A Century of Design in the Parks

Preserving the Built Environment in National and State Parks

Santa Fe, New Mexico, June 21-23, 2016



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Santa Fe, New Mexico, June 21-23, 2016

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FOREWORD

The built environments of the US National Park Service (NPS) span one hundred years of development and have influenced park design all over the world. From the early rustic period, when railroads transported tourists to large western parks, through the major construction projects of the Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) during the Great Depression, to the post-WWII era and the mid-century modern structures of the NPS Mission 66 campaign, NPS park design has been reinvented over and over to address the changing needs of the parks and their visitors

In 2016, the National Center for Preservation Technology and Training (NCPTT) joined with the Friends of NCPTT, the NPS Cultural Resource Division, the NPS Intermountain Regional Office, Bandelier National Monument, New Mexico Department of Cultural Affairs, the Living New Deal, the American Society of Landscape Architects New Mexico Chapter, and the National Trust for Historic Preservation to host a three-day symposium discussing the preservation of NPS-developed buildings and landscapes.

A Century of Design in the Parks celebrates the unique qualities of National and State park resources, and focuses on current efforts to preserve these structures and landscapes for the new millennium. This wide-ranging compilation of papers from the Symposium includes Ethan Carr's keynote address highlighting the creativity and bold initiative required if the historic developed areas of National, State, and municipal parks are to be revived and enhanced for future generations. Hugh Miller's paper illuminating the work of the NPS Office of Archaeology and Historic Preservation offers insights into the history of NPS historic preservation efforts, and Cynthia Brandimarte's paper, *Built Sturdy Left Fragile: State Parks after the New Deal*, discusses some of the early plot twists in the almost century-long narrative of how State parks are striving to manage and operate parks designed in the 1930s.

Other papers address topics such as adapting to changing climates and balancing historic preservation with modernization to meet the needs of the NPS. Robert Melnick's paper addresses potential climate-related vulnerabilities facing character-defining landscape features in NPS Pacific West Region parks. Robert Hotes' paper explores an integrated design approach that successfully balances preservation and sustainability goals in the Northeast.

These are only some of the interesting narratives captured in the pages that follow. In addition to reading this publication, you are invited to visit our website at www.ncptt.nps.gov, where you can view the closed-captioned videos captured during the Symposium.

It was a great pleasure to host this Symposium during the National Park Service Centennial, and to highlight technologies and strategies that can safeguard our cultural heritage for many years to come. We hope you find this publication valuable both now and in the future, as we work together to better understand and preserve NPS-developed buildings and landscapes.

Kirk A. Cordell
Executive Director

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NPS Design Tradition in the 21st Century

Ethan Carr, University of Massachusetts, Amherst, Massachusetts



Figure 1. From "Mission 66 in Action" slide show, 1956 (Photo: NPS Harpers Ferry Center)

Centennial celebrations, like most historical commemorations, express apprehension for the future as much as pride in the past. While retrospection on an important anniversary can forge renewed identity or purpose, the need for such definition seems most pressing when new realities call old certainties into question. The National Park Service (NPS) has important reasons to celebrate its centennial, in this sense. It comes at a time when social, technological, and environmental changes have already altered basic assumptions about national parks and their management.

This is not the first time the NPS has made such use of the anniversary of its 1916 Organic Act. In 1955, Director Conrad L. Wirth anticipated the agency's fiftieth anniversary as the deadline for a ten-year expansion and modernization of the national park system, and of the NPS itself. Then as now, demographic and technological changes were shifting how, where, and when people visited parks, and the kinds experiences they had when they did. Wirth and his cadre of park planners and designers were prepared to rethink fundamental aspects of how park visits should be facilitated. He named the effort "Mission 66," and the program is best known today for the many construction projects—visitor centers, park housing, utilities, road widenings—completed through increased annual appropriations during the decade leading up to 1966. Many of the developed areas of the national park system still rely on the automobile-ori-

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ented infrastructure of the Mission 66 era. But Mission 66 also provided for an increase in the size and professional training of NPS staff, and it permanently raised expectations for overall levels of annual funding per unit of the system. Initiatives in the identification and restoration of historic sites prefigured the preservation legislation of the 1960s. The planning and development of national recreation areas and national seashores stimulated further recreational planning on the federal scale. Critics have condemned Mission 66 for relying too heavily on park development to meet the challenges of post-World War II war levels of use. But as a ten-year long, billion-dollar fiftieth birthday party, it will be an hard act to follow.

Of course the "mission" in the twenty-first century is very different than that of the mid-twentieth. The baby boom may be over, but demographically we are a more diverse nation and that trend will intensify. While the construction of the Interstate Highway system made parks more accessible to the public than ever before, today new sources of information and experience available through the Internet make it possible to "visit" places without actually traveling at all. As the seemingly endless rise in visitor numbers slows or even reverses, fears that parks are being "loved to death" are accompanied by another apprehension: that parks are being ignored, and are becoming irrelevant to the younger generations who must become their stewards. And if it once seemed to be possible to protect a park's integrity with physical redevelopment plans meant to minimize visitor impacts, new threats such as climate change, sprawling urbanization, and habitat loss make it clear that ecological threats are global in scale and are neither contained, nor entirely mitigated, within park boundaries. The twenty-first century already mandates a new "mission."

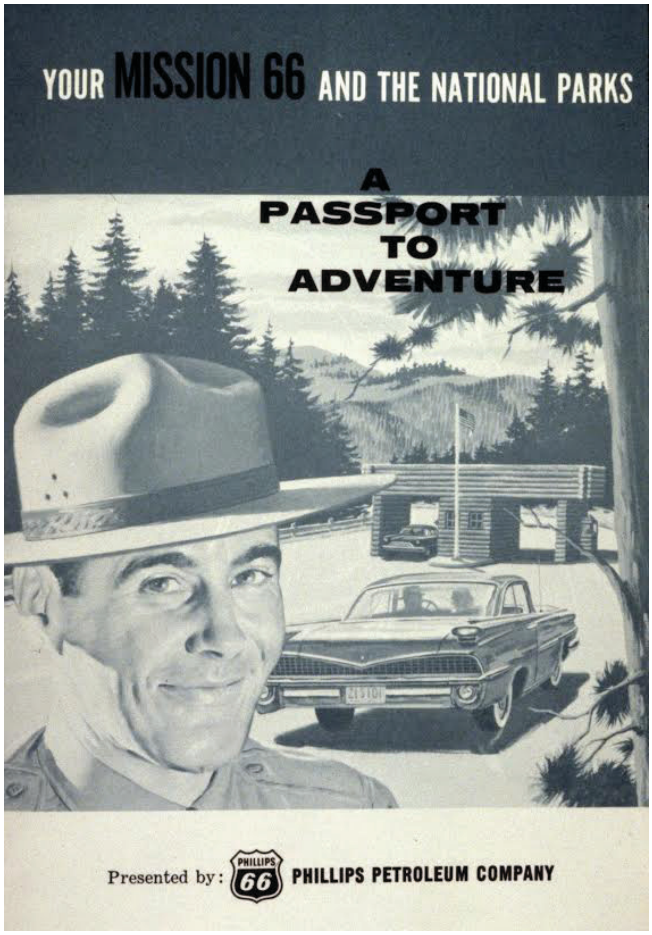


Figure 2. Mission 66 Brochure (Photo: NPS Harpers Ferry Center)

To the degree that NPS officials have articulated goals for marking their agency's centennial, it is fair to say they have not yet done so with the emphatic clarity that Wirth gave to Mission 66. Neither has Congress indicated it might initiate a new era of capital investment in the national park system. The NPS today is in a completely different position politically, legislatively, and administratively than it was in the middle of the last century. Federal environmental legislation and agency policies, for example, long ago determined that another Mission 66 could not, as well as should not, be attempted. Wirth's NPS was still a park development agency, as it had been since its creation in 1916. It relied on landscape architects and engineers to design plans for "harmonious" park improvements that would enable growing numbers of visitors arriving in automobiles to "enjoy" scenic and historic places without "impairing" them. By legal definition, the purpose of the national parks was to preserve them unimpaired for the benefits they offered the visiting public.

This definition has often been described as oxymoronic, or at least as a dual mandate. But Frederick Law Olmsted, Jr., (who wrote the key portion of the 1916 act expressing this purpose) believed that the design and construction of public park facilities—roads, trails, campgrounds, and other public and maintenance areas—made it possible to achieve both enjoyment and preservation, at least if such development were done well. His father was the source of this belief. Frederick Law Olmsted, Sr., in his 1865 recommendations for the management of Yosemite Valley, unequivocally prioritized the first goal of that new park: landscape preservation. The second and also vital mandate was to establish easier public access to the park, and to develop drives, paths, and minimal facilities within the park to allow vis-

itors to experience it without damaging the fragile landscape. Olmsted asserted that appreciation of landscape beauty—whether in the middle of Manhattan or in the remote Sierra Nevada—was necessary to the physical and emotional well being of individuals, and therefore to the future public health of the Republic. The creation of public parks, in this light and along these lines, was nothing less than a required duty of government.

Olmsted's 1865 Yosemite Report was ignored in the coming decades, but his son read it and was inspired by it during the years he was drafting the legislation to create the NPS. This was the origin of the NPS design tradition. This tradition found expression in a group of principles for how national park development should be designed. The 1918 "Lane Letter," drafted by Steven T. Mather and Horace M. Albright for the signature of Secretary of the Interior Franklin K. Lane, specified that "every activity of the Service is subordinate to the duties imposed upon it to faithfully preserve the parks for posterity." Their letter indicated how preservation could be achieved while facilitating public access: "In the construction of roads, trails, buildings, and other improvements, particular attention must be devoted always to the harmonizing of these improvements with the landscape. This is a most important item in our program of development and requires the employment of trained engineers who either possess a knowledge of landscape architecture or have a proper appreciation of the esthetic value of park lands. All improvements will be carried out in accordance with a preconceived plan developed with special reference to the preservation of the landscape, and comprehensive plans for future development of the national parks on an adequate scale will be prepared as funds are available for this purpose."

In the 1920s and 1930s, in-house professionals followed this design tradition in creation of "rustic" architecture and "park villages," and in the "landscape engineering" of park roads that minimized damage to their surroundings. After the war, Mission 66 planners addressed an ever-growing number of cars and people with a revised set of planning principles and Modernist design idioms. But Wirth and his cadre of NPS designers—many of whom were the same individuals who had been responsible for rustic development earlier—held fast to the underlying tradition that guided these updated principles. "Enjoyment without impairment" remained their mantra, and they made frequent reference to earlier NPS policy and practices as they faced postwar levels of use with boldness and creativity. The tradition of NPS design was never a matter of style, but of the ultimate purposes for park development. Mission 66 planners intended to revive that tradition with new approaches to planning and design that would achieve the same goals, under vastly altered circumstances.

By the 1970s, however, neither Congress nor the public seemed to desire further accommodation of automotive tourism in the park system, which at least in some cases had grown to unacceptable dimensions. For many, this meant that the NPS design tradition had run its course. Changes at the agency rightly prioritized natural and cultural resource stewardship over park development, and the roles of scientists and other trained resource managers increased in relevance. This corrective was needed, overdue, and remains fundamental to NPS priorities and mandates today. But it never changed the necessity of park design to help achieve the same purposes of stewardship. For many parks today—from large natural parks to historic sites and battlefields—real improvements in ecological health, resource stewardship, and public experience will not occur without significant change. That change must be planned both to protect park landscapes and to enhance the public's experience. But the social and environmental contexts of the park system have shifted, once again, and the principles guiding such change require fresh expression. The continuing relevance of the NPS design tradition, in other words, has nothing to do with a return to rustic style, or to Mission 66 Modernism. The tradition defines a set of broad purposes, not a preferred style. Reducing park design to stylistic choices evades the challenges at hand and often perpetuates or worsens the status quo.

In considering the new mission associated with the NPS centennial, officials and their design consultants need to consider how the NPS design tradition can be expressed in new design principles that can guide built form and management policy that address current conditions. Such a revision is very much part of the tradition, and the call for the agency to engage in such a effort is not new. In 1991, the NPS engaged in a system wide review of its policies in recognition of the agency's seventy-fifth anniversary. Following a conference involving hundreds of participants, six "strategic objectives" were agreed upon and published as the Vail Agenda. The first two objectives effectively restated the general priorities of Olmsted's 1865 Yosemite Report and the 1916 Organic Act: "Resource Stewardship and Protection," followed by "Access and Enjoyment." The document also featured specific recommendations in different catego-

ries. Regarding "public use and enjoyment," the authors proposed that the NPS "embark on an innovative program of facility planning, design, and maintenance" to develop "a new generation of state-of-the-art designs of needed facilities," while making sure to minimize development within park boundaries and to offer assistance to planning efforts in gateway communities outside park boundaries.

The recommendations of the Vail Agenda remain relevant, and over the last twenty years a number of influences have begun shaping a new iteration of the NPS design tradition. One important direction is indicated by the NPS commitment to the sustainability of its facilities and operations. Sustainable construction materials and technology, for both sites and buildings, represent an important step forward for park projects, as they do for any form of development. But even if a new building is "carbon neutral," and its parking lot recharges its storm water runoff into the ground on site, these laudable aspects of its design have little to say about whether the building should be there at all, what its program should be, or how its appearance and visual impact will affect its setting.

Such planning for each unit of the park system is required, and all national parks, until recently, produced General Management Plans (GMPs) to guide official decisions and prioritize actions. The process was structured around the Environmental Impact Statement required by the 1969 National Environmental Policy Act. Typically several alternative futures for a park, each involving somewhat different management directions, were described. Park planners assessed the environmental impacts of each, and eventually a preferred alternative was selected. The law mandates a public process, and certainly this is an improvement over how park planning proceeded (almost secretly by today's standard) under Mission 66. The emphasis on assessing the environmental impacts of policy alternatives, however, made it difficult to use the GMP process to investigate dramatic change, because such actions are likely to have significant impacts on both cultural and natural resources. Anything but the most incremental change is likely to violate NPS environmental or historic preservation policies, if not both. Most GMPs do not actually describe specific designs for development, or re-development, but are templates for very general resource stewardship goals. Lawsuits from friend and foe alike, in addition to this inherently conservative and limiting planning process, have made it difficult in many cases for individual parks to plan, much less implement, reconfiguration, removal, or relocation of developed areas, or other significant changes in park landscape management policies and practices.

Ambitious (Mission 66-scale) ideas for the redevelopment and reconceptualization of how the public arrives at, moves through, and otherwise experiences its parks, however, are required to address changed contexts and new challenges. The planners and landscape architects attempting to implement alternative transportation systems in national parks have been saying as much for decades. Where they have been successful, such as Zion National Park, we have at least a partial idea of what real change can mean for both park resources and visitor experience. But the difficulties of implementing alternative transportation schemes are as instructive as the few successful examples. Transportation in a park setting is not just a means of getting someplace. As NPS historian Tim Davis notes, moving through landscapes on well designed roads, whether in a carriage or a motor vehicle, has been a primary mode of experiencing and appreciating park landscapes, and an integral part of park design, since at least the eighteenth century. The design of various modes of public circulation was particularly significant in nineteenth-century municipal park design, as at Central Park. If the national park public still clings to the autonomy and experience provided by automobiles, it may not just be out of laziness. Alternative transportation, in many cases, actually implies an alternative national park experience. That alternative experience must be more, not less, inspiring to succeed.

The NPS has also recently sponsored the "Designing the Parks" initiative, which has produced another source of new visions of park design that attempt to address the changes in ecological and cultural conditions we are now experiencing. Through conferences, a student design competition, and its website, the NPS organizers have identified a set of park design principles, and tested them through theoretical projects in seven national parks. Created by groups of students and faculty from a diverse selection of graduate design schools, these projects illustrate how much has changed, at least for this generation of landscape architects, planners, preservationists, and architects. Designing the Parks has been an impressive effort, and one made particularly timely by the fact that in recent years the NPS has steadily divested itself of in-house design professionals. Earlier eras of NPS design were planned and executed mainly by NPS personnel. Collaboration with other agencies,

such as the Bureau of Public Roads, and the services of design consultants, especially architects, has always been significant. But only in recent years has the NPS looked to design consultants without its own strong group of in-house professionals to articulate a program of design principles, schematic designs, and specific requirements. Consultants may be very good at providing certain services, but they cannot provide an agency with the reasons, purposes, and guidelines for those services. The Designing the Parks initiative is a very good first step at exploring new ways for the NPS to engage these questions in an era of limited in-house expertise, in which partnerships with universities and non-profit organizations will become even more essential than they already are.

How far can new ideas, such as those students put forward in their Designing the Parks projects, be allowed to go? Put another way, when will NPS planning and design policies and practices catch up with the existing demographic and environmental trends that have altered the situation of every unit of the national park system? In 1916, the NPS itself was created to answer these kinds of questions and to enforce standards and policies across the system from a new and centralized administration. A relatively small group of Mission 66 planners also applied system wide policies and design standards, continuing to assure a minimum level of service and a consistently identifiable look to all national park developed areas. Today, it is apparent that the new iteration of the NPS design tradition taking shape will not be the work of an in-house cadre of designers and officials in Washington; it is evolving through the many partnerships of almost every description that have been forged, especially over the last twenty years, throughout the national park system. With private nonprofit groups, land trusts, and land management agencies at various levels of government, national park managers have already largely re-invented the NPS as a decentralized, partnership-driven organization, facilitating new models of conservation and public engagement. Individually and in groups, the managers of dozens of national parks, historic sites, and recreation areas are actively engaged in devising new, diverse visions for ways in which the public can become more engaged and have more profound experiences of scenic and cultural landscapes.

This is an exciting time, despite (in part because of) reduced federal budgets. But can we say what the new, decentralized iteration of NPS design tradition is, or will be, over the next hundred years? Will there be a systematic consistency of design principles, even within an official culture of decentralized, flexible partnerships that respond to local constituencies, exploit new sources of funding, and benefit from their own political coalitions? This has been and will remain a principal challenge for the NPS as it approaches its centennial. These are vital questions if we believe significant redevelopment—including the removal of facilities in some cases—will be necessary in coming decades for parks and historic sites of all types to continue to fulfill the traditional promise of preservation combined with public enjoyment. Whether the necessity of change is accepted or not, it is ongoing anyway in many units of the park system. Partnerships and entrance fees, as well as regular appropriations, are driving a new era of park development. The dangers of ad hoc and inappropriate development are as real as they were in 1916.

Will the NPS design tradition be successfully redefined as the means of assuring unified policies and the identity of the system? The eventual alternative is, arguably, the effective disbandment of the NPS as a national organization, and the undoing the 1916 legislation even as it is being celebrated. The NPS design tradition remains relevant, but it demands periodic, creative, and system wide reformulation. Park superintendents and their partners, in the best cases (which are too numerous to cite fairly here), are showing the way. But the agency, as a whole, needs to do more. Whatever one thinks of Mission 66, it left a legacy not only of buildings and developed areas, but of a greatly expanded and diversified park system, an enlarged and professionalized agency staff, and a congressional commitment to the values of national parks. What will the centennial legacy be, after a period of self examination and celebration? Using this anniversary as the catalyst for renewing its bureaucratic identity and purpose, the NPS should re-examine and reconceive its design tradition as the means of perpetuating the vital public purposes of the national park system.

The author would like to thank Rolf Diamant for his comments and advice on this essay.

Park Historic Architecture Program Comes of Age with the Historic Preservation Act of 1966

Hugh C. Miller, National Park Service (retired), Richmond, Virginia



Figure 1. In 1973, the author and James S. Askins organized the first nationwide training courses for NPS maintenance workers. This annual training enhanced skills for park staff to undertake preservation treatments. These hands-on workshops included guest instructors such as Martin E. Weaver of Parks Canada, seen here, discussing the replacement of a window sill on a C&O Canal lock house. (Photo by Hugh C. Miller)

Abstract

The National Park Service (NPS) Park Historic Architecture Program came of age following the passage of the National Historic Preservation Act of 1966. The National Park System had numerous historic structures in its care; however, there was little involvement of historical architects in their preservation as a system-wide program. The organization of the NPS Office of Archeology and Historic Preservation (OAHP) in 1967 to implement the 1966 Act gave historic architecture a place at the table in the NPS Washington Office (WASO).

In OAHP Henry A. Judd was Branch Chief of Park Historic Architecture. He helped write the 1964 *Administrative Policy for Historic Areas in the National*

Park System. He became a leader in explaining this policy and best practices for preservation treatments and management of historic resources for the WASO staff, regional offices and the parks. In 1973 OAHP was organized into external and internal programs that became "Park Historic Preservation" directed by Robert M. Utley with Henry Judd as the "Chief Historical Architect." It was decided that the regional offices should develop professional staffs reflecting those in WASO. With professional cultural resource staffs in the regions, including historical architects, there was a new capacity for preserving historic buildings in the parks. At the same time, the NPS had to grapple with the large number of historic structures in the new park areas. With the expansion of the Park Historic Architecture Program, the List of Classified Structures (LCS) was established and the NPS training courses were organized focusing on "Maintenance is Preservation." When Gary Everhart became Director in 1975 his negative attitude toward historic preservation and a reorganization of WASO resulted in Robert Utley's leadership roles being diminished and Utley left the NPS in 1976.

The Park Historic Architecture programs continued, but the vision of park historic preservation programs in WASO had to wait until 1980 for the next generation. With historical architects the regions continued expanding own preservation programs. The retirement of Henry Judd in February 1979, brought an era of Park Historic Architecture to an end, but many of the Park Historic Architecture programs continue.

Introduction

This paper will discuss the National Park Service Park Historic Architecture Program coming of age following the passage of the National Historic Preservation Act of 1966 (the Act). This analysis of the first 13 years of the Park Historic Architecture Program is based on documentation, interviews and firsthand knowledge of the author who served in the program during its formative days. The National Park System has had numerous historic structures, monuments, buildings, engineered structures and standing ruins in its care even before the 1933 government reorganization and the 1935 Historic Sites Act. However, there was little involvement of historical architects in their preservation through a system-wide program. The organization of the NPS Office of Archeology and Historic Preservation (OAHP) in 1967 to implement the Act gave historical architects a place at the table in the NPS Washington Office. (WASO)

Park Historic Architecture Activities Prior to the Act

In reorganizing National Park Service (NPS) programs to meet the challenge of Director George B. Hartzog's "new vision for the parks," Henry (Hank) A. Judd and James C. Massey were relocated from the Philadelphia design office to WASO in late 1965. Judd became the supervisor of the Branch of Historic Structures and Massey became the supervisor of the Branch of Historic American Building Survey (HABS) under Charles W. Lessig, FAIA, Chief Architect, Branch of Historic Structures and HABS. For the first time, the historic architecture programs of NPS were organized as national programs directed by an architect on the senior staff of WASO. Judd supervised ongoing preservation projects undertaken by the service centers and park historical architects. He also began developing a handbook of restoration.[1]

Massey and Judd participated in a Special Committee on Historic Preservation organized by Director Hartzog on May 24, 1966. The Committee was to advise the Director on problems and opportunities with administration of the proposed legislation for a national preservation program. The committee included advisors Dr. J. O. Brew, a Harvard archaeologist, and Dr. Ernest Allen Connelly, a University of Illinois architectural historian, as well as NPS assistant directors and senior professionals in archeology, history and historic architecture. The committee chaired by Ronald F. Lee submitted its report on September 30, 1966. Although the report focused on the administration and professional staff needed for the expected new preservation programs, there was some discussion of preservation programs for park historic structures.

The committee reported on the needs for professional staffing and discussed the fragmentation of the administration of historic structure projects in the parks. While there were professionals in the service centers and historians and archaeologists in the regions and some parks, the report recommended 17 historical architects in the proposed OAHP and WASO organizations. The committee noted that the stewardship of NPS historic buildings fell to park operations, maintenance and interpretation, often under the supervision and reporting system of several administrative units with no coordination. They saw collaboration needed for a stronger historic architecture program to organize the historic structures research (including a building's history and site archeology), the development of histor-

ic preservation treatments, preparation of drawings and specifications and the undertaking of the preservation work preferably by NPS exhibit specialists.[2] They also recommended expanded cooperation between park operation, maintenance and interpretation of the parks' historic structures.[3]

The Office of Archeology and Historic Preservation

The Historic Preservation Act of 1966 was a bold piece of legislation, referred to as the "New Preservation" with most of the program administration delegated to the National Park Service. Following the recommendations of the Special Committee, Director Hartzog organized a new Office of Archeology and Historic Preservation (OAHP) with Ernest A. Connelly assuming directorship in early 1967. There were four divisions: History, Historic Architecture, Archeology and the National Register of Historic Places. Robert M. Utley was the Chief of the History Division. He had participated on the Special Committee, was a published scholar of western history and longtime regional historian in the Southwest Regional Office. The Historic Architecture Division was directed by Joseph B. Watterson, FAIA, the nationally recognized retired editor of the *Journal of the American Institute of Architects*.

In the OAHP office, Henry Judd was supervisor of the Park Historic Architecture Branch. He brought 22 years of experience in traditional building and restoration. He inherited the legacy of the restoration dynasty that Charles E. Peterson, FAIA created in the Eastern Office of Design and Construction during the Mission '66 Program. Judd had been working in the Rosslyn, Virginia branch office of WASO since 1965 making the transition into the "New Preservation" era.

Judd was involved in writing the new *Administrative Policy for Historic Areas in the National Park System*. This new policy with its definitions and requirements for planning, preservation treatments and management also defined the establishment a List of Classified Structures (LCS). The LCS was high on Judd's priority list but was not funded until 1975. In spite of Director Hartzog's opposition to NPS handbooks and manuals, Judd was able to convince him that there was a need for a restoration handbook of best practices. He and historical architect Thomas N. Crellin, who was in the field, began working on a draft. Also in response to complaints about parks abandoning and demolishing old and historic buildings, Director Hartzog issued a memorandum in October 1968 mandating that he would approve all requests for demolition of park buildings over 50 years old. This review and approval process was delegated to the Park Historic Architecture Branch.

The New Administrative Policies

After George Hartzog became Director in 1964 he "threw out" all the NPS manuals. He was a proponent of "management by objective" and believed that decisions should be made by analyzing all the factors involved to solve problems within the broad framework of NPS policies. Robert Utley was the senior NPS historian who was tasked to lead a group of NPS professionals to write the new policies for historic areas.

Utley resisted, claiming the policies provided by the National Park Service Advisory Board in 1937 sufficed. The 1937 policies dealt mostly with historic structure treatments. These policies were based on internationally accepted principles including A.N. Didron's 1839 dictum "Better to repair than to preserve. Better to preserve than to restore. Better to restore that to reconstruct."[4] There was considerable time and energy expended by Utley in resisting the Director who prevailed, stating that policies must be written by NPS professionals and not an advisory committee. The new policies were completed and approved in the late 1960s.[5]

In 1968 the policies were compiled with related appendices into the *Administrative Policy for Historic Areas in the National Park System* and printed as a 166 page six-by-nine inch booklet with a red cover. At the same time a policy booklet with a green cover was issued for natural areas, and a blue cover for recreation areas. This small format was useful as a desk reference and to hold up in a classroom. Over the years these policies were expanded and republished without the differentiating colored covers. When Gary Everhart became Director in 1975, he proposed combining all the administrative policies into one document. Utley vehemently opposed, urging that the historic area policy must be clearly differentiated to be understood.[6] The Director prevailed and the policies for cultural resources became Chapter 28 (NPS 28) of a much larger document. The administrative policies covered all types of park areas and Chapter 28 was clear that the cultural resource policies applied to ALL parks.

Historic Preservation and the Denver Service Center

During the Mission 66 program, NPS revived the HABS program and established a program to restore and

reconstruct historic buildings. In the Eastern Office of Design and Construction (EODC) Charles E. Peterson, FAIA developed a NPS restoration era program with historic architects and exhibit specialists accomplishing major preservation projects. Charles S. Pope developed a smaller preservation program in the Western Office of Design and Construction (WODC) in San Francisco. By 1966 these design offices became Service Centers with EODC moving to Washington, DC. The park preservation projects continued following the Act and historical architects and exhibit specialists were assigned to restoration work in the parks with supervision from the service centers and the overview of Judd.

In October 1971 NPS Director Hartzog decided to merge the Washington and San Francisco Service Centers into one and move the function to Denver and the Denver Service Center (DSC) was born. This decision to relocate was sudden and many professional staff in the service centers chose not to move to Denver, including historic preservation professionals who were detailed to preservation projects in the parks. As a result there were no experienced historical architects in the DSC. The recruiting and development of historic architecture capacity in DSC was a time consuming task. During this period many squabbles developed between DSC and the regions regarding historic preservation activities.

Concurrent with the decision to merge the service centers, new historical architecture positions were created in some regional offices. Robert (Bob) M. Cox, a design architect in the Western Service Center, decided not to move to DSC. This opportunity was recognized by the Western Region and Bob accepted a position as Regional Historical Architect. At the same time Vance Kominski left the Western Service Center to become the historical architect for the Midwest Regional Office in Omaha. David G. Battle, a former NPS architect, was rehired in 1971 to become the Regional Historical Architect in the Southwest Region. The Pacific Northwest Region was created in Seattle in 1970 primarily to address Alaska statehood and tribal issues related to NPS. Although the Regional Director had little interest in historic preservation, a position was created for a regional historical architect and Laurin C. Huffman II filled that position. He had recently completed an architectural degree from Virginia Tech and had worked for NPS in the Washington Service Center as a student.

Park Historic Architecture Expands with Outreach Activities

At the time the author joined the OAHP Park Historic Architecture Branch in 1971, Joe Watterson had retired and Thomas N. Crellin was now the Chief of the OAHP Historic Architecture Division. It was clear that OAHP was an external program expanding the National Register and providing grants to the states. Park Historic Architecture, Park History and Park Archaeological programs were a part of OAHP, but the "New Preservation Program" for the parks was only a recognized need. At this time many of the NPS regional offices and parks ignored the requirements of the Act, particularly the Section 106 process. This was not unique to NPS. In May 1971 President Nixon issued Executive Order (EO) 11593, requiring all Federal agencies to survey their properties, to list those historically significant in the National Register, and to provide for their stewardship, including consulting with the Advisory Council under Section 106 of the Act.

The author observed extremes of understanding about preservation in the parks and regional offices, including the *Administrative Policies for Historic Areas of the National Park System* and the requirements of EO 11593. In the National Capital Region, superintendents had rehabilitated CCC park administration buildings and cabins at Prince William Forest Park and the Catoctin Mountain Park with an intuitive awareness of their architectural character. In the same region the Superintendent of Antietam Battlefield and the Chesapeake and Ohio Canal was unaware of the existence of the administrative policies and the requirements of the executive order. Here many historic buildings were vacant and subject to vandalism. Regional historians were nominating NPS buildings in the Grand Canyon, Yosemite and other national parks to the National Register. In one region the historian and the archeologist, following the decision of the regional director said that there were no archeological sites, nor historic buildings in their national parks.

Judd and the author spent much of their time in the parks reviewing requests for demolition, consulting on the requirements of E0 11593, interpreting NPS policies and responding to emergencies, such as recovery from damage to the C&O Canal historic structures from Tropical Storm Agnes (June 1972). The author also was assigned to special projects including the evaluation of historic properties as possible official residence of the Vice President, and the development of a Chicago School thematic preservation action plan. This proposal (never

implemented) was for the NPS to join with the City of Chicago to use transfer of development rights to protect Chicago's late 19th century significant historic commercial buildings. He led the official Department of Interior review of The Plan for the Pennsylvania Avenue Development Corporation (PADC) in Washington, DC. He continued to provide advice to the Secretary of Interior and represent the Secretary's interests to the PADC Corporate Board for revitalization of downtown Washington. These studies and projects interested the Secretary of the Interior who became involved in the activities of architectural preservation beyond the parks' programs.[7]

National Training Programs in Historic Preservation

In 1968 Hank Judd and historical architect Lee H. Nelson proposed the William Strickland Preservation Center to enhance the skills of historical architects and exhibit specialists. Nelson was a senior professional working on Independence Hall projects. Both men had participated in Charles E. Peterson's "carpenters' carnival" that brought historical architects and exhibit specialists together to share their preservation knowledge, skills and experiences. The proposed Strickland Center was to be located in Philadelphia as a residential program with historical architects and craftsmen learning together while working on preservation projects. The Center was funded, but before it began, the Director moved the money to a promised restoration of Castle Clinton in New York City and the project died.

However, the need for training continued, and by 1972 funding was secured for a film about investigating historic buildings. The WASO staff provided technical assistance for the production of the film at Gettysburg. Here the author met James (Jim) S. Askins, a senior exhibit specialist who was the lead personality in the film. Although the film was never produced, the author observed Askins replacing a 1958 wooden roof that had not been properly maintained.

From these conversations, the author and Askins worked with the NPS Stephen Mather Training Center at Harpers Ferry to organize the first course in historic building preservation for park maintenance staff. In 1973 the first class of 22 maintenance tradesmen and three historical architects spent two weeks in the classroom, shop and field applying their skills to hands-on problem solving for preservation projects. This focused their knowledge, skills and abilities to think about materials and repair in special situations. These courses became an annual event and the author coined the phrase "Maintenance is Preservation." The author also became active in organizing national training courses related to preservation for managers, historical architects, landscape architects and maintenance workers in NPS and outside the service.

The Williamsport Preservation Training Center Program

In recognition of the Act and the need for exhibit specialists to carry out budgeted lump sum preservation projects, Askins on his own initiative in 1967 began crafts training for people working with project crews from his Harpers Ferry shop. Unfortunately, with the budget tightening in the early 1970s, all 45 craftsmen and trainees were terminated. However, the idea for a center for training was fixed in Askins' mind.

With success of the Mather Training Center historic preservation courses for NPS maintenance workers and the multi-year funding for the rehabilitation of the structures on the C&O Canal damaged by Tropical Storm Agnes during June 1972, Jim Askins again seized the opportunity to establish a program for on-the-job training in the specialized skills needed for preservation treatments. Askins and his crew were assigned to undertake emergency work on the Canal from shops in Harpers Ferry. He later moved the training to his shop in the Cushwa Brick Company building located on the C&O Canal at the edge of Williamsport, Maryland. This ad-hoc training program included future exhibit specialists Bobby Flickinger, Sam May, and Sherman Grove.

In 1976 in a meeting in Santa Fe, the regional directors and WASO officials recognized the Park Historic Preservation Program, Askins' work, and the need for trained people to manage preservation projects. They asked DSC to develop a comprehensive crafts training program. Don Bressler from DSC met with Askins, who insisted that the trainees in the new program have permanent NPS positions. It was also agreed that the training would be service-wide with projects using park and regional funds, not just DSC construction funding. The Williamsport Preservation Training Center was formally organized in 1977 under DSC with James S. Askins as director.[8]

The training was for four or five trades mechanics and a historical architect who developed Individual Development Plans that could be met in two or three years of on-the-job experience working on current projects. This work was augmented by classroom time and special shop assignments, such as building a six-over-six

window sash. The program was under the DSC for administrative support. Askins also established an advisory committee of five people, including the author. This committee was useful in providing oversight of the training and in supporting the requests for funding for training not covered by direct project budgets.

Although not a training program of Park Historic Architecture, the Williamsport Training Center made a major contribution to the success of the Park Historic Preservation program as a result of Askins' energy to seize opportunities and his tenacity to expand their scope. Askins called the Center "learning from each other." This had been the intent of the proposal for the William Strickland Preservation Center.

The List of Classified Structures

Early in the discussion about the preservation of park historic structures, there was a realization that no one knew how many historic structures were in the Park System. The idea of a computer-based List of Classified Structures (LCS) was readily accepted. Director Hartzog often bragged that with an LCS he could "push a button" and know how many historic adobe buildings were in the parks.

In the compilation of the administrative policies of 1968, the LCS is defined as a list of "all historic structures within the areas of the National Park System that may be worthy and practicable of preservation." By 1971, Clarence Meek, an experienced WASO administrator, was assigned to Park Historic Architecture Branch as the Registrar of the LCS; however, funds were not available. In 1975 a national program was launched with young professionals employed in each region for the inventory process. They inspected all eligible historic structures in the 287 park areas and answered eight key questions on the inventory form identifying the type, materials and conditions of the structure and the site. The proposed preservation treatment and estimated costs were included with notes regarding needs for emergency stabilization. These inventory forms were sent to the WASO Park Historic Architecture Branch where Registrar Clarence Meek, and Technical Information Assistant Travis McDonald led a team of six people who transferred the information to coding sheets for key punching the computer cards.[9] These inventory forms are now in the NPS Archives.

By 1977 the first generation of the LCS was established with over 70,000 entries, including 10,000 major structures. These numbers were daunting and the cumulative costs of preservation treatments resulted in "sticker shock." Not surprisingly, the concentration of historic structures was in recreation areas. There were thousands of structures on former military bases, including Golden Gate, Gateway and more. There were also multiple buildings in hundreds of abandoned farmsteads and ranches, including Delaware Water Gap , Cuyahoga Valley, Sleeping Bear Dunes, etc. In the older national parks, the historic structures included parkways, bridges and buildings designed and built by the CCC.

The refinement of the LCS computer system and coordination with the parks and regions continued after 1977 led by WASO park historic architecture staff Susan Sherwood and Karen Ream. It was a challenge to make the reports from printouts meaningful. Because of its size the LCS was clumsy and retrieving useful management information for the entire national park system was problematic. However, the LCS provided compelling information to present to Congress and the Office of Budget and Management that supported program needs. The third generation of the LCS making it a more useful management tool for the parks and the regions began after 1980.[10]

Park Historic Preservation Becomes a Program in OAHP and the Regions

In 1973 OAHP was organized into external and internal programs that became Park Historic Preservation (PHP) directed by Robert M. Utley who had the title of Assistant Director. There were three divisions -- history, archeology and historic architecture. Henry A. Judd headed the Historic Architecture Division with the title of Chief Historical Architect.

NPS Director Hartzog saw the regional offices as a connection to the parks and they monitored the activities of the big parks and provided technical assistant to the smaller parks. By 1973 there were nine regions with the new North Atlantic Region in Boston and the Rocky Mountain Region in Denver. There also were redrawn boundaries among the previous seven regions. The Director and Robert Utley decided that the regional offices each would develop park historic preservation staff reflecting the Washington office organization. This required each region to have a chief of their Park Historic Preservation program to coordinate the activities of the regional historian, regional archaeologist and regional historical architect with other programs in the region and the parks. In most regions this chief was an experienced NPS historian. Many of the regions

already had historical architects who were beginning to define their programs and preservation treatment capacity. Judd worked with the new regional personnel offices to recruit experienced historical architects. In 1974 E. Blaine Cliver went to the North Atlantic Region and Rodd Wheaton was recruited in May 1974 for the Rocky Mountain Region. Sometime later, Henry Magaziner joined the Mid-Atlantic Region in Philadelphia. Paul Goldner went to the National Capitol Region and John C. Garner, Jr. joined the Southeast Region. Robert M. Cox was already designated the historical architect for the Western Region and Laurin C. Huffman, II was in the Pacific Northwest Region. David G. Battle was in the Southwest Region and Vance Kominski was the historical architect in the Midwest Regional Office. In these regional offices, the historical architects had varying success in defining new roles, new program activities and their relationships with the parks.

With the development of the Park Historic Preservation Program in Washington the new regions in the North Atlantic and the Rocky Mountains grasped the opportunity and were effective in educating park superintendents about historic preservation. The regions that understood preservation became better. Some learned about preservation and did well. However, the lack of funding for preservation needs of historic structures persisted and the flat funding of budgets resulted in abandonment and neglect as management decisions. It took a change at the top and the fortuitous availability of experienced historic preservation professionals for a sea change to occur for historic structure preservation in the parks to go from a negative to positive in the 1980s.

Rustic Architecture in the Parks

The style of building known as "Parkitecture" thrived with the Civilian Conservation Corps (CCC). Park CCC demonstration projects resulted in style manuals that were used in national, state and local parks. Albert H. Good's book *Park Structures and Facilities*[11] first published in 1935 was a catalogue of rustic design in NPS. In the mid-1970s NPS historians, historical architects and others recognized the significance of park rustic architecture.

Most notable was the 1977 NPS publication of *Rustic Architecture 1916-1942* by William C. Tweed, Laura E. Soulliere and Harry C. Law.[12] This work brought NPS historians and historical architects together in recognizing the national significance of these park buildings, and in 1987 the publication became *Architecture in the Parks: National Landmark Theme Study* by Laura Soulliere Harrison.[13] This work resulted in National Historic Landmark designation for these buildings. The St. Louis Gateway Arch by Saarinen was included in these studies. It was a brilliant move to include the arch in this landmark nomination and this iconic Modernist structure became a National Historic Landmark in 1987.

With a professional park preservation staff, including historical architects in the regional offices, there was a recognized interest in preserving park buildings, headquarters, ranger cabins and maintenance areas in the national parks. Park concession buildings also were recognized as historic structures. They were listed in the National Register and many became National Historic Landmarks. Rustic architecture became a theme for NPS publications, policies, preservation and interpretation. Most interesting are *Landmarks in the Landscape* by Harvey J. Kaiser, published in 1997, and *Wilderness by Design: Landscape Architecture and the National Park Service* by Ethan Carr published in 1999. It is useful to read these two books together since their analysis of "rustic" explains how park landscapes and buildings were successfully combined with the nature of the parks.

Bold Moves Recognize Needs of Park Historic Structures

In spite of a Park Historic Preservation program in WASO, and regional park historic preservation professionals, including historical architects, not all regional directors, their staffs, nor park superintendents understood the requirements of stewardship. At the same time, the regions were grappling with the huge number of historic structures that came into the NPS with new park areas, particularly recreation areas. The spirit of the National Historical Preservation Act and the requirements of Section 106 were lost on many NPS administrators and park superintendents. Even with the requirements of EO 11593, historic structures did not have priority in decision-making. "Abandon and neglect" was the mode leading to demolition of many park historic structures.

Although Ronald Walker, who was appointed NPS Director in 1973, had limited knowledge of historic preservation, he was receptive to what his staff was telling him.[14] To raise awareness, Utley asked Judd and the regional historical architects to organize a slide show of the horrors of neglect to be shown to regional offices and park superintendents. This was presented by Robert Utley and soon the poor condition of park historic structures became general knowledge. Utley remembers

that "after we compiled the list of horrors that had been perpetuated by the park service in historic preservation, he (Walker) turned me loose to go about an attempt to bring about a higher level of sensitivity and greater commitment to proper care of historic resources."[15] The horror show had a short run since NPS officials did not want the story regularly repeated. However, in both the House and Senate National Park Subcommittees there was an awareness of the problem.

The XXX Form

After the Regions had their own historic preservation staff, Utley realized there was an opportunity to force the NPS to live up to its own policies and principles.[16] Soon the negotiations for a programmatic Memorandum of Agreement (MOA) to cover NPS preservation activities was begun between Utley and Robert Garvey, the Executive Director of the Advisory Council. This MOA created a process that would require NPS professional review of NPS preservation projects in lieu of a formal Advisory Council review of each project as required by Section 106 of the Act. The XXX Form and its related procedures became the management tool for compliance with the law and NPS policy. This review process was successful, although for some projects the XXX Form was perfunctory.

The author worked with Utley and other WASO park historic preservation staff in developing the process and required forms need for discussion with the Advisory Council. When the author took the draft form to the NPS Form Administrator, he was told that official numbers could not be issued for a draft form. So the form was called XXX awaiting final approval. When the MOA process was approved by the Advisory Council and NPS, the XXX Form was accepted as the reporting document. All parties were surprised to discover that a new form with an official NPS number would require new negotiations, so the XXX Form developed a life of its own.

NPS Reorganization and the Park Historic Preservation Program

In 1975 the Park Historic Preservation program was organized under the direction of Park Operations with Daniel J. (Jim) Tobin, Jr., Associate Director and Robert Stanton, his deputy. Now there was no functional relationship with the external OAHP programs. Interestingly, Tobin and Stanton shared a carpool with Henry Judd and they received daily tutoring and developed a working interest in the new historic preservation programs. They supported the programs and the relationship with the regions and the parks, but there was little vision for the future. Unfortunately, under Director Gary Everhart (1975-1977) and Director William J. Whalen (1977-1980) there was no effort to request funding for park preservation programs. Director Everhart developed a negative attitude toward historic preservation in the parks and, after a reorganization of WASO, Robert Utley left his leadership roles and joined the Advisory Council in 1976.[17]

The First Generation of Regional Historical Architects

In spite of these limitations in WASO, Park Historic Architecture Programs expanded in the regions. In the North Atlantic Region Blaine Cliver was successful in establishing and staffing a preservation laboratory at the Charlestown Navy Yard with historical architects and preservation specialists. He developed the capacity for preservation treatments and restorations of historic buildings with experienced exhibit specialists and trades mechanics. In 1977 he hired historical architect Randall J. Biallas, who worked in a regional branch office in New York City until 1978 when Randy became the Midwest Region historical architect.

David G. Battle had similar successes in developing a preservation center in Santa Fe although the scope of his efforts was not as broad-reaching as Cliver's. He set up a preservation shop in a freight truck trailer that could be hauled to parks for historic building preservation projects. He hired historical architects and exhibit specialists for this work. Most interesting was the project for the US Army at the Trinity Site. Battle directed the restoration of the McDonald Ranch House where the first atomic bomb was assembled on July 16, 1945. The house was damaged by the blast, but after the NPS restoration became the site's interpretive center. Working with regional park historic preservation colleagues, David had measurable success in developing a preservation ethos and preservation maintenance awareness in the Southwest Region and its parks. David served as regional historical architect from 1971-1984.

When Rodd Wheaton arrived in the Rock Mountain Region in May 1974, it was a new region with new professional staffing. Wheaton brought experience from working in HABS and private preservation offices. He was knowledgeable about the investigation of buildings, preparation of treatment documents, and carrying out

the work. With Harrison Goodall, an educator and preservation consultant, he developed new methods to repair log structures, including rebuilding rotting log ends and rafter tips. He worked effectively with the regional park historic preservation staff in promoting the understanding the "new preservation" and rustic architecture as a theme.

Although the Southeast Region did not fully recognize the park historic preservation responsibilities and opportunities, Regional Historical Architect John C. Garner, Jr. used his knowledge of historic structures and skills as an architect to expand preservation treatment projects, ranging from the Gulf Coast forts to the mansion ruins and remaining structures of the Carnegie Estate at Cumberland Island. By 1981 he had been responsible for five million dollars in preservation projects and was awarded the Appleman-Judd Award for his leadership in architectural preservation.[18]

Although Box Cox had little experience with historic structures when he became the Western Region Historical Architect, he was skilled at surveying a building and developing realistic projects. He worked closely with the regional park preservation staff and developed preservation projects utilizing the Williamsport Preservation Center to do work, and train maintenance workers at Yosemite and in other parks. He was able to expand his project architect ability and utilized park maintenance tradesmen to accomplish preservation projects. One of the most interesting was his organization of the rehabilitation of the San Francisco Aquatic Park Bathhouse. This Streamline Moderne building was designed and built as a Works Progress Administration project, dedicated on January 22, 1930.

When Randall J. Biallas became Regional Historical Architect in the Midwest Region in 1978, he expanded the programs to include the rehabilitation of Happy Days Lodge in Cuyahoga Valley NP. This lodge and related park structures were designed by an architect and built by skilled tradesmen in 1938 as part of a CCC demonstration park program. Biallas helped organize the preservation of several "Homes of Tomorrow" designed by named architects for the 1933 Chicago Century of Progress World's Fair that were moved to what became Indiana Dunes National Lakeshore. He also developed an interest in cultural landscapes, contracting with Robert Harvey of Iowa State University for an analytical study of historic plant materials and a planting plan for the restoration of the streetscape of the Lincoln Home National Historic Site.

Historical Architects in the Denver Service Center and the Parks

As the Park Historic Architecture Programs grew in the Regions in the mid-1970s, the historic preservation capacity of DSC grew under the direction of Vernon Smith, Harold LeFlur, and Robert Simmons. At this same time many of the DSC historical architects, who were in the field in 1971, took assignments in the Parks and Regions. Penelope Batcheler joined the Independence National Historic Park, where she developed a 50-year cyclical maintenance plan. "Maintenance is Preservation" was the mantra on workers' T-shirts and project interpretive signs. Historical Architect Orville Carroll joined the North Atlantic Regional office providing new ideas for conservation rather than restoration. He successfully urged keeping all the historic layers of the Wayside House in Concord to interpret all of the historic past from the Colonial parlor to the 20th Century porch. Historical architect Fredrick Gjessing, who worked on preservation projects in the Virgin Islands during the Mission 66 period, joined John Garner's new preservation team in the Southeast Region working on Fort Jefferson and the forts and historic structures in Puerto Rico and the Virgin Islands. With the development of historic preservation capacity, DSC became the training ground for historical architects. Many of them became leaders in parks and regions, like W. (Bill) Lewis Barlow IV, Rebecca Stephens, David Snow, Tom Solan and others. By 1979 there were nearly 100 historical architects working in the DSC, the regions and the parks.

Park Historic Architecture Programs in 2016

With the retirement of Henry A. Judd in February 1979, an era of Park Historic Architecture came to an end, but many of the Park Historic Architecture programs continue. Judd started the programs in 1966 and since his retirement in 1979, NPS policy for Historic Areas has continued to mature into cultural resource management policies for all types of parks and resources (Director's Order 28). The EO 11593 became Section 110 of the Act when the law was amended in 1980. Today NPS maintains a Park Historic Structures and Cultural Landscapes program within the Directorate of Cultural Resources in WASO. In 2016 Randall J. Biallas, AIA continues to serve as Chief Historical Architect. Biallas joined WASO in 1980 and became Chief in 1991. The LCS has been updated and refined. It provides input to the NPS Facilities Management Software System managed by the Park Facility Management program. The national NPS

training programs for CRM have continued but not at the same intensity as in the 1970s.

In the regions, park cultural resource programs with regional historical architects continue with some semblance to the original concept. However, the regional historical architects are not taking the lead in managing major preservation projects as in the 1980s and 1990s. During those decades the restoration of the Statue of Liberty, the reconstruction of Fort Union Trading Post, and the design and construction of a new visitor center at Pecos NHP were projects of the regional historical architects.

In the 50 years since the passing of the Act, the park system has grown from 239 areas in 1966 to 411 areas as of April 12, 2016. Now there is the threat to cultural resources from climate change, including dramatic changes in temperature and rainfall, more frequent flooding, and sea level rise. The task is daunting. Most limiting is the continual flat funding in budgets for historic preservation work. The needs for preservation work increase as new areas come into the National Park System, while the rate of deterioration of backlogged untreated buildings accelerates with the passage of time. The Park Historic Architecture and Cultural Landscape program staff continues to creatively meet these national challenges using professional problem-solving and programs from the formative 13 years of 1966-1979.

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1 Massey. Telephone conversation, 2016.
2 Peterson and Judd adapted the description of the government personnel system classification "museum specialist" to create the "exhibit specialist" classification. This classification is for employees with knowledge, skills and abilities of the traditional crafts for decision-making and hands on treatments of historic structures (the exhibit). This classification allowed for permanent employment status and salary scale as a federal government employee.
3 NPS. Report of Special Committee on Historic Preservation.
4 Hosmer, *Preservation comes of Age.* pp 1010-1011, 1252.
5 Sellers and Webb, *Utley tapes*. Tape #6 p2.
6 Sellers and Webb. *Utley tapes*. Tape #6 p2-3.
7 Sellers and Webb, *Utley tapes*. Tape# 7, p5.
8 Hicks. CRM Newsletter.
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10 Biallas, personal communications.
11 Goode, *Park and Recreation Structures*
12 Tweed, *Rustic Architecture*.
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14 Sellers and Webb, *Utley tapes*. Tape # 1, pp 9-10.
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Finding Significance in Park Cultural Resources: The Evolution of Preservation Attitudes and Treatments

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Figure 1. Federal soldiers in front of the Appomattox County Courthouse, April 1865. Photograph by Timothy H. O'Sullivan, courtesy of the Library of Congress Prints and Photographs Division.

Abstract

Using two case studies—Appomattox National Historical Park and Lowell National Historical Park—this paper explores the impact of the National Historic Preservation Act on the selection, treatment, and management of historic sites by the National Park Service (NPS). The role of the federal government in shaping policy and professional practice is examined, particularly with passage of the National Historic Preservation Act (NHPA). This legislation marked a definite policy declaration by the federal government and resulted in a multitude of preservation regulations, guidelines, and standards that form the basis of the historic preservation profession in America today.

Introduction

Historic preservation in the United States has deep and abiding ties to the Department of the Interior. When the department was established in 1849, it reflected a merging of the General Land Office, the Patent Office, the Indian Affairs Office, and the Military Pension Office. Over the years, the department's functions changed and broadened, but its essential responsibility for "the internal development of the Nation or the welfare of its people" did not waver.[1] Almost from the beginning, this responsibility included the protection of cultural resources.

Over time, Interior's involvement in the protection of cultural resources has reflected the national perception of "historic." Beginning with the notion that historic resources were works of great antiquity, then acknowledging the significance of places with associations with great men and moments in American history, and eventually noting the significance of great design, Americans expanded their thinking about cultural resources through the decades of the twentieth century. By the end of the century, national appreciation for everyday places that reflect vernacular craftsmanship and small town milestones were entrenched in the lexicon of "historic places." Much of the new thinking was related to passage of the National Historic Preservation Act (NHPA) of 1966.

In this paper, we explore the impact of the National Historic Preservation Act on the selection, treatment, and management of National Park System historic sites. Our approach began with an examination of the history of historic preservation in the twentieth century in the United States, particularly the federal government's role in shaping policy and professional practice. We know that the NHPA marked a definite policy declaration by the federal government and resulted in a multitude of preservation regulations, guidelines, standards, and essentially the emergence of historic preservation as a profession. But, we wondered, what was the impact of the NHPA on National Park Service historic units?

To explore this question, we examined two representative NPS historic sites—one that reflects the early period of NPS involvement with historic site management, and one that became a national park unit after passage of the NHPA. These sites, we believe, also represent the evolution of historic preservation in the United States in the twentieth century and American perceptions of what is worth saving. Before presenting the case studies, we will review various factors that helped shape NPS policies and programs, and made the NPS the steward of the nation's preeminent historic sites and the arbiter of significance by virtue of its administration of the National Register of Historic Places.

Early Preservation Efforts

Nearly 30 years before the Organic Act established the National Park Service in 1916, the United States was involved in the federal acquisition and protection of historic sites. In 1889, 17 years after Yellowstone was designated a national park, Congress responded to concerns about the looting and destruction of the magnificent Casa Grande ruins in Arizona. Casa Grande became the first cultural reserve designated in the United States, placed under the protection of the General Land Office of the Department of the Interior. Others followed, with a bias to sites of great antiquity. For example, Mesa Verde in Colorado—now a World Heritage site for its remarkable pre-contact cliff dwellings—was designated a national park by Congress in 1906, and in the same year the Antiquities Act was passed, giving the president the authority to designate national monuments.

Private preservation efforts also did a great deal to shape public policy, concepts of significance, and considerations of appropriate treatments. In this brief paper we will not delve into the significant impact of early preservation organizations, but we acknowledge that private and public efforts were both essential to yield the preservation programs we have today. Furthermore, the National Park Service was influenced by the preservation practices of organizations like the Mount Vernon Ladies' Association, chartered in 1856, the Society for the Preservation of New England Antiquities (now Historic New England), founded in 1910, and the many local groups that saved houses associated with historical figures. Our first case study, the Appomattox Court House National Historical Park, has geographical and philosophical ties to the iconic private preservation/restoration/reconstruction effort at Colonial Williamsburg.[2] Our second case study, the Lowell National Historical Park, represents the complete integration of the National Register into a national historical park and the preservation of a coherent urban environment. Lowell was brought into the fold of historic sites in 1978, some 50 years after restoration work at Williamsburg and Appomattox Court House was launched. Although the philosophical underpinnings of the preservation approach differ in important ways, Lowell subsumed the important concept of preservation of buildings and set-

ting to preserve an orchestrated historic ensemble. The concept is incorporated in the National Historic Preservation Act as the historic district property type.

These case studies encompass sites that were valued for the history they represented and a remarkable degree of preservation of the buildings and site—rural in one case, urban in the other. The preservation and reconstruction of one reflects an emerging body of treatment standards; the other reflects the application of the fully developed treatment standards that were available some forty years later.

Before passage of the National Historic Preservation Act, the NPS Organic Act famously charged the National Park Service, which was created by the act, to "conserve the scenery and the natural and historic objects and the wildlife therein." The meaning of what was intended by the conservation of the "scenery" and "natural objects" holds little mystery. However, "historic objects" to those who crafted the Organic Act were the western antiquities and 200-year-old Spanish Colonial sites, which were replete with "scenery and natural objects."

Signed into law by President Woodrow Wilson on August 25, 1916, the Organic Act gave administration of existing and future parks and national monuments to the National Park Service, although other federal agencies—primarily the War Department and the Forest Service—maintained jurisdiction over a number of historic sites, such as battlefields and monuments. For several years after passage of the Organic Act, there were proponents for the administration of all historic sites, including battlefields and monuments, to be under one agency within the Department of the Interior. The War Department, however, had been charged by Congress in 1926 to survey the nation's battlefields and recommend appropriate commemoration. One consequence of its actions was the addition of the Appomattox Court House Civil War site to the War Department's body of historic sites in 1930.[3]

Reorganization and the Historic Sites Act

The years after passage of the Organic Act and up until the early 1930s were marked by congressional designation of national parks and national battlefields and by the presidential designation of national monuments. Overt expressions of a desire by the NPS for regional expansion and a broadening of NPS interests were exhibited in 1930 with the establishment of colonial period historic parks in the east: George Washington Birthplace National Monument, Colonial National Monument (Jamestown and Yorktown), and the Morristown National Historical Park in New Jersey.

In the dawn of the 1930s, with the Great Depression waging war with the economy, President Franklin D. Roosevelt took a bold step that gave an expanded purpose and definition to the National Park Service. He reorganized the executive branch of the federal government and gave the NPS jurisdiction over historic sites and monuments that had been the responsibility of the War Department, the Forest Service, and the National Capital Parks in Washington, DC. According to Barry Mackintosh, the reorganization "was arguably the most significant event in the evolution of the National Park System"[4] and it put the NPS "firmly in command of federal historic preservation activity."[5] The impact of this move may have been unfathomable even to Horace Albright, director of the National Park Service at that time and a proponent of a greater role by the NPS in the designation and administration of the nation's historic sites.

Passage of the Historic Sites Act in 1935 further enhanced the NPS role as the nation's keeper of the flames of history. The act established a national policy "to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States" [6] and gave the National Park Service the responsibility of effectuating the policy and carrying out the duties and functions articulated in the law. It created a permanent home for the Historic American Building Survey and established the National Historic Landmarks program. Secretary of the Interior Harold Ickes testified that the proposed Historic Sites Act would "lay a broad legal foundation for a national program of preservation and rehabilitation of historic sites."[7]

The National Historic Preservation Act

The New Deal programs that led to a spate of preservation and development in the national parks were phased out or put on hold as the nation prepared for and entered World War II. Even the Historic American Building Survey—intended to be a permanent program—was temporarily ended in 1941, with thousands of drawings and photographs that documented more than 6,000 buildings to its credit.[8] During the war years, however, the designation of national parks and historic sites continued, and in the years after the war, as the nation turned its attention to home, even more NPS units were established. Programmatic innovations led to new energy for interpretation and education. However, the emphasis on the acquisition of new units and the incredible escalation

of tourism after the war became the perfect storm to create a level of shabbiness and infrastructure decline and inadequacy that became an embarrassment to the NPS, especially as it prepared for its 50th anniversary and the centennial of the Civil War. Enter Mission 66.

In 1956, under the leadership of director Conrad Wirth, the NPS initiated a 10-year plan for developing and improving NPS units for its 50th anniversary in 1966. The program is most recognized for the modern visitor centers and other amenities built to serve visitors and introduce them to the history and nature that led to their NPS acquisition. However, Mission 66 was equally important for its contributions to historic preservation. Revival of the Historic American Building Survey and the Historic Sites Survey was an important aspect of the program, and improving geographic and thematic inclusiveness was a goal of both programs.

The Historic Sites Survey was charged with identifying properties for inclusion in the National Park System related to historical themes that were not yet represented.[9] By this, the survey became more egalitarian in its coverage. In 1960, Secretary of the Interior Fred A. Seaton announced the establishment of the Registry of National Historic Landmarks. Today, the National Historic Landmark program retains its essential characteristics. Requirements for inclusion in the Registry included concepts that were encompassed six years later by the National Historic Preservation Act, such as the criteria for establishing significance a cautious approach to including certain categories of properties (religious properties, for example), and an insistence on integrity.

Some 92 properties were considered designated with Seaton's announcement of the Registry of National Historic Landmarks. He noted, "Because of the number of historic landmarks in our great Nation, it is manifestly impossible for the Government to acquire or manage these sites or support them financially, although they are an integral part of the American heritage."[10] Such thinking became integral to the National Historic Preservation Act, with the National Register not burdening the NPS with a monitoring or treatment role.

Thus, the preservation work of Mission 66, including the research and documentation required for planning and construction activities, was based loosely on the models developed for the Historic Sites Survey and the Historic American Building Survey. However, even with the expanded concept of the Registry of National Historic Landmarks program, new momentum was being fueled for an even broader approach to historic preservation by preservationists outside of the government. Alarmed by the widespread removal of historic cores from American cities through urban renewal, preservationists were mobilizing for change.

A Special Committee on Historic Preservation was formed in 1964 by the United States Conference of Mayors to investigate the nation's sense of history and place and the potential for historic preservation to gain a foothold in urban planning. Albert Rains, chairman of the committee, and Laurance G. Henderson, director of the committee's work, wrote in the introduction to the committee's findings publication *With Heritage So Rich:*

> . . . Connections between successive generations of Americans—concretely linking their ways of life—are broken by demolition. Sources of memory cease to exist . . . We ourselves create the blank spaces by doing nothing when the physical signs of our previous national life are removed from our midst. [11]

The Special Committee carried out a deeply probing examination, with the participation of some of the nation's most engaged elected officials, federal agency representatives, and scholars. Gordon Gray, chairman of the National Trust for Historic Preservation, represented the nation's historic preservation advocates. Two years earlier, the Trust had published its seminal *Report on Principles and Guidelines for Historic Preservation in the United States* by Charles Peterson, which echoed NPS thinking about integrity and significance, but was particularly articulate on approaches to the treatment of historic buildings. The Special Committee's recommendations, published in 1966, became the essence of the National Historic Preservation Act, passed later that same year.

The National Historic Preservation Act was signed into law by President Lyndon Johnson on October 15, 1966. Important components of the law were the establishment of the National Register of Historic Places with the creation of a national-state historic preservation partnership through state historic preservation offices, the establishment of a grants-in-aid program, and the creation of a requirement to establish professional preservation standards. An important component of the act was the requirement to offset negative effects to listed properties through federal funding, licensing, and permitting, which was to be overseen by the Advisory Council on Historic Preservation. This, of course, refers to Section 106 of the act. Amendments to the act in 1976 included a provision

that offered the same protection to properties considered *eligible*, not just those already listed.

An important part of the act, especially from our perspective today, was Section 110, which was added with the 1980 amendments to the act. This required all federal agencies to establish a professionally staffed program for the identification, evaluation, and nomination to the National Register of properties under their jurisdiction—and provide for the protection of eligible properties. Those of national significance were to be given special consideration. Importantly, this clause acknowledges that not all historic properties at National Park Service units are nationally significant.

With passage of the act, a number of properties became "administratively listed," including properties already designated as National Historic Landmarks and historic units of the National Park System. To this day, new historic units acquired by the NPS are automatically listed in the National Register, although the documentation still must be submitted. In 1966, 804 administrative listings were accomplished with passage of the act.

Benefits of National Register Listing

Within a few years after passage of the National Historic Preservation Act, real benefits to National Register listing were offered. In 1971, the grants-in-aid program for the acquisition and development of listed properties was first funded.[12] The Tax Reform Act of 1976 gave preservation a huge boost by providing tax incentives for the rehabilitation of historically significant properties, defined as "certified historic structures" listed in the National Register of Historic Places.[13] This act was passed on the heels of the Housing and Community Development Act of 1974, which allowed federal investment in existing housing stock listed in or eligible for the National Register, as a cost saving strategy for addressing blighted areas. All of these programs required standards that were needed to assure the execution of worthy and acceptable work. The NPS responded with preparation of the *Preservation Project Standards* in 1976 that specified seven treatments and eight general standards. Later the same year, the *Guidelines for Rehabilitating Old Buildings* was issued by the NPS, specifically targeting applications for the Department of Housing and Urban Development programs.[14]

These important amendments, codes, and tax initiatives fueled the need to address the treatment of properties listed in the National Register, including those owned by the NPS. *The Secretary of the Interior's Standards for the Treatment of Historic Properties* were initially developed to specify appropriate and acceptable treatments for work carried out on National Register properties using the National Historic Preservation Fund, but the standards for rehabilitation became essential to implementation of the federal tax credit program.

In 1978 the Code of Federal Regulations, 36 CFR 68, included *The Secretary of the Interior's Standards for Historic Preservation Projects*. Guidelines for the Standards were published in 1979, and the rehabilitation guidelines were amended in 1983. In 1992 more comprehensive treatment standards were developed to address four treatment approaches: preservation, rehabilitation, restoration, and reconstruction. These were codified in 1995 (36 CFR 68), with illustrated guidelines published the same year. In recent years, guidelines have been expanded to address new concerns, such as sustainability.

Treatments of Cultural Resources at NPS Units

From passage of the Organic Act, the National Park Service has been given a protective function for the lands and resources over which it has stewardship. In 1935 the Historic Sites Act articulated the treatments to be considered for historic buildings: "Restore, reconstruct, rehabilitate, preserve and maintain historic or prehistoric sites, buildings, objects, and property of national historical or archaeological significance and where deemed desirable establish and maintain museums in connection therewith."[15] The Advisory Board on National Parks, Historic Sites, Buildings, and Monuments honed the priority of treatments a year later in 1936. It declared:

> It is well to bear in mind the saying: "Better preserve than repair, better repair than restore, better restore than [re]construct." As a corollary it noted, "It is ordinarily better to retain genuine old work of several periods, rather than arbitrarily to 'restore' the whole, by new work, to its aspect at a single period." Internationally accepted historic preservation standards continue to stress the protection and perpetuation of authentic surviving resources.[16]

A few decades later, the Management Policies of the NPS required that "pending planning decisions, all cultural resources will be protected and preserved in their existing conditions." The policies further specify (italics added):

> In reaching decisions about resource treatment, moreover, *preservation* should always receive first consideration. Data recovery, rehabilitation, restoration, and reconstruction may sometimes serve legitimate management purposes. However, these treatments cannot add to and will likely subtract from the finite material, and sometimes even data sources, remaining from the past.[17]

These words were emblematic of the approach that was taken with NPS historic sites from that time forward. With the codification of treatment standards and the development of guidelines, the NPS had specific standards and methods to reach in executing its stewardship of cultural resources under its jurisdiction. To manage the huge number of National Register properties at national park units and to transparently comply with federal law, the NPS planning system and associated guidelines specifically address the management of cultural resources, with significance determined by eligibility for or listing in the National Register. The NPS planning system is regulated by its *NPS Management Policies*. The cultural resource management policies are implemented by *The Cultural Resource Management Guideline,* which is periodically updated via Director's Orders. At the individual unit level, planning has traditionally been carried out according to the General Management Plan (GMP), which is an operation blueprint for resource stewardship. All park units were required to have a General Management Plan to establish management and use, as established by the 1978 National Parks and Recreation Act.

More recently, each unit is required to develop a Foundation Document that articulates fundamental information, such as the unit's purpose (its core mission), significance, resources, legal and policy requirements, and key planning and data needs.[18] A Foundation Document establishes the basis for all future planning and is the core element of each park's planning portfolio. This approach enables the development of targeted planning documents to meet each of a unit's needs.[19] Park planning documents have been helpful in achieving an understanding of past and current management approaches and specific treatments applied to the buildings and landscapes that are encompassed by our case studies.

Together, the two historical parks we will examine demonstrate the evolution of NPS preservation priorities and practices from shortly after passage of the Organic Act to after passage of the NHPA. We hope to demonstrate the evolving nature of the perception of significance and the application of treatments. For each park we will review the aspects of the National Historic Preservation Act that have been influential. First, we will examine the Appomattox Court House National Historical Park in Virginia; next, we will examine the Lowell National Historical Park in Massachusetts.

Appomattox National Historical Park

Appomattox Court House National Historical Park commemorates a defining moment in the Civil War: the surrender of Confederate General Robert E. Lee to Lieutenant General Ulysses S. Grant, commander of the Union forces. The pivotal meeting between the two military leaders in April 1865 effectively marked the end of the Civil War. (See Figure 1 on page 16)

The fateful encounter took place in the small village of Appomattox Court House, located in south-central Virginia some 90 miles west of Richmond. Leading up to the meeting, Lee had retreated from Petersburg and Richmond across southern Virginia, with Union troops in relentless pursuit. Finally, on April 8 Union troops under Brevet Major General Custer blocked the vital Richmond-Lynchburg Stage Road at the Battle of Appomattox Station. The last battle of the Appomattox campaign took place the next morning when Confederate troops tried unsuccessfully to break through the Union position. That afternoon, Lee ordered truce flags to be waved and a note from him was conveyed to Grant, requesting a meeting to discuss the terms of surrender of the Army of Northern Virginia. The park's Foundation Document summarizes the events that unfolded:

> Approximately 100,000 Union and Confederate troops were in battle lines in the surrounding farms and fields, anxiously awaiting word of the meeting. The two generals met at the home of Wilmer McLean in Appomattox Court House to agree upon the final terms of the surrender for the Army of Northern Virginia. By April 13, Confederate troops had stacked their arms along the Richmond-Lynchburg Stage Road, were issued paroles, and were allowed to return to their homes. Other Confederate commanders still in the field soon followed Lee's lead in surrendering, thus concluding the Civil War.[20]

Scattered resistance continued for a number of weeks, but the war was effectively over. The war's end was noted by magnanimous gestures by both sides at Appomattox Court House, setting the stage for national reunification and reconciliation. News of the surrender reached President Lincoln on April 10. It is easy to imagine that the words he had spoken in his second inaugural address on March 4, 1865, still resonated:

> With malice toward none; with charity for all; with firmness in the right as God gives us to see the right, let us strive on to finish the work we are in, to bind up the nation's wounds, to care for him who shall have borne the battle and for his widow and his orphan, to do all which may achieve and cherish a just and lasting peace among ourselves and with all nations.

The end of the war also began a period of memorialization, but Appomattox Court House was unique among battle sites for its association with peace. It was not a natural site for memorialization by southerners, whose efforts focused on allegiance to the Confederacy, not defeat. Northerners also left the site alone. Except for the Confederate Cemetery west of the village, for many years Appomattox Court House remained without specific memorials to its role in ending the War Between the States.

Elsewhere, Americans' enthusiasm for Civil War battlefields seemed boundless. In 1864 Pennsylvania chartered the Gettysburg Battlefield Memorial Association; preservation groups also emerged at Chickamauga, Georgia, and Chattanooga, Tennessee. Beginning in the 1880s, former Union and Confederate soldiers began staging reunions at former battlefield sites, but the work of commemorating the war intensified in the 1890s when Congress authorized the establishment of National Military Parks. The first was the Chickamauga and Chattanooga National Military Park, followed by Shiloh, Gettysburg, and Vicksburg—all designated by 1895. Authority for land acquisition and management was given to the War Department, although the important work of building monuments was left to the willing partners in various states and associations. Appomattox Court House was also noticed. With a resurgence of Civil War memorializing in the 1890s, Samuel S. Burdette, former commander-in-chief of the Grand Army of the Republic, began efforts to memorialize the site. In 1893, the War Department placed 10 cast iron tablets at the battlefield in locations that marked pivotal events. In 1905 the state of North Carolina erected a monument at the battlefield, but for the next 30 years there was little commemoration activity.

Requests to the War Department for battlefield designation continued unabated—not only for Civil War battlefields, but also for War of 1812 and Revolutionary War battle sites. To impart some order on the numerous requests for national battlefields and memorials, in 1926 Congress passed the Act for the Study and Investigation of Battlefields. Signed by President Calvin Coolidge, this was the first legislation enacted by Congress to provide for a broad historic sites survey.[21] As a result, 11 military parks were added to the War Department's park system during the last years of its jurisdiction. Appomattox Court House was included among them.

By the mid-1920s, Appomattox Court House was a sadly ragged site, although not without a base of individuals and groups that recognized its national significance. In the 60 years since the great peace was forged there, the village had suffered losses of major buildings, a dwindling population, loss of agricultural productivity, and general economic decline. The courthouse for which the village was named burned in 1892. The McLean House, site of the meeting between Lee and Grant, had been dismantled in a scheme to showcase it at the World's Columbian Exhibition in Chicago in 1893. Since then, the remains of the house that had not been looted moldered on site.

In keeping with the recommendations of the congressionally appointed committee to study battlefields, Appomattox was designated a "national historic battlefield site" in 1930. This implied that only a small amount of land was authorized, sufficient for construction of a monument or marker. Had it been declared a "national monument," a much grander expression of commemoration would have been possible.[22] In 1931 funds were appropriated for construction of a monument at Appomattox, but many were uneasy about the concept of a monument at the site. There were expressions of suspicion that a monument would be interpreted as little more than a celebration of Grant's victory, which was unpalatable to southerners.[23] For different reasons, the National Commission of Fine Arts, which had approval authority for monument selection, balked at the concept of a monument at Appomattox Court House. It considered monuments an outmoded expression of commemoration for such sites.[24] Finally, it was agreed that "recreating the scene of the surrender" would be a more suitable commemoration.[25]

Nothing was firmly planned or executed at the Appomattox site before President Roosevelt's reorganization of the Executive Branch gave the NPS jurisdiction over the nation's battlefields. NPS Director Horace Albright was keen on establishing a national monument at Appomattox, and the grander vision also found local momentum. With economic challenges and job shortages, the development could infuse the area with a needed boost. Williamsburg, the restored and reconstructed historic village some 150 miles to the east, was proof positive that the American public thrived on overt expressions of history. The NPS had experience with a similar re-creation at the Colonial National Monument (later, the Colonial National Historical Park), also in Virginia.

The concept of restoration of the historic village took root, and US Representative Patrick Drewry sponsored a bill to create the Appomattox Court House National Historical Monument. In 1935, the 1930 legislation was amended to designate the site a National Historical Monument; it also authorized the acquisition of all land within one-and-a-half miles of the courthouse site.[26]

An appropriation for land purchases was not immediate, but ultimately funding became available via the authority of the Emergency Relief Appropriation Act of 1935. The property was later transferred from the Department of Agriculture to the Department of the Interior, with the provision to administer it as part of the Appomattox Court House National Historical Monument.[27] Acquisition of the land happened in fits and starts over the next few years, but by 1940 all of the land within the congressionally authorized area had been acquired.

In that same year, it was determined that a Civilian Conservation Corps (CCC) company would be stationed nearby to begin the work of returning the site to its 1865 appearance. The African American company that had been working at Yorktown was assigned the job, and they immediately began tackling the development program. According to a report written by Hubert Gurney in 1955, the repair and stabilization of buildings and clearing the landscape were high priorities for the CCC company. By the time the company left in 1942, it had made significant inroads on site improvements. Besides stabilization and clearing, the men had made progress on the construction of infrastructure, including a sewage disposal system, telephone lines, and a well. They also contributed to the archeology work at the McLean House. The CCC camp structures were razed in 1943 when it became clear the program would not return.

Planning for Appomattox

The first master plan for the restoration and reconstruction of the Appomattox Court House National Historical Monument was finished in 1940. Even before land acquisition was final, Charles W. Porter III of the NPS office in Richmond worked with Chief Historian Ronald Lee on preliminary studies in the last years of the 1930s. Their work included documenting all existing buildings, structures, and landscape features and preparing a historic base map that portrayed the village in 1865.

Although the presumption was that the reconstruction and restoration would go hand-in-hand at the site, historian Lee was not convinced of the wisdom of reconstruction until he visited the site and was sold on the strategy by local enthusiasm. After efforts at reconstructions at the George Washington Birthplace National Monument were later deemed inaccurate, Lee was determined that further reconstructions by the NPS would be based on the most thorough of investigations. Thus began a coordinated and "unprecedented intensive research effort to justify the reconstruction" of the McLean House. Its eventual reconstruction, completed in 1949, was based on drawings prepared before its dismantling some 50 years earlier that were worked into HABS-quality drawings by the NPS. Archeological investigations were important to determining the appearance of the house. Charles Hosmer characterized the final report for the McLean reconstruction as "the most complete and scholarly work yet undertaken" by the NPS.[28] The reconstruction and the process to achieve it served as a model for reconstruction of the courthouse and at other NPS sites. Not only did the reconstruction at Appomattox affect the development of NPS historic site management, it also supported interpretation of the site's place in American history. This was a departure from the approach used by the War Department over the years, but became an important precedent in the interpretation and management of NPS battlefields.[29] In addition, several scholars have noted that reconstruction of the McLean House ultimately influenced development of the Secretary of the Interior's Standards for the Treatment of Historic Properties, and the reconstruction guidelines that followed.[30]

The master development plan was completed by an interdisciplinary team that included historian and Appomattox superintendent Hubert Gurney, Branch Spalding (coordinator of all battlefield parks in Virginia), and the entire Richmond NPS staff. In keeping with the

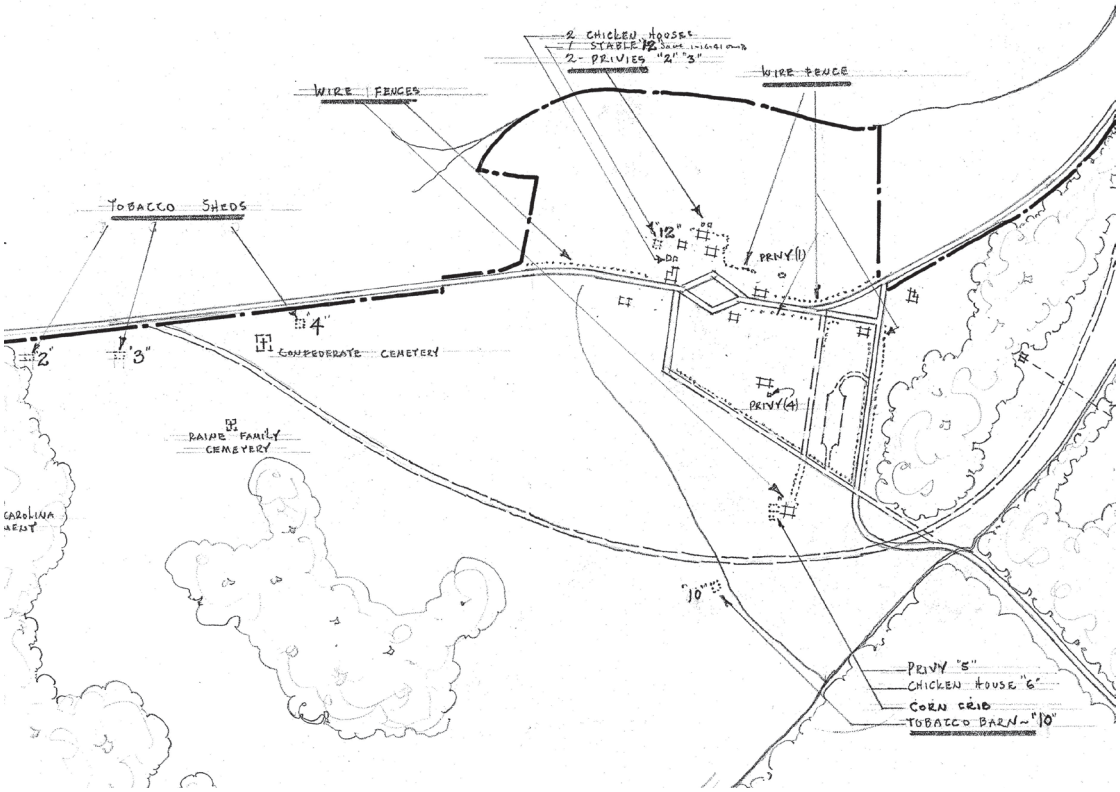


Figure 2. *Job Plan for Razing Undesirable Non-Historic Structures, Appomattox Court House National Historical Monument*. This small piece of the site plan for CCC Job No. 23 identifies fencing and outbuildings to be removed. The plan also reveals the location of circulation and vegetation features. It was completed by NPS landscape architect Walter H. Sheffield in September 1940 and approved by Acting Superintendent Hubert Gurney in October 1940.

philosophy alluded to or articulated in the Organic Act and the Historic Sites Act, and in the legislation creating the Appomattox historic site, the treatment approach followed the agency's policy that had been articulated by NPS Director Arno Cammerer in 1938. This included the fundamental principle of thorough research, preferably conducted by historians and archeologists working together and using modern and standardized methods. Such documentation would enable the NPS to prove the authenticity of its work.[31]

Highlights of the 1940 master plan for the Appomattox Court House site were:

- Returning the landscape to its 1865 appearance by removing vegetation encroachment, returning land to historic uses (such as farming), and reconstructing missing elements;
- Removing non-historic buildings and additions to historic buildings;
- Stabilizing Civil War-era buildings and structures;
- Installing a central sewage system and other essential infrastructure;
- Reconstruction of the McLean House, the courthouse, and other missing buildings and structures;
- Rerouting Route 24 to remove automobile traffic from the restored village.[32]

The reconstruction of the McLean House and other preservation strategies at Appomattox had long-lasting effects on historic preservation practice, as did treatment of the landscape. The research undertaken to understand the 1865 appearance of the landscape was exacting and inclusive, utilizing the methodology and expertise of both historians and archeologists. The landscape approach to studying the site was progressive and has proved influential over time. Because of the documentation that supported original planning, the 1940 plan is still a touchstone for landscape management at Appomattox.

World War II and After

The plan was completed just prior to American entry in World War II, so it was essentially shelved until the war was over. During the war, little development activity took place at Appomattox (or at any other national park units), and during these years some of the work of the CCC began to unravel, particularly as cleared land be-



Figure 3. *McLean's House, scene of General Lee's surrender*. This photograph shows the house in Appomattox Court House where the terms of surrender between Generals Grant and Lee were signed on April 8, 1865. The research that preceded reconstruction of the house contributed to the development of a methodology for approaching such projects. Photo by Timothy H. O'Sullivan, courtesy of the Library of Congress Prints and Photographs Division.



Figure 4. Appomattox National Historical Park. This view of the historic Back Street shows the siting of the Mission 66 parking lot on left, below the slope and removed from the heart of the village. The reconstructed McLean House is on the right. Photo by NPS, 2016.

gan to revert to shrubs and trees. Mowing and farming leases helped address these maintenance needs.

After the war, work began with new energy. The landscape of the site and its viewshed were enhanced by the purchase of scenic easements, and some new land purchases completed the legislated limits of the park. The reconstruction of several buildings in the village began to fill the holes; all were considered to be completely accurate reconstructions. Beginning in 1950 the park master plan was amended several times to reflect new ideas about the entrance road and the visitor parking lot. In 1954, the site's name was changed to Appomattox Court House National Historical Park. With the advent of the NPS Mission 66 initiative, work at the national historical park intensified.

Mission 66 at Appomattox

The Mission 66 prospectus approved for Appomattox had a significant impact on the appearance of the park, its management, and interpretation. Projects at Civil War sites were generally regarded favorably because of the impending centennial of the war and the anticipation of increased visitation. Thus, visitor services and accommodation were among the priorities at these NPS units.

Appomattox Court House was no exception. Projects undertaken during the 10-year Mission 66 initiative were preceded by needed planning and design updates. A number of plans were prepared by the Denver Service Center, in some cases using important information gleaned from research and archeology efforts. Roads held a prominent place in the site's interpretation, inspiring particular attention to the routes, construction, and surfacing. The historic route of the Richmond-Lynchburg Stage Road was found archeologically, and the existing road was re-aligned to match. All roads were resurfaced to better reflect their historic appearance.

One of the most important projects was the design and construction of the park entrance road and the visitor parking lot. NPS had developed and abandoned a number of designs over the years, and finally in 1961 a parking lot that conformed to Mission 66 principles was implemented. The parking lot was sited south of the village area in a loop configuration that maximized parking yet accommodated turn-arounds. Most importantly, the parking lot was depressed from the surrounding village and all but invisible from most interpreted areas, while at the same time remaining in close walking distance to the site.

An even greater impact was realized with reconstruction of the courthouse. Following the same exacting detail that was used in reconstructing the McLean House, the courthouse work was preceded by historical and archeological research that led to what was considered a highly accurate exterior reconstruction.[33] NPS planners had a brilliant inspiration when they determined that the reconstructed courthouse would make an ide-

al visitor center: it was located in the center of the village and not far from parking. In contrast to the sleek, modern visitor centers that usually mark Mission 66, at Appomattox the visitor center merged the initiative's attention to historic resources with its emphasis on interpretation and visitor education. The courthouse was dedicated in 1964, in time for the centennial commemoration of the great event that inspired its establishment as a national park unit.

Important developments that followed the Mission 66 initiative included an increase in the park boundary allowing the purchase of new land and its inclusion in the park, the purchase of inholdings, and restoration work at a few buildings, mainly outside the village, but also some interior work on buildings in the district.[34]

Impact of the National Register of Historic Places on Appomattox

The National Historic Preservation Act was passed immediately after the push for infrastructure development and the expansion of historic resources prior to the mid-1960s Civil War centennial and 50-year anniversary of the NPS. Passage of the act gave the historical park new directives for management and preservation activities. Key aspects of the NHPA that affected Appomattox, as the act's regulatory functions evolved, revolved around documentation, planning, and project approval. All of the work at Appomattox had been based on exceedingly high documentation standards and rigorous attention to detail in both building and landscape treatment. However, with passage of the act, the historic site was required to consider its features in terms of their contributing or noncontributing status and their treatment in terms of the standardized treatments that evolved with the development of regulations, standards, and guidelines.

The Appomattox Court House National Historical Park was administratively listed in the National Register on October 15, 1966. The documentation was approved on June 26, 1989. In submitting the documentation, the park was fulfilling its obligations under Section 110 of the National Historic Preservation Act and the NPS Cultural Resource Management Guidelines. By the time of National Register listing, the landscape at Appomattox had achieved, to the extent possible, the appearance of the fateful day in April 1865 that ended the Civil War. Buildings had been reconstructed and restored and visitors were accommodated in comfort, with explanations of the site presented in a variety of formats.

The 1989 documentation presents a glimpse of the National Register program at that time, as well as the park's perceptions of the significance of resources. Although the period of significance for the nomination is presented as three periods—1865, 1930, and 1935-1940—virtually all the buildings and structures that existed on the site were considered contributing. The only exceptions were two maintenance buildings and a 1920 house. Today, we would reconcile the periods of significance,



Figure 5. The reconstructed Appomattox Courthouse was dedicated in 1964, in time for the centennial commemoration of the signing of the treaty by Generals Lee and Grant. Photo by NPS, 2016.

with historical events, architectural significance, and archeological significance. The original nomination found all of the reconstructed buildings contributing, as we would today, but probably for different reasons. Whether their eligibility was ever questioned because they do not fall within the periods of significance is unknown.

The site of Appomattox has always been highly valued as a cultural resource, with as much research contributing to the accurate reconstruction of fencing and other landscape features as with the buildings. The siting of roads, parking, and other modern amenities was done with the utmost sensitivity. The early nomination counted 39 contributing sites, which were primarily sites of ruins or other archeology and cemeteries. The National Register *Guidelines for Evaluating and Documenting Rural Historic Landscapes* was issued in the same year, 1989, but probably was not available for this nomination. The cultural landscape component of the NPS Cultural Resource Management Guideline was not ready for another 10 years. Although these two pivotal guides were not used, a landscape approach to assessing the Appomattox landscape was essentially implemented, although not reflected thoroughly in the National Register documentation.

The NPS has recently extensively revised the National Register nomination for Appomattox Court House. The draft of this revised nomination brings the documentation in compliance with current standards and proposes the application of National Register Criteria A, B, C, and D. The extensive documentation includes an inventory of landscape features, as well as noncontributing elements. Moreover, the new nomination will identify sites of state and local significance, as well as national, with a period of significance of circa 1790 to 1968. The revisions in this nomination, with a greater scope of significance, a more generous period of significance, and more thorough research, reflects the impact of the National Register, as well as maturation of the National Register program over time. With the new National Register documentation and new park planning initiatives, the Appomattox Court House National Historical Park represents the evolution of NPS stewardship of the nation's historic resources over an 80-year period.

Lowell National Historical Park

By 1978 the National Register program had been well established and benefits of listing provided grant funding and tax credits, as well as limited protection from adverse actions by federal agencies. With the economic benefits of historic preservation programs now widely accepted, the NPS also recognized the change in the establishment of new historic parks. One of the most innovative and dramatic examples of this was in Lowell, Massachusetts. Lowell had been founded in 1822 as one of the first planned industrial cities in the country. The textile mills built there were powered by a system of canals constructed during the years 1822 to 1850. The site of the town was chosen for its potential to harness the water power created by a drop of more than 30 feet in the Merrimack River over the Pawtucket Falls. Upriver lakes and streams were dammed to control a reliable source of water. No individual mill controlled the water supply, which was managed by the Proprietors of Locks and Canals.

In addition to having developed this source of water to power the mills, Lowell was notable for the design of the mills and the construction of comfortable boarding houses for the employees, originally mostly young women drawn from surrounding rural areas. Lowell is a striking representation of the transition from an agrarian to an industrial society in America. By 1850 Lowell was the second largest city in Massachusetts. In addition to the mills and boarding houses, a commercial district developed in close proximity to the industrial sites. During the period from 1850 to 1920, major waves of immigrants and the expansion of the mills changed the ethnic character of Lowell in a way that reflected urban development in the rest of the country. After 1920 the textile industry in Lowell entered a period of economic decline as the mills moved to the South. This decline was evident in the many mill buildings that had been demol-



Figure 6: Lowell National Historical Park, view toward NPS Boott Mill on Eastern Canal with portion of Canalway Park on left, 2016. Photo by NPS, 2016.

ished or were in a severely deteriorated state when the National Park Service stepped in. Most were underutilized. In 1976 unemployment in Lowell was 13 percent and proposals existed for the wholesale demolition of the buildings. Although there were no national parks that recognized America's urban industrial history, the NPS was reluctant to become involved in such an economically depressed area.

The creation of the Lowell National Historical Park was intended to provide a vehicle for the economic revitalization of Lowell, in partnership with the city and commonwealth. In June 1973, the NPS had identified three specific treatments that were eligible for grant programs funded by the federal government: stabilization, restoration, and reconstruction. This was followed by *Preservation Project Standards* in March 1976 and the publication of *Guidelines for Rehabilitating Old Buildings* in August 1976. The Lowell National Historical Park was approved by Congress on June 5, 1978. The partnership was between the federal, state, and local government, as well as the private sector. The three principle agencies working with the NPS were the Massachusetts Department of Environmental Management, the City of Lowell, and the Lowell Historic Preservation Commission. The latter was authorized by Congress in 1978 for 10 years, and then extended through 1995.[35] Four main interpretive themes were identified: Technology and Hydropower; Free Enterprise and Capitalism; Working and Living in the Industrial City; and Immigration and the Settling of the City.[36]

It was never intended that the NPS would own large parcels of property at Lowell to develop as interpretive sites. Key buildings were identified among the mills, boarding houses, and gatehouses. The Boott Mill contained a major exhibit of working textile machinery, while another became the park visitor center. One row of early boarding houses also became an exhibit, and a former mill agent's house became park headquarters. The partnership included the development of the canals for boat tours, and the construction of the Canalway, a system of paths along those waterways. A system of trolley lines on the old railroad beds was also developed. The park "matured to its near current form" over the years from 1987 to 1992.[37]

The Lowell National Historical Park is not a restoration of the city as a museum, or to reflect any specific

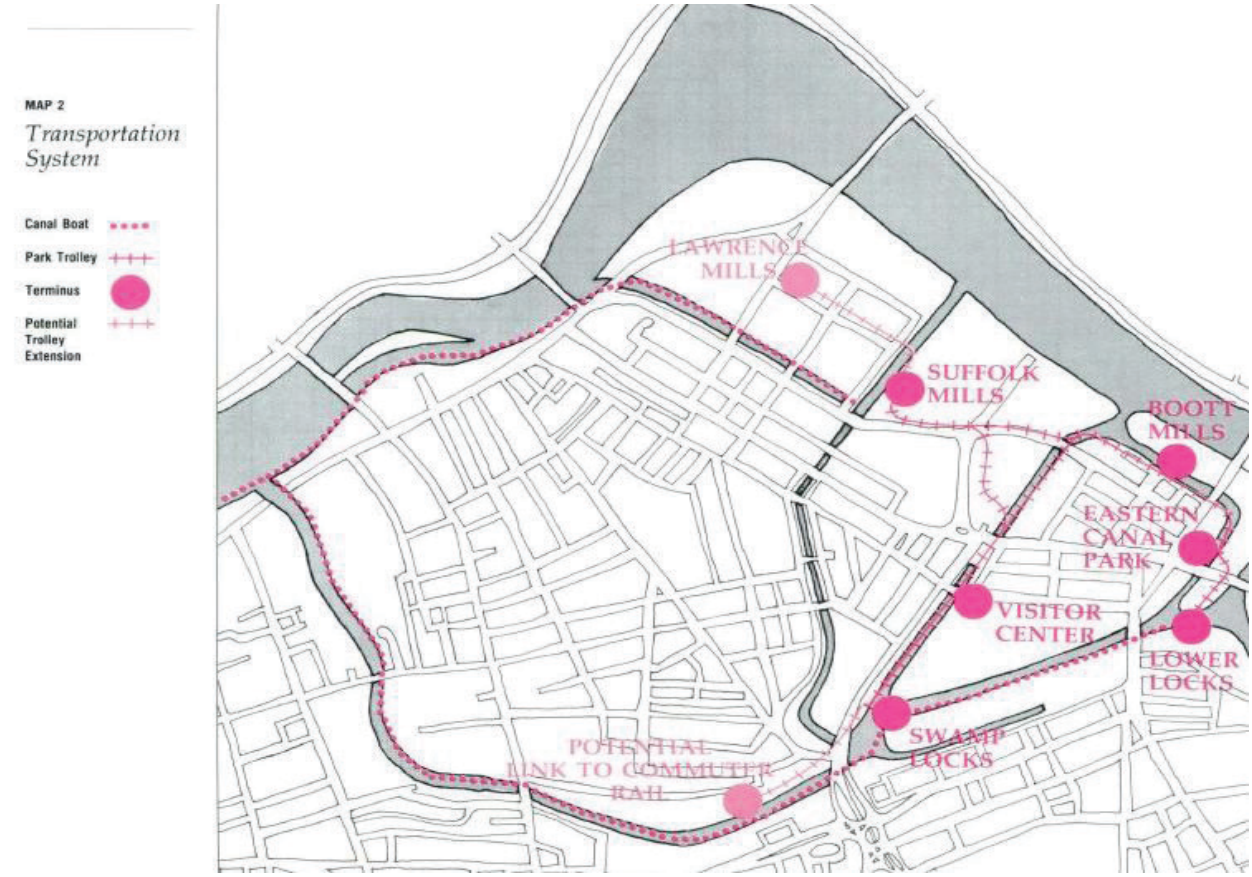


Figure 7: Lowell National Historical Park (Preservation Plan Amendment, 1990)

period of history or event. In keeping with the Secretary of the Interior's *Standards for Preservation Projects*, layers of history were preserved in the variety of historic buildings recognized. These ranged from early commercial buildings and a stone church, to a classic diner from the 1940s. Most buildings, of course, remained in private hands. Indeed, some buildings, like the original City Hall, had been intended for acquisition by the NPS for the park headquarters. However, this building, greatly altered in the late nineteenth century, remained in private hands with its historic alterations intact. Redevelopment of privately-owned properties was guided by the partnership between the National Park Service and the Lowell Historic Preservation Commission, whose mandate consisted of a large, overlay district that extended well beyond the mills and canals administered by the NPS.[38]

The basis for developing historic review of properties in Lowell was founded upon several National Register districts. The Lowell Locks and Canals Historic District was listed in 1976 prior to the establishment of the park. This district also became a National Historic Landmark. The Lowell National Historical Park was listed in the National Register in 1978 along with the City Hall Historic District. The Lowell Historic Preservation District was listed in 2001. In addition to these National Register districts, the city of Lowell established local historic districts for the commercial and industrial areas, as well as important residential neighborhoods.

While preservation and rehabilitation guided the Lowell National Historical Park, there were design elements to improve the visitor experience. As noted, the canals used to power the mills now became scenic waterways for tours. The Canalway—modest tree-lined walkways—linked the canals, as well as the Merrimack River, in a system unique in America in terms of how it is integrated into the urban landscape.[39] Parking lots were also needed, particularly for the visitor center in the former Lowell Manufacturing Center Mill. This mill was not the most historically or architecturally significant industrial complex, but it was strategically located to bring visitors into the commercial district on their way to buildings with major exhibits. Also known as "Market Mills," this complex is in the "intensive-use zone." The buildings had been damaged and abandoned when developed by Market Mills Associates, who created 230 units of subsidized housing for families and the elderly in the upper floors above the visitor center and office space on the ground floor. Private redevelopment of underutilized and vacant mills remains a critical component of the Lowell National Historical Park.

Small parks were also designed on empty lots. One of the few examples of major reconstruction of an altered building is part of Boarding House Park. The Patrick J. Mogan Cultural Center includes a row of houses built in 1837 that were among the earliest boarding houses for mill workers. This block of three-story houses was erected perpendicular to the mills across from the Eastern Canal. The building chosen for this NPS exhibit had been extensively altered for mill use and required major reconstruction for interpretive use.[40] In the rear was added a wing to house the University of Lowell's Center for Lowell History. In front of this row was an empty lot on the site of long-demolished boarding houses. This became a park for concerts, festivals, and theatrical performances. A more recent addition is the Jack Kerouac Commemorative by Ben Woitena in the Eastern Canal Park dedicated in 1988. This small park occupies a key location between the Boott Cotton Mills Museum and the principal commercial district on Merrimack Street.

The Lowell National Historical Park must be judged a success, certainly in comparison with the condition of the city in 1978. Like all historic parks, the visitor experience needs to be constantly reevaluated and enhanced. However, unlike other historic parks, such as Appomattox, there also needs to be a continued effort to foster adaptive reuse of buildings in the private sector which are integral to the park experience.

Conclusion

When we began our research for this paper, it was our premise that the National Historic Preservation Act had had a vital role in shaping the preservation and treatment of cultural resources at national parks units. This was not actually the case at Appomattox Court House, which was philosophically and physically established—and in no small way contributed to the National Historic Preservation Act. We found that the act was indeed important for codifying requirements for all federal agencies' requirements in regard to historic properties, but that the treatment of cultural resources by the NPS actually represents the evolution of historic preservation attitudes and practices over the 50 years that preceded passage of and shaped the act. The NHPA is considerate of those attitudes and practices, and hones them into a strong policy statement, with legal requirements and expectations for the development of best practices by the NPS. Thus, the real value of the act was the codification



Figure 8: Lowell National Historical Park, view of "Swamp Locks," with American Textile History Museum in renovated mill in background, 2016, Photo by NPS, 2016.

of federal policy and the subsequent development of the explicit identification, evaluation, and treatment standards and guidelines captured in the range of the Secretary of the Interior's standards and in the multitude of guidelines, briefs, and bulletins that have been prepared by the NPS to carry out the requirements of the act. In the decades after passage of the act, the NPS developed a body of historic preservation practices that have had a profound effect on historic preservation at all levels of American government in both the public and private sector. The national parks have played a critical role in that effort as laboratories for the development of best practices and confirmation of their success.

Thus, the NHPA was the culmination of a half-century of trial and error development of a preservation philosophy for the United States, with much of the emerging theory and practice implemented at National Park units. The act embodied the best thinking about preservation, and continued the process in that same tradition as it developed the means for carrying out the provisions and mandates of the act.

The act itself primarily reflects the overriding mandate of the Organic Act, that the NPS shall "conserve the scenery and the natural and historic objects and the wild life therein and . . . leave them unimpaired for the enjoyment of future generations."[41] This mandate has been the underpinning of the NPS since its inception. It was elucidated further by later legislation, including the Historic Sites Act, and by its own internal practices and general management planning.

When the Organic Act was passed, the Constitution was only 140 years old. The United States was still groping for a cultural identity and a tangible history at this early time. At a fundamental level, it knew that the protection of the nation's natural and cultural resources was absolutely essential for this identity to be found and carried forward for future citizens. To conservationists, the Organic Act was one of the most brilliant pieces of legislation passed by the US Congress. The NHPA, as we have tried to demonstrate, was the result of the theory and practice that developed in the wake of the Organic Act, and it was an important instrument for making sure the primary dictate "to conserve" was carried out in the national park units—and beyond.

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Money Can't Fix Everything: Facility Management Funding at the Flagstaff Area National Monuments

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Figure 1. Wupatki Residence #1 at Wupatki National Monument Wupatki, constructed from 1938 to 1959. Residence #1 is significant as the first headquarters for the Wupatki National Monument, for association with New Deal policies, and for being designed by NPS architect Cecil Doty. (Photo: Sarah Jackson: NCPTT)

Abstract

The National Park Service (NPS) has billions of dollars in backlogged "deferred" maintenance across a diverse asset portfolio. One of the biggest challenges is deciding how to allocate the sparse funding. We have tools that help us make data-driven decisions, but work does not always happen in a quantitative method. A wide variety of factors determine where the project money is spent. External pressures can dictate constantly changing priorities. Storm events damage facilities and require immediate attention. Administrative flaws at one park can affect funding throughout the NPS. How then do we manage our asset portfolio? This paper identifies the methodology behind planning the budget and priori-

tizing work at the Flagstaff Area National Monuments (FLAG). It evaluates the process used to seek and prioritize funding requests from initial project development in the field, to entering the data and estimating the project, creating the project in the NPS funding system, having said project reviewed by the regional and Washington offices, receiving notification of funding, planning and compliance, receiving the funds, implementing the project, and reporting outcomes. This paper also looks closely into a few success stories past and ongoing: a 1930s trail at Walnut Canyon National Monument, a Mission 66 Cecil Doty visitor center at Sunset Crater Volcano National Monument, and a historic 1930s residence at Wupatki National Monument. These successes reflect issues including cyclical maintenance and lifecycle management, climate change, use of traditional trades, and sustainability.

Introduction

In March of 2015, the National Park Service (NPS) issued a press release identifying the deferred maintenance (DM) backlog in the National Park System.[1] This press release identified the $11.49 billion deferred maintenance backlog across the service. This marked the first time that an official press release was issued detailing the DM across all of the nation's national parks. The release included specific DM for individual parks and asset types. This was followed by a 2016 press release detailing the new, $11.9 billion DM figure. Half—almost $6 billion—of this DM is tied to transportation assets: paved roads, parking lots, tunnels, and bridges. The remaining half is tied to all other assets: trails, buildings, housing, utility systems, unpaved roads, marinas, railroads, and fortifications to name a few.[2] As of October 1, 2015 the Flagstaff Area National Monuments (FLAG), which are composed of Walnut Canyon, Sunset Crater Volcano, and Wupakti National Monument, have a combined DM of $31.05 million. Guidance for how these assets are managed comes from several directives. At the highest level, these directives are Director's Order #80 and Executive Order #13327.[3] [4] While these, and many other directives, would seemingly dictate the process of managing our assets in clear terms, when they are put into practice in the field the process can vary considerably.

Funding

Each new fiscal year begins with NPS units receiving Operations of the National Park System (ONPS or Base) funding from Congress through either an appropriated budget or a continuing resolution. This funding amount is detailed in the Department of the Interior (DOI) National Park Service Fiscal Year 2016 Budget Justifications, commonly referred to as the "Green Book." The Green Book publishes the following three dollar figures for ONPS funding at each NPS site: fiscal year (FY) 2014 final funding, FY2015 enacted funding, and the FY2016 president's request. At FLAG, these three base funding figures are as follows: FY2014 - $3.522 million; FY2015 - $3.569 million; FY2016 - $3.618 million.[5]

The emphasis on ONPS funding is just as the name indicates—operations. Operational budget expenditures within any given national park are the programs that must be carried out every year to fulfill the mission of the National Park Service and the purpose of each individual unit.[6] This includes staffing visitor centers, ensuring law enforcement protection of resources and visitors, monitoring resources, and completing administrative actions. In facility management, these tasks include custodial duties, routine repairs, preventative maintenance work, and grounds care. It does not include major projects, such as roof replacements, chip sealing roads, trail rehabilitation, or utility system rehabilitations; these projects must be completed with funding outside the parks' annual ONPS budgets. This outside funding is often called "soft money" because it is not guaranteed to a park on an annual basis.

There are numerous fund sources, all ultimately controlled by the regional and Washington offices. The most commonly used of these fund sources are Repair/Rehabilitation (R/R), Cyclic Maintenance, and Fee Money provided by the Federal Lands Recreation Enhancement Act (FLREA). Repair/Rehabilitation is focused on taking assets in poor condition and moving them into good condition, such as taking an aged water system and completely replacing it.[7] Cyclic Maintenance focuses on renewing specific components that are on a two- to 20-year cycle, such as crack sealing roads or repainting buildings.[8] Fee Money is specifically designated by FLREA to be used on visitor use assets.[9] These three fund sources are the largest source of funding for facility projects that do not include capital improvement and new construction.

Obtaining "soft money" funding is done through a suite of asset management databases. The bottom line is that these databases were built to allow managers to make sound data-driven decisions for selecting the projects that need and merit funding. These databases are

populated with various metrics that range from simple quantities, such as square footage of a roof, to expected life cycle in years. Through working with these databases, a project is created in the Project Management Information System (PMIS). Within PMIS, the park must select a funding source for each project to compete against all other parks within a region. Creating and submitting a project in PMIS does not guarantee funding. Each project is automatically scored using data pulled from the various databases to assign a project score. The score ranges from 0 to 1000.

In July of 2012 a new scoring strategy, called the Capital Investment Strategy (CIS), was developed. This strategy looks at four elements: financial sustainability, visitor use, resource protection, and health and safety. Using these elements to score projects strives to ensure that the highest priority assets receive the funding they need. The CIS also attempts to maintain and eventually reduce the deferred maintenance backlog on the most important assets at each site.[10]

Planning and Prioritizing

The Flagstaff Area National Monuments use all of the previously described documents to plan the needs of the facility management program. There is no set document that dictates a course to be followed in this process. The latest guidance, the CIS, puts a greater emphasis than any previous document on focusing funding on the highest priority assets. There are two metrics for assessing the priority or importance of an asset. One is the Asset Priority Index (API) which ranges from 0 to 100, with 100 being the highest priority. The API looks at criteria including: park operational use, visitor use, resource protection, and asset substitutability. The other metric is the Optimizer Band (OB) which ranges from 1 to 5, with 1 being the highest priority. The "bands" are defined by the priority of assets that they contain and their criticality to park mission.[11]

Planning is already complete for the next fiscal year. The projects have been assigned and scheduled. Planning beyond the next fiscal year is heavily influenced by OB. Facility management staff meets annually to evaluate the existing deferred maintenance against all locations within FLAG. This task is easier at FLAG, with only 268 assets, as compared to other parks with significantly more assets. The assets are then weighed against the funding strategies. If the life cycle of a visitor center roof is set to end in five years, a cyclic project is targeted to address the roof replacement. If a low OB building has the same need, a project is also created to address replacing the roof, knowing that the chances of having this project funded are low, but the creation of the projects allows for the identification of the full need, rather than just what can be funded.

Into Action

This is an example of all the steps involved in creating and implementing a project at FLAG:

1. Individual assets receive condition assessments to identify work needs;
2. Work orders are developed and estimated based on the condition assessment;
3. A PMIS project is created and submitted for funding;
4. Regional and Washington offices review and approve PMIS project;
5. If the project scores high enough and meets all the criteria, it is formulated to be funded in a set fiscal year;
6. Once funding is finalized, the park initiates National Environmental Policy Act (NEPA)/National Historic Preservation Act (NHPA) compliance with a compliance specialist;
7. A spending plan is created detailing staff to be hired or paid from the project, contracting needs, and material needs;
8. Hiring is initiated through NPS human resources and contractual documents are created and sent to the NPS contracting office;
9. Project is implemented in the field by staff and contractors;
10. Project is completed and a completion report is sent to the regional office;
11. Schedule next annual condition assessment to monitor the asset.

The above is a simplified example for a project at FLAG if everything goes perfectly. Frequent problems include: difficulties with hiring (for example, delays in background investigations, a lack of applicants, or the acceptance of jobs elsewhere by applicants); difficulties with contracting (for example, a heavy workload of contracting officers, or contractor bids greatly exceeding budget); and difficulties with compliance (for example, unforeseen complications with NEPA, NHPA, the Endangered Species Act, etc.).

Island Trail Rehabilitation, Walnut Canyon National Monument (WACA)

In the late summer of 2012, FLAG was notified that funding had been approved through the Repair/Rehabilitation program for the $530,000 rehabilitation of the Island Trail. This project had been created with a PMIS project in 2009. As one of the primary ways for visitors to connect with the resource, the Island Trail has both a high API and OB. The Island Trail was a foot trail in existence before the park was designated in 1915. The trail had seen various forms of improvements and up-keeping over the years, most notably by the Civilian Conservation Corps (CCC) in 1942 and by contract during the Mission 66 program. Between the Mission 66 improvements and 2013, however, very little work had been done on the trail, with the exception of recurring asphalt overlay of the 8/10-mile trail.[12]

Upon being notified of funding, FLAG initiated compliance, which included consultation with the United States Fish and Wildlife Service regarding Section 7 of the Endangered Species Act for working in active Mexican Spotted Owl breeding areas. FLAG also consulted with a number of Tribal Historic Preservation Officers regarding work taking place so close to archaeological sites. Compliance was approved and completed in February 2013. Concurrently, market research had concluded the best surfacing material to replace the asphalt would be a decomposed granite material mixed with soybean oil and polymer to form a hardened trail surface. This large supply purchase was sent through contracting to procure.

In February 2013, with compliance completed, trail work began with asphalt removal. In several weeks, local conservation corps worked with NPS staff to demolish and remove via helicopter 220,000 pounds of asphalt. During demolition, it was clear that the park had made at least three different overlays of the asphalt since it was originally installed during the Mission 66 improvements. During helicopter operations, Kaibab limestone from a nearby quarry was flown in to rebuild retaining walls and stairways, many of which had been previously built with old concrete or asphalt.[13]

Over the next two years, the trail was completely rehabilitated without the use of any new asphalt. The reconstructions of a number of dry-stone retaining walls were built in a style intended to last for 500 years, looking aesthetically pleasing and being functional and sustainable.

Visitor Center Rehabilitation, Sunset Crater Volcano National Monument (SUCR)

In 2011, FLAG was notified that funding had been approved through the Repair/Rehabilitation program to rehabilitate the Visitor Center complex for $400,000. This project had been created with a PMIS project in 2007. The Visitor Center has both a high API and a high OB due to its heavy visitor use, historic properties, and operational requirements. The Visitor Center was designed by NPS architect Cecil Doty and constructed during the Mission 66 program. It is unique in that it was built on United States Forest Service land adjacent to the legislative boundary of the national monument it serves. Over the years, the cedar shingle roofing, siding, and cedar panel siding had been painted over and in some places replaced with Texture 1-11 siding.[14]

Upon funding, FLAG began the compliance process and worked with regional historical architects to make sure the project would be appropriate to restoring this historic and highly visible building. A contract was solicited and awarded with work beginning in the summer of 2012 and finishing in the fall of 2012. The Texture 1-11 wood siding was replaced with fire rated cedar panels; all of the previously painted over cedar shingles were replaced with new fire rated shingles. The existing standing seam metal roofs and gutters were replaced with copper details, restoring the original look.

After successful completion of this project, the life cycle for all of these items has been renewed and a new project will soon be created to repeat the appropriate replacement schedule before it falls into disrepair as it was prior to the completion of this project.

Historic Residence 1 Rehabilitation, Wupatki National Monument (WUPA)

In 2015, during an annual project planning meeting, rehabilitating this residence was given heightened importance. This building was completed with assistance from the CCC and was the first permanent National Park Service structure at Wupatki. The API is high, but not as high as the previous two projects. Likewise, the OB is high, but not as high as the previous two projects. This is due to the lack of visitor use and park operational needs. The residence has been used throughout its existence for solely housing park staff.

While it is included in the Wupatki National Monument Visitor Center Complex Historic District, and eligible for the National Register of Historic Places, that is not enough to bring it into a category of the most important

needs in accordance with the Capitol Investment Strategy. The building currently has a deferred maintenance backlog of $472,318, needing significant exterior preservation in repointing, reroofing, and replacement of vigas and canals, in addition to interior replacement of the mechanical and electrical systems. Because it scores so poorly, FLAG decided to seek other means of funding for this project. Currently the roof replacement and repointing projects are a formulated project for the next fiscal year through the cyclic program, with hopes to cut the deferred maintenance in half.[15]

Conclusion

There is a tremendous amount of guidance available to the NPS for running a facility management program. The overall goal is to continually reduce deferred maintenance, or at least prevent it from increasing dramatically to top level OB assets. Because there are over 400 different NPS units with a diverse asset portfolio, there is no "one size fits all" approach. FLAG has had some recent successes in reducing deferred maintenance largely due to good planning processes and flexibility in the face of continually changing funding allocations for soft money projects. FLAG has also been capable of focusing project requests on the appropriate fund sources and assets to maximize the likelihood of funding, therefore reducing deferred maintenance.

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Indigenous Influences on National Park Service Design and Planning

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Figure 1. Mr. William Quackenbush, the Tribal Historic Preservation Officer for the Ho-Chunk Nation of Wisconsin, with Effigy Mounds National Monument park ranger Bob Palmer at the Sny Magill Unit.

Abstract

Land that would eventually become part of the American National Park Service (NPS) was utilized and inhabited by American Indians long before the Organic Act of 1916 established the NPS. Many units of the NPS are specifically dedicated to preserving and interpreting significant places created by American Indians, yet inclusion of indigenous people in the planning, management and use of these places has been greatly limited.

Although facilities and significant resources within national parks reflect many different design styles, the rustic style is commonly recognized as the iconic national park *type*. NPS designers set forth principles aimed at development of structures and sites that are subordinated to their settings and expressing a quality of "*nativeness*" that emphasizes natural aspects of the landscape. Local materials, forms, and workmanship are used to create unity with the surrounding environment. But the style has rarely translated to include the people who,

over multiple generations, manipulated and altered the landscape, resulting in the environment present when Europeans arrived in this country. During the initial decades of the NPS, people were seen as intruders on wilderness and their presence was often seen as an interruption of the natural environment. In wilderness parks efforts were made to remove traces of active human culture in order to present the appearance of a landscape untrammeled by man. Even at parks classified as *cultural* sites, efforts were made to remove traces of *active* human culture in order to enhance scenic qualities.

In order to guide design and management of cultural landscapes associated with American Indians, it is necessary to include indigenous people in their planning, design, interpretation, and use. This paper provides a brief overview of policies that affect planning for indigenous cultural landscapes, two examples of current projects, and a list of strategies to help effectively include American Indian tribal representatives in this work. The spirit of this presentation is to share information that may be used and built upon by others, to improve the process in the future. It is not intended to be definitive; rather it is meant to be a stimulant for discussion and improvement.

Introduction

Long before the arrival of Europeans, the North American landscape was populated by a diversity of cultures whose lifeways and traditions resulted in a wide range of relationships between people and the land. Over time, their activities left impressions on the landscape, many of which are recognizable today. The members of today's tribal nations are the descendants of the earliest inhabitants of the continent. Their knowledge and traditions can provide guidance for understanding landscapes associated with their ancestors. Integration of current American Indians into planning and management for cultural landscapes can improve the sustainability, authenticity and meaningfulness of these significant places. Although the tribes in this country differ greatly with respect to their languages, practices, and traditions, most American Indians view landscapes holistically, without differentiating between culture and nature.[1] This perspective supports and informs work focused on preservation of cultural landscapes.

As planners and designers, we work to protect significant places while creating inspiring experiences for those who visit. In the case of places that are culturally significant, their full and true value is best understood from the perspectives of the people who are "*culturally associated*" with the place. It follows that, to truly conserve indigenous cultural landscapes, associated peoples must be included in the planning and design process.[2]

As a historical landscape architect engaged in planning and design for significant cultural landscapes, I have found it challenging to substantially integrate American Indian perspectives and concerns in projects. Although guidance is available for consultation, common project processes and schedules are often difficult to incorporate with the pace of tribal participation and content of concerns that are broad and holistic. For example, the question "what in this landscape is important to you," may seem simple, but from a tribal perspective it may be considered too broad and so important as to be practically unanswerable. In order to even begin to have such an important discussion, a relationship based on mutual trust and understanding of each other's cultural background is needed. Building this type of relationship takes time and requires respect and patience.

Background

Establishment, planning, and design of public parks in the United States is guided by policies and standards that have been developed to protect significant landscapes and provide for access and use. The establishment of the United States was driven by the European ideal that land was free, plentiful, and available to those willing to work hard to convert the wild country into a "civilized" environment. The focus was on all things "new" and there was no preservation mindset. We considered it part of progress when we drove American Indians out of land that we wanted for settlement, mining, ranching, or farming. By the beginning of the 20th century, significant places throughout the country were being defaced and dismantled for profit or curiosity. We began to realize the need to protect special sites.

In 1906, President Theodore Roosevelt signed the Antiquities Act to protect archaeological ruins and other historic sites located on public lands and gave the President the authority to create National Monuments.[3] These sites were set aside to be protected, and initially overseen by a variety of government agencies. The National Park Service was established in 1916 with oversight by the Department of the Interior.[4] In 1933, President Franklin Delano Roosevelt consolidated all national parks, monuments, military parks, cemeteries and memorials into one system, but our country's significant places were not yet well understood.[5]

The National Historic Sites Act was signed into law in 1935, establishing a national policy for public use of historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States.[6] The law called for the creation of a national survey of historic properties but the outbreak of WWII shifted our focus. At the end of the war, unrestrained development of highways, dams, housing, and institutions was fueled by our desire to move forward, leave the past behind, establish our successfulness, and accommodate our expanding population. By the 1950s, federal urban renewal programs were wiping out entire neighborhoods for the sake of improving living conditions. Eventually, we began to realize that we were losing valuable places for the sake of "progress" and Americans began to pull together to work to preserve the heritage of our country.[7]

The establishment of the National Historic Preservation Act (NHPA) as law in 1966 provided for the preservation of the historical and cultural foundations of the Nation as a "living part of our community life and development."[8] This act led to the creation of the National Register of Historic Places, the Advisory Council on Historic Preservation (ACHP), and State and local historic preservation programs and grants. Section 106 of NHPA placed oversight for federal actions related to preservation under the ACHP. The organization established regulations and a process to be used to address preservation practice.[9] Early preservation efforts emphasized historic houses, but the National Register property types also include structures, objects, sites and districts. Cultural landscapes, including indigenous cultural landscapes, are addressed under the site and district types.

Cultural Landscape Preservation

Efforts to preserve cultural landscapes in the United States began in the 1850s with activities of citizen groups. In 1853, the Mount Vernon Ladies Association established Mount Vernon to preserve the legacy of George Washington, with policies that addressed the preservation of the gardens, fields, views and setting surrounding the mansion. In 1928, a period garden approach to preservation was applied from the beginning in the restoration and reconstruction of Colonial Williamsburg. In the 1970s and 1980s a number of landscape preservation groups were founded.[10]

Beginning in the 1980s, the NPS developed National Register Bulletins addressing rural historic landscapes, Traditional Cultural Properties, battlefields, cemeteries, mining districts and suburbs. In 1992, the United National Educational, Scientific and Cultural Organization (UNESCO) recognized cultural landscapes. Standards and guidelines for addressing evaluation and treatment of cultural landscapes were published in the late 1990s.[11]

Indigenous Cultural Landscapes

In many cases, when planning for national, regional, and local parks began in this country, the associated indigenous community was no longer locally present or it was not clear who could speak for the cultural importance of the landscape. In other locations, the associated community was ignored, or misunderstood. Legislative mandates, beginning in the 1970s, provided for the continued use of federal lands by indigenous peoples; however, the integration of this policy into practice has not yet been fully achieved.[12] Many regulations, standards, and guidelines affect conservation, planning, and design for indigenous cultural landscapes. It is not the focus of this paper to list or explain all of these. Instead a few are presented here to give a sample of the complexity involved.[13]

In 1978, Public Law 95-341, the American Indian Religious Freedom Act (AIRFA), was established to protect and preserve the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians. The rights include access to sacred sites, repatriation of sacred objects held in museums, freedom to worship through ceremonial and traditional rites, including within prisons, and the use and possession of objects considered sacred. The Act required the policies of all governmental agencies to eliminate interference with the free exercise of Native religions, based on the First Amendment, and to accommodate access to and the use of religious sites to the extent that the use is practicable and is not inconsistent with an agency's essential functions. It also acknowledged the prior violation of that right. The act did not provide a means of enforcement and failed to protect American Indian culture and religion. In 1994, H.R. 4155 provided for the management of federal lands to avoid frustration of traditional religions and religious purposes of American Indians.

The Archeological Resources Protection Act (ARPA) of 1979 (54 USC 300101 et seq.) and American Indian Graves Protection and Repatriation Act (NAGPRA) of 1990 provide a foundation for protection of indigenous cultural landscapes. In 1996, Executive Order No.

13007, Indian Sacred Sites, directed that management of federal lands must accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. This order set forth procedures to ensure reasonable notice is provided of proposed actions, or land management policies, that may restrict future access to, or ceremonial use of, or adversely affect the physical integrity of sacred sites.[14]

In 1996, American Indian tribal governments began entering into agreements with the NPS to assume (1) the State Historic Preservation Officer responsibilities under the 1992 amendments to the NHPA; and (2) to receive funding from the Historic Preservation Fund administered by the NPS.[15] The ACHP's regulations for Section 106 consultation were revised in 1999 to address Tribal/Native Hawaiian Organizations consultation and add consideration of properties of religious and cultural significance while acknowledging the special expertise of American Indians to assess the eligibility of historic properties that possess religious and cultural significance to their communities.

The addition of Tribal consultation has had a dramatic effect on bringing cultural landscapes into focus. American Indians and Native Hawaiians do not see the world as either natural or cultural. Their more holistic concept sees people and nature as parts of one system. This has challenged the dominant guidance addressing cultural landscapes. Gradually, as American Indians have become more empowered in consultations, their influence is supporting a more holistic understanding of cultural landscapes.

The policies, standards, and guidelines described above provide a basis for protecting cultural landscapes but fall short of fully supporting inclusion of indigenous peoples in the planning and use of these sites. The approach used for Ethnographic Landscape Studies (ELS) may provide an improved process for documentation through the perspective of associated communities, but detailed guidance is not readily available, and examples for indigenous cultural landscapes are rare.[16] During the George Wright Society conference in 2011, I was introduced to the concept of the "*Indigenous Cultural Landscape*." Although the concept was developed to address *large* cultural landscapes, the approach being used to address those regional resources can provide guidance for projects focused on smaller sites. The concept of the *indigenous cultural landscape*

> "…recognizes and respects that Indian cultures lived within the context of their environment, although not in the stereotypical sense of *living in harmony with the environment*. American Indian peoples lived around major waterways within large, varied landscapes, with which they were intimately familiar. They used different parts of those landscapes in different ways: for food, medicine, and clothing procurement, for making tools and objects related to transportation and the household, for agriculture, and for settlements…. [T]o be effective in such a society, both men and women had to be familiar with very large areas of land and water, and be able to remember and travel to the appropriate places for gathering particular plants, acquiring stone for tools, or hunting particular species of animals. This was the indigenous person's world of the time; in area it far outstripped what is generally understood today as an 'Indian community' according to the dots on the early explorers' maps. This view of the world one inhabited and lived with, was the indigenous cultural landscape."[17]

Deanna Beachum notes that use of this construct is directly pertinent to land conservation and interpretation in the Eastern United States today because acknowledgement of the continued existence of American Indian cultures leads to respect of their knowledge and traditions, including strong attachment to place and better understanding of cultural life ways of communities who lived within significant spaces. In her words:

> "This approach also brings both equality and visibility to the descendants of the indigenous cultures who inhabited these lands historically. If we conserve for both indigenous cultural and ecological reasons, along with scenic and aesthetic reasons, we build a greater meaning for these landscapes, and for the people who were, and still are, culturally attached to them. We build opportunities for the public to interact with and learn about these communities, which furthers their attachment to those lands and waterways. In addition, we include these indigenous peoples, who

are today largely absent from the greater "conservation communities" of the eastern United States, as equal partners, consultants, educators, and interpreters."[18]

Although Beachum is focused on large landscapes in the eastern part of the country, the concept and guidance is applicable to other cultural landscapes in the Midwest, and likely other locations where American Indians are not generally included in planning for parks.

Effigy Mounds National Monument Cultural Landscape Report

Recent efforts by American Indian nations and public planning agencies provide examples of ways that indigenous influences can improve planning and management for parks. A Cultural Landscape Report prepared for Effigy Mounds National Monument included tribal representatives in the planning process throughout every step. Tribal representatives are affecting consideration of new management approaches that reflect their cultural traditions and concerns, as well as the presentation of interpretive information to help visitors understand relationships between today's tribes and the monument landscape. The results will affect the ways that the monument resources are interpreted and used by general visitors and members of American Indian tribes.

The approach used to develop the monument in the 1940s, and manage it in the following decades, focused on a Euro-American perspective. We thought of the effigy mounds as constructions of an ancient culture that died long before Europeans encountered this place. Planning for the park focused on establishing trails, buildings, overlooks, and interpretive materials to explain European ideas of the *"extinct culture."* We essentially made up stories about why the mounds were constructed and what they were supposed to mean. American Indians were not consulted. In fact, we decided that the "*moundbuilders"* were a lost culture with no connections to current Indigenous American groups.

The 2,526-acre Effigy Mounds National Monument is characterized by steep bluffs, floodplain terraces, and swift cutting streams channeling into the bedrock terrain on the west bank of the Mississippi River. More than 200 conical, linear, compound, and effigy mounds constructed between 500 BC and 1300 AD are located throughout the site. Mound building in this region included birds, turtles, lizards, bears, buffalos, wildcats, and rarely, human effigies. The monument also contains other archeological sites.



Figure 2. Mr. William Quackenbush, the Tribal Historic Preservation Officer for the Ho-Chunk Nation of Wisconsin, identified this marker tree at Effigy Mounds National Monument. The Ho-Chunk Nation of Wisconsin has undertaken care of the tree to ensure its spiritual significance is addressed.

The purpose of the combined cultural landscape report and environmental assessment for the monument is to determine the desired future condition of the mounds through integration of American Indian interests in the planning process. The project is needed to provide a vision for protecting the landscape resources and a cohesive, unified visitor experience. To accomplish this, consultation with formal representatives of tribes began prior to the establishment of the project scope, and will continue through the finalization of the project later this year. The current Superintendent has been meeting with tribal representatives on a regular basis for several years and an American Indian archeologist and resource specialist was hired by the NPS to work with the superintendent on these efforts. For the CLR, a pre-scoping meeting resulted in a project process including multiple workshops with tribal representatives, and inclusion of the Tribal Historic Preservation Officer for the Ho-Chunk Nation of Wisconsin as a consultant on the project team. It also influenced the inclusion of archeologists and an ecologist. Throughout

the project process, the team has met with tribal representatives and provided draft materials for review. The process and recommendations have been adjusted multiple times to accommodate requests made by tribal representatives. One of the most meaningful requests was to make arrangements for a Tribal Elder Summit that occurred in Spring 2015. Tribal elders from several tribes came together to discuss issues related to the park, and provided guidance for the cultural landscape report.

There are many tribes that have an interest in Effigy Mounds National Monument, each with different concerns and perspectives. The Tribal Historic Preservation Officers (THPOs) who participated in the project requested an opportunity for their elders to come to visit the site and meet with each other to discuss their concerns. The NPS arranged for the Elder's Summit and it was held in the Spring of 2015. Input from elders was incorporated into the landscape treatment plan.

Desired uses of the landscape for tribal members were identified including: use by tribes for traditional activities, tribal use of plants and plant gathering, and educational opportunities for tribal youth.

Trail and overlook locations were adjusted to protect/respect the mounds. This included providing a minimum fifteen foot buffer from the base of mounds to trails, and routing trails around the feet of effigy mounds with legs (not over their backs). Recommendations also included removing or replacing waysides containing inaccurate information about American Indian culture.

Plants with cultural uses were identified by tribal members and documented in the report. Use of these plants by tribes was proposed as a treatment but could not be included in the report recommendations. The NPS is restricted from authorizing consumptive use of park resources, and has stated its intent to "provide reasonable access, and use of, park lands and park resources by American Indians for religious and traditional activities." This puts superintendents working with tribes in a confounding situation. Federal regulation 36 CFR 2.1 states: Preservation of natural, cultural and archeological resources strictly limits the type of use that appears to be promised in the American Indian Religious Freedom Act (AIRFA) of 1978. One of the most difficult challenges related to including American Indians in planning projects is the lack of trust that tribes have for institutionalized entities. They have spent tremendous time and effort "coming to the table" to discuss their concerns and give recommendations, frequently learning that those at the table are not able to honor their requests. Tribal representatives requested that a Traditional Cultural Property (TCP) survey be conducted. The NPS contracted with an academic consultant to undertake the study, but the process was not well received and tribal members were displeased with it.

Physical investigation of mounds is strongly discouraged by American Indians. In addition, some tribes discourage non-invasive investigations such as ground penetrating radar, magnetometry, and LIDAR scans, as these techniques can interfere with spiritual presences at sites. The CLR for the monument is currently being finalized. Its content has been greatly influenced by the tribal representatives that participated in the project.



Figure 3. Project team members conducting field investigations. Mr. William Quackenbush, the Tribal Historic Preservation Officer for the Ho-Chunk Nation of Wisconsin, is talking about the importance of the landscape environment associated with the mounds to Paul West, of Coolfire Conservation and Bill Whittaker of the Office of the State Archaeologist.

Blood Run National Historic Landmark

A master plan for the Blood Run National Historic Landmark (NHL) in Iowa has undertaken a highly integrative approach with tribal representatives to develop a foundation for the establishment of a new state park. Beginning with visits to the tribal homes of the five nations involved, the project team has developed a working relationship with tribal representatives who have influenced the research, analysis, design, and management recommendations provided in the master plan.

From 1300 to 1720, Blood Run included a large population of people whose descendants today are members of several American Indian Nations. At its height, between 6,000 and 10,000 people lived at the site which was an important center of exchange for a wide-ranging trade network. It was also a ceremonial site and is sacred to the Omaha, Ioway, Ponca, and Otoe-Missouria tribal

nations. The approximately 3,000 acre site in Iowa is a beautiful and emotionally compelling landscape that includes distinct topographic terraces in the river valley, along with the Blood Run floodplain, and steep high upland bluffs.

The NHL includes land in both South Dakota and Iowa. Both states are working together to establish a bi-state park dedicated to preservation and interpretation of the significance of the landscape, the people who lived, farmed, traded, and are buried there, and their descendants who are members of six American Indian Tribes. State park facilities are under construction in South Dakota, including trails and a visitor center.

The Iowa Blood Run Cultural Landscape Master Plan used a highly integrative and participatory process to bring together tribal representatives, state managers (from Iowa and South Dakota), and local stakeholders to build relationships and develop a Vision and long-term guide for establishment of the park and associated programs.

Prior to initiation of the project, the State of Iowa met with tribal representatives to discuss how to proceed with the project. This initial work identified key components of the project, including the need for the project team to visit tribes at the initiation of the project. The project initiated with members of the project team travelling to visit the Omaha Tribe of Nebraska, the Ponca Tribe of Nebraska, the Iowa Tribe of Kansas and Nebraska, and the Iowa Tribe of Oklahoma, each at their headquarters. We met with Tribal Elders and members of the community and visited sites of importance in the landscape. We spent time listening to the concerns of the tribe including education of their youth, protection of their heritage and culture, and struggles and successes they have had. We learned about the treaties that resulted in their displacement from their ancestral home at Blood Run. We asked how tribes would like to be included in the project, discussed the project schedule and desired outcomes, and requested that formal representatives of each tribe be designated to participate in key project activities.



Figure 5. Tribal Elder and Bison Herd Manager Larry Wright, Senior, and project team member Dan Williams during a meeting at the Ponca Tribe of Nebraska's Cultural Center in Niobrara, Nebraska.

Numerous activities were planned to bring together tribal representatives, master plan team members, and federal, local, and state stakeholders to begin to build a community that will work together to implement the master plan in the future. Meetings were held with small focus groups, as well as large, integrated groups to ensure that the multiple concerns were well understood and to work out conflicts as they arose. Communication was emphasized and encouraged. Participants worked together to establish a vision, goals, and guiding principles to direct development of the master plan and to serve as a foundational structure for the future. Upon these, and



Figure 4. Project team members met with the Omaha Tribe of Nebraska Tribal Council and other Tribal representatives at their Reservation in Macy, Nebraska.



Figure 6. Project stakeholders during a workshop in Lyon County, Iowa in January 2016.

based on site visits and research, a series of options for the master plan were developed and reviewed.

The goals identified the need for a formal arrangement to ensure that tribal representatives be included in the guidance of management of the park during implementation and continuing as advisors to the operation of the park. This resulted in a master plan recommendation to establish an advisory group including Tribal representatives and other stakeholders to help guide decisions about park management in the future.

Tribal representatives explained that it is highly disrespectful to disturb their buried ancestors, while archaeologists stressed the importance of improving understanding of the resources to ensure their protection. Resulting master plan recommendations include avoiding disturbance of known sacred sites and conducting non-invasive reconnaissance survey of all land within the boundary by tribal representatives and archeologists together. Also, recommendations included the need to include tribal representatives in making decisions about what, where, and when to do development or investigations in the landscape. We learned that spiritual sites can be impacted by disrespectful behavior and non-invasive investigations, and the treatment plan stresses the need to have Tribal input prior to initiating new programs or research.

Tribal members stressed the need to teach visitors to respect the sacred nature of the place. The master plan includes a protocol for a comprehensive visitor experience at each phase of development that includes an initial welcome and orientation for all visitors entering the site. The orientation will include information about the importance of the site to living cultures and ways to show respect to current tribal members and the sacred sites in the landscape. The importance of Blood Run to tribes as a place to come for spiritual activities resulted in designating specific sites for use and management by tribes. These sites will be open to the public when not in use by tribal members.

There are three separate traditional languages associated with the six tribes whose ancestors are buried at Blood Run. The tribes are struggling to keep their languages alive, as they are key to keeping their culture alive. The master plan includes recommendations to use the indigenous languages in programs, exhibits, and interpretative materials about the site.

Tribal members stressed the need to teach visitors about the sacred nature of the landscape. The master plan includes a protocol for a comprehensive visitor experience at each phase of development that includes an initial welcome and orientation for all visitors entering the site. The orientation will include information about the importance of the site to living cultures and ways to show respect to current tribal members and the sacred sites in the landscape.

1.	Develop on-going relationships with tribes.
2.	Discuss project plans with tribal representatives before developing a scope of work.
3.	Work with formal representatives of tribes (designated by the tribal government).
4.	Go to visit tribes to better understand their perspective.
5.	Ask tribal representatives how they would like to work with you.
6.	Include tribal representatives on your project team.
7.	Build flexibility into the process to allow for adjustment based on tribal requests.
8.	Visit the project site with tribal representatives.
9.	Meet face to face whenever possible.
10.	Ask specific questions, be open to unexpected answers.
11.	Listen and adjust, based on what you hear.
12.	Develop formal agreements for inclusion of tribal representatives in long-term review and guidance of site management and interpretation programs and use for traditional activities (gathering specific plants, ceremonies, etc…).
13.	Incorporate native language into interpretation of the site.
14.	Teach visitors how to be respectful.

Table 1. Strategies for including Indigenous Peoples in Planning and Design for Cultural Landscapes

Through meeting with and listening to tribal representatives, our team has identified some strategies that are helpful for including tribal members in design and planning processes. Table 1 includes a list of strategies we identified. My challenge to readers is to think about your work and consider if there are ways that it may be improved by integrating American Indians into your design and planning process.

Endnotes

1 Dennis Martinez, "Protected Areas, Indigenous Peoples, and the Western Idea of Nature" (paper presented at the George Wright Society Conference on Parks, Protected Areas, and Cultural Sites, Philadelphia, Pennsylvania, March 14-18, 2005) Proceedings, 215.

2 The term conserving is used here to address the protection of cultural and natural resources at significant sites through the application of one of the four treatments recognized by The US Secretary of the Interior: preservation, restoration, rehabilitation, or reconstruction.

3 Antiquities Act, 1906 (16 USC 431-433); accounts of the history of the establishment of the National Park Service (NPS) and design and planning for NPS sites include: Dwight F. Rettie, *Our National Park System: Caring for America's Greatest Natural and Historic Treasures* (Chicago: University of Illinois Press, 1995); Alfred Runte,. *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1987); Richard West Sellars, *Preserving Nature in the National Park: A History* (New Haven: Yale University Press, 1997); Linda McClelland. *Building the National Parks: Historic Landscape Design and Construction* (Baltimore: The Johns Hopkins University Press, 1998); Ethan Carr, *Wilderness by Design: Landscape Architecture and the National Park Service* (Lincoln: University of Nebraska Press, 1998); Ethan Carr, *Mission 66: Modernism and the National Park Dilemma* (Amherst: University of Massachusetts Press, 2007); and Albert H. Good, *Park and Recreation Structures* (New York: Princeton Architectural Press, 1938).

4 Organic Act, 1916 (16 USC 1)

5 Brown, Nancy. "*Cultural Landscapes and NHPA, 1966-2016: From Footnote to Focal Point*" (Presentation at the Alliance for Historic Landscape Preservation: Conserving Cultural Landscapes Annual Conference, Chicago, 2016). This section relies heavily upon information shared by Ms. Brown during her presentation and her input and support.

6 National Historic Sites Act, 1935.

7 Brown, "*Cultural Landscapes and NHPA, 1966-2016: From Footnote to Focal Point*"

8 National Historic Preservation Act, 1966.

9 Brown, The ACHP Office of American Indian Affairs website includes helpful guidance: http://www.achp.gov/nap.html and http://www.achp.gov/traditional-cultural-landscape.htm.

10 Ibid. Organizations founded include the Alliance for Historic Landscape Preservation in 1979, the National Association of Olmsted Parks in 1980, the American Society of Landscape Architecture Historic Preservation open committee in 1982 and the National Park Service Olmsted Center for Historic Landscape Preservation in 1983.

11 The Secretary's Standards with Guidelines for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes was published in 1996 based on the definitions and criteria developed by the National Register. In 1998 the NPS published A Guide to Cultural Landscape Reports: Contents, Process and Techniques, that continues to serve as a guideline today.

12 Spence, Mark, Dispossessing the Wilderness: Yosemite Indians and the National Park Ideal, 1864-1930 (Pacific Historical Review, 1996), 27-59; and Howell, Benita J., Linking Cultural and Natural Conservation in National Park Service Policies and Programs in Conserving Culture: A New Discourse on Heritage, ed. Mary Hufford (University of Illinois Press, 1994), 122-135.

13 United States Federal Historic Preservation Laws, Regulations, and Orders can be found at www.nps.gov/subjects/historicpreservation/ laws.htm.

14 https://www.nps.gov/history/local-law/e013007.htm

15 National Association of Tribal Historic Preservation Officers website: http://www.nathpo.org/aboutthpos.htm.

16 It is difficult to find these types of studies, examples are: Gates, Thomas. *Ethnographic Riverscape: Regulatory Analysis* (PacifiCorp, 2003). Dr. Gates is the Yurok Tribal Heritage Preservation Officer.

17 Deanna Beacham (Weapemeoc), "The Indigenous Cultural Landscape of the Eastern Woodlands: A Model for Conservation, Interpretation, and Tourism" (paper presented at the bi-annual George Wright Society Conference on Parks, Protected Areas and Cultural Sites, New Orleans, Louisiana, March 14-18, 2011) Proceedings, 41.

18 Beacham (Weapemeoc).

Pueblo Art and Culture in the Landscape

Deborah Ann Jojola, Curator of Exhibitions, Indian Pueblo Cultural Center, Albuquerque, New Mexico



Figure 1. Guard Turning Tourists Away, c 1940, By Pablita Velarde, Casein paint, masonite.
The guard turns away a car full of tourists during a ceremony. This work was commissioned by Bandelier National Monument under the Works Progress Administration [WPA] program. (Photo: NPS Bandelier National Monument)

Pueblo Sovereignty and Way of Life

In the words of our elders and spiritual leaders, SOVEREIGNTY is our right of existence to promote our communities and to create our own laws that govern our activities. The ultimate power of that existence is considered our Pueblo Way of Life and comes to us as a gift from the Creator. At the time of our Emergence, we traveled from the spiritual world into the physical world and gained our breath of life. The Creator gave to us the Gifts that maintain our collective well-being—emotionally, physically and spiritually along our life journey. We were given the *Original Instructions* to fulfill our purpose as a sacred trust. The process of conscious engagement individually and communally provides for our daily strength. This engagement begins with the rising and setting of the Sun and moves from season to season.

An important component is the element of living life as a Prayer so that we may understand our place in this Universe, expand our role within the gifts of humanity, and extend our experience to include the natural world. That enduring sense of humaneness guides our relations with all things and is defined as our core values of Love, Respect, Compassion, Faith, Understanding, Spirituality, Balance, Peace, Empathy. When we no longer live by our core values, we will perish because we will have lost not only our way, but our connection to all things will be broken. With little sacred to support us, the life and spirit of our people will perish. Our sacred trust is to maintain the knowledge and the spirit of the *Original Instructions* so that we retain our right to that existence. Among the most important commitments is that our Mother Earth is an essential part of that sovereignty. It is where we came from and where we will return. What we do to Her, we do to ourselves.

Adapted from Regis Pecos, New Mexico Leadership Institute

The Pueblo people have lived in this region for thousands of years. Our ancestral lands are among the most spectacular ancient sites in the world. Regional Pueblo art and culture exist extensively in the surrounding landscapes. Many significant sites throughout the landscape exist within or close to national parks and monuments and regional historic sites. Pueblo art and culture have endured many devastating periods of time but continue in time-honored ways given to us by our elders and ancestors. Along with the significance of arts and culture to our communities, Pueblo people have shared these important aspects with growing numbers of supporters and benefactors—sometimes to our benefit, sometimes not. Between 1897 and 1904, Indian arts and crafts increased in sales as objects moved into the arena of "collectables," both locally and internationally. Handmade arts and crafts from indigenous communities became a huge fascination.

In contrast and during the same era, many Native youth were taken from their homelands, communities, cultures and families to enter the Indian boarding school system. In New Mexico, students attended the Albuquerque Indian Boarding School beginning in 1881, and the Santa Fe Indian Boarding School that began in 1890. The mission of the schools was an attempt to assimilate these young people into the mainstream culture. At these schools, they were often stripped of their language, ceremonies, culture, with on-going attempts to remove them from all tribal and familial influences. They entered a place that was foreign in every way to their lives back home. They were punished for being Indian, for speaking their languages, and singing their songs. As these young Native students missed their families and homes they used their art as a spiritual outlet that connected them to their homes and cultures. Art was a necessary connection to the only life, community, and landscapes they knew and loved.

During this time, New Mexico was growing rapidly, especially with the growth of its two major cities. Between 1821 and 1880, commercial highways were expanding to connect Albuquerque and Santa Fe. The railroad arrived in Albuquerque in 1880. Additionally, major events during this era impacted native communities including the 1883 Religious Crime Code that forbade indigenous people from practicing any religion not approved by the white man, the ratification of the Dawes Act in 1887, and the Antiquities Act followed in 1906. The 1924 Indian Citizenship Act granted hundreds of thousands of Native people American citizenship. Other events would also prove to be momentous. The Fred Harvey Indian Museum opened in 1908, and by 1917, car travel expanded significantly in New Mexico; and Congress passed the Federal Highways Act in 1926. In 1912, New Mexico gained statehood status and growth mimicked much of the westward expansion of the era. The Federal Highway Act brought US Highways 66 and 85 to the state and the Kimo Theatre opened in 1927. In Albuquerque, the First American Pageant was held from 1928-1930, rivaling the Gallup Intertribal Ceremonials; and TWA began air travel to the area in 1930. New Mexico, along with the rest of the country, was devastated by the Great Depression in 1932.

During 1933-1943, the Public Works Arts Project (PWAP) was established by President Roosevelt with several of the Pueblo tribes of New Mexico participating in federally sponsored art projects. Pueblo artists participating included painters, potters, and sculptors. Many of the Pueblo artists participating in this program remain unrecognized for their talent, skillfulness, and the incredible art work produced. Very few studies focus on the art and crafts of Native People and/or Pueblo artists produced during the New Deal.

In New Mexico there can be counted as least 45 Native American artists who benefited from these projects. Of these, 22-25 are Pueblo artists. Many of these artists began as students at the Santa Fe and Albuquerque Indian Boarding Schools. During this time, there was a high priority for implementing changes in Indian Education. By the 1930's, the Bureau of Indian Affairs and All Indian Pueblo Council assisted with eliminating marching and other military-style activities, supported allowing Pueblo students to speak their languages, and allowed students to return home to participate in seasonal Pueblo ceremonies.

At the Santa Fe and Albuquerque Indian Boarding School at least half the staff was Native American. Instructors included Navajo weavers and jewelers and Pueblo potters, painters and woodworkers. Buildings were built specifically for arts and crafts classes. This gave students an opportunity to create in many mediums of traditional arts. Many of the New Deal artists were themselves instructors and/or students from the local boarding schools. However, it was the Santa Fe Indian School that grew into an institution that fostered both traditional and innovative Native arts, and from where many of the more recognized artists emerged.

The government Indian arts and crafts effort was implemented through the Public Works Art Project in

1933, through a grant from the Civil Works Administration to the Treasury Department. This grant provided for the establishment of regional committees to create many projects that engaged unemployed artists to decorate public buildings with depictions that reflected the imagery of localized populations. Native students painted murals, produced museum quality rugs, and made pottery for new Indian schools, hospitals, federal, state and municipal buildings, and community centers. Most of these public buildings were under construction through Public Works Administration programs.

In New Mexico, 13 murals and 46 watercolors were produced in a six-month period by eight native artists. These artists included Velino Shije Herrera, Zia Pueblo; Emiliano Abeyta, Ohkay Owingeh Pueblo; Tonita Peña, San Ildefonso Pueblo; Tony Archuleta, Taos Pueblo; Calvin Tyndall, Omaha; Jack Hokeah, Kiowa; Santa Fe Indian School students Pablita Velarde, Santa Clara Pueblo and Andy Tsihnahjinnie, Navajo. Two additional Pueblo artists, Alma Chosa, Jemez Pueblo; and Miriam Marmon, Laguna Pueblo, worked as illustrators to copy and record two hundred designs. Six Pueblo potters including Maria and Julian Martinez, San Ildefonso Pueblo; Lela and Evangelio Gutrierrez, Eulogio Naranjo, Santa Clara Pueblo; and Agapino Quintina, Cochiti Pueblo, crafted 62 pots. Many of these federal project artists were showcased at the Corcoran Gallery of Art in Washington, DC. Two-thirds of the artwork shown there was produced by Native artists from New Mexico. The exposure of our talented Native artists at a national level brought new attention and awareness of the rich heritage and talent within Native American Culture.

Two Pueblo women, artist Tonita Peña (employed under PWAP as a visiting muralist), and Pablita Velarde (a student), both worked at the Santa Fe Indian School. Tonita was the first Pueblo woman painter to innovatively push boundaries of the traditional roles of Pueblo women to gain independent recognition as a painter. Tonita was Pablita's mentor and friend and, as Pueblo women, they shared an understanding of being Pueblo women who inspired each other to overcome the tremendous challenges during a difficult time for Pueblo women artists.

During 1939-1945 Pablita Velarde had an opportunity to continue her painting through funding from the WPA – Works Progress Administration – for Bandelier National Monument, an ancestral site in the northern Pueblo tribes region. With extensive research and interviews conducted with Pueblo elders, Pablita learned of her historical past, life ways, and the important seasonal ceremonies. She executed a series of 84 paintings for the Bandelier National Monument Museum. This commission greatly spread her fame and supported her independence as an artist. She was well known for images that provide a glimpse into Pueblo sensibilities and daily life. Her style is elegant in composition, with intensely observed details of design and historical accuracy. Throughout her life, Pablita continued to paint depicting her Pueblo cultural heritage and symbolic imagery in techniques of traditional earth pigments and materials. She raised one daughter, Helen Hardin, and one granddaughter, Margarete Bagshaw. Both became artists and brought innovative inspiration to many young Native and Pueblo women and artists in Indian Country.

Artist, instructor, muralist and family man Velino Shije Hererra, *Ma Pa Wi* of Zia Pueblo, was a student of the Santa Fe Indian Boarding School. *Ma Pa Wi* was a self-taught artist who became an important professional painter and later taught at the Albuquerque Indian School. In 1932 he gained national recognition as a professional artist with the opening of his own studio in Santa Fe. During 1939 New Deal WPA – sponsored art projects, he accepted a commission to paint a series of nine murals for the Department of Interior Building in Washington, DC.

Ma-Pa-Wi was a very prolific artist during his career. In 1940, under another WPA project, he worked at the Coronado Historical Monument, an ancestral site for southern Pueblo tribes. His challenge was unique, as he was the only WPA-era fresco artist challenged to paint a project over an adobe substrate in a subterranean structure. The discovered kiva of Kuaua Pueblo had the original fresco murals painted with natural pigments on dry mud plaster on adobe walls. This fresco was created by artists during or preparing for a time of ceremonial purposes with spiritual seasonal balance.

In 1942, *Ma-Pe-Wi* painted fabulous murals on the interior bunkhouse walls at the Pritzlaff Ranch in San Ignacio, New Mexico. Richard Pritzlaff was an art collector of Chinese and Southwest Native American art. These paintings have recently been considered as historically and culturally important both because of the content, representations, and images.

Ma-Pe-Wi, Pablita Velarde and many of the Pueblo artists working for the New Deal were definitely artists before their time, pushing boundaries and incorporating innovative techniques for a unique purpose and economic survival. These Native artists depicted images

and works of art that were more than just craft work. There was a broader theme linking ritual practice to a way of life that was especially important in its relationship to the land, seasons, and all living beings. The understanding of the ecological relationship expressed through highly detailed graphics of each their work is reflected in the colors and symbolism of representation. It is the balance composed of contrasting parts as life as it cannot exist without death, or day without night. The living respect given to the land, waters, and all elements that nurture and surrounds us are constant remembers that we are the keepers of Our Mother Earth. These artists remind us of our core values and their work guides our everyday journeys.

Preserving the Denali Park Road: Ninety Years of Challenge and Perseverance

Frank Norris, National Trails Intermountain Region, National Park Service, Santa Fe, New Mexico

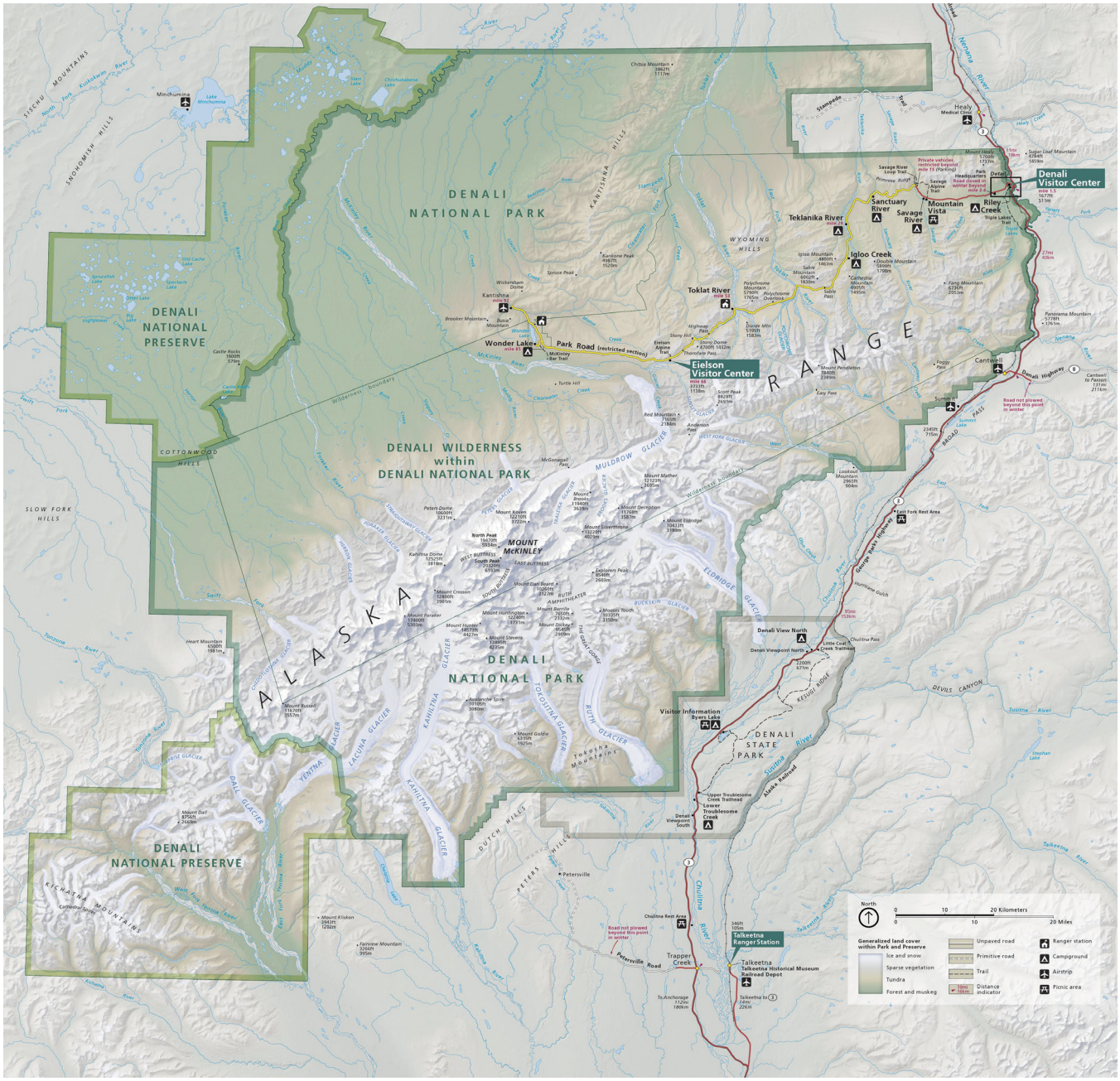


Figure 1. Denali National Park and Preserve – boundaries since 1980. National Park Service

Abstract

Almost a century ago, Congress established Mount McKinley National Park, and by the early 1920s work began on the park's main road. This road was consciously built as a scenic, low-speed road, one that would allow—according to NPS official Arno Cammerer—"the visitor going over the road the best possible views and vistas of the country, avoiding a straight line in road location."

Until World War II, the park typically attracted fewer than a thousand visitors per year, but the completion of the Denali Highway in 1957 and the Parks Highway in 1971 caused dramatic increases in tourism. By the late 1970s, the annual visitation total exceeded 200,000. Today, visitors travel to see the park's wonders – chief among them are views of the area's remarkable wildlife and the continent's tallest mountain, all seen from the park road.

In order to protect the park's resources, park managers allowed limited streamlining of the road during the 1950s and early 1960s. However, fearing a loss of the road's character, the agency engaged in a series of innovative measures that included the closure of most of the park road to tourist automobiles. This helped to retain the rustic character of the park road's design features while simultaneously ensuring access for, and a safe travel experience to, the swelling visitor population. In recent years, decisions over road access into the park (now called Denali National Park and Preserve) consistently cause friction between NPS officials and outside development advocates. Major portions of the road, however, still largely follow the philosophical guidelines laid out during the 1920s by Cammerer and other NPS officials. For that reason, visitors can still enjoy viewing the park's wildlife much as their forebears did many years earlier.

Introduction

Denali National Park and Preserve is one of the largest units in the National Park System. The entire unit encompasses about 6.1 million acres; 4.7 million acres are national park lands, with the remainder being a national preserve, where sport hunting is allowed. It is Alaska's oldest national park, and it's a major tourist draw. Access to the park unit is almost entirely dependent on a single, 90-mile ribbon of road that is still mostly gravel. That road, designed by the National Park Service (NPS) during the early 1920s, initially provided park access to a few hundred, perhaps a thousand visitors per year. In recent years, however, more than 500 times that number use the road annually. Given that explosion in visitation, it is perhaps not surprising that arguments over the park road and its design have been central to the primary purposes for which the park was established.

In 2015, Denali attracted perhaps 560,000 recreational visitors.[1] A scattered few headed out into the park's

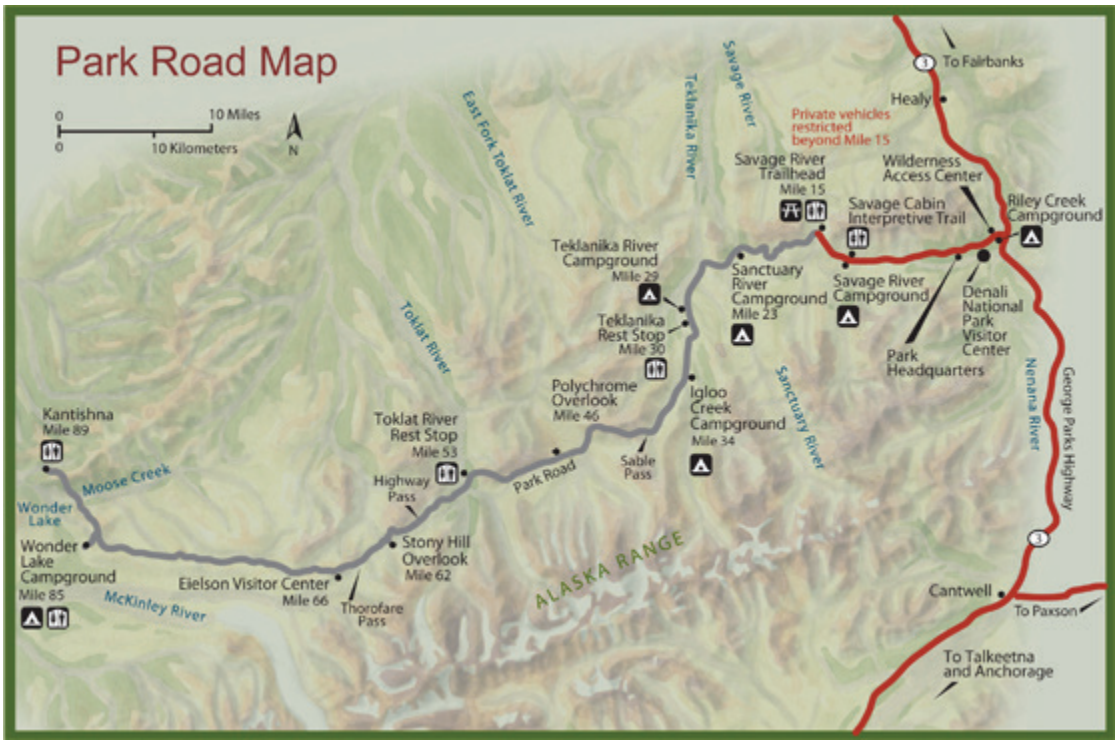


Figure 2. The Denali Park Road, 90 miles from Parks Highway to Kantishna. National Park Service

backcountry on hiking and trips. More than a thousand people each year try climbing Mount McKinley or other nearby peaks. And a number of local residents hop on a snowmachine or dogsled to take advantage of the park's subsistence hunting opportunities. The vast majority, however, arrive at the park's eastern entrance via either the Alaska Railroad or the Parks Highway. They then board either a tour bus or shuttle bus and head down the 90-mile-long park road with two basic goals in mind: first, they want to see the park's five best-known wildlife species (mountain sheep, caribou, grizzly bear, moose, and wolf), and second, they seek close-up views of Denali, or Mount McKinley,[2] along with the surrounding wilderness landscapes.

Historical Background

Less than a century ago, however, the area that is within the park was largely uninhibited by either native peoples or non-natives, and virtually no tourists visited this vast area.[3] In February 1917, when President Woodrow Wilson signed Mount McKinley National Park into law, the remarkable wildlife populations were the primary residents of the area and the reason Congress established the park, along with the great mountain wilderness character.[4] The railroad did not arrive until the fall of 1921, and a highway connected the park much, much later. NPS officials, hoping to develop the park, proceeded with an essentially blank slate.

The park's first employee was Supt. Harry Karstens, who arrived at the east end of the park in the summer of 1921, just before the railroad arrived.[5] Within weeks of his arrival, Karstens told his superiors in Washington that an all-weather road heading west from the railroad into the park was one of the park's top priorities.[6] The Alaska Road Commission (ARC), which was an arm of the U.S. War Department, was the territory's designated road-building agency, and even before the park was established, the commission had marked off a winter sled road to the Kantishna mining camp, 90 miles west of the railroad right-of-way. When NPS officials indicated an interest in a park road, ARC engineers responded by recommending a direct and cheaply-built road between the railroad and Kantishna along the park's northern boundary. This route offered only scattered views of the Alaska Range peaks.[7] Karstens, however, envisioned a road that would bisect the park and terminate at Peters Glacier, near the base of Mount McKinley, where he hoped that a lodge, typical of the national parks being established at that time, might be built.[8] In a letter to his superiors in Washington, Karstens called his proposed road "a natural and interesting route for a purely park road." The NPS, by this time, made it known that they would be willing to share in the road's construction cost if the ARC could supply the labor and equipment.[9] Working together, the two agency heads – General James Steese of the ARC, and NPS Director Stephen Mather – arrived at a pragmatic compromise. The ARC chief agreed with Karstens' vision to build the scenic road through the center of the park in order to maximize views of both wildlife and the majestic Alaska Range, while the NPS chief agreed to move the west end of the park road from the base of Mt. McKinley north to Kantishna. In this location, the road, serve mining activities as well as tourists. Under the joint plan, ARC surveyors laid out the park road in 1922, and construction began a year later.[10]

During the early 1920s, the NPS had definite ideas on how roads should be designed and built in its national parks. Acting Director Arno Cammerer explained the agency's road-building philosophy in a letter to ARC engineers, hoping to thus influence the commission's construction crews out in the field. Traveling on a park road, Cammerer wrote, should

> allow the visitor… the best possible views and vistas of the country, avoiding a straight line in road location and consequent cutting through hillside and forest growth merely to constitute it the shortest way between two points. [We believe] that the easy-curved roadways are particularly charming and pleasing in national park work. [We also ask that] care … be taken in clearing for the roadbed by protecting the trees and shrubbery, springs, or beautiful rock formations; it is often possible, by switching the line of the road a few feet, to preserve the particularly interesting bits of shrubbery, a spring, or even rock formations.[11]

Under the Park Service's guidance, ARC crews built an all-weather gravel road west from the Alaska Railroad into the park – sometimes following Karstens' suggested route, and at other times slightly altering that route.[12] Funds to build the road were perpetually tight – they seldom exceeded $100,000 per year – so the road was built in a series of phases, representing a few miles each year. At that slow rate, the road did not reach Kantishna until 1938.[13] The constructed road was 20 feet wide,

with no shoulders along the first 53 miles (from the railroad to the Toklat River bridge), and then narrowing to just 16 feet wide from the Toklat River to Kantishna. Throughout the 15-year construction period virtually everyone—territorial officials, the NPS bureaucracy, and Kantishna miners—supported the construction of the road—and this same group, could not see the road's construction as an ecological threat because the Alaska Territory at this time, hosted fewer than 30,000 tourists each summer.[14] Mount McKinley National Park, located 150 miles away from the nearest steamship port, was a secondary destination for visitors, so park visitation never exceeded 1,500 people per season.[15] The new road's only traffic during this period, consisted of occasional concessioner-run tour buses, an NPS patrol vehicle, and a smattering of mining trucks.[16]

In 1939, in a move to improve visitation, the federal government opened the 98-room McKinley Park Hotel near the railroad station and got the desired results.[17] In April 1943, the U.S. Army took over the hotel as a military rest-and-recreation site and for the next two years approximately 500 soldiers a month visited the park.[18] Following WWII, civilian tourists returned to the park and during the late 1940s and early 1950s the park visitation increased to 8,000 visitors per year.[19] What really stimulated visitation, however, was the Alaska Road Commission's decision to construct a 150-mile-long highway to connect the park road to the Territory's contiguous road network. Called the Denali Highway, this road was completed in August 1957. As predicted, park visitation increased dramatically. In both 1958 and 1959, more than 25,000 visitors entered Mount McKinley National Park, many of whom arrived by personal vehicle and stayed over at one of the park campgrounds. The era of "rubber-tired tourism" began.[20]

Throughout the postwar period, the condition of the 90-mile-long park road continued to be the same ribbon of gravel completed by the ARC in 1938. The only changes, in fact, had been a series of bridge replacements and a short segment of widened road west of the Toklat River. But as one NPS official said, the road by the mid-1950s had become a "sub-standard gravel road of a type that is not desirable as the main park road."[21] Given the dramatic increase of new automobile traffic arriving by the Denali Highway, the NPS recognized the need for park road improvements.

Competing Visions for Park Development

The NPS's Mission 66 program was a 10-year federally-funded program proposed in 1956 and approved in 1957 to address the post-war visitation boom to national parks and the downgraded park conditions following years of neglect. Mission 66 called for the park road to be realigned, widened, and paved, along with the addition of guard rails and other safety features. Based on those plans, the NPS authorized the Bureau of Public Roads—successor to the Alaska Road Commission on Alaska became a state in 1959—to start a program to widen the park road from 20 feet to 26 feet.[22] Not everyone, however, welcomed the "improvements." As early as the fall of 1956, park biologist Adolph Murie, citing the "purity of wilderness atmosphere" in the park, openly questioned the need for road improvements and accompanying developments; as he noted in an impassioned letter to the park superintendent, "the wilderness standards in McKinley must be maintained on a higher level than anything we have attempted in the States."[23]

A key element in the NPS Mission 66 plans for the park was the Eielson Visitor Center at Mile 66, a location that planners and architects proposed because the location – on clear days – offered dramatic views of Mount McKinley. However, conservationists, upon seeing the center in its early construction phase, were horrified; they argued that it did not blend into the tundra landscape, and they derided it as "monstrosity" and a "Dairy Queen." Despite those protests, the visitor center was completed in July 1961.[24]

Meanwhile, the Bureau of Public Roads undertook another major project proposed in the park's Mission 66 plans by widening and improving the park road. Construction began in 1958 near the park hotel and was extended a few miles west each year. By 1962, crews had widened and improved the park road out to Mile 26, which was about five miles shy of the Teklanika River.[25] The road improvement program, like the new visitor center, incurred the wrath of conservationists. As early as the fall of 1959, Adolph's brother Olaus Murie, who was a National Parks Association board member, warned that "the national park will not serve its purpose if we encourage the visitor to hurry as fast as possible for a mere glimpse of scenery from a car, and a few snapshots." But the agency's regional director, Lawrence Merriam, "concluded that the road must be widened to minimum safety standards" as far as Eielson Visitor Center. And in Washington D. C., Assistant Director A. Clark Stratton agreed with Merriam; in a 1962 letter, he



Figure 3. Olaus Murie (left) and Adolph Murie, at Mount McKinley National Park, 1961. pbs.org

stated that "we have been forced … by increased use to improve the substandard existing park road to make it safe for today's travel needs."[26]

Murie and his fellow conservationists were not pleased by the Park's response, so in the spring of 1963 *National Parks Magazine* published an entire issue devoted to Mount McKinley. In several short articles, conservationists criticized the new "speedway" that encouraged visitors to "get in and get out fast," and they further stated that they were violating the park's planning guidelines, which called on visitors to "savor their park and get full enjoyment and inspiration."[27] These messages apparently made an impression because Stratton, in June 1963, reversed his recommendations from a year earlier. He wrote to Director Conrad Wirth and suggested that the agency adopt "telescoping standards" for the road: 26 miles of a 20-foot roadway with 3-foot shoulders, 40 additional miles of a 20-foot roadway with "minimum shoulders" that would be anywhere from nothing to three feet wide; and the final 18 miles receiving no new improvements.[28]

Director Wirth ignored Stratton's letter. In June 1964 and again in August 1965, the NPS tendered contracts to Fairbanks firms to improve and widen five additional miles of road, from Mile 26 to the Teklanika River Bridge. This work would be carried out in the spring and summer of 1966. Meanwhile, the Bureau of Public Roads was pressuring the NPS to take on even more construction. The BPR stated that the next 12 miles of road – from the Teklanika River out to the Toklat River's East Fork - was currently "unsafe for general public use," so it recommended a $1.2 million construction job. NPS officials agreed, stating that the job was a Priority 1 request.[29]

Conservationists refused to give up. Adolph Murie, just retired from federal service, wrote a pointed article about the controversy in the July 1965 issue of *National Parks Magazine*. Given his 20-plus years of experience at the park, Murie stated that most visitors liked the

"charm" of the old road, and noted that many observers—including a few BPR officials—felt that overzealous engineering standards had been applied to the recent widening of the park road. He urged his readership to register their protests with NPS officials; otherwise, he warned, roadbuilding advocates would push to widen the park road almost all the way to Kantishna.[30]

A Nod to Conservation

Murie's article hit home. Conservationists reacted by sending protest letters, and in response, NPS officials at both the regional and national levels backpedaled away from their previous positions. By the end of September 1965, a new policy emerged. In a long letter, Assistant NPS Director Johannes Jensen ardently defended the NPS's past actions and stated that it had long been the agency's goal to provide road access "with as little impact on the natural scene as possible," and that "conditions of permafrost" had demanded improvements to portions of the old right-of-way. For the future, however, the agency's actions would more closely adhere to Clark Stratton's 1963 advice that supported "telescoping standards" for the road. Jensen stated that "it is our intention to use progressively lower standards the farther the road penetrates into the wilderness. Beyond [the Teklanika River Bridge], the remainder of the road is to receive only minor repairs."[31]

Conservationists had clearly won a victory. It remained to be seen, however, if it would last, because a new threat was on the horizon. Ever since Alaska had gained statehood in 1959, officials from the new state had let it be known that they planned to build a highway between Anchorage and Fairbanks. That highway, moreover, would go through the east end of the park.[32] Upon hearing of the new road, conservationists worried that the anticipated spike in highway traffic would dramatically increase park visitation - and that, in turn, would result in new pressures for improvements to the park road. NPS officials, in response, promised that for the next few years, they would delay any new park road widening projects. Once the Anchorage-Fairbanks highway was completed, however, they would reassess the situation.[33] Conservationists were not really assured by the agency's temporary moratorium; all they could do, however was to wait until they could press for a more long-term solution. The NPS, fulfilling its 1965 promise, made no further improvements to the park road until October 1971 upon completion of the Anchorage-Fairbanks Highway.[34]

In January 1972, NPS Director George Hartzog startled nearly everyone when he laid out the agency's plans for the park in a *U.S. News and World Report* interview. The Wilderness Act had passed in 1964 partly in response to Mission 66 and the unprecedented road and other construction projects that impacted a number of



Figure 4. Concessioner's tour bus (DENA Museum Collection)



Figure 5. NPS-managed shuttle bus (DENA 11439)

big western parks, and it was a new day for conservation of NPS back country. The park road through Denali, he stated, would not be improved to accommodate automobile traffic; instead, the agency planned to manage the new wave of visitors by closing the road to private vehicles and by instituting a free shuttle bus system—similar to one that had recently been implemented at Yosemite. Buses would take visitors from the eastern entrance to various points along the park road.[35] After hearing Hartzog's announcement, some Alaskans lashed out against the new system, because for the past 15 years, they had enjoyed unlimited access to the park road and wanted to keep it that way. Many others, however, recognized that without major changes, the traffic levels promised by the new highway would overwhelm the park road and destroy the park's wildlife viewing opportunities.[36] The shuttle system was implemented on June 1, 1972, and the agency-operated buses, along with concessioner-operated tour buses, became the primary ways by which visitors saw the wonders of Mount McKinley National Park.[37]

Eight years after the implementation of the park's shuttle-bus system, the Alaska National Interest Lands Conservation Act became law, and Mount McKinley National Park tripled in size and became Denali National Park and Preserve.[38] That action, however, had virtually no impact on how visitors accessed the park. Today, NPS officials operate essentially the same bus-dependent system initiated in 1972. Today, the agency recognizes, now more than ever, that providing public access to the park via its one road corridor will be a continuing management challenge. However, the existing shuttle system, compared with any alternatives considered to date, appears to provide a healthy balance between visitor access and ecological integrity.

The park road, moreover, is an enduring survivor from an earlier park development era. Viewed by some as quaint or rustic, the road's design features – plus the reliance on bus transportation – ensure that today's visitors see the park's wildlife and wilderness scenery at a moderate, easygoing pace. The appearance of the 90-year-old road, however, is not the product of mere happenstance. Instead, it is the product of a small if spirited band of advocates who protested the agency's road improvement plans a decade between the mid-1950s and 60s, and an NPS director who recognized that increasing traffic levels might well jeopardize the values for which the park was established.

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Perpetuating the Thrill of the Old-Time Road: A Historical Perspective on Park Road Preservation

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Figure 1. The Zigzag on Yosemite's Big Oak Flat Road (photograph by Julius Boysen, 1903: Yosemite National Park)

Park road preservation is one of the most contentious issues facing National Park Service (NPS) cultural resource managers today. From Glacier and Yellowstone to Antietam, Blue Ridge Parkway and myriad other units, historical values have been threatened by calls to upgrade old roads to new standards. Most of these efforts are well-intentioned attempts to make roads safer and more efficient by easing curves, widening roadbeds, and constructing stronger and longer guardwalls. While these standard engineering solutions may be appropriate in many non-park situations, they can compromise the scenic beauty and historical integrity of national park roads designed in different eras and for different purposes than utilitarian highways. Disagreements over the degree to which park roads should be upgraded to conform to conventional engineering standards have created conflicts between NPS personnel, federal engineers, and stakeholders ranging from environmentalists and historic preservationists to gateway communities and other tourism interests. Given the important role

roads play in shaping the visitor's experience and influencing the broader course of park development, discussions about appropriate levels of improvement are not just technical calibrations or bureaucratic ratiocinations but debates about the nature and purpose of national parks. This presentation will trace the rising interest in historic road preservation over the past few decades, highlighting key projects such as the rehabilitation of Yellowstone's Grand Loop and Glacier's Going-to-the-Sun Road. It will also explore the roots of national park road preservation, demonstrating that efforts to commemorate and conserve park roads began much earlier than is generally known and played a vital role in some of the most significant episodes in NPS history.[1]

It is necessary to expand one's perception of historic preservation in order to appreciate these early iterations, since they did not involve self-identified preservationists or invoke current terms and concepts. Throughout most of national park history, concerns about preserving the historic qualities of park roads were expressed by landscape architects, park superintendents, environmental advocates, and, yes, even engineers. The current emphasis on cataloguing and curating individual features was also absent. With notable exceptions, those who we might now categorize as preservationists spoke in more general terms about the need to minimize the visual impact of construction and preserve the unique character of the park road experience, which was predicated on the leisurely enjoyment of natural scenery with minimal evidence of human intrusion. Many policy directives and design practices cited as evidence of the NPS's embrace of landscape architecture could just as easily be seen as efforts to retain the historical character of reconstructed roads and ensure that new roads conformed to historical ideals. Mid-twentieth-century defenders of historic roads often looked beyond the immediate physical impact of engineering upgrades to decry their broader consequences, contending that improved access would transform formerly sacrosanct precincts into the over-crowded resorts they sought to escape. For them, preserving the historic qualities of park road was a means of holding the Park Service to its congressionally mandated mission of maintaining an appropriate balance between preservation and access. Combined with the growing emphasis on ecologically based management, this perspective produced an antipathy toward park roads that held sway until resurgent appreciation for the historical and experiential qualities of national park roads gave rise to an increasingly powerful preservation movement in the 1980s and 1990s.

While the scope and sophistication of recent efforts might give the impression that reverence for park roads is a new phenomenon, the recognition that park roads were historical achievements possessing unique qualities worthy of commemoration and preservation is almost as old as the national park idea itself. Pioneering Yellowstone superintendent Nathaniel Langford and noted landscape architect Frederic Law Olmsted emphasized the importance of roads in making national parks fulfill their designated function. While Olmsted's injunction to preserve Yosemite's scenery is cited ad infinitum, he was equally adamant about the need for better access. Without improving the dismal stage roads to the valley rim and extending them down into the heart of the park, he maintained, visitors would be too exhausted to benefit from the uplifting exposure to Yosemite's majestic scenery. Langford was equally adamant. Having created the park "For the benefit and enjoyment of the people," as the enabling legislation enjoined, the federal government was obligated to ensure that the public could experience its unique features with a reasonable degree of safety and comfort. Railroad companies and others who sought to reap the financial rewards of park creation also clamored for improvements, as did the slowly growing stream of tourists who braved dangerous bridle paths and other trying conditions to visit these remote wonderlands.[2]

Progress came slowly, hampered by meager funding, challenging conditions, and primitive technology. Since the National Park Service did not exist until 1916, the first national park roads were constructed by private entrepreneurs and the U.S. Army Corps of Engineers. Construction crews labored with picks, shovels, and horse-drawn equipment to carve rudimentary roadbeds out of steep mountainsides. Black powder was used to blast away the worst obstacles, but road builders followed the dictates of the terrain, zigzagging up treacherous slopes with dramatic switchbacks and hazardous hairpin turns. Despite these challenges, park road builders accomplished impressive feats. In Yellowstone, the Army Corps of Engineers constructed several entrance roads and completed a circuit linking the park's major features. Between 1883 and 1905, the engineers built or improved approximately 300 miles of roadway along with several impressive bridges. In Yosemite, which was initially administered by the State of California, private toll road companies provided the first vehicular access. During the 1870s, rival concerns from outlying communities constructed stage roads that

replaced the hazardous trails leading to the valley floor. The completion of these roadways was greeted with grand celebrations replete with brass bands, fireworks, lofty perorations, and ample libations. Along with improving access, these roads afforded impressive examples of road-building expertise, such as the Big Oak Flat Road's Zigzag turn, which embodied contemporary enthusiasm for the union of the natural and technological sublime. At Mount Rainier, the Army Corps of Engineers built the Nisqually Road between 1901 and 1910, upgrading an existing private toll route and extending it to the alluring meadows of Paradise Valley. The Corps also constructed some of the first roads at Crater Lake National Park and assumed control of road building in Yosemite Valley. Not only did these roads provide access to America's western wonderlands, but they established precedents for the development, use, and public perception of national parks that influenced National Park Service policies throughout the twentieth century and continue to resonate today.[3] (See Figure 1 on page 59)

Long before the first automobile chugged and wheezed its way into Yosemite's vaunted valley, these minimalistic wagon tracks had firmly established the expectation that the national park experience was primarily a park road experience, where vehicular travel through attractive scenery was punctuated by pauses at signature attractions and iconic vistas, such as Yosemite's Inspiration Point, where tourists got their first glimpse of the monumental valley. While this notion might offend latter-day critics, nineteenth-century visitors would have expected nothing less, given the dominant role roads played in municipal parks and the enjoyment of eastern tourist destinations. Not only did Yellowstone's Grand Loop exemplify the adaptation of traditional park development to the national park setting, but the identification of the park with its transportation infrastructure was so strong that roads and stagecoaches vied with geysers and bears as icons of the park experience. As primitive trails and crude lodgings gave way to graded roads and elaborate hotels, the stagecoach tour was celebrated as an attraction in its own right. Writers recounted the trip in elaborate detail, regaling readers with the rigors and rewards of stagecoach travel and calling attention to notable feats of road construction, such as the "glass road" at Obsidian Cliff, where early Yellowstone superintendent Philetus Norris cleared a path through the impenetrable outcrop by heating it with bonfires then dashing it with cold water so that it fractured into pieces small enough to remove by hand. Images of the glass road and other engineering achievements appeared on a wide range of tourist souvenirs such as the stereo-views, spoons, and ceramics visitors purchased to preserve their park memories. Charismatic structures such as the monumental entrance arch at Gardiner, Montana, the elegant Chittenden Bridge, and the Golden Gate Viaduct were the most widely celebrated features but depictions of particularly attractive or imposing alignments appeared as well. Characterizing this sort of graphic memorialization as preservation might seem like a stretch, but by establishing a tradition of veneration and canonizing key features it laid the groundwork for subsequent preservation efforts.[4]

The Golden Gate Viaduct generated what might be considered the first clash between engineering standards and preservation sentiments. In 1884 construction forces under the leadership of Lieutenant Daniel Kingman encountered an imposing cliff at the crux of the climb through a dramatic cleft known as the Golden Gate. Since blasting a passage across the rock face would have been inordinately expensive and produce an egregious scar, Kingman constructed a wooden trestle supporting a 16-foot-wide plank deck. At the lower end, workmen discovered a stone pillar split off from the main outcrop. Kingman's pragmatic advice was to send it crashing into the canyon, but Yellowstone's assistant superintendent argued that tourists would enjoy the picturesque feature. A narrow passageway was excavated to provide a seemingly natural gateway just wide enough for one coach to pass. Even at stagecoach speeds the stone stub posed a clear danger, but tourists and guidebook writers quickly adopted it as a signature element of the Yellowstone tour, rhapsodizing about the unique combination of natural and manmade attractions.[5]

As stagecoach traffic became heavier and tourists somewhat less adventurous, Kingman's successor Hiram Chittenden faced a similar dilemma. Noting that the trestle remained structurally sound but that its precarious appearance generated what he diplomatically described as "uneasiness and concern among the traveling public," Chittenden set about replacing it with a wider and more substantial concrete viaduct. Questions immediately arose about the fate of the stone column, which was now not just a picturesque embellishment but a celebrated aspect of the Yellowstone experience – a cultural resource, in today's terminology. With the wider roadbed and altered grade, the obstructive pillar was an even greater affront to engineering expectations. Chittenden initially insisted that safety and efficiency



Figure 2. Golden Gate Viaduct, original version, Yellowstone National Park (vintage postcard: author)

should trump "sentimentalism," but park photographer F. J. Haynes convinced him that the public would lament the landmark's loss. Preserving the pillar was an engineering achievement in its own right. The 23-ton monolith was jacked up 6 feet to meet the new grade and shifted 6 feet sideways, where it rested on a stout concrete column. These efforts were carefully concealed so tourists could continue to marvel at the propitious location of this "natural" gateway. Similar sleights of hand occurred when the structure was widened and strengthened in 1933 and again in 1977, by which time the pillar was so firmly ensconced in Yellowstone lore and legend that there were no questions about its preservation.[6]

Despite his hesitation about the Golden Gate pillar, Chittenden was an early advocate of what we would now characterize as "flexibility in highway design" and "context sensitive solutions," key concepts for contemporary preservationists. While he embraced and expanded on existing guidelines for park road development, he maintained that deviations were permissible to avoid compromising important features. His signature bridge above Yellowstone's Upper Falls fell a foot-and-half short of the reigning standards, an inconsistency he excused by the need for delicacy in the highly picturesque setting. Noting the folly of attempting to widen and straighten the road through a series of outcrops known as the Hoodoos, he insisted that stage drivers should alter their behavior instead. "It would be better to require all teams to come to a walk there," he pronounced, "than to remedy the defect by blasting out those picturesque rocks." Most visitors hailed the engineers' achievements, but as early as 1894 Chittenden noted that "an occasional crank" lamented the impact of improved roads. While they acknowledged the need to provide basic access, these critics contended that additional development would "convert the grand domain from the wild state in which nature gave it to man, to a crowded summer resort." Presaging the sentiments of many twentieth-century opponents, they insisted that the government should leave things as they were because further enhancements would attract "a horde of the idle curious whom it would be better to keep away."[7]

The advent of automobile tourism generated widespread support for the improvement of park roads. Between popular insistence on making parks accessible to automobiles and the newly formed National Park Service's belief that catering to the motoring public was both a civic duty and a means of generating support for the protection and expansion of the park system, there was no question that outdated wagon tracks would be

upgraded to accommodate America's newest national pastime. NPS leaders joined automobile clubs, tourism interests, and outraged motorists in insisting that dangerously narrow, steep, and tortuous roads be improved to promote access and enhance safety. The biggest question – how to pay for system-wide improvements --was answered in 1924, with the passage of a three-year $7.5 million funding bill, to be followed by an even more generous multi-year allotment and the munificence of Franklin Delano Roosevelt's New Deal programs.[8]

While the NPS was already renowned for its landscape architectural expertise, there was considerable question about its engineering capabilities. NPS Director Stephen Mather had doubts about the abilities of his irascible chief engineer George Goodwin and the growing scope and complexity of park road construction threw the agency's shortcomings in stark relief. Sensing an opportunity to expand his own agency's activities and influence, Bureau of Public Roads (BPR) chief Thomas MacDonald put heavy pressure on Mather to transfer engineering responsibilities to bureau personnel. While the ensuing 1926 Memorandum of Agreement has long been heralded as a model of collaboration, NPS officials had deep reservations about the partnership, many of which presaged contemporary conflicts between the two agencies. Goodwin and Horace Albright cautioned that the BPR's insistence on the rigid application of higher standards was inconsistent with the preservation of park road values. The excessive widening, grading, and straightening would destroy the charm of existing roads and the construction of new ones would cause excessive scenic damage. The BPR's decision to cut down a 400-year-old sugar pine on the approach to California's Calaveras Big Tree Grove underscored the danger and further elided the distinction between natural and historic preservation.[9]

Criticizing one of the earliest collaborative efforts, NPS landscape architect Daniel Hull characterized the BPR's attempt to upgrade Yosemite's El Portal Road as an example of "standardization run riot" and prepared a detailed photographic account of the transgression. In the narrow-minded pursuit of "a so-called better alignment," Hull protested, BPR engineers ignored NPS directives to preserve the enfolding trees and outcrops that contributed to the roadway's picturesque appeal. "The very charm the tourist seeks may be destroyed by holding too strongly to a standard specification," he admonished, insisting that park road improvements should not be governed by engineering concerns alone. In another precursor of contemporary debates, NPS officials rejected the BPR's claim that wider and straighter roads were inherently safer, noting that the supposed deficiencies of lower-standard roads forced motorists to proceed at slower speeds and the transparent danger of poorly protected precipices induced ample caution. Higher-standard roads promoted higher speeds and a misplaced sense of confidence that could lead to more serious accidents.[10]

The NPS and BPR resolved most of their differences and the period from the mid-1920s to America's entrance in World War II is generally regarded as the "Golden Age" of national park road development for the balance that was achieved in the construction or reconstruction of hundreds of miles of roadways, including such masterpieces as Skyline Drive, Glacier's Going-to-the-Sun Road, Blue Ridge Parkway, and Trail Ridge Road in Rocky Mountain National Park. While agency officials were justly proud of these accomplishments and publically presented a united front, internal documents reveal pointed conflicts over preservation issues along with expressions of regret about the impact of improvements on specific features and the park road experience in general. Two of the most significant controversies involved hallowed highlights of Yosemite's historic entrance roads. When the BPR asserted that upgrading the Wawona Road to accommodate automobile traffic would entail bypassing Inspiration Point, NPS officials mounted strenuous opposition. Albright, Chief Engineer Frank Kittredge, and other senior staff insisted on retaining the iconic view that had awed and inspired visitors since the park was founded. Efforts to find a feasible alternative failed, however, and Mather endorsed the BPR's proposal over Albright's and Kittredge's continued objections. Deciding that the specific viewpoint was not as significant as the suddenly appearing scenic panorama, the two agencies worked together to replicate the sensation by constructing a tunnel at a lower grade that culminated in a similarly striking presentation of Yosemite's stunning scenery. Having lost the battle over Inspiration Point, Kittredge fought even harder to retain the Big Oak Flat Road's historic alignment with its signature switchback and cathedral-like enfilade of towering trees. Albright and Yosemite superintendent Charles Goff were similarly appalled at the idea of sacrificing the storied approach on the altar of speed and efficiency, but landscape architect Thomas Vint endorsed the BPR's proposal to forsake the historic route in favor of a more commodious roadway through less scenic ter-

rain. Vint expressed his regret that the NPS was "gradually eliminating all the old time mountain roads" but maintained that traffic concerns and the need to protect the view from the newly created tunnel outlook mandated the change. Goff reluctantly agreed, characterizing the loss as "the penalty exacted" by the commitment to public access and warning that if utilitarian values were allowed to predominate, the NPS would be "savagely criticized not only now but throughout the years by the large and influential (and correct) elements who oppose engineering parks to death." [11]

Current National Register guidelines acknowledge the difficulty of incorporating the concept of "feeling" in historic integrity evaluations, but by the 1930s both visitors and NPS officials expressed concern that widespread improvements had reduced the romance of park travel, eliminating the sense of adventure encountered on primitive park roads. Kittredge cast his resistance to the BPR's Big Oak Flat Road as an attempt to "perpetuate the thrill of the old-time road," while Acting Director Demarary sympathized with a writer's request to leave some roads unimproved and longtime Sequoia superintendent John White shared a visitor's lament that "the old roads or least some of the advantages of the old roads in the national parks are no longer to be had." White waged a successful campaign against BPR efforts to replace Sequoia's narrow and winding Generals Highway with a wider and straighter roadway that would be easier to drive and accommodate additional traffic. White's resistance has long been cast in environmentalist terms as opposition to the idea of replacing the road's twenty-six switchbacks with a long, languorous loop extending into unsullied regions of the park, but he was motivated at least as much by the desire to preserve the roadway's unique contribution to the park experience. White acknowledged that the road was challenging to drive and appeared "like a brown ribbon" when viewed from above, but asserted that these hallmarks of pre-BPR park road design were assets rather than liabilities. "No matter how good a road we might build up the Middle Fork," he insisted, "it would be a pity to do away with the thrill that people get climbing up the switchback grade and later looking down on it." Albright initially embraced the BPR's proposal but he eventually changed his stance, adding a more overtly historical dimension to the argument. Given the seemingly inexorable march toward higher engineering standards, he observed, "The time will soon come when a



Figure 3. Generals Highway from Moro Rock, Sequoia National Park (vintage postcard: author)

road like the switchback section of the Generals Highway will be extremely unique" and predicted "People will come to the Park to travel over this road because of its interest." Employing a favorite term of its discredited designer George Goodwin, he praised it as a "spectacular" contribution to the park experience. The proliferation of postcards highlighting Generals Highway's highly visible alignment suggests that popular opinion accorded with these assessments, though the deification of Going-to-the-Sun's Road more self-effacing esthetic has delayed appreciation for its status as an exemplar of early NPS road design. White also fought to retain an iconic gateway between towering sequoia trees that was well below BPR specifications for pavement width and hazard clearance. When his successor succumbed to pressure to improve circulation, the NPS and BPR collaborated to snake a second single lane through the stand in a manner that retained the original effect.[12]

Opposition to the next great wave of road improvements during the Park Service's Mission 66 development program has also been cast in terms of natural and scenic preservation. While these motivations were clearly present, most discussions revolved around the question of how far park roads could be improved without compromising the qualities that endeared them to generations of visitors, with opponents maintaining that existing roads should be retained with little or no alteration. The Tioga Road controversy, which served as the centerpiece in the debate, exemplified these tendencies. A showdown over the putative desecration of a prominent feature known as Pywiack Dome grabbed headlines, but this flashpoint was preceded by impassioned soliloquies about the romantic appeal of the old toll road and embedded in sophisticated analyses of the impact of engineering variables on the historic toll road and the park as a whole. These ranged from detailed discussions of pavement-widths to complaints that additional improvements would exacerbate crowding in Yosemite Valley and transform little-used regions into playgrounds for mainstream motorists. Sierra Club leaders argued that the supposed deficiencies of historic roads should be retained to filter out casual tourists, who should only be allowed to proceed if they accepted the challenges and rewards of old-time park roads. NPS officials sought a middle ground, endorsing some improvements but leveraging the public furor to extract concessions from the BPR. The Mission 66 program also included an oft-overlooked form of road preservation in which historic traces were retained to serve as low-volume, low-speed "motor nature trails" that enabled motorists to experience the thrill of old-time roads under the guise of nature appreciation and cultural tourism. In the most explicit demonstration of road-related preservation to date, Mission 66 funded the relocation and restoration of Yosemite's historic covered bridge.[13]

Many of the complaints leveled at Mission 66 were amplified in the 1960s and 1970s, both within the NPS and in American society as a whole. The success of the wilderness movement, the rise of environmentalism, and growing concern about freeway construction and the automobile's impact on American lives and landscapes were not conducive to claims that historic roads should be venerated as iconic aspects of American heritage or NPS history. With prominent parks becoming ever more crowded and everyone from Secretary of the Interior Steward Udall and NPS Director George Hartzog to conservation advocates and popular writers such as Edward Abbey insisting that the NPS's embrace of the automobile had been a devil's bargain, roads were cast as sacriligious intrusions, the reduction or removal of which would serve as a cultural and ecological exorcism. Hartzog garnered considerable acclaim for prohibiting automobiles from portions of Yosemite Valley and jackhammering a parking lot scheduled for removal. Park officials boasted that the ensuing shuttle system transported 1.6 million visitors in its first year of operation -- the equivalent of 400,000 noisy and polluting private automobiles. This early venture into alternative transportation lead to a range of proposals, from electric buses to tramways, monorails, and Disneyesque people-movers. The new generation's antipathy toward traditional modes of visitation were epitomized in Yosemite's draft General Management Plan, which called for strict limitations on automobile access and dramatic reductions in the number of overnight accommodations. These controversial measures were debated for decades, pitting environmental groups and ecologically minded park personnel against the automobile-dependent public, traditional tourism interests, and gateway communities concerned such restrictions would deal a devastating blow to the park's popularity. A late-1990s iteration included graphic renditions of the purported benefits of removing roads and bridges dating from the Golden Age of park road construction, which from the environmentalist perspective were not venerable touchstones of NPS history but unwarranted intrusions that disrupted the stream flow, enabled the automotive addiction, and impeded the pursuit of primeval purity. A

much-modified version of the plan designed to balance ecological concerns with other stakeholder interests was adopted in 2014.[14]

While Hartzog railed against automobiles and gloated over the prospect of additional road closings, he presided over the development of the most preservation-friendly road development guidelines in NPS history. Recognizing that motor tourism could not be extinguished overnight, he sought to limit the construction of new roads and minimize changes to existing ones. Citing the growing gap between national park roads and mainstream highway standards, BPR officials renewed the push for systematic improvements and sought to wrest control over the decision-making process. The latter prospect prompted longtime opponents to leap to the Park Service's defense, but simmering tensions boiled over in a dispute over the Wetherill Mesa road in Mesa Verde National Park. The NPS wanted to make minor upgrades, but the BPR insisted on replacing the winding dirt road with what NPS officials decried as a "high-speed modern highway." When the BPR refused to budge, Hartzog exercised the rarely employed option of proceeding without the bureau's involvement. He also formed a committee to articulate the rationale behind NPS transportation policies and provide alternative design standards. Reflecting the contention that, as NPS spokesman William Everhart phrased it, "park roads are much too important to be left in the hands of engineers," the committee included prominent conservationists and the photographer Ansel Adams, but no one from the BPR. The ensuing recommendations were not presented as historic preservation per se, but as means of ensuring that national park roads continued to function as low-speed facilities geared toward the leisurely appreciation of natural and cultural landscapes. Echoes of previous clashes reverberated throughout the 1968 report, with encomiums to the appeal of traditional park roads and recitations of classic design precepts culminating in geometric standards that resembled the Sierra Club's Tioga Road recommendations more than the BPR's bloated dimensions. The rejection of standard engineering solutions was accompanied by assertions that the NPS was under no obligation to reconstruct roadways to accommodate increased traffic, larger vehicles, or impatient drivers. Along with calling for reduced speeds to enhance safety without physical alterations, the guidelines contained a handout urging visitors to turn back if they weren't willing to accept the conditions imposed by traditional park roads. The underlying message was that when engineering standards or visitor expectations conflicted with the preservation of park values, every effort would be made to adjust the former before contemplating changes to the latter.[15]



Figure 4. NPS Director George Hartzog initiating removal of parking lot, Yosemite National Park, ca. 1971 (National Park Service Historic Photography Collection)

Despite its visionary statements and detailed prescriptions, the effectiveness of the 1968 Park Road Standards is somewhat debatable, as Yellowstone's notorious Old Faithful flyover attests. The 1982 restructuring of the NPS-BPR (or FHWA since 1967) agreement raised further questions about the fate of national park roads. The new agreement channeled funding through the FHWA rather than NPS, which meant that when the two agencies disagreed, the FHWA rather than NPS called the shots. The ramifications of this arrangement became clear when FHWA engineers insisted on adhering to the increasingly rigorous guidelines endorsed by the American Association of State Highway and Transportation Officials (AASHTO). This created tensions not just in terms of the general aesthetic, environmental, and perceptual issues underlying previous conflicts, but in regard to the growing awareness that national park roads were historic resources worthy of preservation in their own right. This development was rooted in academic trends, popular predilections, and bureaucratic agendas. As the twentieth century drew to a close, many Americans grew nostalgic for the halcyon days of automobile culture, romanticizing the period before interstate highways exerted their homogenizing influences and environmental awareness complicated the equation. Academic interest in roads, parks, and related issues was stimulated by the broadening scope of tradi-

tional disciplines and rise of new fields like industrial archeology, landscape studies, and environmental history. On the bureaucratic front, National Register evaluations proliferated as products of the "Golden Age" of road development hit the fifty-year threshold for evaluation of historical significance. In 1983 Going-to-the-Sun Road became one of the first park tour roads to be listed on the National Register. Yellowstone embarked on ambitious study of its road system leading to multiple National Register listings in the 1990s. In 1997 Going-to-the-Sun Road became the first national park road to achieve National Historic Landmark status. The Historic American Engineering Record (HAER) received FHWA funding to conduct a multiyear project on park roads and parkways. Along with producing extensive archival documentation, the program raised awareness of the historical significance of park roads through an exhibition at the National Building Museum, a brochure series, and a portfolio of drawings published by Johns Hopkins University Press. To assist more directly with the rehabilitation of park roads, the NPS Park Historic Structures and Cultural Landscape Program developed guidelines for Cultural Landscape Reports combining historical research with treatment recommendations.[16]

Another factor in the rising awareness of historic preservation concerns was that many park roads were showing their age. Pavements and road beds were deteriorating, guard walls crumbling, drainage disintegrating, and bridges undergoing scrutiny for structural stability. Some of the damage could be attributed to inadequate maintenance budgets, but even under the best of circumstances, roads constructed during the classic era of park road development were approaching or exceeding their expected service limits. Many were subject to harsh conditions, ranging from landslides, floods, and avalanches to geologic instability and geothermal activity. Heavier vehicles and higher traffic volumes accelerated the damage, especially with the proliferation of commercial bus tours and mammoth RVs, whose size and weight created additional concerns. Not only were older guard walls designed to withstand lower impacts, but they were employed more sparingly in the early years, when motorists were expected to exercise greater discretion and liability concerns were less prevalent. Similar questions were raised about pavement width, curvature, intersection arrangements, and the distance between the road's edge and natural or man-made features. New engineering standards required greater separation or "clear zones" between motorists and potentially dangerous obstructions, including the rocky ledges and native vegetation that played important roles in establishing park road character. In some cases, guard walls and bridge abutments themselves were cast as safety hazards. The combination of deteriorating conditions, heavier traffic loads, and changing engineering guidelines created a new round of challenges.[17]

From the FHWA's perspective, the obvious solution was to rebuild outdated roads in accordance with contemporary specifications. Preservationists preferred to repair damaged features or replace them with similar dimensions, character, and materials. Conflicts ensued, but significant gains were made in resolving tensions by the end of the decade. This progress was due in part to the engineering establishment's growing willingness to explore alternative solutions to meeting safety goals. The 1997 publication *Flexibility in Highway Design* emphasized that AASHTO guidelines afforded more leeway than was generally acknowledged. The emphasis on flexibility accorded with the transportation community's endorsement of Context Sensitive Design, which called for site-specific decision-making rather than rote applications of formulaic criteria. The subsequent embrace of Context Sensitive Solutions was even more beneficial, since it advocated broadly conceived measures extending beyond basic physical design. These might include lower speed limits, one-way traffic designations, and vehicle-size restrictions as alternatives to pavement widening or curve easement. Highway engineers also became more receptive to the argument that roads that did not meet current standards were not inherently unsafe. Given the rarity of serious accidents on park roads, it made little sense to conduct massive construction campaigns to cure problems that did not exist. Problem areas shad to be identified and addressed, but wholesale improvements were unwarranted and economically unjustified, especially in an age of shrinking budgets. While couched in the contemporary rubric of risk analysis, this strategy harkened back to the recommendations of Albright, Goodwin, and Tioga Road opponents. Another preservation-oriented trend was the transportation profession's embrace of "traffic-calming" strategies aimed at inducing motorists to slow down through pavement-width restrictions and other visually prominent deterrents. This "revolutionary" planning concept had long been a fundamental tenet of park road design, not just for safety purposes but on aesthetic and philosophical grounds.[18]



Figure 5. Rehabilitated roadway, Yellowstone National Park, 1996 (author photograph)

The search for mutually agreeable alternatives was evident in attempts to resolve the long-running debate over safety barriers. The FHWA and NPS collaborated to develop stone-faced concrete-core guard walls and steel-backed timber guard rails that both echoed historical appearances and passed rigorous crash-testing procedures. Since applying stone facing was an expensive process, solid concrete models were also developed. Specially designed forms imprinted masonry patterns and the concrete was tinted in natural stone hues. Sharp-eyed observers might note that patterns were repetitive and the subtle variations of hand-laid stone replaced by machine-like precision, but few motorists were likely to discern the difference. Simulated stone was also used for culverts, retaining walls, and bridge abutments. Strict preservationists expressed reservations, but the approach was significantly cheaper and quicker than conventional masonry. This could be an important factor when dealing with short working seasons or emergency situations like the aftermath of the 1997 Yosemite flood, which destroyed hundreds of yards of guard wall on the park's busiest approach.[19]

Fittingly, one of the first national parks to undertake a collaborative road rehabilitation plan with explicit attention to historic preservation was Yellowstone. Due to its age and popularity, Yellowstone exemplified the challenge of adapting historic roads to modern demands. By 1988 the FHWA deemed less than a third of the park's roads to be in acceptable condition. Although it would have been possible to reconstruct the roads with minor changes in width and alignment, park officials endorsed the FHWA's assessment that comprehensive improvements were necessary. At the same time, they emphasized the importance of retaining historic character. In 1992 the NPS, the FHWA, and the Wyoming State Historic Preservation Office developed a programmatic agreement aimed at improving safety and efficiency without compromising historical values. While pavements and clear zones were widened and curves and grades reduced, the NPS and FHWA went to great lengths to preserve or reconstruct individual structures such as bridges, guard walls, and culvert headwalls. Simulated stone was often used when the originals were beyond repair or additions mandated by safety requirements or new excavation. Traditional masonry was restricted to areas where visitors came close enough to notice the difference. Some preservationists, landscape architects, and engineers believed the changes compromised the roads' historic character and encouraged speeds that were incompatible with park values, but state and national preservation authorities concurred with the park's assessment that the reconstruction achieved the desired results. The difference in opinion reflected divergent views about the defining characteristics of historic roads. The official position was that Yellowstone roads had changed so much throughout the course of history that they should be viewed as evolutionary elements rather than static entities. From this perspective, a well-designed contemporary park road was a more authentic embodiment of Yellowstone's heritage than a continuously evolving design frozen at an arbitrary point in time. Skeptics continued to express reservations, but numerous segments of the project received



Figure 6. Going-to-the-Sun Road Rehabilitation, Glacier National Park, 2004 (Photograph: Glacier National Park)

FHWA design awards. A succession of superintendents endorsed the approach as essential for accommodating Yellowstone's large automobile-dependent crowds.[20]

An equally ambitious project that elicited unambiguous acclaim as an exemplary union of highway engineering and historic preservation was the rehabilitation of Glacier's Going-to-the-Sun Road. The iconic road had been subjected to rock falls, avalanches, drainage problems, and destructive freezing-and-thawing cycles since its completion in 1932. By the late 1980s inspections revealed that the retaining walls and guard walls were dangerously compromised, the slopes above and below unstable, and the pavement and roadbed in extremely poor condition. In 1990 the FHWA insisted that all historic guard walls would have to be reconstructed to AASHTO standards. An impasse ensued when NPS officials protested that the proposed changes would destroy the road's character and compromise historic views. Even the newer stone-clad concrete-core approach was considered inappropriate due to its increased height and bulk. After extensive negotiations failed to solve the problem, the FHWA and NPS created a special team to make one more attempt at finding a mutually agreeable solution. They arrived at a strategy that mimicked the historic conformation but gained strength by filling the cavities between hand-laid inner and outer stone surfaces with heavily reinforced concrete. When crash tests proved the design could withstand impacts up to 35 mph, the FHWA granted approval on the condition that the NPS post and reinforce appropriate speed limits. Since widening and straightening the road would have been inordinately expensive and environmentally destructive as well as historically untenable, vehicle-size restrictions eliminated the dangers posed by large buses and RVs. Problems with retaining walls, slope failure, and roadbed deterioration were addressed with a range of visually compatible stabilization techniques. Hand-laid stone veneer was applied to all exposed concrete surfaces. The rehabilitation took longer and was exponentially more expensive than its original construction, but the expensive and technically complex undertaking underscored the degree to which the NPS and FHWA were committed to rehabilitating the landmark roadway in a manner that reconciled safety concerns with historic preservation.[21]

The most recent challenge to historic road preservation involves climate change and other ecologically based concerns. Increasingly volatile weather patterns contributed to catastrophic flooding in Mount Rainier and Rocky Mountain National Parks that devastated park roads and cost millions of dollars to repair. Tropical Storm Sandy severely damaged roads, bridges, and multi-use trails in Gateway National Recreation Area. Rising sea levels threaten roads in coastal parks. The main road in Gulf Islands National Seashore clings to a shrinking spit of sand and is submerged by increasingly



Figure 7. Primary access road, Gulf Islands National Seashore, 2004 (Eastern Federal Lands Highway Program)

violent storms. Assateague Island's circulation system occupies a similarly precarious position. In both cases, scientifically based recommendations to abandon facilities succumbed to opposition from the visiting public and local businesses. Ecological concerns trumped historic preservation in Yellowstone, when a section of the Grand Loop Road was relocated from the Gibbon Canyon -- where Chittenden had located the road to take advantage of picturesque views -- to less environmentally sensitive higher ground, and the riverbanks restored to their natural condition. On the other hand, Yosemite's attempt to remove historic bridges was stymied when the National Trust placed the National Register-listed structures on its 2012 list of most-endangered structures.[22]

Saving old guard walls and crumbling bridges might seem like a minor concern compared to the overt imperatives of visitor safety and ecological balance. When engineers assert that outdated safety features imperil visitors or environmentalists insist roads be removed to restore riparian zones or combat climate change, it can be hard to plead the case for retaining aging masonry and archaic alignments. But park road preservation is not simply a matter of safe-guarding physical features. It's about preserving an important aspect of the national park experience. From the stagecoach era to the present, roads have determined what the majority of visitors see and how they see it, presenting natural and cultural features as carefully choreographed interludes of amusement and inspiration. Park roads have also been at the forefront of debates about the NPS's central mandate: maintaining an appropriate balance between preservation and access. Given the enormous role roads have played in shaping both the course of park development and the experiences of individual visitors, park road preservation should not be considered an antiquarian exercise or obstructionist pursuit, but an effort to ensure that current and future generations are be able to experience a significant aspect of national park history and American heritage in general.

Endnotes

1 This paper draws on observations about national park road preservation that are spread throughout the author's book *National Park Roads: A Legacy in the America Landscape* (Charlottesville: University of Virginia Press, 2016). For the sake of brevity, citations in this essay refer to the relevant pages of this volume with selective references to additional sources.

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The Blue Ridge Parkway: Exemplifying The Evolution of National Park Service Planning and Design

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Figure 1. Bucolic view of Blue Ridge Parkway, milepost 217, September 1953. (Source: National Park Service, Blue Ridge Parkway, negative no. 248)

Abstract

The Blue Ridge Parkway, constructed between 1935 and 1987, exemplifies the evolution of National Park Service approaches to planning and design as manifestations of a national vocabulary of park architecture and landscape, and the articulation of federal standards for environmental stewardship, interpretation, and public access. While construction of the 469-mile motorway began as a New Deal project with a rustic vision for grounding park features in the materials of the land, much of the corridor was completed later, during the 1950s and 1960s, when a Modern aesthetic was sweeping the nation. The Parkway was not actually completed until 1987, however, when the last segment of the Linn

Cove Viaduct, a cantilevered structure built from 153, one-of-a-kind, 50-ton precast concrete segments, was lowered into place. The viaduct itself is a product of its time—engineered with the aid of computers, and designed to avoid disturbing a sensitive plant community, thus representative of the emerging value placed on environmental protection.

Over the fifty-two-year construction period, Parkway designers maintained a commitment to the initial vision to tie the road to the land through the use of rustic style elements and references to local Appalachian lifeways, even as they introduced features with a decidedly modern character. Parkway designers found creative ways to combine the two styles, resulting in some interesting hybrid architecture. The Parkway thus expresses a unique union of Appalachian pioneer spirit, rustic heft, and modernist verve that can be tied to important periods of National Park Service history.

In 2012, the National Park Service recognized the need to better understand and place into context the more than 1,000 historic structures associated with the Blue Ridge Parkway. After receiving a National Scenic Byways grant from the Federal Highway Administration, the agency engaged a team led by Wiss, Janney, Elstner Associates, Inc., to prepare an architectural inventory and integrity assessment for more than 600 buildings and structures, 235 overlooks, 99 bridges, and 26 tunnels. The effort also entailed exploration of the historic contexts associated with each resource. The resulting survey and assessment report depicts the evolving approach to national park design expressed within the Blue Ridge Parkway, affords the opportunity to reflect on the changing ideas about nature and history in America, and has already begun to guide stewardship of this national treasure.

Introduction

The Blue Ridge Parkway is perhaps the finest example of a recreational motorway in America. Construction of the 469-mile scenic parkway began as a New Deal project in 1935 with several missions: to connect Shenandoah National Park and Great Smoky Mountains National Park, to highlight the unique culture of Appalachia, and to provide work for the unemployed during the Great Depression. More than simply a ribbon of asphalt through the wilderness, the Blue Ridge

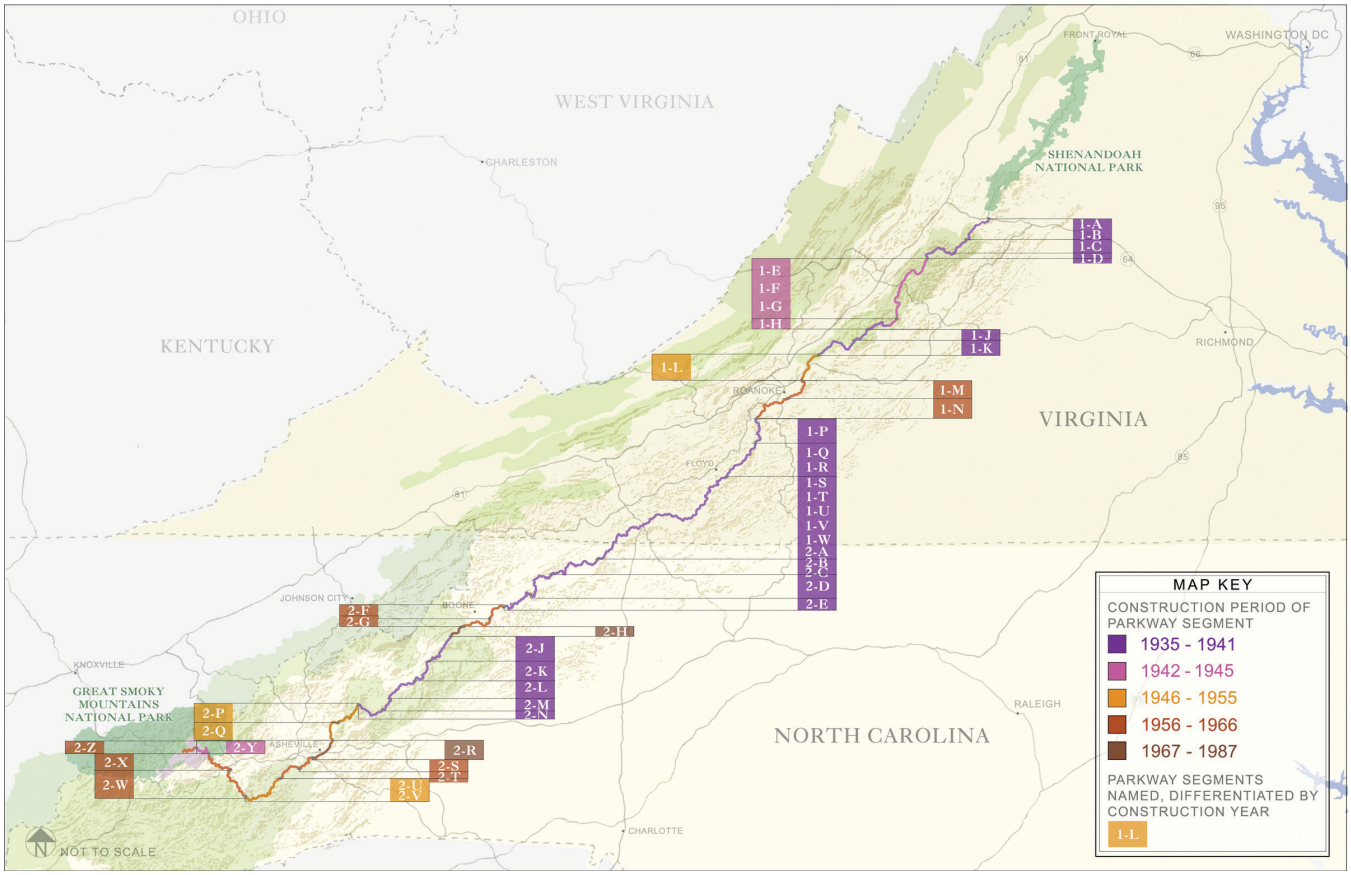


Figure 2. Parkway segments by period of construction. (Illustration by Kirsten Sparenborg)

Parkway is at once a unique blend of advanced engineering technology, innovative site planning, visionary design, and natural splendor that affords visitors the ultimate cinematic promenade. With regular expansion of the road to include large land reservations, and a wide range of services and amenities for visitors, the Parkway was also pioneering as a new park type. The innovations expressed in the form and function of the Blue Ridge Parkway were the result of multidisciplinary teams working closely together to effect a vision—and landscape architect Stanley Abbott is generally credited as the visionary.

Other notable aspects of the Parkway's history include its prolonged fifty-two-year construction history. Although conceived as a whole in the mid-1930s, rock blasting, tunneling, road grading, bridge and culvert construction, and the addition of visitor amenities and landscaping would continue for five decades as funds, manpower, and engineering capabilities allowed. Over the course of the effort, design styles as well as the needs of visitors changed, with architectural and engineering expressions and resource types evolving in response. An endeavor that began during the depths of the Great Depression in 1935, with Civilian Conservation Corps labor at the ready, ended with construction of the Linn Cove Viaduct, one of the world's most complex concrete bridges, designed by Swiss engineers using computer technology.

Throughout the long construction period, Parkway designers strove to maintain a consistent vocabulary for architectural elements based in the rustic design style and employing native materials that would both blend with the natural terrain and reference regional Appalachian pioneer lifeways. They considered and designed every aspect of how and what motorists would see from the road, and how the road would be perceived from outside. Although the rustic vision articulated in the 1930s was generally followed, the powerful influence of contemporary design during the 1950s and 1960s resulted in the introduction of Modernist architecture during Mission 66 that added a sleek, contemporary character to the motorway. By the time it was completed, the Parkway offered a union of Appalachian pioneer spirit, rustic heft, and Modernist verve, and one the world's unique recreational motoring experiences.

These aspects of Parkway history, and the nuances of design approach as tied to a vision for the visitor experience, were considered through the lens of a Parkway-wide historic structures inventory prepared in 2013–2015. The first survey of its kind prepared for the National Park Service, the effort documented more than 600 buildings and other structures, 99 bridges, 26 tunnels, and 275 overlooks. The survey served as a springboard to assess every single Parkway structure, while at the same time, placing them into a framework of the Parkway's historical chronology of construction, building typologies, and historic contexts. The survey and assessment allowed for an understanding of the relative integrity of each resource and identified the best surviving examples of each resource type. This information is already being used by the National Park Service to appropriately address the stewardship needs of each individual resource, and will serve as an essential tool for maintaining features that are threatened by the ravages of time, budgetary constraints, and ongoing debate about the appropriateness of post-rustic design features.

Planning for a Recreational Motorway

The Blue Ridge Parkway was established as a unit of the National Park System by an Act of Congress on June 30, 1936. The Act called for the National Park Service to create a scenic motor road that would provide a means for leisurely travel and recreation through Southern Appalachia, while linking two relatively new national parks—Shenandoah National Park in Virginia, and Great Smoky Mountains National Park in North Carolina.

Although the design of the road would prove novel in many ways, the idea for the Blue Ridge Parkway was not new. A scenic road through Southern Appalachia was first proposed in 1909. Referred to as the "Crest of the Blue Ridge Highway," the road was to extend between Marion, Virginia, and Tallulah Falls, Georgia, following the upper reaches of the Blue Ridge Mountain range through several idyllic locales. American involvement in World War I, however, siphoned off funds and labor, bringing an end to the project.

A second proposal to create a motorway through the scenic Southern highlands emerged in 1930 when the Eastern National Park-to-Park Highway Association recommended connecting Shenandoah and Great Smoky Mountains national parks, both established in 1926. Throughout the 1930s, the Great Depression played an important role in the development of the Blue Ridge Parkway. Following his 1933 inauguration, President Franklin Delano Roosevelt advanced several programs and regulations known as the "New Deal," to help out-of-work Americans and stimulate the economy. Later that year, Congress enacted the National Industri-

al Recovery Act of 1933, which established the Public Works Administration and authorized the Public Works Administrator, Secretary of the Interior Harold Ickes, to prepare a comprehensive program of public construction projects. The proposed Park-to-Park Highway in Southern Appalachia was well-suited to the program and immediately added to Ickes's list. The fact that the National Industrial Recovery Act was also working to acquire land considered sub-marginal for agriculture, but potentially valuable for public recreation, provided an additional reason to pursue the project as a way to improve conditions within the impoverished Southern highlands where severe soil erosion had resulted from poor farming practices and steeply-sloped terrain.

Roosevelt encouraged Ickes to pursue the project following the President's 1933 visit to Shenandoah National Park, where he witnessed Skyline Drive emerging atop northern Virginia's Blue Ridge Mountains. By December 1933, federal funding had been allotted to finance construction of a scenic Park to Park highway.

The Vision and Initial Design

Planning, design, and construction of such an enormous undertaking would take a vision, and a visionary. To find the project's leader, Ickes convened a group of advisors that included Gilmore D. Clarke of the Westchester County Park Commission, which had established the nation's first parkway system. The group's most important contribution was recommending the appointment of Stanley W. Abbott as Resident Landscape Architect for the new parkway. Abbott, who had previously worked for the Westchester County Park Commission on the Bronx River Parkway, was only twenty-six when appointed in December 1933. Abbott brought in Edward Abbuehl, a former professor of landscape architecture at Cornell. These two landscape architects would soon be working closely with engineers of the North Carolina and Virginia state highway commissions and the federal Bureau of Public Roads, among others.

One of the North Carolina State Highway and Public Works Commission engineers involved in planning the parkway, R. Getty Browning, was instrumental in helping to establish the far southern route for the road, which could have been designed to pass through either Tennessee or North Carolina. An avid outdoorsman and transportation engineer with many years of experience investigating and plotting highway locations, Browning successfully argued for the North Carolina route, noting that ". . . nowhere else in the United States, so far as I know, could such an excellent location for a parkway be found, if splendid scenery, high elevation, profusion of beautiful shrubbery, favorable climatic conditions, reasonable construction cost and accessibility from all sections of the country are to be considered."[1]

As many historians have suggested, the real mastermind behind the Parkway was Stanley Abbott. Abbott immediately recognized that the Blue Ridge Parkway was to be a new amalgam of parkway and scenic park road. Once the routing decision had been made, Abbott and his team began to consider the specifics of the road alignment and what to feature along the way. Designers spent months flagging the route for the road in the field. Many credit Abbott for his conviction in guiding the vision that resulted:

> While engineers from the Bureau of Public Roads and landscape architects from the Park Service were walking each mile of location, Stan Abbott was "seeing" the finished project. He had the imagination and ability to think big and make no small plans. While most of the innovations in the Blue Ridge Parkway are the product of a joint effort, to Stan must go the big share of credit for the vision, imagination, and enthusiasm necessary to make the dream come true.[2]

Abbott's design vision for the parkway corridor was of bucolic parkland, flanking a roadway of the most advanced design through its center. The route and its expression aimed at variety and an ever-changing series of vistas. Engineered for a low driving speed, the road featured frequent overlooks to allow the safe enjoyment of scenery and pauses for drivers to rest. The curvilinear nature of the road helped control the speed of motorists. Commercial vehicles were prohibited from driving on the road to enhance safety and distinguish the Parkway from standard traffic arteries.

In contrast to the Skyline Drive, the Blue Ridge Parkway was not planned as a ridge-line route, even though extensive segments follow the crest of the mountains. Instead, the designers introduced variety by routing the road to follow mountain streams and broad river valleys, as well as mountainsides. Abbott stressed the importance of an ever-changing road position for maintaining the interest and pleasure of motorists. He suggested that ". . . only intermittent sections will ride on or near the skyline in the manner of the Shenandoah Drive," reasoning that

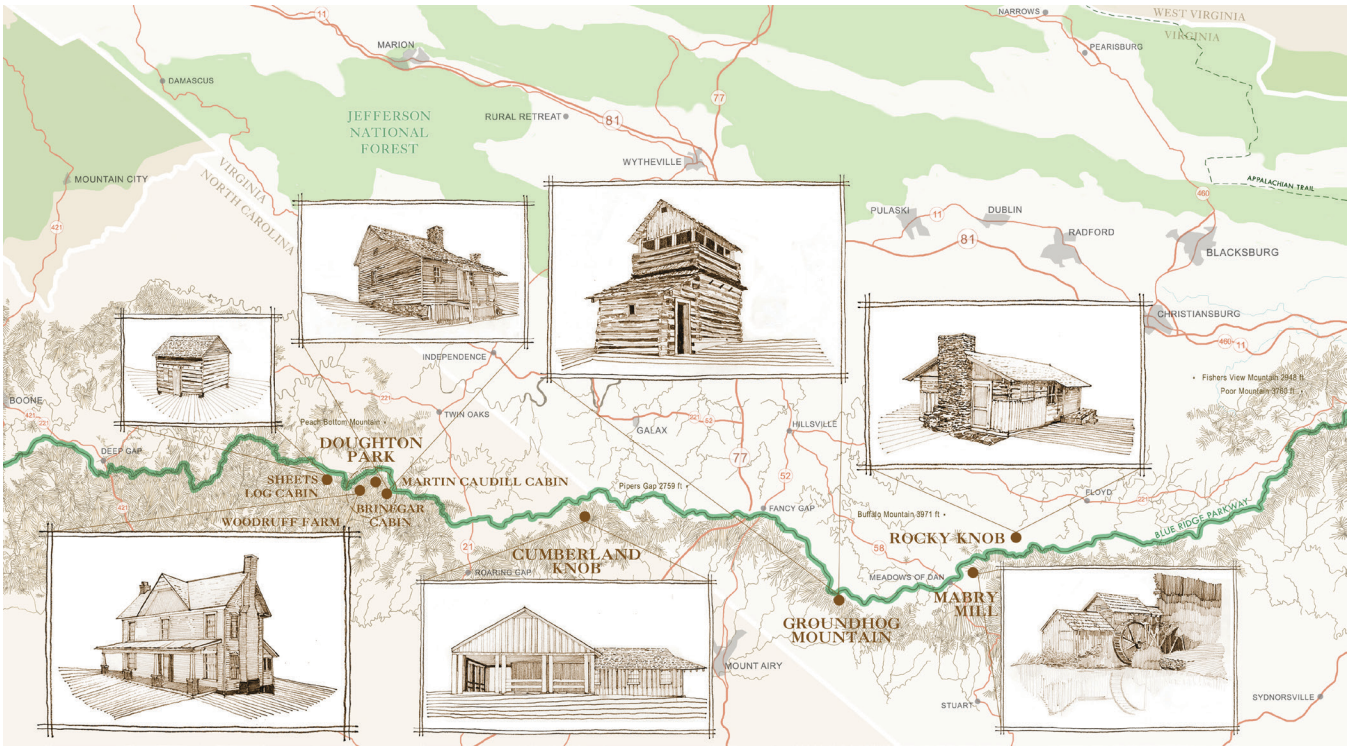


Figure 3. Middle section of the Blue Ridge Parkway that spans the border between Virginia and North Carolina, illustrating some of the primary built features and recreation areas. (Illustration by Kirsten Sparenborg)

"Rugged topography has served to deflect a continuous skyline location," and adding that the designers ". . . have deliberately chosen to avoid certain mountains in order to introduce other types of scenery."[3]

More than just a road, the parkway was envisioned as the physical core of an inter-regional park plan for the entire Appalachian Range. Abbott considered it crucial that the park preserve both the environmental qualities of the landscape, and the cultural history within view of the road. The preservation of pioneer structures along the Parkway was part of the comprehensive program of rural conservation conceived by Abbott and his colleagues. Within view of the roadway they preserved agricultural field patterns, pastures, and orchards. At various stops and parks along the route, old log homes, a rustic mill, outbuildings, and rail fences were composed to reflect an admittedly romanticized view of the agricultural heritage of mountain residents. Some recreation areas featured major exhibits of mountain lifeways, and interpreted regional practices of pioneer settlement, handicrafts, and folk traditions.

Abbott in particular can be credited with developing means for how to translate this aesthetic vision for the Parkway across several scales, noting: "I can't imagine a more creative job than locating that Blue Ridge Parkway, because you worked with a ten-league canvas and a brush of a comet's tail. Moss and lichens collected on the shake roof of a Mabry Mill measured against the huge panoramas that look out forever."[4]

Describing his comprehensive design philosophy, Abbott explained, "All elements must compose, so as to please. Hence, to take examples of stone masonry, we find the same extraordinary attention to detail in a small masonry retaining wall designed to protect a roadside tree as we find in the triple-arched Linville River Bridge."[5]

The Road and Its Resources

Abbott and the team were responsible for the particular innovation of expanding the Parkway to be more than just a linear corridor. After identifying nearly twenty exemplary locales along the proposed route, the team settled on the idea of featuring them in a series of larger land reservations, called recreation areas, where motorists could stop and further connect with the region's beauty and recreational amenities. In addition to recreational opportunities, these reservations would also accommodate the needs of motorists in the form of food, lodging, and fuel. In describing the idea, Abbott noted:

The Blue Ridge Parkway might more accurately be described as a park and parkway system. The concurrent development of parks to the side into which the tourists may withdraw from the traffic is no less important to its

full functioning as a new type of tourist facility . . . we were guided, too, by some sense of need for rhythm or pattern—or a jewel on the string of beads occurring every so often . . . . Our theory was a major park every sixty miles, and in between two lesser day-use areas . . . . [6]

Abbot considered the provision of service facilities and accommodations vital to the parkway concept. He believed that many visitors would wish to stay overnight in cabins or small inns located along the roadway. Picnickers and campers would need to purchase supplies near the picnic grounds and campsites. Service stations would be necessary at regular intervals. If not built along the Parkway, they would inevitably spring up near road crossings with potential visual impacts for the carefully articulated roadway.

The road alignment and cross-section determined by Abbott and his team was no less innovative, and serves as the essential character-defining feature of the Parkway. Abbott conceived of the route as a continuous stretch of paved roadway that would afford an ever-changing series of views and vistas from the elevated terrain of several Southern Appalachian mountain ranges. The designers then orchestrated sequences of short-, mid-, and long-range views from the gracefully turning road that would present an ever-changing combination of dramatic mountain landforms and other natural wonders, and rural agricultural Appalachia. The resulting new road typology—the rural scenic recreational motorway—conveyed a distinctive character that would serve as a model for other long-distance parkways.

The road itself was designed in accordance with specific guidelines and to careful standards. Narrow in width, the two-way road contains only a central stripe, no side striping, and minimal sculpted shoulders, helping to connect motorists with the land. The roadway design is composed of geometric curves connected by minimal tangent sections. This creates a constantly flowing route and offers an ever-changing view of the surrounding scenic landscape. Horizontal and vertical curvature are designed to complement one another so that motorists can safely navigate the roadway at design speeds that range from 25 to 45 mph. Super elevation and pavement widening were used to render some of the horizontal curves more comfortable for driving. To expand views from the road, Parkway designers employed a technique known as day-lighting, in which excess material on the downslope side of the road was removed to open up views and reinforce the impression that the road follows the contours.

Designers took into account the impact of road construction on the landscape and the resulting visual aesthetic. The route was carefully planned to cause the least possible scarring of the wild mountain terrain and to fit the surrounding topography using a technique referred to as the streamlined cross section. Here, cut and fill are used to create flattened and rounded connections back to the adjacent upper and lower slopes. All cut slopes, except rock, were rounded and transitioned and tied back to the natural contour of the surrounding terrain to erase evidence of heavy machine work, along with the planting of native trees and shrubs. Views of the Parkway from nearby roads were also taken into consideration when blending the road with its environs.

Several structure types were used to convey the road over gorges, streams, and other roads, and to accommodate visitor needs. One of hallmarks of the Blue Ridge Parkway design is its collection of 275 overlooks. These features regularly edge the road and are designed to entice motorists to stop and enjoy the scenery. The overlooks are scenic pull-offs designed to provide stunning vistas and panoramas of the near and distant mountain scenery, and opportunities for trail access and picnicking. Each overlook is composed of the same group of features: access road, parking, sidewalk, site furnishings, signage, trailhead, and vista, but is distinct in layout to match the conditions of the road and ensure safe access, ease of parking, and orientation to views.

Bridges, tunnels, and retaining walls were used to facilitate passage over ravines, rivers, and other roads, as well as through the scenic but impassable mountains.



Figure 4. Singecat Ridge Overlook (milepost 345.3) in 1953, as documented in Blue Ridge Parkway Final Construction Reports. (Source: National Park Service, Blue Ridge Parkway)



Figure 5. The Peaks of Otter Country Store, which reflects both the rustic style and is reminiscent of local Appalachian culture. (Photo by the authors)

An early goal of Parkway designers was to limit at-grade crossings of public road corridors so as not to interfere with the experience of recreational motoring or enjoyment of the scenery. Bridges and viaducts were used in favor of double lane roads and turn lanes that would increase the scale and width of the road. Wider road sections were only utilized at some major road interchanges and entrances to recreational areas.

Bridges and retaining walls were integrated into the road design, often indistinguishable from the road except for the low-height guard walls of stone or concrete construction. These features were used as a tool to highlight vistas, frame scenic views, or navigate the terrain without detracting from the traveler's experience of the landscape.

Bridges and tunnels crossing over the parkway were typically clad with field stone. Designers applied similar principles to parkway bridges that crossed over public roads. Whether concrete, steel, or stone-clad, and whether crossing over an interstate, railroad, or small county road, the character, scale, and design features indicated that the parkway carried by the bridge was not a typical roadway. In addition to the low-height guard walls and materials, the narrow roadway, landscaping, and orientation of the bridge–often sited at an angle to the adjacent roadway–accentuated its purpose as a recreational motorway.

As part of the original design, buildings and structures were primarily concentrated within recreational areas. Parkway designers adopted the rustic design style as the overarching architectural vocabulary for building. This style was considered a hallmark of the Park Service in the western United States. Its use of native materials, such as stone and rough-hewn wood, was envisioned as a visual link to connect the road with the rocky, mountainous setting, as well as with the local architectural style common in rural Appalachia.

Appalachian structures already present along the Parkway included old log homes, farm buildings, rustic mills, and outbuildings, as well as rail fences. Easements were used to protect the structures, setting, and views along the parkway. As part of the Parkway design, these structures were preserved and in some cases interpreted as evidence of the local pioneer culture. They were enhanced by views of working farms, fields, and orchards adjacent to the road corridor.

The parkway was designed to highlight these resources either by preserving the structure and setting, such as at the Caudill House or Brinegar Cabin, or by creating small enclaves of resources, such as those at the Mabry Mill and Humpback Rocks, arranged in exhibits to emphasize the lifeways of mountain communities. These are interpreted to introduce regional practices of pioneer settlement, handicrafts, and folk traditions.

The experience of viewing the pioneer structures is enhanced by the design of the road. The meandering approach of the road, framed views, enrichment of the setting, and arrangement of these structures within the site gives park visitors the sense that they are discovering these pioneer settlements, happening upon them as if by chance. The overall rustic style vocabulary of the Parkway further complements the historic pioneer features of the roadside landscape.



Figure 6. The rustic Sharp Top Bus Shelter. (Photo by the authors)

Construction

Work on the Parkway was performed in phases as funding and labor were made available. By 1935, the designers had divided the proposed road corridor into a series of sections, identified by a letter and number code, to manage planning and construction. The sections varied in length from 5.7 to 15.6 miles.

Construction of the road began in 1935. For each section, the designers prepared carefully drawn Planned Land Use Maps or PLUMS to show the character of the roadside and intended views. About two-thirds of the proposed route and five of the recreation areas were completed between 1935 and 1942. Work involved blasting, grading, and construction of the road as well as construction of walls, culverts, bridges, tunnels, and overlooks and continued intermittently until America's involvement in World War II siphoned off labor and funding. As previously stated, buildings constructed during this period were typically designed in the rustic style.

Due to a shortage of funds and manpower, little work occurred on the Parkway during World War II. Road construction focused on just a few sections of the parkway. In addition, a few maintenance areas, two recreational areas, and the Groundhog Mountain observation tower were constructed. Planning also focused on the resumption of construction and development when peace returned.

Efforts to complete the roadway began again after the war, but work was limited due to a lack of funds and a shortage of labor. There are few examples of features constructed along the Parkway between 1945 and 1955.



Figure 7. The Mission 66-era Peaks of Otter Lodge. (Photo by the authors)



Figure 8. The Linn Cove Viaduct as it weaves around Grandfather Mountain. (Source: Historic American Engineering Record)

Most are associated with recreational uses, such as picnic and campground areas, and the establishment of pioneer farm exhibits and visitor facilities. These features continued to reflect the proposed rustic design style. However, the lack of New Deal-era manpower and craftspeople needed to build complicated stone and timber structures, coupled with the availability of new and prefabricated construction materials, led to modifications in the Park Rustic design style. Structures were built of unornamented, machine-worked materials in a style referred to as the modified rustic. Although these features are typically not exemplary works of architecture, and most were designed to meet utilitarian needs, they remain an important part of the Parkway vocabulary.

Some complicated rustic wood structures that were not easy to maintain, such as drinking fountains, were replaced with more durable stone. At the same time, bridge and tunnel design began increasingly to incorporate concrete, as well as updated safety features.

In 1955, the National Park Service received authorization to undertake an initiative—called Mission 66—that funded improvements in parks throughout the nation between 1956 and 1966. Funding generated by the Mission 66 program was integral to the completion of the Blue Ridge Parkway, including construction of approximately one-third of the remaining road corridor, and the expansion of lodging and food services, park administrative features, maintenance facilities, and recreation areas. The Visitor Center was developed by the National Park Service as a new building type and was incorporated into the architectural vocabulary of the

Parkway through the construction of new visitor center buildings or adaptive reuse of existing structures. Architecturally, the resources constructed during Mission 66 were a departure from the rustic, employing Modernist principles, and conveying an exciting streamlined sense of efficiency that would better meet the challenges of ever-increasing numbers of visitors. The use of Modernist architecture during this period was and continues to be hotly debated.

Mission 66 funds were used to complete all but 7.8 miles of the Parkway. The unfinished section was to circumnavigate the lower regions of Grandfather Mountain in North Carolina, but work was impeded by the challenging terrain, sensitive and rare natural plant communities along the proposed route, and ownership disputes. By this time, environmental issues were coming to the fore and the federal government would soon pass the National Environmental Policy Act, suggesting special care be taken to solving the problem of routing the Parkway over this sensitive terrain. The final section of the parkway was finally completed in 1987 and incorporated a series of bridges and cantilevered road sections that were carefully lowered into place to disturb as little of the terrain as possible and protect the sensitive environment of the mountainside.

Survey and Assessment

The Blue Ridge Parkway encompasses a vast array of resources and periods of construction. Our objective during the survey was to characterize the Parkway experience by assessing the overlooks and structures and identifying the design characteristics, construction methods and materials, building functions, and conditions that distinguished the resources. In the field, we were able to identify, categorize, and group resources based on these characteristics and period of construction. The list of resource types included visitor centers, comfort stations, maintenance structures, and other buildings; various bridge types based on structural system; and a variety of overlook types based on design features. The integrity of each resource and the adjacent site was assessed by documenting the condition and identifying perceived threats such as vandalism, deterioration of the structure or building features, vegetation overgrowth, flooding, and extensive previous alterations. This information was compiled into a database that also included documentation collected during our archival research. Once the field data and archival material were reviewed, the patterns of development along the Blue Ridge Parkway became more clear and easier to comprehend, allowing those resources that may be potentially eligible for the National Register of Historic Places, either individually or as part of a district or collection of resources, to be identified.

Conclusion: The Meaning of the Parkway

Once completed, the Blue Ridge Parkway was immediately lauded as a premier example of the power of design to create built form that is thoughtful, meaningful, and sensitive to its environment—a feat of unparalleled vision. At the time of its earliest construction, it was the longest road in the United States ever to be planned as a single unit. The Parkway and its resources exhibit an all-encompassing philosophy of connecting the motorist to the land.

Unity of form, materials, and quality was achieved by the consistent application of three basic principles throughout the design: recognizing the preeminent importance of scenery; providing a safe and enjoyable driving experience; and protecting the natural environment and gently fitting the road and all other structures into their mountain setting so that they looked as though they belonged. The design of the road was the throughline by which these design principles were linked.

Despite having evolved over several construction periods, the Parkway continues to express a single unified idea. The guiding principles were followed in the location and design of the road, and was continued in the design of the scenic corridor, the development of the recreation areas and associated park buildings, and through roadside exhibits and signs. Unity is also derived from the frequent repetition of structural typologies and a consistent application of form and materials, layout, and character.

While presenting a unified design, variation was introduced through site-specific implementation of the overarching design principles. Project engineers, landscape architects, and architects were afforded latitude to develop their own solutions to particular problems and site-specific needs of fitting the road to the land. The directive to meet each unique situation with a fresh eye resulted in a range of execution that offers constant interest and reminds motorists that the Parkway was the result of a process of debate, experimentation, and compromise, involving dozens and even hundreds of people over many years. It also confers a sense of individuality on each section of the Parkway that serves as part of the historical record. Today, the Parkway offers

the opportunity to experience and study the physical expression of National Park Service ideals and values over a more than fifty-year period. It also has much to teach us about innovation, teamwork, and the importance of creativity in addressing challenging problems, a model in many ways for all of us as stewards of our national park heritage.

The authors would like to thank R. Steven Kidd, Chief of Resources and Facility Management, Carl Sandburg Home National Historic Site, formerly Cultural Resources Specialist/Archeologist (RPA), Blue Ridge Parkway, for his guidance throughout the Blue Ridge Parkway Survey and Assessment project.

Endnotes

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Many Glacier Hotel: The 100-Year Rehabilitation

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Figure 1. Many Glacier Hotel West Elevation Across Swiftcurrent Lake (Photo Credit: Bryant Photograhics for Anderson Hallas Architects, PC)

Abstract

How often should the NPS rehabilitate a National Historic Landmark? It depends. Commanding what is arguably the most spectacular view from any building in the National Park system, Many Glacier Hotel hosts over 300,000 overnight and day visitors each summer. But despite its popularity and storied past, the hotel had not experienced a major rehabilitation in its 100-year history. It had endured forest fires, floods, 30' snow drifts and misguided "remuddlings."

This paper documents the journey that started in 2004 and may end in 2017! We'll reveal Many's compromised condition, the effects of a severe climate, unaddressed code deficiencies, funding realities and the political forces that finally focused enough attention on the building to accomplish the Phase 1 Rehabilitation (the north half).

With Phase 2 (the south half) just launching, we'll also discuss the difference between what the two phases will achieve and the roles that the park, the con-

cessioner and the architect have had in advocating for the building's preservation.

Many Glacier Hotel

Built between 1914 and 1918, Many Glacier Hotel captured the spirit of a young America establishing and expanding a national park system to preserve the nation's most iconic cultural and natural landscapes. Situated on the eastern shore of Swiftcurrent Lake, the hotel looks into the heart of Glacier National Park, a World Heritage site and an International Peace Park shared with Canada. Its story parallels that of other National Park Service "greats," hotels that capitalized on an increasingly mobile public with a thirst for adventure and the resources to travel comfortably. In turn, each hotel offered more luxury and majesty:

- Old Faithful Inn (1904) – Yellowstone National Park
- El Tovar Hotel (1905) – Grand Canyon National Park
- Paradise Inn (1916) – Mt. Rainier National Park
- The Ahwahnee Hotel (1927) – Yosemite National Park

Many Glacier was conceived by Louis Hill, president of the Great Northern Railway. Hill coupled the expansion of his railroad to the development of the park, eventually building three hotels, a loop of guest chalets (a day hike apart) and an inter-park transportation system (the "red bus" – an open touring car for day trips in the park). Hiring Architect Thomas D. McMahon, Hill requested a rustic lodge in the Swiss Chalet style. The popularity of European travel and familiarity with Europe's quaint alpine architecture made Swiss Chalet a likely choice. (In *Architecture in the Parks,* Soulliere Harrison writes "the identifiable landscapes of those . . .areas [west of the Mississippi], the exotic lure of the romantic west, the westward emphasis of the railroads encouraged romantic resort architecture in western national parks.")[1]

Within a year and through daunting winter weather, Hill's crews brought magnificent log columns from the Northwest, electricity, heavy timbers, and stone to the site and completed construction. By 1915, The Lobby, Annex 1 and Dining Room were in business, providing over 160 guest rooms, fine dining and a number of day and evening activities. Annex 2 was completed two years later, offering 80 additional guest rooms.

Travelers typically arrived in East Glacier (40 miles south) by train and took the "red bus" to the hotel. Steamer trunks, carrying clothes and gear for weeks of travel,



Figure 2. East Elevation of Many Glacier Hotel circa 1920 (Photo Credit: Minnesota Historical Society/Great Northern Railway Collection)

were fed down trunk chutes to the lake level and delivered to guest rooms via the hotel's two elevators. Two rooms typically shared one bath, with each bath including a water closet and tub. Lavatories resided in each guest room. Accommodations ranged from five to ten dollars per night. Knob-and-tube wiring delivered power to rooms and lights but hallway lighting was supplemented with "borrowed" natural light that glowed through translucent windows in the guest room walls. Although some rooms boasted individual fireplaces, heat was primarily distributed through the hotel's steam radiator system.

Guests dressed formally for evening meals in dinner jackets or tuxedos and dresses but during the day casual wear, suited to the activity, was the norm. Daytime activities included hiking, boating, auto-touring and horseback riding. Evenings found guests gathering around the lobby's grand fireplace, dancing, or enjoying amateur theater in the Lobby's lake level.[2]

Although Many Glacier's major building campaign ended in 1918, the hotel changed incrementally to respond to visitor tastes and operational needs. Some of the more significant changes included (dates noted, where known):

- Removal of the Chinese lanterns in both the Dining Room and Lobby
- Installation of a lowered ceiling in the Dining Room (1949)
- Removal of the wood pergola in the Dining Room
- Infill of the hallway/guest room translucent windows
- Removal/replacement of the windows in the Dining Room (1930s, the first time)

- Installation of asbestos tiles over wood floors
- Conversion of four guest rooms on the main level of Annex I to the Swiss Lounge, a casual bar/dining area

Sometime in the 1950s, the Great Northern divested itself of Many Glacier. Always a summertime only operation, the expense of maintaining a grand hotel in a harsh winter environment became financially untenable. (Whether true or a part of the hotel's lore, a story records a forest fire that threatened the hotel. After a successful fire watch averted disaster, the hotel manager wired, "We've saved the hotel!" to the home office in Minneapolis. "Why?" was the response.) It was this period that perhaps most compromised the hotel's original character, with these changes:

- Guest room remodels adding a bathroom for each room (1952/Lobby & Annex 1; 1956/Annex 2)
- Porte cochere addition at the main entry (1957)
- Removal of the spectacular helical stair and stone fountain/trout pond from the Lobby (1957; an unsubstantiated story asserts that the stairway was detached and dragged out onto a frozen Swiftcurrent Lake and allowed to sink in the spring, all presumably to make room for the gift shop)
- Removal or painting of original, stained, rough sawn wainscot and installation of gypsum board and Masonite wall finishes
- Removal/replacement of the Dining Room windows

A second rehabilitation effort in the 1980s resulted in the following:

- Replacement of the 1950s Dining Room windows
- Infill of the swimming pool/conversion of that space to employee housing (1982)
- Refurbishment of guest rooms[3]

Despite the significant loss of Many Glacier's character-defining features, the hotel was listed on the National Register of Historic Places in 1976, as the centerpiece of the Many Glacier Hotel Historic District. For its association with the Great Northern Railway and in recognition of its significant role in the railroad's tourist trade, Many Glacier and the extant Great Northern accommodations in Glacier National Park were elevated to National Historic Landmark District status in 1986.[4]

In 1996, the National Trust for Historic Preservation placed Glacier National Park, including Many Glacier Hotel, on its list of "America's Most Endangered Places," citing the deteriorated condition of the park's historic resources.[5]



Figure 3. Lobby Atrium with Chinese Lanterns and Helical Stair, circa 1931 (Photo Credit: Minnesota Historical Society/Great Northern Railway Collection)

By 2000, deferred maintenance issues threatened hotel operations. Concessioner work crews, arriving to open the hotel in the spring, found guest room balconies detaching from the building. Emergency stabilization efforts posted up structural members from grade to stabilize the balconies for the guest season. This was the start of Many Glacier's exterior rehabilitation, work that was to include over the next few years:

- Stabilization of Annex 1's structure (foundation and framing stabilization to resist uphill snow loads on the building and to straighten the structure into a more vertical position)
- Reconstruction of wood balconies with steel members (2002-2004)
- Window and siding rehabilitation and roofing replacement (with custom-colored aluminum shingles that approximated the original, diamond-shaped asbestos shingles)

Rehabilitation of the building exterior did not begin to address all of Many Glacier's deficiencies. With no comprehensive interior rehabilitation in its 90-year history, the hotel was still operating with critical life safety hazards - hazards that continually forced the question, "If the National Park Service cannot afford to fund a major rehabilitation, should the hotel be shuttered?"

Many Glacier's egregious life safety deficiencies justified funding under the line item construction program, the NPS's largest source of congressionally-appropriated construction funding. With funding in place, the NPS retained the firm of Anderson Hallas Architects, PC (Andrews & Anderson Architects, PC at the time) to begin the interior rehabilitation process in 2004. The

design team's first task was to identify the condition of each building system, with the goal of prioritizing the work. Through the course of its site investigation, the Anderson Hallas team found:

- Hazardous materials, particularly lead-based paint and asbestos pipe wrap throughout the building, that represented health risks to concessioner staff who accessed affected areas for routine repairs
- Plumbing lines that failed with some regularity—occasionally releasing raw sewage into crawl spaces
- Bats nesting in guest room walls
- Wood framing members that were badly deteriorated in some locations and undersized for Glacier's extreme snow loads and moderate seismic conditions
- Four and five story chimneys that could be reduced to rubble in an earthquake
- Knob-and-tube wiring that had charred wood framing members where accidental contact had occurred
- Choked fire suppression lines; each spring's recharging of the fire suppression system exposed dozens of leaks and removed sections revealed heavy mineralization that compromised flow and the system's efficacy
- Ground water "flowing" through the building's lake level crawl spaces, wreaking havoc on plumbing lines and rotting wood members that were resting on saturated soils
- Fire separations, mandated by modern codes, were non-existent

Many Glacier Hotel is a five story, wood-sided and wood-framed building with interior wood finishes. By today's codes, it could not be built. But through the application of the International Existing Building Code (a modern code that acknowledges and works with existing conditions), the team was able to retain the hotel's essential character, while significantly upgrading its life safety systems.

Due to building system interdependency and the efficiencies of addressing all building deficiencies, once wall and ceiling finishes were removed, it was agreed that all systems would be replaced or (in the case of systems like structural) upgraded. Without funding to rehabilitate the entire hotel in one funding cycle, the project team had to prioritize the work.

Through a Value Analysis/Choosing by Advantages process, it was determined to prioritize Annex 1, the North Bridge and the Dining Room building. (Annex 1 contained the greatest number of guest rooms where a night-time fire or seismic event could imperil the greatest number of guests. The Dining Room represented a critical function for the hotel and was adjoined to Annex 1 via the three-story North Bridge.) All life safety upgrades would be heavily reliant on a functional fire sprinkler system.

Funding for design ebbed and flowed throughout the next several years, translating to a 2009 start of construction for Annex 1, the North Bridge and the Dining Room. Bidding at the peak of the recession, the project was originally estimated to cost $18 million plus, but actually bid for slightly more than half that.

In 2012, the hotel opened a completely rehabilitated north half. Along with the mandated system upgrades, the design team had successfully advocated for reconstruction of some of the hotel's character defining features:

- Removal of the Dining Room's dropped ceiling to re-expose the magnificent engineered trusses
- Reconstruction of the Dining Room pergola (original pieces of which were found supporting the dropped ceiling; the re-created pergola matches the original's apple green stain)
- Re-creation of the Dining Room's Chinese lantern lighting - utilizing recycled acrylic for the custom shapes and energy-efficient compact fluorescent lamps
- Reinstatement of the hallway windows in Annex 1 (first floor), utilizing artificial light to mimic daylight



Figure 4. North Bridge Precedent Guest Room (Photo Credit: Bryant Photographics for Anderson Hallas Architects, PC)



Figure 5. Rehabilitated Dining Room (Photo Credit: Bryant Photographics for Anderson Hallas Architects, PC)

- Installation of rough sawn, stained wood wainscot (to match the hotel's original finishes) in the North Bridge's seven guest rooms, to set the precedent for future remodels

2016, the National Park Service's centennial, marks the beginning of a two-year project that will rehabilitate the remaining sections of Many Glacier - the Lobby, South Bridge and Annex 2. Much of the same work will be accomplished and the life safety work will be complete. A leaner budget than in 2009 will translate to more retention of non-historic finishes and fixtures but the park is still hoping to:

- Reconstruct the spectacular helical stair, that communicates between the main and lake levels of the Lobby
- Reinstate all of the hallway lights in Annex 2 hallways
- And re-create the playful Chinese lanterns that once floated gracefully throughout the Lobby atrium

As with almost any rehabilitation project, there is not enough funding to accomplish everything in the "should do" category and preservation has to focus on the "must dos." In fact, the National Park System has a $12 billion backlog of deferred maintenance throughout its 411 parks. But with patience, persistence and consistent advocacy, the Many Glacier Hotel Project Team (a cast of dozens, over 13 years, with only five remaining from the first phase) was able to breathe magic back into the building, particularly its public spaces, and to set the stage for future remodels to incrementally recreate rather than erode Many Glacier's remarkable character.

Endnotes

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A New Deal for the Arts and Crafts: Herbert Maier and the California "Boys" in the National and State Parks

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Figure 1. Architect Herbert Maier designed the Yosemite Museum, which was constructed in 1925. This and other buildings designed by Maier revived the Arts & Crafts style he'd absorbed in Berkeley and served as prototypes for other structures in the national parks after Horace Albright appointed Maier District Officer for the Rocky Mountain District and CCC Regional Officer for the Southwest during the Great Depression. (Photo: Gray Brechin)

Abstract

The designers of the structures erected by Civilian Conservation Corps labor in the national and state parks in the 1930s would have felt that they had succeeded if you noticed little about their creations other than their exceptional craftsmanship. Inspired by the writings and example of John Ruskin and William Morris in Britain, Arts and Crafts architecture and decorative arts enjoyed their heyday in the U.S. from about 1895 to 1920. Within the nation's parks, however, the aesthetic and ethos of the movement guttered on and then flared anew in the 1930s. It owed its rebirth largely to the economic catastrophe of the Great Depression and the administration of President Franklin Roosevelt, whose New

Deal programs successfully fought the crisis. A man and a town transmitted the movement from the first decade of the century to the fourth: little known architect Herbert Maier and Berkeley, California.

Herbert Maier in California

The English Arts and Crafts designer and advocate Charles R. Ashbee recalled after visiting California in 1896 and 1900 that:

> California Speaks . . . Here things were really alive—and the Arts and crafts that all the others were screaming about are here actually being produced. Curious it is that the best work in Arts & Crafts in America is already being produced on the Pacific Coast.[1]

The ideals of the movement were transmitted to California as early as 1876, when the Swedenborgian minister Joseph Worcester built a simple, low-slung house of unpainted redwood so that he could be closer to nature in the oak-studded hills of Piedmont above Oakland. Worcester designed his house with its expansive verandah for indoor-outdoor living and to take advantage of a sweeping panorama of San Francisco Bay.

Worcester later moved to a similarly informal house he designed for himself on San Francisco's Russian Hill to better accommodate his parishioners. In the early 1890s he commissioned a group of progressive young architects who had recently arrived in the city[2] to design a modest building integral with its garden. The church's interior featured a domestic brick fireplace, painted landscapes of California's four seasons, and unpeeled madrone trunks that Worcester personally selected in the Santa Cruz Mountains for use as rafters. One of its designers was Beaux-Arts trained Bernard Maybeck who—as an instructor in the University of California's College of Engineering in Berkeley—was then laying the groundwork for the first architectural school in the West. Maybeck and his wife Annie briefly lived in a cottage next to Worcester's Piedmont house that, Maybeck's friend Charles Keeler said, was a "revelation" to him.[3] The couple soon moved to their own unpainted house in Berkeley so that the architect could be closer to work at the university as well as to enjoy, as had Worcester, the natural opportunities afforded by the steep backdrop of the East Bay hills.

Though then as now little funded by the state, the university had become the intellectual center of the far West and attracted settlers seeking more stimulating company than San Francisco could afford. It was especially congenial to Bohemians like the Maybecks.

John Muir frequently visited Berkeley from his ranch in nearby Martinez. Muir had many friends on the faculty, while his daughters Helen and Wanda attended the Anna Head School housed in a cluster of rustic shingle buildings south of the campus. On May 28, 1892, Muir founded the Sierra Club with kindred associates. His professor friends and their wives were heavily represented among the charter members. They shared the charismatic Scots naturalist's deep love of Yosemite and used it for both recreation and as a natural laboratory.[4] A thick umbilicus grew between the university town by San Francisco Bay and Yosemite's spectacular valleys and high country. The connection would subsequently grow to feed the fledgling National Park Service as well.[5]

Muir's club in 1904 dedicated the LeConte Memorial Lodge on the floor of Yosemite Valley. It commemorated natural history professor and Muir's close friend Joseph LeConte, who had died in 1901. The stone building with its steeply pitched roof is an early exemplar of what came to be known as National Park Rustic architecture. It was designed by architect John White, Bernard Maybeck's brother-in-law.

Maybeck almost certainly had a hand in designing the lodge in Yosemite, for he had recently completed a far more ambitious stone castle for his patron and friend Phoebe Apperson Hearst on a forested estate she owned near Mount Shasta. Hearst was a discriminating patron of architecture for whom Maybeck had already concocted a remarkable lodge-like structure of unpainted redwood that Mrs. Hearst used for receptions a few blocks south of the university. At the same time Maybeck also designed a faculty club next to the creek that bisects the campus. It, too, resembles a rustic mountain lodge. Both buildings clearly showed Maybeck's affinity for Arts and Crafts detailing and furniture as well as tall cavernous spaces.

In 1906, Maybeck created a clubhouse for the Hillside Club in a growing residential district north of campus. The women of Berkeley founded it as a civic improvement club in 1898 but Maybeck largely inspired it and it soon admitted men. The club grew out of a Ruskin reading group and was devoted to preserving the town's hillsides from brutal street grading and inharmonious buildings. Its bible was a book titled *The Simple Home* written by poet, naturalist, and Muir friend Charles Keeler. The slim volume was "dedicated to my friend

and counselor Bernard R. Maybeck" and contained the architect's prescriptions for designing in harmony with nature. The club's *Yearbook* in 1906-7 summarized its credo as, "Hillside Architecture is Landscape Gardening around a few rooms for use in case of rain."[6] Berkeley's benign climate as much as Muir's presence and the Hillside Club's suasion produced a plethora of brown shingle houses, sleeping porches, patios, and even an open air school to indoctrinate the town's children in a proper reverence for nature.

The excitement occasioned by the building of an ideal bayside city for the San Francisco Panama-Pacific International Exposition (PPIE) in 1915 may have enticed Herbert Maier to enroll in UC's Department of Architecture. UC alumnus Stephen Mather took the opportunity of the fair to sponsor a three-day conference of national park superintendents, concessionaires, and politicians at the university. President Woodrow Wilson had recently appointed former San Francisco attorney Franklin K. Lane as his Secretary of the Interior and Lane in turn appointed Stephen Mather his assistant. Both men were near classmates and proud alumni of the University of California. Mather was also a friend of Muir (who had died the previous year) and an ardent and energetic conservationist who sought to create an agency to oversee the expanding network of national parks and monuments with a cadre of rangers modeled on the Canadian Mounties. The spring conference in Berkeley led the following year to the creation of the National Park Service with Mather as its first Director.



Figure 2. Herbert Maier around the time he studied architecture at U.C. Berkeley (Photo courtesy Phyllis Zagone.)

Although Herbert Maier's life was to be inextricably bound to the NPS, it is unlikely that the young man attended that conference of dignitaries. He would, however, have partaken of the studio camaraderie in the university's Department of Architecture, then under the leadership of Professor John Galen Howard. As architectural historian Sally Woodbridge has written:

> From the beginning, the department's atmosphere was intimate and informal. Because these juniors and seniors were not required to take courses in other departments, they spent most of their time working together in the architecture building. The eight students in Howard's first class called their self-contained world "the Ark." Howard was "Father Noah."[7]

The university's Regents had lured Howard from private practice in New York City to found the department and to supervise the implementation of a grandiose master plan for the campus. The plan was the product of an international competition paid for by Phoebe Hearst at Bernard Maybeck's suggestion. Although Howard is best known for his monumental neoclassical buildings that comprise the campus core, he was equally adept at designing informal rustic structures such as the brown shingled "Ark" where Maier learned his craft as well as sensitive expansions to Maybeck's own redwood Faculty Club and an immense log cabin behind it built for the senior men's class in 1906. Howard was an early member of both the Sierra and the Hillside Clubs.

That Mather and Lane strongly identified with California and its public university assured that almost all the men who founded and steered the NPS through its formative years had passed through UC in the years that Berkeley was a leading center of the Arts and Crafts Movement.[8] All of those men shared a love for Yosemite National Park and most were early members of the Sierra Club as well as the later Save-the-Redwoods League founded in 1918.

Herbert Maier was a private and modest man who left almost no record of what must have been his formative years at the University of California. We cannot know

whether he met Bernard Maybeck, who had been instrumental in founding the Department of Architecture but who did not teach there. Little known outside the Bay Area until 1915 when his remarkable Palace of Fine Arts[9] for the PPIE earned him international fame at the age of 53, the older architect did apparently leave a lasting impression on the student, for his daughters recall that after his retirement he enjoyed driving them around Berkeley pointing out buildings that Maybeck had designed.

Fluent in German, Maier enlisted in the Naval Reserve as a translator when the United States entered World War I and apparently never graduated from the university. He paid for his college years by working summers at Camp Curry in Yosemite Valley. In an interview conducted in 1962 by his NPS colleague Herbert Evison, Maier attributed his lifelong love of nature, and especially for the Sierra Nevada, to that experience and to the high country trips he took with his UC classmate and friend Ansel F. Hall.

Almost exactly contemporary with Maier, Hall graduated with a degree in forestry in 1917 and soon joined the fledgling National Park Service where he quickly climbed the civil service ladder and took Maier with him. He served from 1920 to 1923 as Yosemite Park's first park naturalist, a role in which he founded the Yosemite Museum Association and promoted the kind of interpretative programs that John Muir had advocated. Stephen Mather regarded Hall's work so highly that he made him chief naturalist of the National Park Service. Hall moved from Yosemite to Berkeley, where the university gave him an office in the School of Forestry, further reinforcing the university's close association with the National Park Service that would grow into the on-campus Western Museum Laboratory that furnished interpretive displays for national parks across the country.[10]

In 1923 Hall invited Maier to a meeting with Stephen Mather and NPS Chief Landscape Architect Daniel Hull to discuss Hull's plan for a government center and museum in Yosemite Valley. Maier later recalled that the men met at San Francisco's Palace Hotel while President Harding was dying in the Presidential Suite upstairs.

Maier shared with his friend Ansel Hall and with Stephen Mather (as well as Muir and LeConte before them) a keen interest in and commitment to the educational role of national parks. Only nature education, the men felt, could instill in visitors the necessary appreciation and even reverence that would safeguard the parks from vandalism and excessive development. Hall subsequently obtained a grant from the Laura Spelman Rockefeller Memorial for Maier to design an interpretive museum for Yosemite Valley, where Maier and Hall had spent their collegiate summers.

For nine years Maier devoted himself to working for the American Association of Museums and the Smithsonian Institution designing museums for the national parks. The structures he built for Yosemite, Yellowstone, Grand Canyon, and for Bear Mountain State Park on the Hudson River display not only his own sympathy for nature but his affinity for the Arts and Crafts ethos and aesthetic, but also, I believe, for the late work of architect H.H. Richardson[11] and perhaps as well for the Californian architects Greene and Greene.[12]

Maier saw his own buildings as regrettably necessary incursions into the parks he loved, and he sought to make them as unobtrusive as possible. He wrote that "even the finest building . . . is somewhat of an intruder" when advising other park designers in 1935 to err towards modesty.[13] His buildings typically featured battered walls of massive local boulders often supporting an upper story of equally massive rough logs and unpainted wooden shakes. Working closely with his UC classmate Thomas C. Vint and other talented landscape architects, Maier strove to integrate his buildings into their unique environments by sensitive siting, expansive terraces that accommodated landmark trees, and meticulous attention to color. His buildings hugged the ground; he championed what he called "the horizontal key."

The National Park Service's Landmark Theme Study for the four museums Maier designed for Yellowstone Park summed up the architect's intentions:

> Maier saw his museums as "not mere passive repositories of 'exhibits' but active interpreters and guides to the national and cultural features and historical associations of their parks. They are laboratory manuals . . . for use not only by the qualified student but by anybody and everybody." Maier saw the museums aiming to "interpret," not just to provide cold facts. To him, "the great thing is to get people to go and see; intelligently, if possible; but by all means to see. And nothing conducive to that end is to be disdained." Maier's buildings were among the first to house that new concept

> of "interpretation"—the "revelation of a larger truth that lies behind any statement of fact."[14]

In this his creations recalled the immensely influential writings of John Ruskin, whose mission he felt was to teach his readers to *see* and understand divine truths within and behind nature as well as to appreciate and practice handicrafts. Through those whom Ruskin inspired—men such as Olmsted, Muir, Maybeck, Worcester, and Keeler—Maier sought to enrich the perceptions of the many who visited his tutelary creations.[15]

Civilian Conservation Corps

Maier's buildings were expensive. The onset of the Great Depression after the market crash of 1929 stanched funding from the Rockefeller Memorial fund and might easily have spelled the end to such meticulously detailed and constructed buildings. As the economic crisis deepened, however, millions of Americans abandoned their faith in an unregulated market that had brought them such grief. Candidate Franklin Delano Roosevelt promised them a New Deal to overcome the calamity, and his administration delivered soon after his inauguration on March 4, 1933.

Among the first of Roosevelt's alphabet soup agencies—and always among his favorites—was the Emergency Conservation Work (ECW) program later and more popularly called the Civilian Conservation Corps (CCC). President Roosevelt announced his intention to Congress on March 21, 1933:

> I propose to create [the CCC] to be used in complex work, not interfering with abnormal employment and confining itself to forestry, the prevention of soil erosion, flood control, and similar projects. I call your attention to the fact that this type of work is of definite, practical value, not only through the prevention of great present financial loss, but also as a means of creating future national wealth.

Congress authorized the agency by voice vote just ten days later.[16]

Deeply committed to conservation since boyhood on his family estate at Hyde Park, Roosevelt wanted his new "tree army" to remediate not only damage caused by heedless exploitation to the nation's lands but the physical and psychological damage the Depression had wrought on its youth. No nation, he said, was so rich as to afford to waste its human and natural resources, and "More important . . . than the material gains, will be the moral and spiritual values of such work . . . We can eliminate to some extent at least the threat that enforced idleness brings to spiritual and moral stability."[17]

The CCC would also, he might have added, short circuit crime, suicide, and the danger of revolution born of despair among millions of chronically unemployed young men.

The ambiguous term "and similar projects" embedded in Roosevelt's message to Congress proved usefully elastic, and the CCC's remit for work on public lands grew along with enlistments that ultimately totaled over 3 million men. As a civil servant, Herbert Maier used that enormous army of cheap labor to vastly expand what he had begun in the 1920s with private funding. He, the professional staff he assembled, and the CCC "boys" left the nation a vast panoply of handcrafted buildings and sensitive landscaping in the process.

In 1933, Horace Albright, Mather's successor as NPS superintendent, hired landscape architect Conrad Wirth as chief land planner for the NPS. Wirth quickly and deftly established connections with local governments to promote more state parks and to provide design assistance and planning that the CCC could implement. At the same time, Albright appointed Maier NPS district officer for the Rocky Mountain District based in Denver as well as CCC regional officer in the Southwest. Although his increasing administrative workload meant that Maier had little time for design, his roles straddling the rapidly expanding state and national park networks as well as the CCC put him in a unique position to implement design work on a scale unimaginable in the 1920s. Like other NPS district officers, he employed a corps of park inspectors who became his circuit riders reporting conditions back to him while advising CCC camp supervisors in the field. Each CCC camp had its own complement of landscape architects and other professionals as well as local experienced men (LEMs) employed to impart their expert knowledge of stonemasonry, carpentry, blacksmithing, forestry, and other valuable skills to the recruits. Maier's team of design professionals further propagated his ideas.

A premium was given to fine craftsmanship not only to better harmonize structures with their surroundings but to instill self-respect and lasting pride in the men of the CCC. Their excellent stonemasonry, in particular, has endured for eight decades and remains a hallmark

of the CCC's presence in the parks as well as a tangible expression of the Arts and Crafts movement's revival in the New Deal.[18]

In 1934, Maier assembled a pattern book that he called his *Library of Original Sources*, combining photos of his own park buildings with other state project structures he admired. The *Library*, says historian Ethan Carr, became "a powerful tool for quickly introducing new state park planners to the basics of Park Service landscape architectural design."[19]

In 1935, Maier addressed the first conference of state park officials organized by Conrad Wirth in Washington as the preeminent authority on proper park development. He told the attendees that the NPS had launched an ambitious research project to identify and document the "close to one hundred types of indigenous frontier construction," and recommended them as exemplary: "We find that construction which is primitive in character blends most readily with primitive surroundings and is thereby less outstanding and has an intriguing craftsmanlike appearance."[20] His emphasis on a deliberate return to primitive materials and means of construction and to manual craftsmanship once more recalls the Arts and Crafts movement. Such advocacy ran counter to the rising tide of Modernism in the 1930s.[21]

Maier hired Ohio architect Albert H. Good in 1935 to collaborate on the compilation and publication of the pattern book *Park Structures and Facilities* under Good's name alone. Demand for the book proved so great that, three years later, Good published an expanded version in three volumes titled *Park and Recreation Structures*.[22] In his 1962 interview with Maier, Herbert Evison began by noting that three out of five structures in the latter book "show distinctly the influence of Architect Herbert Maier."[23]

In 1937, NPS Director Albright reorganized the National Park Service into four regions. Maier retained his dual position as both regional director for the southwestern states as well as regional director of the CCC. He moved from Oklahoma City to Santa Fe, where architect Cecil Doty melded pueblo and hacienda sources in his NPS Region III Headquarters Building according to Maier's precepts. Although he was no longer designing, Maier's authority had grown so great that the other NPS districts looked to Region III, as well as to *Park and Recreation Structures*, for design cues.

Changing Times

Due to the support given them by Franklin Roosevelt's New Deal, the Depression years were a halcyon period for the national, state, and local park systems. Following the war and FDR's death in 1945, tastes changed and without the president's advocacy and CCC labor, Maier's handcrafted and rustic style structures were no longer feasible. Maier nonetheless remained with the NPS where he was instrumental in implementing—perhaps with some remorse—the radical shift to Modernism ushered in with Mission 66.

In 1962 Maier left the western regional office in San Francisco to retire to Oakland, where he had been born almost 70 years before. In a letter to his successor Lawrence Merriam, he asked that no recognition be made of his retirement in the way of a party, solicitation of letters, or gifts. When soon afterwards he learned that he had lung cancer, he concealed his condition from his friends and family until it was no longer possible for him to do so. He died in an Oakland hospital on February 23, 1969.[24]

Maier had grown from his beginning as an obscure Bay Area designer into one of the most influential architects of his time albeit in the constricted realm of park design. Unlike so many others of his profession, however, he was not afflicted with egomania or megalomania and he remained as self-effacing as his own buildings. He told Herbert Evison in 1962 that his opportunity to guide the CCC in the development of state parks "was an unusually rewarding program and has conferred long-range recreational benefits to the public during the ensuing 30 years." At the time of his death, few outside the Park Service knew of his responsibility for so many handsome structures in the nation's parks, or even that he had designed the National Park Service's iconic arrowhead logo.[25] Like so many of those whom President Roosevelt inspired to enter government service, Maier devoted his exceptional talent to the public for whom he worked and to the nature that he loved. He was above all a committed public servant whose work, park historian Linda McClelland asserts, "probably more than any other park designer . . . assimilated and perpetuated the principles of the Arts and Crafts movement."[26] As Berkeley had been so instrumental in creating the National Park Service, so did it transmit an aesthetic that defined the service's formative years.

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1 Freudenheim, Leslie M. *Building With Nature: Inspiration for the Arts & Crafts Home*. Salt Lake City Gibbs Smith, 2005, 186

2 Longstreth, Richard. *On the Edge of the World: Four Architects in San Francisco at the Turn of the Century*. Berkeley: University of California Press, 1998.

3 Freudenheim. *op. cit* 20.

4 NPS Director Horace Albright recalled that Muir "made an enormous impression on me with his discussion of the Hetch Hetchy problem in Yosemite" at a meeting of the Sierra Club. Albright, Horace M. and Schenck, Marian Albright. *Creating the National Park Service: The Missing Years*. Norman: University of Oklahoma Press, 1999, 15.

5 Thompson, Daniella. "Sierra Club pioneers lived near pre-stadium Strawberry Canyon:" http://berkeleyheritage.com/eastbay_then-now/sierra_club_leaders.html

6 Freudenheim. *op. cit*. 123. Maybeck's building burned in a 1923 wildfire and was rebuilt to a design by John White.

7 Woodbridge, Sally B. *John Galen Howard and the University of California: The Design of a Great Public University Campus*. Berkeley, Los Angles, London: University of California Press, 2002, 94.

8 As a successful businessman in Chicago, Mather founded and was President of a California Club there. Albright, *op. cit.*, 31.

9 Maybeck designed the Palace as a total integration of architecture and nature and expressive of the passage of time, both themes which Maier later expressed in his own park buildings and encouraged in his associates.

10 Smith, Harvey L. *Berkeley and the New Deal*. Charleston: Arcadia Publishing, 2004, 107-112.

11 Specifically a gate lodge Richardson designed of massive stone boulders for an Ames family estate in North Easton, MA. Although Richardson never visited California, he was a close associate with landscape architect Frederick Law Olmsted who first proposed that Yosemite Valley be protected as a public park and who designed the first campus plan for the University of California while spending two years in the state during the Civil War. Leland and Jane Stanford commissioned Richardson to design their eponymous university with Olmsted in 1885, but Olmsted's successors took over the job when he died prematurely of gluttony. Ansel Hall worked closely with Frederick Law Olmsted, Jr. to produce a model plan for a system of California state parks as well as the East Bay Regional Park District. See Brechin, Gray. "Forgotten Foundations: The New Deal for Bay Area Parks." *Bay Nature*, January, 2008 (http://baynature.org/article/forgotten-foundation/).

12 Linda Flint McClelland suggests the influence of Greene & Greene designs in Pasadena and Carmel.

13 https://www.nps.gov/parkhistory/online_books/harrison/harrison20.htm

14 *ibid*.

15 Eagles, Stuart. *After Ruskin: the Social and Political Legacies of a Victorian Prophet, 1870-1920*. Oxford: Oxford University Press, 2011. In his book Eagles demonstrates the degree to which Ruskin's ideas influenced even those who never read him.

16 https://en.wikipedia.org/wiki/Civilian_Conservation_Corps

17 Brinkley, Douglas. *Rightful Heritage: Franklin D. Roosevelt and the Land of America*. New York: HarperCollins, 2016, 172-3.

18 E.g., Eleanor Roosevelt was an advocate of handicrafts and ran a crafts cooperative called Val-Kill Industries on the Roosevelt estate at Hyde Park. See Brechin, Gray. "Necessitous Men Are Not Free Men: Bridging Ruskin's Thought and the New Deal." 2014 Ruskin Lecture for the Guild of St George, Sheffield, U.K. and Waithe, Marcus. "Ruskin and Craftsmanship." 2015 Ruskin Lecture for the Guild of St. George, Sheffield, UK.

19 Carr, Ethan. *Wilderness by Design: Landscape Architecture and the National Park Service*. Lincoln and London: University of Nebraska Press, 1998, 281.

20 This survey of sources recalls other New Deal initiatives such as the Historic American Buildings Survey and the Index of American Design.

21 In a letter to David Brower in 1956, Ansel Adams declared himself a "purist" in favor of the removal of all permanent structures from Yosemite Valley, but he was especially fearful of the Modernist structures that Mission 66 would introduce into the parks. Cohen, Michael P. *The History of the Sierra Club, 1892-1970*. San Francisco: Sierra Club Books, 1988, 140.

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24 See tributes by Herb Evison, Conrad Wirth, and Horace Albright in *NPS Alumni Notes*, April, 1969.

25 Shankland, Robert. *Steve Mather of the National Parks*. New York: Alfred A. Knopf, 1970, 316.

26 McClelland, Linda Flint. *Presenting Nature: The Historic Landscape Design of the National Park Service, 1916 to 1942*. Washington, DC: National Park Service, 1993, 234.

America's Parks: Cultural Landscapes of The New Deal

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Figure 1. CCC crew at lunchtime, Glacier National Park (Photo: George Alexander Grant, NPS Historic Photograph Collection)

It is hard to imagine that the worst economic crisis in our nation's history was the time of the greatest expansion and development of our parks and public lands. In fact, the Great Depression and government's all-out response to it catalyzed a "Golden Age of parks," yet the connection is largely forgotten today.

The New Deal (1933-1942)—a collection of 43 newly-styled "relief" programs—was a massive federal investment to stimulate the economy and get millions of unemployed Americans working again. Upon taking office in 1933, President Franklin Roosevelt reorganized the National Park Service, doubled the size of its holdings, and established the Civilian Conservation Corps (CCC) to carry out what has been called the largest environmental protection and restoration program ever undertaken in our country.

Over its nine-year existence, the CCC enrolled more than three million men. Most were teenagers from families struggling with too many mouths to feed.

The "CCC boys" called themselves Roosevelt's Tree Army. They lived in military-style camps where they gained job skills and purpose (and an average of 11.5 pounds). They earned about a dollar a day. They restored millions of acres of ruined forests and farmland, and developed hundreds of state and national parks still in use today.

By contrast, state and national parks today are starved for funds and in need of billions of dollars for deferred maintenance. Without adequate public funding or a vocal constituency to demand it, the parks today, as a matter of policy, are commercializing the public domain in exchange for corporate support.

Few people today remember when parks were regarded as essential to the nation's economy, health, and spirit. By telling their New Deal history, parks can introduce millions of people to a forgotten heritage and the spirit of government that inspired it. Were the public aware of our government's commitment to parks during the hardest of hard times, might they ask of our country's policymakers, "Why not now?"

> "I pledge you, I pledge myself, to a New Deal for the American people."
>
> *- Franklin Delano Roosevelt, Nomination Address Chicago Democratic Convention, 1932*

When President Franklin Roosevelt took office in 1933, the nation was in the depths of the Great Depression. One in four working-age Americans was unemployed. Millions had lost their homes and savings. Nearly half the banks had failed. The country's industrial production had dropped by half. Bread lines and soup kitchens became commonplace across America. Farmers could not afford to harvest their crops and left them rotting in the fields while people elsewhere starved.[1]

Thirteen million people were displaced during the Great Depression. Many lived in shantytowns called "Hoovervilles," named for President Herbert Hoover, who had presided over the nation's economic collapse.[2] Thousands of homeless lived in New York City's Central Park. Along California highways, Dust Bowl migrants were stopped at checkpoints called "bum blockades." In Oakland, California 200 men lived in sections of unused sewer pipes in the infamous homeless encampment of Pipe City, also known as Miseryville.[3]

Within the first 100 days of taking office, Roosevelt succeeded in pushing through legislation intended to stabilize industrial and agricultural production, create jobs, and stimulate economic recovery. A constellation of federal programs, the New Deal gave millions of Americans desperate for a job the chance to earn a paycheck. Many were skilled professionals; others received training on the job. In less than a decade, these workers built tens of thousands of public works across the country—roads, bridges, libraries, courthouses, hospitals, airports, schools, post offices, housing—and parks.[4]

One of FDR's top priorities was to establish the Civilian Conservation Corps (CCC). In its first three months of existence, the CCC enrolled a quarter of a million men (despite pleas from American women and Eleanor Roosevelt's efforts to open the CCC to women.)[5] Most of the men were teenagers, unskilled, and unemployed. More than three million would eventually serve in the CCC—living in military-style camps scattered throughout all 48 states. It was the largest peacetime mobilization in our nation's history,[6] demanding unprecedented cooperation among the Departments of War, Labor, Agriculture, Interior, and dozens more federal agencies.[7]

> "Thank God for President Roosevelt. Without him, I don't know what we would have done."
>
> *- Ruben Keel, CCC Company, 1459 NP-10 Great Smoky Mountains National Park, 1933*[8]

A primary goal of the CCC was to get young men out of the cities and build their health and morale. The Corps planted billions of trees, fought forest fires, and repaired lands ravaged by floods and drought. But the CCC's work in the parks remains its best-known achievement.

Developing parks was a key strategy for bringing relief to rural areas where many lived in poverty. In 1933, FDR issued Executive Orders that doubled the size of the National Park System and strengthened the National Park Service.[9] The newly-minted CCC was deployed to make the parks more accessible and tourist-friendly.

Eight hundred parks across the nation, including 94 national parks,[10] bear the imprint of the CCC in the form of visitor centers, lodges, campgrounds, cabins, shelters, bathhouses, water systems, picnic areas, roads, bridges, trails, lookouts, and comfort stations. Much of what the CCC constructed—like the great lodges—is celebrated for its design and craftsmanship. The men earned about a dollar a day. All but $5 of their monthly earnings was sent home to their families so that the program could benefit the greatest number of people.[11]

The work of the CCC directly led to the creation of park systems in dozens of states.[12] Many states organized parks systems for the first time in order to qualify for federal funds. Conrad Wirth, who supervised the CCC's work in the state parks and later became the Director of the National Park Service, observed that what the CCC had accomplished in the parks in ten years was equal to what might have been expected in 50 years without the Corps' assistance.[13]

Still, the New Deal had its critics. Some in Congress, intent on cutting funds, charged that New Deal agencies were run "extravagantly, wastefully and inefficiently" by legions of shovel-leaning loafers looking for "three hots [meals] and a cot."[14] But the New Deal, and the CCC in particular, were enormously popular with the people.[15]

Through the decades, the CCC has stood as a model of public service, inspiring such programs as the Job Corps, Peace Corps, VISTA, AmeriCorps, the Youth-Adult Conservation Corps (YACC), many local CCCs, and other community-based training and job placement programs that offer young people a chance to succeed.

> "It is my belief that what is being accomplished will conserve our national resources, create future national wealth, and prove of moral and spiritual value not only to those of you taking part, but to the rest to the country as well."
>
> *- President Franklin D. Roosevelt, Message to CCC enrollees, July 8, 1933*

The New Deal decade is widely acknowledged as the "Golden Age of America's parks."[16] Although seen by millions of park visitors every year, the work of the CCC is rarely recognized or interpreted. Ren and Helen Davis, who toured state and national parks to document the CCC's legacy, wrote, "Each year millions of Americans visit state, regional, and national parks. They hike trails, picnic by blue-water lakes, camp beneath towering trees, and relax in rustic lodges or cabins—often without giving a thought to the young men of the Depression-era CCC who created or enhanced the parks they so much enjoy."[17]

Some parks mark trails and buildings constructed by the CCC. New Mexico's Bandelier National Park does more than most. It offers visitors a booklet guiding them through the park's CCC historic district, which was declared a National Historic Landmark in 1987. The Prairie Creek Visitor Center at California's Redwoods National Park provides signage celebrating the history of the CCC in the park. Displays at the museum at the Mesa Verde National Park, Colorado, note their provenance as the CCC. Still, opportunities to preserve, showcase, and interpret the physical legacy of the New Deal-era in the state and national parks—and to honor those who built it—are largely overlooked.

Few visitors to Mammoth Cave National Park in Kentucky would know, for example, that in order to share the risk of their exhaustive and dangerous work underground, CCC crews took turns building the caverns' trail system. Or that in Death Valley, California, CCC work sites and camps remain but are off limits to visitors.[18]

Many of New Mexico's parks and monuments were built or enhanced by local laborers and craftsmen working for the WPA and CCC. One signature example, the Old Santa Fe Trail Building, served as the Southwest Regional Headquarters of the National Park Service from 1939 until 1995. Constructed by local Native American and Hispanic CCC workers, the building is a singular cultural landscape. Due to budget cuts, it now serves as Park Service administrative offices and has very limited public use.

Over the past 20 years the Park Service has made strides explicating the roles of the CCC and the New Deal's Works Progress Administration (WPA) in shaping the national parks. But interpretation is uneven at best and contingent on the interest and knowledge of local park staff. No national standards or interpretive materials appear to exist. The larger story behind these New Deal landscapes—the primacy of parks in the national agenda; the massive public investment made in them; the men whose lives were shaped by the CCC; the ethos of national service, the sense of commitment to future generations—is seldom told.

> "It's not a matter of money, it's a matter of priorities, and the National Park Service over the years has not developed a constituency that will lobby on behalf of it.[19]
>
> *- Dwight T. Pitcaithley*
> *Professor of History New Mexico State University*
> *Former Chief Historian of the National Park Service*

In 2015 the National Park System logged more than 305 million visits—an all-time record.[20] Despite unprecedented and growing demands on the parks, and even as the US economy has regained footing since the Great Recession, the nation's parks are starved for funds. The

National Park Service alone has nearly $11.5 billion in deferred maintenance.[21] The current appropriation for national parks is 1/15 of one percent of the federal budget—about half of what it was in 1981.[22] By contrast, land acquisition, historic preservation, and wildlife protection programs were encouraged and generously funded during the New Deal.

Without adequate government support, state and national parks have been forced to reduce staff and raise visitor fees. Parks everywhere rely on volunteers and private contractors to do the work that park employees once performed. "Public-private partnerships" are viewed as the solution to fill the gap left by years of budget cuts.

A growing number of "friends of the park" groups act as conduits for private donations to the parks. Corporate "philanthropy" is pursued not only for special initiatives, like the National Park Centennial, but to cover the basics that the parks no longer can afford.

Dependence on the private sector has become official National Park Service policy.

NPS Director Jonathan Jarvis' recent memorandum, "New Framework for National Park Service Partnerships and Philanthropic Stewardship in the 21st Century,"[23] has raised concerns over the extent to which corporate donors expect or are promised benefits in return for their support. Under the new guidelines, the Park Service will allow the use of park names and imagery in corporate advertising campaigns, grant naming rights to park facilities, and allow the display of corporate logos on park infrastructure and displays.

Director Jarvis, who sits on the Board of the National Park Foundation, recently offered assurances that any donor recognition the Park Service provides "is done tastefully and appropriately." "Thoughtful corporate philanthropy is more than a source of funding for America's national parks," he said. "It is a cornerstone of their origins and key to their next 100 years."[24]

The Park Service claims that the parks have always benefited from philanthropy, but historically such generosity has not been tied to corporate marketing. Corporate donors to the Parks Centennial include Boeing, Disney, Budweiser, Coca-Cola, Suburu, Wells Fargo, and Air-Wick, which has introduced scented air fresheners inspired by the national parks.[25]

Budweiser, which donated $2.5 million to the National Park Foundation, received a waiver to the Park Service's longstanding policy against partnering with alcoholic beverage companies;[26] some Bud bottles now feature the Statue of Liberty.

The nonprofit Public Employees for Environmental Responsibility (PEER), a national alliance of local, state, and federal resource professionals, points to the $2.5 million "Proud Partner" donation agreement between Coca-Cola and the National Park Foundation as an example of "creeping corporatization." In a five-year agreement that ended in 2012, Coca-Cola was granted exclusive use of park logos for cause marketing campaigns (to the exclusion of all other beverage companies). While under the agreement, Coca-Cola temporarily blocked a ban that the Park Service had imposed on the sale of disposable plastic water bottles, a major source of litter, at Grand Canyon National Park.[27]

Parks and their stewardship have traditionally been government's role—a public investment for a public good. But after years of budget cuts and partisan politics, park managers appear resigned to the necessity of private fundraising and to doing more with less. The pernicious underfunding of the parks by Congress and states has barely penetrated the public's consciousness. Raising awareness is crucial.

There is another model. The New Deal, told through its imprint on the parks, offers lessons not only to the history of the parks, but also to what Americans value and choose to protect. The cultural landscape of the New Deal is not only about the past—it is a meme for the future: how young men, given the chance to work, created glorious parks where everyone is welcome today; how in the hardest of hard times, government devoted itself unreservedly to the best idea America ever had.[28]

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Rocks, Logs and Circular Perfection: Design Parameters and Processes for Constructing Outdoor Theaters in the Nation's Parks During The New Deal

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Figure 1. In the 1920s, simple theaters and fire circles began offering church services, lectures and cultural events at Yosemite (above) and other national parks. (Source: Record Group 79,G-17A. National Archives, College Park, MD)

Abstract

During the 1930s, multiple programs within Franklin Roosevelt's New Deal agencies built hundreds of outdoor theaters in America's public landscapes, including many constructed by the Civilian Conservation Corps (CCC) and designed by National Park Service staff.[1] This zeal for constructing theaters was an outgrowth of an early 20th century movement promoting the spiritual benefits of staging music and drama in undisturbed nature. In 1903 UC Berkeley constructed Hearst Greek Theatre in a forested site to offer both student and professional performances. Publicity on Hearst's successful events inspired the construction of additional outdoor theaters on campuses, estates and parks across the country. The popularity of outdoor performances intensified and requests to present events in the national parks became overwhelming. To insure that performances addressed topics appropriate to each park, in 1924 National Park Service (NPS) Director Stephen Mather appointed Berkeley's drama coach Garnet Holme as Pageant Master of the National Parks. Although most events were held in unimproved landscapes, a number of theater structures had been built in national parks by 1932. Then, in 1933 the construction of outdoor theaters increased significantly when the NPS Branch of Planning and Design took charge of all park improvements built by the CCC. This in-house group not only expanded its staff to manage national park projects, but it established a separate State Park Division to address the 70% of CCC projects in state and local parks. To aid the new staff, the NPS retained the architect Albert Good to produce references illustrating appropriate park structures. Good proposed that outdoor theaters should disappear into the landscape through the use of local stone and timber, but the circular symmetry of Good's examples were in stark contrast to the nat-

ural geometries of the landscape. When constructing these symmetrical theaters in the national parks, park designers selected naturally bowl-shaped sites to avoid significant earthwork and vegetation removal. In state and local parks, less concern for land disturbance often resulted in siting theaters in asymmetrical or convex topography. Such sites produced distinctive theater designs by either reshaping of the landscape or reshaping a theater's idealized symmetry. Whether designing to the restrictive guidelines in the national parks or more flexible ones in the State Park program, National Park Service designers and CCC recruits produced inventive and memorable theater designs that consistently gave a voice to the particular character and beauty of each landscape.

Introduction

In 1933, Franklin Roosevelt was elected President with a mandate to revitalize the nation's economy. His administration immediately created new federal programs referred to as the "New Deal," to provide jobs for the 25% of Americans out of work. Some agencies, such as the Public Works Administration, contracted with private firms to build large-scale public projects including roads and buildings in the national parks. Other programs directly hired the unemployed to maintain and build public facilities. These programs also hired many of the nation's most talented design professionals to propose and design these projects. Influenced by the popularity of outdoor theaters during the previous decades, these designers recommended building hundreds of outdoor theaters in the nation's parks, schools, and civic plazas, often whether there were programmatic demands for a theater or not. In her book, *The Public Landscape of the New Deal*, Phoebe Cutler noted, "The amphitheater, a much-favored item with almost every agency but the Soil Conservation Service, appeared everywhere from the heart of a redwood forest to city streets."[2]

The Early 20th Century Outdoor Drama Movement Encourages New Outdoor Theaters

The popularity of outdoor theaters during the Depression was a continuation of an early 20th century movement that promoted the spiritual benefits of staging performances in the outdoors. In the late 19th century, troupes of actors had traveled the country presenting plays on the open lawns of private estates, campuses, and public landscapes. These events grew into an organized outdoor drama movement to bring citizens in contact with nature. In 1903 UC Berkeley constructed Hearst Greek Theatre to offer both student and professional performances. Publicity promoting Hearst's successes inspired the construction of additional outdoor theaters in campuses, estates and parks across the country. As interest in outdoor drama grew, publications as diverse as *Craftsman, Sunset, Harpers, Vogue, Landscape Architecture Quarterly, The Architecture and Engineer,* and *Scientific American* published articles on outdoor performances and the design of outdoor theaters.[3] These articles, along with two books, *Outdoor Theaters* (1917) by landscape architect Frank Waugh and *The Open-Air Theater* (1918) by art and theater critic Sheldon Cheney, advocated for outdoor theaters as a way to merge two progressive beliefs:

1. The gathering of all members of a community for cultural events as a way to enhance civic life and democratic values.
2. Spending time in nature as a method to provide spiritual renewal for every person, rich or poor.

Three landscape architects - Frank Waugh in Massachusetts, Jens Jenson in the Chicago, and Emerson Knight in California - played active roles in this popular movement. Knight and Waugh wrote numerous articles on outdoor theaters for professional publications and all three designed multiple theaters in natural settings. The popularity of hosting outdoor events intensified and after the establishment of the National Park Service (NPS) in 1916, requests to present events in the national parks became overwhelming. To address these demands, in 1924 National Park Director Stephen Mather, a Berkeley alumnus, appointed Berkeley's drama coach Garnet Holme as Pageant Master of the National Parks.[4] Holme's charge was to insure that all events in the national parks were appropriate for their settings. He reviewed event requests and produced multiple performances at Sequoia, Yosemite, and Yellowstone National Parks, Pinnacles National Monument, and in the Allegheny Mountains. Holme was working on pageants for Crater Lake and Mt. Rainier National Parks when he died in 1929. [5]

During the twenties most national park events were in unimproved landscapes, but crowds sometimes compromised fragile surroundings, generating support by park staff to build outdoor theaters in specific locations for plays, church services, and interpretive lectures. By 1932, fire circles and small log theaters had been built in several national parks, as well as two theaters with

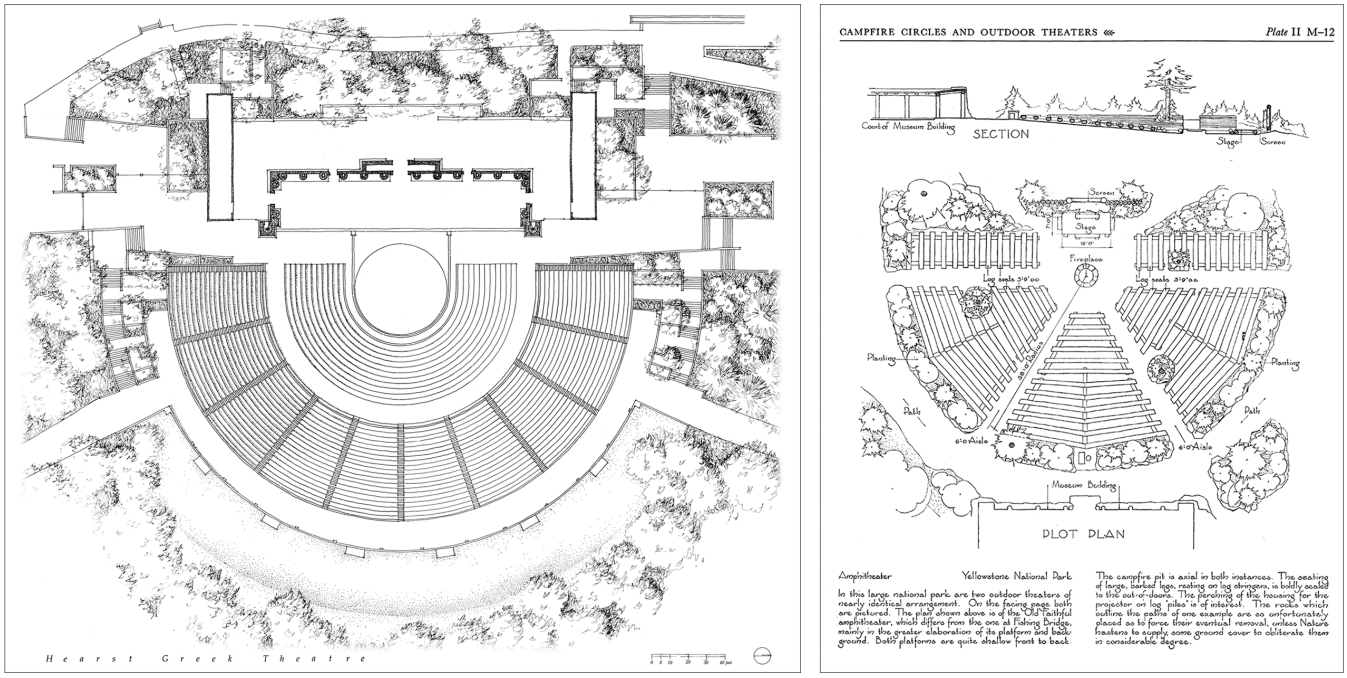


Figure 2. The layout of the 1903 Hearst Greek Theatre (left) was seemingly a precedent for the Yellowstone NP Amphitheater (right) (Sources: Drawing, L. Jewell (left): Albert Good. Park Structures and Facilities (National Park Service, 1935): 178. (right))

more than 800 seats each in Yellowstone National Park. The Yellowstone theaters were adjuncts to museums designed by architect Herbert Maier, so they were likely designed by Maier, possibly with input from Thomas Vint, Head of the National Park Service Landscape Division. Both theaters had log seats placed in concentric arcs around a central space backed by a raised stage. Their symmetrical layouts were strikingly similar to Berkeley's Greek Theatre, only smaller and rendered in rough-cut logs rather than concrete. Both Maier and Vint had attended Berkeley during the teens and may well have been influenced by their student experiences at Berkeley's Greek Theatre. [6]

National Park Service Designers Guide CCC Construction

Immediately after becoming President in 1933, Franklin Roosevelt established the Emergency Conservation Work, soon known as the Civilian Conservation Corps, or the CCC. The intent of the CCC was to put large numbers of youths to work conserving and restoring the natural environment, including the nation's parks. Unskilled, single men between the ages of 17 and 26 made up 90% of the enrollees while middle-aged World War I veterans, often with skills as masons or carpenters, were the remaining 10%. Administration of the CCC was a collaborative effort of government agencies. The Labor Department recruited and hired the men, the Army managed the camps where the men lived and the Department of the Interior's National Park Service and the Department of Agriculture's Forest Service oversaw most projects. The recruits functioned akin to a peacetime army. They dressed in uniforms and lived in military-like camps near work projects. They cleared vegetation, planted trees, stabilized eroding streams and constructed roads and small structures in federal, state and metropolitan parks and forests. Every state housed CCC camps and more than 3,000,000 men served over the life of the program.

Under the mantle of conservation, CCC recruits built park roads, walls, fire towers, picnic shelters, campgrounds, comfort stations, trails, and on occasion, administrative buildings and lodges under the direction of national park designers. They also built outdoor theaters that ranged from intimate fire circles to Colorado's 9,500-seat Red Rocks Amphitheater. By the time Roosevelt established the CCC, the National Park Service had already set up an in-house Landscape Division to develop master plans and improvements for the national parks. The Landscape Division, led by landscape architect Thomas Vint, was poised to provide design leadership for CCC projects in not only the national parks, but also in state and local parks. With the skill of the CCC laborers at their disposal, these designers created

the facilities symbolic of the American park experience, including thousands of structures such as picnic shelters, comfort stations and outdoor theaters. Renamed the Branch of Planning and Design in 1933, the group had a ready supply of master plans and design proposals to immediately put CCC recruits to work in the national parks. However, roughly 70% of the park CCC projects were in state and local parks. Unlike national parks, state and local parks seldom had master plans, much less detailed designs for park improvements. To address this, Vint established a State Park Division led by landscape architect Conrad Wirth to administer, plan and design CCC projects. Wirth organized regional offices to manage the design of these non-federal projects and produce a constant flow of work to keep the thousands of CCC enrollees busy.

To aid the newly hired design professionals who were inexperienced in park design, the design staff produced references with existing park structures as models for new ones. In 1934, the park service retained designer Dorothy Waugh to assemble the first references, *Portfolio of Comfort Stations and Privies* and *Portfolio of Park Structures*, with dimensioned drawings of existing structures. Waugh was the daughter of Frank Waugh, a former professor of Conrad Wirth and the aforementioned author of a book on outdoor theaters. But surprisingly she did not include examples of outdoor theaters or fire circles in her references. In 1935, the architect Albert Good edited a more sophisticated bound volume *Park Structures and Facilities,* in which he included six examples of circular and symmetrical theaters in a chapter, "Camp Fire Circles and Outdoor Theaters." Good's book was produced with input from Herbert Maier, Dorothy Waugh, and Vint and included photographs and beautiful ink drawings. After the initial 2250 copies were distributed, Good produced a 1938 three-volume edition, *Park and Recreation Structures,* with thirteen examples of outdoor theaters.

Albert Good's introduction to the 1938 edition addressed the evolution of the natural park and the role of structures in these parks. He offered his observation that the 19th century natural park idea had evolved to include not only the superlative nature found in national parks, but also the nature he labeled as *sub-superlative* found in most state and municipal parks.[7] Good proposed that structures should defer to the landscape in superlative nature, but suggested that structures could be designed more boldly when they were located in *sub-superlative* nature. He emphasized the use of natural materials and hand-hewn construction as a way for theaters to merge into their surrounding landscape. However, Good did not include, or advocate for, theaters where both geometry and materiality reflected the surrounding landscape. This is surprising since Sheldon Cheney's *Open Air Theater* book, along with numerous magazine articles, included examples of theaters with irregularly organized designs. Cheney even designated such theaters as *nature* theaters and he presented northern California's Bohemian Grove Theater as an example.[8]

Good did include a few examples where existing trees or boulders briefly interrupted the arced rows, but he did not include any where landscape features reshaped the geometry of traditional theater plans. The advantage of less geometric layouts would have been the flexibility to adapt to a range of topographic locations while still avoiding earthwork. Instead, Good recommended the strategy of selecting only bowl-shaped sites to accommodate the symmetrical theater layouts without making significant topographic changes:

> Whenever possible, the outdoor theater should be located in a natural half bowl. Unless existing contours truly invite such development, a remolding of them to create a natural effect is likely to require an amount of work out of proportion to the benefits derived. If anything short of accomplishment of complete naturalness results from a remolding of topography in creation of an open-air theater, the park is long, perhaps forever disfigured by a scar that should be rigidly avoided…[9]

NPS Designers and the CCC Continue Building Outdoor Theaters in the National Parks

The CCC, under the guidance of NPS designers, constructed new theaters and fire circles similar to the stone and timber structures built in the national parks during the 1920s. Built from local materials in the hand-hewn construction techniques of the American pioneers, the CCC recruit's limited skills meshed well with the park service's aesthetic of rough hand-hewn work. As per Good's guidelines, these theaters were strategically designed to disappear into their landscapes and were almost always located in topographic half-bowls where a

circular auditorium could fit without significant earthwork. Even large theaters were low-profile structures designed to blend into the surrounding landscape. At Moraine Park in Rocky Mountain National Park, the existing vegetation was not sufficient to conceal a new theater, so the CCC recruits installed trees to obscure it. Where stone was available in parks such as Mesa Verde, recruits built curved seat walls that could hug the native terrain more closely than straight segments of timber. However, in most forested sites, recruits typically built log benches for theaters rather than stone walls that required more sophisticated construction skills. They simply placed stripped logs in arced configurations or crafted timber into planks supported on stone or wooden piers. In western forests where large diameter logs were readily available, park service designers developed a simple, yet striking and serviceable bench by having recruits simply cut and remove a quarter of a large diameter log to create a flat seat and sloped back. At Lassen National Park, they developed a clever solution to the conundrum of building a traditional fire circle where visitors could also view a stage from all seats. Here, National Park Service designers created what Good dubbed a *"campfire circle with budding ambition to become a kind of outdoor theater."*[10]

A ring of large diameter log seats formed Lassen's fire circle/theater. Eliminating the backs of the log seats directly in front of the stage kept views open to the stage. Participants in this backless bench section could face the stage for presentations and then simply turn in the opposite direction to enjoy a campfire. This ingenious scheme also addressed sight lines by using incrementally larger logs to raise seat heights gradually as the distance to the stage increased. Other fan-shaped layouts provided both a stage and campfire by placing the fire circle to one side of the auditorium or elevating the stage above the smoke of a central fire. Using this limited vocabulary of logs, planks and stone for structures in the national parks, talented NPS designers fashioned many imaginative, albeit restrained, theaters and fire circles.

New Deal funds also expanded the National Park Service's interpretive programs, prompting the widespread use of lantern slides in outdoor presentations. The CCC workers encased modern screens and projectors in unfinished logs in both new and existing outdoor theaters. At Yellowstone and elsewhere, the log encased screens resulted in rather incongruous assemblages of rough-hewn structures supporting the latest technical apparatus.

Using what became known as *park service rustic*, the outdoor theaters and campfire circles, like other rough-hewn structures built by the CCC recruits, were designed to merge into the landscapes of the national parks.[11] Rustic imagery was so ingrained that it went essentially unchallenged as the method for structures to harmonize with the surrounding landscape in the national parks. Similarly entrenched was the notion that outdoor theaters have rigorously symmetrical plans with only the occasional interruption by a significant tree or boulder. The motivation to rely almost exclusively on classically derived seating arrangements is unclear; assumedly the

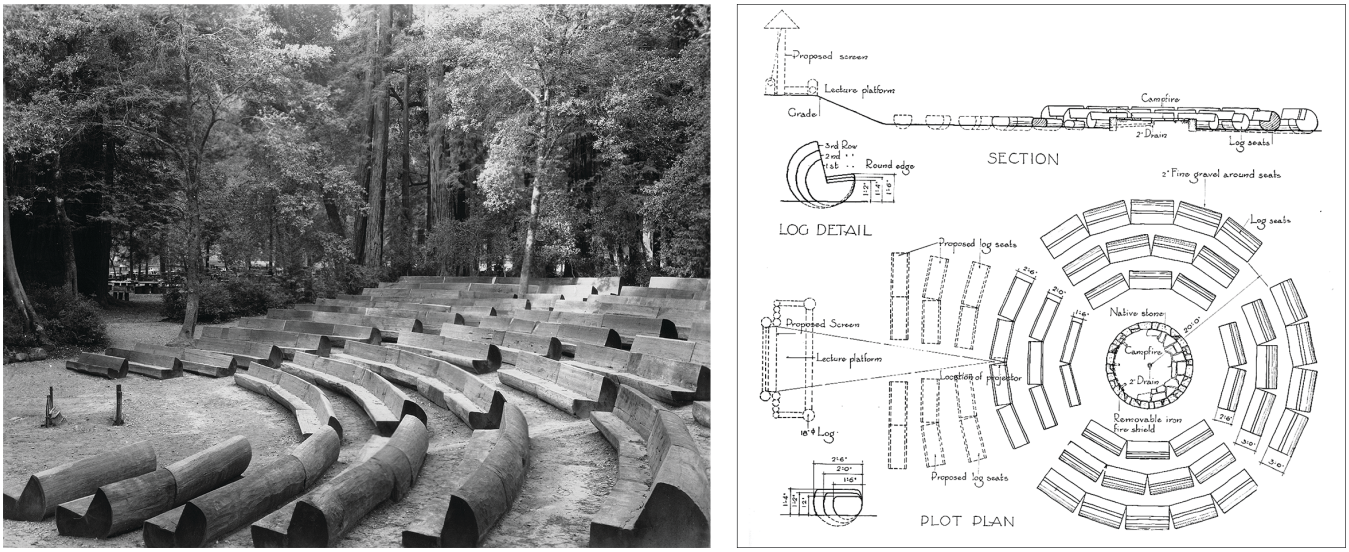


Figure 3. Seats were cut into large diameter logs and arranged in arcs at Big Basin (left) and other western forests. At Lassen National Park log seats were modified to provide a stage view (right). (Source: Record Group 79, SP-CA. National Archives, College Park, MD (left): Albert Good. Park & Recreation Structures: Part I (National Park Service, 1938), 199.) (right)



Figure 4. CCC workers encased screens in logs (left) and built miniature rustic structures to house projectors for lantern slides (right) similar to ones at Yellowstone in parks across the country. (Source: Record Group 79, PGN. National Archives, College Park, MD.)

designers' Beaux Arts training or perhaps a concern for maximizing the number of seats with perfect sight lines influenced this bias. Whatever the reason, this design strategy resulted in a memorable landscape experience, particularly in forested locations. From a distance, the materials of the theaters render them a part of the landscape; yet, the geometric arrangements of logs or stones are unmistakably human-made when viewed up close. Similar to art installations by Andy Goldsworthy and several other environmental artists, their materials make them a part of the landscape while they are also powerful reminders of the deliberate human thought and effort that created them.

NPS State Park Designers Reinterpret CCC-Built Outdoor Theaters in State and Local Parks

In contrast to the national park programs, state park programs had more flexibility in a theater's programming, size, and appearance, thereby opening up opportunities for bolder theater designs. By the mid-1930s, many state and local parks had strained the interpretation of the CCC's conservation mandate by proposing outdoor theaters for concerts, large dramatic pageants, and civic gatherings. Several of these theaters were visually prominent structures with design expressions quite different from the rustic theaters of the national parks. Likewise, the need to quickly direct the CCC recruits to construct improvements in the state parks, along with the design and construction process set up by Conrad Wirth, encouraged diverse design solutions. Wirth established three roles for designers: 1) regional office staff to select, review, and oversee projects, 2) senior consultants to generate design schemes and inspect construction projects and 3) foremen who worked daily in the field with the CCC recruits.[12] Either the park service staff or a sponsoring agency could initiate a proposal for state park improvements. They began by submitting a conceptual design drawing to obtain approval for an initial six-months of CCC labor. As support was not guaranteed, these drawings were fairly basic. Following project approval, recruits collected timber and stone for construction materials because funds were seldom available for purchase of construction materials. The foreman would then adjust the design diagram to site conditions and develop details in the field as construction progressed. A National Park Service inspector visited each project several times a month to give design direction and file reports with the district office on the project's progress, design and workmanship. On a large project, one section might be built in one six-month funding period and the next section might begin only after approval of a new funding period. Some major projects were extended ten or more times.



Figure 5. The Sunrise Amphitheater in Colorado was one of the earliest theaters built by the CCC. (Photograph by Anton Grassl)

State park theaters in relatively undisturbed natural areas were usually low-key structures similar to those in the national parks, but other locations presented newly hired NPS designers with opportunities to apply their design training to bolder, more adventuresome schemes. These theaters were usually based on the same precedents as theaters in the national parks, but they were located in a range of topographic situations, often to take advantage of powerful vistas. When these sites had convex or asymmetrical topography, they required either reshaping the landscape to the theater or reshaping a traditional theater layout to the landscape. Boulder, Colorado's Sunrise Amphitheatre, built in 1933, was one of the first theaters built by the CCC in the state park program. It was built from rough stone collected on site and had a circular plan focused on a fire circle like the theaters in the national parks. However, the theater was located on a convex landform and, it was a structure designed to be noticed.

S.R. De Boer, a landscape architect known for his Beaux Arts planning schemes for Denver, proposed this small amphitheater while working as a NPS Inspector on the road, trails and picnic facilities for Boulder's Flagstaff Mountain Park. He located it on the mountain's summit where visitors could enjoy a breathtaking vista of the landscape below. His only drawing was quite basic, showing concentric circles overlain on a topographic map. The foreman and inspectors then fit the symmetrical plan into the convex topography by directing fifteen CCC recruits to vary the vertical distance between the seats and the surrounding grades along each row.[13] The theater's small size meant that recruits could adjust the terrain to the plan with only shovels and wheelbarrows. As a result, they created a precise circle of seats that contrasts sharply with the landscape's rugged character, while the seats of rough local stone emphasize that the theater is also a part of this same landscape.

However, the limited availability of earthmoving equipment made reshaping the terrain for a large theater challenging. Instead, at the 5000-seat Sydney B. Cushing Amphitheater in California, NPS designers reshaped the theater's proposed plan to fit the site. Known as the Mountain Theater, this extraordinary landscape was built by the CCC between 1934 and 1941 on state land. Plays had begun on this hillside in 1913 to take advantage of the site's excellent natural acoustics and its extraordinary view of the San Francisco Bay. In 1924, San Francisco landscape architect Emerson Knight sketched a scheme for the Mountain Theater inspired by a Greek theater at Segesta, Sicily. This proposal had a symmetrical stage and seating partially merged into a hillside, but little was built until 1934 when the state received CCC support to build the theater and Knight became an NPS Inspector overseeing the project. With almost no access to heavy equipment, Knight and NPS Landscape Foreman Paul Holloway worked daily in the field with the CCC recruits to reshape the plan into a distinctive sweep of seats that closely follows the site's warped topography.

Knight saved as much existing vegetation as possible, allowing clusters of oaks and rock outcrops to abruptly interrupt the sweeping lines of seats. To avoid removing a backdrop of trees at the top of the theater, he fine-tuned the alignment of the upper twenty rows to shift up and down with existing knolls and swales. This tactic created an impression of the ground pushing the line of monumental stones upwards and downwards, referencing its geologic structure. Evidently Knight produced no

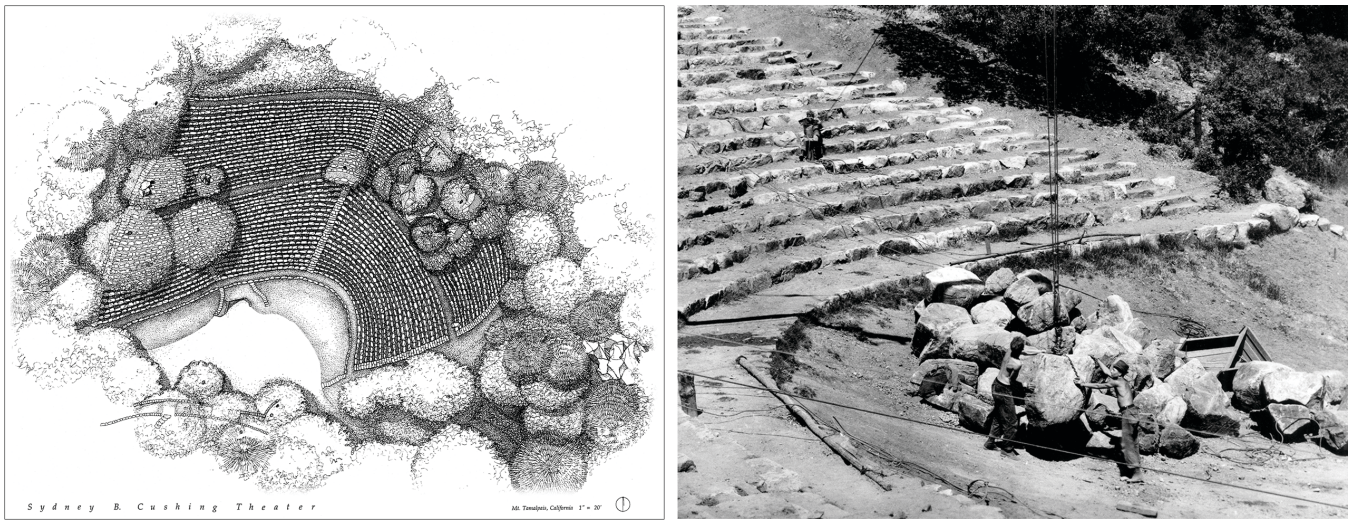


Figure 6. At the Sydney B Cushing Amphitheater, Emerson Knight worked with CCC Foremen and recruits to reshape his classically inspired symmetrical scheme to the existing topography. (Sources: Drawing, L. Jewell (left): Record Group 79. Entry 40-Box 15-SP-CA. National Archives, College Park, MD (right))

additional design drawings, but he gave precise written instructions for selecting and placing the stone seats. He directed recruits to bury one-third of each stone so they appeared to have been in the ground for centuries. Recruits were to select only uncut stones with a naturally occurring square edge to be placed as the top front edge of each row to delineate a continuous sharp line.[14] These stone-to-stone contour lines highlight both the sweep of the native topography and the human made rows. From some positions, the stone seats appear to be random boulders, but from others, the precision of the long curved edge reminds visitors that both human hands and nature made this special place.

By 1936, the CCC program had matured and more local governments retained their own designers to design CCC projects. These consultants were in a position to obtain community support for design schemes more adventuresome than the usual CCC project. Less intense schedules also provided time for more detailed drawings although the 6-month approval process continued to foster incremental design decisions. In 1936, Denver submitted a proposal for CCC support to build a 10,000-seat outdoor theater in a beautiful city-owned park fifteen miles outside the city where citizens had picnicked since the 1870s. Beginning in 1902, people had gathered periodically between two gigantic sandstone formations

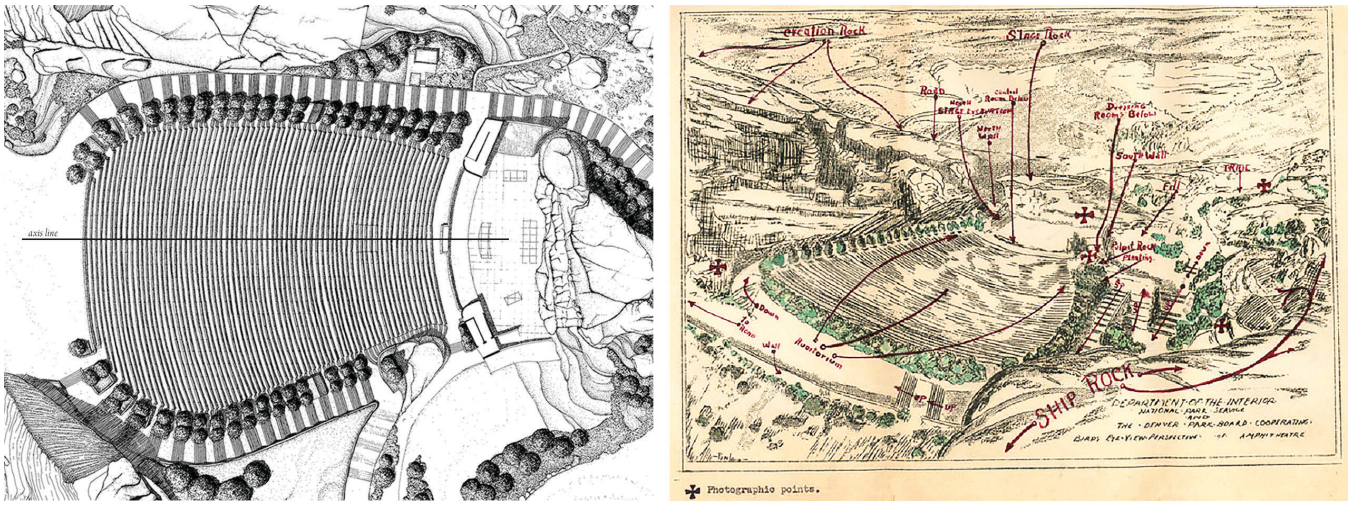


Figure 7. At Red Rocks Amphitheater, CCC recruits moved 250,000 cubic yards of soil while working from a concept sketch (right) and then revised the plan into an asymmetrical scheme (left) to avoid additional earthwork. (Sources: Drawing - L. Jewell (left): NPS notations on Burnham Hoyt drawing - Record Group 79, SP-48-CO. National Archives, College Park, MD (right))

for concerts, prompting the city to plan a grand theater between the two rocks. However, no funding was available until Denver received CCC support for the project based on a design by a local modernist architect, Burnham Hoyt.

Hoyt's scheme challenged the assumption that the only way a structure could respect a scenic landscape was to disappear into it. He proposed a simple undifferentiated plane for a vast auditorium that brazenly contrasts with the textured walls of the adjacent rock formations. Yet, this unadorned surface concentrates the visitor's attention on the site's dramatic rock formations and its 200-mile panoramic view of the surrounding landscape. With only a park superintendent's marked copy of Hoyt's sketch, the CCC began excavating for the stage in early 1936. Construction then progressed uphill to build the auditorium incrementally as the six-month funding periods were extended eleven times. Hoyt achieved the graphic simplicity of the auditorium's surface by eliminating all feeder aisles within the sweeping rows of benches. To do this, he provided generous space along each row so patrons could quickly reach wide peripheral stairs, the theater's only vertical circulation. Creating this deceptively simple plane also meant a radical change to the topography that required dynamite blasting to modify the slope and remove gigantic boulders scattered across the site. The subsequent removal of 25,000 cubic yards of rock and soil was a challenge to Good's directives and required an extravagant commitment of CCC labor. However, political influence and enthusiasm for the distinctive design engendered ongoing approvals from the National Park Service.

Hoyt also adjusted the scheme to the site. When a 28-foot deep excavation at the top of Creation Rock revealed an unexpected rock ledge at its base, Hoyt simply warped the auditorium's plan to circumvent the newfound bedrock and avoid additional blasting. The result was a distinctive asymmetrical plan that still maintained a central axis through the stage and the geometric arcs of seating. Once excavation began, Stanley Morse, an architect on the city's payroll under Hoyt's watchful eye, began the incremental production of 127 sheets of detailed drawings during nearly five years of construction. Morse visited the site each morning with drawings produced in his office the day before. In his words, "The layout plan for the entire theater was not actually completed until construction was completed."[15] The design and construction of Red Rocks differed from most other CCC-built theaters in both scale and in the production of very detailed construction drawings. Morse's daily site visits, the constant adjustments to unexpected conditions, and the incremental process of the NPS State Park program facilitated thoughtful design decisions on the site as well as on paper. Hoyt and Morse sometimes allowed the structure to reshape the site (ex. by moving thousands of cubic yards of earth.) At other times, they let the site reshape the structure (ex. the realignment of the plan to rock ledge.)

Influence of CCC and National Park Designers on Contemporary Outdoor Theaters

The influence of the CCC-built park projects on the American landscape is indisputable. Throughout the country, thousands of structures in hundreds of locations have defined the use and look of American parks. However, it is important to look beyond the iconographic imagery to examine how the National Park Service's designers called upon imagination and creativity

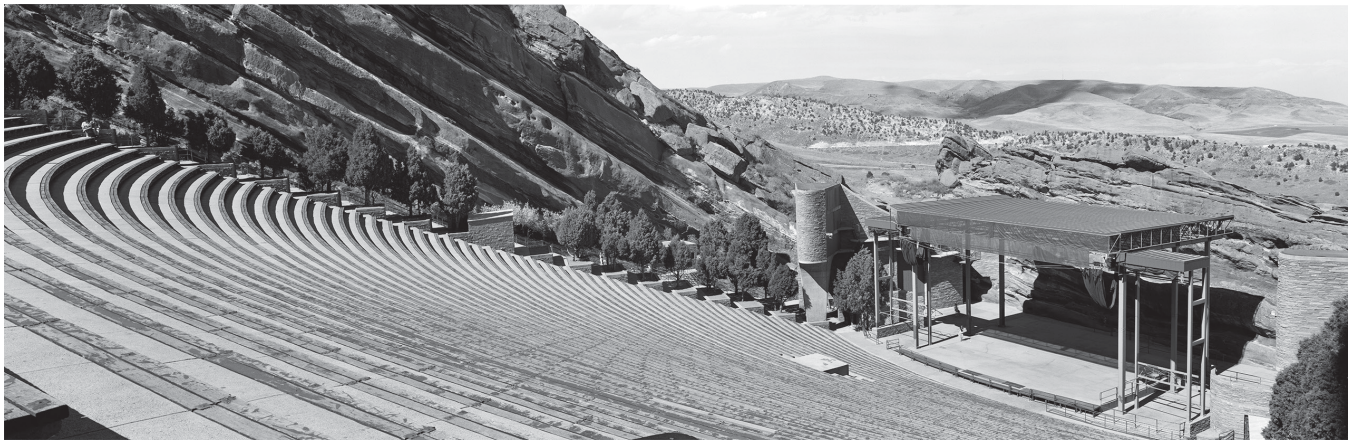


Figure 8. The undifferentiated plane of the Red Rocks seating contrasts sharply with the surrounding landscape to highlight the rugged character of surrounding rock formations and landscape. (Photograph by Anton Grassl)

to place the landscape front and center when designing these theaters. Whether undertaking rough-hewn fire circles in the national parks or daring structures in the state park program, the National Park Service designers never approached the landscape as a generic abstraction. Instead, they pursued an understanding of the particulars of each site by spending time in the landscape. In the national parks, they fashioned imaginative, albeit restrained, theaters and fire circles with a limited vocabulary of logs, planks and stone located in prescribed topographic settings. In the state park projects, they institutionalized a process of designing on site as well as on paper to insure that even the most daring theater structures were crafted to the natural features of their landscapes. In both situations, the results were often striking designs that highlighted the distinctive beauty of each landscape.

After The Depression, priorities in outdoor theater design shifted. Emphasis was placed on large capacities, comfortable seats, concessions, and the technologies available in interior theaters. Such considerations continue to dominate the design of new theaters. Still, Red Rocks and many other Depression-Era outdoor theaters are intact and have continued as prestigious outdoor venues. Fortunately, these wonderful New Deal structures - both modest and spectacular - continue to provide models for structures that give a voice to the landscape.

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Endnotes

1 The number of outdoor theaters constructed by the CCC was never tabulated because financial summaries and reports recorded them under "park structures" or in a mysterious category called "undifferentiated landscape improvements." An examination of National Archives and local sources indicate the CCC constructed at least forty theaters as well as numerous campfire circles that served as theaters. The WPA records indicate they built nearly 500 theaters and bandstands, many with input from the NPS staff. The Forest Service and TVA also built outdoor theaters.

2 Phoebe Cutler, The Public Landscape of the New Deal (New Haven: Yale University Press, 1985): 152.

3 A literature search revealed at least twelve popular magazines, including those listed, with multiple articles on outdoor theaters between 1906 and 1930.

4 Phil Brigandi, Garnet Holme: California's Pageant Master (Ramona, CA: The Ramona Pageant Assoc., 1991): 53-60.

5 Brigandi, Garnet Holme, 58.

6 NPS Director Stephen Mather, his assistant Horace Albright, Thomas Vint, and Herbert Maier all attended Berkeley although there is no record that Maier graduated. All would have likely attended events at the Hearst Greek Theatre. Brigandi's book indicated that Albright had performed in a play directed by Garnet Holme.

7 Albert H. Good, Park and Recreation Structures, 3 vols. (Washington D.C.: United States Department of the Interior National Park Service, 1938): 1-4.

8 Sheldon Cheney, The Open-Air Theatre (New York: Mitchell Kennerley, 1918): 11.

9 Good, Park and Recreation Structures, 1938.

10 *Ibid,* 199.

11 Linda Flint McClelland, Building the National Parks: Historic Landscape Design and Construction. (Baltimore: John Hopkins Press, 1998): 434-434.

12 Linda Jewell, and Steve Rasmussen Cancian, "Keeping the boys busy: Outdoor theatres of the great depression: on-site, incremental design gives form to the complex relationship of site and structure." In Studies in the History of Gardens & Designed Landscapes: An International Quarterly (London: Taylor & Francis, 2004): 188.

13 Jewell and Cancian, "Outdoor theatres of the great depression," 191.

14 Emerson Knight, "The Mountain Theater on Mt. Tamalpais" in *Landscape Architecture Quarterly, (Washington: American Society of Landscape Architecture, October 1949*).

15 Stanley Morse Papers, Denver Public Library.

Remembering The New Deal in the Parks

Harvey L. Smith, National New Deal Preservation Association, Project Advisor, Living New Deal, Department of Geography, University of California, Berkeley, California



Figure 1. Former CCC workers with current AmeriCorps workers, Leeds, Utah. Photo by Harvey Smith, September 2011.

Abstract

The National Park Service (NPS) now faces a staggering $11.5 billion maintenance deficit. By contrast, in the midst of the Great Depression of the 1930s, the NPS experienced a period of major construction and land conservation, thanks to the New Deal. This work was done by the Civilian Conservation Corps (CCC) and under the Works Progress Administration (WPA). When the CCC was terminated in 1942, enrollees had performed work in 198 CCC camps in 94 national park and monument areas, and 697 camps in 881 state, county, and municipal areas. The NPS also played a major role in the improvement and development of state parks nationwide, through its administration and supervision of CCC and WPA crews.

This presentation will briefly describe the contribution of the CCC and WPA and compare it with the current relatively feeble magnitude of the AmeriCorps program. During the New Deal, nearly three million young men built functional yet beautiful infrastructure and planted three billion trees in federal, state, and county parks and federal lands throughout the nation. Today, AmeriCorps employs only 75,000 individuals in the face of a tremendous need for infrastructure repair and employment.

The Bureau of Labor Statistics reported in July 2015 that the number of unemployed youth 16 to 24 years old had increased to 20.3 million. Add to this the grim fact that homicide ranks among the top three causes of death for youth. An expanded AmeriCorps program is not only needed for parks but as a lifesaving alternative for young people. Surprisingly—given the level of youth unemployment and youth violence—funding of AmeriCorps has been controversial.

How can the NPS assist in dealing with its crumbling infrastructure and with the plight of young people in America? The NPS should increase its efforts to interpret the remarkable history of the CCC and WPA in the parks. Presently, interpretation efforts are uneven: some parks do a thorough job, while others do little to interpret or celebrate the CCC and WPA contributions. These interpretation efforts are seemingly not coordinated or encouraged at a national level. Greater efforts during this centennial year would be entirely appropriate to the NPS's initiative encouraging people to discover the meaning of national parks and to inspire "people to both experience and become devoted to these special places." Educated park visitors can become advocates for what could be a win-win solution for both parks and America's youth, contributing to a popular groundswell of support for the NPS and AmeriCorps.

Introduction

My interest in the New Deal goes back about two and half decades. My first New Deal public presentation was for the California Studies Conference in 1999 and was titled "The New Deal or the Raw Deal: Public Works and Public Debate." I developed the presentation after thinking that California did not have a public infrastructure program comparable to the New Deal until I realized that the massive prison building boom of the 1990s was certainly on a similar scale. However, the latter was the polar opposite in terms of public policy. The California boom reflected what was a growing national trend; by 2014 an estimated 6,851,000 persons were under the supervision of US adult correctional systems, including probation, prison, parole, and jail.[1]

In contrast, the New Deal programs of the 1930s employed the down-and-out to build beautiful schools, libraries, parks, and public structures of all types to benefit the greatest number, and through employment probably prevented many from committing crimes. (Although the New Deal did build some prisons and jails, they were very few relative to other types of structures.) The prison building of the 1990s was a program of creating infrastructure for a small but growing portion of society, and the "lock them up and throw away the key" mentality actually reduced the amount of rehabilitative training offered to inmates.[2] Presently, the total number of incarcerated Americans numbers over two million, the highest rate per population for any large country in the world.[3]

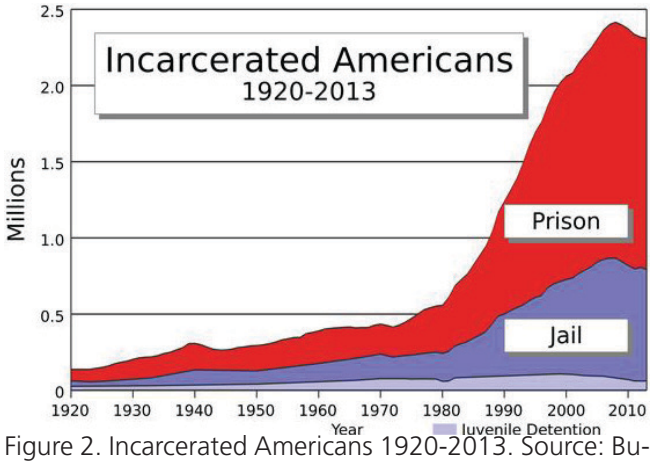


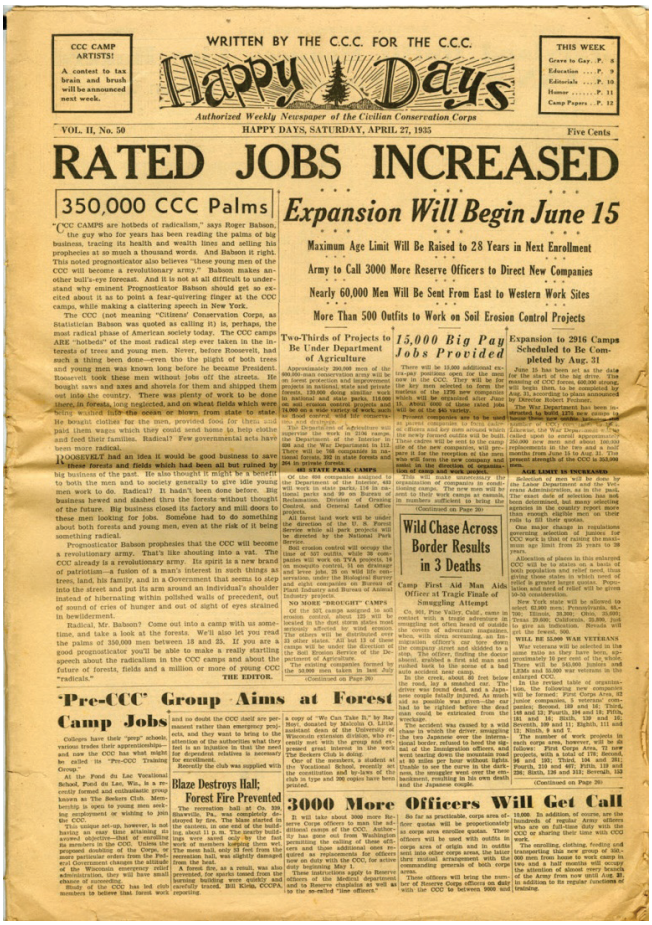
Figure 2. Incarcerated Americans 1920-2013. Source: Bureau of Justice Statistics.

Now we find ourselves in an era that has many parallels to that of the 1930s. Following the massive financial meltdown of 2008, there have been minor increases in employment, but wages are flat and debt for many has increased. The New Deal programs of unemployment insurance, aid to dependent children, old-age pensions, and bank deposit insurance have prevented the financial chaos that the mass of the population experienced in the 1930s. However, the ever-increasing wealth gap and ever-decreasing availability of public services are facts of life in the twenty-first century.

The New Deal and the National Park Service

The Civilian Conservation Corps (CCC) was the first program enabled by the first legislation of the New Deal, the Emergency Conservation Work (ECW) Act, which was passed by Congress within days of Franklin D. Roosevelt taking office. Concern for young people and the environment was central to the public policy of FDR's administration. Adults could not afford to feed their families, and many young men left home and school out of necessity, some riding the rails in search of work. The CCC was able to provide them with work, good nutrition, and education. We know the results—the planting of three billion trees and the construction of park infrastructure at the national, state, and local level.

Thus, ironically in the midst of the Great Depression of the 1930s, the National Park Service (NPS) experienced



WRITTEN BY THE C.C.C. FOR THE C.C.C.

Happy Days

Authorized Weekly Newspaper of the Civilian Conservation Corps

VOL. II, No. 50 — HAPPY DAYS, SATURDAY, APRIL 27, 1935 — Five Cents

CCC CAMP ARTISTS! A contest to tax brain and brush will be announced next week.

THIS WEEK

Grace to Gay.. P. 8
Education ... P. 9
Historian ... P. 10
Humor ... P. 11
Camp Papers .. P. 12

RATED JOBS INCREASED

350,000 CCC Palms

Expansion Will Begin June 15

Maximum Age Limit Will Be Raised to 28 Years in Next Enrollment

Army to Call 3000 More Reserve Officers to Direct New Companies

Nearly 60,000 Men Will Be Sent From East to Western Work Sites

More Than 500 Outfits to Work on Soil Erosion Control Projects

"CCC CAMPS are hotbeds of radicalism," says Roger Babson, the guy who for years has been reading the palms of big business, tracing its health and wealth lines and selling his prophecies at so much a thousand words. And Babson it right. This noted prognosticator also believes "these young men of the CCC will become a revolutionary army." Babson makes another built-eye forecast. And it is not at all difficult to understand why eminent Prognosticator Babson should get so excited about it as to point a fear-quivering finger at the CCC camps, while making a slattering speech in New York.

The CCC (not meaning "Citizens' Conservation Corps, as Statistician Babson was quoted as calling it) is, perhaps, the most radical phase of American society today. The CCC camps ARE "hotbeds" of the most radical step ever taken in the interests of trees and young men. Never, before Roosevelt, had such a thing been done—even tho the plight of both trees and young men was known long before he became President. Roosevelt took these men without jobs off the streets. He bought saws and axes and shovels for them and shipped them out into the country. There was plenty of work to be done there, in forests, long neglected, and on wheat fields which were being washed into the ocean or blown from state to state. He bought clothes for the men, provided food for them and paid them wages which they could send home to help clothe and feed their families. Radical? Few governmental acts have been more radical.

ROOSEVELT had an idea it would be good business to save these forests and fields which had been all but ruined by big business of the past. He also thought it might be a benefit to both the men and to society generally to give idle young men work to do. Radical? It hadn't been done before. Big business hewed and slashed thru the forests without thought of the future. Big business closed its factory and mill doors to these men looking for jobs. Someone had to do something about both forests and young men, even at the risk of it being something radical.

Prognosticator Babson prophesies that the CCC will become a revolutionary army. That's like shouting into a vat. The CCC already is a revolutionary army. Its spirit is a new brand of patriotism—a fusion of a man's interest in such things as trees, land, his family, and in a Government that seems to step into the street and put its arm around an individual's shoulder instead of hibernating within polished walls of precedent, out of sound of cries of hunger and out of sight of eyes strained in bewilderment.

Radical, Mr. Babson? Come out into a camp with us sometime, and take a look at the forests. We'll also let you read the palms of 300,000 men between 18 and 25. If you are a good prognosticator you'll be able to make a really startling speech about the radicalism in the CCC camps and about the future of forests, fields and a million or more of young CCC "radicals."

THE EDITOR.

Two-Thirds of Projects to Be Under Department of Agriculture

15,000 Big Pay Jobs Provided

Expansion to 2916 Camps Scheduled to Be Completed by Aug. 31

Wild Chase Across Border Results in 3 Deaths

Camp First Aid Man Aids Officer at Tragic Finale of Smuggling Attempt

"Pre-CCC" Group Aims at Forest Camp Jobs

Blaze Destroys Hall; Forest Fire Prevented

3000 More Officers Will Get Call

Figure 3. Happy Days, CCC Newspaper, April 27, 1935. Source: California State Archives.

a period of major construction and land conservation, thanks to the New Deal. This work was done both by the CCC and the Works Progress Administration (WPA). When the CCC was terminated in 1942, enrollees had performed work in 198 CCC camps in 94 national park and monument areas, and 697 camps in 881 state, county, and municipal areas.[4] The three million young men of the CCC not only built functional yet beautiful infrastructure and planted trees, they helped protect forests through conservation work and by fighting fires in federal, state, and county parks, and federal lands throughout the nation. The NPS also played a major role in the improvement and development of state parks nationwide, through its administration and supervision of CCC and WPA crews. Today, the WPA is best known for its poster series promoting the national parks, and many parks still have interpretive exhibits created by it. (This paper will focus primarily on the CCC contributions to parks.)

As explained by Harley Jolley, who joined the CCC in 1937, "We were taught the idea that, 'Hey, you can do things. You can do better than what you've done in the past. You do have a future.' And we believed that."[5] This sentiment was echoed by every CCC enrollee I have interviewed—Milt Wolff, Archie Green, Travis Lafferty, and Walter Atwood—or by others I have had casual conversations with at CCC commemorations. Conversely, imagine the potential social dysfunction of those three million desperate young men on the streets during the 1930s without the option of CCC enrollment.

In the 1970s, several decades after the CCC disbanded, two other CCC-like programs benefited the national parks. The Youth Conservation Corps (YCC) and the Young Adult Conservation Corps (YACC) performed a variety of maintenance and resource management projects, including tree planting, river cleanup and erosion control, invasive plant reduction, trail maintenance and improvement, building rehabilitation, and wildlife research. According to Rebecca Mills, Chief of Youth Programs in the western region national parks from 1978 to 1981 and later the superintendent of Great Basin National Park, "The program gave the youth much more than a good job—it gave them a place in an organization staffed with dedicated people committed to the Park Service mission and it taught them a lot about conservation and public service, and work."[6]

The Deficit and the AmeriCorps Option

Now, decades since the remarkable work of the CCC, the NPS faces a staggering $11.5 billion maintenance deficit.[7] Crumbling infrastructure in national parks is not only an aesthetic problem for visitors from all over the world but a potential safety hazard and a national



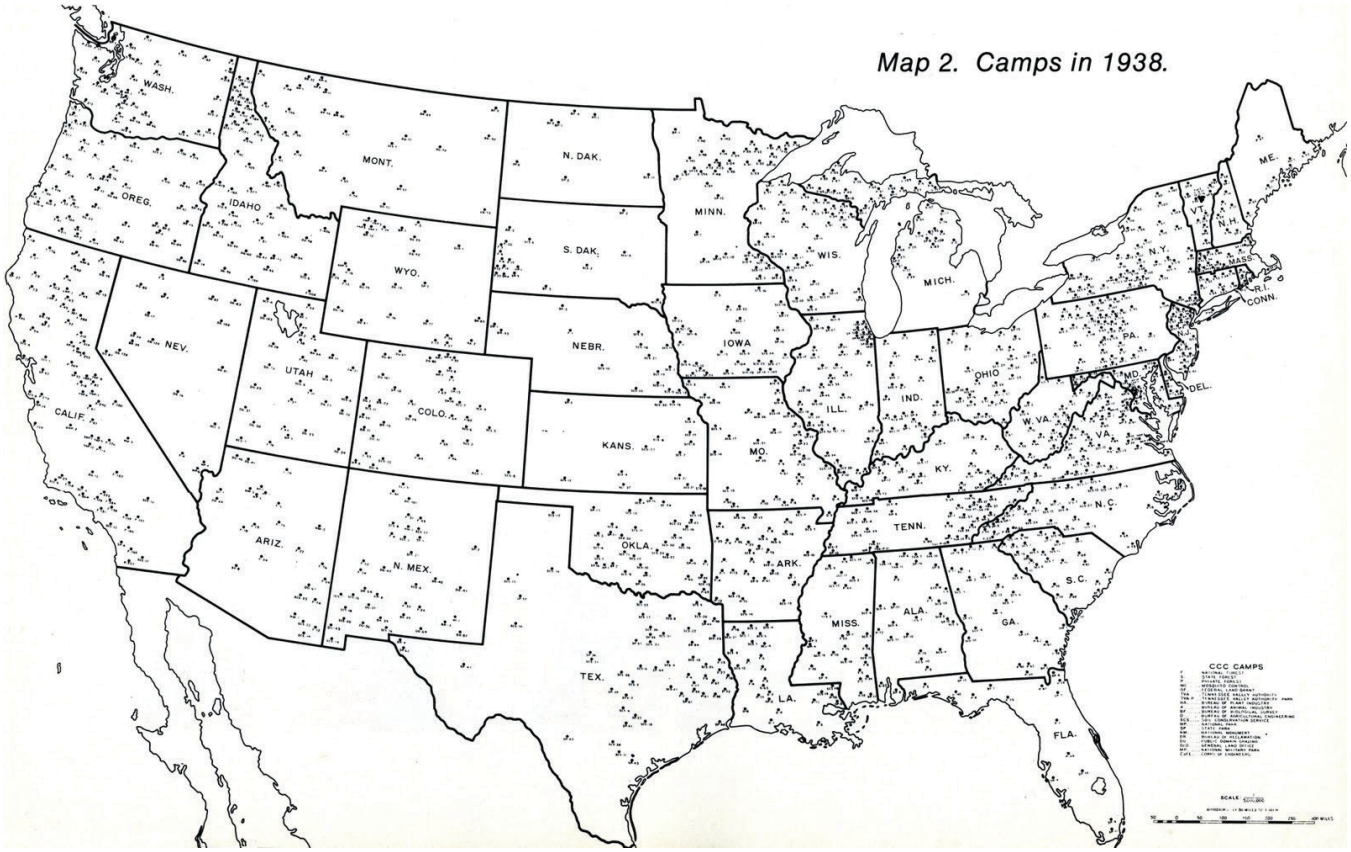


Figure 4. CCC Camps in 1938. Source: Stan Cohen, The Tree Army, A Pictorial History of the CCC, 1933-1942. Retrieved from http://cccresources.blogspot.com/2010_12_01_archive.html.

embarrassment. Our historic structures are in danger, and issues like the invasion of non-native species of plants and animals into park ecosystems also need to be addressed.[8] Additionally, the Union of Concerned Scientists reports that growing consequences of climate change are putting many of the country's most iconic and historic sites at risk.[9]

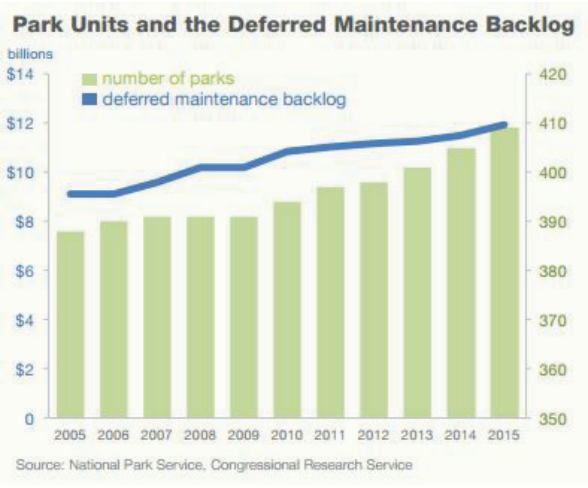


Figure 6. Park Units and the Deferred Maintenance Backlog.

How can the NPS deal with its crumbling infrastructure? The answer certainly could be in the AmeriCorps program, which is a modern version of the CCC. However, AmeriCorps employs only 75,000 in the face of a tremendous youth unemployment rate.[10] The Bureau of Labor Statistics reported in July 2015 that the number of unemployed youth 16 to 24 years old had increased to 20.3 million. Add to this the grim and disturbing fact that homicide and suicide rank among the top three causes of death for youth. An expanded AmeriCorps program is not only needed for parks but as a lifesaving alternative for young people. Surprisingly, given the level of youth unemployment and youth violence, funding of AmeriCorps has been controversial.

My direct experience with AmeriCorps youth showed me the value of the program. I was director of Wildcat Canyon Ranch Youth Program, an environmental educational nonprofit. We partnered with AmeriCorps crews to do maintenance work on a seven-acre ranch located adjacent to a regional park. For most of these multi-ethnic, inner-city youth, the AmeriCorps experience provided a welcome alternative to their urban neighborhoods and introduced them to learning team-

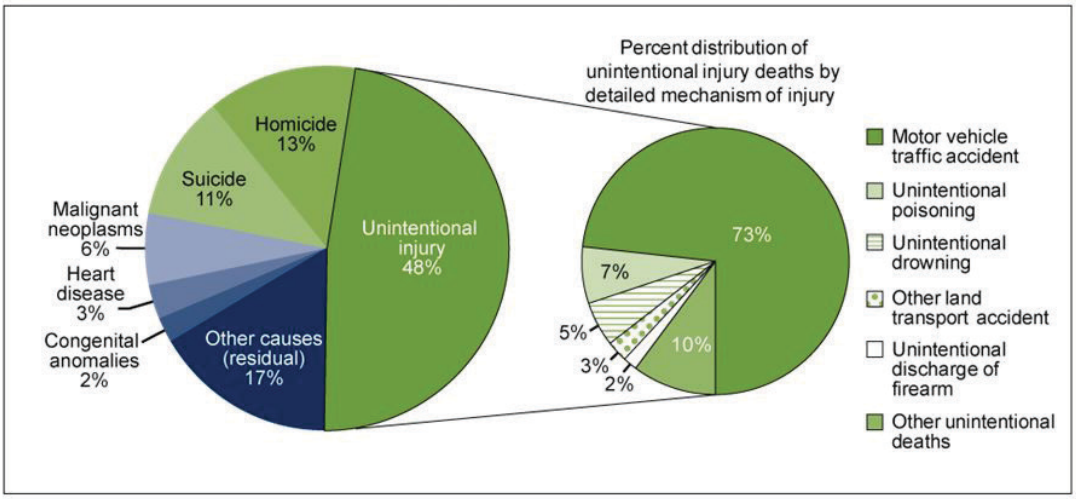


Figure 7. Percent distribution of all deaths to teenagers 12-19 years, by cause of death: United States, 1999-2006.

work with their fellow crew members and to experiencing the physicality of outdoor labor. It improved their education level, bettered their physical and emotional health, introduced them to nature and issues of the environment, and improved their job prospects.

Diversity in the Parks

Diversity in the parks is an issue that has been taken up by the NPS during this centennial year. A 2015 report on outdoor participation by the Outdoor Foundation found that, in 2014, participants in outdoor activities were 70 percent white.[11] Additionally, a coalition of civil rights and conservation groups is calling for public lands to be more inclusive over the next century. The coalition has started a petition drive to urge President Obama to issue an executive order to make public lands more diverse.[12]

A practical and literal boots on the ground approach to diversity would help to make it a reality. An expansion of AmeriCorps that included both urban and rural youth, African Americans, Latinos, Asians, and Native American youth would bring a more diverse group of young people into the parks who would likely return to visit their former work sites and other parks; I have spoken with former CCC men and their descendants who have returned and told stories of the work that was done in their younger years. In 2008, Saul Beltran, who worked with a mostly Chicano company from Los Angeles on the restoration of La Purisima Mission in Lompoc, California, reminisced at a 75th anniversary celebration of the CCC that, "The CCC took me off the street and taught me how to exist with others my age that came from different cultures and different religions."[13]

Of course, skills learned by CCC workers were applied in World War II and later in life. Today's AmeriCorps workers would be learning skills that could be applied to permanent employment in parks, construction, and various green jobs. Some may become park rangers, and hopefully be able to express similar feelings as that of the oldest national park ranger Betty Reid Soskin, 94 years old and African American, who has written, "I am able to speak my truth and bring my whole self into the process . . . I'm experiencing the respect of my community and my colleagues."[14]

CCC Interpretation

Granted, it may be difficult for the NPS to advocate directly to Congress for support of AmeriCorps, but it could increase its efforts to interpret the remarkable history of the CCC and WPA in the parks. Presently, interpretation efforts are uneven: some parks do a thorough job, while others do little to celebrate the CCC and WPA contributions. I have observed in many national parks that these interpretation efforts are seemingly not coordinated or are they encouraged at a national level.

During a recent visit to Rocky Mountain National Park, I was driving on the road toward the high mountain pass. I spotted a hitchhiker holding skis and stopped to give him a ride. He explained he was a former park employee who knew the ski trails, and although the lift had been removed several years ago, he still enjoyed skiing well-remembered trails. I mentioned my quest to find CCC sites in the park, and he pointed out the two nearest former CCC camps which were not noted on the park map. This was information not readily available

from the visitor centers; park volunteers and most rangers knew little about the CCC in the park. Clearly my unique experience of picking up a hitchhiking former ranger underscores it is not the best or likely way for a typical visitor to find out about the CCC in a park!

Park visitors who are adequately informed about park history and the CCC can potentially have influence on their elected officials to support AmeriCorps. In my work with both the National New Deal Preservation Association and the Living New Deal, I often hear the comment, "The New Deal did so much beneficial work, why aren't we doing this now?" This is the question national park visitors should be asking.

During the 75th anniversary of the CCC in 2008, the State of California Parks commemorated the CCC at several of its major development sites throughout the state. This may be a model for what the NPS can do nationally. Events, brochures, standard signage, commemoration of the few still living CCC and WPA workers, and ongoing archival research help the park visitor to learn and to appreciate the history of the essential contributions to park infrastructure. Another model may be the Department of the Interior funding program, administered by the NPS, for interpretation of Japanese-American internment camp sites.

The Public Domain

The maintenance deficit of the NPS and its possible alleviation by a new CCC-like effort is also critical in a broader perspective. As pointed out by FDR, "It took a bitter struggle to teach the country at large that our national resources are not inexhaustible and that, when public domain is stolen, a twofold injury is done, for it is a theft of the treasure of the present and at the same time bars the road of opportunity to the future."[15] We are certainly aware that there are those who promote privatization of the public sector or urge returning federal lands to the states, advocating that very theft of the public domain FDR warned about.

An aspect of my New Deal work involves protection of New Deal sites and artwork. After a three-year struggle by a coalition of local citizens and a legal team consisting of a pro bono lawyer, the city attorney, and the National Trust for Historic Preservation, the Berkeley, California post office was saved from imminent sale to a private party. During this effort I learned about several conservative think tanks and their influence on Congress in attempting to privatize not only the United States Postal Service but also the Transportation Security Administration and other aspects of the public sector.

The case of the NPS is similar to other sectors of government: think tanks call for privatization, Congress reduces funding, think tanks and elected officials point to the inefficiency of government, privatization is proposed as the solution. However, time and again it has been shown that privatization of public programs and resources has certainly enriched the private sector, but has at the same time increased costs to the taxpayer and decreased public services.[16] The NPS maintenance deficit has been taken up by one such think tank, the Prop-

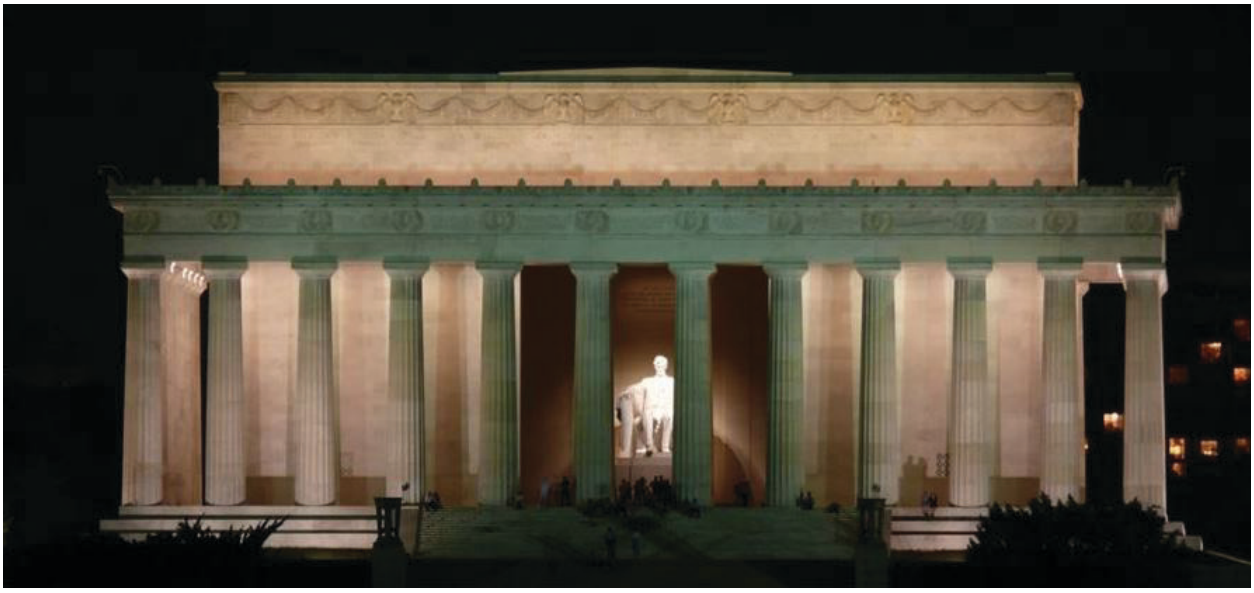


Figure 8. If branding rights are not appropriate at the Lincoln Memorial, why are they appropriate for any national monument or park? Photo source: Public Domain/Ad Meskens.

erty and Environment Research Center (PERC), with its ideology of "free market environmentalism," which focuses on profit-based rather than human-based solutions to the deficit problem.

The proposed weakening of NPS rules governing corporate sponsorships points to the slippery slope of increased privatization.[17] Rather than moving to corporate branding, the NPS should focus on celebrating the historical fact of the huge contribution of public sector programs in building our parks and preserving our natural resources. A new CCC or expanded AmeriCorps could give the NPS what it lacks in dollars, and the NPS would not have to solicit desperately for private donations and corporate partnerships. But, of course, increasing AmeriCorps funding or the NPS budget depends on a functional Congress supportive of the public sector.

Win-Win Solution

Educated park visitors can become advocates for what could be a win-win solution for both parks and America's youth, contributing to a popular groundswell of support for the NPS and AmeriCorps. Greater interpretive efforts during this centennial year would be entirely appropriate to the NPS's initiative encouraging people to discover the meaning of national parks and to inspire "people to both experience and become devoted to these special places."[18] (See Figure 1 on page 110)

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A Great Trio: National Parks, President Roosevelt's New Deal and the National New Deal Preservation Association

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In 2016 our national parks are celebrating their 100th anniversary. Many activities are planned nationwide and we are reviewing the history of this gift to Americans and their visitors which was made possible by Mother Nature, President Theodore Roosevelt and President Franklin Roosevelt. We sometimes take the parks for granted and don't look at what has taken place over the last 100 years to create this priceless gift. Older Americans may have some awareness but many younger citizens do not know how the national parks came into being. It is important to change that. These two Roosevelts were part of that history with Theodore Roosevelt establishing the National Park System and Franklin Roosevelt providing federally funded employment opportunities to make these sites more accessible and enjoyable. For this document, we will focus on Franklin Roosevelt's actions between 1933 and 1942, the era commonly referred to as the New Deal in this country. When Roosevelt took office in March 1933, he promised "a new deal" to solve the major economic, environmental and social problems of this country that resulted from the Great Depression. Our nation's severe drought conditions compounded with the 1929 stock market crash left family and business finances in a crisis that lasted into 1933.

Two of the government programs that Roosevelt initiated, the Civilian Conservation Corps (CCC) and Works Progress Administration (WPA), helped make our National Park System better and provided needed employment opportunities for millions, particularly young men. Both programs worked to improve the drastic condition our land, our establishments and our people were in. The CCC did the majority of the work in parks but WPA laborers and artists contributed as needed. Our land was worn out due to the drought and overuse and vast dust storms eroded topsoil. To help correct this problem the CCC was charged with planting billions of trees nationwide including in parks to stop the vast dust storms. The CCC boys, ages 18-24, also built roads and trails into and throughout the parks, built infrastructure and numerous buildings to accommodate visitors. Today most visitors aren't aware of this history and to some extent take the offerings at our national parks for granted. Each park has much to offer and, considering the numbers of parks, monuments and landmarks in this country, there are parks located near everyone. But for some, there are obstacles (lack of transportation, money, and other obligations) that may keep them from fully enjoying the park experience. Books and television provide some exposure and we hope that this 100th anniversary celebration will heighten awareness and interest in these treasures so that everyone will be able to enjoy them firsthand.

To help make folks become more aware of Roosevelt's New Deal, a non-profit organization, the National New Deal Preservation Association (NNDPA), was formed in 1998 to "promote the identification, documentation, preservation and education of people about the New Deal's visual and performing arts, literature, crafts, structures and environmental projects. All of the desired goals are equally important but the last three components relate directly to the accomplishments that took place within our national parks. Now in 2016 the organization is focusing time and effort to help make more Americans conscious and appreciative of what was accomplished in our parks. NNDPA suggests that we "Look Where We Live" in hopes that more of us will become aware of the parks make plans to visit them. Encouraging Americans to learn more about New Deal accomplishments within their own communities and surrounding areas is another goal. These accomplishments include such things as sidewalks, roads, dams,

cemeteries, city parks, swimming pools, public buildings (schools, libraries, universities, city halls, courthouses, jails, fire stations, post offices, etc.), public art in these buildings, forests, and the infrastructure within our villages and cities which we often take for granted until they aren't working well.

Joining with the National Park System and staff, the NNDPA wants to highlight the New Deal features in our parks and the people who created them. Think of the accessible park roads that can be challenging, the trails throughout the parks, the rock walls and rock abutments outlining the many paths and trails that protect us from sharp drop-offs, buildings, picnic areas, lookout areas, fire pits, overnight sleeping accommodations, and even the remaining, early WPA "fly-proof interior sanitation units," more commonly known as outhouses. And one wonders if the original telephone lines strung across the Grand Canyon by daring, young CCC boys are still in use.

Who were those CCC boys? They were predominately teen age boys or early young men of families nationwide who were out "riding the rails," looking for work because their parents could no longer afford to care for them and their younger siblings. There were also some WWI veterans who needed work to stay alive and feed their families. Roosevelt's CCC program was also referred to as "Roosevelt's Tree Army" because they planted trees across the nation. The program provided them housing (barracks and tents), clothing (some WWI uniforms), three meals a day (a then rarity for most), physical exercise, additional education since most had only an eighth grade education, job skills that they would use for the rest of their lives, transportation to and from camp and work areas and into town on the weekends. Above all, many have noted how they had a chance to see other parts of the country and to learn how to live and get along with people with different traditions and lifestyles. To get accepted they had to be 17 (later 18) to 24 years old (some lied about their age with their parents backing), weigh at least 107 pounds, be in good health with no communicable diseases, 5'5"to 6'6" tall, and have at least 3 good masticating teeth with one up and one down. They were paid one dollar a day with 25 dollars of that monthly paycheck going back to the families (no wonder the parents went along with lying about actual ages) and the boys got to keep five dollars each month which was adequate since most of their daily needs were provided by the program. They could enlist for six month assignments, but generally no more than a total of three assignments.

The Army provided for their daily living needs and various federal agencies (National Park Service, Forest Service, Soil Conservation Service, Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation and Grazing Service) provided the "work opportunities" which would ultimately help the agency to better serve the country and its people. These agencies were the obvious ones to utilize this volume of young manpower (3,000,000) including 225,000 WWI veterans and many Native Americans working to restore Indian ruins in New Mexico, Colorado, and Arizona. Some work activities included planting 2.4 billion trees, installing 90 miles of telephone lines and 6.7 million check dams in addition to the work carried out in the national parks. Both CCC and WPA enrollees were involved in building park structures and their interior furnishings including light fixtures, furniture, paintings and other art work. These skills would carry forward into their future lives. Their immediate "future life" was joining the WWII military forces in 1942 and, except for the "war part" of their assignment, they fit right in. Some US generals proclaimed that we won the war on the backs of those CCC boys who were well trained with necessary skills for the regimented work and lifestyle.

Where are those 3,000,000 CCC "boys" today and what do they think of that time in their lives? Most have died but over the years many have continued their connections with one another through their national association of the CCC alumni—the CCC Legacy. Holding monthly and annual meetings across the nation and sharing memories of the best time of their whole lives is generally their focus. At last count, only two alumni chapters are still active—one is in Albuquerque, NM. There are some museums around the country featuring the stories of the CCC with interpretive materials in the park visitor centers that share the accomplishments of the CCC. Likewise there are currently 67 bronze life-size statues of the CCC worker in various parts of the country. The few remaining "boys"--the name they prefer -- are 100 years old or in the late 90s if they lied about their age when signing up. It is certainly possible that someone reading this paper may have been in this outstanding program and that "boy" may not know about the alumni association. Likewise some of the families may want to know more about where their CCC family member worked and what he did. If so, more informa-

tion about this organization is provided on their website www.ccclegacy.org.

What was the WPA and who were the participants? Anyone "on relief" needing a job was generally eligible for the Works Progress Administration later called the Works Projects Administration or simply WPA. Thousands were employed to carry out the heavy manual labor needed to build highways, dams, public buildings like park buildings, bridges, waterways, airports, infrastructures, sidewalks, sewer systems, etc. We are still using most of these public entities today but may know little about some of them.

In addition to the heavy manual labor, WPA employment programs put artists, musicians, writers, photographers, actors, cooks and seamstresses to work using their creative talents and skills to benefit this nation. Their creations -- paintings, murals and sculptures -- enhanced post offices, courthouses, schools and universities, libraries, parks and other public buildings. Sometimes people do not notice these beautiful creations and don't see the artistic and architectural enhancements that are historical images of that area and are quite beautiful. The WPA Art project also created seriograph posters of at least fourteen national parks. Also, musical and theatrical performances rarely available in smaller communities were created for all to enjoy and helped these artistic folks survive. The writers documented our people and places in 48 state guidebooks that describe how we looked and lived in at that time. These books are accessible in libraries and other collections for reading and research. All of these programs were a godsend for creative people since most Americans were barely "getting by" and there was no money available to spend on "culture." Many artists in these professions became successful because of their opportunities and exposure during their WPA days.

Another benefit of these programs was for the local businesses that provided the goods to feed the boys and staff, supplies and equipment, and transportation for these goods to and from sites. This brought needed revenue into surrounding community businesses enabling them to get back on their feet financially. Everyone benefited from the New Deal and its programs provided a successful approach to solving the critical problems that the country faced. Today we find ourselves in economic situations that might be addressed by implementing similar programs. The CCC program was never officially closed down by our government so it might be possible to reinstate it. Programs similar to the CCC exist today, including Americorps and other state funded programs that employ youth to work in our parks and other public areas but none of them can match the volume of work carried out by the CCC.

One federal agency that is reportedly currently feeling an economic pinch is our 100 year old National Park Service. Due to limited federal funding, they currently need $11.6 million to provide maintenance on New Deal structures around the nation. They are currently pursuing the possibility of turning to private resources for funding to keep our parks up to expected standards. This may make a significant difference in our parks in the future. Will the difference be positive or negative? We hope that this 100th birthday celebration will inspire Americans to insist that the agency be funded adequately to continue to carry out the mission that was established by both Theodore and Franklin Roosevelt. Also we all need to become more aware and concerned about encroachments that can seriously impact or negatively affect the parks environmentally. Learn what you can do to help fight this.

We encourage each of you to visit the parks in your area and share their beauty with your families and friends. Get acquainted with park offerings and their needs. Don't take them for granted but do take their beauty into your soul. They are our treasures to be enjoyed and preserved. Visit www.americathebeautiful.com/nationalparks,html for information about all our parks.

We hope you will also visit the NNDPA website www.newdeallegacy.org to learn more about our goals and activities around the country. Learn about New Deal places and objects that have been identified. The NNDPA encourages you to share information and images about any New Deal sites, collections, people, oral histories, public art, publications and New Deal related programs that you know about. "Look Where You Live" and contact NNDPA at newdeal@cybermesa.com or call (505) 690-5845 or (505) 473-3985.

History by Design: Tumacácori and its Museum

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Figure 1. Mission San José de Tumacácori, ca 1895, NPS image

Abstract

The "Organic Act" created the National Park Service in 1916 as *the* federal agency responsible for the protection and management of the nation's natural and historical parks and monuments. In order to "promote and regulate" those parks and monuments as a national system of "scenic landscapes and natural and scientific curiosities" as well as "great educational enterprises," the new agency quickly recognized the need to provide visitor amenities in the form of museums and later, the visitor center. Recent scholarship has begun to examine the rise of National Park Service visitor services in terms of their planning and architectural design, especially as related to NPS expansion during the New Deal public works projects of the 1930s and 40s and later updating and modernizing through the post war Mission 66 Program. Regional contextualism, defined as fitting into the natural or cultural setting, was fundamental to these efforts yet much research remains to be done to understand the different approaches taken at individual parks. Often context was equated with 'rustic' design employing local materials and/or vernacular uses of those materials; however, occasionally more ambitious efforts were employed to design a facility to educate the public by displaying the very cultural traditions of the monument(s) it served.

The museum and visitor center at Tumacácori is one such well documented example that involved a team of distinguished professionals who traveled to northern Mexico to survey the Sonoran missions, produce an in-depth report including measured drawings, renderings, and photographs, and using traditional construction techniques, create a museum that was meant to be an exhibit in itself, without reconstruction, of the best examples of Sonoran Spanish Colonial details. While other museums attempted to reference local traditions through their design and construction, few, if any, display the level of scholarship, intent, and integrity as at Tumacácori.

This paper will recount the early preservation history of Tumacácori National Historical Park beginning in 1908 including the significance to preserve the site as a 'stabilized ruin.' This early precedent, so critical in defining the preservation ethos for many historical monuments in the region, allowed site stewards to eschew reconstruction in favor of designing a new museum and visitor facility that showcased Spanish colonial architecture as an historical pastiche that was as educational as it was functional for visitor needs.

Introduction

The narratives we tell and how we tell them through historical site interpretation and display help shape our relationship to the past. Cultural resource specialists must balance between protecting intrinsic tangible values in the material evidence of any historic site while addressing the intangible values related to social, ecological, economic, and other associated concerns. The result is often an inherent tension in the push and pull between the emotional and humanistic on one hand and the rational and scientific on the other. Three basic questions that concern all involved in the preservation of cultural resources are:

- How should we experience historical sites-especially those that are fragmented and illegible?
- How does conservation shape what we see, know and feel?
- How can display promote an effective and active dialog between past and present?

Display is an interface that mediates and can transform any constructed place into potential heritage. Historic preservation's approaches and techniques have always been a part of that process. Different approaches often result in different meanings so that "visual legibility" affects the way information is preserved and transmitted and therefore how a site is experienced.

One interpretative practice—that of reconstruction—has loomed large in the history of American preservation and especially in its federal expression through the National Park Service. John Jameson, William Hunt, and Dwight Pitcaithley have written some of the most cogent reviews of reconstruction and interpretation as reflected by government policy.[1] Their work reveals an agency in conflict over elitist professional concerns about authenticity and historical interpretation with public expectations and recreation. Against the backdrop of well-known debacles such as the reconstructed 'replica' of Washington's birthplace in 1932, the Service steadily moved toward policies favoring preservation over restoration as a general rule, although later exceptions such as Fort Union Trading Post and Bent's Old Fort were reconstructed in response to local interests and congressional influence in the literal portrayal of historical events and personalities. What are less well documented and therefore less well known are early efforts to develop an appropriate approach for both prehistoric and historic ruin sites in terms of balancing their preservation, interpretation, and display.

Mission San José de Tumacácori was not only the first historical (i.e., post European contact) site to join the newly created National Monuments program in 1908, it was among the first Spanish colonial sites to be designated along with Grand Quivira Mission ruins in New Mexico and Castillo de San Marcos (Fort Marion) in Florida by 1916. In addition to this distinction, Tumacácori became an early model for preservation[2] utilizing comparative studies with other mission sites, and later the use of studied historical *pastiche* to design and build a museum and visitor facility beginning in 1935.[3]

To understand the significance of these early efforts at Tumacácori, we must first review the policies of the National Park Service on education and interpretation of its historic sites and in particular, the attitudes toward preservation, restoration and reconstruction before 1935. Related to this is the position the Service took toward visitor service buildings in the parks and especially those designed to help interpret these sites to the public such as site museums and later visitor centers.

Historic Site Preservation and the National Park Service

The formation of a federal preservation ethos in the United States began early in the late 1870s-80s with public interest in the protection of prehistoric sites in the West, culminating in the Antiquities Act of 1906. From



Figure 2. Casa Grande

the beginning with the Smithsonian Institute's directive to preserve Casa Grande in the 1890s and then excavate and open it to the American public in 1904, preservation and interpretation have been major components of the then emerging field of American archeology and ethnology on federal lands. Beginning with his first official federal directive at Casa Grande, ethnologist-archeologist Jesse Walter Fewkes, systematically conjoined the methods of archeology and ethnology with preservation, interpretation, and display.[4]

This desirability to study the indigenous past of Southwest native peoples through a 'reverse reading' of their material culture from the historical present to prehistory was advocated by American scholars at the newly formed Bureau of American Ethnology (later Ethnography) in 1879 and supported by the Smithsonian Institute. This was archeology in the service of preservation: preparing sites for public visitation and education. Fewkes was among the first of his generation to tackle this thorny problem and he set American archeological site preservation quite apart from the prevailing practices of restoration and reconstruction by his European contemporaries such as Sir Arthur Evans at Knossos (Crete) or Amedeo Maiuri at Pompeii. But it was the influence and power of Edgar Lee Hewett as founder and first director of the Museum of New Mexico and Director of the School of American Archaeology, and his interest in preservation, that not only created the American Antiquities Act of 1906 but set the federal government on an integrated program of survey, excavation, and preservation that would later lead the National Park Service to its monumental recording and stabilization projects beginning in the 1930s.

These early programs of ruins preservation (before 1935) sometimes included modest examples of reconstruction to help interpret the ruined or lost architecture at a site, born out by archeological excavation. At Casa Grande, Fewkes had Pima Papago (now Tohono O'odham) builders construct a traditional post, thatch and puddled earth wickiup or *Ki* in 1906-08 to illustrate the dwellings that once surrounded the Great House. At Mesa Verde, Fewkes also reconstructed a courtyard kiva in 1908 based on surviving examples in his stabilization of Spruce Tree House and, in 1910 at Bandelier National Monument, Edgar Lee Hewett and Jesse Nusbaum reconstructed a kiva in Ceremonial Cave (Alcove House). Later in 1920, Hewett contracted with local tribal builders to reconstruct one of the talus houses in Bandelier's Frijoles cavate community to present a more complete picture of the actual cliff pueblo architecture. These early reconstructions not only provided tangible evidence of past architecture for visitors to experience, but consciously reinforced the continued presence of native communities whose ancestors built and inhabited these places.

The creation of the National Park Service in 1916 tasked the new agency to manage all federally owned natural and pre-historic sites previously under other

agencies. At the time of the creation of the Service in 1916, few American academics or professionals identified as experts in architectural restoration-preservation. Moreover, how to use cultural sites to interpret American prehistory and history was hardly in agreement across the young agency. The "Organic Act" that created the National Park Service in 1916 as the federal agency responsible for the protection and management ("to promote and regulate") of the then current and all future parks and monuments, also stipulated

> …by such means and measures… which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.[5]

The Organic Act not only justified the creation of a dedicated agency to preserve and protect specified natural and cultural resources but it defined those parks and monuments as a national system of "scenic landscapes and natural and scientific curiosities" as well as "great educational enterprises" equal to anything in the Old World. This definition was based on the 37 parks and monuments that existed prior to 1916, and specifically those ancient monuments already identified by the Antiquities Act. The value of national parks and monuments to educate the public would take almost a decade more and external philanthropy to build the necessary facilities (e.g., museums).

By 1933 the approximately 80 historical and archeological areas that had been acquired and developed under three separate federal departments and bureaus, all came under the stewardship of the National Park Service.[6] This included responsibility for stewardship to all federally-owned American Revolutionary and Civil War battlefields, parks, monuments, and cemeteries. In order to guide this new responsibility, the Service established the Branch of Historic Sites to guide preservation, development, and interpretation and European models were studied to offer guidance on the new responsibilities. It was, however, the passage of the Historic Sites Act of 1935 that made the Service the federal agency now solely responsible for the protection and management of all federally recognized historic sites and placed the responsibility of defining historic preservation for the entire country. According to Jameson and Hunt, "[The Historic Sites Act] authorized the NPS to locate, conduct research, preserve, restore, maintain, reconstruct, commemorate, and interpret historical and archaeological sites, buildings, and objects of national significance."[7]

The Historic Sites Act also authorized the Service to conduct a survey of potential significant sites nationwide and a thematic classification defining American history was created. For example, Tumacácori was assigned to the category of religious history along with San José Mission, San Antonio, Texas (already restored), Jamestown church tower, Gloria Dei (Old Swedes) in Philadelphia, and Whitman National Monument near Walla Walla, WA.[8] From the start, the Service employed historians and archeologists as well as architects, landscape architects, and engineers to assist in the interpretation and development of the parks. By the early 1930s the Service institutionalized its approach through guiding principles embodied in 'Park Master Plans' which combined historical research, archeology, infrastructure and architecture to direct all future work. As summarized 10 years later,

> In the administration and operation of the historical areas generally, the interpretative policy of the NPS is significant, holding that the educational and inspirational values of the historical parks can best be realized through a well-planned program which efficiently ultilizes the major points of interest in the park and provides adequate facilities such as public roads, markers, literature, outdoor exhibits, museums, lectures and guide service."[9]

The passing of the Historic Sites Act was intended to support and promote the Service's greatly expanded historic preservation program and the many new historical properties which came under the agency's responsibility. These sites, incorporating a broader range of historical significance from battlefields to presidential birthplaces, opened up the debate over the most appropriate approach to take in their interpretation and display. Despite the great success of Colonial Williamsburg with the public and its heavy reliance on restoration and reconstruction, Verne Chatelain, chief historian of the National Park Service, argued against reconstruction.[10] His objections centered on the limited synchronic nature of reconstructions and the potential destruction to all other periods and events that also occurred at that location. In 1937 an NPS Advisory Board committee at-

tempted to reconcile the challenge and potential damage to authenticity that reconstructions posed with the public benefits of visualizing history. The final report (1938) provided intervention guidelines that have since become well-known doctrine within the agency and beyond:

> …the motives governing these activities are several, often conflicting: aesthetic, archaeological and scientific, and educational…It is well to bear in mind the saying: 'Better preserve than repair, better repair than restore, better restore than reconstruct.[11]

With these new responsibilities in place and the funding available through New Deal public works projects in the years preceding World War II, the Service was poised to expand its mission to preserve and protect America's historic resources for public enjoyment including education. Wishing to avoid earlier debacles of reconstruction such as at Washington's Birthplace (1930-32), the Service vowed to stress preservation over restoration with Jamestown as the federal response to Williamsburg, whereby "the historic structures to be placed on display, when preservation techniques have been perfected, are expected to be unalloyed authentic originals."[12]

San José de Tumacácori and the Spanish Colonial

The inscription of the ruins of Mission San José de Tumacácori as a National Monument in 1908, only two years after the passing of the Antiquities Act, was the first Spanish colonial site to be recognized and protected by the federal government. The enabling legislation sought to preserve the mission as a ruin thus requiring early site stewards to develop methods of preservation and display that presented the mission church as recognizable architecture without reconstruction. This culminated in 1935-1939 with the design and construction of a new museum and administrative center at Tumacácori that was neither overtly historicized or defiantly modernist but rather designed as a new building type to showcase regional Spanish colonial details and construction methods specifically drawn from the other surviving and associated Sonoran missions.

In so doing, the Tumacácori museum and administration center was conceived to support the government's decision to preserve rather than restore the mission



Figure 3. TUMA visitor center complex, 1940, NPS image

church by interpreting and displaying Tumacácori's lost details and those of other regional Spanish colonial buildings in a new museum and visitor service building nearby. Even more extraordinary was the decision to gather a team of distinguished professionals to travel to the Sonoran missions to survey them in order to assist in both the preservation of the ruins and the construction of a museum that would be an exhibit in itself. While other early park museums attempted to reference local and cultural building traditions through loose historicized design and construction (e.g., Mesa Verde Museum), few, if any, displayed the level of scholarship, intent, and accuracy as at Tumacácori.

It is worth considering under what circumstances the National Park Service organized such a trip to record firsthand the Sonoran Missions and the region's Spanish colonial architecture. Recent critical scholarship in postcolonial studies has begun to untangle the complex relationship between heritage, identity, and historic preservation. In the United States, recognition and celebration of regional identities began after the Civil War, coalescing in the first national expressions at the Philadelphia Centennial of 1876. States and regions were presented through their distinct pasts and the American West was displayed for the first time emphasizing its 'aboriginal antiquities' and Spanish colonial traditions. Later fairs would continue to showcase regional character and the Spanish colonial quickly became a popular trope for the exotic and romantic, especially for the exhibits of California, New Mexico, Arizona and Texas.

Possibly the first serious and sustained effort to study and preserve the country's Spanish mission architecture began in California with the founding of the Landmarks Club in 1895 under the leadership of its charismatic

founder, Charles Lummis. Efforts followed elsewhere In San Antonio (Texas), Santa Fe (New Mexico), and Tucson (Arizona), each claiming a unique variant of the country's Spanish legacy.[13] In 1921 architect and archeologist Prentice Duell published his three-part study of the Arizona-Sonoran missions in *The Architect and Engineer*, thus bringing the Kino missions to a wider, albeit professional audience. However, soon thereafter in 1928, University of Arizona English professor Frank Lockwood, Kino biographer and Arizona booster, advocated for the touristic development of the Kino mission chain in Arizona and Sonora, declaring that the Kino missions were far more interesting historically and more beautiful architecturally than the California chain.[14] It is within this larger context of interest in the Spanish colonial and its inclusion in the national story through the National Monuments Program in 1906 and later the National Park Service in 1916, that we now consider the early preservation and interpretation of Tumacácori mission and its museum and visitor center.

Frank Pinkley and the Early Preservation of Tumacácori Mission

Frank "Boss" Pinkley began his National Park Service career on Dec 12, 1901, as resident custodian of Casa Grande Ruins Reservation, a career which would span almost 40 years. A giant personality, Pinkley was a dedicated civil servant whose enthusiasm, self-study, and tireless support for the National Monument program earned him the position of Superintendent of Southwestern National Monuments in 1923, a position

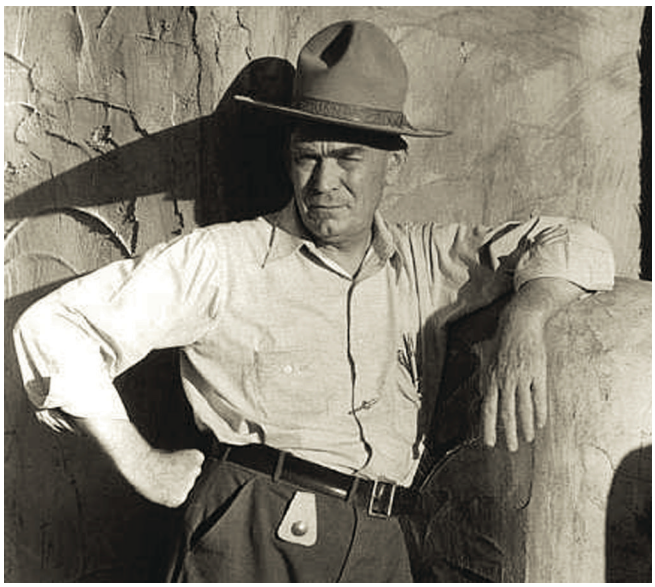


Figure 4. Frank Pinkley, NPS image



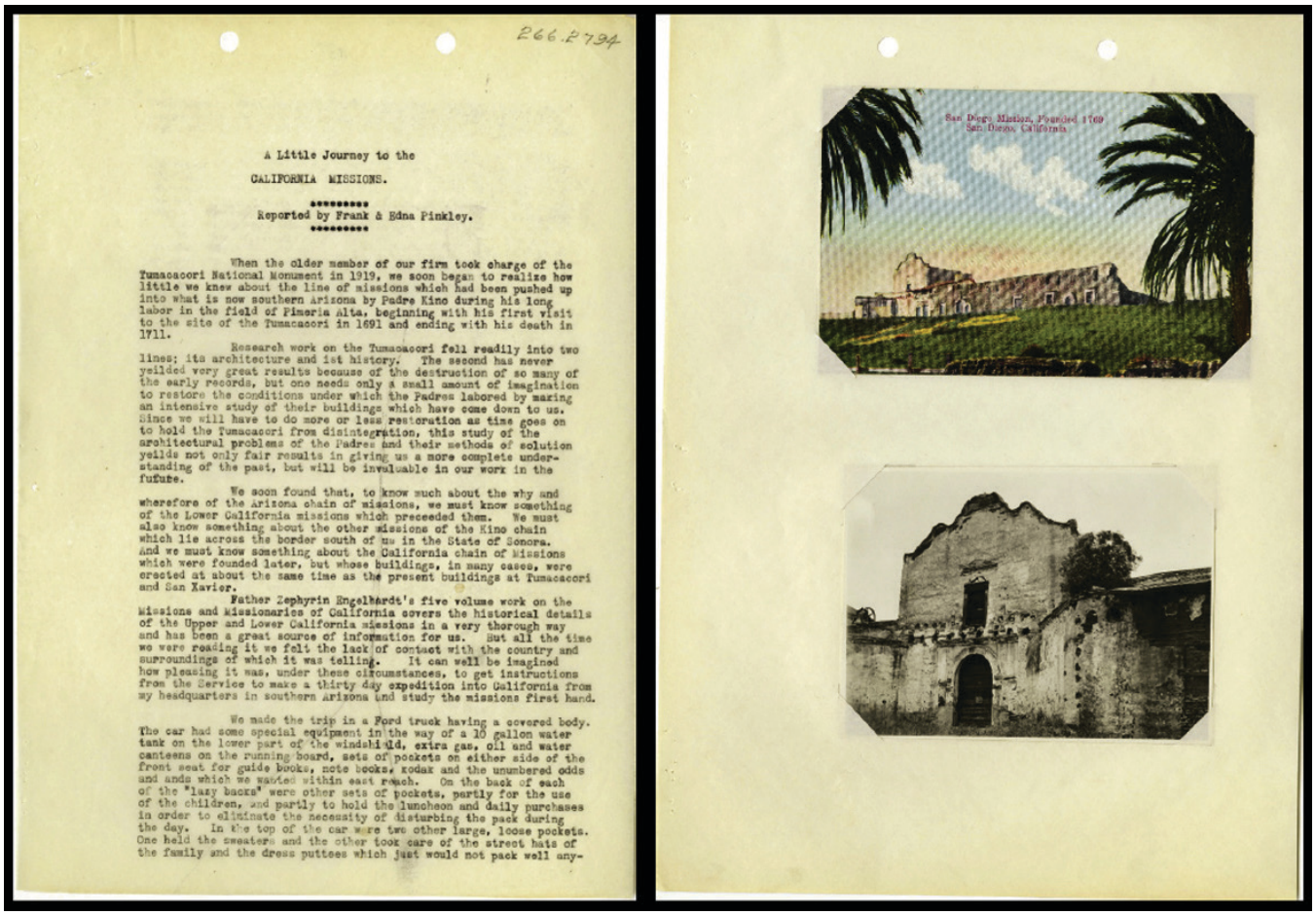
Figure 5. Mission Tumacácori, after Pinkley's Intervention, 1935, NPS image

which placed 14 diverse National Monuments in Arizona, New Mexico, and Utah under his supervision and which would eventually grow to 27 sites.

A tireless supporter of the National Monument program, his individualist ideas and intense manner often placed him at odds with the upper ranks. Pinkley believed in the intrinsic importance of national monuments in portraying the American story, despite their often lesser position compared to the larger, more scenic and popular National Parks. According to Pinkley, national monuments were "… something Historic, Prehistoric, or Scientific in character, of National Importance… primarily educational, secondarily inspirational, and may or may not have a recreational value."[15]

On June 19, 1918, young Pinkley was sent from Casa Grande to nearby Tumacácori Mission National Monument to develop plans for its preservation and visitation, ten years after its designation as a National Monument.[16] On Sept 10, 1918, he received his orders to evaluate its conditions but delayed his inspection until March 1919. Within one year of Pinkley's assignment, major work began at Tumacácori in 1919 to stabilize the church. Work focused on repair of the belfry and the second story of the bell tower, as well as the underpinning of the east sacristy wall and the whole east side of the church proper.[17] On the principal façade, the broken entrance arch was restored in kind with intentionally exposed adobe and new wooden doors were installed.

In order to fully understand the site, Pinkley believed it was necessary to study other missions in Mexico as well as California. In 1920 he made several exploratory trips, the first to Sonora, where he studied the Kino mission churches, making floor plans and photographs.[18] After



A Little Journey to the

CALIFORNIA MISSIONS.

Reported by Frank & Edna Pinkley.

When the older member of our firm took charge of the Tumacacori National Monument in 1919, we soon began to realize how little we knew about the line of missions which had been pushed up into what is now southern Arizona by Padre Kino during his long labor in the field of Pimeria alta, beginning with his first visit to the site of the Tumacacori in 1691 and ending with his death in 1711.

Research work on the Tumacacori fell readily into two lines; its architecture and ist history. The second has never yeilded very great results because of the destruction of so many of the early records, but one needs only a small amount of imagination to restore the conditions under which the Padres labored by maring an intensive study of their buildings which have come down to us. Since we will have to do more or less restoration as time goes on to hold the Tumacacori from disintegration, this study of the architectural problems of the Padres and their methods of solution yeilds not only fair results in giving us a more complete understanding of the past, but will be invaluable in our work in the fufure.

We soon found that, to know much about the why and wherefore of the Arizona chain of missions, we must know something of the Lower California missions which preceded them. We must also know something about the other missions of the Kino chain which lie across the border south of us in the State of Sonora. And we must know something about the California chain of missions which were founded later, but whose buildings, in many cases, were erected at about the same time as the present buildings at Tumacacori and San Xavier.

Father Zephyrin Engelhardt's five volume work on the Missions and missionaries of California covers the historical details of the Upper and Lower California missions in a very thorough way and has been a great source of information for us. But all the time we were reading it we felt the lack of contact with the country and surroundings of which it was telling. It can well be imagined how pleasing it was, under these circumstances, to get instructions from the Service to make a thirty day expedition into California from my headquarters in southern Arizona and study the missions first hand.

We made the trip in a Ford truck having a covered body. The car had some special equipment in the way of a 10 gallon water tank on the lower part of the windshield, extra gas, oil and water canteens on the running board, sets of pockets on either side of the front seat for guide books, note books, kodak and the unumbered odds and ends which we wanted within east reach. On the back of each of the "lazy backs" were other sets of pockets, partly for the use of the children, and partly to hold the luncheon and daily purchases in order to eliminate the necessity of disturbing the pack during the day. In the top of the car were two other large, loose pockets. One held the sweaters and the other took care of the street hats of the family and the dress puttees which just would not pack well any-

266.P734

Figure 6. Cover photo of "A Little Journey to the Missions of California" by F. Pinkley

a thorough reading of Father Zephyrin Englehardt's five volume work on the missions and missionaries of California, Pinkley received approval to visit the California missions.[19] With his wife Edna and their children, the family outfitted their Ford truck and departed on June 30 for a 30 day road trip across the Arizona desert to California to see the mission chain established by Padre Junipera Serra. The churches visited, many under restoration, included San Antonio de Pala, San Diego de Alcalá, San Carlos de Borromeo, the Presidio Church at Monterey, San Antonio de Padua, San Gabriel Arcángel, and San Luis Obispo de Tolosa.[20]

Pinkely's typescript report with his own photographs as well as occasional postcard images, offers detailed descriptions of the architectural features and conditions he observed. No detail was too large or too small including evidence of original painted decoration. Pinkley's intent was clear from the start, writing,

> …one needs only a small amount of imagination to restore the conditions under which the Padres labored by making an intensive study of their buildings which have come down to us. Since we will have to do more or less restoration as time goes on to hold the Tumacácori from disintegration, this study of the architectural problems of the Padres and their methods of solution yields not only fair results in giving us a more complete understanding of the past, but will be invaluable in our work in the future.[21]

That "work in the future" was preservation of Tumacácori and the ever observant Pinkley noted both the original construction methods and the restoration work at each mission church visited, often executed by the Landmarks Club. At San Antonio de Padua, Pinkley noted a number of issues that still plague heritage professionals today. On the question of architectural authenticity or structural integrity, he wrote, "Here is one of the problems of restoration: to restore exactly as the original was built and then put in extra bracing, or to change the original design enough to give it the necessary strength. I should have changed it in this case [at San Antonio de

Pala]."[22] On the subject of whether to preserve or restore, clearly a major issue at Tumacácori and for the National Park Service in general, Pinkley noted, "The cheerful way in which some of these landmarks of other times have been spoiled makes one pause over just how much restoration should be done. Protection against time and the elements, we all grant must be given, although it sometimes takes away the beauty of the ruin…"[23]

Upon his return and with new funds in hand, Pinkley set to reinstate Tumacácori's missing roof, thus stabilizing the nave walls and protecting the painted interior plaster.[24] Based on his California experiences, Pinkley designed a replacement roof, part traditional, part modern, and repaired the drainage canales. In addition, he reconstructed the collapsed façade pediment based on an 1889 photograph. Other minor exterior repair work was conducted so that by the time architect Charles Peterson was sent to Tumacácori to inspect the church in 1930, he reported that the building was "practically out of danger" and that Pinkley's work "was done with great care and considerable ingenuity."[25] Citing the "questionable success" of complete restorations at some California missions, Peterson advised to resist any further work at Tumacácori other than maintenance. Then, with the insight of a clairvoyant, Peterson recommended the preparation of a full set of measured drawings and the preparation of perspectival renderings based on a field study of the other existing missions including those in Sonora.

These would be supplemented by archival research on the history of the mission, the collection of old photographs, and oral histories. According to Peterson, once all together, this research could then inform the restoration of the building "… on paper only, instead of perverting the structure itself in departing from the indeterminate truth."[26] These comments in 1930 already reveal Peterson's insight and talent that would later earn him credit as the founder of the Historic American Building Survey (HABS) in 1933 and creator of the concept of the Historic Structure Report (HSR) in the early 1930s. Peterson even went on to recommend the reuse of a section of the original cloister, previously adapted as the custodian's residence, as a museum for the site.



Figure 7. Convento, C. Peterson, 1935, NPS image

It is very likely Peterson's recommendations reached Carl Parcher Russell, Chief of the newly created National Park Service Museum Division, who mounted a federally sponsored trip to Sonora to study the missions in 1934. Russell, who had worked with Professor Herbert E. Bolton, a well-known scholar in Spanish Borderlands and Kino, and who served on the congressionally mandated Advisory Board of the Secretary of the Interior, was a new generation of civil servant, trained in history and education, and who could be entrusted to develop the narratives the Service was desperate to deploy to the American public. Joining Russell was Park Naturalist Robert Rose, who was assigned by Pinkley to join the trip. Russell made a second trip to Sonora in the winter of 1934, eventually resulting in his application for funding on August 15th, 1935, to the National Emergency Council for the now famous 'Tumacácori Mission Research Project' study trip.[27] From the start, the objectives of the trip were clear:

> This particular project should be viewed in the same light as the measured records of the Historic American Buildings Survey which have come to be regarded-invaluable documents preserving for future study and actual restoration data-the exact architectural measured record of the fast disappearing remains of a unique North American architecture. The value of the records proposed will be enhanced as time goes on and the missions of the Pimeria Alta group slowly disappear.[28]

The intent of the study expedition was two-fold: to assist in the interpretation of the missing features of Tumacácori mission church and to provide the raw material for the design of the new museum-visitor center. The team included Arthur Woodward (archeologist-historian and interpreter), Scofield Delong (architect and the team leader), Leffler B. Miller (architect), George Grant (photographer), J. H. Tovrea (engineer), and Robert



Figure 8. Members of the Sonora Expedition, G. Grant, 1935, NPS image

Rose (naturalist). Arthur Woodward wrote in the introduction to the 1935 expedition report,

> The primary object of the Sonora expedition was to obtain architectural and historic data which might furnish studies for the possible restoration of portions of the Tumacácori National Monument, one of the Kino missions chain, and which would enable the architects and museum technicians to make more accurate exhibits for the new museum projected for Tumacácori. [29]

The Pimeria Alta missions visited by the team included San Ignacio de Caborica, Nuestra Señora del Pilar y Santiago de Cocóspera, Santa María Magdalena, Altar, San Antonio de Oquitoa, San Francisco de Atil, Santa Teresa, Nuestra Señora de la Concepción de Caborca, San Diego del Pitiquito, San Juan del Bisanig (San Valentín), San Pedro y San Pablo de Tubutama, Nuestra Señora de los Dolores, Los Santos Reyes de Cucurpé, Los Santos Ángeles de Guevavi, and San Xavier del Bac.

Although the stated outcome of the 'Tumacácori Mission Research Project' was 'the possible restoration of portions' of Tumacácori, the decision was made to preserve the church as a stabilized ruin and recreate similar architectural details drawn from the other Sonoran mission churches in the design of the new museum. Although earlier, Pinkley had restored the roof of the church based on his studies of the evidence on site as well as work at other Sonoran and California missions, this was justified to stabilize the walls and protect the painted plaster within. The restoration of the great façade parapet that collapsed after the Sonoran Earthquake of 1887 was more visually motivated though no

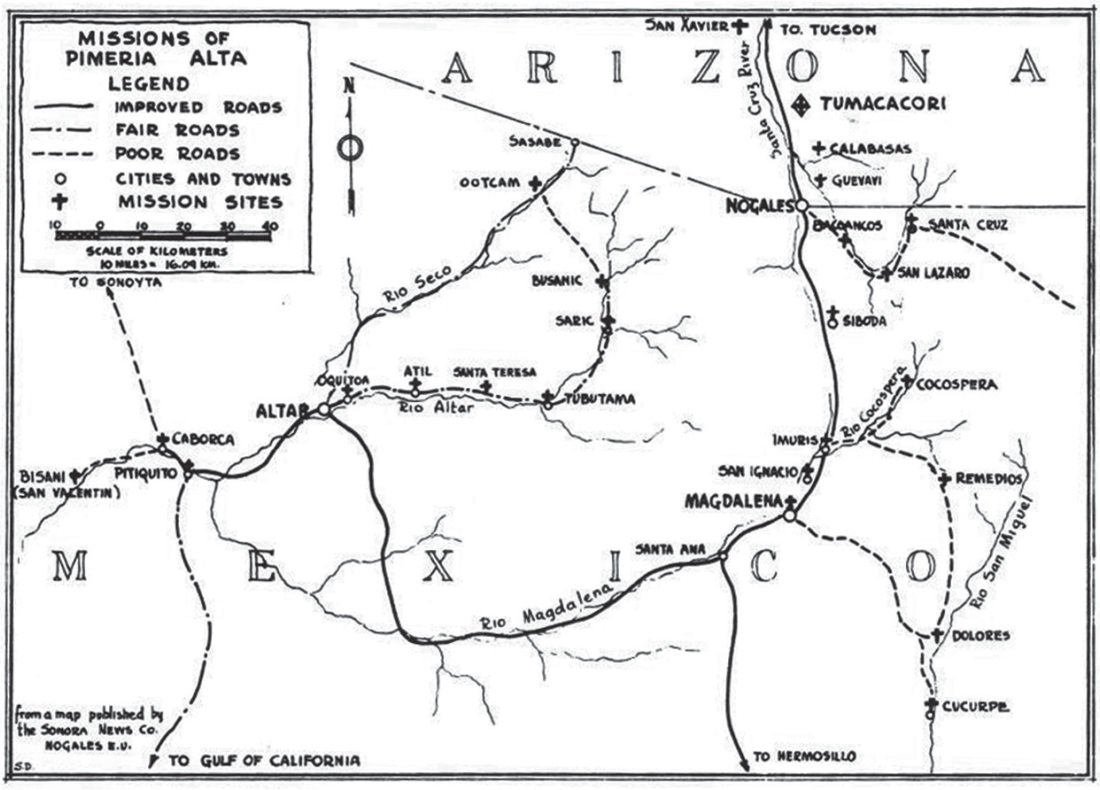


Figure 9. Map of the Sonoran missions

less significant in its formal effect on the display of the ruin as architecture. Ten years later, following Peterson's recommendations and a Service-wide mandate to favor preservation over restoration and reconstruction, the decision was made to treat the new building as the appropriate place to showcase the architecture of the Spanish padres in a new purpose-built structure dedicated to the interpretation of the site as a museum and the accommodation of visitor services.

Education, Interpretation and the National Park Service

Allaback, Carr and other scholars have written on the rise of the visitor center as a programmatic and architectural type created by the National Park Service to accommodate the visiting public and market the image of a new modern Park Service in the post war years.[30] Less well known are earlier attempts to find an appropriate form and language of building to both educate and service visitors to the National Parks. Despite early claims for the national parks as 'a great educational enterprise', little, if any, funds were appropriated for professional staff, programming, or infrastructure to educate the public on the natural or social sciences. While natural parks could still be appreciated for their original 'scenic' values, it was their importance as wildlife refuges and ecological preserves as argued by natural scientists, which demanded greater understanding and management after 1916. Most historical and archaeological sites lacked the high scenic and hence recreational value, so interpretation was critical to best introduce the public to the importance of these sites. At Casa Grande, Pinkley was among the first of the monument custodians to lead informed tours on the prehistory of the site and he established a small ad hoc museum before 1906.[31] His emphatic belief in the primary function of national monuments to tell the American story fostered a lifelong effort to support interpretation whatever the medium, whether it was through direct intervention on the monument or the establishment of a small site museum.

On May 13, 1918, Secretary of the Interior Franklin K. Lane addressed the need for education in the National Park Service in a policy letter to Director Stephen Mather,

> The educational, as well as the recreational, use of the national parks should be encouraged in every practicable way. . . "Museums containing specimens of wild flowers, shrubs, and trees and mounted animals, birds, and fish native to the parks, and other exhibits of this character, will be established as authorized."[32]

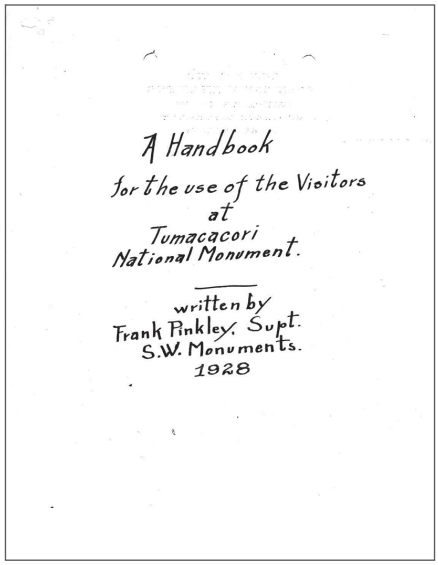


Figure 10. Cover photo of Pinkley's handbook for the use of the visitors at Tumacácori National Monument, 1928

Soon thereafter, in 1922, the first official museum opened in Yosemite National Park dedicated to natural history and ethnology.[33] Similarly in 1921, planning began for a new museum at Mesa Verde dedicated to the park's prehistory. Visitor education gained increased support through the recognized need for 'interpretation' under Horace Albright. In 1929 he created the Committee on the Study of Educational Problems in the National Parks and eventually placed Harold C. Bryant as head of the new Division of Education. Bryant and his staff of museum professionals represented a new direction and commitment to education and interpretation. With New Deal funding now available to realize site-based interpretation through the construction of museums and museum exhibits, the Division of Education had a wide and powerful reach. After years of autonomy and experience in educating the public through his own site tours and collections displays, Pinkley bristled at the new power structure. His last decade of service in the 1930s was marked by continual friction with the Division of Education, using his self-published *Epitaph* and later *Southwestern National Monuments Monthly Report* as a sounding board for his opinions and disagreements with the division. It is against this background that the Tumacácori museum and study trip developed and yet, despite these administrative difficulties, the project was successful and long-lived.

Old Details, New Museum

As early as 1930, Charles Peterson had recommended that the preserved west section of Tumacácori's ruined convento, then the present custodian's living quarters, could be repurposed into a site museum. A museum was established in that location in 1932 until its relocation to the new museum in 1939. As Director of Southwestern Monuments and former custodian of the monument, Pinkley had definite ideas about the museum from the start. As he stated in 1936, he wanted a building that would complement the mission's architecture, low and subordinate to the ruins, and be situated close to the parking lot, the latter increasingly critical for the new auto-bound visitor. The façade was to be simple and the plan to accommodate easy circulation allowing the visitor to return for more information if so desired after seeing the actual ruins. Two of his most important requests were the incorporation of accurate architectural elements copied from the other Sonoran missions as 'exhibits' to display the Spanish colonial architecture of the region, and the design of an open 'view room' so visitors could gaze upon the church in advance of their visit while still in the museum. Employing a similar sequence of spaces and functions as Jesse Nusbaum's Mesa Verde Museum built a decade earlier, the museum included a large entrance lobby with fireplace, a wing of rooms containing the exhibits, including superb historical dioramas, a portal (arcade) and cloistered garden, and a comfort station, the first component to be built in 1932.

Scofield DeLong of the NPS Branch of Plans and Design in San Francisco was the principal designer, assisted by Dick Sutton and Charles D. Carter. DeLong used many of the details he recorded in drawings and sketches from the Sonoran trip attributing each to the actual site visited.[34] Of particular interest was the decision to replicate the early colonial technology by building in adobe, moulded fired brick, lime plasters and traditional finishes. Only the built-up roof and concrete foundations incorporated modern technology.35 Similarly, the museum patio garden was planted with historically accurate vegetation based on mission records.[36] The great shell motif of the main entrance was copied from the entrance at Cocospera while the wood doors were loosely based on those at San Ignacio. The entrance lobby ceiling was detailed with carved corbels and vigas similar to those at Oquitoa and the lobby desk was

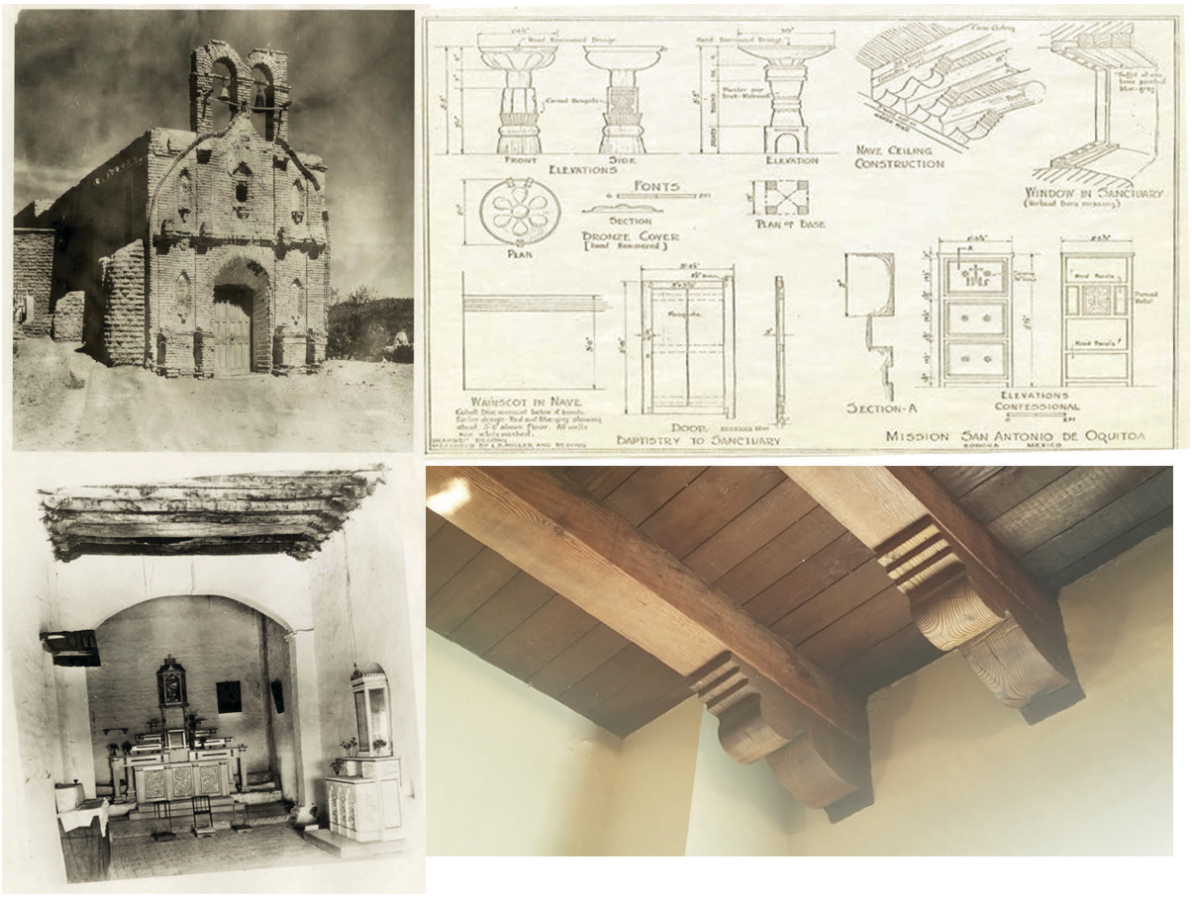


Figure 11. Pair images of the Sonora mission design and the adopted design in VC

ingeniously adapted from the design of a confessional there as well. In the 'view room' framing the church itself, a large decoratively painted groin vault celebrated the tradition of the form as found at the churches of San Xavier, Tubutama, and San Ignacio.[37] The piers and arches of the museum portales were copied from those at Caborca while other details such as the painted dado and lobby ceiling, windows, rejas or window grills, finials, and canales, were based on their common tradition as found throughout the region. It is to DeLong's credit and his team that these elements came together to create a balanced work that still continues to inspire and function for the purpose it was built.

The true success of Tumacácori's museum was its siting and plan (Fig 12. TUMA Map showing siting and plan). The high walls of the compound contained and defined the frontage of the property without blocking the view of the mission church and the mountains beyond. They also kept the parking lot from intruding into the vista once within the park. Although Pinkley and the Division of Education disagreed on visitor circulation, the access sequence was highly successful, especially the 'view-room' and garden, the former providing visual expectation at the onset of the main exhibit, the church, and the latter, a welcome respite for any visitor after touring the site. Because the museum complex was designed first to satisfy its program of education, it was a modern building. Although employing regional traditional construction technology and colonial architectural details drawn from specific Sonoran missions as exhibits, it was not a literal historical reproduction, nor a romanticized stylistic version of the Spanish Colonial but rather a didactic historical pastiche. The designers were probably quite aware of the potential for the public to mistake the

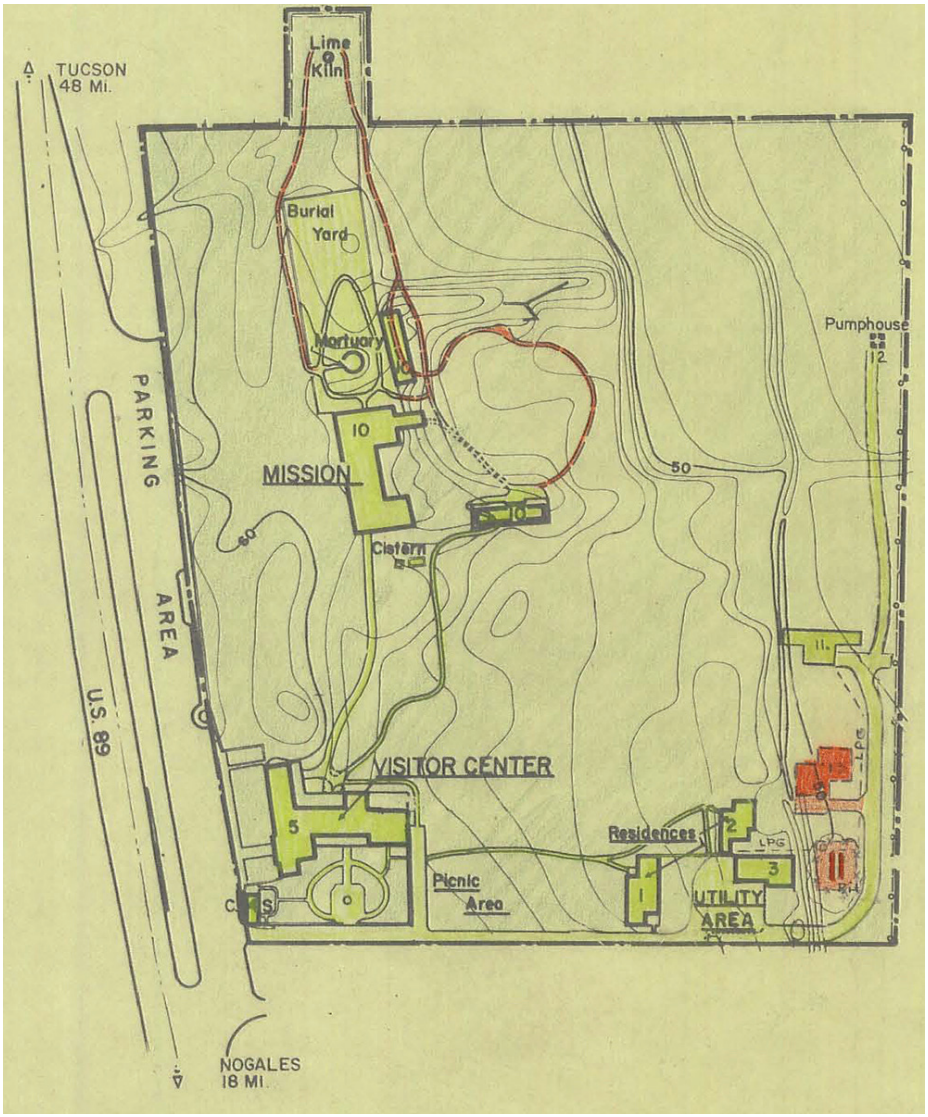


Figure 12. TUMA Map showing siting and plan

building as a restored original or reconstruction, similar to what they might experience at Williamsburg, then newly opened. Eschewing a cloister plan form without its literal reproduction, the museum design indirectly reinstated an architectural space common to every mission complex and largely lost at Tumacácori. Herein lies the brilliance of the design.

Despite the best intentions, the public was confused. In an effort to dispel visitor confusion that the museum was a church, Dale King, Assistant Park Naturalist, provided a contemporaneous explanation of the meaning and rationale for the design.

> ...Our architects and historians and museum men investigated the possibilities. One suggestion was to have the museum a string of adobe rooms along and around the parking area, but this would make a very sprawled out structure of NO PARTICULAR ARCHITECTURAL SIGNIFICANCE (his emphasis), for we must remember the architecture in the Jesuit and Franciscan periods was not unplastered adobe, but adobe walls neatly lime plastered and coated with bright colors...From all of this endeavor and thought there emerged the plan to make the museum and administration building at Tumacácori duplicate to the minutest detail the secular buildings which accompanied the Sonora-Arizona missions, always in the same quadrangles with the churches. As you know, usually on one side of each mission is a quadrangle forming the living quarters of the priest; in front of the church is the patio, lined by the quarters of the neophytes, which sometimes developed into the town plaza if a town grew up around the mission. Tumacácori museum duplicated this "living and working quarters" style of architecture as of about 1800 A.D.[38]

The opening of the complete museum with its dioramas and patio garden in 1940 signaled the beginning of a new era for site interpretation in the National Park Service. It also marked the end of Pinkley's long effort to promote display and interpretation at national monuments. On February 14, 1940, "Boss" Frank Pinkley died. During his 39 years of public service Pinkley witnessed and affected enormous changes within the park system. His belief in the power of national monuments, and specifically any site, to inspire and educate over other forms of interpretation, bring him remarkably in line with our own recent rediscovery of place and its role in public history. Pinkley was the chief author of Tumacácori's early preservation plan and its unusual museum culminated his efforts in appreciation of site values through fundamental education. What is clear is that his insights were almost always right and his ability to realize them highly effective -- no small achievement in an agency that was still experimental, in development, and largely underfunded. Today Tumacácori is a case study of preservation methods and approaches documenting the history of the discipline as it evolved in America. Through a balanced mix of site preservation and historical pastiche, the National Park Service realized its commitment to education, "contact with real things with unusual things, awakens a desire for explanation, for an increase of knowledge."[39] Part of that legacy was Tumacácori's site museum, designed as an innovative alternative to reconstruction as a way to showcase the architectural traditions of the Spanish colonial era.

Endnotes

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Challenges and Approaches to Preserving the Civilian Conservation Corps National Historic Landmark District and the Frijoles Canyon Archeological District, Bandelier National Monument

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Figure 1. View of the CCC NHL District. (Photograph by author)

Abstract

This paper serves as a primer for the field sessions at Bandelier National Monument. Themes presented below will introduce the audience to topics covered in greater detail during the organized site visit. The Civilian Conservation Corps National Historic Landmark District and the Frijoles Canyon Archeological District express different forms of cultural and temporal consequence from each other that often translate to challenges and approaches that deviate as a result of a particular location's maintenance and preservation history, stakeholder involvement and administrative requirements. Preserving the integrity and character of these two nationally significant districts presents frequent and significant challenges that demand innovative strategies in combination with proven approaches.

Introduction

Bandelier National Monument (Bandelier) preserves more than 3,000 archeological sites, including many of the larger, more frequently interpreted and architecturally preserved sites comprising the Frijoles Canyon

Archeological District. In addition to an exceedingly dense grouping of Ancestral Pueblo sites within monument boundaries, Bandelier maintains one of the largest collections of Civilian Conservation Corps (CCC) buildings in the National Park Service (NPS) system. Thirty-one buildings, still in use today, and numerous structures constitute Bandelier's CCC National Historic Landmark (NHL) District.

Civilian Conservation Corps National Historic Landmark District

Constructed between 1934 and 1941, the Bandelier CCC NHL District exemplifies the height of the Pueblo Revival architectural design style. Although commonly referred to as the Santa Fe style, a namesake of the town that spawned the movement, the Pueblo Revival style incorporates design features common to the Pueblo groups of New Mexico and Arizona, as well as the Hispanic communities of New Mexico that hold Spanish and Moorish roots in architectural design and construction.[1] The Pueblo Revival style corresponded well with another architectural style prevalent at the time in the NPS – *Parkitecture* or rustic architecture.[2]

Parkitecture promoted the use of local materials to design and construct buildings and associated landscapes with local and regional culture in mind. For Northern New Mexico, this meant consideration of Native American Puebloan architecture as well as Hispanic architecture. Some exterior design elements typical for this style and found within the Bandelier CCC NHL District consist of flat-top roofs with projecting primary beams (viga ends), plaster over masonry, and portals with decorative corbels. Interior design attributes generally consist of, but are not limited to, plastered walls, open ceilings exposing vigas and latillas, and corner-set fireplaces. The entire complex of 29 grouped buildings within the CCC NHL District is organized to fit the mold of a pueblo village with enclosed plazas and centralized meeting and gathering areas. The main parking area is enclosed on three sides by buildings, while the fourth side is contained by Frijoles Creek.

Prior to the CCC beginning work at Bandelier, the main arteries in and out of Frijoles Canyon were foot trails on the north and south rims. With the influx of CCC personnel, equipment and materials to support work at the bottom of the canyon, a road needed to be constructed. Material was quarried from Forest Service land just outside the monument boundary on the mesa top. The NPS later acquired and adapted the quarry site into the park's amphitheater where park rangers give presentations and hold special events such as Opera on the Rocks.

As one of the first experiences the visitor has at Bandelier, the transition from the mesa top to the canyon bottom via the Entrance Road was designed to inspire a sense of awe for inbound motorists. As visitors enter Bandelier along the Entrance Road, juniper and pinon give way to spectacular views of the canyon walls cradling larger ponderosa pines, cottonwoods and box elders that line Frijoles Creek. Much easier and quicker routes were devised, but the landscape designers wanted to impress, not simply transport visitors into the canyon.

Frijoles Canyon Archeological District

The Frijoles Canyon Archeological District contains many of the park's most frequently visited archeological sites. Among those that were stabilized and reconstructed in the last century and discussed further in this paper include Tyuonyi Pueblo, Talus House and Alcove House. Tyuonyi Pueblo may be the main attraction in Frijoles Canyon due to accessibility and size. Those, however, who venture up the canyon to climb wooden ladders 150 feet above the canyon floor, may argue a preference for the view and adventure offered by Alcove House. Not to be outdone, Talus House provides visitors with an opportunity to envision the canyon as it once was before wind, rain and gravity reclaimed the many hundreds of stone houses built against the south-facing canyon wall that, at one time, concealed the now visible cavates lining the cliff face.



Figure 2. View from the Entrance Road when entering Frijoles Canyon.Geologic time merges with the historic and present-day cultural setting all in one expansive panoramic. (Photograph by author)



Figure 3. Tyuonyi Pueblo. (Photograph by author)

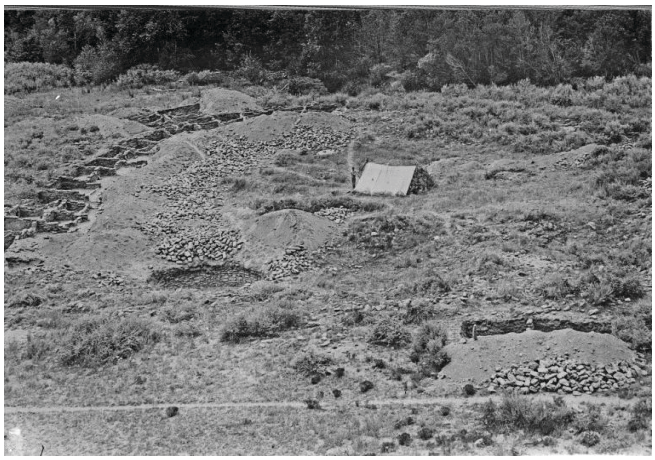


Figure 4. Tyuonyi Pueblo during the School of American Archaeology excavations, 1908 – 1912. Photo possibly taken by Charles Lummis. (Bandelier Digital Archives, BANC_1095)

Dr. Edgar Lee Hewitt, who helped draft and push through the American Antiquities Act of 1906, worked with students from the School of American Archaeology to excavate Tyuonyi Pueblo between 1908 and 1912.[3,4] This work in Frijoles Canyon brought together many individuals later instrumental with developing American archaeology as a science (A.V. Kidder and Neil Judd) as well as individuals who helped to develop the Santa Fe architectural style (Kenneth Chapman, Jesse Nusbaum and Sylvannus Morley) later used to design and construct the Bandelier CCC NHL District. The CCC found the walls of Tyuonyi Pueblo in a detritus state after only a generation of exposure to the elements since the School of American Archaeology's excavations.[5] Under the direction of J.W. Hendron, the CCC stabilized much of the site in 1937. As a result of inadequate recording practices at the time, uncertainty now clouds our knowledge of the extent to which walls were reconstructed by the CCC. Additional episodes of stabilization have occurred since the 1937 episode and may have introduced additional occurrences of reconstruction.

Through the School of American Archaeology, Hewett excavated the portion of Group E cavates now known as Talus House in 1909. At the time, Hewett referred to the site as "Sun House" in reference to what he called a "prevalence of the sun symbol on the face of the cliff above it".[6] Kenneth Chapman later reconstructed five rooms of the Sun House complex in 1920 directly on top of the foundations excavated by Hewett's crew and mapped by Chapman himself in 1909. The 1920 reconstruction utilized stone from the talus slope below and from the backfill of the Tyuonyi excavations. The builders used soils from the canyon bottom to apply mortar and plaster for wall construction. Oak and alder were used for vigas and latillas in the reconstruction of the roof. In addition to the materials listed above, Chapman employed 2" x 4" boards and 3-ply tar roofing paper covered with soil in his reconstruction of Talus House.

In 1937 the CCC reconstructed the upper portions of Talus House. They replaced the entire roof in much the same manner as had been there previously. Oak vigas, however, were replaced with pine. Rotted tar paper and 2" x 4" boards were replaced in-kind. This reconstruction gives the visiting public an idea of what the canyon wall would have looked like prior to the collapse of the front rooms along the cliff face. Today all that is evident



Figure 5. Talus House shortly after the 1937 stabilization. (Bandelier Digital Archives, BANC_0967)



Figure 6. Before and after photos of a CCC worker installing 3-ply tar paper to the roof of Talus House in 1937. (Bandelier Digital Archives, BANC_0991, BANC_0992)

are what archeologists call "cavates". These were essentially the back rooms carved into soft tuff rock with masonry rooms in the front, some of which reached heights of four stories.

The alcove that shelters Alcove House towers nearly 150 feet above the canyon bottom. Estimates range from about 20 – 30 rooms that were originally constructed within the alcove.[7] The room blocks at the back of the alcove remain in their post-excavated state. The kiva at the front of the alcove, however, was reconstructed on two separate occasions. Jesse Nusbaum initially reconstructed the kiva at Alcove House in 1910 after Hewett's excavation of the kiva and room blocks in 1908. The reconstruction, like that at Talus House, occurred on the uncovered foundation. In 1937, the CCC reconstructed much of the kiva again due to the state of deterioration encountered at the time.[8]

The full or partial reconstructions of Tyuonyi Pueblo, Talus House and Alcove House represent ideas held, not by the original builders, but by the people who reconstructed these places in an effort to interpret their own ideas of place to the public. These places now present an idea – a western idea – about what a ruin looks like or looked like in the past. This idea presents concepts, perceptions, feelings, thoughts, and anticipations that are not consistent with what the original builders aspired for in the construction of their buildings.

A reconstruction fails to capture the intentions of the original builders, and thus, presents a false reality to the modern-day observer. Elements of false perceptions can be minute and may not be noticeable as, for example, in the width of mortar joints, but can be as large as the addition of entryways in walls where none were present before. Larger details, as with the example of the entryways give a false impression to the visitor of human behavior where people would have entered the room through an entryway in the roof with all walls sealed up. With minor unintentional reconstruction elements, as illustrated with the mortar joint example, scientists recording every architectural detail, including mortar joint spans, rely on the accuracy of the data. If a wall is reconstructed and the recorder does not know that the wall has been reconstructed, then comparing something as simple as mortar joint widths will throw off any comparisons that scientists hope to make with recordings of other walls.

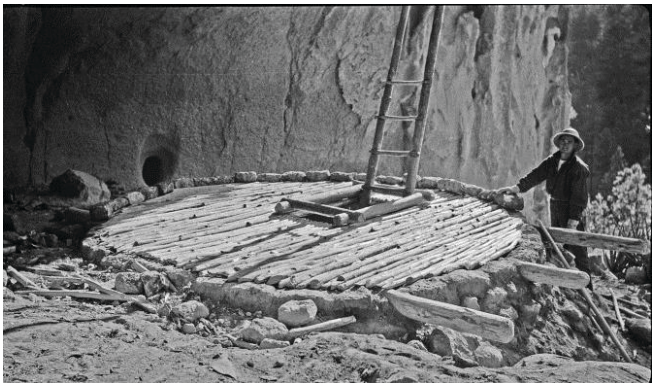


Figure 7. Installation of latillas by the CCC reconstruction crew. (Bandelier Digital Archives, BANC_0300)



Figure 8. Branches over latillas prior to mud application. (Bandelier Digital Archives, BANC_0301)

Preservation Challenges at Bandelier National Monument

As noted above, challenges to properly preserve any structure relies on how cognizant a person is and the impact that the decisions he or she makes as a pres-

ervationist have on the character and integrity of the structure – no matter how miniscule. Preservation challenges in both districts rely on the awareness of proper methodology and techniques employed by the person working to preserve a historic property. Other forces acting to challenge preservation in both districts are human-caused impacts and environmental impacts.

Bandelier draws more than 150,000 visitors annually. With projections between 200,000 and 300,000 annual visitors over the next few years, preservation staff at Bandelier will continue to be challenged to provide safe access to sites within both districts and sustain productive maintenance cycles in the face of such tremendous numbers. Neglect to establish regular maintenance cycles over the past 30 years substantially accelerated deterioration in various architectural elements, particularly in the CCC NHL District. Neglect of routine maintenance in the past resulted in one of the principal challenges confronting Bandelier preservation staff today.

Of greatest concern in the CCC NHL District is window and door openings, and roof systems. These elements, once allowed to become inoperable, result in environmental impacts (i.e. moisture, pests) penetrating to the interior of the building. The semi-arid climate at Bandelier promotes the preservation of many types of architectural elements, but can also hinder efforts when taking into account solar intensity on wooden elements such as windows, doors and viga ends. Snowmelt and intense summer rain storms also accelerate deterioration, particularly with exterior masonry and roof systems. We direct much of our time and money to playing catch up in solving problems that are more than two decades old.

In addition to decades of neglect, the sheer size of the district coupled with continuous use by NPS staff and visitors present important challenges regarding contemporary use of historic buildings and archeological sites. Securing sufficient funding to not only address legacy condition issues, but to also keep in step with and establish routine maintenance cycles is crucial.

Preservation Approaches at Bandelier National Monument

While challenges persist, Bandelier preservation staff continues to progress through proven approaches developed over the years by the preservation community. Application to and coordination with fund source managers in Cyclic Maintenance and Repair/Rehabilitation help secure necessary funding to initiate the process of developing and implementing cyclic maintenance schedules. Establishing cyclic maintenance schedules allows Bandelier to reduce expenditures of large sums of money to address preservation issues every few decades and eventually place greater reliance on lesser, but more frequent and consistent funding.

Maintaining consistent funding is crucial in allowing the Bandelier Preservation Program to retain talented staff concerned with craftsmanship, preservation of original fabric, documentation of all work completed and inclusion of stakeholder concerns into the preservation process. High turnover of staff, due to insufficient and inconsistent funding, hemorrhages institutional knowledge within a program. Fostering institutional knowledge of the preservation needs of historic properties is one of the most important and desirable aspects to a successful preservation operation.

Preservation personnel must respect a historic property for what it is – a resource that educates and inspires all who come in contact with it, whether that be in person or through visual or written media. This respect may be a result of an appreciation obtained at an earlier time from some contact with historic properties, or may even be obtained as a result of an ancestral connection to a place.

Bandelier endeavors to employ preservationists with this ancestral connection to place. Preservation work performed at Ancestral Pueblo sites is often guided by consultation with affiliated Pueblo groups and the field crews are supervised by experienced preservation staff from local pueblo communities. This approach to preservation enriches the entire process by opening the door for descendants of an ancestral group to not only participate in the preservation of the site, but to also have a voice in the continued protection and administration of the site.

Conclusion

Participants in the field sessions offered through the conference *A Century of Design in the Parks: Preserving the Built Environment in National and State Parks* will experience in greater detail the issues briefly discussed in this paper. Bandelier National Monument offers a wide range of preservation topics ripe for exploring in regard to design in the past century. In addition to exploring the historic and archeological sites reviewed in the preceding sections, preservationists on staff at Bandelier will demonstrate viga end replacement, historic window repair, and give tours further discussing preservation issues in the CCC NHL District and the archeological sites comprising the Frijoles Canyon Archeological District.

Preservation of important historical and archeological/ancestral sites goes far beyond the material used, technique employed or test conducted. While materials, techniques and tests are important aspects in the preservation process, there is much more to contemplate before achieving a successful and holistic approach to preserving historic properties important to a variety of concerned stakeholder communities.

Endnotes

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The "Supremely Ugly Museum:" Art Moderne at Ocmulgee National Monument

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Figure 1. Ocmulgee Visitor Center

Abstract

The Visitor Center at Ocmulgee National Monument near Macon, Georgia is the first, and only, Art Moderne building constructed by the National Park Service (NPS). Designed in 1937-38, it broke from NPS design policies and predated the Mission 66 approach by decades. The building was a watershed event, though its significance was not widely recognized at the time.

The site is a cluster of prehistoric mounds that in the 1930s became the largest archaeological dig in the eastern United States with thousands of New Deal relief workers on site. By the mid-1930s it was evident that the vast collection of artifacts demanded a museum and space for administrative and laboratory facilities.

The unheralded NPS architect James T. Swanson, Jr. was charged with the design. His response was unprecedented; in a radical departure from long-established Park Service rustic designs, he chose the Art Moderne style. Swanson's Ocmulgee building is a sculptural showpiece, revolutionary in the NPS in both design and purpose, with curving concrete walls and flowing stairs. In a nod to the site, a bold geometric frieze is patterned on pottery excavated nearby.

With the NPS slowdown in funding and labor that accompanied World War II and its aftermath, construction

at Ocmulgee halted, and it was not until 1951 that the building was completed. Opinions were mixed. Some lauded the "beautiful structure," while others criticized NPS for abandoning the rustic style, declaring Ocmulgee "the supremely ugly museum," a "monstrosity."

By this time, the minimal maintenance of the war years was evident throughout the national park system. The NPS response was Mission 66, a 10-year program to improve visitor services by the fiftieth anniversary of NPS in 1966. Basic to the program was a multi-function visitor center in each park, just what Ocmulgee had addressed decades earlier.

Ocmulgee Mounds

On the fall line of the Ocmulgee River near Macon, Georgia is a cluster of earthen mounds that in the 1930s became the largest archaeological excavation in the eastern United States. From 1933 to 1941 it was one of the most significant archaeological projects of the New Deal, conducted by crews from the Civil Works Administration (CWA), the Civilian Conservation Corps (CCC), and the Public Works Administration (PWA).

The flat-topped mounds are believed to have been constructed by prehistoric Mississippian-era peoples, followed by the Lamar culture with its notable pottery designs. The significance of the mounds was recognized in writings as early as 1739 when the Creek Indians occupied the lands. Nevertheless, from the 1840s to the 1920s, the mounds were damaged by railroad cuts, agriculture, ranching, timbering, clay mining and even a motorcycle course.

Efforts to protect Ocmulgee began in earnest in the 1920s when prominent Macon residents spearheaded a campaign to buy "Ocmulgee Fields" and fund archaeological work there. In 1922 they asked the U.S. Bureau of American Ethnology (research arm of the Smithsonian) for help. In 1929 the Smithsonian archaeologists returned, this time offering to help fund the excavations. Three weeks later the NPS Bureau Chief visited the site.[1]



Figure 2. The mounds at Ocmulgee.

The abrupt arrival of the Great Depression occurring the same year was a setback, but the Macon group resumed its efforts and gained broader support in 1933 when a mound was destroyed for road construction fill dirt.[2]

The Depression was to be the savior of Ocmulgee, and led to the creation of the Visitor Center. At Franklin Roosevelt's election in 1932, he promised Americans security from "the cradle to the grave." With unemployment at an all-time high, he was convinced that only massive government intervention could help the collapsed economy; he called his plan "A New Deal for the Common Man." The range of programs put thousands of Americans to work, often in large-scale projects to improve the country's natural and historic public lands. Not yet a national monument, Ocmulgee first benefitted from the Civil Works Administration (CWA), which provided funding for 150 laborers to begin excavations in December 1933 under direction of the Smithsonian. It grew quickly from there as an array of New Deal programs accomplished an ambitious program of excavations and new construction, overseen by the Emergency Relief Administration (ERA). The thousands of workers at Ocmulgee during the New Deal years became the largest archaeological team in the United States. Smithsonian anthropologists supervised archaeologists, engineers, draftsmen, skilled tradesmen, lab workers, equipment operators and hundreds of unskilled laborers at a time. One group served as guides for the 2,000-3,000 visitors who came each weekend.[3]

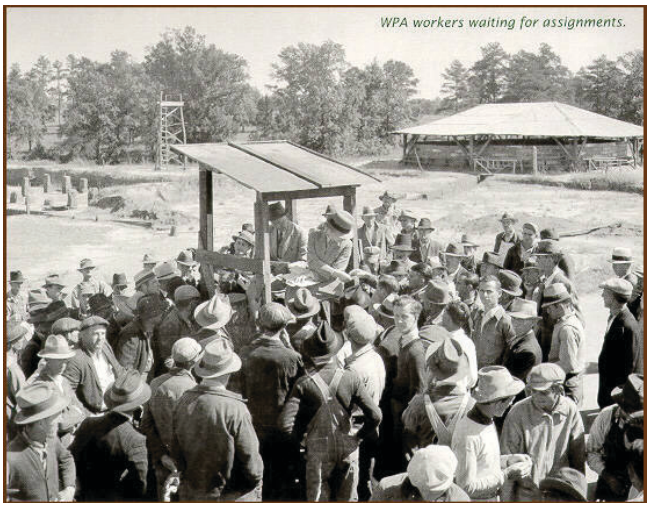


Figure 3. WPA Workers wait for assignments, ca. 1935. (SEAC Coll.)

Among the significant excavations was the Earth Lodge, an early council chamber. To protect the original, a reconstruction of the Lodge was built, led by a young NPS assistant architect, James T. Swanson, Jr. Swanson was to feature prominently in the later development of the park.

Creating the Monument

The Macon group that succeeded in bringing funds and workers to the site now turned to the National Park Service for protection of the mounds with the support of a Georgia Congressman. Persistent appeals brought legislation in 1934 that approved the establishment of Ocmulgee National Monument; however, despite the ongoing federal investment and obvious significance of the site, the legislation pushed the designation of the monument into the future, with acquisition not by government appropriation, but by public and private donations. So, in the midst of the Depression, civic organizations went to work and in 1936 conveyed about 680 acres to the government.

The national monument was established just before Christmas in 1936.[4] Swanson's reconstruction of the Earth Lodge began two days earlier. In the right place at the right time, he was named acting superintendent of the new monument.[5]

Growing Pains

As excavations continued, the materials unearthed in the mounds surpassed the capacity to analyze and catalog them. Accordingly, in 1938 a laboratory was set up at the Macon Municipal Auditorium to allow Works Progress Administration (WPA) workers to process the staggering number of artifacts and the collection of notes, drawings, and photographs.[6] A pottery laboratory was set up on site for immediate examination of pieces before transfer to Macon. Artifacts from archaeological sites elsewhere in Georgia and even from neighboring states were sent to Macon, creating a collection of over a million objects and establishing Ocmulgee as a regional depository for the Southeast. Archaeological storage needs alone underscored the necessity of permanent housing for the collections.[7]

Similarly pressing was the need for office space, which led to use of a nearby farmhouse for NPS and Emergency Relief Administration offices.[8] At hand as well were the thousands of visitors coming to Ocmulgee each year. In response, a small temporary "museum" was built in the mid-1930s to display artifacts. The Macon promoters had foreseen the need for a museum from the start, but as recognition of the broader archaeological importance of Ocmulgee grew, it became clear that the enormity of artifacts and data and the popularity of the site would demand a larger museum and regional center to provide laboratory, study, storage, and office space.[9]



Figure 4. Temporary museum, mid-1930s. (OCMU Coll.)

The Park Service agreed. A master plan finalized in 1937 included a building with three-fold purpose: to house the administrative offices of the monument; to provide fireproof storage and study space for artifacts in well-equipped laboratories; and to provide facilities for public interpretation.[10] The building would encompass more than Ocmulgee: "Perhaps most important for the whole picture of Southeastern Archaeology is the building and establishment of a great display and research museum at Ocmulgee….a center for continued scientific investigation in Anthropology in the Southeastern United States."[11] As construction progressed, the superintendent made a hopeful prediction:

> The Ocmulgee National Monument of the future – a beautifully landscaped park area, with paved roads and ample parking areas, with well-trained rangers…, with a modern museum in which aspects of the story of Indian occupation not easily interpreted in the field will be brought out in a series of attractive, graphic popular exhibits. It will be a museum where archaeologists can meet…and consult large collections…. Then truly Ocmulgee National Monument will be a center for popular education and scientific research.[12]

This was not typical of NPS park buildings at the time, in fact, far from it. Buildings in several parks served multiple purposes, but not in a comprehensive manner. Some had an office in the ranger's quarters, or a building with a small display space on one side, but with other functions in a different structure. Interpretation in many parks was limited to small roofed signboards.

The Architect…

James T Swanson, Jr., called Jimmie, served as acting superintendent through the master planning process, during which time he was selected as architect for the new building. Available records do not reveal how he came to be the designer, nor how his controversial design was approved, but it is likely that he considered a design for the building well before his superintendent duties began at Christmas 1936. His work on the Earth Lodge was just beginning, but about a month later in early February 1937, he wrote that he had studied "the Museum problem," and would soon complete his "studies for the preliminary plans for submission to Mr. Vint's office.…"[13] Swanson transferred from Ocmulgee in February 1938 to take the position of Assisting Architect at NPS "so that all of his time could be spent in design of the park visitor center," and just in time to present a full set of plans and elevations on March 12.[14]

Swanson (1909-1980) was not a major NPS architect. He received his BA in Architecture from Rice Institute in 1931 (today's Rice University) and in the 1930s worked for NPS. Known records show him only with a minor role in the development of the Skyline Drive at Shenandoah National Park. After his work on the Earth Lodge and Museum-Administration building at Ocmulgee, he apparently left NPS in 1939 and served in the Navy during World War II. He later worked for Alfred Hopkins, a New York architect well-known for prison and hospital designs, for Fort Worth architect Wiley G. Clarkson, and for architect Claude E. Hooton of Houston and New Orleans until 1951 before working on an Air Force project in Morocco. In 1955, Swanson opened his own firm in Houston designing schools and office buildings. However, the Ocmulgee building appears to be his only principal work.[15]

Though his earlier experience may have been slight, as designer of the two major construction projects at Ocmulgee he is the individual most responsible for the park's above-ground appearance.

…and His Design

Americans were familiar with park architecture, so-called rustic designs, intended to blend into their surroundings. The style, more a design philosophy of proportion and materials than a true style, was used in the 1920s and 1930s in western parks and in the natural parks of the east.[16] Solutions for other eastern parks were less obvious. The typical rustic focus on rough, "pioneer-style" construction had no association with sites devoted to a military event or historic theme. The Park Service acknowledged this, and though controversial, ultimately developed standardized designs for eastern park buildings, typically in the Colonial Revival style modified to reflect regional influences. The attempt was to present a dignified public face for a military park, for instance. In his 1938 publication on NPS facilities, Albert Good affirmed the use of historical precedent, stating, "thus we are influenced by the early settlers…along the Atlantic seaboard."[17]

But what style was appropriate for Ocmulgee? The building would be surrounded by open land and prehistoric mounds that had no association with any Euro-American historic period, and the only nearby structure was a farmhouse. It was clear that the new building would be substantial in size. Swanson's response was unprecedented; in a radical departure from NPS standards, he chose the Art Moderne. Modernist architecture had been introduced to the United States from Europe in 1922 when an Art Deco design won second prize in a competition for the *Chicago Tribune's* headquarters building. Although not selected, the design was widely publicized, and Art Deco became a popular new style.[18] By the late 1920s, Art Deco spread from California and New York to other regions, generally to urban areas. It was the first nationally popular style in the U.S. to break from classical designs and Victorian adaptations, and paid scant notice to local or regional tradition. While popular elsewhere, it remained uncommon in Georgia.[19]

Art Deco led to Art Moderne. Where Art Deco was essentially ornamental with sharp stylized designs and vertical emphasis, the style became more abstract as it moved toward the Moderne's new emphasis on smooth surfaces, sweeping lines, curving corners, and a more horizontal effect. The style represented forward-looking ideas, and as such, was chosen for many new federal buildings, but was not used in national parks.

Swanson's confident design for Ocmulgee belies his relative anonymity. His building is a sculptural showpiece of the style, revolutionary among NPS buildings in

both design and purpose. Formed concrete was used to create curving forms and sweeping turns. Walls of glass block established a new pattern for natural illumination. Aluminum, in doors and windows, was a new construction material and spoke of a new age. Wide entry stairs gave a horizontal effect, reinforced by low flowing terrace walls, dark banding at the base of a rotunda and again at a frieze, and a flat entrance canopy, all echoed by a clerestory band and flat rooflines. The distinctive hint of Art Deco is provided with a nod to Ocmulgee's archaeology, the bold geometric frieze patterned on Lamar Pottery excavated nearby.[20]

Swanson's plan shows the rotunda with rounded corners wrapped by an open terrace. Behind the rotunda are administrative offices and a large auditorium, but the striking feature is a dramatic exhibit gallery winding north from the rotunda around the building to an entrance at the south. This was to be the main exhibit space, taking visitors through a chronology of prehistoric cultures and to the auditorium. The lower level of the building was devoted to archaeological research, with significant spaces for artifact and record storage and for archaeologists to meet.



Figure 5. Frieze pattern (top) derived from incised patterns on Lamar Pottery (bottom). (Oppermann; University of Georgia)

The building remains today the only Art Moderne building constructed by the Park Service.[21] It was of course unfamiliar to Middle Georgia residents. The *Macon Telegraph* offered the helpful, though erroneous, explanation that the building was "patterned after buildings of the New York World's Fair."[22]

Not only its design, but the multiple functions of the building, its focus on the visitor, and its purpose as a regional center were unprecedented. The lesser multi-function buildings in the east followed the Colonial Revival standard, with museum space secondary to administrative functions. Examples are at Sugarlands and Oconaluftee in the Great Smoky Mountains National Park, and at Kings Mountain National Military Park, all built between 1938 and 1942.[23]

Swanson's original design remained largely unchanged, although he made a significant alteration to the front steps after construction began. His first design shows a wide stairway with steps descending from the three sides; notable is the absence of cheek walls. By October, a revised design shows a stepped, straight-sided cheek wall with rounded front.[24] That design was presented in a watercolor rendering, and a 1939 photograph shows the cheek wall under construction, its wood form in place for pouring concrete. But even then the stairs would change again to take on their more dramatic design of the sweeping, raked flare present today.[25]

The design and placement of the frieze also changed more than once, the first design showing a double frieze, a second showing a segmented frieze of undistinguishable material, and by March 1939 the geometric frieze with its Lamar-inspired pattern.

Ocmulgee as an exhibit showcase was a major project for the NPS Museum Division, at that time developing a top-notch program aimed at making park history museums equal to any in America. In June 1939 the Division sent curator John C. Ewers to Ocmulgee to serve as acting superintendent, allowing him to concentrate on an exhibit design in close collaboration with Swanson.[26] Swanson's knowledge of Ocmulgee gave him particular insight into the possibilities of the Southeast's premier archaeological complex. He probably had more than the usual input on exhibits.

The final exhibit plan was printed in booklet form with watercolor renderings of interior and exterior, and de-

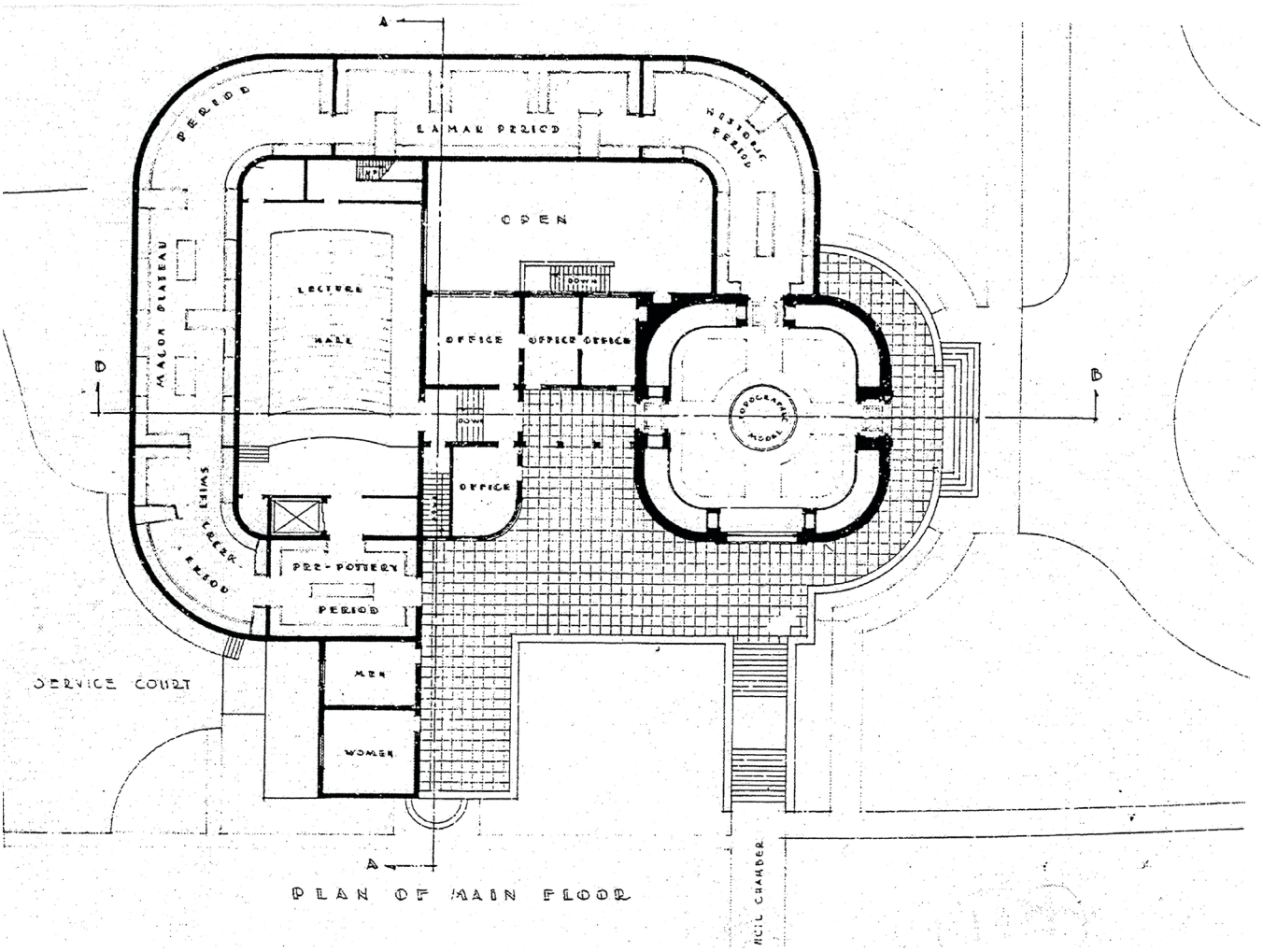


Figure 6. Swanson's plan of main floor, 12 March 1938, showing the winding outer gallery and early stair design. (OCMU Coll.)

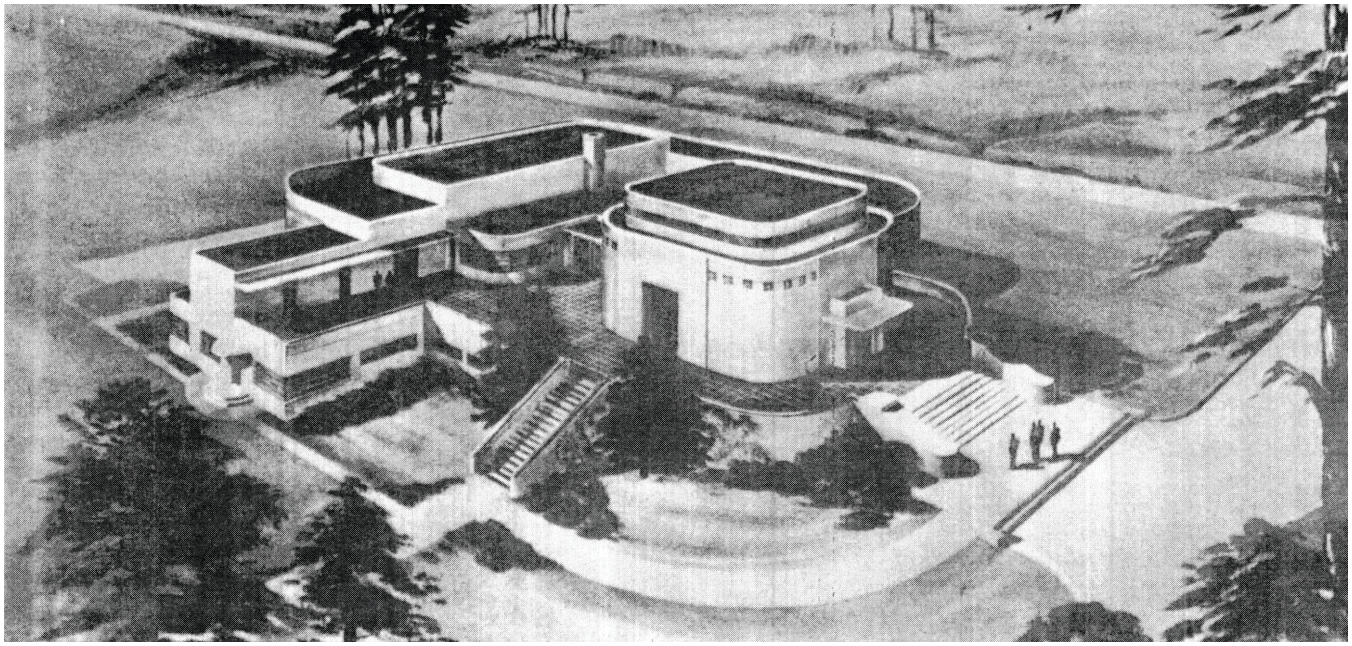


Figure 7. Watercolor rendering, early 1939, showing cheek wall and segmented frieze. (OCMU Coll.)

scriptions of the museum's intended appearance and use. The rotunda and the winding exhibit gallery were unified, the rotunda a welcoming introduction.[27]

Phased Construction

Construction began in May 1938 largely with unskilled ERA labor. After excavation for the lower level, wood forms were built for each component of the building to shape the poured concrete. The curing procedure was precise. Exposed surfaces were thoroughly saturated, then covered with wet blankets within fifteen minutes and left for three hours to prevent moisture loss before the actual curing began. The next step was to rub the surface with burlap one section at a time until it was ground to a paste and all form marks removed. This paste surface was smoothed then cured to create the sleek walls.[28]

By 1940 the basement pottery lab and considerable storage space for artifacts had been completed, and on the upper level, the rotunda and offices. Temporary exhibits were on display in the laboratory. In late 1940 a Macon newspaper reported "more construction and activity at the Ocmulgee National Monument now than at any national park east of the Mississippi River." The reporter comfortably continued, "If by any chance Mr. Hitler should ever send a bomber over Macon, there would be no safer [place than] the basement of the museum."[29]

The citizens of Macon paid close attention to the project. Opinions were mixed as the rotunda took shape. Though not all agreed, the newspaper reported glowingly about the "beautiful structure," encouraging residents to visit "one of the finest buildings of its kind in the United States and one of the most modernistic in Georgia." A year later, Standard Oil's *Tours and Detours* newspaper referred to the "striking museum building."[30]

1941: Suspension

From the start, the building was to be constructed in phases, but funds slowed to a trickle as the threat of war with Europe increased and plans were revised down. Eliminated from the plan were the auditorium, some office spaces, and most severely, the winding museum gallery that was the centerpiece of the exhibit plan. When in 1941 most of Ocmulgee's CCC workers were called into military service, construction crept along until funding stopped; work halted that November. The building was about 65 percent complete with several basement units lacking their upper levels, open to the elements. The last job was a temporary roof until construction could resume, certainly in the near future.[31]

The Outstanding Derelict

The country's entry into World War II halted most maintenance at Ocmulgee and other national parks. Trails, fences, parking lots, and the mounds all suffered from vandalism and neglect. And the temporary roofs leaked. Hope came soon after the war ended in 1945 when the Interior Secretary notified the governor of Georgia that construction would resume shortly. The Macon newspaper led with a bold headline and enthusiastic report that the library, auditorium, "and the main exhibit wings circling the building" would soon be built. The winding gallery was back in play.[32]

But NPS funding was not approved, not then, not the next year nor the next. The superintendent reported with some sarcasm that "physical development continued at a complete standstill." As water continued to enter the building, he stressed his fear of its "complete collapse" but held hope with each budget announcement.[33]

The poorly-roofed building had been without maintenance since 1941. By 1949 Superintendent Millard D. "Dean" Guy was fed up, reporting the building "is, in our estimation, the outstanding derelict in the National Park System." Ocmulgee that year had a visitation of 32,953 in over 6,000 cars. The park visitor saw temporary roofing, reinforcing steel "protruding in every direction," and broken steps. Inside the rotunda, "he is right in the middle of discarded drug store cabinets used as exhibit cases against a background of mildewed cork sheets."[34]

Guy described exhibits with similar scorn:

> We can tell visitors, many from distant states and foreign countries, that there are approximately 1,000,000 pieces of pottery, weapons, implements, ornaments and

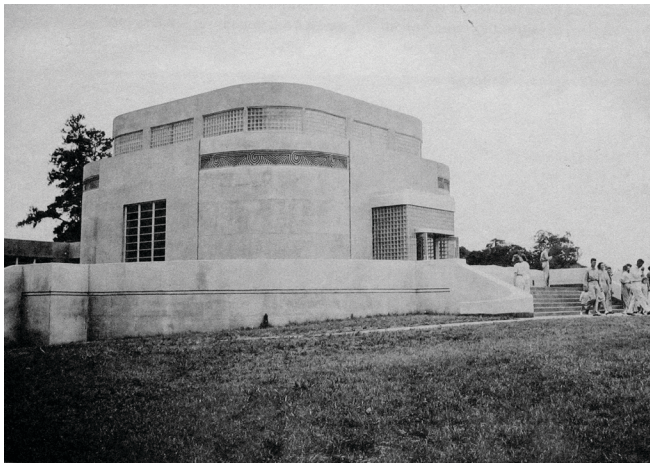


Figure 8. Building in the 1940s after construction was suspended. (OCMU Coll.)

> skeletons stored in the basement in shoe boxes but they cannot see them…; that a burial mound is covered with a dilapidated shed…. Our job of interpreting is very unique in that most of it concerns the invisible. Hidden features make good stories possible but, regardless of factual basis, stories alone will not satisfy visitors.[35]

A newspaper agreed:

> The museum at the Ocmulgee National Monument looks as if it had a bad case of measles. The building has "weathered" in such an unpleasant fashion that the splotches are unhealthy looking…. The beauty of the design that forms the frieze to decorate the museum is lost in the stained, soiled, run-down look of the building…. If the exterior has measles, the interior has pox! If the outside looks unhealthy, the interior looks as if it were almost on its death bed.[36]

Their complaints at last bore fruit. Funds were received in 1950 but reduced to $135,000, far less than budgeted, requiring substantial revisions once again.

Phase II Begins

The 1950 plans for Phase II show a building radically different in size and scope from that designed by James Swanson. During the stagnant years of the 1940s, superintendents still anticipated eventual completion. Expected or not, major reductions had to be made.[37] New to the 1950 design was a room projecting north from the rotunda. In the earlier plan, it had been not a room but the first section of the winding gallery. It was now the guides' room. A corridor behind the rotunda retained one rounded corner constructed before the war and intended to border the winding gallery. Nevertheless, the new construction of 1950-51 added significant additional space to the building, finally allowing visitor programs and administrative functions not possible in the incomplete earlier facility.

In 1951, thirteen years after its start, the building was complete. Even during the Phase II construction, about 333,000 visitors toured the monument. The superintendent was pleased: "The building is of reinforced concrete and tile construction and modern in every respect. The interior is a thing of beauty, while exterior walls are attractively finished in sandstone color and the frieze and dado around the rotunda in tile red."[38]

Another view was less positive. The irascible Devereux Butcher of the National Parks Association criticized the Park Service for abandoning its policy of rustic architecture, and cited "the supremely ugly museum at Georgia's Ocmulgee National Monument."[39] The superintendent bit back: "This is not the first outburst by Mr. Butcher. On another occasion, he referred to the building as a 'monstrosity' and suggested that the Park Service 'build a mound over it.'" The superintendent added spice as well to his monthly report:

> It seems that Mr. Butcher still doesn't like our Museum-Administration Building… [his opinion] causes us to doubt his qualifications as a critic. Perhaps he possesses a latent talent more valuable than his writing ability and should enter the field of architecture.[40]

Others appreciated the park. A local reporter opined, "It is the finest, most modern and best prepared archeological presentation anywhere in the U.S. That is undisputed by the National Park Service which supervises such monuments and parks."[41] Other articles touted the financial benefit to Macon, noting the estimated 50,000 people expected to visit the park in FY 1952.

After Completion

The lack of funding for parks throughout the nation in the 1940s left them unprepared for the post-war crowds of visitors with their automobiles. The NPS response was Mission 66, a national program to improve visitor services by 1966, the agency's fiftieth anniversary. Basic to the program and presented as a new concept was a multi-function Visitor Center in each park, what Ocmul-



Figure 9. The Visitor Center with its flowing cheek wall.

gee had addressed decades earlier. Despite Ocmulgee's incomplete construction and decade of water damage, the building received no Mission 66 funds, gaining only a new name, the Visitor Center.

In a reorganization in 1966, the Southeastern Archaeological Center (SEAC) was created at Ocmulgee, the facility designed for that role. In 1972, SEAC moved to Florida State University in Tallahassee, but much of SEAC's southeastern archaeological material remains in Ocmulgee's collection spaces.[42]

Modifications to the building since its completion have been made to accommodate changing uses and an updated interpretative program.

What's in a Name

Today, the building receives little recognition for either its striking architecture or its prophetic role in the evolving park philosophy of stewardship and interpretation. Both are of national significance; the building should be considered for designation as a National Historic Landmark. It is the first and only Art Moderne structure built by NPS, and the building challenges the accepted view that Mission 66 "invented" the centralized Visitor Center: a modern style building, with spaces devoted first to visitors, and all park functions in one building. Ocmulgee's visitor center predated the idea by twenty years, needing only a name change to comply with NPS planners' vision of the future.

Endnotes

1 Alan Marsh, "Ocmulgee National Monument Administrative History" (typewritten manuscript, Macon, GA: Ocmulgee National Monument, 1986), 7; Cameron Binkley, *Science, Politics, and the "Big Dig;" A History of the Southeast Archeological Center* (Cultural Resources Division, Southeast Regional Office, National Park Service, 2007), 16. BAE was the research unit of the Smithsonian. In 1965, it merged with the Smithsonian's Dept. of Anthropology; their records became the National Anthropological Archives in 1968. The Bureau had conducted archaeological investigations elsewhere in Georgia in the 1880s.

2 Joseph K. Oppermann, *Ocmulgee National Monument Visitor Center Historic Structure Report* (Atlanta, GA: Cultural Resources Division, Southeast Regional Office, National Park Service, 2008), IA 3.

3 Oppermann, IA 4-5; Marilyn Pennington interview with Kelly, in "In His Own Words: An Interview with Dr. Arthur Kelly (1900-1979)," edited by Mark Williams (University of Georgia, Lamar Institute Publication 44, 1997), 8-9.

4 Letter NPS Director Arno B. Cammerer to Georgia Congressman Vinson 6 January 1934; letter Interior Secretary Harold L. Ickes to Committee on Public Lands Chairman Rene L. DeRouen 16 April 1934; Marsh, 10-11.

5 Apparently spelled Jimmie, but written as Jimmy in Kelly interview transcript.

6 Ralph H. Lewis, *Museum Curatorship in the National Park Service 1904-1982* (U.S. Department of the Interior, National Park Service Curatorial Services, 1993), 270.

7 Marsh, 23; Binkley, 16-17; Superintendent's Annual Report, 1938.

8 Marsh, 42; letter of 7 December 1937 to NPS director regarding inspection trip to Ocmulgee; remodeling plans drawn April, approved June 1936. All cited drawings are in OCMU collections.

9 Oppermann, IA 7. It was at Ocmulgee that much of today's standard ceramic and cultural typology was developed. The need for a regional center stemmed from the pace of excavations at Ocmulgee and elsewhere. Relief projects were producing unprecedented numbers of artifacts, yet no chronology of Southeastern prehistory had been developed to interpret the findings. Recognizing the need for a uniform set of standards, archaeologists organized a Conference on Southeastern Ceramic Typology in May 1938. Later that year, the Southeastern Archaeological Conference was organized, and in 1939 held its annual meeting at Ocmulgee as construction on the new building progressed.

10 Binkley, 17.

11 Superintendent's Annual Report, 1939.

12 Ibid.

13 Letter of 3 February 1937. Thomas C. Vint was Chief of the NPS Branch of Plans and Designs and oversaw architecture and landscape architecture through Mission 66 and into the 1960s. See also Jesse D. Jennings, "Macon Daze," *Ocmulgee Archaeology, 1936-1986*, edited by David J. Hally (University of Georgia Press, 2009).

14 John W. Walker, "A Brief History of Ocmulgee Archaeology," in Hally, 24.

15 American Architects Directories (AIA) (1956), 547, (1962), 689, (1970), 897; Hastings H. Hart, *Plans and Illustrations of Prisons and Reformatories* (New York: Russell Sage Foundation, 1922).

16 Sarah Allaback, *Mission 66 Visitor Centers: The History of a Building Type* (Washington, D.C.: Cultural Resources Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, National Park Service, 2000).

17 Albert H. Good, *Park and Recreation Structures* (Washington, DC: National Park Service, 1938), 2.

18 Virginia Savage McAlester and Lee McAlester, *A Field Guide to American Houses* (Alfred A. Knopf, 1984), 465. Submitted design was by Finnish architect Eliel Saarinen. The term Art Deco was not common until the 1960s, derived from the *Exposition Internationale des Arts Decoratifs and Industriels Modernes* held in Paris in 1925.

19 Robert M. Craig, *Atlanta Architecture: Art Deco to Modern Classic, 1929-1959* (Gretna, LA: Pelican Publishing, 1995), 18. In Georgia, Art Deco and Art Moderne first appeared in Atlanta in about 1930.

20 John C. Ewers, "Exhibit Plan for Ocmulgee National Monument" (Macon, GA: Ocmulgee National Monument, National Park Service, June 1940), 17.

21 In 1931-32 an Art Deco shaft was built as a commemorative monument at the Wright Brothers National Memorial. The 1939 streamlined moderne Bathhouse at the San Francisco Maritime Museum was built as a joint project of the City of San Francisco and the WPA, and was not transferred to the Park Service until the 1970s.

22 Tommy H. Jones, *Ocmulgee National Monument, The Earth Lodge Historic Structure Report* (Atlanta, GA: Cultural Resources Division, Southeast Regional Office, National Park Service, 2005), 13.

23 Robert W. Blythe, Maureen A. Carroll, Steven H. Moffson, "National Register of Historic Places Registration Form, Kings Mountain National Military Park, Amendment and Additional Information" (1994), 88-89.
24 Plans dated 21 October 1938.
25 Handwritten note added to plan sheet of March 1939, penciled approval added six months later: "OK 9/22/39;" "Key to Gallery Arrangement" 9 December 1939, #2002C. This design is also on 18 December 1939 landscape planting plan.
26 Lewis, 67; Oppermann, IA 8.
27 Lewis, 93, cites Monthly Reports, Museum Division, 1936-39 box, NPS History Collection.
28 A series of photographs with explanatory captions is in OCMU collections.
29 Clipping hand dated 11/1940 from unidentified Macon newspaper.
30 Ibid.; *Tours and Detours* (General Drafting Company, Inc.: Standard Oil Company of New York, October 1941), 3.
31 Walker in Hally, 28.
32 *Macon Telegraph & News*, front page, 30 December 1945.
33 1946 Annual Report; Interior Secretary to Governor Ellis Arnall 29 January 1946; Marsh, 34; Superintendent's memo to director 10 August 1948.
34 Superintendent's Annual Report, 1949.
35 Ibid.
36 Article, apparently May 1949, from unidentified Macon newspaper.
37 Plans are dated simply "1950," drawings #2041C.
38 July 7 and November monthly reports. Staff of the NPS Museum Branch installed the exhibits; rotunda was opened to the public July 25, all exhibits and public address system completed in October; *The Macon Telegraph*, 19 July 2001, in a "50 years ago" article; Superintendent's Annual Report, 1951.
39 Devereux Butcher, "For a Return to Harmony in Park Architecture," *National Parks Magazine* (October-December 1952), 150.
40 Superintendent's monthly report, November 1952.
41 *Macon Telegraph*, 29 February 1952.
42 Binkley, 16-17, 27-30, 56-62.

From New Deal in Parks to New Deal as Park

Jerry L. Rogers, Coalition to Preserve America's National Parks



Figure 1. Old Santa Fe Trail Building, Santa Fe, New Mexico (photo:NPS)

There is a beautiful symmetry in the fact that on August 25 of this year the National Park Service turns 100 years old and 51 days later the National Historic Preservation Act is 50 years old. This is personally meaningful because 49 years and three days ago I became the second person employed in implementing the National Historic Preservation Act. The result of those laws is a grand and inclusive partnership that ought to be loved by every American of every political persuasion. It covers the whole country, obliges every Federal agency to be aware of historical values in the places they manage and affect with their work, include tribes while respecting their sovereign status, gives roles to every state and territory plus several thousand local governments, and draws upon the private sector without affecting property rights.

Only a tiny percentage of America's historic places need to be directly managed and interpreted as part of the national park system, but that system does need to include the best examples of the most significant parts of the American story. The Civilian Conservation Corps (CCC) is significant enough to merit its own unit of the national park system. The National Park Service build-

ing at 1100 Old Santa Fe Trail in this city is worthy of being that unit.

National parks had existed for almost 60 years and the National Park Service for 17 years, but the national park system was not truly national until President Franklin Roosevelt transferred historic places from other federal agencies to the Service in 1933. The system acquired more than 50 new areas, and continued to grow throughout the New Deal era. To deal with this rapid change the Service created regional offices and by 1937 decided to have one of them in Santa Fe. Land was acquired from the Laboratory of Anthropology on the outskirts of town. The National Park Service was one of the primary agencies that managed the CCC and it used a camp of young Hispanic enrollees from northern New Mexico and Trans-Pecos Texas to build a unique headquarters for.

This presented an extraordinary opportunity for the National Park Service to use design -- of a building, of a landscape, and of a building in a landscape -- to speak to the world. This building, while serving utilitarian purposes, would proudly say: "This is who we are, this is what we do, and this is how very well we do it!"

What a magnificent thing to do! And they did it themselves. The acting regional director, Herbert Maier, was an architect himself and had strong ideas about design in parks. To design this statement he chose National Park Service employee Cecil Doty, who provides an example of how and why the New Deal was important to America as well as to the Service. Although an architect six years out of school, Doty had fallen on hard times and had taken a job as a file clerk in the regional CCC program. However, he quickly became the regional architect. Other things happened quickly in those days: Maier and Doty had similar ideas and the design was done in short order. Excavation for the foundations was under way almost as the ink dried on the necessary documents. John Gaw Meem consulted on the design, but that too happened quickly and his changes were minor—most notably the large buttress added to the front of the building.

Carlos Vierra, a member of the Santa Fe art colony, oversaw the construction. CCC boys made adobes on site, quarried flagstone from a few miles east, brought logs from the mountains for vigas, pillars, and corbels, constructed the building, and even made some of the furniture. Works Progress Administration (WPA) dollars secured decorative items. The result was an extraordinary expression of what the people of the United States, acting together as the United States of America, could accomplish: families of CCC boys and artists and artisans were fed who might not have been, and the National Park Service presented this design proudly to an admiring world.

The Southwest Region occupied the building in 1939, and for fifty-six years developed parks and programs around a part of the national heritage that is wonderfully distinct from the rest of the country. So different was the Southwest Region that during the Cold War when Winston Churchill called the Joseph Stalin's Soviet Union "a puzzle, wrapped in a mystery, inside an enigma" and described it as being behind an "Iron Curtain," National Park Service parlance spoke of the region as "behind the Adobe Curtain." So remote and exotically named were its parks that when a misbehaving NPS official was exiled as punishment, as Stalin exiled problem people by sending them to Siberia, wags said they had been "sent to Tuzigoot." (Tuzigoot National Monument, although having a far-away-sounding name, is a perfectly lovely little park in Arizona). That era ended when a 1995 restructuring of the entire Service eliminated the Southwest Region as an administrative entity. As the last Southwest Regional Director I had the unhappy duty of putting the change into effect.

In that capacity I worked with colleagues Ernesto Ortega and John Cook, the Director of the new and enormous Intermountain Region, to ensure a couple of things that we considered vital. One was to maintain a cadre of National Park Service professional -- especially cultural resource experts -- in Santa Fe. A Service presence had become important to the city, the state, other federal agencies, and to the particular kinds of national park units in the Southwest. The other was to have the former regional office building consciously managed as a nationally significant representative of the CCC and the WPA. We used the building as an office, but arranged for additional space in town to avoid overcrowding. We gave the building as many national park characteristics as we could. Like actual parks it had a superintendent (of the National Trails System), a general management plan, a cultural landscape plan, an exhibits plan, public events, uniformed interpreters, and a maintenance staff who knew cultural resources. Units of the national park system have four-letter "alpha codes" drawn from their longer official names, and the Old Santa Fe Trail Building, as it was known after 1995, was called OSFT. It was on a track that should lead to becoming a national monument or national historic site devoted to the story

of the CCC and the WPA while remaining a center of expertise in disciplines important to the Southwest.

Unfortunately the 1995 restructuring was only the beginning of hard times for the National Park Service. Since that time the forces that oppose parks, conservation, preservation, and government itself have had powerful effect upon America. The entire government has been "shut down" in foolish publicity stunts disguised as budget controversies on three occasions. National Park Service budgets and the number of employees it is allowed to have are much lower than they were, and the workload is greater.

Year after year, little by little, the Service has been forced to re-evaluate everything it does, to stop doing things not explicitly mandated by law in order to do those things that are absolutely mandatory. That has completely undone the things Ortega, Cook, and I had arranged, to the point that the Old Santa Fe Trail Building was treated not only as a mere office building but as a very crowded one. It even lost its ability to speak -- as design -- about how wonderful the National Park Service is because the public was no- longer admitted to the building except for business purposes or with special permission.

Since then the Service has managed to reinstate public access using volunteer docents. That is good, but it is a shaky foundation for the future of a nationally significant building and for the whole idea of a park devoted to the CCC and WPA.

There are, of course, a few other places that wonderfully embody and express the CCC and the WPA. The ideal process for creating new units of the national park system requires that such places be comparatively evaluated on a nationwide scale in order to determine which of them merit becoming part of the system. Even without such evaluation I confidently say that few other places will equal and none will exceed the Old Santa Fe Trail Building, and it is even less likely that any such places will already be owned and managed by the National Park Service. It is past time for a CCC and WPA national monument or historic site. Let's do it now.

Built Sturdy, Left Fragile: State Parks after The New Deal

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Figure 1. A board-and-batten office of the NPS, Department of the Interior, stood on the grounds of Lake Corpus Christi State Park during its construction. Outlined with small stones, "SP-32-T" signifies that it was a state park project, Park 32, Texas. (TPWD)

Abstract

And the story goes . . . During the New Deal era NPS design professionals worked with state and local architects and planners to build state parks. Some 800 parks were "gifts" to the nation, states, and communities. But this standard narrative can hardly describe the post-New Deal history of state parks as one characterized by high quality or smooth progress. Although state governments had welcomed federal aid to build parks in or near communities desperately needing economic assistance, by the early 1940s they found themselves holding unfamiliar assets. Suddenly responsible for operating and maintaining park systems, they faced a host of problems. Taking Texas as a case in point, this paper examines twists and turns in the creation and preservation of state parks.

State parks were popular before, during, and after World War II. Even when under construction, parks had large numbers of visitors. Limited by rationing of gasoline, tires, and other commodities during and after the war, Americans who could take vacations wanted destinations near their homes, and this often meant state parks. After the war parks became locations for communities to welcome summer, enjoy food and music, celebrate important dates with family and friends,

and compete in athletic contests. The drawback was that state parks were subjects of contention. During and after the war, much federal funding went to national defense, and state monies for park operations were not on par with the earlier federal dollars; communities frequently complained that "their" parks were unfinished or they demanded additional amenities; politically powerful legislators and constituents fought to re-purpose park facilities to meet other state needs; African Americans were excluded from admission to parks they helped build during the New Deal; and some parks and historic sites were grandfathered into park systems, which meant that they expanded helter-skelter. In addition, some parks built with federal aid were attractive only to small numbers of local residents, and this tended to undercut support for state parks more generally.

These were situations state park administrators faced after the NPS withdrew. Holding the proverbial bag were persons who knew little about maintaining park systems. Few state park boards, superintendents, and least of all state legislators, knew the "park business." Board members tended to consist of prominent business figures with limited political capital. The boards inherited park systems before they could develop strategies for managing them and employ professionals. Park superintendents were little more than concessionaires, trained on-the-job. Not all legislators had welcomed New Deal programs in their states and many regarded parks as additional burdens requiring funds. Consequently, funding for state parks tended to be woefully inadequate and within a few years of their creation many were in shabby condition. Perhaps no state park system exemplified these difficulties more than the Texas system. Still, their use and popularity remained unabated.

Drawing from the experiences across the nation, this paper will discuss some of the early plot twists in the almost century-long narrative of how state parks are still striving to fulfill the promise of the 1930s.

Introduction

To bring the CCC to Texas, the state had only to make two promises: first, that it would work with National Park Service professionals in designing parks; second, that it would operate and maintain parks once they were built. The first promise was easier to carry out than the second, but it was not without difficulties. The State Parks Board complained frequently about the NPS's tendency to plan parks without the Board's input. The



Figure 2. This wooden sign posted at Palmetto SP announced the collaboration of NPS and the Texas State Parks Board, circa 1934. (TPWD)

abrasions created by this NPS high-handedness were real, although thankfully short-lived (figs. 1 and 2).

Fulfilling the state's promise to operate and maintain parks once they were built was much harder. The State Parks Board was simply not staffed, funded, or trained sufficiently to operate and properly maintain a statewide system of parks. But when the last of the CCC camps closed in early 1942, and when the NPS closed its Austin office that June, the Board found itself presiding over a small "empire" of parks nonetheless.[1] This was not unlike the plight of parks in other state systems.

Lack of funding, lack of planning, and lack of knowledge about managing parks dogged state parks systems across the U.S., and these deficits were interconnected. We must ask if the tremendous infusion of New Deal programs and the relatively sudden end to NPS assistance was an optimal way to jump start systems of state parks. Probably not; yet they would not have happened in any other way (fig. 3).

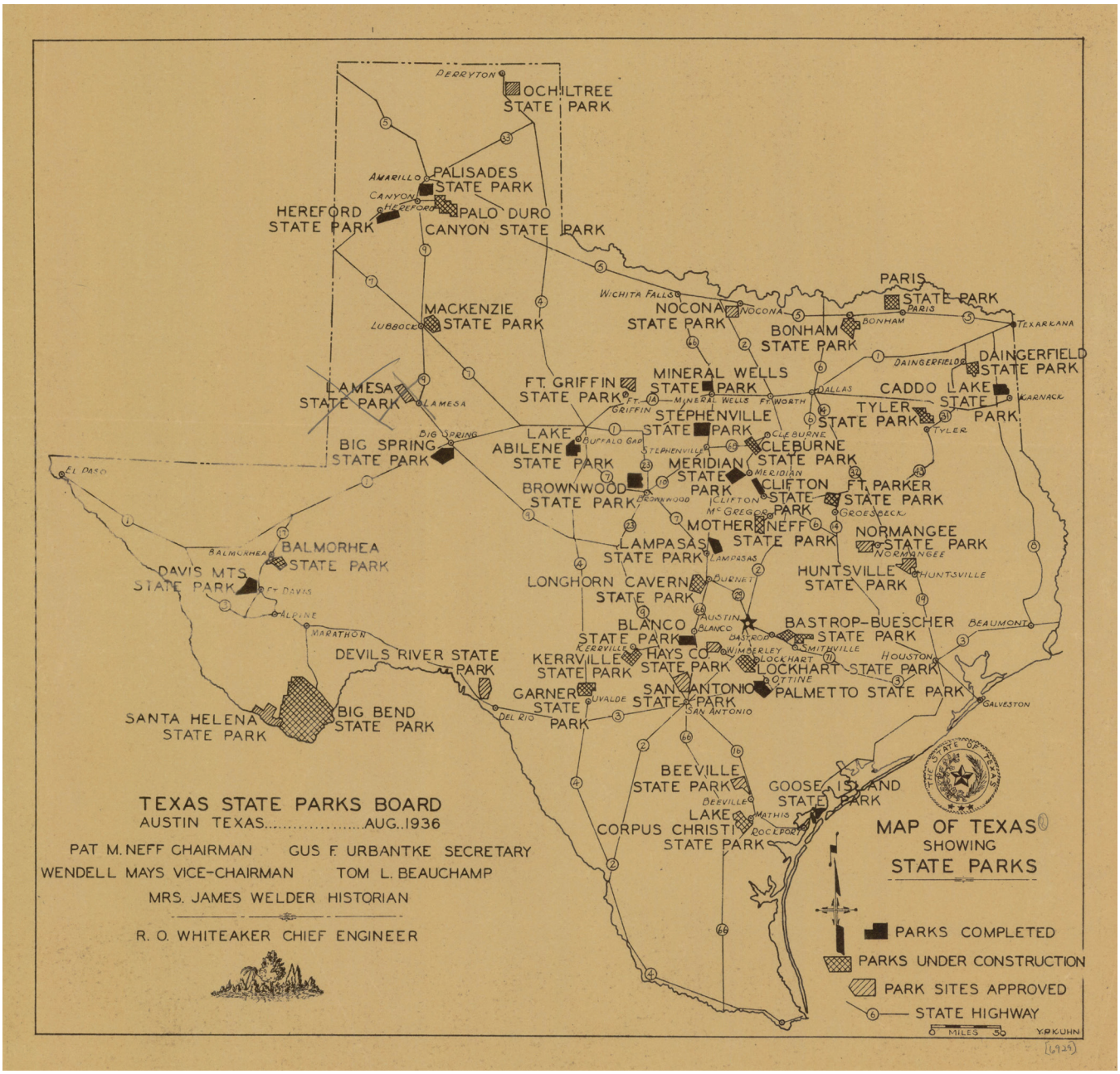


Figure 3. A work in progress, the state parks system is depicted on a Texas map in August 1936. (Texas Planning Board records, Recreational Land Use map 6929, TSLAC)

Popularity and Politics

State parks were enormously popular before, during, and after World War II. Even when still under construction, the parks had large numbers of visitors. Where there were lakes, bathing beauty contests and boating races were held. On Opening Day each year whole communities would turn out to mark the approach of summer, and throughout the year families and groups came for reunions and other festivities. People took enthusiastic part in celebrations of Memorial Day, the Fourth of July, and Labor Day. In some states, parks suffered from lack of visitation during the war years, because the home front was limited by the rationing of gasoline, tires, and other commodities. But those Americans who could afford vacations wanted destinations near their homes, and this often meant state parks. Far from forcing the closure or warehousing of CCC parks, wartime spurred their use by many in Texas and elsewhere.[2]

Coming in large numbers, many visitors did not know how to act. For example, so many celebrants converged upon Tyler State Park's July 4th holiday in 1939 that the local cartoonist had to remind them of their manners



Figure 4. After a particularly busy weekend celebrating Independence Day, the Tyler Courier-Times staff cartoonist chastises messy park visitors, July 4, 1939. (Tyler SP, State Parks Board records, TSLAC)

(fig. 4).[3] Often subject to the actions of feckless visitors, Texas state parks were also vulnerable to suggestions by powerful individuals to use the parks for purposes other than originally intended or statutorily mandated. The problem was not with short-term and patriotic use by the military as training camps, troop staging areas, and places where soldiers could rest and recreate.[4] It arose when Weaver H. Baker, who was Chairman of a powerful agency, the State Board of Control, had ideas about using two of the CCC parks, at Longhorn Cavern and Inks Lake, for purposes other than public recreation. Baker hit upon the idea of using the recently abandoned CCC barracks at Longhorn Cavern to house the state's mental patients. He reasoned that the barracks were relatively close to Austin and lying empty, so that placing mental patients in them would save the state money. In addition, Baker proposed leasing land in nearby Inks Lake Park for cattle grazing. Instead of having to ask the Legislature for money, Baker believed he would in these ways be able to return money to the state. But he ignored the fact that the original land donations were expressly for use as parks and that Longhorn Cavern was not a safe location for persons with mental infirmities. Only when the Legislature failed to fund a refurbishing of the Longhorn Cavern barracks did Baker's plans die.[5]

The Legislature knew well enough that a state park system existed and had to be funded. But its allotments of funds to the Parks Board grew slowly. Suspicious of this system of parks, which seemed to have suddenly appeared, the Legislature asked a member of its Auditing Committee, Representative W.R. Chambers, to conduct an evaluation in 1945. The conservative Chambers proved to be a conscientious evaluator, and he generally complimented the Board for its management. He observed that the forty or so parks managed by the Board in 1945 provided ample recreational outlets for Texans, and he advised against increasing their number. Indeed, Chambers believed that some smaller and less distinctive parks could be closed with their lands returned to those who had donated them. The reason was that he found much of the land in some small parks to be without recreational value or scenic beauty, and with little or no historical significance. He told the Auditing Committee, "It takes more than a cow pasture or a mesquite-covered hill and an excited chamber of commerce to make a park go!"[6]

Despite its decision not to grow the park system, in 1949 the Legislature did agree with the Board of Control recommendation and transferred eight historical parks to the State Parks Board. In loose partnership with the Board of Control since 1919, local volunteers and commissions appointed by Texas governors had previously managed the historical parks, but the Legislature now placed responsibility for them, and for monuments in them, squarely with the Parks Board.

In contrast to politicians, the public wanted more and better parks. Just a few years after NPS closed its office in Austin, citizens were clamoring for added amenities. Master Plans in some cases had been ambitious and so the refrain that "They didn't finish our park" was heard frequently. Building supplies were scarce or at a premium, and the war had swept many supervisors and artisans into the military. As Americans, Texans understood the call of national defense, but residents of some communities still felt that promises to construct nearby parks had been broken. They clamored for completing a dam and a lake or cabins, picnic tables, trails, and park roads that had been promised before the war. For illustration, South Texas and Hill Country residents wanted all 26 of the cabins at Garner State Park planned for their park

to be completed, because when war broke out only 14 had been finished.[7] Elsewhere some residents thought progress building parks was insufficient and they argued that land donated for the parks should be returned to its donors. Communities across Texas regarded plans for nearby parks as assets that had been promised but not delivered, and they sometimes did not fully appreciate the wartime exigencies responsible for their disappointment.

Any description of the trajectory of mid-20th century state parks history must be characterized as resembling a ride on a roller coaster. Political winds were strong and legislative support for parks was weak. Texans' expectations for their parks were high, and oftentimes fulfillment was minimal. Levels of funding, planning, and available park management expertise were at their nadirs.

Lack of Park Funding, Planning, and Training

In 1942, following the departure of NPS, the Texas Legislature for the first time in its history, allocated some $100,000 to state parks from general revenue. It slowly increased this amount in successive biennia in order to make up for federal funds, assistance, and expertise withdrawn during World War II and not restored after the war ended. However, the amount was hardly enough to operate and maintain some three dozen parks. Moreover, the elected body parceled the allocations out in small appropriations to specific parks in members' districts.[8]

The Legislature did allocate general revenue funds to finance inspection and supervision required of the state when it implemented the CCC park development program and agreed to employ caretakers, or park keepers, principally to perform policing duties, at the termination of CCC's development of a specific park site. But the general revenue funds were hardly ample, providing only limited travel expenses for Parks Board appointees, modest salaries and expenses for a small central office staff, and individual caretakers at far-flung parks. This was a bare-bones arrangement at best.

With its partnership with the National Park Service and receipt of accompanying federal funds a thing of the past, the Parks Board gave full-time attention to funding



Figure 5. Taken September 1940, the photograph includes (standing left to right) R.D. Sias, Inspector, NPS; James C. Jones, Architect, TSPB; Kennedy N. Clapp, Member, TSPB; Raymond L. Dillard, Member, TSPB; Frank D. Quinn, Executive Secretary, TSPB; H.H. Cornell, Regional Landscape Architect, NPS, Santa Fe; John C. Diggs, Inspector, NPS; Dr. Aubrey Neasham, Historian, NPS, Santa Fe; T.J. Reynolds, Administration Assistant, TSPB; and (seated left to right) Eugene Thompson; M.J. McColm, Associate Regional Director, NPS, Santa Fe; D.A. Bandeen, General Manager of the West Texas Chamber of Commerce; Harry Connelly, Executive Secretary of the Big Bend Park Association; M.R. Tillotson, Regional Director, NPS, Santa Fe; Wendell Mayes, Chairman, TSPB; J.D. Sandefer, Jr., Member, TSPB; J.V. Ash, Vice Chairman, TSPB; C.E. "Tom" Sawyer, Manager, Chamber of Commerce, Breckenridge. (Photo of TSPB staff and NPS staff, Acquisition and development files, Possum Kingdom SP, State Parks Board records, TSLAC)

operations of the parks that were now its responsibility (fig. 5). In addition to seeking increased funding from the Legislature, the Board tried innovative ways to raise money. Leasing mineral rights to park lands was one way. Leases enabled oil companies, using directional drilling to tap petroleum reserves beneath parks and pay royalties on the petroleum extracted. The Legislature was persuaded to create and oversee a Special Mineral Fund from which money for parks, together with normal appropriations, could be doled out. Optimism about this flow of revenues led the Board to predict that funds from general revenues might no longer be needed.[9]

Another source of funds was the Board's financial arrangement with food and other concessionaires at parks, whereby the Board received some twenty percent of the profits they earned. However, the profit motive caused some concessionaires to launch enterprises that ran counter to park values and aesthetics. Some installed pinball machines that fell into disuse once their novelty wore out; others provided jukeboxes that were quite popular, but also frequently not working. Not surprisingly, "Some people complained about the 'Coney Island type' concessions in state parks, which included airplane rides, a western clothes store, passenger boats, fishing barges, and race tracks."[10] The Parks Board defended the concessions because it sorely needed its share of the profits and simply could not operate or maintain the parks without the money. But in truth, the Board could not sustain the parks even with concession revenues and funds from the Special Parks Fund that the Legislature had established in 1931.[11]

Without sufficient and stable funding, the Parks Board was not in a position to look ahead to anticipate acquisitions, improve operations, and provide maintenance. Lacking the ability to plan, the Board accepted that the number of parks had increased without forethought and that people wanted still more of them. But there was no long-term plan and little possibility of there being one. The Parks Board inched along with something akin to management-by-creep—a series of minor decisions accumulated into what passed for a policy. Legislators themselves remained uninformed: they might be able to quote their colleague Chambers about it taking more than a chamber of commerce and a hill to make a park function, but exactly what "more" it took was unknown. Decades away from any systematic study of recreational needs, Texas state parks suffered from the ignorance of park needs, which limited legislators, park board members, staff, and managers—no matter how well intentioned.[12]

One dedicated individual, Frank Quinn served as paid director of the Parks Board and later as an appointed member. Trained in business, Quinn displayed a passion for parks. He led the Board during its transition to post-New Deal status, but with a stagnant salary, inadequate appropriations for parks, and little control over how scarce funding was expended, he resigned as director. After he joined the Board as a commissioner, Quinn was instrumental in bringing the National Conference on State Parks to Bastrop State Park, which was a coup for Texas.

While still a paid director, Quinn introduced training programs for park managers and concessionaires. In April 1941, the Texas State Parks Board held its first training session. There was no curriculum just an awareness that something about hospitality, safety, and operations needed to be taught. Quinn told the press, "Although the Texas state parks board is in its infancy, it is growing into a lusty youngster, and we realize the need of a school to instruct park managers as to how to better take care of patrons and to see that they enjoy to the fullest extent the facilities offered by state parks of Texas."[13] The first session featured addresses by both NPS personnel and Parks Board staff on topics covering operations and record keeping, with the primary achievement being to create a sense of identity among those who worked at the parks. Perhaps the most important and concrete takeaway was two pages titled "Who Does What When?" B.G. Link, the chief clerk and sometimes the park system maintenance supervisor, delivered a brief narration of what should be done at each park every morning just before opening and every afternoon just before closing, plus weekly and monthly chores.[14]

Although the growth of professions characterized the late 19th century in the U.S., park operations and management was not among them. If there was a professional discipline at all, particularly in planning, it might have been landscape architecture, but it was in its early development. At the time of the NPS office winding down, the small parks staff in Austin consisted of an executive secretary (director), architect, purchaser and auditor, technicians, and stenographers. Danny Rosenauer traveled the state as the lone maintenance technician for Texas state parks. By 1955, the Board had added a few positions, notably accountants, two field supervisors, and a property manager.[15]

This general state of affairs in the 1950s is documented in State Parks Board files, which are rife with complaints. In a good-natured and helpful manner, a visiting Michigan family wrote to the Board after camping at Daingerfield in 1959: "We are accustomed to camping in the rough and enjoy it, even where there are no toilets, but this place tops them all. I could not help myself from taking these pictures for you. At least the fallen down out-building and rotting tables could be piled up and used for firewood. The grounds sure would look more presentable. The water was excellent, also lighting for good campsites too, but a cleanup would be in order. I sincerely hope this is the only park like it in Texas."[16] The absence of an effective strategy for park maintenance and repairs, lack of a trained workforce, and too little funds allocated by successive sessions of the Legislature, compared with revenues it made available for other good causes and agencies, meant that Daingerfield was hardly the only Texas state park in shabby condition during the 1950s (fig. 6).



Figure 6. This cartoon depicts the new opportunities for tourism and old problems of state parks in need of repair. (Acquisition and development files, State Parks Board records, TSLAC)

State Parks and National Affairs

Internal influences upon state parks in Texas were indeed formidable. Still, the parks were not isolated from broad currents and problems in postwar American society. Reflecting generally better wages and greater opportunities for leisure activities, increased visits to parks in Texas mirrored increased visits to national parks, which skyrocketed from 22 million visits in 1946 to 54 million eight years later. However, polio was a national health scourge, and during successive polio scares, potential park visitors had to be urged not to let fears of polio keep them away. The long and severe drought suffered by the Southwestern U.S. during the late 1940s and early 1950s was also felt in Texas parks.

Nor were Texas parks isolated from the broad national movement to gain civil rights for African Americans after World War II. Having helped build parks before the war and having performed military service during it, many former African American enrollees in the CCC wanted to tour parks where they had earlier lived and worked, but they were denied entry or shunted to unattractive park areas. Witness what happened to Millard Fillmore Rutherford, a former CCC enrollee at Fort Parker State Park, who was also a World War II veteran and who was African American. Rutherford had fond memories of living and working in the outdoors when he was in the CCC camp at Fort Parker. He remembered how he and fellow enrollees had built a dam to create a park lake for fishing and boating. When Rutherford returned to Mexia after serving in World War II, he married and wanted to take his bride to the park to show her the dam. When they arrived, however, they were told that "Negroes" were not allowed to enter. As Rutherford later recalled with bitterness, "I could not even show my wife the park I helped build" (fig. 7).[17]

From the late 1940s until the Civil Rights Act was passed during the presidency of Lyndon B. Johnson in 1964, racial segregation was prevalent in parks and other public places in Texas. As the civil rights movement gained momentum, the State Parks Board and discriminatory practices by parks came increasingly under attack.[18] There was, in fact, much variation in the extent of discriminatory practices among the many Texas parks. In general, they refused African Americans the access that whites enjoyed, but the Parks Board had no formal policy governing entry to parks on the basis of race, and it made efforts to discover how its parks were acting in this regard. It asked superintendents if they were experiencing much use of parks by African Americans, and



Figure 7. Men associated with Company 3807(C) attended their first reunion at the park in 1993. Here, they pose next to a historical marker commemorating the CCC work. Gathering annually with family and friends at the park they built, the men share stories about the CCC and their lives. Rutherford is the gentleman standing on the dais. (TPWD)

it learned that in the absence of a statewide policy, the treatment of African Americans varied greatly. Some parks had not been visited by them at all, or so they reported; some simply accommodated African Americans with no fuss. Still others welcomed some "Negroes" and refused others. "So long as they remain apart" was the usual refrain.

Despite finding that some parks were accommodating African Americans and others were not, the Board bowed to pressures from outspoken whites unwilling to have "Negroes" admitted to parks. The Board therefore asked the legislature to fund "separate but equal" facilities in parks or, even, to fund parallel systems of parks for whites and blacks.

Board members were well aware of the legislature's reluctance to allocate significant funds for state parks, and they were no doubt certain that the proposal to create a second park system for use by African Americans had no chance of being funded. In effect, the Board threw the hot potato of civil rights into the Legislature's hands, asking it to pronounce a general policy.

After the Supreme Court's decision in Brown vs. Topeka Board of Education in 1954, African Americans could legally use state parks. Nevertheless, the earlier practice of segregation had prevented them from going to parks when they were freshly built, and African Americans had been allowed no role in managing the parks. By the mid-1950s, in any case, few of the parks were capable of accommodating additional visitors, whether African Americans or others, and it was clear to most observers that expanded park accommodations, especially for overnight visitors, were sorely needed. How to provide them in the face of the legislature's chronic underfunding remained a mystery.[19]

Texas parks also mirrored national park trends when the State Parks Board announced in 1960 a ten-year program it dubbed Operation 10/70, which it envisaged as the Texas equivalent of a program launched by the National Park Service in 1956 and labeled Mission 66. Mission 66 was the name the NPS gave to a decade-long effort to prepare national parks for 1966, when the Eisenhower administration's target for completing the interstate highway system was to be realized.[20] The NPS saw correctly that the highway system would produce an unprecedented amount of automobile travel by Americans and foreign tourists, not least to national parks. Consequently, funding and facilities to accommodate greatly increased numbers of visitors, campers, and

overnight guests were imperative. In Texas, the intention was to generate funds for improvements to CCC parks, historic sites, and other public spaces under the Parks Board's jurisdiction. But as happened with earlier Board requests for additional funds, Operation 10/70 went nowhere when the Legislature once again refused to increase park funding.

Help On the Way

During the early 1960s, the state parks' plight was in sharp focus. The failure of revenue bonds for parks, authorized by Governor Allan Shivers, awakened many to the fact that funding by the Legislature and the 20% share of concessionaire profits received by parks were grossly insufficient. In 1959 the Texas Observer wrote about the pitiful state of affairs in which visitors had to foot the bill for each activity at a park, and it highlighted the severe limitations on the number of employees the Parks Board could hire. To further prove the longstanding needs of the parks, supporters needed only point to an on-going feud at the Davis Mountains State Park. That park was on land leased to the Parks Board for 99 years, albeit with a proviso that if the land ever ceased to be used as a park, it must be returned to the lessor. When maintenance of the park's famous Skyline Drive and shelter, picnic tables and barbeque pits at its top lagged soon after the CCC Company that built the park departed, the lessor fenced the park entrance and reclaimed ownership, with a court supporting his action. The standoff persisted until key legislators interceded on behalf of the Parks Board in order to accomplish the needed maintenance at Davis Mountains State Park and Indian Lodge.[21]

Everyone concerned with parks during the early 1960s acknowledged that something had to be done to meet the needs and demands of a growing and increasingly urban and mobile population. The State Parks Board had done its homework and it provided a well researched list of needs for each state park. To study the funding problem the Texas Research League hired Texas Tech University, which offered an academic degree in park management. The study, like others before it, regarded greater support for repair and maintenance of the park infrastructures, reliance on professionals rather than concessionaires, acquisition of additional public lands, and a culling of the current system would lead to an improved state parks system.

When Governor John Connally took office in 1963 he made good use of the study's recommendations to set priorities for that year's legislative session. He stated boldly that: "We must decide what we want in the way of parks and what it will cost to provide this service to our people, or not attempt to engage in the activity at all" (fig. 8).[22] Seeking a reliable income stream for parks, Connally hit upon the idea of tying park funding to funding for conservation, which involved federal funds made available by the Pittman-Robertson and Dingell-Johnson Acts and which totaled more than $26 million dollars a year. Federal aid provided a 75 percent federal match of funds generated by a state tax on hunting and fishing equipment. This prompted Connolly to engineer a merger of the State Parks Board with the Texas Game and Fish Commission to form the Texas Parks and Wildlife Department (TPWD). A Land and Water Conservation Fund Act passed by the U.S. Congress in 1964 also made funding available to state and local communities for acquiring, planning, and developing recreational facilities. The new TPWD created a Texas Outdoor Recreation Plan and submitted it to Washington to show how federal funds would be used in Texas and how matching funds would be acquired. The Legislature duly authorized park bonds in order to raise the state's matching funds, on the assumption that if the bonds raised as much as $75 million, Texas parks would with the federal matching funds have $150 million to provide the long sought safety net for existing parks, as well as money with which to acquire lands for new parks.



Figure 8. This photograph of Governor John Connally and President Lyndon B. John enjoying a casual drive as their spouses sit in the back seat of the convertible suggest their personal friendship, one forged on many shared interests, included a love of Texas lands and the outdoors. (TPWD)

Had the Land and Water Conservation Fund Act not been passed by Congress, Texas state parks might never have been required to write an Outdoor Recreation Plan, which was a prerequisite for receiving federal funds, preserving park lands, and living to fight another day.

Comparisons and Conclusions

There were national, state, and local parks—and state park systems—before the New Deal. During the 19th century, several western states sought to set aside areas of scenic beauty, but did not have the wherewithal to plan and operate parks; in the east, New York's Niagara Falls (1885) lays claims to being the first state park, soon followed by parks in Pennsylvania and Massachusetts, and in the Midwest in Minnesota.[23] In the early 20th century, Wisconsin, California, Illinois, Maryland, Washington, South Dakota, Indiana, North Carolina, Florida, Iowa, and others joined in the state park movement. After the National Park Service was founded in 1916, there was a period of some five years of modest but significant beginnings of state park systems. Adding impetus was the January 1921 National Conference on Parks, held in Des Moines, Iowa, the first one of its kind and called by Stephen Mather. A decade followed during which state agencies and systems tried to get organized; this was the environment of the 1920s, just prior to the New Deal. From 1933 until 1942, the NPS, in conjunction with the labor supplied by Civilian Conservation Corps enrollees, accelerated the growth of state parks by building or improving 405 parks in forty-three states.[24] Yet five states—Delaware, Kansas, Utah, Arizona, and Colorado—did not even have a state park system until after World War II.[25] Such is a brief outline of state parks' coming into being, but it's primarily the trajectory of state park systems post-1942 that interests us.

I have focused on Texas, and now ask to what extent was the Texas state park system from 1923 until 1963 an outlier, and to what extent was it average? Admittedly, although my paper purports to be comparative, it must be, by necessity, discursive. Not all states have published histories of their park systems; some have guidebooks rather than histories. The unevenness of the data thwarts any conclusive comparisons, but I can make some preliminary observations.

We can view Texas as simultaneously typical and atypical: typical insofar as there were individuals in Texas who had a passion for what they imagined a state park system could be, as did other states; atypical insofar as Texas had unusual access to political power at the national level during the 1930s, a tradition of economic conservatism, and more than a tinge of grandiosity (for example, a tendency to regard every "cow pasture" as worthy of park status).

Although Texas was relatively slow to obtain federal aid, elected officials wholeheartedly sought it when they recognized economic necessity. Some 56 parks were constructed during the life of the CCC; and 29 of these, currently operated by Texas Parks and Wildlife Department, form the core of the state park system. In some states, however, the CCC made little impact on the state park building effort. In Idaho, for example, the CCC concentrated on fire suppression because of a spate of fires that had devastated the state's woodlands and forests.[26] Not all states had state and park leaders who embraced federal programs. On one hand, the conservative Texas Legislatures of the 1930s embraced them, the CCC in particular; but at least one, a more progressive state, did not. In Oregon, Parks Engineer Samuel Boardman agreed with critics who accused the CCC of prettifying nature when it needed to be preserved. He complained about NPS planners whom he accused of liking "'to hang the garland on the crag" and "festoon the stars and moon."[27]

Before and after the New Deal, Texas state parks shared with other states a general lack of planning capabilities. What passed for planning in states that had park systems prior to 1933 was minimal. It consisted of deciding which scenic landscapes or historic sites needed protection or preservation, without bothering to define what was meant by significant or knowing much about the recreational needs of visitors. This pattern of so-called planning continued for several decades. A clear exception was California, which had the benefit of Frederick Law Olmsted, Jr., who wrote the California State Park Survey in 1928.[28] For most states, however, land acquisitions were often opportunistic, and most states relied on donations, rather than strategic planning. Freeman Tilden singled out Texas when he wrote that "Texas may be taken as an example of what can happen when enthusiasm for a state park system is not coupled with a well-developed plan."[29] Nevertheless, the fact remained that few states invested in park planning during the 1940s and 1950s.

The Texas State Parks Board shared with other parks systems a paucity of trained professionals once the NPS closed its Texas office. Formerly funded by NPS, a few individuals in engineering, landscape architecture, and architecture remained, now funded by the state, but

field staff had no experience in the emerging "profession" of park operations and management. Like agencies in other states charged with the responsibility of running parks, Texas was slow to professionalize. Like most states, too, Texas was subject to changing political winds and power-wielders. It took elected officials, powerful allies, or leaders in the conservation field—or some combination of these individuals to provide funding and support, as in California and Iowa.[30] Some state parks system administrators and appointed boards found themselves in the crosshairs of disputes and vulnerable to harsh treatment within the course of an election cycle or at the whim of a governor, as in Washington State.[31]

Lastly, in matters of racial integration, overnight accommodations, and launching a successful program to renew and refurbish state parks during the late 1950s and early 1960s, Texas shared with most other states a slowness to act. The basic situation was that without a secure and stable funding stream, state parks could not really progress. It took the federal government to pass the Land and Water Conservation Fund Act that gave state parks around the country a brief reprieve in their never-ending struggle to obtain funds after the New Deal.

Endnotes

1 For more history on early efforts in Texas to establish state parks, see James Wright Steely, Parks for Texas: The Enduring Landscapes of the New Deal (Austin: University of Texas Press, 1999); for more on Pat M. Neff, known as the "Father of Texas State Parks," see Dan K. Utley and James W. Steely, Guided by a Steady Hand: The Cultural Landscape of a Rural Texas Park (Waco: Baylor University Press, 1998); for the ongoing efforts of the Texas State Parks Board and its successor, Texas Parks and Wildlife Department, to operate state parks designed by NPS and built by the CCC, see Cynthia Brandimarte, with Angela Reed, Texas State Parks and the CCC: The Legacy of the Civilian Conservation Corps (College Station: Texas A&M University Press, 2013).

2 Ney C. Landrum, The State Park Movement in America (Columbia: University of Missouri Press, 2004), 160.

3 Sam Nash, "The End of a Perfect Day," Tyler Courier-Times, July 4, 1939. See Tyler State Park, Texas State Parks Board records, Archives and Information Services Division, Texas State Library and Archives Commission (TSLAC).

4 "History of Texas Parks Board" (updated narrative consolidation), Joan Pearsall, 24 June 1974 with contributions by Dr. Harold Toy and Fred McNeil, p.19. Departmental history project research files, Texas Parks and Wildlife Department administrative records and other materials, TSLAC.

5 Sharon Morris Toney, "The Texas State Parks System: An Administrative History, 1923-1984" (Ph.D. diss., Texas Tech University, 1995), 82-84.

6 W.R. Chambers, Mexia News Daily, September 3, 1945 (clipping).

7 CCC administrative files, Garner State Park, 1936-1940, State Parks Board records, TSLAC.

8 Pearsall et al., "History," 23.

9 Toney, "The Texas State Parks System," 140-41.

10 Ibid., 142.

11 Ibid., 38-43.

12 Landrum, State Parks Movement, p. 183. Certainly, there were attempts by NPS to plan: in 1934, NPS prepared the "Recreational Use of Lands in the United States" for the National Resources Board; and in 1941, it prepared A Study of the Park and Recreation Problem of the United States. Landrum writes about these planning efforts: "The primary purpose was to assess the situation in each of the states and lay a factual basis for further acquisition and development efforts, presumably to be assisted with federal technical and financial aid." In Texas, the Legislature established the State Planning Board, largely to obtain federal aid for relief programs and to assess the state's resources in order to both use and conserve them. While the Board only operated from 1935 until March 1939, it did spur some action among local planning groups.

13 "Park Managers Plan Meeting," Austin American, April 18, 1941, n.p.

14 Administrative files, School for Park Managers, 1941, State Parks Board records, TSLAC.

15 S-Parks, December 1941, 1; Administrative files, memo, Danny Rosenauer, Maintenance technician, 1939-1942; and S-Parks, January 1955, , State Parks Board records, TSLAC.

16 Acquisition and development, Daingerfield State Park [Correspondence], 1956-1959, State Parks Board records, TSLAC.

17 Millard Fillmore Rutherford, interview by Dale Martin and Tom Fisher, video recording, March 31, 2003, Historic Sites and Structures Program, Texas Parks and Wildlife Department, Austin.

18 For more on this topic, especially the case of T.R. Register, et al. v. J.D. Sandefer, Jr., et al, pertaining to Tyler SP, see Toney, Chap. 5.

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The Civilian Conservation Corps and New Mexico State Parks: An Early Partnership With Lasting Effects

Robert J. Stokes & Christy Tafoya, New Mexico State Parks, Santa Fe, New Mexico

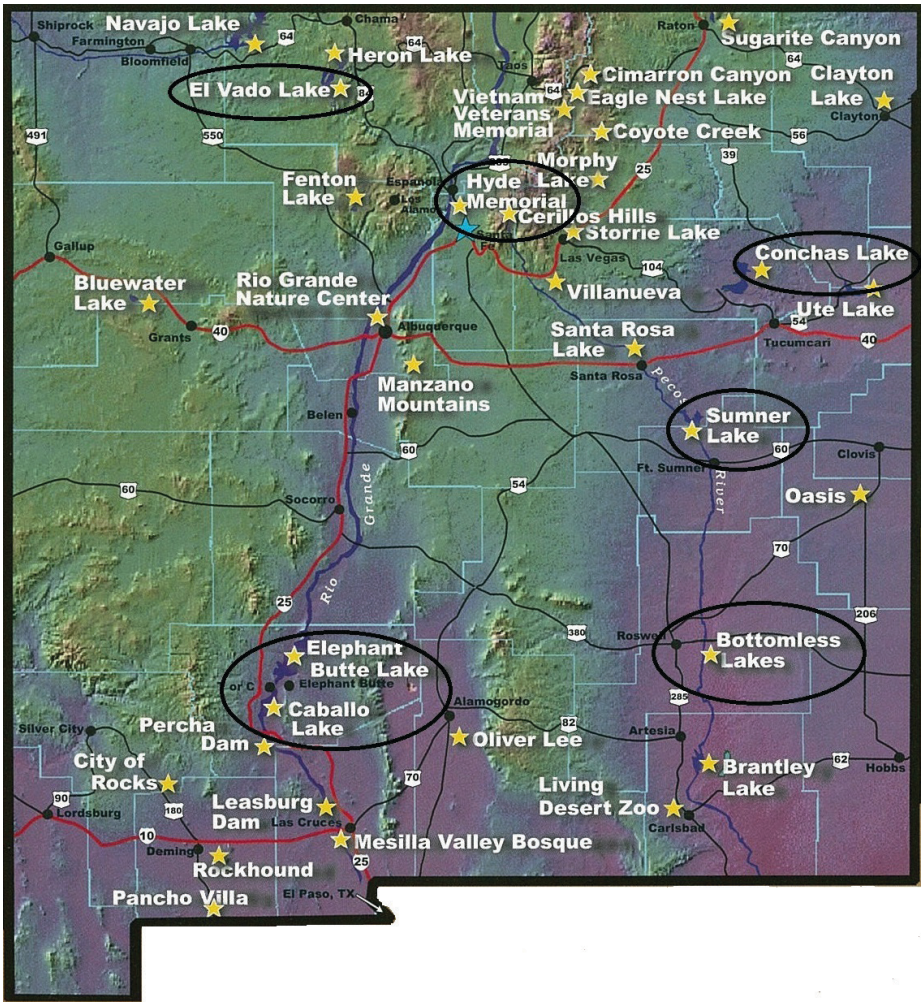


Figure 1. New Mexico State Park map with discussed parks highlighted.

Abstract

New Mexico State Parks got its start during the dark days of the Great Depression with the help of the federal government's New Deal and the National Park Service (NPS) through the efforts of the Civilian Conservation Corps (CCC) and Works Progress Administration (WPA). The New Mexico State Park Commission was established on August 31, 1933 by Governor Arthur Seligman in order to receive federal funds and recreational infrastructure assistance primarily through the NPS and CCC.[1] Four parks were proposed: Santa Fe River-Hyde Memorial, La Joya near Socorro, Bottomless Lakes near Roswell, and Eastern New Mexico near Portales.[2] With the invaluable assistance of the NPS-trained and -supervised CCC workers, and with the participation of the WPA, the infrastructure was built for these four

early parks and for four federal reservoir projects that would become part of the state park system in the 1950s and 1960s: Conchas Lake, Elephant Butte Lake, El Vado Lake, and Sumner Lake. Although La Joya and Eastern New Mexico are no longer part of the State Park system, the structures built at the other parks remain and are celebrated components of our park system [Figure 1].

Introduction

The early CCC and WPA efforts within the nascent state parks, and the recreational infrastructure built at federal reservoirs in New Mexico in the 1930s to early 1940s, are a daily reminder to modern generations of New Mexicans of the important role the federal government and its agencies played in ameliorating the effects of the Great Depression in our state. The legacy of this work, and the architectural styles *en vogue* with the NPS at that time, take us back to another day and age, a trying time for our state and country that becomes more and more of a distant memory to modern generations. As a result, it is important for New Mexico State Parks and its managing partners to preserve this historical and architectural legacy for future generations to not only enjoy, but to remember. This paper and accompanying poster presented at the NPS Century of Design celebration symposium held in Santa Fe briefly outline the history and architectural legacy of the NPS, CCC, and WPA at several of our state parks, and concludes with a discussion of this legacy going into the future.

Early History

New Mexico's first state park was created in 1933 at Bottomless Lakes along the Pecos River east of Roswell. Santa Fe River-Hyde Memorial soon followed in 1934, along with two now defunct parks—La Joya along the Rio Grande bosque near Socorro, and Eastern New Mexico between Portales and Clovis. A new state agency was created to oversee the state park system, known as the New Mexico State Park Commission until the 1980s, and now as the New Mexico State Parks Division of the Energy, Minerals, and Natural Resources Department. All four parks and the creation of the Commission were direct results of the federal government's New Deal programs in New Mexico;[3] the CCC, an NPS-supervised "make work" program for unemployed young men across the nation, was active at all four parks. One of the primary objectives of the CCC was to rebuild recreational infrastructure across the federal land-managing system, but state parks were also included in this mission. Cooperation between the NPS and state park systems was encouraged early on by NPS directors Stephen Mather and Horace Albright, and echoed by Conrad Wirth,[4] who acted as the NPS director for the CCC, its camps, and its work during the New Deal era. Wirth was also a working partner with his US Bureau of Reclamation (Reclamation) counterparts during his period of NPS-CCC management.[5]

A related agency, the WPA, was also active across the state during the 1930s, and played significant roles in the construction of two dams and reservoirs on the Canadian and Pecos rivers on the plains of eastern New Mexico. At Conchas Dam on the Canadian River, the US Army Corps of Engineers teamed with the WPA and Public Works Administration (PWA) to build the dam and related facilities in 1935 to 1939, including a new town-like camp for the construction workers. The CCC built the Pueblo (New Mexico) style visitor and administrative buildings using recycled adobe brick from the construction camp which was dismantled upon completion of the project. The administration buildings are set amid a 6.2-acre park at the north end of the dam that was also built by the CCC.[6] Conchas Lake State Park was created in 1955 to manage recreation at the reservoir.[7]

At Alamogordo Dam and Reservoir (later renamed Sumner Lake), Reclamation built a reinforced earthen dam in 1936–1937, and the CCC and WPA built roads, drainage channels, stone culverts, recreation facilities, and landscaping from a CCC base camp at the reservoir (Camp BR-3, 1938–1942).[8] Alamogordo Lake State Park was created in 1966, but its name was changed to Sumner Lake State Park in 1974 due to its proximity to the town of Ft. Sumner.

During the 1930s, the El Vado Dam on the Chama River, a major tributary of the Rio Grande, was built using federal New Deal funds and labor.[9] The lake became part of the state park system in 1962.[10]

Lastly, the CCC was active at Elephant Butte Lake on the Rio Grande near Truth or Consequences.[11] Reclamation constructed Elephant Butte Dam early in the twentieth century as the major water storage unit on the river, followed by Caballo Dam downriver to regulate water flows into the Elephant Butte Irrigation District system, which is listed on New Mexico's State Register of Historic Places (SR 562). Elephant Butte Dam was completed in 1916, and Caballo Dam was built between 1933 and 1934 as part of the New Deal. Elephant Butte Lake became a state park in 1964 and Caballo Lake in 1967. In 2015, Reclamation assumed full responsibility for the maintenance of the historic CCC-built landscape around the

Elephant Butte dam (aka "Damsite"), although the area is still accessed by New Mexico State Park visitors.

At Elephant Butte Lake at the Damsite area between 1934 and 1941, the CCC built housing and visitor cabins, concessionaire facilities, landscaping and retaining walls, roads, electric transmission systems, water mains, a fish hatchery, camping and picnicking areas with toilet and shower facilities, a regatta spectator stadium, and marina and boating access facilities from two CCC base camps, BR-8 and BR-54.[12]

The cabins were built in the Pueblo (New Mexico) style [Figure 2] and the concessionaire restaurant was built as a large Spanish Colonial style building.[13] The Pueblo (New Mexico) style is most prominently known from the National Register-listed NPS Southwest Regional Office Building in Santa Fe. This style featured adobe or adobe-like walls over concrete block, mud plastering or adobe-like exterior stucco, rounded irregular corners, flat roofs, and round or squared beams and vigas that protrude from the walls at the roof line, all of which create an organic, earthy feeling and tone. The CCC's work at Elephant Butte represents one of the largest undertakings at a New Mexico recreational area, and remains the most intact CCC-built landscape at a Reclamation reservoir in New Mexico. The Damsite and hatchery areas are no longer managed by New Mexico State Parks and are owned and managed by Reclamation.

NPS-inspired Architecture at the Early New Mexico State Parks

The earliest New Mexico state parks and the CCC-built infrastructure were heavily influenced by the NPS Rustic architectural style. The use of heavy, massive logs and timber, in conjunction with elaborate decorative stonework, characterizes most of the CCC buildings and structures at Santa Fe River-Hyde Memorial, Bottomless Lakes, and La Joya State Parks. The banks of the incised Santa Fe River as it flows through the city were stabilized by the CCC using large, variously sized stone blocks that interlocked, forming a durable barrier against flood waters and slope movement[14] [Figure 3]. The construction style is also aesthetically pleasing. The CCC also built several bridges over the river park using the same stone work. Log books from this time period at the New Mexico State Parks headquarters, housed in the Santa Fe office, include mention of having "the CCC boys start the stonework along the river" in 1934. Although the state park is now managed by the City of Santa Fe Parks and Recreation Department (but still owned by New Mexico State Parks), the CCC stonework remains in place and is one of the visually defining features of the city park.

The Hyde Memorial State Park unit farther up into the wooded mountains above Santa Fe served as a mountain retreat for Benjamin Talbot Hyde, a New Yorker who fell in love with the Southwest early in his life. Hyde was instrumental in funding many of the early archaeological expeditions to southwestern ruins, such as Chaco Canyon, teaming with Richard Wetherill, an early southwestern archaeological pioneer.[15] In 1934, the Hyde family donated the land to the state for use as a mountain setting park and recreation facility.[16] Between 1936 and 1938, the CCC built an open "V"-shaped stone and timber lodge with a fireplace in each wing, and a large central fireplace with stone flanking walls [Figure 4, Figure 5]. The building also served as a ski lodge during the



Figure 2. Pueblo (New Mexico) style CCC-built visitor cabin at Elephant Butte Lake.



Figure 3. CCC-built rock walls alongside the banks of the Santa Fe River in downtown Santa Fe, New Mexico.

winter months in the 1930s through 1950s [Figure 6]. The CCC built a campground area with timber picnic shelters and rock retaining walls [Figure 7, Figure 8], and a swimming pool/ice skating rink, of which only the perimeter rock walls remain.[17]

The lodge was remodeled during the 1970s by the New Mexico State Parks concessionaire at that time. The remodeling included inappropriate stylistic elements and enclosure of the rear porch area. New Mexico State Parks restored the lodge to its original 1930s appearance in 1996. Work included the rebuilding of the rear porch and its roof that had been altered in the 1970s [Figure 4].[18] Today, it is the site for family gatherings for special events, such as weddings and reunions.[19] The building's roof is now crimped sheet metal, not wooden shakes, as a fire-protection measure. Although the hill behind the lodge no longer functions as a ski run, the slopes are still used by park visitors during the winter as tube runs. The lodge serves as the base of operations for a ski supply concessionaire during the winter for the Santa Fe Ski Basin at the crest of the mountain. After 80 years, the building remains structurally sound and is the focal point for the park. Its construction style would not look out of place at NPS units such as Yosemite and Yellowstone.

The CCC established a camp (SP-3-N) near Bottomless Lakes State Park for work at the park between 1933 and 1938, although CCC work continued on and off until 1942.[20] At the park, the CCC built roads, culverts, and campgrounds, and a massive stone pavilion, bath house, and water tower at Lea Lake. Lea Lake is one of



Figure 4. Hyde Memorial State Park CCC-built lodge using the NPS Rustic style.



Figure 5. Hyde Memorial State Park lodge interior with two fireplaces shown, including the large central fireplace with stone flanking walls. Note timber supports and open vault ceiling.



Figure 6. Late winter skiing at Hyde Memorial State Park in the 1940s, with lodge in background (New Mexico State Parks photograph archives).



Figure 7. Hyde Memorial State Park campground log picnic shelter, built by the CCC.



Figure 8. CCC-built rock retaining walls and stairway at the Hyde Memorial State Park campground.

the many "cenote" sinkhole-type lakes found along the Pecos River escarpment in this area.[21]

The pavilion, bath house, and water tower were massive stone buildings of the NPS Rustic style, although wood vigas and supports, porticos, and a flat roof added Pueblo (New Mexico) and Territorial style elements to the buildings [Figure 9, Figure 10]. Lea Lake—already a popular summer swimming and picnicking location since the late 1800s—was established as New Mexico's first state park in 1933 (although at the time, it was called a state monument) and finally opened to the public in 1937 after the CCC completed much of their work.[22] The facilities were heavily used in the decades afterwards and began to show their age.

The 1960s-era swimming pool was later removed by New Mexico State Parks and the edge of the lake was expanded in its place to create a more natural look to the swimming area. Incompatible additions to the pavilion were removed, and the building and water tower were stabilized and returned to their original 1930s condition in 2003. The original 1930s park entrance road, built by the CCC as an elevated earthen causeway along the western edge of Disappearing Lake, was recently documented as an archaeological site; it had been abandoned in the 1960s.[23]

At La Joya State Park, the CCC erected a large stone lodge as a base for visitors to enjoy the surrounding wooded bosque and wildlife. The property is now managed by the New Mexico Department of Game and Fish.[24]

At Eastern New Mexico, the CCC built a fishing lake, shelters, and several houses and offices for park personnel. The architectural style used for the houses was the Pueblo (New Mexico) style. However, the park was not successful and the property was transferred to Eastern New Mexico University (ENMU) in 1941. The houses have fallen into ruin but were recently documented by an ENMU anthropology graduate student for her thesis.[25]

Conclusions

The CCC- and WPA-built infrastructure at several New Mexico state parks remain largely intact today, and is a testament to the engineering and construction ethic exercised by the NPS as manifested in the CCC and WPA programs. These New Deal constructions also have a continuing impact on the operation of the state parks by remaining as important architectural elements drawing thousands of visitors each year. Although time has affected the functioning of these buildings and



Figure 9. CCC-built Lea Lake pavilion and water tower at Bottomless Lakes State Park, using the NPS Rustic style mixed with Pueblo (New Mexico) and Territorial style elements.



Figure 10. Territorial style portico wing at the Lea Lake pavilion.

structures, and many now require a constant regimen of maintenance and repair, they form an integral part of the experience visitors enjoy at the parks.

The construction styles used by the CCC and WPA harken back to the Rustic and Pueblo (New Mexico) styles used by the NPS in the western United States. When viewed today by visitors, they transport us back to a more romantic time in our nation's history, and conjure up images of what many, if not most, visitors envision what the NPS and the parks are supposed to be. Although New Mexico's state parks are not part of the NPS system, many parks have historical connections, and the general purpose of our state parks mirrors very closely the ethos of the NPS, not just in our mission statement but in the architecture that can be found at our parks.

New Mexico State Parks and our managing partners work hard to ensure that these CCC and WPA treasures remain for future generations to enjoy as much as the 1930s and 1940s visitors did. State park systems around the country owe much of their early history to the NPS and the New Deal.

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Iconic New Deal Era Cultural Landscapes in the Florida State Park System

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Figure 1. Florida New Deal era state parks adhered to the NPS Rustic Style of architecture, as does this entry station at Hillsborough River State Park, 1947, State Archives of Florida, Florida Memory.

Abstract

Eight parks created by the Civilian Conservation Corps (CCC) and one park by the Works Progress Administration (WPA) under Franklin Roosevelt's New Deal during the Great Depression are the historic nucleus of the Florida State Parks System (FSPS). Landscape architects from the National Park Service (NPS) and the FSPS collaborated in selecting sites for large-scale natural resource conservation and recreation development projects, overseeing design of park master site plans, and supervising workforces in park development.

The park building programs were derived from pattern books such as *Park and Recreation Structures*, compiled by Albert Good and published by the National Park Service in 1938. The exchange of building plans from park to park contributed to common architectural themes statewide in the NPS Rustic style with regional variations.

Recreational facilities also were derived from pattern books such as *Recreation Plans Handbook*, compiled by Albert Davis Taylor and published by the US Forest Service in 1936. Similar recreational programs are found

throughout these nine parks, yet each is a distinctive outgrowth of its geographical province. The careful integration of recreational facilities into the natural environment through site master planning renders each park unique and its cultural landscape character defining.

Nationally renowned landscape architects Frederick Law Olmsted, Jr., John Nolen, and Albert Davis Taylor participated in establishing the first New Deal era park in the state—Florida State Botanical Gardens and Arboretum. Landscape architects Charles Vinten for the NPS and Emmett Hill for the FSPS led state park site master planning and guided development, contributing to the commonalities found within the parks statewide.

Introduction

Florida established a system of state parks to take advantage of New Deal era federal economic relief programs that employed unskilled youth in restoring degraded landscapes and developing public recreation facilities according to professionally designed site master plans. The Great Depression had been particularly long and tragic for Florida. Prior to the Wall Street Crash of 1929 that set the whole nation in hard times, the Florida economy suffered widespread economic distress from five years of Mediterranean fruit fly infestation that crushed the citrus industry, collapse of the real estate bubble, and two devastating hurricanes that turned investment away from the state. The land, too, had experienced challenging times, as natural resource exploitation and poor farming practices led to worn out, abandoned land and unpaid real estate taxes.

The federal government aided Florida between 1933 and 1942 in creating a state park system. Federal funding and CCC workforces developed Florida Caverns State Park, Fort Clinch State Park, Gold Head Branch State Park, Highlands Hammock State Park, Hillsborough River State Park, Myakka River State Park, O'Leno State Park, and Torreya State Park. The WPA funded Ravine Gardens State Park.

These nine parks exemplify the NPS Rustic style of recreational architecture and planning in Florida, using rough cut timber and rubble stone, English Arts and Crafts detailing, and cluster compositions of a "harmonious rural setting." The narrow options in Florida building materials—limestone, cypress, pine, and palm logs—resulted in the similar-looking built facilities within the parks and from one park to another. The professionals overseeing production of building plans also contributed to similarly designed elements within the parks.



Figure 2. This boardwalk exemplifies the responsiveness of park development to the environment. Photo: William Lutrick

The uniqueness of each park site master plan resulted from the well-chosen land parcels representing the diversity of the physiographic regions in Florida. The responsiveness of each of these site master plans to the natural environment and to harmonizing park facilities with nature is a testament to the skills of the landscape architects that created the parks.

Establishment of the Florida State Park System

In 1925, the Florida state legislature passed a law creating the Florida State Park System to acquire land for public recreation, preservation of natural beauty or historic association; however, no funding was appropriated. The Legislature passed a law in 1927 creating the State Board of Forestry and the subsidiary Florida Forest Service, which became the vehicle by which the Florida State Park System came into being later on.

In 1933, the state legislature passed a law directing the Board of Forestry to select land parcels on which to establish CCC camps for conducting conservation work to take advantage of federally funded employment assistance. Land was identified but no funding was appropriated and acquisition was pursued largely through donations.

The first Florida State Park was Florida State Botanical Gardens and Arboretum, established in 1934. The donated land parcel was adjacent to and included Highlands Hammock Park, located near the city of Sebring on the Central Florida Highlands.

The Iconic New Deal Era Cultural Landscapes in the Florida State Park System

Highlands Hammock State Park

Highlands Hammock Park originated in 1929 when the Tropical Florida Parks Association (TFPA) acquired the virgin forest of Hooker's Hammock, later renamed Highlands Hammock Park, for preservation. Freeman Tilden, a leading authority on state parks at the time, described the forest as one of the most fascinating of American wildernesses. The 500-acre parcel was a vestige of the hardwood tropical forest that once extended across southern Florida. A park site master plan was developed around a low impact framework of foot trails, weather shelters, and picnic grounds made with careful study and sympathetic restraint to preserve natural scenic perfection and biological wealth.

This purchase of land and the development of the private park, funded by Margaret Shippen Roebling and her husband John A. Roebling, was an early preservation effort by a private sector entity to save a special landscape in Florida, and may have been the first to save a natural site in Florida.

The worsening economy in 1933 led to discussions of closing the park. In an effort to preserve this magnificent forest and to provide local employment, TFPA donated to the state the already developed Highlands Hammock Park and two squares miles of undeveloped adjacent property on which to establish a CCC work camp to develop Florida State Botanical Gardens and Arboretum as a state park. Acceptance of the donation made this parcel the first unit of the Florida State Park System.



Figure 3. Preservation of this remnant virgin subtropical forest led to the creation of Highlands Hammock State Park

An advisory board of prominent persons, influential groups, and nationally recognized leaders in park and recreation planning, biological sciences, and landscape architecture—including landscape architects Frederick Law Olmsted, Jr., Albert Davis Taylor, and John Nolen—assembled in cooperation with the Federal Emergency Conservation Work Program to guide the development strategy for creating the park. Suggestions from Olmsted for the preliminary park site master plan were prepared into a drawing of the Florida State Botanical Gardens and Arboretum State Park by landscape architect William M. Reinsmith, who was employed by the FSPS. Olmsted left the advisory board and was replaced by landscape architect William Lyman Philips to review the park plans. Philips had been an employee of Olmsted Brothers Landscape Architecture and City Planning firm before the Great Depression and he superintended the first CCC workforce in South Florida.

A unit of 200 untrained youth with a superintendent and a technical and supervisory staff was stationed at Florida Botanical Gardens and Arboretum. The Army provided standardized barracks and camp layouts, workshops, fleets of trucks, tools, and building materials. In 1935, the NPS hired landscape architect Charles Raymond Vinten as the first CCC park project superintendent in Florida. He had participated in the planning of Highlands Hammock Park, coming from the nationally recognized Albert Davis Taylor Landscape Architecture and Community Planning firm, based in Cleveland, Ohio. Vinten aided in the transition of Highlands Hammock from a private park to Florida's first state park and oversaw design and construction activities. After a year, the NPS promoted Vinten to supervisor inspector over all CCC parks in Florida, where his professional skill, dedication, and judgment resulted in the quality, style, and uniformity of the Florida New Deal era state parks.

Hillsborough River State Park

Hillsborough River State Park features a watershed heavily forested with bald cypress, longleaf pine, and live oak trees sustaining richly diverse plant and animal communities. By the beginning of the twentieth century, all of the ancient trees had been removed from the parcel. The derelict land was donated to the state in 1934 for a forest restoration project. CCC Company 1418 was stationed on the parcel to erect fire towers, clear firebreaks, and plant tree seedlings. The FSPS hired landscape architect Prentiss French on a consulting basis to help with park site master planning. French resigned



Figure 4. This series of Class II rapids provided a recreational resource around which to create Hillsborough River State Park

and was replaced by landscape architect William Phillips. The FSPS also hired landscape architect Walter A. Coldwell to assist in park planning and design of all Florida state parks. Coldwell earlier prepared the park master plan for the Florida State Botanical Gardens and Arboretum. The site master plan of Hillsborough River State Park bears his name along with landscape architect Emmett Hill.

The park recreational facilities are centered along the Hillsborough River on a series of Class II rapids. This is one of the few rivers in Florida to have Class II rapids, and it is unusual to find bedrock reaching the surface in this part of the state. In 1935, a CCC workforce of 60 enrollees was sent to improve a natural swimming area, construct weather shelters, picnic tables, fire pits, drinking water fountains, an amphitheater of native limestone along the riverbank, and a suspension bridge crossing the river connecting hiking trails on both sides. This cluster of facilities and the contact station, ranger station, fire tower, caretaker's cottage, and the many large live oak trees that grace the grounds of the park administration facility complex are an exceptionally well preserved vestige of New Deal era park site master planning in Florida, retaining the character and features that exemplify the Rustic style of architecture and planning created in harmony with the natural environment.

Myakka River State Park

Myakka River State Park is one of the largest parks in Florida, covering 58 square miles. It is the southernmost and the most subtropical of the New Deal era parks in the state. The vast openness has been compared to the African veldt. The Myakka River flows 12 miles through a landscape mosaic of prairies, pinelands, oak and palm hammocks, and summer wetlands. The park is noted for migratory birds so abundant that it has been described as reaching "spectacular concentrations."

The contributions of an African American CCC workforce that constructed the park are particularly noteworthy. Fifty black enrollees were relocated to Myakka River State Park in 1935, and the racially segregated white community protested. The state representative warned that the black workforce would remain to work on the park, or the CCC camp would be abandoned. The white community voted to reject them and the camp was evacuated, buildings locked, equipment moved away, and the workforce transferred to Charleston, South Carolina. Sentiment in the community turned as the departure of the workforce removed desperately needed federal relief money from the local economy. The community repented and the workforce returned to develop the park.

The enrollees entered a land of stunning beauty and rattlesnakes. Conditions in the temporary camp were very unsatisfactory at first, with outdoor kitchens, no floors, and rattlesnakes getting into tents. Some enrollees became sick with malaria; others deserted, shocked by the primitive conditions in which they were required to live until suitable barracks and a dining hall were completed.

The state engineer surveyed the land parcel in 1934 and a landscape "engineer" from the Department of the Interior laid out the park under the direction of Charles H. Schaeffer, the acting director of the FSPS. The park site master plan bears the names of both landscape ar-



Figure 5. The broad open space of Myakka River State Park has been described as a subtropical Serengeti

chitects Emmett Hill and Walter Coldwell. Landscape architect Prentiss French served as a consultant reviewing the plans.

Landscape architect William Cook produced architectural plans for five overnight cabins located along the Myakka River, from building plans shared from Highlands Hammock State Park. Each cabin stands on limestone piers and features a large limestone fireplace and chimney in the NPS Rustic style. The cabins are elevated so the periodic flooding flows beneath them. Fred Chapman, the construction foreman, explained how the cabins were built as frame structures of hand-hewn timbers. Logs of native cabbage palm trunks were wired firmly into place within the heavy frames, eliminating the need of saddle notching. The shingles for roofs and gable ends were hand-riven from cypress logs harvested in the park. Over 80 percent of the materials used in construction came from within the park. The exception was the Florida limestone purchased from offsite. Acting Superintendent A.D. Lawson commented that the grace and distinction of the picnic pavilion was the park's glory, with its ashlar floor constructed of carefully sawed limestone.

O'Leno State Park

O'Leno State Park originated from O'Leno State Forest in 1934 on land with a long and rich history of human use. The town of O'Leno was established in the mid-1800s where the Santa Fe River sinks underground and forms a natural bridge that served as a thoroughfare during the Spanish colonial period and undoubtedly was used before that by Native Americans to avoid fording the river. The Old Bellamy Road that connected the state territorial capitals of Tallahassee and St. Augustine in the mid-1820s—the first federally funded road in Florida—was aligned across this natural bridge.



Figure 6. This amphitheater at O'Leno State Park recessed into the riverbank is reflective of the surrounding karst landscape

Water power harnessed behind dams built across the Santa Fe River powered saw mills, and the prosperity of the early lumber industry resulted in the community of O'Leno growing large enough to have a post office. Later construction of the railroad bypassed O'Leno and set off its decline. All that remains of the town are the mill-dams and an altered landscape mosaic of pasture, fields, successional forests and remnant natural plant community types, a large limestone quarry, and several smaller ones mined in the early 1900s and again in the 1930s for the park construction.

The town site was selected for a Florida Forest Service camp to provide training and education under auspices of the WPA. The site master plan included a mess hall, lodge and cabins, infirmary, museum, swimming site in the river, large picnic pavilion, an amphitheater, and a suspension bridge across the Santa Fe River, all constructed of materials harvested and manufactured on the site.

Construction came to a standstill when WPA funding expired in 1935. Landscape architect Emmett Hill facilitated the transition of the forestry camp to the state park centered on the popular swimming area along the Santa Fe River. A CCC workforce of 25 enrollees was transferred to the park in 1936 to complete the work, but construction was performed and the workforce was soon removed. Cost overruns, inexperienced labor, and shortage of skilled men to direct the workforce led to the park being completed by private sector contractors.

Torreya State Park

Torreya State Park has one of the most varied landscapes in Florida, with high bluffs and deep ravines where clear, cool streams flow over small waterfalls, sink underground, and resurface downstream. This southern extension of the Appalachian Uplands is the highest point found in Florida. The broad Apalachicola River has the largest drainage basin in Florida. The forest is a highly unusual natural community of extensive biological diversity found nowhere else in the state, and harboring endemic plants and animals commonly found further north. The Florida Yew (Taxus floridana) and Florida Torreya (Torreya taxifolia) are relic trees surviving from the Tertiary Period. This rare forest of fabled evergreen trees was visited in 1875 by Harvard botanist Asa Gray. The stands of Torreya trees had been intensely

logged before a remnant uncut parcel of 320 acres was donated by the Neal Lumber Company for the core of the new state park.

CCC Company 4453 of Camp SP-6 was installed in 1935 and worked on developing the park until 1937, when work was halted due to funding reductions. Park development was limited to constructing roads and forestry conservation.

In 1939, a side camp from CCC SP-12 was transferred from Florida Caverns to resume development of the park. Landscape architect Emmett Hill oversaw the park site master planning and proposed an antebellum motif recalling "Life in the Old South" during the nineteenth century when plantations and slavery stretched across Florida from Jacksonville to Pensacola. The historic Gregory plantation house was disassembled and barged across the Apalachicola River to the park and reconstructed as the interpretive center overlooking the river from 250 feet above. Two enrollees drowned moving the building across the river. This work was led by local experienced men and required the labor of most of the workforce, leaving the park largely undeveloped.

The CCC barracks survive as the only example of a camp enrollee residential building in Florida, giving it special significance for interpreting "Life in a CCC Camp."

Fort Clinch State Park

Fort Clinch State Park overlooks the St. Mary River and Cumberland Sound along the coastal lowlands of northeast Florida within the Lagoons and Barrier Island Chain of the Atlantic Coastal Ridge. Construction of the pentagonal-shaped red brick fortress began in 1847 as a component of the federal coastal defensive system known as the Third System Fortifications following the War of 1812. Thick masonry walls were built and heavy cannons installed to defend against attack, but the fort was never finished as advances in cannon technology rendered it obsolete. The fortress served as a military



Figure 7. Recalling "Life in the Old South," the Gregory house was repurposed as the visitor contact station at Torreya State Park

outpost during both the Civil War and Spanish American War. Several structures stand in the interior courtyard, including the two-story soldier barracks, quartermaster building, and foundations of unfinished barracks from when construction was halted.

The Florida state legislature made efforts to prevent deterioration of the fort and, after the unsuccessful effort to have it declared a national monument, transferred the property to private ownership. It was abandoned, fell into disrepair, and acquired again by the state in 1935 for historical restoration and development as a state park.

Landscape architect Emmett Hill oversaw the production of treatment plans for preserving, rehabilitating, and partly restoring the fort, and also the site master plan for developing recreation facilities and environmental restoration.

A CCC workforce from Camp SP-5 was installed first to perform forestry work, and then a side camp from Company 2444 was transferred from Mike Roess Gold Head Branch State Park in 1936 to make the fort accessible and safe for the workforce that followed. Company 1420 was transferred from Lake Kerr in the Ocala National Forest in 1937 and re-designated CCC Camp SP-8. This company of mature and skilled World War I military veterans worked under NPS guidance. Work progressed slowly and only parts of the fort were restored, leaving remaining sections as stabilized ruins.

Several new amenity buildings were constructed with surplus brick from the fort. A beautiful three-mile drive surfaced with seashell meandered from highway A1A through the live oak forest and across sand dunes leading to the fort. Spur roads led off to scenic overlooks, picnic areas, and overnight trailer camps. Natural resource conservation, coastal erosion control, and beach stabilization were important completed components of the site master plan. The CCC work on this park is a Florida legacy and in 1972 the fort was listed on the National Register of Historic Places.

Mike Roess Gold Head Branch State Park

Mike Roess Gold Head Branch State Park lies upon the rolling red clay sandhills within a region of broad uplands on the Central Florida Ridge. The karst landscape is dotted with sinkhole lakes, including one of the oldest in the state, Sheeler Lake, approximately 24,000 years old. The principal natural feature and park main attraction is the steephead ravine, 40-feet deep, 1.5 miles long and reaching several hundred feet across. The park is named for the stream originating from water issuing



Figure 8. The wooded, fern-lined ravine is the principal attraction of Mike Roess Gold Head

from many springs in the ravine merging to form the substantial flowing Gold Head Branch. The CCC encircled this wooded, fern-lined ravine with a nature trail, and constructed a footbridge across the stream near the remains of a nineteenth-century grist mill.

Branch State Park

The NPS Division of State Parks directed the development of this park between 1937 and 1939. Landscape architect Emmett Hill oversaw production of the park site master plan. CCC Company 2444 was installed to develop the park. The company consisted of 25 mature veterans from World War I, all seasoned craftsmen, and 200 inexperienced youth. Together they built one of the most complete New Deal era parks in Florida, constructing wood framed overnight cabins, roads and foot trails, campgrounds, a sand beach and swimming area with a concession facility, large picnic areas with weather shelters overlooking the lakes, the contact station, and entrance gate, planting trees to stabilize the ravine slopes. The park is described as having a Boy Scout feeling from the visitor facilities created in the NPS Rustic style.

This was the second state park in Florida to officially open to the public and the first developed from land obtained specifically for park development purposes. In that respect, this park served as a model for the other New Deal era state parks that followed in Florida.

Florida Caverns State Park

Florida Caverns State Park was created by the CCC and the adjacent federal fish hatchery was created by the

WPA. The karst topography of limestone cliffs, caverns, sink holes, flowing springs, streams, and floodplains is spectacular. The caverns, the Chipola River, and the landmark Blue Hole Springs are natural features that make this one of the "crown jewels" of the Florida State Park System.

In the early 1930s, the Marianna Cavern Association began to develop the so-called "Indian Cave" for a roadside tourist attraction. The local civic organization donated the land and petitioned for federal relief funding to develop a state park. This was the last full state park CCC camp activated in Florida with federal assistance to stimulate the local economy.

An initial workforce of African American enrollees prepared the camp for the arrival of CCC Company 1445, a side camp of local experienced men and 25 enrollees detached from Torreya State Park to excavate the Indian Cave. They initially surveyed boundaries, built fences, and cut firebreaks. After three months of working, they discovered a spectacular cavern, named the "Florida Cavern." All other work was halted and the Florida Cavern became the focus of CCC activity. A 3,000-foot underground trail system was surveyed and designed; architectural drawings were produced for entry and exit portals, cavern lighting systems, and above-ground facilities, and steel doors were installed to secure the cavern from trespass.

Superintendent A. D. Lawson from Myakka River State Park, known for his ability to execute speedy and efficient work, was transferred to the Florida Cavern to supervise the workforce. Landscape architect Emmett Hill oversaw the site master planning, landscape architect Ray Vinten served as work inspector, and landscape architect Walter Caldwell served as project coordinator.

The construction of park buildings and facilities with locally quarried limestone is a notable accomplishment of the NPS Rustic style in Florida. Foundations of the two-story visitor center are sunk into the bedrock and the building appears to rise organically from the natural landscape. Limestone retaining walls and steps merge multiple levels of the visitor center into the landscape. The parking lot is discretely removed and accessible over a short trail.

The caverns feature the wonders of stalactites, stalagmites, soda straws, flow stones, dripstone formations, and draperies. Known as the Gopher Gang, the CCC workforce tunneled 55 feet underground with pick, shovel, and wheelbarrow, removing mud to enlarge and reveal the spectacular caverns.

The federal fish hatchery was developed nearby at the historic Carter Mill along the Blue Hole Branch, within the stone foundations and earthen dams remaining from a nineteenth-century grist mill. The hatchery complex is a WPA project constructed by local skilled men. The facility includes houses, warehouse, earthworks, and floodgates. The access road is bordered by low limestone walls terminating at the large stone gateposts. The Rustic style construction harmoniously compliments Florida Caverns State Park.

Ravine Gardens State Park

Ravine Gardens State Park is located in Palatka, a historic port city on the St. John's River and at one time the most southerly resort in Florida for winter visitors. The park encompasses two adjoining ravines and enhances the distinctive geological formation with dazzling botanical displays. The park was initiated to attract tourism to the historic city. The park was championed by local citizens and funded initially by local businesses and later funded and completed by the WPA. Ravine Gardens Park was constructed without CCC assistance.

Landscape architect Richard Forester developed the park site master plan. Born in Holland into a family of landscape gardeners, Forester came to America on a scholarship to attend Stanford University. He went on to serve as the beautification director for the WPA in Florida. His site master plan included administration and concessions buildings, entrance contact station, improvement of existing roads, construction of fountains, slope terracing and retaining walls, foot trails, dams and weirs to form ponds, extensive botanical displays, restoration of suspension bridges, and reconstruction of the nineteenth-century waterwheel at the sawmill ruin. Serving as the city manager, Forester supervised construction of the park that became known as "the nation's outstanding CWA project" and "a new wonder of the world" having the single largest display of flowering azaleas.

The Court of States inside the entrance is a marvelous architectural space from where the park begins its descent into the ravine below and its transformation to natural. The grassy rectangle of the Court of States is framed by paired limestone pillars of a rustic pergola rising 15 feet and supporting a sturdy lattice of heavy sabal palm logs. The soaring 65-foot high commemorative Roosevelt Obelisk dominates the space. A series of terraces interconnected by flights of stairs leads down into the ravine, becoming increasingly natural looking as they descend 100 feet into the bottom of the ravine



Figure 9. The integrity of the cultural landscape resources at Ravine Gardens State Park, and at all Florida New Deal Era state parks, is threatened by incremental insidious change, as seen in this before and after photographic illustration

to spring-fed reflecting lakes in the ravine forest (think of Villa Lante in reverse). This transition from architectural space to natural landscape is a brilliant work of great artistry and the outstanding example of the high art of landscape architecture created in the New Deal era Florida state parks. Colonel Joseph Hyde Pratt, the southeast region engineer of the Federal Emergency Relief Administration (FERA), stated that "this is a project which not only Florida but the entire FERA is proud. The skillful blending of artificiality with the natural is superb."



Figure 10. Cultural landscape resources at Florida New Deal era state parks are threatened by incremental landscape change, as seen in the loss of CCC-built roadway culverts at Highlands Hammock State Park. Photo: William Lutrick

Conclusion

Each of these nine parks is historically significant as a designed landscape. Together, they represent the deep foundation of the Florida State Park System. Management of these landscapes as natural resources rather than as historic resources is resulting in an incremental and often barely perceptible impairment of historic integrity. The impairment will continue in the near term and likely will not be resolved until these parks are understood as cultural landscapes, appreciated as heritage resources and protected as legacies of the New Deal in Florida and state heritage resources.

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Restoring The Two-Step: Illuminating Texas Dance Terraces

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Figure 1. Dance terrace and arcade of the Garner State Park Combination Building, c1941. As one of the largest and most elaborate terraces, it features a lower flagstone terrace, low seating walls, tree wells and bracketed wall lantern lighting. (Postcard, Barry Photo, TPWD)

Abstract

In Texas state parks, terraces and open air pavilions evolved from daytime transition areas to platforms for evening dance with the design of state parks by the National Park Service and built by the Civilian Conservation Corps. While terraces may be a regional response to the warm climate in southern states, their prevalence in Texas parks became a key element that enriched the overall site composition. Following changes in social forms that brought paired dancing to a wide audience in the 1920s, the 1930s expanded the boundaries by widespread exposure to new styles of music and dance that influenced the inclusion of terraces in park design. In parks developed later in the decade, the addition of electric lighting facilitated outdoor dance after dark, a novel experience for many rural park users who did not have electric lights at home. Reflecting changes in park accommodations, the inclusion of both terraces and lighting in park plans evolved during the CCC decade.

Introduction

As the purpose and identity of state and regional parks struggled to surface in the early 20th century, these new parks became rural gathering places for visitors and locals to freely mix outside of traditional cultural boundaries. New park building forms, designed outdoor spaces, and the provision of exterior lighting were adapted to accommodate one popular manifestation of this freedom: dance. The rising popularity of social dance as a recreational activity in Texas state parks during the 1930s took park planners and managers by surprise. The changes in society coincided with the progress of state park work by the Civilian Conservation Corps (CCC) and lasted from 1933 until 1942 as one of the most popular of President Franklin Delano Roosevelt's federal responses to the Great Depression. The 1938 publication of Albert H. Good's *Park and Recreation Structures1* by the National Park Service was an attempt to record the best examples of rustic architecture and craft in order

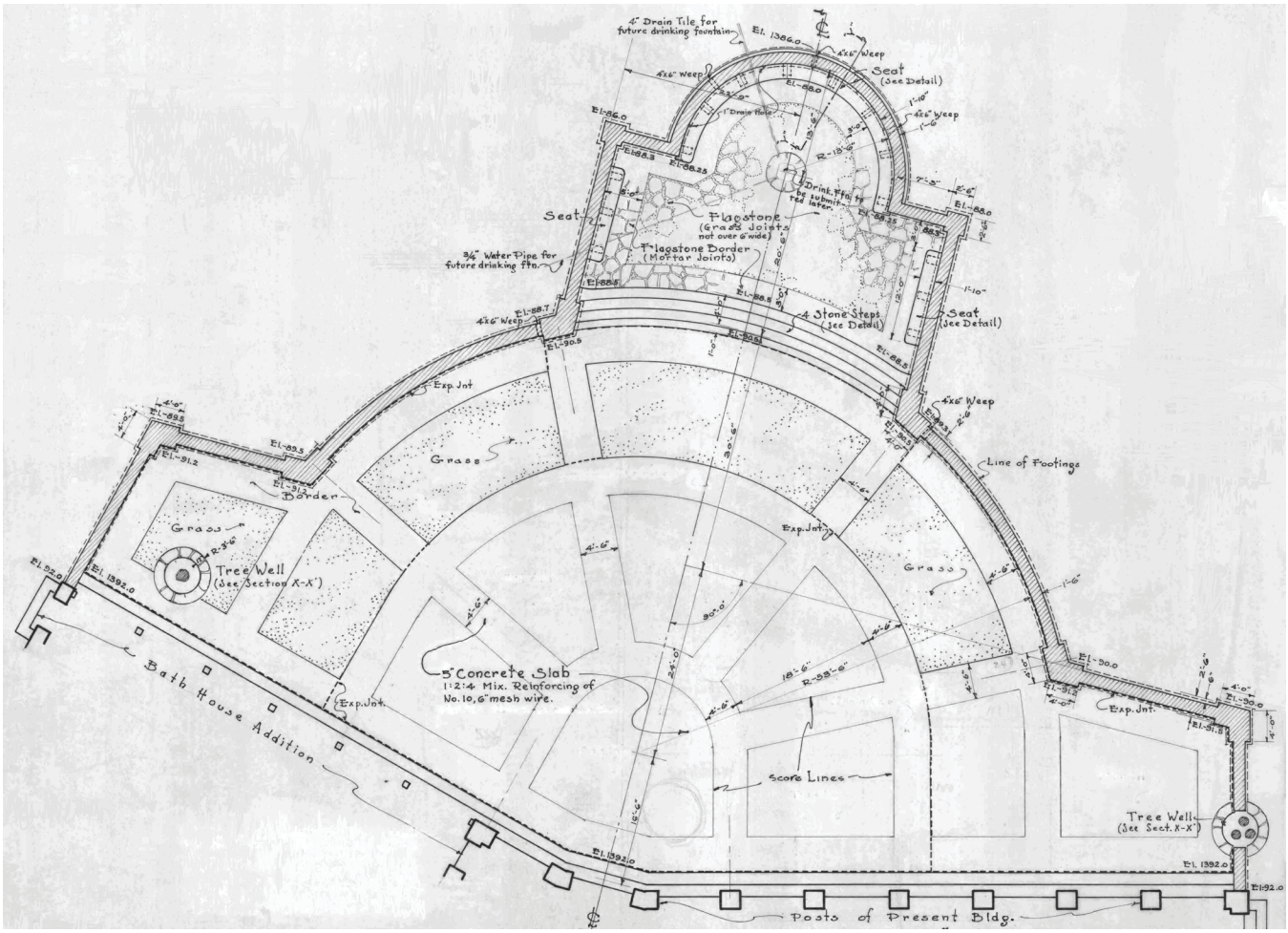


Figure 2. Garner State Park terrace engineering plan featured scored concrete paving at upper level with flagstone below, and an integral relationship to the Combination Building entry (lower center) and flanking wings of dining room and bathhouse. (National Park Service/Texas State Parks Board, drawn by John H. Morris and D.D. Obert, 6/14/1938, TSLAC SP.42.75)

to provide guidance to park architects, and landscape architects, and in their absence, project design leaders across the country. Albert H. Good's landmark work, however, neglected the growing regional importance of designed outdoor spaces, specifically construction of pavilions and terraces in Texas parks.

Open Air Pavilions and Terraces

Many Texas CCC parks included space for outdoor entertainment associated with the main park building (refectory, concession building, etc.). The local climate played a role in the emphasis on open-air spaces, necessitated by sweltering summer heat with temperate spring and fall conditions. In Texas, climate zones range from humid subtropical in the southeast portion of the state to arid desert climates in the west, with colder extremes in the sparsely-populated Panhandle and Big Bend regions.[2] After their construction and long before the advent of modern heating and cooling systems, Texans enjoyed visiting state parks throughout much of the year. The often short drives to state parks made them popular destinations for Texans during the Depression and during the gas-rationing years of World War II. During the war years, parks offered a place of pure recreation for itinerant soldiers, visitors, and citizens alike.[3]

In Texas, the main park building type was often called a combination building, which included a concession with a pavilion, dining room (refectory), restrooms, and/or a bathhouse. Albert H. Good contrasts the attributes of these structures with buildings designed for national parks in terms of "structural trespass". The pervasive design philosophy associated with national park plans prohibited erecting structures in the most naturally-beautiful and unique areas of the park. In state parks, often established on marginal lands, new buildings central to the visitors' experience were viewed as

an opportunity "legitimized or not by harmony or the lack of it" to improve upon the existing environment. Good proclaims, "It seems reasonable to assert that in just the degree natural beauty is lacking structures may legitimately seek to bring beauty to purpose."[4] In speaking specifically of concession buildings, Good describes their gateway function in the park as a focal point. "It must announce its commercial traffic unmistakably yet with a certain subtlety. It is the Jekyll and Hyde among park structures. It is asked to walk in the paths of quiet

State Park	Year	Type of Building and Floor Finish	Label on Drawings	Lighting
Palmetto	1933	Concession Building with concrete paved pavilion/terrace with flagstone perimeter (see Good, Park & Recreation Structures, Part II, p. 84)	Terraces	None found, trees?
Blanco	1933	Concession Building with flagstone pavilion/terrace	Terraces	None found, trees?
Lake Corpus Christi	1934	Refectory with concrete-paved pavilion/brick paved terrace(see Good, Park & Recreation Structures, Part II, p. 83)	Porch, terraces	Wall lanterns
Goose Island	1934	Public Camp Ground Building with concrete-paved pavilion and concrete tile-paved terrace (see Good, Park & Recreation Structures, Part II, p. 82)	Terrace, Pergola	None
Meridian	1934	Concession Building with concrete-paved pavilion/terrace	Terraces	None
Bastrop	1934	Wood floored Refectory with flagstone terrace; flagstone half-round extension (1935) (see Good, Park & Recreation Structures, Part II, p. 85). Replaced flagstone with smooth cement finish in 1938	Terraces	None
Abilene	1934	Concession Building with concrete-paved lounge (pavilion)/terrace	Terrace	Wall lanterns (not installed)
Big Spring	1935	Concrete-paved Pavilion with terrace	Platform	Wall lanterns
Mother Neff	1937	Concrete-paved Recreational Pavilion with side aisles (used as Baptist tabernacle)	Pergolas	None found
Lockhart	1937	Combination Building with enclosed wood-floored pavilion and concrete-paved terrace	Paved Dancing Terrace	Wall lanterns, tree wells
Daingerfield	1937	Combination Building with concrete-paved pavilion and scored-concrete terrace	Terrace	None. Area lighting?
Lake Brownwood	1937	Combination Building with concrete pavilion later enclosed for "Dining and Dancing" Rooms with concrete terrace; 1941 addition to concrete terrace	Existing Cement Dance Terrace	Wall lanterns, tree wells, wall-top lanterns
Buescher	1938	Combination Building with wood-floored Lounge for dancing and concrete-paved terrace	Terrace, Dining Terrace	Wall lanterns
Garner	1938	Combination Building with Covered flagstone Porch and tile-paved Dining and Dancing Room with concrete upper terrace and lower flagstone overlook terrace	Dance Terrace; Lower Terrace Overlook	Tree wells, wall lanterns
Caddo Lake	1939-1941	Elaborate Concession Building designed with "Dining and Dancing" pavilion, but never built	Dancing Terrace	Wall lanterns
Tyler	1940	Combination Building featuring Dining Room with twin Daises overlooking the concrete-paved dance terrace	Dance Terrace; Dais	Roof floodlight
Fort Parker	1940	Combination Building with wood floored Pavilion, scored concrete front terrace and back porch overlooking dance terrace	Dance Terrace	Wall lanterns
Bonham	1941	1936 asphaltic-paved Picnic Shelter repaved with colored concrete-paved terrace	New Dance Terrace	None found
Huntsville	1942	Wood-floored Combination Building with concrete terrace overlooking lower boating platform	Dance Terrace	Pole lights; tree wells
Cleburne	1944	1939 Combination/Concession Building with pea-gravel surfaced concrete breezeway. Terrace later added.	Concrete Dance Terrace	Wall lantern

Table 1: Open Air Pavilions and Terraces in Texas CCC-Built Parks

beauty and of commercial solvency at one and the same time, though these may lead in opposite directions."[5] Such was the case in Texas where the CCC-built concessions presented a gathering place for the park experience, with food and comfort and often framing one of the salient natural features of the park. As visitors walked through the building, typically placed at the precipice of a steep grade, they were directed to an overlook of a water feature or scenic vista on the opposite side of the entrance. Here, an outdoor terrace became a key component of Texas state park concession buildings.

Oftentimes the terrace expanded the overall axiality of the site layout, extending it from the building into the landscape and beyond to the distant view. It embodied the picturesque notion that nature can be improved using man-made structures to frame and enhance the outdoor experience. Despite the rustic appeal of the materials and construction techniques in the overall form of structure, the site composition echoes the prevalent Ecole des Beaux-Arts training of the architects drafting the site plans. An axial formality pervades the 1930s architectural design of the period. While concession and combination buildings provide a gateway that focuses the visitor's attention to a prescribed view of the natural world, terraces also expand that order by providing a transitional space between indoors and out.

CCC park building designs evolved through the 1930s, from open-air pavilions—used primarily for dining—to terraces designed specifically for paired dancing. The first completed CCC projects (1933 – 35) included terraces and pergolas on the front, back, and sides of the main building (see Table 1). Terraces were shaped as long, thin rectangles to fit the overall geometry of the adjacent pavilions. Flagstone, or sometimes brick, was typically used as the finished terrace floor, while stone walls enclosed the space. Terraces at Palmetto, Blanco, Lake Corpus Christi, and Goose Island State Parks exemplify this early design concept.

As the CCC progressed, terraces expanded from linear compositions of earlier designs to wider configurations with more complex geometries. Flagstone paving was replaced with concrete, surfaced with a smooth cement topping. A low masonry wall often enclosed the terrace to provide seating for spectators. Outdoor lighting appeared by the mid-1930s. Abilene and Big Spring State Parks provide early examples with these tell-tale design characteristics with terraces designed to accommodate dance, although the drawings do not label the terrace as such. Stairs and formal walkways, located adjacent to the main building often provided direct access to a waterfront that brought locals and overnight visitors to evening dances by boat or on foot.

Before the advent of air-conditioning, dancers on these terraces seamlessly flowed between indoor and outdoor spaces. In 1937, justification for the dance terrace at Garner State Park described the typical characteristics as such:

> The completion of this important recreational unit will afford plenty of dancing space for park visitors interested in this form of recreation. The terrace itself is very attractive and has a concrete floor that will not be hard on foot-wear provided small quantity of wax, or other similar substance, is used on same at frequent intervals. There is a beautiful view of the lake from the terrace, and this will attract visitors to the terrace in addition to the regular crowds that enjoy dancing. The adjoining Combination Building will afford cloak-room, restroom and concession facilities for the patrons of both areas.[6]

While other park elements are described in CCC design handbooks of the period, no specific mention of terraces can be found. *Parks and Recreation Structures* recommends community buildings with "wide roomy porches" for summer use[7], but fails to mention the importance of terraces and other uncovered outdoor space for concession buildings and refectories. Many of the projects illustrated in Good's handbook show patios, platforms, overlooks, porches and towers, but do not consistently illustrate a back terrace designed for dining and/or dance. As may be seen in the accompanying table (Table 1), the rising popularity of dance terraces in Texas may have coincided with the publication date of Good's book, inadvertently neglecting an unforeseen growing regional trend. In many ways, the book marked the culmination of the 1920-30s interest in the rustic style, which was soon to be superseded by new architectural trends and world events.[8]

A comment in a 1938 inspection report on Tyler State Park made by Regional National Park Service Inspector B. A. Tripp reflects his views on Good's seminal guidebook, which may have pervaded design guidance in the field.

> There is nothing in the law which says the new book on park structures cannot be exposed to our anxious gaze. By the time it gets out it will be in the class of a catalog of Brother Good's Pewter collection—a record of antiques. Something is sorely needed to arouse the creative instinct in a group which is showing signs of senility in design. Since the age of splayed foundations, what have we done to make posterity wish they had lived among us?[9]

Dance as a Recreational Activity

By 1938, day use was the most popular activity in Texas state parks, despite the availability of overnight campgrounds and cabins. Conveniently located near major highways, Texas state park were accessible to urban dwellers out for a scenic afternoon drive and picnic.[10] As state parks' popularity grew, planners were under pressure to provide visitors with more varied activities and programs. In April 1941, L.C. Fuller, State Supervisor, Recreation Planning Division, National Park Service, gave an address to Texas state park managers on park programming. In his presentation, he said:

> People must be not only induced to come to the park, they must be provided with something to do when they get there…It must be remembered also that the greater part of the American people like to take their recreation sitting down. America is a great spectator nation. Put on any kind of a show, demonstration, contest or entertainment and you will have a crowd of spectators.[11]

In the presentation, a number of activities are suggested, including "Music, such as old fiddlers contests, local band and orchestra concerts" and "Dancing, such as social, tap, folk, jitterbug contests, etc."[12]

As early as 1937, the design for the Coronado Lodge (never fully completed) at Palo Duro State Park included a full ballroom for dancing. One of the largest dance terraces in the Texas state park system was already in the planning stage at Garner State Park as a "dance pavilion" (See Figure 1-2 on pages 183–184) to complement the concession area,

> …for the preparation and sale of foodstuffs, cold drinks, cigars, candy and novelties etc., a focal point for information and entertainment, as well as all the other required recreational features…to be used in combination with the Parks chief bathing facilities, toilets, and restrooms.[13]

Smaller parks pushed for similar facilities, such as the Community-Recreation Building at Buescher State Park which included preliminary plans for "a community auditorium, play house, and dance hall."[14]

At about the same time, justification for the addition of a dance terrace to the combination building at Lockhart State Park (see Fig. 3) included the following:

> The need of this Terrace is very necessary and essential since there are no means of recreation in this territory and one of the greatest means of recreation indulged in this community is dancing and this terrace will afford a most needed purpose in the open and it will also provide a suitable lookout location as there are several wonderful views from this point. It will also provide suitable accommodations for outdoor gatherings as meetings, etc. as well as an outdoor dining terrace.[15]

In October 1937, Lake Brownwood State Park justified their request for improvements to the CWA-built Combination Building with,

> …that there is a large demand for the facilities which this building will provide is evidenced by the fact that many requests are received at the concession room for meals and, for a place where visiting parties may dance. The installation of coin operated phonographs will bring a good revenue. At present there is no place in the park or in the vicinity of Brownwood where all of these facilities are provided for the public.[16]

The Project Superintendent at Bastrop-Buescher State Parks complained in 1938,

> …the public seeks and asks for a place where dancing may be indulged in….Strangely enough, the American public needs more attractions than those of nature to beckon her to most State Parks. Once there, other features serve, but the demand for a place to enjoy dancing seems to be of great importance.

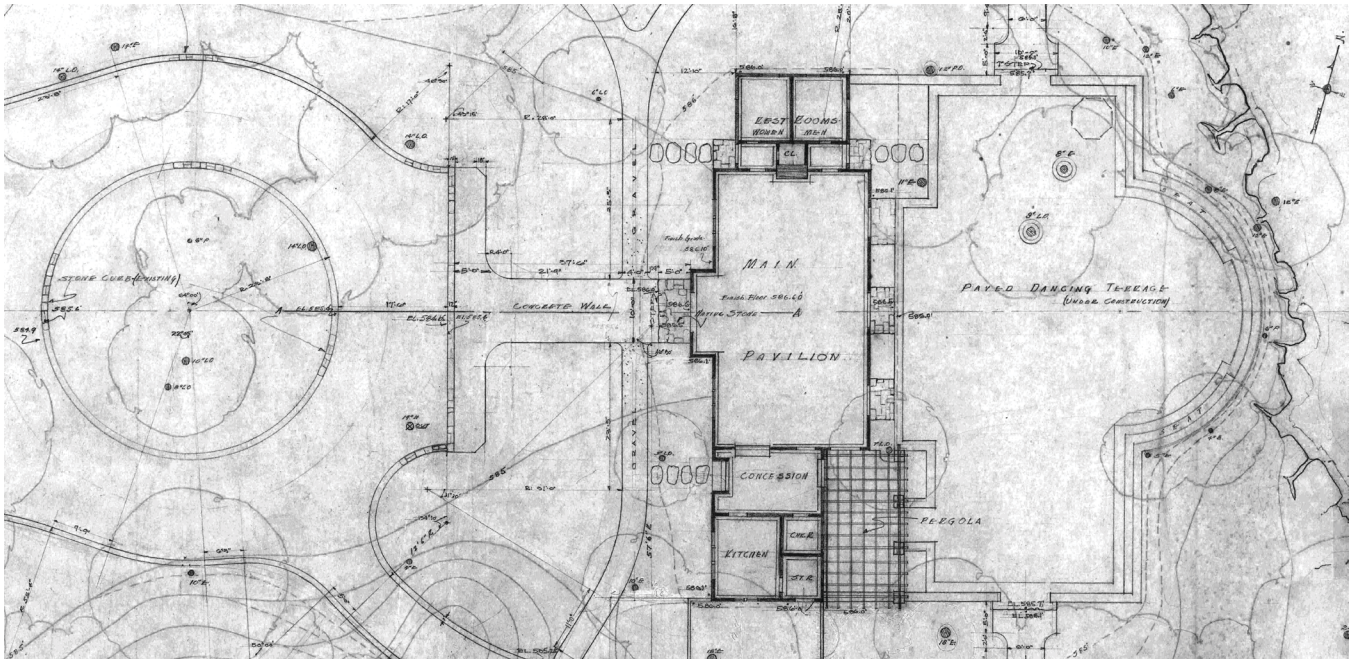


Figure 3. Axial site plan for the Lockhart Combination Building with "Paved Dancing Terrace" overlooking the WPA-built golf course and distant views to the horizon. (National Park Service / Texas State Parks Board, drawn by Kirk H. Scott, August 24, 1937, TSLAC[17] SP.51.106)

The existing flagstone terrace at the Refectory was soon replaced with a smooth cement finish, while the hardwood floor was refinished for dancing.[18] Later correspondence elaborates on the Bastrop park users: "It appeals particularly to the younger people, such as the students in the University of Texas and others who are chiefly interested in such sports as swimming, golfing, dancing and picnicking."[19]

In Huntsville State Park (sixty miles north of Houston), an elaborate dual-level terrace was planned in February 1940 as a boat dock for the Combination Building (see Fig. 4). In justifying the construction, an in-depth explanation was submitted to the National Park Service:

While the terrace would appear to be rather large (having roughly 4800 square feet exclusive of boat landing), considerable space will be required for tables, aisles and orchestra. It is estimated space for dancing for 100 couples will be available after all deductions have been made. Another intended use for the terrace will be during regattas or water pageants when it will serve as a reviewing stand by the various groups sponsoring such functions.[20]

At Tyler State Park in 1940, terraces became even more elaborate, with twin outdoor daises flanking the dining



Figure 4. Huntsville State Park dual-level terrace overlooking the lake with tree wells, low seating wall and smooth cement terrace combined with boat landing. (Texas Parks and Wildlife, 2008)

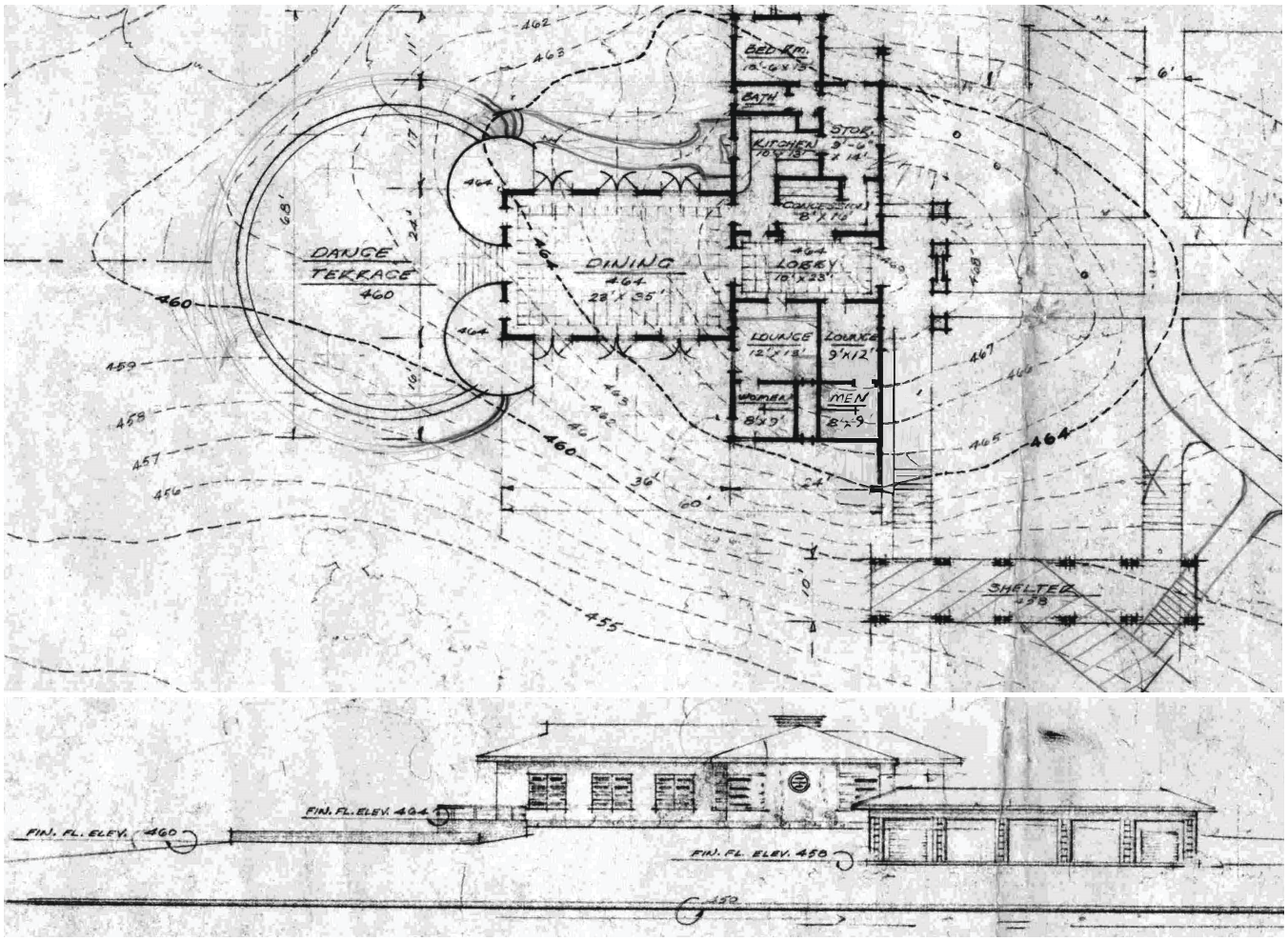


Figure 5. Plan and elevation of the Tyler Combination Building with streamlined details, axial composition, and round dance terrace overlooking the lake. (National Park Service/Texas State Parks Board, drawn by architect Joe C. Lair, March 29, 1940, TSLAC SP_54_166)



Figure 6. Modern view from the dais and dining level of the Tyler Combination Building to the dance terrace and the lake. (Photo by John B. Chandler for TPWD)

room stepping down to a perfectly round dance terrace. The style of the building departed from Rustic style for a decidedly Moderne streamlined appearance. The combination building featured wraparound windows, a porthole, and hipped roof to complement the curve of the dance floor (see Figs. 5-6). As a counterpoint to the stylish Combination Building, Tyler State Park shows just how far dance terraces evolved as design elements in their own right.

The Novelty of Outdoor Dance Lighting

When the Emergency Relief Act of 1935 established the Rural Electrification Administration (REA), less than three percent of Texas farms and ranches had electricity, as compared with ten percent nationally. It is estimated that one third of Texans, as many as a half-million residents living on farms and ranches, made do with lighting supplied primarily by kerosene lamps, as well as candles, coal oil and flashlights. For remote areas such as the Texas Hill Country, electricity did not arrive until 1939 as electric co-ops were formed to serve rural members.[21]

While the Texas state parks facilities evolved to accommodate dance at concession buildings, one key element, light, was lacking in the first round of CCC buildings. Electric power eventually served buildings at every park, yet building roads and establishing water supplies necessarily took top priority. The first terraces had little, if any, outdoor lighting. Parks located near urban areas benefited from earlier installation of power lines, such as Abilene (1934), Bastrop (1935), and Lockhart (1937). As the demand for dance facilities increased, so too did the need for lighting for evening dances. Although Garner State Park's dance terrace was constructed by 1939, power did not arrive until 1941 by "overhead power lines erected by R.E.A." The park's isolated location twenty-five miles from Uvalde, Texas, likely explains the delay until a rural cooperative was established.[22] Outdoor lighting in state parks provided a novel experience for many rural neighbors who flocked to nearby parks after dark to dance.

Terrace Lighting Design

Wall lanterns provided illumination along one edge of many terraces, hung from the walls of the main building. While this type of borrowed light from the building sufficed at first, it could not fully light larger dance floors crowded with couples. Other lighting solutions were eventually implemented.

The most typical early fixtures consist of square wrought iron lanterns with pyramid-shaped caps, as seen at Garner (see Fig. 7) and Lake Brownwood State Parks, hung on matching wall brackets. Good's guide book featured examples, approvingly noting they were

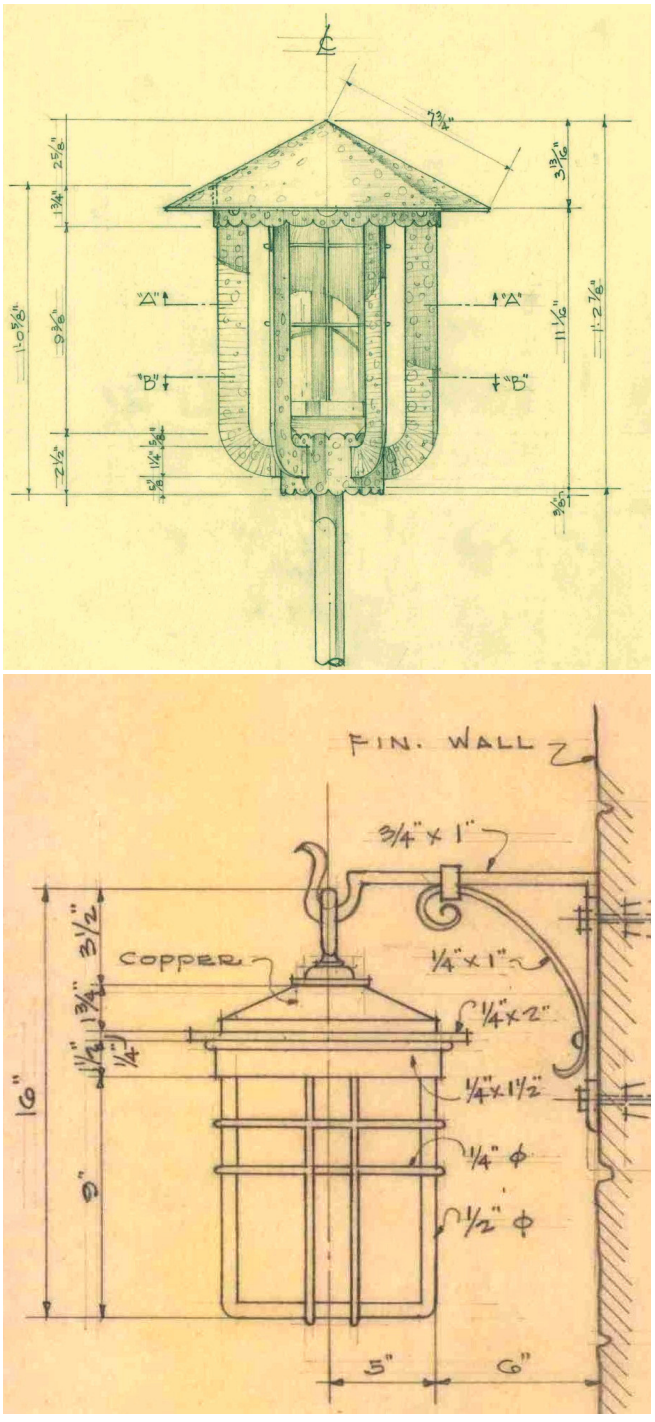


Figure 7. Drawings of dance terrace lighting, including Garner State Park wrought iron wall lanterns (left) and Huntsville sheet metal pole lights (right) showing the evolution in lighting design to match changes in architectural style of the buildings. (National Park Service/Texas State Parks Board: Garner fixture drawn by G.T. Patrick, April 21, 1938 SP_42_100; Huntsville fixture drawn by James L. Walker, January 28, 1942, SP_61_97)

"…illustrative of the appropriateness of wrought iron against a background of native stone…"[23] Lighting design drawings indicate most fixtures were made by CCC enrollees as part of blacksmith training. Stylistic consistency in rustic detailing favored hand-wrought Craftsman-style lanterns. Traditional round Mariner fixtures were also featured as an alternative.

Similar square lanterns were also installed directly on top of masonry walls to provide night lighting in all directions. At Lake Brownwood State Park, a series of square lanterns lit a grand stairway from the boat dock on the lake to an open air "Lookout House." The procession then led to the dance terrace located at the rear of the Combination Building (see Fig. 8). These lanterns not only enabled sure footing, but provided a beacon to those boaters finding their way to an evening dance or other event at the park.

Lighting styles evolved with building styles and materials. Several dance terraces were illuminated with fixtures somewhat reminiscent of the 1920s Gothic revival style. Big Spring and Huntsville State Parks featured elongated hexagonal wall lanterns which ornamented otherwise plain limestone stone walls.

A park project superintendent at Lockhart State Park justified installing permanent lighting by giving clues to other common lighting practices in 1939: "These lights are needed to effectively light the Terrace at the Combination Building. At present the concessionaire has strung some unsightly overhead wires among the trees serving the purpose after a fashion but not satisfactory. We propose to place 2 – 500 watt floodlight projectors on trees located immediately adjacent to the Terrace. This will give an inexpensive and satisfactory method of accomplishing the job. The above method of lighting suggested by Assistant Director Conrad L. Wirth[24] on recent visit to this area… For proposed light locations… one light located 14' up on 12" Post Oak, just outside Terrace Wall … and the other 17' up on 18" Elm, just outside Terrace Wall…"[25]

Many terraces were built around existing trees which were encircled with low walls referred to as "tree wells" as seen at Huntsville State Park: "Several trees will remain within the terrace floor area, thereby adding considerable (sic) to the attractiveness as well as offer shade to daytime users. Trees will be protected by wells as detailed, and the actual construction supervised by a Landscape Architect."[26] Evidence of the terrace tree wells provides yet another clue as to the historic illumination of the dance floor by string lights.

Huntsville State Park (see Fig. 4), completed at the end of the CCC period, also provides the singular example of freestanding pole lights at Texas' CCC-built dance terraces. While the fixtures have disappeared, the design drawing gives insight into another historic strategy for supplementing artificial light with fixtures along the perimeter of terraces. The round shape of the cap and

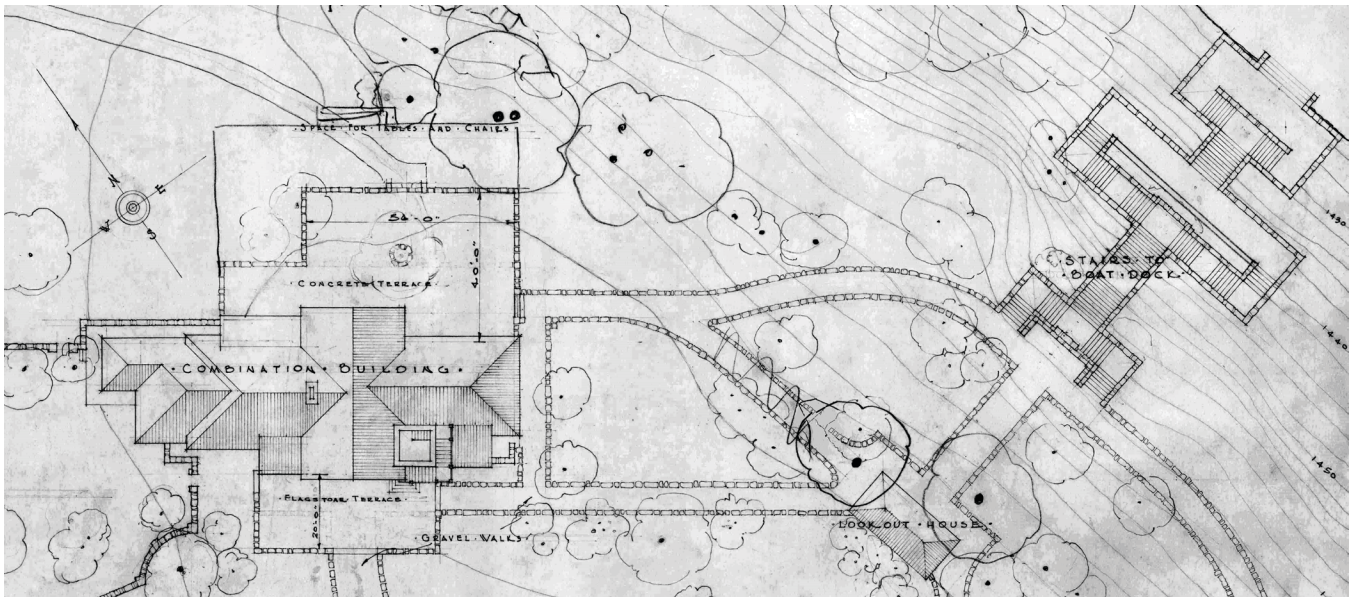


Figure 8. The Combination Building (left) at Lake Brownwood State Park features a dance terrace overlooking the lake, accessed from the boat dock and grand stair (right) to the Lookout House at the top of the hill. Lanterns built into the stair and lookout beaconed to dancers across the lake and gave them sure footing to the terrace. (National Park Service/ Texas State Parks Board, preliminary drawing by J. F. Doyle, August 27, 1937, TSLAC SP_36_82)

use of sheet metal, in contrast to earlier blocky fixtures made of wrought iron, reflect a lighter, streamlined style (see Fig. 7).

One last example of historic pole lighting originates from designs for road and parking illumination, or area lighting. When the CCC Company abruptly left the park before approved wall lanterns could be installed, Abilene's terrace was eventually lit by an adjacent floodlight mounted on a utility pole. Design drawings for Tyler's combination building feature a roof-mounted floodlight directed at the terrace. Some parks, such as Daingerfield State Park, may have used area lighting designed for the lakeshore beach to illuminate their grand bathhouse terrace. These expedient solutions became more prevalent through the intervening years.

Why Texas?

Perhaps terraces came to prominence in other regions, but their Texas appeal fit a long tradition of song and dance in the state. The CCC decade also coincided with a turning point in media, music, dance, and technology that built upon Texas' multicultural history. Despite objections of some religious leaders, Texans have enjoyed dancing from the earliest days of the Spanish and Anglo settlers, at all levels of society. Social dancing evolved from the formal European quadrilles to a simpler style with a caller which eventually became Western square dance.[27] Traditional polka and waltzes eventually gave rise to the Cotton-eyed Joe, schottisches, and the Texas two-step prevalent today.[28]

Beginning in the mid-nineteenth century, German and Czech immigrants built hundreds of dance halls across the state as they settled. The social and financial devastation of the 1930s, however, began the decline of many of these community gathering places, as families left the countryside in search of city jobs. As the descendants of these tightly-knit communities assimilated into the larger culture, the support for the halls faded. "Customers responded to a divergent regional sound, and communities once defined by ethnic origin were at once broken and reformed."[29]

Charleston, swing, jitterbug and fox-trot made popular in the late 1920s received a huge boost as breakthrough musicians surged to the forefront of regional music in the mid-1930s. "Country King" musicians Roy Acuff, the Monroe Brothers, and Bob Wills and His Texas Playboys simultaneously popularized bluegrass, country and swing through radio broadcasts, movie shorts, and phonograph records.[30] First and foremost, however, Texas fiddler and bandleader Bob Wills' combination of folk music with jazz/blues brought an irresistible dance beat with a big band sound to national prominence, resulting in a new dance style, Western swing.[31]

My father's childhood memoirs point to his family's purchase of a radio operated by a car battery, several years before electricity arrived at their isolated ranch. In looking back, he realized "Radio changed our lives." He grew up listening to and performing folk and country music. By the first half of the 1940s, however, big band and swing music predominated in social gatherings and movie shorts.[32]

As the Big Band era took hold during the 1940s, Bonham, Lake Brownwood and Cleburne State Parks responded by expanding existing terraces to meet the demand for entertainment. Several parks were uniquely situated to provide for the recreational needs of servicemen stationed at neighboring training camps, while one park housed a training camp for the U.S. Army. Beginning in the mid-1940s, juke boxes supplied the music.

Conclusion

As park design and development changed in the decades following WWII, historic combination buildings lost their prominence. In the 1960-70s, Texas parks benefited from a building boom as increased state funding modernized aging facilities. Following the NPS example, visitor centers became the primary visitor focal point, supplanting many of the previous functions of the CCC-built combination buildings. Leasing these historic buildings for private functions further limited the day use of many of these facilities by the casual park visitor. At the same time, historic light fixtures began to be replaced or supplemented by new exterior light fixtures.

Viewsheds have largely been lost surrounding these carefully-designed terrace overlooks. Selective pruning and clearing of undergrowth surrounding terraces will be one key to ensure visitor appreciation and prolong their continued use. In Texas and the western United States, on-going brush clearing will also safeguard these historic structures in the face of increasingly-frequent forest fires along this wildland interface. As park staff members have seen the stunning transformation of overgrown terraces, appreciation for properly managing vegetation has grown.

Restoration of auxiliary structures, such as the grand stair at Lake Brownwood, may increase use of dance terraces for evening events for visitors arriving by waterway. When these structures are recognized as inte-

gral components of the overall site design, they should become a higher priority for restoration and on-going maintenance. Related policies for park security and collection of admission fees will need to be resolved along with construction issues.

Restoring and supplementing terrace illumination encourages more evening use by park visitors and park friends' groups. Preserving the historic light levels, however, necessitates a careful balance. Providing adequate light for safety and security remains important, while at the same time protecting dark skies from a sustainability standpoint. With some innovative strategies proposed by park staff, historic fixtures have been adapted to partially-shield uplighting and glare in wall sconces. Other strategies use various techniques to highlight the historic fixtures while providing subtle background light. Some examples include integral step lighting using solar cells, replica or reproduction fixtures in historic locations, and area lighting by full cut-off LED fixtures. New technology promises energy-conserving replacement light bulbs with the appearance and glow of incandescent lighting. Careful supervision of wiring, particularly reuse of existing wall conduit and inconspicuous installation of additional conduit, minimizes damage to historic structures and provides aesthetically-pleasing results.

Statewide programming showcasing and encouraging dance events may change the focus from private events in these facilities. At this time, nightly summer dances are held solely at Garner State Park in the western Hill Country, while Abilene State Parks hosts monthly "Dances under the Stars". Returning more terraces to the original use provides the greatest incentive for their preservation in the years to come. As parks reach out to diverse audiences, these terraces may provide an unusual live music venue for park visitors (with appropriate noise regulation policies). Recognizing the iconic value of these spaces as park gathering places deepens comradery among visitors, enriches the historic interpretation of the parks, adds revenue, and encourages more evening use by park visitors and neighbors.

While outdoor terraces may be found at most CCC-built parks in Texas, the future remains uncertain. Although these structures were specifically designed as dance terraces by the architects, builders, and park managers of the 1930s, today few park staff or visitors recognize their colorful and important history. Many park terraces provide picnickers with a paved place to relax, with little recognition of the historic significance and original function of these places. This research may provide a first step in augmenting interpretive programs and signage to open this door to a unique chapter in Texas CCC history.

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14 NARA– Denver, Group 79, Box 29 (Bastrop-Buescher), Folder 620-20, Justification for Buescher Combination Building by Conrad L. Wirth, National Park Service Assistant Director, April 15, 1937.
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16 NARA – Denver, Group 79, Box 46 (Brownwood), Folder 620-20, Justification for Remodeling of Combination Building by Project Superintendent, September 27, 1937.
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Government Rustic in Palo Duro Canyon State Park

Lisa Jeane Jackson, Bowie, Maryland



Figure 1. Profile of El Coronado Lodge, Palo Duro Canyon State Park, Texas Panhandle

Abstract

As one passes through the entry gates and portals of the many national, state, and municipal parks throughout the country, visitors may notice a common theme. The structures built with Civilian Conservation Corps (CCC) labor and National Park Service (NPS) guidance, maintained a similar architectural style. The buildings, constructed with hand tools whenever possible, were comprised of materials native to each region. This architecture is purposefully and distinctively rustic. The National Park Service used the terms *Government Rustic* or *Parkitecture* as descriptors of this style of architecture. Just being rustic was not enough. The use of native materials allowed the structures to blend with the surroundings.

In 1918, Stephen Mather, the first NPS director, presented a policy in respect to building trails, roads, and structures on NPS lands. He believed that "…particular attention must be devoted always to the harmonizing of these improvements to the landscape."[1] Under the guidance and watchful eye of NPS, CCC construction itself fell under the premise that the structures were ancillary to the beauty and features of surrounding landscapes. The structures offered comforts for the visitor but did

not intrude upon what nature provided. This was the NPS architectural ideology that was practiced during the 1930s.

At Palo Duro Canyon State Park, the structures not only blended with the surrounding natural environment, the architecture went a step further towards a more primitive version of Government Rustic. The NPS regional architect who oversaw construction at Palo Duro Canyon was Herbert Maier. He was a talented architect and museum designer who kept the local architects on a very short leash. An inspiration to Maier was Harvey House architect and interior designer, Mary Elizabeth Jane Colter. Her Hopi House built in 1905, greatly influenced him when he designed Yavapai Point Observation Station in 1929 – both on the South Rim of the Grand Canyon. The stone buildings and walls in Palo Duro Canyon reflect the same architectural dynamics with striking parallels. The comparisons offered are perfect examples of Colter's influence and Mather's directive in this little "Grand Canyon of Texas," Palo Duro Canyon State Park.

Government Rustic

Regional Director Herbert Maier wrote, "It is the policy of the National Park Service in developing wilderness areas to preserve the area as much as possible in its natural state and such items as club houses, basketball and tennis courts, etc. would be obviously out of place in such an area." [2]

Within the United States, there is a consistent architectural style prevalent in national, state, and municipal parks built or renovated by the CCC. Although under the umbrella of Emergency Conservation Work (ECW), the Civilian Conservation Corps was more commonly called the "CCC." As a Franklin Delano Roosevelt New Deal program, the CCC focused on the preservation of the Depression era idle youth in tandem with an exploited national landscape.[3] Yet, the government also recognized the need for recreational areas for the public, thus many of the CCC companies were assigned to park construction.[4]

As a means to avoid the carnival-like atmosphere present in some overly developed commercial sites of the early Twentieth Century, the first National Park Service (NPS) director, Stephen Mather, issued his policy relative to building roads, trails, and structures.[5] With this in mind, CCC construction was conducted under the watchful eye of NPS regional architects and landscape architects.

As they pass through park entrance gates, today's visitors may notice the distinctive architectural style of buildings and features built by the CCC. These structures bear a similar theme in design. They blend with the surrounding landscape, appear rustic in nature, and often reflect regional styles. The use of local materials further enhances this harmonizing of structure within the natural setting. Although park structures offer comfort to visitors, there is a minimum of intrusion into what nature provides. This architectural design often referred to as "Government Rustic" or even "Parkitecture," embodied the NPS architectural philosophy during the 1930s.[6]

Palo Duro Canyon never lacked superlatives when described. A 1934 CCC camp inspection report, declared Palo Duro Canyon as "Texas' greatest natural wonder."[7] As Nature's gift to the people of the Texas Panhandle and visitors from all corners of the earth, the canyon is in direct contrast to the flat, seemingly featureless plains surrounding the rugged colorful landscape below the rim. This breathtaking beauty of the canyon initially drew the interest of NPS officials.

For many years, the people of the Texas Panhandle had dreamed for a park built in the canyon and happily in 1933 their dreams became reality. A caption of the Amarillo newspaper declared, "Panhandle's 30-Year Dream Comes True With Establishment of 21-Section Playground in the Big Gulch." With the stroke of a pen, Roosevelt included Palo Duro Canyon as a CCC beneficiary.[8]

At Palo Duro Canyon State Park, the stone walls, culverts, and buildings of local sandstone allow the natural environment to overshadow the structures and offer an apt example of "Government Rustic." Native stone buildings blend with the surroundings where they are secondary and not overpowering to the beauty that nature provides. The rough sandstone construction consists of rock extracted from hidden quarries within the canyon walls. This style exemplifies the mandate issued by Stephen Mather where the amenities harmonize with the natural landscape.

The architecture of the canyon exudes a version of Government Rustic that offers a more primitive style of stonework. Unlike many of the CCC constructed parks in Texas, the stonework in Palo Duro Canyon had little or no formally cut stone. This style, influenced by Herbert Maier, who oversaw the construction at Palo Duro Canyon, offered an insight into an architectural design preference of Maier and also tapped into his experi-

ence in constructing within rugged canyon terrain.[9] The stones were laid in a manner similar to those seen in the ancient pueblo ruins of the Southwest. Heavy wooden *vigas* were also used as decoration and support.

Herbert Maier served as the Emergency Conservation Work (ECW) Regional Director for the Eighth Corps Area, which included Palo Duro Canyon. He was an accomplished architect and museum designer whose vast experience and vision were of great benefit to the canyon construction. At Palo Duro Canyon, under Maier's guidance, the structural architects and landscape architects stayed within the parameters of Mather's policy. More so than many CCC structures throughout the nation, the rim cabins, known as the Lighthouse, Goodnight, and Sorenson, along with El Coronado Lodge were true to this philosophy. These were all constructed below grade so as to not interfere with the view of the canyon as one drove around the first bend. This is where the canyon first appears to the visitor. Each structure, built with the Trujillo sandstone of the canyon, seemingly melds into the surrounding canyon walls. From a canyon across the way, one has to search to be able to pick out the lodge as it blends well with its natural environment. (See Figure 1 on page 195)

The construction of the El Coronado Lodge required a great deal of dynamite for soil and rock removal before the actual building could begin. According to the *Windy Rim,* the camp newspaper, excavation removed forty-five thousand cubic feet of overburden before reaching bedrock.[10] The bedrock created a low bench for the footing and placed the lodge well below the normal vision of passing motorists. After blasting, the landscape architects and their crews removed the evidence of scars created by chiseling and blasting and did so throughout the park. Prior to blasts, the landscape crew dug up and transplanted trees and foliage. They collected deadwood for the furniture shop as well. Landscape foreman Walter J. Caserta observed they made certain that the landscape looked as natural as "Nature's dressings." [11]

CCC enrollee Ed Davis remembered when he worked on Water Crossing No. 2 in the canyon. During his tenure in the canyon in 1937, he and his fellow enrollees "dressed up" the water crossing. They moved small boulders around in the stream bed in an aesthetically pleasing randomness to the satisfaction of the landscape architects. It was as if nature had placed the boulders there.[12]

Guy Carlander, the architect who drew the plan for the lodge, initially designed the structure to have a second story with a tall aerial lookout tower, but only the ground floor was completed.[13] The NPS architects closely scrutinized Carlander's design before they eventually signed off on it. Carlander was an excellent architect and was highly respected in and around Amarillo, yet his expertise was in Art Deco style as opposed to Government Rustic.

On the canyon floor, four "cow camp" cabins were constructed for park visitors. Carlander's vision was to have them made in the style of the 1876 T-Anchor Ranch Headquarters, a rough-hewn log structure. Ironically, the timbers for the ranch headquarters were more than likely gleaned from the canyon floor many years before.

Ultimately, the cabins were built in the same manner as the lodge and rim top cabins – in the style reminiscent of ancient pueblo ruins. Whether or not he was the driving force behind calling Palo Duro, the "Grand Canyon of Texas," Maier's attempt to mirror the architecture at the Grand Canyon is evident.[14] Certainly, the stone walls, buildings, and culverts of Palo Duro Canyon reflect the style of his creation seated on the south rim of the Grand Canyon, Yavapai Point Observation Station, now called Yavapai Point Geology Museum. The resemblance is remarkable between the cabins and lodge in respect to Maier's structure perched on the Grand Canyon rim. In profile, El Coronado Lodge, seated on the ledge overlooking Timbercreek Canyon, bears an uncanny resemblance to Maier's Yavapai Point structure. Another view of Yavapai Point could easily be confused with the Cow Camp cabins of Palo Duro. Rough cut stone and pueblo influences are evident on all the stone buildings at Palo Duro Canyon.

No doubt, Herbert Maier was highly influenced by Mary Colter's Watchtower and Hopi House, also on the



Figure 2. Cow Camp Cabin #4, Palo Duro Canyon State Park



Figure 3. Outside Wall of Yavapai Point Geology Museum, Grand Canyon National Park



Figure 4. Profile, Yavapai Point Geology Museum, Grand Canyon National Park

southern rim of the Grand Canyon. This is evident in his Yavapai Point structure.[15] Colter was a remarkable woman of her time. She was a very successful architect who was initially drawn to the Southwest by Harvey House commissions.[16]Both Colter's and Maier's structures utilized rough cut stone and not unlike the ancient pueblos, uneven rooflines and rounded irregular corners. From a distance, the two structures give the impression of the handiwork of the *Anasazi* or Ancient Ones. This is the same architectural design that is seen in Palo Duro Canyon State Park. Colter's biographer, Arnold Berke wrote that she influenced the "design of national and state park structures." She herself was drawn into the irregular walls and heavy *vigas*, or wooden beams, of the ancient pueblo structures of the Southwest. Berke also recognized those same influences in the El Coronado Lodge.[17] Maier may have found inspiration in Colter and the ancient pueblo ruins, but that does not diminish the importance and far-reaching effect of his knowledge and skill on the National Park Service.

Government publications during the 1930s provided helpful guidance and positive reinforcement to maintain Mather's ideology. A. D. Taylor's Camp Stoves and Fireplaces, published by the ECW, offered insight into functional versus non-functional methods of building campfire circles, standard grate fireplaces, camp stoves using stone for materials, and others. Schematics, instructions, and line art fill the pages of this guide. A modified version of the community campfire circle can be found in the Palo Duro Canyon architectural drawings.[18]

The ultimate book that reinforced the ideology of Mather's Government Rustic and Maier's influence was compiled by Albert H. Good in his voluminous, Park Structures and Facilities. It was a "comprehensive statement of the design principles and practices" of the National Park Service.[19] The 1938 volume offered essentially a catalog of CCC structures built around the country. Good, along with a committee, chose those believed to epitomize Mather's policy. Many participated in this compilation, but as an architect, Good rendered the plans and documentation that still elicits interest in the rustic style of architecture in our parks today.[20]

The companies who served at Palo Duro Canyon were 1821(V), 1824(V), 1828(V), 1829(V), 2875(C), 2876(C), and 894. Former military status or race further distinguished them: (V) Veteran or (C) Colored.[21] The company without a designation letter consisted of white juveniles, as were the majority of enrollees throughout the nation. From July 1933 to December 1937, each of these kinds of companies served at Palo Duro Canyon, but not all concurrently. The first four companies to work in the canyon were war veterans and were integrated. During their tenure, Camp Palo Duro was the largest



Figure 5. Hopi House, Grand Canyon National Park; Mary Colter, Architect

CCC camp in the nation.[22] Palo Duro Canyon historically stands out considering it held diverse companies of men: war veterans, Black war veterans, Black juveniles, and Anglo juveniles. Praise belongs to those men of the CCC who toiled for a mere dollar a day, using hand tools, under extreme weather conditions in a stark environment. Palo Duro Canyon State Park holds the legacy of these seven CCC companies who served and left an indelible mark.

> "Without their labor, the park would never have been built."[23]
>
> -- *A Park for the Panhandle*, Pete Petersen

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Solving the "Recreation Problem:" The Development of the National Recreation Area

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Figure 1. NPS-produced graphic promoting recreation in the 1930s (from *National Park Service, Recreational Use of Land in the United States: Part XI of the Report on Land Planning*. (Washington, D.C: U.S. Government Printing Office, 1934), 11)

Abstract

As the National Park Service evolved, recreation became an increasingly important, if not fully stated part of the agency's mission. By the 1930s the NPS was seeking to solve the "recreation problem," or the need to provide recreation facilities to an industrializing nation whose workers enjoyed unprecedented leisure time. Expansion and experimentation resulted in the development of new park typologies, among them the recreation area, which was distinct from previous park types in its lesser "caliber" of scenic value and greater focus on active pursuits. Throughout the 1940s, the recreation area concept expanded as the NPS collaborated with the U.S. Bureau of Reclamation and Army Corps of Engineers in the creation of reservoir recreation areas. These developments, however, became increasing controversial in the wake of the Echo Park Dam controversy, leading to a four-year review of federal recreation activities by the Outdoor Recreation Resources Review Commission and the subsequent creation of the Bureau of Outdoor Recreation. As a result the National Recreation Area (NRA) was redefined as a general class of federal lands outside the sole purview of the NPS. Today there are forty NRAs of disparate size and character, located in wilderness, rural, and urban areas, and managed by the NPS, the USFS, the Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service (USFS). Explicating the complicated history of the NRA, using such examples as Lake Mead, Glen Canyon, Chickasaw, and Gateway National Recreation Areas, expands our understanding of the NPS in the post-World War II era beyond the usual "Mission 66" story. An awareness of the historical context for this typology is also important as these resources, congressionally designated after 1963, become eligible for inclusion on the National Register.

Introduction

The forty National Recreation Areas (NRAs) in the United States are a diverse group of properties located in wilderness, rural, and urban settings. They range in size from approximately 1,500 acres (Boston Harbor Islands NRA) to 1,000,000 acres (White Rocks NRA in Alaska). They are managed by three federal agencies: The National Park Service (NPS) and the United States Forest Service (USFS) each manage nineteen NRAs, one is managed jointly by the two agencies, and the Bureau of Land Management (BLM) manages one more. On the one hand, the diversity of these properties reflects the diversity of the recreational activities—fishing, hunting, hiking, paddling, climbing, and sightseeing — that Americans have learned to enjoy and the locale — mountains, lakes, streams, and cities — needed to enjoy them. On the other hand, the diversity — and even disparity — of the National Recreation Areas as a type reflects a long and somewhat convoluted history of federal recreational planning that began in the late 1920s, was dominated by the NPS in the 1930s and 40s, and became a broadly focused national effort undertaken by multiple agencies in the 1950s and 60s.

National Park Service	**US Forest Service**
Amistad	Allegheny
Big South Fork	Arapaho
Bighorn Canyon	Flaming Gorge
Boston Harbor Islands	Grand Island
Chattahoochee River	Hells Canyon
Chickasaw	Land Between The Lakes
Curecanti	Moosalamoo
Delaware Water Gap	Mount Baker
Gateway	Mount Hood
Gauley River	Mount Rogers
Glen Canyon	Oregon Dunes
Golden Gate	Pine Ridge
Lake Chelan	Rattlesnake
Lake Mead	White Rocks
Lake Meredith	Sawtooth
Lake Roosevelt	(Whiskeytown)-Shasta-Trinity
Mississippi	Smith River
Ross Lake	Spring Mountains
Santa Monica Mountains	Spruce Knob-Seneca Rocks
Whiskeytown(-Shasta-Trinity)	Winding Stair Mountain
Bureau of Land Management	
White Mountains	

Table 1: List of National Recreation Areas by managing agency. Note that Whiskeytown-Shasta-Trinity is jointly managed by unit by the NPS and the USFS

Defining Recreation in the 1920s and 1930s

The early history of the NRA dates to the late 1920s and early 1930s, when the NPS began to seriously consider the issue of recreation. Although today parks and recreation are often conflated, it is perhaps worth remembering that the 1916 Organic Act did not use the word recreation. As historian Larry Dilsaver has noted "The national parks were for inspiration and education of the people not, as many supposed, for recreation per se."[1] Recreation activities such as camping and automobile tourism were a means to pursue park pilgrimages rather than an end in and of themselves. In support of this idea, it is worth noting that the 1916 Organic Act did not use the word "recreation" at all, but rather "use and enjoyment." Recreation only became more acknowledged as a separate issue through series of national conferences and research studies, including the 1924 National Conference on Outdoor Recreation, featuring an address by President Calvin Coolidge. In 1928 the survey *Recreation Resources of Federal Lands,* described the field of outdoor recreation as "vast, practically new, field of exploration, partly or wholly unknown even to its governmental guardians."[2] Such perceptions of novelty are likely partially due to the fact that earlier definitions of recreation in the United States came out of the Play and Playground Movement in the early 1900s, which primarily focused on youth, not adults, as the major target audience for recreation.[3]

In the early 1930s, NPS recreation planners in Conrad Wirth's "Branch of Recreational Land Planning" (formerly the Branch of Lands) broadened this definition of recreation in their review of national recreation resources for the Land Planning Committee of the National Resources Planning Board, an early, Depression-era comprehensive federal long-range planning effort. The report provided a detailed description of recreation in the U.S. including its geography, economics, "physiological and moral aspects," and trends. Furthermore, described as the result of a modernizing society with increased leisure time due to mechanization, recreation was as a "problem" worthy of planning a campaign akin to a federal health crisis. If the report and its graphics (Figure 1) implied a need and urgency that would park planning on an equal footing with other national planning concerns, the report also further implied that the NPS would be the federal agency who would coordinate solutions to the "problem."[4]

NPS Solutions in the 1930s and 1940s

Actually, by the early 1930s, the NPS, under the auspices of President Roosevelt's New Deal Programs was already hard at work posing new solutions to the "recreation problem." These solutions included the expansion of state parks via the work of the Civilian Conservation Corps and the NPS's "State Parks Division" of Emergency Conservation Work, and beginning in 1934, the development of Recreational Demonstration Areas (RDAs) and National Seashores, all under the supervision of Conrad Wirth's office. As detailed in numerous other park histories, state parks were intended to serve regional recreational needs while conserving a secondary tier of natural landscapes, while seashores captured recreational areas on coastal bodies close to urban areas. Recreation Demonstration Areas were also intended to further expand the scope of state and national parks with the development of three new kinds of parks: large regional areas 10 to 15,000 acres in size; smaller "group" camp sites, 2,000 to 3,000 acres in size, targeting underprivileged children; and day-use "waysides" 20 to 50 acres in size constructed along roadways to serve tourists enroute to the larger areas. These projects began to quite literally "demonstrate" how the NPS — and other state and local agencies, with NPS support — could provide recreation in new ways. Notably, these efforts did not require significant scenery in far off reaches of the country; state parks had always been "local" and RDAs were sited close to population centers. RDAs in particular "reclaimed" "submarginal" lands, moving park design away scenic protection toward increasing levels of landscape "improvement" and construction of facilities for increasingly active recreation. However, contrary to expectations, RDAs did not "turn into" National Recreation Areas; by the 1940s most were instead absorbed into to state park systems. A few were also combined with existing national parks.[5]

More significant for the development of NRAs in the 1930s was the Park, Parkway, and Recreation Area Study Act. This act was important because it advanced additional recreation research, positioned the NPS as the agency in charge of coordinating that research with the states and fueled studies for the designation of new National Park units, including additional National Seashores, all work undertaken by Wirth's office. Particularly significant for the development of the NRA, is that the Act not only allowed the NPS to collaborate with states and municipal agencies, but also authorized the NPS to collaborate with other federal agencies. This was significant in that it opened up new federal funding sources to the NPS beyond its own annual Congressional budget as a means to promote its recreational agenda.

Throughout the 1930s, other federal agencies were building recreation projects with varying success. The USFS had begun their own recreation planning back in the 1920s, with assistance of Frank Waugh and Arthur Carhart, and continued planning, independently throughout the 1930s with their own CCC crews.[6] The Tennessee Valley Authority also planned recreation areas as part of many of their water projects. More interested in collaborating with the NPS were the U.S. Bureau of Reclamation (USBR) and the Army Corps of Engineers (ACE). The USBR had viewed its projects as recreational as early as 1918, when they (unsuccessfully) proposed that the Teddy Roosevelt Dam and Lake in Arizona be designated a National Park. Soon thereafter, however, the agency decided large scale recreational planning was out of their expertise, and in 1928 approached the NPS about developing a recreational plan for the lake behind Boulder (soon to be Hoover) Dam. With the Hetch-Hetchy controversy in Yosemite a not-so-dim memory, NPS demurred for the next eight years, despite Congressional pressure, sending out survey teams but taking no action. The Park, Parkway and Recreation Act, however, provided the administrative structure and USBR funding for the project and in 1936 a Memorandum of Understanding (MOU) was signed, creating Lake Mead as the first National Recreation area. The NPS—Wirth's Branch of Recreation and Land Planning—designed and administered the facilities, though the USBR retained ownership the property. This project was followed by another MOU for the design and administration of recreation facilities at Grand Coulee Dam in Washington. NPS began planning this area, which would eventually become Lake Roosevelt NRA in 1941 and took over administration in 1946.[7]

By the early 1940s these multiple fronts of park work — state parks, RDAs, seashores and now reservoirs — had expanded the NPS mission far beyond stewardship of the "crown jewel" national parks. The extent of the agency's work was summarized in a 1941 publication entitled *A Study of the Park and Recreation Problem of the United States* which compiled research completed under the 1936 Park, Parkway and Recreation Study Act, including a review of planning, administration, and financing of recreation at the municipal, state, and federal level and an inventory of parks and recreation areas in each of the 50 states. The report concluded with

a national plan for providing recreation for the entire country. If proposing such a comprehensive plan seems immoderately ambitious today, at the time it was the logical outgrowth of the NPS's status as the federal agency with if not sole, then major, jurisdiction over recreation. In addition, this expansion into all facets of recreation made sense within the larger NPS mission: one way to protect and preserve the crown jewels was to take "average" recreation pressure off of them by providing other, less significant landscapes to absorb these activities.

Likewise, an increasing interest in reservoir recreation areas also made sense because lakes — either natural or man-made — were beginning to be seen as the central activity in any recreation area. When describing the construction of an idealized recreational park, for example, the 1941 *Study of the Park and Recreation Problem of the United States* provided a full page of text on how to construct a dammed lake, based on "several instances encountered in Civilian Conservation Corps construction." The description was illustrated with a "sketch" of a park with a lake surrounded by bath houses, vacation cabins, picnic areas and trails (Figure 2).[8] As the collaborations with the USBR and the ACE continued, reservoir projects increasing reflected this drawing both conceptually and physically, though on a much larger scale. The NPS recreation area plan for a reservoir at the Army Corps' Denison Dam on the Red River in Texas and Oklahoma (today's Lake Texoma), completed in 1946, for example, scaled the simple boat house into a marina, the camping area into a hotel-motel lodging complex and the "all season play area" into a series of golf courses, all surrounding a 93,000-acre lake (Figure 3). [9]

War and Post War Reservoir Recreation Area Planning in the NPS

During World War II, planning and construction work in state and national parks dropped off, but USBR and ACE reservoir projects continued to be planned throughout the war, fueled by numerous flood control and irrigation project bills Congress passed in anticipation of post-war development and growth. Over the course of the 1940s, as Reclamation and the Army Corps surveyed 19 river basins across the country, including the Missouri, White, Arkansas, and Canadian Rivers, regional NPS staff trailed behind, assessing the proposed reservoirs' recreational capacity. Each NPS report on a reservoir recreational survey assessed impacts on existing NPS properties and other scenic, cultural, and natural resources; assessed day-, weekend-, and vacation-use recreational opportunities around

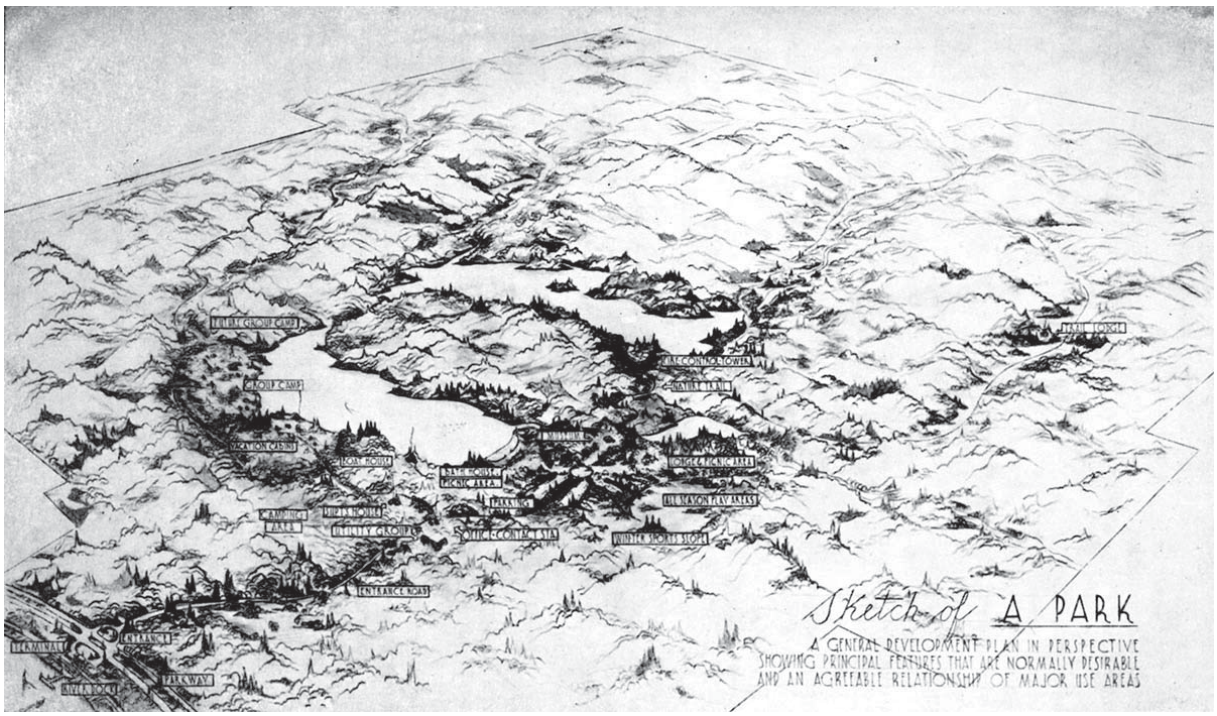


Figure 2. Image of idealized state park with lake for recreation at the center (from National Park Service, *Study of the Park and Recreation Problem of the United States* (Washington, D.C.: U.S. Government Printing Office, 1941), 46)

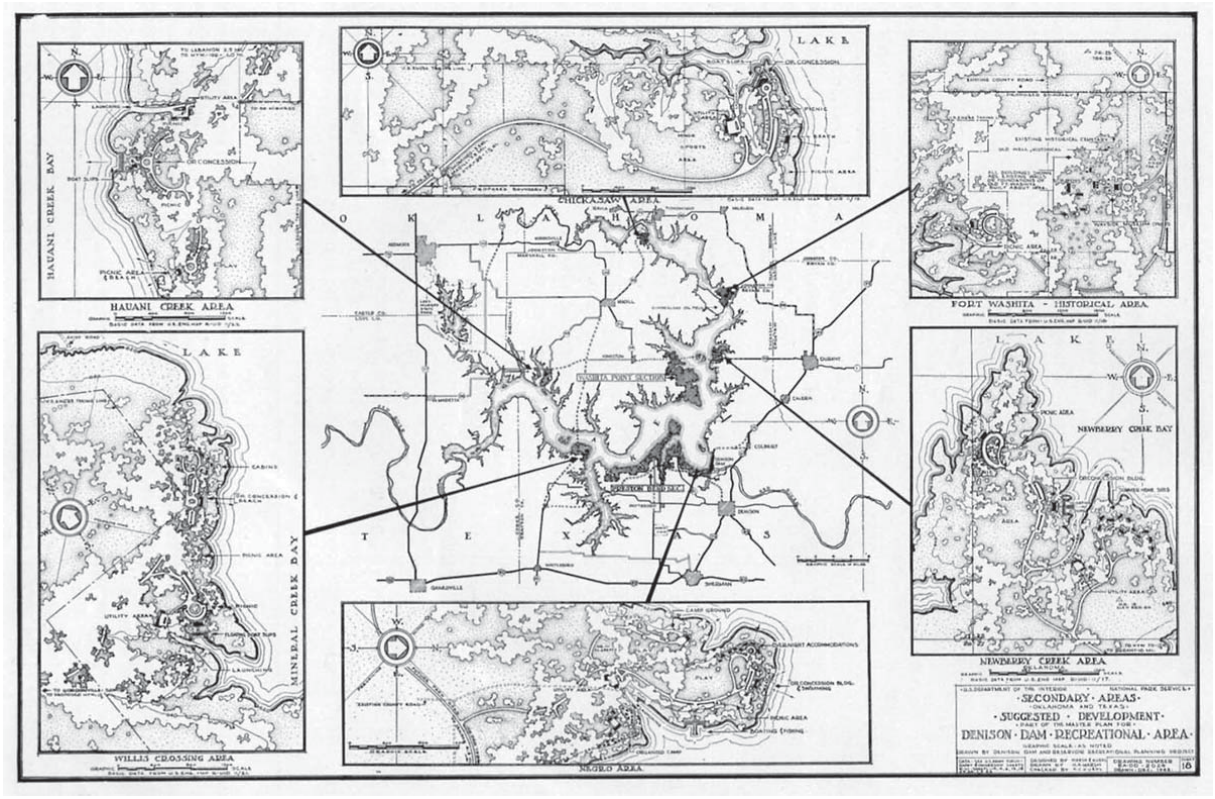


Figure 3. Plan for facilities around the Denison Dam Recreation Area (from National Park Service, *Recreational Resources of the Denison Dam and Reservoir Project, Texas and Oklahoma* (Washington, D.C.: U.S. Government Printing Office, 1943, np)

each proposed reservoir; and assessed the reservoir's state, local, and national significance (Figure 4).[10]

If there was concern within the NPS about working so closely with man-made landscapes and the agencies that created them, often to the detriment of natural landscapes, it appears that these fears were at least partially allayed by the fact that many of the proposed projects were located in sparsely populated, parched areas. Underserved by the NPS and state and local governments, most of these sites had a surfeit of recreational opportunities, and development of any sort was viewed positively by local communities. And if, the word "reservoir" was increasingly equated with the term "recreation area" within the National Park Service, the agency felt it could control official designation as a *national* recreation area, offering a means of distinguishing significance and protecting the status of traditional NPS parks designated for their unique scenery and features.

However, such concerns would not be put off forever, and the issue came to a head during the late 1940s and 1950s over the survey and plans for the Upper Colorado River Storage Project. In 1941, the NPS entered into an MOU with the USBR for a survey of the recreation potentials of the Upper Colorado. Then Director Newton Drury enlisted Frederick Law Olmsted, Jr. to head this survey, which covered a vast area of unique geology features. Completed in 1946, the survey did not initially raise flags about the impact of the dams on natural and scenic resources. However, as plans for the project's first dam at Echo Park within Dinosaur National Monument proceeded, conservationists increasingly realized the harrowing consequences the dam would have on the Monument. Thus ensued the well-known "Echo Park Dam Controversy," which led to Drury's resignation in 1951 and a decade-long battle between wilderness conservationists and the USBR over the construction of dams in the Colorado Basin. Although the dam was ultimately defeated in 1956, the resultant compromise led to the construction of the Glen Canyon Dam downstream that engulfed a perhaps even more significant landscape. The battles over the two dams are credited with the birth of the environmental movement and the passage of the 1964 Wilderness Act. [11]

The Echo Park controversy badly damaged the Park Service's credibility with the conservation community, who now had great reason to question the Park Ser-

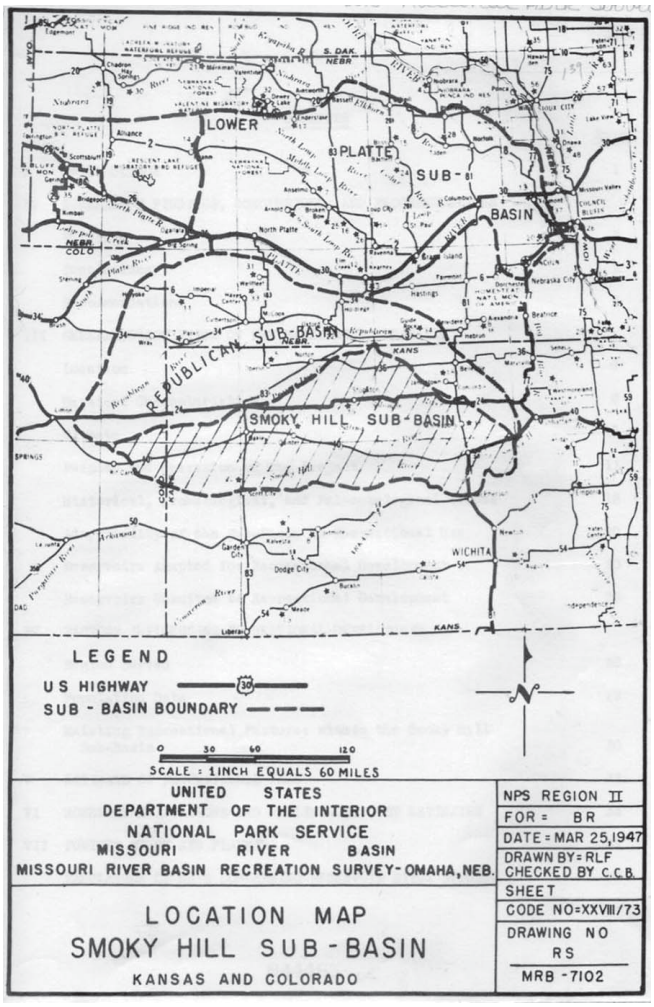


Figure 4. Example of river basins and sub basins reviewed by the NPS for the Platte River in Nebraska. From Guy Edwards, "Reconnaissance Report on Recreational Potentialities, Lower Platt Sub-Basin, Nebraska," unpublished manuscript (Denver: National Park Service, 1947)

vice's commitment to wilderness and its ability to appropriately balance preservation and development. In light of the controversy, for many, Mission 66, launched by Wirth, who had become the Director after Drury's resignation, was another indication of the Park Service's predilection for use, tourism and recreation over conservation.[12]

Glen Canyon Dam and the lake recreation area also brought the total number of "official" National Recreation Areas up to three, along with Lake Mead and Lake Roosevelt (at that point still known as Grand Coulee Dam NRA). Meanwhile, the NPS continued building other reservoir recreation areas with the USBR and ACE, including Lake Meredith in Texas, Shadow Mountain in Colorado, and Arbuckle in Oklahoma — all of which were candidates for National Recreation Area status. Considered alongside NPS disavowals of Echo Park, these projects demonstrate a certain agency ambivalence toward reservoir recreation areas. They also highlight the fact that there was, at this point, no official definition of a National Recreation Area, outside of the fact that it had to be of "national" significance (whatever that meant) and that it had to be designated by Congress as being under NPS administration. However, the increasingly suspect value of National Recreation Areas compared to other park types was demonstrated in 1953, when a Congressional Act described them as "miscellaneous areas" rather than parks, thereby officially "excluding" them from the system.[13]

The Outdoor Recreation Review Commission

Though a definition would be forthcoming, it would be greatly influenced from forces from outside the agency. In 1958, as the Echo Park and Glen Canyon dam controversies and negotiations drew to a close, President Eisenhower signed the Outdoor Recreation Review Act, with the goal of defining the nation's recreation needs for 1976 and 2000. The Act demonstrated a "new approach to the federal encouragement of outdoor recreation" by creating the Outdoor Recreation Resources Review Commission (ORRRC), a group of senators, congressmen, and appointed citizens. The creation of the ORRRC and an advisory council of federal agency contacts, interest group stakeholders, and citizens consciously excluded the NPS from the review process. Instead, the review was opened to a much wider field of expert consultants and contractors, including researchers from other agencies and universities, including such notable participants as William Whyte and Ian McHarg. The review findings were presented in 27 "study reports" on specific topics and an overall summary report, *Outdoor Recreation for America*.[14]

Within the summary report the terms park and "national park" were almost nowhere to be found; rather the report took a broad look at recreation areas, reclassifying them less in terms of "use" and type but more in terms of general character and qualities and also based on proximity to population. Classes I-VI Recreation Areas were described, respectively, as High Density; General Outdoor; Natural Environment; Unique Natural Areas; Primitive Areas; and Historic and Cultural Sites. This classification system created a continuum of recreation areas without regard to jurisdictions; and moreover emphasized that there was a continuum of agencies at the state, national, and local levels that could manage

Findings:

- The simple activities are the most popular.
- Outdoor opportunities are most urgently needed near metropolitan areas.
- Across the country, considerable land is now available for outdoor recreation, but it does not effectively meet the need.
- Money is needed.
- Outdoor recreation is often compatible with other resource uses.
- Water is a focal point of outdoor recreation.
- Outdoor recreation brings about economic benefits.
- Outdoor recreation is a major leisure time activity and it is growing in importance.
- More needs to be known about the value of outdoor recreation (ORRRC 3-5)

Recommendations:

- A National Outdoor Recreation Policy
- Guidelines for the management of Outdoor Recreation Resources
- Expansion, Modification, and Intensification of Present Programs to Meet Increasing Needs
- Establishment of a Bureau of Outdoor Recreation in the Federal Government
- A Federal Grants in Aid Program to States

Table 2: Findings and Recommendations of the ORRRC (from Outdoor Recreation Resources Review Commission, *Outdoor Recreation for America*, 3-5)

them, encouraging changing jurisdictional boundaries for more efficiency.

The ORRRC report also presented overall findings and recommendations about recreation (Table 2). Within these summary conclusions, two ideas would be most important in terms of the development of the National Recreation Area. First was the report's highlighting of the need for recreation areas near metropolitan areas. Second was the report's recommendation for the creation of a Bureau of Outdoor Recreation (BOR). In 1962, just a few months after the ORRRC submitted its report and recommendations, Secretary of the Interior Stewart Udall signed a Secretarial Order creating the bureau, followed by President Kennedy's Executive Order creating an Advisory Council, headed by Udall, to guide its activities. These actions negated the 1936 Park, Parkway and Recreation Area Study Act, putting the BOR in charge of coordinating federal recreation. The resultant reorganization of the Interior Department ended NPS domination in recreation planning, and placed it on a similar footing with the other departmental players (Figure 5).[15]

In particular, the appointment of Edward Crafts, former Assistant Chief of the USFS as the first Director of the Bureau of Outdoor Recreation was likely intended to bolster the status of the Forest Service in the provision of recreation. In 1957 the USFS created "Operation Outdoors," a parallel program to Mission 66, in an attempt to accrue increased Congressional and public support. Though less successful in gleaning funding than Mission 66, Operation Outdoors did help pressure Congress into passing, in 1960, the Multiple Use and Sustained Yield Act, which supposedly equalized recreational and other non-timber uses in National Forests with timber, and may have helped ensured a continuing "multiple use" ethic for recreational lands going forward.[16]

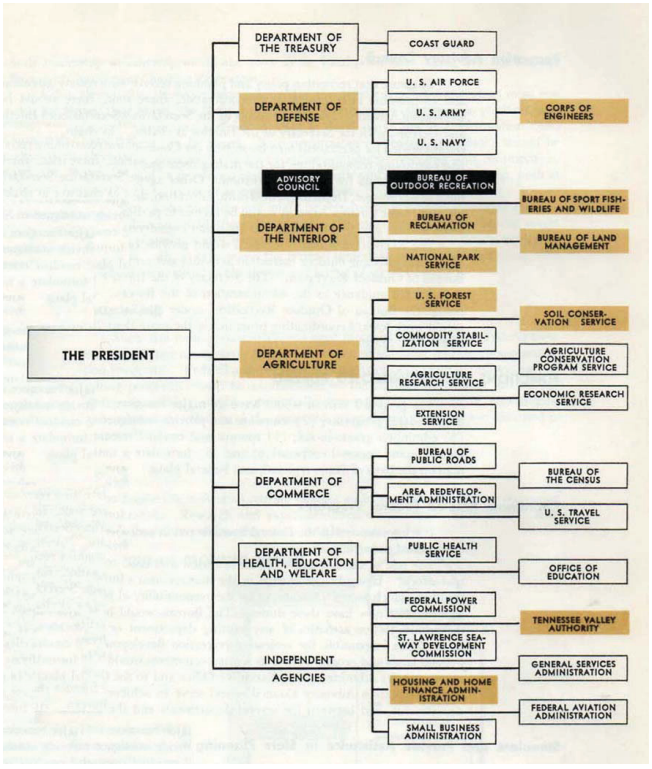


Figure 5. Chart showing re-organization of the Department of the Interior following creation of the Bureau of Outdoor Recreation (from Outdoor Recreation Resources Review Commission, *Outdoor Recreation for America*, 10)

One of the early activities of the Bureau of Outdoor Recreation was to define the NRA within this broadened realm of federal recreation, and in spring 1963, the Recreational Advisory Council produced the Executive Policy for the selection, establishment, and administration of NRAs as a federal class of lands and no longer under outside the sole purview of the NPS. The policy stated that NRAs were to be established by Congress in a limited number of areas where recreation demand was not met through other programs. As such they needed to be responsive to clearly defined demands and also needed to have natural endowments well above the ordinary -- less than the unique elements of the NPS but affording an experience greater than those typical of state park systems. The policy noted that NRAs could also include designations such as National Seashore, National Waterway, National Riverway, NRDAs and "other names that embody physical resource base or functional purpose."

The creation of an NRA was predicated on certain criteria (Table 3). Primary criteria for designation stated that NRAs should primarily support recreation use; be at least 20,000 acres in size; reach regional audiences, and be located within 250 miles of major urban population centers. Secondary criteria focused on carrying capacity of the proposed NRA and ensuring a high benefit of recreation per cost of development, as well as supporting recreation on adjacent private lands. Notably, a clause highlighted the use of federal impoundments for NRAs, but only if the recreational development was in some way "beyond normal." The policy did not indicate a funding source for NRAs. It also did not indicate which federal agency should manage which NRAs or which kinds of NRAs, though it noted that administrative efficiencies and adjacencies should be considered and indicated that federal and or state agencies might manage an NRA together.[17]

These criteria for NRA creation are interesting in that in contrast to the bold pronouncements of the ORRRC a few years earlier, they are actually quite general rather than "specific and visionary."[18] In part this is likely due to a recognition that future recreation areas would need to accommodate not only unmet but also unknown recreation needs and would therefore need to be flexible. Such vagueness also allowed the USFS and the NPS to define their own individual guidelines for these parks, unique to their departmental cultures, within the broader framework of the policy.

For the NPS, development of these guidelines began in 1964, with Secretary Udall's letter on park management, which in support of the Leopold Report, established differing management prescriptions for natural, historic, and recreation areas. Hashing out management for these different areas was necessary in light of Wilderness Act, which had created another new, "nondenominational" federal lands designation — the Wilderness Area — and a groundswell to manage it and other park landscapes on a more scientific and ecological basis. Udall's recommendations were inculcated as administrative policies for the three types of areas in the NPS Handbook

Primary Criteria: NRAs should

- Be spacious areas, not less than 20,000 acres of land, except where total populations within 250-mile radius exceed 30 million people
- Be located and designed to achieve a high carrying capacity
- Provide recreation opportunities significant enough to ensure interstate patronage within the region and possibly from outside the region
- Have a scale of development, investment and operation should be high enough to require Federal involvement
- Be located within easy driving distance of urban population centers (no more than 250 miles)
- Present outdoor recreation as the dominant or primary resource utilization
- Be only established where other programs will not fulfill recreation needs.

Secondary Criteria-- NRAs should or may

- Provide high benefits for low cost (preference for areas with high population, low recreation facilities; optimum ratio of carrying capacity to cost.
- Utilize federal impoundments only if significant recreational development beyond normal is warranted
- Fit with state, regional and local plans and should support private rural recreation lands/activities and local economic development
- Include of any scenic, historic, scientific, scarce, or disappearing resources was permitted in the boundary so long as preservation and enjoyment is compatible with the recreation mission.
- Be located within or adjacent to or surround other federal lands.

Table 3: Criteria for NRA Designation as per the 1963 Executive Order (from Dilsaver, *America's National Park System: The Critical Documents*, 264-65)

in 1968. For recreation resources, the policy stated that recreation "shall be recognized as the dominant or primary resource objective" though "management must provide for the conservation of natural or historical features when they . . . enhance the recreational opportunities of the area." A Master Plan for each recreation area was also required to "spell out the details of resource management for public use and enjoyment"; such "details" could include management of fish and wildlife, agricultural uses, forest management, based on "sound ecological principles" as well as grazing, timber harvesting and mineral exploration, so long as these activities did not impair public recreation and the conservation of scenic, scientific, historic or other values contributing to public enjoyment. Finally, managers were admonished to consider the total environment of the recreation area and "be alert to peripheral use and development proposals that impinge" on the NRA. [19]

Throughout the 1960s, NPS management of existing NRAs focused on meeting these guidelines. This initially meant recasting existing reservoir recreation areas as NRAs, something of a hit or miss process. Its large size and fame made Lake Mead a shoe-in as the first "real" NRA with a 1964 Congressional Act. Lake Sanford (now Lake Meredith) followed suit in 1965, and Ross Lake and Lake Chelan, both in Washington, were established as NRAs in 1968. However, congressional acts were not forthcoming for other existing reservoirs. Grand Coulee NRA, the "second" named NRA (and now known as Lake Roosevelt NRA) was never officially designated, but grandfathered into the NPS in 1970.[20] Elsewhere, NPS planners and communities struggled to conform to the new standards. At the Arbuckle Reservoir Recreation Area in Oklahoma, for example, a series of proposals sought to enlarge the area around the existing reservoir with separate units containing unique geological elements of the region in an attempt to meet the requirements for significant natural and scenic features or character "beyond the normal" and the minimum required 20,000 acres.[21] The property came up short until 1976, when it was combined with Platt National Park to create Chickasaw NRA, thereby elevating its significance to the national level, though at 10,000 acres it still didn't measure up in size. Shadow Mountain Reservoir in Colorado, built in 1952, shared a similar fate, languishing for years as an NPS-managed "Recreation Area", until it was finally incorporated into the much larger USFS-managed Arapaho NRA, established in the late 1970s. Likewise, Flaming Gorge NRA was transferred from the NPS to the USFS when Congress established it in 1968.

During the 1960s, brand-new NRAs were also established, including the first NRA in the USFS, Spruce Knob-Seneca Rocks NRA in West Virginia in 1965. Some new NRAs were reservoirs that had been planned before the new guidelines, such as Bighorn Canyon NRA behind the Yellowtail Dam in Montana, constructed and established in 1966. Other NPS NRAs came into being when planned reservoirs were abandoned due to public protest and their proposed sites became river-based NRAs instead. These included Tock Island NRA, which became Delaware Water Gap NRA in 1965; its scenic river designation followed later in 1978. Public protest also slowed and downsized new NRAs in scope or scale. For example, the 154,000-acre Mount Rogers NRA in the Jefferson National Forest in Virginia was designated in 1966 but not completed until 1978 due to significant public opposition over its land condemnation process. When finally implemented, it was without the proposed ski area, reservoirs, and scenic highway that were originally envisioned, in part due to the fact that envisioned federal funding for facilities had evaporated in the decade since inception. Subsequent Forest Service designs for both it and other NRAs were simpler proposals, featuring "camping, picnicking and interpretive sites rather than the flashier developments."[22] Such reductionist strategies were also true for NPS sites, as shrinking federal budgets scuttled plans for large scale marinas and hotel accommodations at reservoirs like Arbuckle (soon to be Chickasaw NRA) were replaced by minimalistic boat ramps and campgrounds.

In the 1970s, however, public participation also helped to fuel the next stage of NRA development, as the other major finding of the ORRRC report — the idea that outdoor recreation areas were most needed in metropolitan areas — was addressed. Although no longer "in charge" of recreation, throughout the 1960s, under Secretary Udall and director George Hartzog, the NPS continued to grow, adding more than 60 units between 1964 and 1972. Although NPS competition with the Bureau of Outdoor Recreation continued strong throughout the 1970s, without actual parks to manage, the BOR increasingly became more of a policy organization, especially as grants for parks from the Land and Water Conservation Fund, the major federal source for recreation funding for the new bureau's activities, waned. Meanwhile, during the last years of his tenure, in the late 1960s Hartzog, who prided himself on his ability to innovate "ac-

tively promoted [the NPS] as an agency in search of an urban mission" accomplished in part through a catchy new program called "Parks to the People."[23]

These recreational ambitions, combined with an interested new Nixon administration, the burgeoning environmental movement, and urban growth and renewal led to the concurrent development of two urban waterfront NRAs, Golden Gate NRA in the San Francisco Bay area and Gateway NRA along the urban New York and New Jersey shorelines. The establishment of both parks was supported by local organizations. In New York, these included the Mayor's office, the Regional Plan Association, and the residents of the soon-to-be abandoned Floyd Bennett Field, while in San Francisco, these included the San Francisco Board of Supervisor's Office, a grass roots group called People for a Golden Gate National Recreation Area, and preservationists wishing to preserve Alcatraz Island, among many others. Both parks easily met the broad NRA standards, especially in terms of size (Golden Gate was 80,000 acres, and Gateway 27,000), populations served and recreational need, and in 1972, both parks were authorized with well-negotiated and well-written legislations.

Together, these parks launched a new era for then NPS, presenting it with new frontiers in terms of design, use, and public service. In particular, the two parks posed urban problems the NPS had previously not considered at such a scale. For example, the Statement for Management at Gateway NRA, written just two years after its authorization, listed widely separated units, long distances from inner city target audiences, inadequate mass transit to access the park, shoreline pollution from sewage effluent, and the need to coordinate with 500 state and local agencies that had various jurisdictions over portions of the park. Both parks also contained significant cultural resources (such as historic military facilities) and natural resources (such as tidal estuaries), and posed challenges for integrating resource management. In managing these urban parks, the NPS had a steep learning curve, variable local support, and decreasing government funding during their first decades of existence. Despite such difficulties, other urban NRAs soon followed; the 32, 000-acre Cuyahoga National Recreation Area near Akron and Cleveland in Northeast Ohio in 1974; Santa Monica Mountains NRA outside of Los Angeles in 1978; and Boston Harbor Islands NRA, established in 1996.

Conclusions

With these recent additions, the NRA clearly continues evolve as a resource type. However, the earliest NRAs, designated in the 1960s are now turning 50 years old, and are becoming eligible for the National Register of Historic Places. Thus, an awareness of the historical context for this typology is important as determinations are made regarding nominations to the Register.

At this point, from the perspective of historic context, NRAs would appear to fall into a number of broad categories. One group might be recreation areas created before the 1963 Executive Order, that is, reservoir recreation areas planned in the 1930s, 40s, and 50s; a second group might be the urban recreation areas of the late 1960s and 1970s, that is, those modeled after the two coastal "gateway" parks of 1972. In between might be a third group of USFS forest and reservoir recreation areas, though more research will be needed to clarify these groupings. The passage of more time and the greater historical perspective that this affords will also be useful in determining the future assessment and management of national recreation areas. And despite the fact that nomination to the Register has the potential to alter the management of an NRA, it is important to remember that, based on their legislation, recreation will undoubtedly remain the most important management priority for any NRA. Designed to solve a recreation "problem," NRAs will likely continue to change as they adapt to the United States' continuing recreational needs.

Endnotes

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Landscape Processes and Cultural Resources: Shifting Perspectives to Protect Mendocino Woodlands

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Figure 1. Walking across a historic foot bridge over the Little North Fork of the Big River in Camp Two which is set amidst towering coast redwoods.

Abstract

As one of only two Recreation Demonstration Areas built in the western part of the United States and one of only two that remain intact nationwide, Mendocino Woodlands is a rare and complete example of the planning, design and craft of the Works Progress Administration (WPA) era. As a camp that still enjoys its historic use today, the threats to this National Historic Landmark don't come from adaptive reuse. Instead the dense redwood forest that continues to mature and the flowing streams rich with life that braid through the site both contribute to this cultural landscape's character and are contributing to its loss. In addition, the site is struggling financially and has been at the short end of funding streams in a region that often prizes its natural resources over its cultural ones. These are not isolated issues, but systemic of the types of challenges facing historic properties located in sensitive complex landscapes. The solution is not to continue conserving one resource at the detriment of another, but looking at the resource more holistically and developing preservation and conservation strategies that sustain the character of this property.

Mendocino Woodlands State Park

Mendocino Woodlands is a 720-acre parcel of land that was designated a National Historic Landmark in

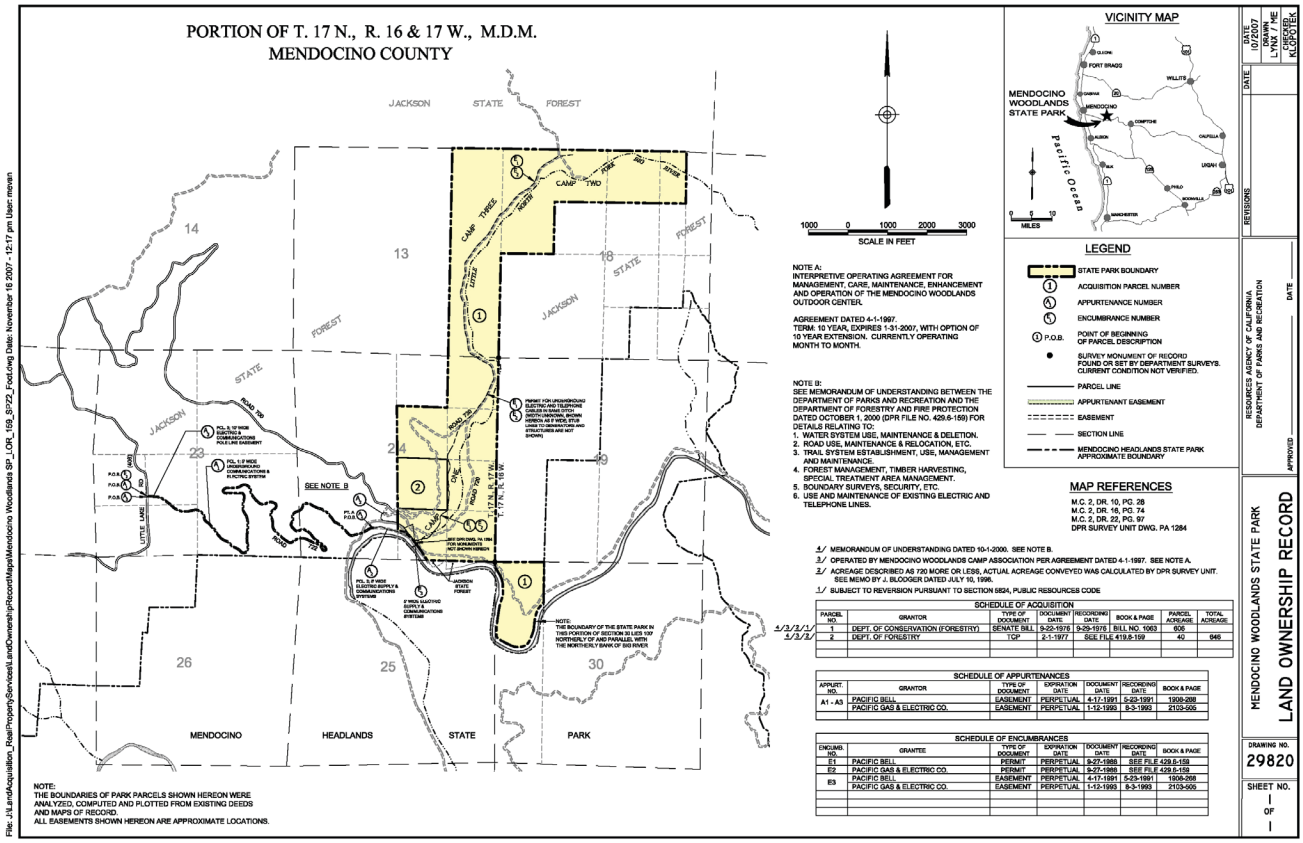
1997. Historically part of the Mendocino Woodlands Recreation Demonstration Area, it is now known as Mendocino Woodlands State Park.

The state park is located in Mendocino County, California, approximately seven miles east of the town of Mendocino and the Pacific Ocean, in a coast redwood forest with steep hillsides and intermittent flatlands in the Big River watershed. Mendocino Woodland's three distinct camp sites are located along portions of the north-south running Little North Fork of the Big River. The closest urban center, San Francisco, is located 160 miles to the southeast. The Oregon-California border is located about 275 miles to the north.

Mendocino Woodlands is currently owned by the State of California, which has a concession agreement with the non-profit Mendocino Woodlands Camp Association (MWCA) to run summer camp and outdoor school programs. MWCA has been running camp programs continually at the site since being founded in 1948. Mendocino Woodlands State Park is surrounded by other state owned lands most notably the Jackson State Demonstration Forest, which is managed by California's Department of Forestry and Fire Protection. The state park is part of the Russian River-Mendocino District, which also includes the adjacent Russian Gulch State Park and Big River State Park.

Historically, the 720-acre Mendocino Woodlands was part of a larger 5,426-acre Mendocino Woodlands Recreation Demonstration Area (RDA) which was established by the United States Congress in 1942 as part of the New Deal era federal recovery programs. The federal land was transferred to the State of California following World War II, and today the RDA is divided into three parcels that are managed by two California state agencies, the 720-acre Mendocino Woodlands State Park is managed by the Department of Parks and Recreation and the Department of Forestry and Fire Protection manages both a 2,550-acre Special Treatment Area (STA) and 2,156 acres of outlying lands that are situated adjacent to Russian Gulch and Big River State Parks.

Mendocino Woodlands is significant because of its association with the New Deal, specifically the program of establishing RDAs on below par agricultural land that would be better used for recreation and conservation. It was one of 46 RDAs established in the United States. "Mendocino Woodlands was the only RDA in Califor-



nia, the only one in a Redwood forest, and one of only two group camp facilities built west of the Rockies."[1] On June 6, 1942 the United States Congress declared that Mendocino Woodlands "…shall be used exclusively for public park, recreation and conservation purposes."[2] The property is an incredibly intact example of the bungalow/NPS rustic architectural style and recreational land use planning principles epitomized by the National Park Service during the New Deal era. According to the National Park Service, Mendocino Woodlands "is one of the two best remaining examples of recreational demonstration area (RDA) planning and design in the country."[3]

Mendocino Woodlands is a complex site where cultural resources, natural resources, and recreation resources all come together. In many ways this is why the place resonates with so many people, and why it provides such good habitat to the numerous flora and fauna that exist here. How these three aspects are viewed and managed today has caused conflict and is threatening the vision of this landscape set aside for conservation and recreation.

Developing the Cultural Landscape Report and Identifying Preservation Treatment Issues

In 2011, MWCA used grants to fund the development of a cultural landscape report to help them refine their understanding of the landscape, identify issues associated with its long-term care and management, and learn ways to address those issues using *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Because funds were tight, two critical partnerships were established to fill the gap between the level of work needed to develop a cultural landscape report and the level of funding available. The first partnership enlisted the help of the University of Oregon to assist with research, documentation, and the development of preliminary treatment concepts as part of a studio taught in Spring 2011 by Professor Robert Z. Melnick with assistance from Laurie Matthews and Christina Frank from MIG, Inc. for landscape architecture, architecture, and historic preservation students. Work associated with this first phase was presented to the client and used as the basis for a workshop facilitated by MIG, Inc. with key stakeholders including MWCA, California's Department of Parks and Recreation, and California's Department of Forestry and Fire Protection. The workshop, which was funded by California Department of Parks and Recreation, focused on fleshing out critical issues facing Mendocino Woodlands and the surrounding landscape, re-engaging partnerships between the key stakeholders, and providing information for MIG, Inc. to develop preservation treatment recommendations for Mendocino Woodlands. The need for this workshop was not initially scoped as part of the project but it became clear during the first phase how critical it was to the development of the cultural landscape report's recommendations.

Six primary treatment issues were identified during the development of the cultural landscape report that are adversely affecting Mendocino Woodlands and threatening its historic integrity, its ability to function as a group camp, and the health of some of its flora and fauna. Those six issues include:

- deferred landscape maintenance,
- changing environmental conditions,
- multiple partners,
- scarce financial resources,
- incomplete documentation, and
- current use and high levels of visitation.

While all are important to the future preservation and sustainability of Mendocino Woodlands, it became clear during the development of the cultural landscape report that addressing one of the most complex issues, namely the changing environmental conditions of the landscape, could have the most benefit and positively impact aspects of many of the other identified treatment issues. Addressing this issue also pointed out some gaps in how traditional cultural landscape reports are less effective when faced with complex landscape issues that often go beyond the resources themselves to the people and agencies that are stewarding them.

Changing Environmental Conditions

In the cultural landscape report, changing environmental conditions are defined as being part of "a dynamic landscape [that is] subject to disturbances introduced through storms, pests and diseases, accidents, floods and droughts, and the mortality of aged plants. Responding to changing environmental conditions such as these and others requires the flexibility to make appropriate but action-oriented choices that balance the needs of the cultural and natural resources with the site's established recreational and educational uses. Developing or codifying a process for making decisions, especially in response to unplanned events, will ensure

that cultural resources affected by changing environmental conditions will be protected as best they can."[4]

Limitations and Challenges

Though recommendations were made to address the issue of changing environmental conditions in the cultural landscape report, recommendations that will be addressed later, it is important to first acknowledge the limitations that were and continue to be present which prevented fully discussing and developing solutions as part of that process. The primary limitations and challenges were:

- the hierarchy in the western United States of favoring the conservation of natural resources over the preservation of cultural resources,
- the framework and methodology associated with developing traditional cultural landscape reports, and
- navigating public-private partnerships needed to steward our public lands.

Conservation of Natural Resources and Preservation of Cultural Resources

Many often say that the western United States doesn't have the breadth and depth of cultural resources that other parts of the country, namely the east coast, have. This is wildly inaccurate, but perseveres and continues to affect the priority that cultural resources have in the planning and design of our public places in the west. This construct also perpetuates the separation of cultural and natural resources as if they are two different entities. Within cultural landscapes these resources are often one and the same or at the very least are resources that have a symbiotic relationship. Isolating one from the other or ignoring how resources are connected only puts them at risk of not being conserved or preserved effectively. At Mendocino Woodlands the steep topography combined with significant winter storm events and an aging and clogged drainage infrastructure creates significant storm water drainage issues that are adversely affecting stream and river health given the amount of particulates that wash into the watershed, washing out roads and trails, and causing water damage to buildings and structures. Fixing this problem, which would involve the restoration of cultural resources - namely historic wood culverts, and natural resources - namely ephemeral tributaries, has not been addressed due to the overlap and complexity of how the resources are intertwined. It's a game of "not it" with the resources on the losing end.

Cultural Landscape Report Framework and Methodology

While the National Park Service methodology for developing cultural landscape reports effectively embraces the complexity and dynamic qualities of landscapes listed in, or eligible for listing in the National Register of Historic Places and under their purview and provides a critical framework for researching, documenting and analyzing all types of significant cultural landscapes, this focus remains too narrow when developing preservation treatment guidelines and recommendations for landscapes managed by multiple jurisdictions and/or interests. Often, landscapes are interconnected physical-



Figure 3. Circa 1940 photograph of a Camp One cabin set on a slope in a forest clearing.



Figure 4. Camp Two Gatehouse shrouded in the coast redwood forest and covered in moss.

ly and politically to watersheds, circulation networks, plant and wildlife habitats, and hills and valleys owned or managed by multiple interests. These connections often span much larger areas than that of the historically significant cultural landscape itself. However, the current methodology lacks sufficient guidance for these more complex landscapes. While most people who develop cultural landscape reports are trained as landscape architects to see and address these connections, not all are, and therefore they may not know to look beyond the cultural landscape being studied at the natural and political systems and processes it fits within. This prevents a cultural landscape report's treatment section from adequately addressing issues associated with more complex interconnected landscapes, which can adversely affect the successful implementation of the recommendations. In the case of Mendocino Woodlands, it is the byproduct of this construct that adversely affected the ability to dig deeper and develop more holistic cross-disciplinary solutions. The original focus of the cultural landscape report zeroed in on the cultural landscape and "natural" landscape characteristics. Features that exceeded the boundaries of the cultural landscape being studied were often pushed outside the purview of the project. The traditional methodology also fails to address the critical need that strategic planning, team-building, and facilitation have in managing cultural landscapes in the 21st century to address issues associated with the people and agencies managing the properties that sometimes overshadow the issues associated with the properties themselves.

Collaborations and Partnerships for Stewarding our Public Lands

In terms of managing our shared heritage, public-private partnerships are gaining popularity and rightly so for the benefits these collaborations can provide a site. However, just forming a partnership without understanding what each partner brings to the table or what limitations are inherent can severely limit a partnership's effectiveness and leave the management of a site at the short end of the stick. At Mendocino Woodlands, three groups are at the table, each with a different mission, constituency, and access to resources. The MWCA is the non-profit that manages the site and can apply for and receive grant funding. They also bring in revenue from groups who rent the site. However, they do not have access to in-house cultural and natural resource planning, design, or management expertise. California Department of Parks and Recreation is the owner, has cultural resource expertise and a deep understanding of park management, but they don't have a strong regional presence and are not involved in the day-to-day operations. A result of this kind of ownership is "out of sight, out of mind." California Department of Forestry and Fire Protection is not directly associated with Mendocino Woodlands, but owns and manages the land surrounding it and has a stronger regional presence than does the owner. They have more natural resource management expertise and equipment, but have traditionally had a strained relationship with MWCA due to perceived conflicting missions and priorities.

When these groups came together for a workshop that was added to the project scope to help identify and solve some of the issues discovered during phase one, an important issue was solved just by having these three groups at the same table at the same time. During the workshop a deal was struck to fix deteriorating roads that provide access to Mendocino Woodlands. As previously stated, poor drainage wreaked havoc on the roads, which created potholes and large washouts. Because of this poor condition, the one and only garbage and recycling company serving Mendocino Woodlands threatened to quit service when their trucks suffered several broken axles. Ending service would effectively shut down the camp, which in turn would have a disastrous effect on the maintenance of the site and preservation of its resources. During the workshop a representative of California Department of Forestry and Fire Protection mentioned that they have access to road building and maintenance equipment that could help solve the problem. MWCA gratefully accepted the offer and the roads were fixed in time for the camp's busiest season.

Recommendations

Even with the challenges and limitations outlined above, treatment recommendations were developed to address the changing environmental conditions and help guide all three groups towards next steps. However, there has been little to no progress on these fronts because the cultural landscape report falls short in recommending an implementation strategy. In this case, the workshop was a great first step. However, without additional strategic planning sessions, or a joint-management agreement among these groups, they are still not able to address complex issues holistically and pool their allotted resources.

The recommendations made in the cultural landscape report, which provide solid footing and a place to start,

addressed four major factors stemming from the site's changing environmental conditions:

- conservation and recreation were meant to co-exist at Mendocino Woodlands, but the balance has been lost;
- need for a forest management plan that conserves and preserves all resources, both natural and cultural;
- address changes in terms of the storm water and sewage systems on site; and
- create a joint agreement to rehabilitate the culverts to help with that effort.

Conservation and Recreation

Conrad Wirth, second director of the NPS and who earlier had directed the CCC state park camp development, clearly outlined that park lands would be set aside for conservation or recreation and that those distinctions should be clear. "The two types… might be joined or separated, and 'one might even completely surround the other, forming a multiple-use area.'"[5] However, planners "should 'always bear in mind the distinction' between the two types.'"[6] Recreation areas were selected to take submarginal lands that "'could be transformed to serve good recreational purposes near cities and towns in need of such areas."[7] "Certain areas, especially of larger state parks, were intended to remain undeveloped 'conservation' areas, analogous to the 'wilderness' zones of national park master plans. Roads, fire roads, and trails would be kept to a minimum, but would allow access to the most important scenic and other features of interest in the park."[8] With these principles in mind, recognition of the difference between recreational areas and conservations areas should be readdressed in terms of Mendocino Woodlands. The current management strategy should be reviewed and updated by a joint group of the property's stewards to ensure that it both reflects the original vision for the RDA and contemporary guidelines regarding preservation of cultural and natural resources. The updated management strategy should recognize different areas' uses and their distinct characteristics, and implement a management plan so that both types of areas are allowed to continue to fulfill their full potential as originally designated. For example, the camp areas should be treated with a recreation management approach.

Vegetation Management Plan

A vegetation management plan, specifically a forest management plan should be developed with all of the site partners to ensure that management issues related to many goals, that are articulated throughout this CLR, are addressed. These issues include, but are not limited to the future health of the forest, the relationship of managing the forest to the historic buildings, preventing wildfires, and ensuring that a diversity and balance of vegetation types continues in the future. In places where



Figure 5. Circa 1940 photograph of the morning flag ceremony in a meadow near the Dining Lodge that no longer exists.

historic resources and visitor use is high there should be an effort to manage the natural succession process so that there is a balance of wooded and open areas and the variety of spaces and features that contribute to the site's historic character are retained. Areas where there is less intense visitor use and/or no historic resources a process of natural succession should be encouraged.

The planning group should include representatives from each of the partnering stewardship groups, but also include people with expertise in cultural and natural resource protection as well as expertise in coastal redwood forests. It has been noted that more issues need to be addressed in relationship to the madrones and Douglas firs, than the coast redwoods. The plan should address pertinent issues raised over the years, including but not limited to what policies are in place for thinning trees, what the natural and cultural reasons would be to trigger tree removal, how to repurpose the lumber for historic building projects since it cannot be sold, and if there are any species of trees that need to be managed more intensely than others to ensure a balanced ecosystem and retain the historic setting for the camps.

Water and Sewage Infrastructure

Both the water and sewage system infrastructure are in dire need of attention. For example, the Camp III sewer system is near the failing point. It doesn't percolate properly and overflows. The septic tanks are located near the kitchen. Conversely the septic system at Camp II was updated in the 1980s and so no issues with the sewer system currently exist.

Patchwork solutions in place over several years barely keep the failing systems functioning, and require an extreme amount of staff time that could be better appropriated to other operations and maintenance tasks that are desperately needed. Unfortunately, it's only a matter of time before one of these patchwork solutions fails and an emergency or hazardous situation occurs. Discussions have started and actions been taken between the site's partners to address this critical need. In fact, upgrading the water filtration system is underway, if not already completed. Regardless of where this work is in the process, upgrading the water and sewage infrastructure should be a high priority and resolved in the near future. California Department of Parks and Recreation has stated it's a high priority.

In the core historic areas where this infrastructure is visible, rehabilitation guidelines should be followed. It should also be noted that some of the water lines are positioned along the road so any work to either the park road or the water line should look for ways to rehabilitate both or at the very least not damage either during the course of the project.

Culverts

Many of the historic culverts have failed or are failing due to the deterioration of the wood material and lack of cyclical maintenance that is needed to clear these passageways of debris. These failures are creating flooding events and diverting water flow which affects both critical cultural resources, such as the Park Road, and natural resources such as the plant and wildlife that depend upon a working hydrologic system.

Many studies have been completed regarding the impact these failed culverts are having on the natural resources of the area, namely the salmon. It is in the best



Figure 3. Circa 1940 photograph of a Camp One cabin set on a slope in a forest clearing.



Figure 4. Camp Two Gatehouse shrouded in the coast redwood forest and covered in moss.



Figure 8. Utilities are precariously situated on top of a fallen tree over the Little North Fork of the Big River which bisects cabin clusters in Camp Two.



Figure 9. Square wood culverts have deteriorated under the primary access road that connects the three camp sites which causes flooding and washouts.

interest of both the significant cultural and natural resources that the flow of water, which used to be accommodated by the culverts, is restored, but in a way that both ensures the health of the ecosystem and reflects the character of the historic features. For example, one solution may be to rehabilitate culverts so that the materials are more durable and will require less upkeep, but that appear similar to the design of the historic culverts. For another example, many stone walls situated along historic parkways do not meet current Federal Highway standards. A rehabilitation approach was used so the interior of the walls was fortified with a stronger material to meet these higher impact standards, while the height, scale, and exterior cladding remained in character with the look and feel of the historic walls. This rehabilitation work should be followed by a new maintenance regime that more regularly monitors and cleans the culverts.

Because of the impact of the failed culverts on both the cultural and natural resources, namely the salmon habitat, it's been mentioned that funding resources may be available through state and non-profit organizations that are targeted towards stream restoration and fish health.

What's next?

MWCA, which led the development of the cultural landscape report and has been leading the management and care of the site for nearly 70 years, does not have the resources or skills required to address the complex set of inter-related issues. Nor does it appear that either of the State of California agencies have the funding or political willpower to accomplish this work. The cultural landscape report identified a growing gap that is adversely affecting our historic resources, a failing of the process, and traditional tools that are no longer serving the places we are working to preserve and maintain. The reality of limited resources is not lost, nor is the intent to point out these shortcomings come from a desire to swim in a sea of naivety. However, it is a place like Mendocino Woodlands, which is a National Historic Landmark with incredibly high integrity that is well loved by a devoted user group and clearly embodies the values of our public lands as models for conservation and recreation, that should be the focus of our resources and a testing ground for adopting new tools and models on how to preserve and manage our cultural landscapes.

As the lead agency for providing technical assistance to National Historic Landmarks, the National Park Service should provide leadership in pulling together multi-disciplinary design firms, that can forge new paths for places like Mendocino Woodlands that requires not just historic architects and landscape architects, but biologists, strategic planners, foresters, facilitators, consensus-builders, grant writers, and others who together can develop and implement solutions. The dream is that a small, multi-disciplinary team, with members from all three stakeholders can work alongside a multi-dis-

ciplinary design and planning team that has been contracted to:

- develop and implement a forest management plan that opens the canopy in places where buildings and structures need sunlight to help ensure the longevity of their original materials, and that creates multiple edge conditions that are proven to be so beneficial for increasing plant and wildlife diversity;
- design and implement a storm water and sewage design plan for the site that preserves the character of the historic system, takes the current drainage patterns into account, and designs a system of streams, wetlands, roads, and trails that work together and not against each other to prevent washouts and high particle content in the Big River watershed;
- form a new managing partnership that recognizes the strengths and weaknesses of each stakeholder so that resources and expertise can be more effectively and sustainably allocated to the site;
- document the methodology and its process as a case study to learn from aspects that worked and those that didn't, to supplement cultural landscape preservation planning, design, and maintenance guidance to provide stewards across all agencies and non-profits a more effective model.

Mendocino Woodlands is not an isolated case, but a harbinger of what our work in preserving and managing historic resources will require in the 21st century. It is up to professionals working at these sites to push the boundaries and use Mendocino Woods, and places like it, to test new models for developing and implementing treatment recommendations and designs that recognize gaps among partners and agencies and use these multiple sources to put our national treasures on a sustainable maintenance path.



Figure 10. An ephemeral stream bisects a trail and rushes by Camp One cabin during a spring rain storm.

Endnotes

1 James, Ronnie and Ethan Carr. Mendocino Woodlands Recreational Demonstration Area National Historic Landmark Nomination Form. Washington, DC: Department of the Interior, National Park Service, 1997.

2 James, Ronnie and Ethan Carr. Mendocino Woodlands Recreational Demonstration Area National Historic Landmark Nomination Form. Washington, DC: Department of the Interior, National Park Service, 1997.

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4 Matthews, Laurie, Christina Frank and Robert Z. Melnick. Mendocino Woodlands Cultural Landscape Report. Portland, Oregon: MIG, Inc., 2014, 162.

5 United States Department of the Interior, National Park Service, National Historic Landmark documentation, 1997.

6 United States Department of the Interior, National Park Service, National Historic Landmark documentation, 1997.

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8 United States Department of the Interior, National Park Service, National Historic Landmark documentation, 1997.

Assessment and Preservation of Mission 66 Visitor Centers

Timothy A. Mitchell, Hennebery Eddy Architects, Inc., Portland, Oregon



Figure 1. Mission 66 Advertising Graphic (Image courtesy Yosemite Museum, National Park Service)

Abstract

This paper provides an overview of the characteristics which contribute to the significance of the Mission 66 visitor center, providing case studies of rehabilitation projects at Sequoia-Kings Canyon and Olympic National Parks, discussing the benefits of a rehabilitation treatment, and proposing guidelines for assessing, preserving and sensitively altering these unique buildings. We will focus on Mission 66 visitor centers because –

- They are a unique building type invented by the National Park Service (NPS) during the Mission 66 era
- They are public buildings from the Mission 66 era
- The greatest design efforts were applied to visitor centers
- Their modern character-defining features vary from those found in NPS rustic buildings and are often difficult to identify
- The construction materials used on these buildings are approaching or have exceeded their intended lifespan and will require different preservation efforts than those of previous building eras
- They are in jeopardy of significant modification and demolition due to changing visitor and park expectations as well as a general lack of awareness regarding their significance

The Mission 66 period of development in the national parks created a new multi-purpose building type, previously unseen in park architecture, to house, centralize, and streamline visitor services – the Visitor Center. Prior to the Mission 66 era, visitor services such as park information, restrooms, museum displays, and concessioner facilities were randomly scattered in ranger stations, park museums, hotel lobbies, and gift shops. The new visitor center buildings provided visitors with a single location to find park information, enjoy interpretive programs and exhibits, purchase mementos, and utilize restroom facilities. Through intentional planning and steadfast modern design, the visitor center served as the embarkation point for visitors to understand and enjoy the park within a sequenced framework of organization and efficiency. Though not immediately apparent to visitors already familiar with the National Park Service rustic building tradition, the modern-style visitor centers were designed to harmonize with park landscapes while enhancing connections between park resources and visitors. While the majority of the 112 visitor centers built during the Mission 66 program are still functioning and serving visitor needs, many have been irreparably altered or demolished to accommodate changing park requirements and increased visitation numbers. Consequently, there is an imperative need to understand both the unique significance and the requisite preservation of these park resources.

Introduction

The Mission 66 Program was a multiple year (1956-1966) infrastructure and building campaign undertaken by the National Park Service (NPS) to modernize the national park system. The completion date targeted the year 1966 to coincide with and commemorate the fiftieth-year anniversary of the establishment of the National Park Service. National parks and monuments across the United States added new campgrounds, restroom facilities, employee housing, guest lodging units and administrative facilities. The most public of this new construction was the introduction of a new multipurpose building to house and centralize visitor and administrative services – the visitor center. Previous to the Mission 66 era, visitor services, such as park information, restrooms, and interpretive displays, were randomly scattered in ranger stations, park museums, hotel lobbies, and gift shops. The new visitor center buildings provided park visitors with a single location to find park information, enjoy interpretive programs and exhibits, and utilize restroom facilities. By intentional planning and design, the visitor center was created as a starting point for visitors to understand and enjoy the park. Though not immediately apparent to visitors familiar with the NPS rustic building traditions, the modern style visitor centers were designed to harmonize with park landscapes and enhance connections between park resources and visitors. Most of the 112 visitor centers built during the Mission 66 Program are still functioning and serving visitor needs. However, to accommodate changing park requirements and increased visitation needs, five have been irreparably altered, 16 have been demolished, and 16 have been modified.1 This paper is intended to provide both an overview of the characteristics which contribute to the significance of the Mission 66 visitor center and guidelines for assessing, preserving and altering these unique buildings.

Historical Context

The Mission 66 Program originated from the need to modernize the national parks after World War II. The parks had not received adequate funding since the New Deal era and park infrastructure was in significant disrepair suffering from neglect and overuse. Though visitation numbers had increased dramatically in the postwar years, park facilities, including roads, campgrounds, restrooms, staff offices, staff housing, and maintenance buildings had barely changed since the 1930s. 2 The parks were suffering from their popularity and the resulting visitor impact on both the natural and cultural resources was threatening the essential qualities of the parks. As conceived by NPS Director Conrad Wirth and leadership staff, the Mission 66 Program was intended to dramatically reposition the NPS for the modern age by allocating multiple-year congressional funding towards repair and improvement of park infrastructure. The “mission” was to update the parks for both comfort and efficiency while providing greater control of park use and resource conservation. Through the decade between 1956 and 1966, over a billion dollars was spent on the modernization efforts with recognizable improvements at most park units. 3 As a direct result of the program, today’s parks are better organized with roads capable of handling large numbers of automobiles and public use facilities strategically located to accommodate and inform park visitors. While the Mission 66 Program formally concluded in 1966, the impact of the program has a visual and functional legacy lasting into today’s national park experience.

The changing needs of the national parks after World War II demanded new approaches to visitor services, administrative functions, and facilities maintenance rendering the traditional rustic building layout inadequate. Mission 66 planning principles were organized around the conservation of resources through centralization of facilities and services, including prescriptive circulation patterns and grouping of building functions. Rather than provide separate buildings to house staff offices, restrooms, interpretive displays, and park information, NPS designers combined these activities into a single, highly efficient building type which came to be known as "the visitor center." Modeled after the postwar retail shopping center, the visitor center was a completely new building type invented by the NPS to serve a distinct park need. Through centralization of services at strategic locations in the parks, the NPS planners believed they could limit the impact of ever increasing visitors while also reducing costs associated with the delivery of these services.

Buildings built during the Mission 66 Program are identifiably modern in appearance when evaluated alongside the traditional park rustic architecture. This modern character was both a direct outgrowth of the predominant architecture being constructed throughout the United States during this period and an embrace of the principles associated with Modernism. Modern style architecture had been steadily gaining popularity in the United States since the 1930s but coalesced into the predominant design philosophy among practicing architects after World War II due to the functional, social, and material demands associated with postwar society. This "modern" architecture emphasized simple, unadorned volumes and surfaces employing materials such as concrete, metal and glass. The use of low-slope or flat roofs allowed buildings to rely less on roof shape to define the architectural form while placing greater emphasis on horizontal expression. Interior spaces were not organized into discrete rooms separated by walls but were designed to maximize spatial overlap between room functions and allow for greater connections between the interior and exterior. Modern buildings attempted to blur the distinction between building and site through a spatial integration of interior and the exterior. To emphasize this integration, building materials and colors were selected to express the experiential qualities of the site in an abstract fashion. Tangible material quality and the expression of craft were less important than the conveyance of material character to the overall building design. At their very essence, modern buildings strived towards a "dematerialization" of form whereby the building transcends simply being an object placed on the site and becomes an integrated element of the site. This approach to building design, though consistent with the core values of the National Park Service architectural tradition, represents a radical shift in philosophy and provides a different, more sublime resource experience.

NPS Design Tradition

NPS design tradition in the decades prior to the Mission 66 period had been founded primarily on landscape design principles which placed buildings picturesquely within the natural scenery and connected buildings to their settings with the use of indigenous construction materials. The buildings mimicked their surroundings and appeared to be growing out of the landscape. A granite boulder or cedar log used in a building were made to appear as if they had been derived from the adjacent rock outcropping or grove of trees. Park building designers strived to create buildings which complemented the natural scenery by inserting a manmade version of the natural landscape into the scenery. Programmatically, the interior arrangements of rooms did not control the exterior composition of building facades. Exterior doors were located to provide direct access to discreet rooms organized by functional need and windows were placed to provide views of exterior scenery. The visitor was expected to appreciate the building as viewed from the exterior with interior program subordinate to the overall picturesque composition.

Mission 66 visitor centers adapt and extend this traditional approach to NPS building design. The functional requirements of the program in tandem with an integrated connection to the resource are the primary design concerns and express themselves repeatedly throughout the visitor centers. Buildings are carefully oriented to receive visitors from parking areas but often present an architectural face which appears non-hierarchical and directionless. Building organization is controlled by visitor movement with the circulation from the parking area through the building precisely choreographed for maximum efficiency. Restrooms are placed to intercept visitors prior to entering the main lobby space and entry doors are carefully located for direct connection to the information desk. Visitor circulation flows from the information desk through the interpretive exhibit and audio visual area and out towards the

resource. Importantly, the modernist approach to design of overlapping spaces supports the needs of visitor movement by grouping the programmatic functions together, ordering them in a hierarchy, and establishing a sequence for their experience. The interior spatial experience is primarily a manifestation of the program function. By placing the information desk in a central location visible through the glass entry doors, the visitor is connected spatially across the entry from the outside of the building to the inside. Similarly, the exhibits area is physically adjacent and blended with the information area allowing the ranger at the information desk to connect visitors to the exhibits both verbally and spatially.

The prescriptive programmatic organization of the visitor center is blended into a layered experience which provides for the essential needs of the visitors (information, interpretation, restrooms and retail) within a choreographed sequence of resource experience. When successful, individual visitor centers capture the "essence" of a resource experience and convey these qualities in built form.

Conveyance of a resource's "essence" is achieved through the use of several design strategies including **spatial interpenetration**, **parallel circulation sequence**, and **color or texture abstraction**. While the use of spatial interpenetration strives to connect interior and exterior space, parallel circulation sequence mimics the dominant patterns of movement present in the resource. Color and texture abstraction provide "echoes" of the resource, anchoring the visitor center to its context.

In modern architecture, a new term is employed to describe the particular connection between exterior and interior spaces. Described by the architect Richard Neutra as "spatial interpenetration,"[4] the success of this spatial connection relies on precisely designed relationships between roof and floor surfaces in combination with large wall areas of transparent glass. The desired outcome of spatial interpenetration is to blur the perceived spatial boundaries allowing building occupants to experience the building interior and landscape exterior as one unified space. While the NPS rustic building creates a visceral connection to the landscape by emulating and complementing the material qualities of its surroundings, the Mission 66 visitor center absorbs the surrounding landscape and establishes an experiential spatial connection between building and site.

Many of the Mission 66 visitor centers are located in park areas where the peculiarities of terrain create vivid resource experiences. Mission 66 designers utilize the unique circulation patterns inherent in these areas to emphasize the connection between building and site. At the Walnut Canyon Visitor Center in central Arizo-

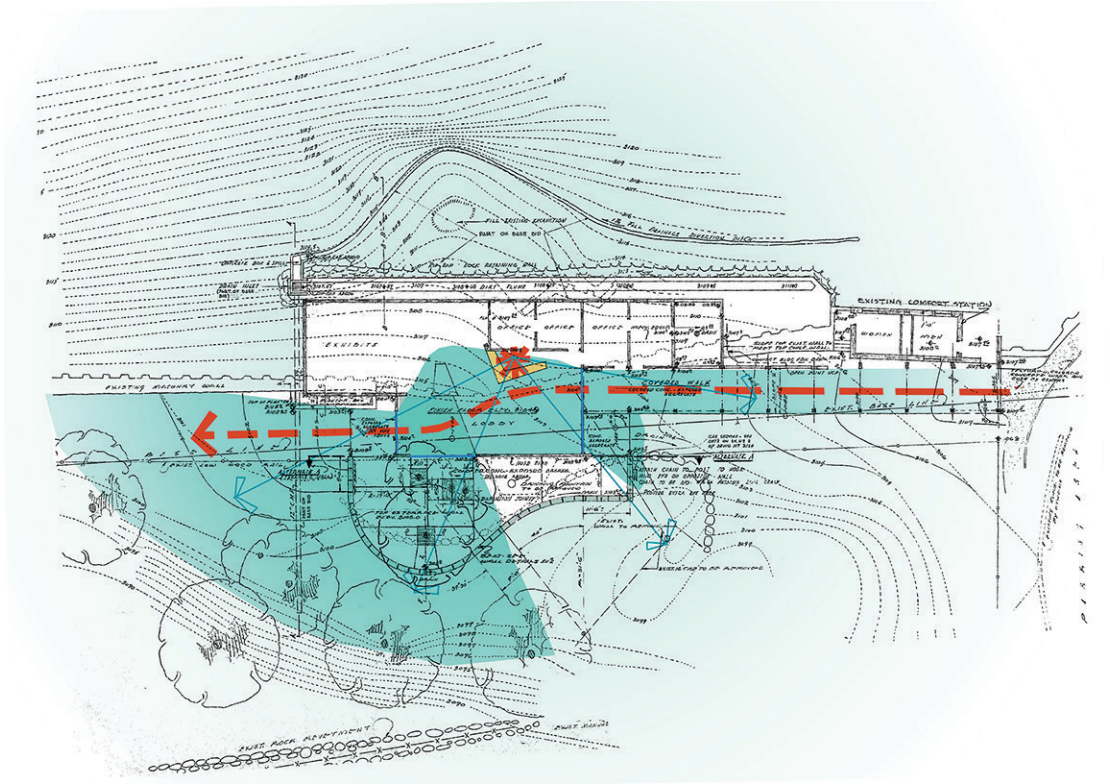


Figure 2. Circulation and Spatial Organization at Montezuma Castle National Monument Visitor Center



Figure 3. Material and Form "Echoes" at Capitol Reef National Park Visitor Center



Figure 4. Historic Image of Hoh Rainforest Visitor Center (Image courtesy Olympic National Park, National Park Service)

na, NPS architect Cecil Doty utilized the precipitous location of the visitor center to create a parallel circulation sequence. The visitor traverses stairs and level changes within the building that anticipate the actual steep vertical circulation through the monument. This technique seeks to draw the intangible qualities of the resource into the building and emphasize the continuum of a singular experience over one separated between building and landscape.

The selection and employment of materials used in Mission 66 buildings further amplify this unification of building and site. Machine-made materials are often smooth with minimal articulation and employed for use in large, plain surfaces such as floors, walls, and ceilings. Joints or breaks between materials are not accentuated and any discernible patterns are the rational outcome of material size and layout. Highly textured materials are typically either natural stone or concrete masonry used as modern veneer wall surfaces to create deep, patterned shadows. Material colors are abstractions of the colors found in the surrounding landscape and most often are applied in a limited and subdued palette across the entire building. The design goal with the selected materials and colors is to establish echoes of the resource, figurative rather than literal connections conveying the essence of the resource, which anchor the building to the resource and underpin the connections established with other design strategies.

Case Studies

Olympic National Park

Designed in 1962 by the National Park Service Western Office of Design and Construction (WODC), the **Hoh Rainforest Visitor Center** provides information and retail services for the 415,000 annual visitors who travel to the Hoh Rainforest. The visitor center was determined eligible for nomination to the National Register of Historic Places in 2002 as significant under both criteria A and C, for both its association with the Mission 66 period of building development in the national parks and for embodying the distinctive characteristics of the Park Service Modern period of architecture. In addition to the listed criteria, the building is also directly associated with the work of NPS architect Cecil Doty at the WODC and represents a notable example of a regionally adapted modernist style visitor center.

A first impression of the visitor center is best described as subtle and unassuming with the only discernible formal gesture being an asymmetrical roof form with a directional overhanging eave. As one approaches the site from the road, the visitor center appears as a horizontal, greyish-green building tucked under the extensive tree canopy. Nothing about the building strongly conveys the notion of "visitor center." Rather, the building appears to turn its back on the approaching visitor and face the surrounding forest. The pedestrian walk to the building is understated but direct and the entry porch unadorned yet accommodating. However, once the visitor enters the building the primary design intent becomes strikingly evident. The "backside" of the building is constructed almost entirely of glass and showcases a panoramic slice of the surrounding rainforest. The primary goal of the Hoh Rainforest Visitor Center is to transport the visitor into the resource by absorbing the spatial boundaries of the forest into the building's lobby. The oddly protruding roof form, as viewed from the exterior, suddenly provides purpose and intent when experienced from the interior of the building. The wood and glass window wall is set back from the roof edge providing protection from the weather and, more importantly, to shape an overlapping space that includes landscape and lobby. The floor

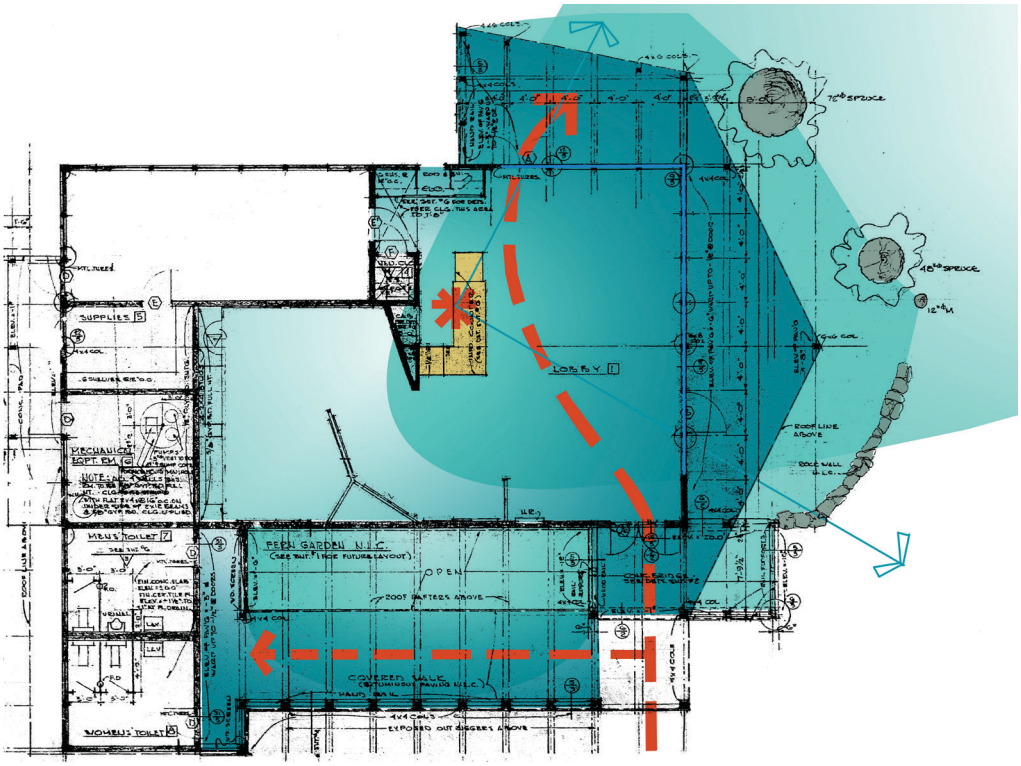


Figure 5. Circulation and Spatial Organization at Hoh Rainforest Visitor Center



Figure 6. Spatial Interpenetration at Hoh Rainforest Visitor Center Lobby

plane is perceived as continuous to the exterior and vertical walls are glazed allowing the surrounding forest to establish the spatial boundaries. Although small in size as compared to most Mission 66 visitor centers, the Hoh Rainforest Visitor Center represents an extremely successful execution of spatial interpenetration as appropriated for a park setting.

Recognizing the significance and primacy of this experience, the rehabilitation project sought to preserve the character-defining features which create this experience. The floor, roof and glass walls were required to retain their proportional relationships and new glass materials were chosen to minimize interior reflections and any perception of thicker insulated glazing. Floor finish color was chosen for compatibility with the exterior soil and the original green and ochre color scheme used on wood elements was retained. In keeping with the rehabilitation treatment, which emphasized the dominant experiential qualities associated with the glass window wall, new artificial lighting was carefully selected and discreetly located to enhance the character of the exposed roof structure. Built-in furniture was placed at the back of the lobby space to provide unimpeded viewing through the window wall.

Sequoia and Kings Canyon National Parks

The **Ash Mountain Visitor Center** (formerly the Foothills Visitor Center) at Sequoia National Park was built in 1964 with a design provided through the NPS WODC and construction documents assembled by Walter Wagner and Partners of Fresno, California. The building was constructed by Lewis C. Nelson and Sons of Selma, California. The building appears to the visitor approaching from the west as a single story, low-slope roof building constructed of earth-tone concrete masonry walls with limited glazing. But, as the building is approached from the southeast, one is presented with the contrasting image of a two-story building constructed of a bright yellow curtain wall with horizontal bands of sliding windows spanning between concrete masonry end walls. The building required upgrades to the original heating and cooling system installed in 1964 and energy estimates suggested an improvement in the thermal performance of the non-insulated curtain wall would significantly reduce the overall energy use of the building.

However, the building was a designated park historic resource eligible for the National Register and a contributing structure to the Ash Mountain Historic District whose period of significance spans from 1924 to 1967. Initial rehabilitation design called for a complete replacement of the curtain wall with a high-performance, insulated metal panel wall but this solution required an unacceptable loss of historic fabric. During the assessment phase, the architectural design team evaluated the existing curtain wall and documented the energy performance deficiencies as well as the presence of asbestos in the bright yellow curtain wall panels. The aluminum framework of the curtain wall was found to be in excellent condition with only minor corrosion in isolated locations. The assessment also evaluated the design integrity of the curtain wall and determined that the contribution of the existing yellow wall panel to the overall design, despite being original fabric, was less a factor of its materiality but, more essentially, a factor of color expression. The smooth, bright yellow infill panels serve as a color abstraction of the dry yellow grass ubiquitous throughout the surrounding landscape. The abstracted yellow panels are an "echo" of the surrounding resource anchoring the building to its environment. The need to preserve and retain the original cement-asbestos wall panels was found to be of minor importance when evaluated against the benefits of an improved thermal envelope and removal of hazardous material. Rather than preserve all material fabric, the architectural team worked with the NPS to retain the intact, aluminum framework of the curtain wall and use the existing mullions as an in situ layout tool for new, color-matched yellow, insulated wall panels and compatible aluminum sliding windows. The appearance of the replacement wall from the exterior of the building is almost identical to the original with the added benefit of measurably improved energy performance.



Figure 7. Ash Mountain Visitor Center Curtain Wall

A Changing Mission

By the close of the Mission 66 Program, the NPS was moving in a strategic direction away from large scale planning efforts and embracing the virtues of environmentalism. The goals associated with the Mission 66 Program had been fulfilled in many respects – more efficient park circulation, concentration of visitor use and centralization of services – but the fascination with the modern age and eagerness to employ all things modern became tempered by practical concerns funded with modest budgets. With the NPS more focused on conservation issues than development campaigns, the ever increasing numbers of visitors slowly outpaced the ability of the "modern" visitor centers to accommodate their needs. The public use spaces (lobby, exhibits, porch and restrooms) required regular modifications to respond to these needs but were too often restricted by small floor plans and inflexible architectural design. The greatest challenge facing the ongoing preservation of Mission 66 visitor centers is the ability of the buildings to provide appropriate space for all of the required uses contained within their footprints. The innovative concept of centralization of services inherent to these visitor centers may, ultimately, hinder their continued use.

Evaluating Significance and Integrity

The determination of significance and assessment of integrity for Mission 66 visitor centers follows standard

preservation guidelines and practice but requires additional considerations not typically applied to buildings which predate the modernist era. As a recommendation, the NPS should work towards completion of the National Register of Historic Places Multiple Property Listing initiated in 2004 so as to provide some level of protection for all of the extant visitor centers. While listing on the National Register does not prevent demolition or modification, the historic association undoubtedly elevates the status of the resource within the NPS asset portfolio and mandates evaluation of the resource prior to any significant project. Additionally, the forthcoming update of the Secretary of the Interior Standards for Rehabilitation specifically mentions the term "spatial relationships" suggesting the importance of understanding and retaining the qualities which contribute to these relationships. Finally, as a step towards facilitating the task of documenting these resources, the NPS should develop standardized tools for evaluating significance and assessing integrity tailored to modern resources. The following are considerations and recommendations to include when developing these tools:

Step 1 – Identify significance and design intent

Significance is established through historical research and analysis by preservation professionals and often conveyed by being listed on the National Register of Historic Places. In lieu of an individual listing, many buildings are considered contributing buildings to a historic district listed on the National Register. In the case of most Mission 66 visitor centers, the predominant significance will be established by connection to the Mission 66 Program as part of the "…events that have made a significant contribution to the broad patterns of our history" as well as "…embody distinctive characteristics of a type, period, or method of construction…" (National Register for Historic Places, Criterion A). Many Mission 66 visitor centers are individually significant and listed on the National Register with the determinations of the significance carefully detailed in the nomination. But, most are not listed and will require further research, documentation and analysis to provide stronger arguments for significance beyond that provided by Criteria A. The documentation of significance for modern buildings would need to include a characterization of **design intent**. Design intent can be described as the predominant design goals established during the design phase and realized in the final construction. Much of the design intent record may not exist in traditional forms of documentation and will require evaluation using diverse tools such as oral histories and analysis of design process information (conceptual sketches, schematic and design development work products, design narratives, construction change records and physical observation and evaluation).

Step 2 – Assess historic integrity

Assessment of integrity requires a combination of research and assessment of existing conditions to both document the amount of original construction material remaining on the structure and record the physical changes which have taken place over time. Drawings, photographs, non-destructive physical investigations and written descriptions are used in combination to establish integrity.

While most pre-World War II historic buildings possess identifiable physical features with recognizable craftsmanship, modern buildings typically employed machine-made materials assembled without discernible manmade craft. The materials used in modern buildings were designed to be replaced as they deteriorated over time and may only be peripherally relevant in conveying building integrity. Rather, a thorough evaluation of a building's **design integrity** provides greater relevance towards establishing fabric integrity and authenticity of original design intent. 6 The following are common considerations for evaluating design integrity in Mission 66 visitor centers:

- **Physical relationship to the resource**
  - Many visitor centers were located to take full advantage of the dramatic views or connections to the natural or cultural resources. Are these views and connections still present?
  - The form of the building as an echo of the resource was typically one of the strongest design connections made between the resource and building. Have any of the elements which contribute to the form of the building been modified altering the connection between building and resource?
- **Spatial experience**
  - Is the overlap of space between the entry, lobby, and exhibit spaces perceptible?
  - Is the spatial interpenetration connection between exterior and interior perceptible or is the experience obscured by objects or building modifications?
- **Layout and Circulation**

    - Are the major programmatic elements maintained in their original locations?
    - Have any new programmatic elements been added to the building and how do they integrate with the original program?
    - Can the original concept for visitor movement (parking – entry - information desk – exhibits - resource) through the building still be experienced?
- **Materiality**
    - Are the original types of materials (concrete, metal, glass, wood, and stone) still used in their original locations?
    - Does the building retain its original colors?
    - Have material changes modified the overall expression and/or experience of the building and are the "echoes" between resource and material still perceptible?
- **Physical relationships of building elements**
    - The relationship between the roof, floors, and walls is often designed to support a spatial experience connecting the user to the resource. Minor changes to these elements could alter or eliminate this experience.
    - The joints between building materials are part of the modern architectural expression and their size is carefully designed. Changes to material joints, reveals, overlaps could significantly alter the building's character.

Step 3 – Identify Character Defining Features/ Contributing Elements

A helpful tool to initiate during the building assessment phase is a table which lists the elements of the building (roof, walls, windows, doors, ceilings, exposed structure, etc.) and relates them to the overall expression. A roof may be determined to be the strongest contributing element to the overall expression requiring additional considerations during any repair or alteration project. This importance would be noted in the table with a "high" or "strong" designation along with a note describing its importance relative to the overall expression. The table can serve as both a documentation tool of the character defining features and a vigilance checklist during future project design phases.

In tandem with a table documenting element relationships, assessment of past modifications should describe their impact on the original design. Often minor modifications have had large impacts on original building design and spatial experience. For example, the infill of an exterior porch space with solid walls for use as an interior space effectively severs the physical and spatial connections between the outdoor landscape and the porch. The implications of the infill may even ripple into other areas of the building.

As more Mission 66 visitor centers are assessed for their significance and integrity, patterns will undoubtedly emerge indicating the typical building areas where modifications have consistently compromised the overall design integrity. As the needs of concessions, association sales, interpretive programs, and employees change and place demands on the use of interior spaces, the original public use spaces, such as lobbies and transition spaces, are often subdivided into discreet spaces and rooms functioning independently from the overall building program. The end result of the subdivisions is a gradual diminishing of the spatial overlaps inherent to these modern buildings. The following are building areas where modifications are likely to occur:

- **Gift shops** were typically not programmed into original floor plans but are now present in every visitor center. Larger lobby spaces are subdivided to provide space for retail merchandise obscuring or eliminating spatial overlap.
- **Exterior porches and plazas** were a significant design component in visitor centers providing visitor waiting areas and, importantly, transition space between the exterior and interior building spaces. New additions which enclose porches or build out into plazas will alter the spatial relationship between existing spaces and the exterior landscape. Depending on the use of parallel circulation



Figure 8. Gift Shop Addition in Exterior Plaza at Montezuma Castle Visitor Center

sequencing in the building, a new addition could radically change or eliminate the original circulation experience.

- The **interpretive exhibits** installed for the Mission 66 Program were modest in size and required limited electrical power and lighting. As interpretive programs change, the physical size requirements of exhibits as well as their electrical and audio visual demands increase. The subdued expression of the modern architecture can be overwhelmed by the electronic sophistication of new technologies and lighting.
- Original building plans typically allocated a minimum amount of space for **restrooms**. Contemporary accessibility needs require restrooms to be modified to accommodate all users. Restroom areas may grow into adjacent spaces creating a spatial ripple effect across the building.
- Visitor centers were built in an era of inexpensive energy utilizing inefficient equipment and materials as compared to contemporary standards. Energy upgrades typically abandon the original **mechanical systems** and introduce new equipment, ductwork, piping and controls into the public spaces. Window glazing and wall materials are replaced with modern, insulating assemblies which change window transparency and thicken walls. The installation of new windows and wall or ceiling insulation will invariably impact existing, original finishes.

As with other modern buildings, Mission 66 visitor centers appear simple in design and construction but are often complex, highly designed and detailed structures. Easy fixes to deteriorated assemblies will generally fail in a short period of time or garnish undesirable attention. The layered construction assemblies associated with traditional rustic buildings allow for gradual deterioration over extended periods of time without noticeable change in the overall visual character of the building. Modern buildings are naked in comparison to their older siblings broadcasting vividly any waterproofing or settlement issues. Unfortunately, a visually apparent problem on a modern structure often indicates a global issue requiring expensive corrective repair. Movement between modern building materials is accounted for with expansion joints rather than an overlap of materials. These joints, often placed in highly visible locations, require regular (i.e., annual) maintenance of sealants to ensure weathertightness and avoid unprotected material deterioration.

Contemporary perceptions of Mission 66 visitor centers range from adoration to vehement distaste. Much of the negative feeling directed toward visitor centers originates from longtime building users frustrated with the antiquated electrical and mechanical systems and dated wall finishes and paint colors. Many visitor centers have not been maintained properly over the years leading to roof failures, broken pipes, and deteriorated structure. While the traditional construction associated with rustic era buildings allowed for a range of interior renovations within the boundaries of rehabilitation guidelines, Mission 66 visitor centers were, by design, complete expressions allowing for limited modification without fundamental upheaval. Coupled with reduced maintenance budgets, the visitor center layout and construction were destined for inadequacy and material failure within a generation. Public opinion of the appropriate architectural expression in the parks has changed over the years and will inevitably move towards an embrace of Mission 66 resources. A comparison of Mission 66 architecture with the older rustic architecture of the parks is inescapable but initiates a healthy interpretive opportunity describing the evolving tradition of NPS design.

Conclusion

The Mission 66 Program was an enormous undertaking requiring the coordinated efforts of thousands of NPS employees and private citizens towards the revitalization of the National Park Service. The program was conducted in an era when American aspirations for problem solving and national pride were at their peak and innovative ideas were pursued with rigorous zeal. While the Mission 66 Program is often associated with an unrealistic expansion of the national park system in response to overwhelming visitor demand, the architecture of Mission 66 has to be seen within the context of 1950s design exuberance and the belief that sophisticated design can provide creative solutions which contribute to the ongoing enjoyment of the parks.

In this centennial year of the NPS, the majority of Mission 66 visitor centers are beyond the fifty-year age mark and many have not received the requisite attention to truly understand their significance and condition. While many of the material and system features of the buildings have aged and are in dire need of replacement and upgrade, the design components embedded within the buildings continue to convey their original aspirations. The tangible, physical needs of these buildings can be addressed with appropriate, regular mainte-

nance funding, but the intangible, experiential qualities require constant attention and vigilance if they are to be preserved into the future.

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1. Rebecca Kinsley, "Mission 66: Where are We Now? The Preservation and Re-use of Mission 66 Visitor Centers" (Masters Thesis, Columbia University, 2013).
2. Ethan Carr, *Mission 66: Modernism and The National Park Dilemma* (Amherst: University of Massachusetts Press, 2007), 3-4.
3. Carr, *Mission 66: Modernism and The National Park Dilemma*, 335.
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5. People often comment that the Mission 66 buildings don't seem to fit in with the rustic buildings. These types of comments are representative of the fundamental distinction between rustic and modern structures in the parks. Rustic buildings are differentiated from the landscape by being placed as objects in the landscape, modern buildings are integrated into the landscape by blending in. Many people cannot describe a Mission 66 visitor center which they have recently visited because, by most accounts, the building was essentially nondescript. Ironically, the buildings were designed to be forgettable and that may be their most significant contribution to the visitor experience.
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The Development of the NPS Standard House Plans and Adaptations: The Early Seminal Designs, the Standard Designs, and their Modification

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Figure 1. Ranger at ranger cabin near north boundary at Crater Lake NP in 1917. NPS Historic Photograph Collection Archives Catalog Number: HPC-001036, Harpers Ferry Center, https://www.nps.gov/hfc/cfm/npsphoto.cfm (5/23/16).

Abstract

Housing in the parks prior to Mission 66 was not a source of uniform pride for the National Park Service. Housing ranged from tents to exquisitely executed stone masonry houses, but the vast majority of employees resided in substandard units that lacked both the basic comforts and modern amenities that post-war America had come to expect. The housing design programming effort was particularly notable for including significant input from residents of park service housing, organized and led by residents and staff. The first house designs, largely the work of John Cabot, utilized modernist materials and concepts, were sensitive to the local climatic conditions, and practiced respect for the geomorphology in site planning. Discussed examples were executed at several parks, such as Zion (early), Lake Mead (adapted to local climate), Volcanoes (regional

style), and Glacier (early and Standard). The early designs of Cabot became the basis of his Standard House Plans, with just a few models to serve all park locations. Later amended, the standard models were intended to provide the comforts and amenities that had become the standards of post war America but did not provide the accustomed sensitivity to local climatic conditions.

The Development of the NPS Standard House Plans and Adaptations: The Early Seminal Designs, the Standard Designs, and their Modification

Mission 66 created many changes in the quality of the park experience for visitors such as improved interpretation of resources, new visitor centers, new guest lodging, and improvements in other facilities such as roads, bridges, and campgrounds. From the standpoint of park employees, the most important improvement in facilities may have been in employee housing. Of interest are both the residential designs and construction, and the process of design and how the process responded to the values of the employees, their expressed needs, and adaptation to the landscape and environmental factors of the site.

With the increase in visitation to the parks of the post-World War II period came a gradual increase in numbers of park employees and a significant increase as the Mission 66 program began implementation. There was another increase -- the awareness of the park employees of the quality of the park located employee housing. When everything else was being improved, shouldn't their housing also be improved? Could their housing include the modern conveniences widely touted as key elements of the new housing of the post-war boom?

What permanent housing that existed in 1945 had been mostly created during the New Deal Era, primarily with the available labor of CCC workers and the use of locally available materials, all executed in the Rustic style. Many of these houses are quite stunning. However, other employees lived in tents and generally lesser quality housing.

The development of the plan for Mission 66 was completed behind closed doors, by a select few individuals, and park input was embodied in a short synopsis of needs. It was not an open process and it did not engage either the conservation organizations or the "rank and file" of the National Park Service (NPS). This style of decision-making was probably familiar to the Commander in Chief, President Eisenhower, as it was typical for the military. Later in the Mission 66 program years, a new young President John Kennedy brought in new ways of doing things and was impressed with how the ORRRC leadership engaged a broad spectrum of the country in determining recreation pursuits and responses. This process was in marked contrast to the modus operandi and leadership personalities with that of Director Wirth and the NPS.

However, unlike the overall plan, the housing portion of Mission 66 was different; the needs for housing were based on a survey and the housing plan developers received opinions from a stakeholders group about what the new housing should contain.

At the 1952 Superintendent's Conference at Glacier National Park, the wives of park employees organized as the National Park Service Women's Organization (NPSWO). They received a request from Conrad Wirth, the new director, to assume a leadership role in determining the need and character of new employee housing and the condition of the existing housing. Under the leadership of Herma Albertson Baggley, who was the first woman in the Park Service to hold a permanent position as a naturalist, the group rapidly organized and proceeded to document the conditions of the existing housing. "Half of the service's housing was below community norms, and only 3 percent was above. Half of the housing lacked one or more of the basic utilities of electricity, inside running water or toilets."[1] Ten percent of the employees lived in tents, somewhat common in parks open only during the summer, such as Yellowstone. With limited resources, existing residences were often overcrowded and any shelter, such as barns and stables, was put to use as housing. The condition of the employee housing was systematically documented by the NPSWO, a key factor in the credibility of the results.

The second part of the effort included a survey of 1,000 employees (with 2,000 dependents) to gain an in-depth understanding of the detailed issues of the substandard housing and its effects on the Service. Examples included the proximity of housing to public areas causing a loss of privacy, and the poor quality of the housing leading to inordinately high rates of employee turnover. These findings were an important foundation piece for the entire Mission 66 Program, assisting to convince the Bureau of the Budget and the Congressional Subcommittee on Interior Appropriations to not only fund the program but to fund it early.

The quantity and quality of the new units was simple in the macroscale and complex in the microscale. The NPSWO argued that the existing substandard units

should be demolished as the new standard units were constructed. Wirth called for 1,000 new units to be built as part of Mission 66, and there were additional existing units that were renovated. The mix of units included single family homes and apartment buildings for single individuals and seasonal workers. By the end of the Mission 66 Era, more than 100 new park units had been created, and with new programs and staffing, the number of required units increased.

The qualitative aspects were in part set by the peculiarities of National Park Service employment and by the increase in amenities considered to be standard in the 1950s in the United States. As to the former, the wives understood that constant moving made the need for storage a critical attribute. They also saw both benefits and drawbacks to a standard housing plan. For example, the curtains and furniture would fit into the new house if it were the same as the previous one, but they did not want all the houses to be the same and appear as though they were the result of "slum clearance." The standards for housing in the 1950s presents a significant shift to higher quality housing with a longer list of standard amenities, in part driven by the boom in housing fueled by returning GIs. Between 1944 and 1952, 2.4 million World War II veterans took advantage of the GI Bill's home loan guaranty.[2]



Figure 2. Zion NP one of three superintendent's houses—the middle aged one.



Figure 3. Typical of the 1937 development area of Bryce Canyon NP Oak Creek Residential area. The garage has random ashlar stone masonry construction.

Magazines, such as *Sunset Magazine*, and advertising raised the expectations as to what constituted a standard home of the entire population, including National Park Service employees, Congress, and government officials. The latter may have been for "standard" but their interpretation was that meant "no frills."

Limits were placed on unit size and constraints placed on cost per "Federal Standards," specified by legislation or Bureau of the Budget policy: two-bedroom houses at 1,080 square feet, three-bedroom houses at 1,260 square feet, and with tight budgets to match.[3] The National Park Service did not include the infrastructure costs of lot development into the housing budget. Rather it was separately funded, thus insuring that all of the housing budget was used on the house. Given the need expressed by NPSWO for more bedrooms, the size limits were later increased to 1,500 square feet, and the per-house budget limits increased somewhat proportionately. The NPSWO continued to be integral in the development and review of housing development progress, keeping it front and center as an ongoing priority for Wirth and his successor.

With the funding from Congress to begin Mission 66 construction, Wirth needed standard plans for the residences that met the specific design program of the NPSWO, reflecting the new modern architectural style, and meeting the tight budget constraints. He turned to the Eastern Office of Design and Construction (EODC) and Western Office of Design and Construction (WODC). The two offices did not start without precedents; there were both older standard designs and a few other new designs executed in a new modern style that were of the popular ranch house configuration.

In the fall of 1956, John B. Cabot, as the lead architect for EODC, issued his own memorandum on "the de-

sign of Park Service houses," in which he described the shortcomings of the housing that was being planned. He felt that the Women's Organization recommendations had not yet been incorporated. He urged that National Park Service housing plans at the very least needed to meet contemporary expectations, especially among women, for a modern standard of living. He reminded his colleagues of their duty to build houses that would fulfill those identified needs for the occupants for the next forty years. He then requested that existing "stock plans" be "held in abeyance" while the WODC and the EODC developed designs that would be "architecturally up to date with current national thinking." The two offices could "collaborate to work out plans solving actual conditions throughout the country and, if possible, arrive at plans and designs that solve many varied conditions of climate and topography." The question of architectural style, however, went unmentioned in the 1956 memorandum.[4]



Figure 4. Standard house at 31 Speery Drive, Glacier NP, 1957 Residence 78, façade from southwest.



Figure 5. Bryce Canyon NP Watchman Residential Area, typical of Mission 66 Standard house.

Familiarity and standardization also assured that local contractors could be found at reasonable cost, and that contemporary building materials and technology—from slab concrete foundations to manufactured windows—could be effectively utilized. The ranch house was also flexible: plans could be easily flipped into "right-handed" and "left-handed" versions, and garages, entry portals, and other extras could be added. Siding materials and different rooflines could be applied to reflect local conditions and availability, though low gabled roofs were nearly ubiquitous regardless of location. Local contractors could be given some latitude on construction materials and techniques to reflect economical building methods appropriate to different regions of the country.

Cabot's "Standard Plans for Employee Housing," issued in time for the 1957 construction season, included variations of two- and three-bedroom ranch houses, as well as designs for multiple units and a dormitory. In fact, the first house design was based on two 1951 houses that were built at Glacier National Park's West Glacier Headquarters area, and were approved by Cabot when he was the Regional Architect Region II in Omaha, Nebraska.[5] All construction was assumed to be "frame wall," but the choice of siding was left open depending on the park superintendent's desire, as well as local availability and construction practices.

Variations on the standard designs were many and varied. In Montezuma Castle National Monument, the building walls at Montezuma Well were pre-fabricated



Figure 6. Standard House, south elevation in Coronado NP. Non-standard siding, fired adobes.

and trucked to the site for assembly, and similarly, in Glacier National Park prefabricated wall sections and roof structures were used. Roof forms were not as varied as one might expect given the wide variety of climatic conditions park system-wide, such as high rainfall to desert and, in particular, snow depth. In some parks, the low roof pitch was altered, such as the rare flat roof residences in Tuzigoot National Monument. The split level ranch house form was used in Glacier National Park; however, most were one story. The standard designs had plans with and without basements.

Walls were typically stud frame construction, a familiar construction typology for local contractors throughout the nation. Upon the rare occasion concrete block was used. The external appearance was, as previously mentioned, the choice of the park superintendent as to siding type. In Volcanoes National Park the siding utilized was a signature design element of Charles William Dickey, architect of the rebuilt (post fire) nearby Volcano House hotel at the edge of the crater. This type of customization of the Standard Design to harmonize with the appearance of other architecture present in an individual park was appreciated for the local sense of control, albeit small, which it offered.



Figure 7. Dickey-designed siding for housing at Volcanoes National Park.



Figure 8. Non-Standard house at Lake Mead National Recreation Area Boulder Beach Residences, photograph of residential Unit #409: Southeast of side elevation. Note the siding and the recessed area that induces cross ventilation.

With the on-going struggle to meet the difficult cost considerations, there was not much room in the budget for customization, nor for the hiring of independent consulting architects. Unlike the other landmark buildings, such as visitor centers for which there were some outside consulting architects, the housing was only designed by outside architects as part of an overall design, such as for Richard Neutra's Petrified Forest Community Complex. For this site Neutra designed the housing around a commons area.

Site planning and design were almost universally accomplished by landscape architects of the National Park Service. The guiding principles of these professionals continued from earlier times to frame views, cut as few trees as possible, and follow the contours of the land. The latter principle differed from the residential model of previous times. The rectangular layouts of streets that were common in most of America were replaced by modern suburban residential street layouts of curved streets, cul-de-sacs, loops, and open spaces. Connection from the street to the house was by a driveway that led to a carport or garage connected to the house by a door. Private outdoor spaces were contained by fences or retaining walls and were often equipped with clothes drying lines. In many of the national park residential areas, a central open space was used as a playground with sand lots and recreational equipment. The residential areas were located away from the public areas, out of view and out of contact with the park visitors. This was a key locational attribute requested by the NPSWO, and represented a shift from unpaid family members being engaged with the public toward gaining a sense of privacy. "Mission 66 marked the end of the pioneer period for park families. Now a wife made a conscious choice between living a private life or continuing her public role."[6]

Cabot's Standard Plans for Housing Design evolved from its early initial issuance in 1956. The newer designs included the two- and three-bedroom ranch houses, multiple attached units, and dormitories. The basic amenities featured central heating, modern appliances, connections (only) for washers and dryers, and resilient sheet flooring for kitchens and bathrooms. In Febru-

ary of 1960, revisions were made to the plans but the $20,000 ceiling for costs remained. The types of single family housing plans offered were expanded to include a three-bedroom standard, a four-bedroom standard, a three-bedroom "superintendent," and a four-bedroom "superintendent." Added as well was a two-bedroom duplex. The floor plans, including those that provided space for larger families, showed improvement in circulation and organization, with more storage, and a more defined entrance area, in addition to a slight increase (200 square feet) in overall size. Standard plans now included front elevation designs, although the choice of siding remained open. A 1959 Women's Organization survey influenced the new plans that now had entry vestibules with closets, extra storage, and dining areas adjacent to the kitchens, as well as garages with storage.[7] By the end of 1963, the process was further standardized with additional standard plans designed specifically for hillsides. New standard plans approved in 1964 closely resembled the 1960 ranch houses, although the average number of square feet of living space was reduced, becoming closer to the original 1957 size. By this time, the three-bedroom, approximately 1,200 square foot ranch with attached carport, had become a ubiquitous standard.[8] Ultimately a total of 743 single family and semi-detached houses were built, as well as 496 apartment units.[9]

A part of the evolution was the ongoing efforts of the NPSWO who continued to keep close watch on the issue, meeting with and providing input to the housing chair, and initiated another survey of housing in the mid-1960s. With the change in the Presidency and the appointment of the Secretary of the Interior Stewart L. Udall in 1961, came a shift in approach. The processes instituted to assess Americans' use of the outdoors were created by the Outdoor Recreation Review Commission, founded in 1958. By 1962 the Commission had issued their report indicating the increases in demand and 30 different recommendations for providing and managing outdoor recreation resources to meet the anticipated demands. The Commission staff was headed by Francis Sargent, who was in his 40s (born 1915), and led a bipartisan effort that reached out to conservation organizations throughout the country. For Udall, who was also young (born 1920), the contrast in style between Conrad Wirth (born 1899) and Sargent must have been significant. In 1964, Wirth stepped down as the long-term director of the National Park Service and the young George Hartzog (born 1920), who was recommended by Wirth and supported by Udall, moved to the position of Director.

Following Wirth's lead, the new director reached out to NPSWO for input on housing issues. At the end of the Mission 66 program in 1966, it was Hartzog who celebrated, although quietly, the program's accomplishments. Housing for employees in the parks had increased in quantity and quality, the service had transitioned to a more professional organization, the number of women in professional positions was steeply on the rise, and the inclusionary processes had proven both their effectiveness and appropriateness.

Endnotes

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The Second Century: Modernizing Park Buildings for the Next 100 Years

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Figure 1. Original Visitor Center, BOWA, 1965



Figure 2. Original and Existing Lobby, Booker T. Washington National Monument (BOWA)

Abstract

National Park Service (NPS) built structures span a century of development, from the early rustic period in large western parks, through major construction by the Civilian Conservation Corps and Works Progress Administration during the Great Depression, to the post-WWII era and the NPS Mission 66 campaign that signaled a recommitment to our national parks, and up through present-day development. Many of the resulting park facilities are now significant historic resources in their own right.

The challenge for the next century is balancing the preservation of these resources with their rehabilitation and modernization to best serve the needs of the NPS and its visitors for the next 100 years and beyond. This paper explores two case studies from the Northeast Region that illustrate strategies and lessons learned for achieving high-performance modernization using an integrated design approach that successfully balances preservation and sustainability goals.

Booker T. Washington National Monument was established to protect and interpret the site of Booker T. Washington's birth, its cultural landscape and view-shed. The park's visitor center is a historic Mission 66 structure originally constructed in 1965. The two-story wood-frame building houses a lobby, exhibit space, bookstore, offices, and a lower-level maintenance shop. Due to substantial growth in visitation since the building was constructed, a new multi-purpose room was added in 2010, and a smaller, adjacent structure houses public restrooms. However, the original office space does not meet staff/volunteer needs or current accessibility standards.

The current project involves providing new fire protection and alarm systems, including the careful insertion of exposed sprinkler piping and heads in the historic lobby and exhibit areas, as well as reconfiguring the existing office wing to meet space and accessibility requirements. A new office addition above the maintenance shop is sensitively designed to complement the historic Mission 66 structure, while providing much-needed staff/volunteer space and a new library/conference room. All work will be coordinated to allow public access throughout construction.

The Administration Building and Auditorium at Valley Forge National Historical Park were constructed in 1967. Both buildings are two stories, connected by a covered breezeway, with stone masonry exteriors designed to harmonize with the historic Valley Forge landscape. Occupancy and use of both buildings are year-round and essential to park operations.

The purpose of the current project is to modernize the existing HVAC systems, including replacement of an existing 100-ton water-cooled reciprocating chiller with an energy efficient air-cooled chiller, updated electric resistance variable air volume boxes and supplemental electric baseboard heat, and additional ductwork to distribute the conditioned air more effectively. Using high-tech non-destructive techniques to understand existing conditions, including infrared thermography and blower door testing, and energy modelling to evaluate alternative HVAC systems and renewable energy options, the integrated design process resulted in a cost-effective system that better serves the heating, cooling and ventilation needs of both buildings, improves occupant comfort and energy efficiency, reduces fossil fuel consumption and greenhouse gas production, and maximizes reliability and ease of operation of the system and controls.

Introduction

National Park Service (NPS) built structures span a century of development, from the early rustic period in large western parks, through major construction by the CCC and WPA during the Great Depression, to the post-WWII era, and up through present-day development.

In 1949, Newton Drury, director of the NPS, described the parks as "victims of the war." Neglected since the New Deal era improvements of the 1930s, the national parks were in desperate need of funds for basic maintenance, not to mention protection from an increasing number of visitors. Between 1931 and 1948, total visits to the national park system had jumped from about 3.5 million to almost 30 million, and were estimated to reach 80 million by 1966, but park facilities remained essentially as they were before World War II.

Mission 66, the ten-year park development program founded in 1956, resulted in the construction of thousands of residential, maintenance, and administrative facilities to elevate the parks to modern standards of comfort and efficiency, including 109 examples of a new building type, the "visitor center," with its efficient centralization of old and new visitor services. Mission 66 buildings, many designed by prominent modernist architects in collaboration with NPS professionals, were intended to exploit the functional advantages offered by postwar architectural theory and construction techniques, and to blend into the landscape through their plainness rather than by identification with natural features. This new, modern image became widespread, and was adopted by many different park and public land

management agencies throughout the United States and the world. Many of the resulting park facilities are now significant historic resources in their own right.

The challenge for the next century is balancing the preservation of these resources with their rehabilitation and modernization to best serve the needs of the NPS and its visitors for the next 100 years and beyond. The two case studies from the Northeast Region that follow, one part of the Mission 66 program and the other built in 1967 for Pennsylvania's first state park, illustrate strategies and lessons learned for achieving high-performance modernization using an integrated design approach that successfully balances preservation and sustainability goals.

Booker T. Washington National Monument (BOWA)

On April 5, 1856, Booker T. Washington was born a slave on the 207-acre farm of James Burroughs in Hardy, Virginia. Despite his desire to get an education, Washington was not allowed to go to school, but he was expected to carry books to school for Laura Burroughs, one of the owner's daughters who was a teacher. The end of the Civil War created an opportunity for those who had previously been in bondage to do things they had always wanted to do. Washington pursued his education and then became the first principal of Tuskegee Normal and Industrial School, now Tuskegee University. As a noted educator, author, orator and advisor to US Presidents, his past would influence his philosophies as the most influential African American of his era.

Booker T. Washington National Monument is a place where people visit and come to remember and reflect on Washington's time in American history. The park was established to protect and interpret the site of Booker T. Washington's birth, its cultural landscape and viewshed. The park also memorializes and interprets Booker T. Washington's life, historical contributions, accomplishments, and significant role in American history; provides a focal point for continuing discussions about the legacy of Booker T. Washington and the evolving context of race in American society; and provides a resource to educate the public on the life and achievements of Booker T. Washington.

Booker T. Washington wrote that "No race or people ever got upon its feet without severe and constant struggle, often in the face of the greatest discouragement." This national monument continues to provide programs and special events that focus on Booker T. Washington's life and legacy.

The park's visitor center is a historic Mission 66 structure designed by Smithey & Boynton of Roanoke, Virginia, and originally constructed in 1965. The wood-frame building houses approximately 5,500 square feet of area built on two levels. The main building houses a lobby, exhibit space, small bookstore and offices. A smaller adjacent structure houses public restrooms. Exhibits and an audio-visual presentation orient the visitor to the life of Booker T. Washington, and the bookstore is stocked with items focusing on African American history. A maintenance shop is attached to the west end of the building on a lower level. (See Figure 1-2 on page 238)

The one-quarter mile Plantation Trail through the historic area of the park passes by reconstructions of the nineteenth century tobacco farm buildings that stood on the Burroughs Plantation when Booker T. Washington lived there as a boy. Sheep, pigs, horses and chickens, as well as an example of a typical subsistence garden, help interpret this recreated Piedmont Virginia farm.

The park's visitation has grown substantially since the visitor center was originally constructed. In 2010, a new multi-purpose room was added to the facility, designed by Michael L. Oxman & Associates, Ltd. of Hillsboro, Virginia. Additional office space over the maintenance shop was also designed as part of the scope for that project, but it was not constructed.

The layout of the existing office space is quite compact and does not meet staff/volunteer needs. Constructed prior to the enactment of disabled access legislation, this space does not have the required clearances for wheel chair users and does not meet current accessibility codes and standards.

Neither the main visitor center building nor the adjacent restroom building is currently sprinklered. The building is presently protected with a conventional fire alarm system that provides manual initiation, selective smoke and heat detection coverage, and audible/visible occupant notification. The nearby restroom building is also protected by the main building fire alarm system. Water is currently supplied to the visitor center by two wells on the property, and the building is not connected to the municipal water system.

NFPA 101 Life Safety Code does not contain any requirements for either suppression systems or alarm and detection systems for the existing occupancy of the visitor center. However, the building is in a remote area with a volunteer fire department located several miles away. A response time of 20 minutes or longer would be typ-

ical of this arrangement. The building is constructed of lightweight wood framing, is culturally significant, and is used for gatherings of nearly 100 people. For these reasons, it was recommended that both fire alarm and sprinkler protection be provided for the main building, including the careful insertion of exposed sprinkler piping and heads in the historic lobby and exhibit areas. The small restroom building would retain the same fire alarm system coverage as currently installed, but sprinklers are not planned.

There are unheated accessible attic spaces above the ceilings (except in the lobby and exhibit areas), constructed with combustible (wood) roof framing and sheathing. The attic spaces formed by the gable roof are approximately six to eight feet high at the peak. NFPA 13 requires sprinklers in these attic spaces because of the combustible framing and sheathing materials and a dry sprinkler system was determined to be the most practical solution for the attic areas. Although the remainder of the building could be protected by a wet system, a dry system throughout the entire building was recommended in order to reduce installation and maintenance costs.

Because the system will be entirely dry, most piping will be installed in the attic space or above suspended ceilings. The only exposed piping on the first floor will be a two and one-half inch pipe installed across the ceiling of the main lobby. This pipe will be installed adjacent to a large structural beam, shielded from view at the main entrance, and will be painted to match the existing ceiling. Sidewall sprinklers will be used in the lobby and exhibit areas in order to eliminate exposed piping on the ceiling.

The proposed new fire alarm system is an analog addressable system conforming to NFPA 72, National Fire Alarm and Signaling Code. Initiation will be by manual fire alarm boxes at each exit, smoke detectors in all common use areas (lobby, exhibit area, multipurpose room, corridors, proposed library/conference room, and at the control unit), and a duct smoke detector on the supply side of the air handler unit. Heat detection is redundant to sprinklers and will not be planned, except in the public restroom building. Automatic area detection will not be needed in the mechanical room or garage areas. All sprinkler functions will be supervised using addressable monitor modules. All fire alarm initiating devices (smoke detectors, manual fire alarm boxes, and duct smoke detectors) will be replaced with new addressable initiating devices. When actuated, these new devices will provide their exact building location, which will facilitate a faster response. Occupant notification will be provided by horn/strobes throughout the entire building, as required by NFPA 72 and the Americans with Disabilities Act (ADA). Existing horn/strobes will be re-used where they meet current code requirements.

In order to provide adequate water for fire suppression and domestic use, a new fire line/domestic line servicing the Visitor Center will be connected to the existing 12-inch main running along Booker T. Washington Highway. The water lines to the Visitor Center will be in the same trench, running along the eastern edge of the property line within an area previously disturbed by an abandoned road bed. Limits of disturbance shall stay within previously disturbed areas to the greatest extent practicable. Excavations that occur outside previously disturbed areas will require archeological monitoring and NPS approval.

In addition, the scope of design includes renovation of the existing office wing and a new office addition above the maintenance shop to meet space and accessibility requirements. The basis of design for the renovation of the existing office space and addition of the proposed new office space was the construction documents prepared by Michael L. Oxman & Associates in 2010. However, the design has been revised to address the following programmatic changes:

1. Removal of existing toilet rooms, while maintaining existing chimney, pipe chase and attic access
2. ADA compliance modifications to existing office spaces
3. Bookstore with storage for inventory
4. Janitor closet



Figure 3. Existing Office Area, BOWA

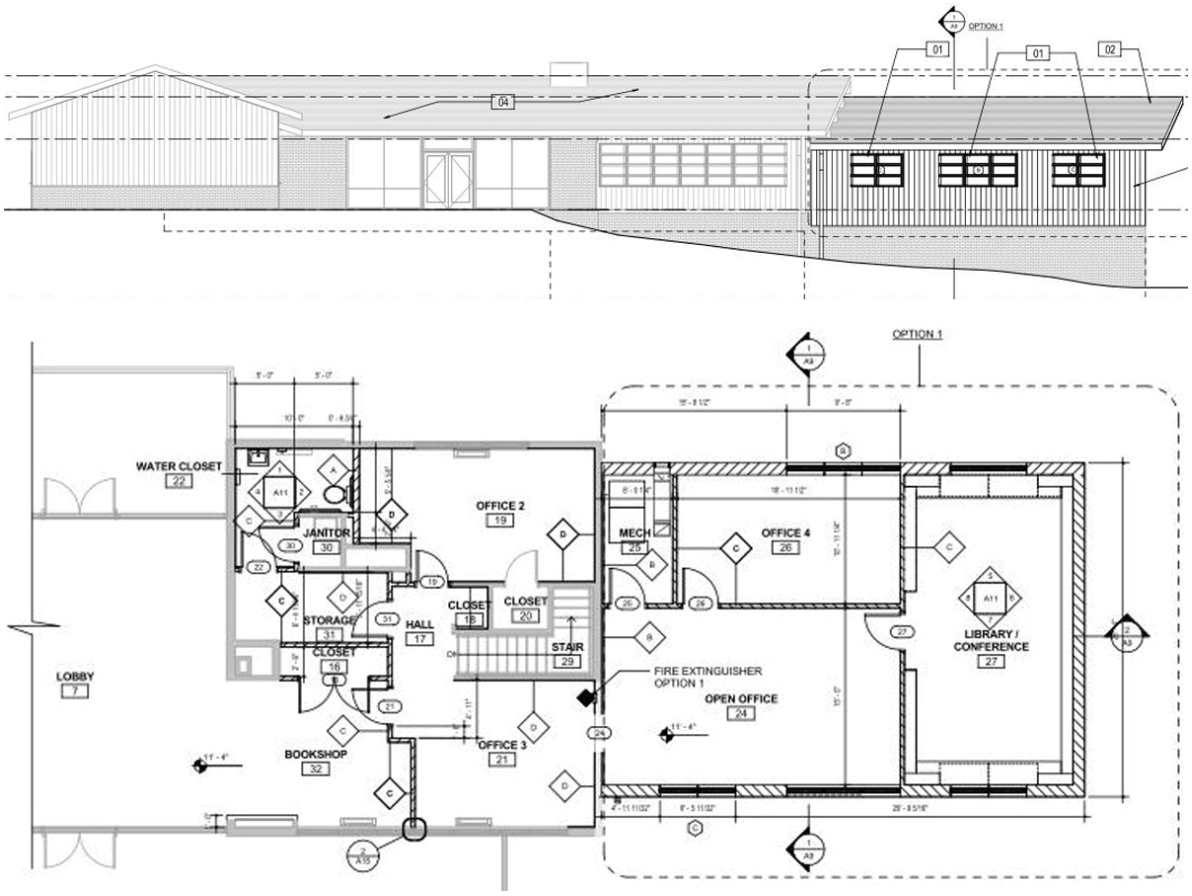


Figure 4. Proposed First Floor Plan and North Elevation, BOWA

5. Revised library
    a. Two to three feet of additional width to accommodate conference room use
    b. Glazed doors for monitoring from adjacent open office
    c. Natural light through transom windows above shelving

These revisions result in the following architectural program of primary spaces:

Existing Office Area

Bookstore	225 sq. ft.
Office #1 (with closet)	200 sq. ft.
Office #2 (with closet)	210 sq. ft.
Office #3	210 sq. ft.

New Office Addition

Open Office	420 sq. ft.
Office #4	225 sq. ft.
Library	400 sq. ft.
Mechanical Room	70 sq. ft.

The new office addition above the maintenance shop is sensitively designed to complement the historic Mission 66 structure, while providing much-needed staff/volunteer space and the new library/conference room. Although the steel windows, exterior brick and roof shingles of the addition match those of the original structure, the roof line of the addition is held below the existing exposed beam ends in order for the original visitor center mass to read as primary. All work will be coordinated to allow public access throughout construction.

Valley Forge National Historical Park (VAFO)

On December 19, 1777, when George Washington's army marched into camp at Valley Forge, tired, cold, and ill-equipped, it was lacking in much of the training essential for consistent success on the battlefield. On June 19, 1778, after a six-month encampment, this same army emerged to pursue and successfully engage Lt. Gen. Sir Henry Clinton's British army at the Battle of Monmouth in New Jersey. The ordered ranks, martial appearance, revived spirit, and fighting skill of the American soldiers spoke of a great transformation having occurred amidst the cold, sickness, and hardship that was Valley Forge.

Valley Forge National Historical Park in King of Prussia, Pennsylvania, is nationally significant as the site of the 1777-78 winter encampment of the Continental

Army under General Washington. Few places evoke the spirit of patriotism and independence, represent individual and collective sacrifice, or demonstrate the resolve, tenacity and determination of the people of the United States to be free as does Valley Forge. The historic landscapes, structures, objects, and archeological and natural resources at Valley Forge are tangible links to one of the most defining events in our nation's history. Here the Continental Army under Washington's leadership emerged as a cohesive and disciplined fighting force. The Valley Forge experience is fundamental to both American history and American myth, and remains a source of inspiration for Americans and the world. Based on this significance, Valley Forge became a National Historical Park in 1976.

The Administration Building (8,558 square feet) and the Auditorium (4,164 square feet) at Valley Forge National Historical Park were designed by Brugger and Freeman Architects in 1966 and constructed by the Commonwealth of Pennsylvania in 1967. Both buildings are two stories, connected by a covered breezeway, with stone masonry exteriors designed in a regional vernacular to harmonize with the historic Valley Forge landscape. Occupancy and use of both buildings are year-round and essential to the park's operations.

The purpose of the current project is to modernize the existing HVAC systems in the Administration Building and the Auditorium by developing design solutions for the replacement of a 100-ton water cooled reciprocating chiller, for the replacement of the electric resistance variable air volume boxes and supplemental electric baseboard heat, and for new ductwork to distribute the conditioned air more effectively.

EYP retained Simpson Gumpertz & Heger, Inc. (SGH) to perform high-tech non-destructive analyses of the Administration Building and Auditorium, including an infrared thermographic survey and blower door air leakage testing, to understand existing conditions and help inform EYP's work on the project.

SGH reviewed drawings for both the Administration Building and Auditorium in order to determine the construction of the existing building envelope, and performed a two-day survey to make observations of the enclosure and perform the air leakage testing and an infrared survey.

SGH performed air leakage testing at the Administration Building and Auditorium to evaluate the amount of air leakage and the primary locations of leakage across the building enclosure. Air leakage testing qualitatively identifies or quantitatively measures air leakage through



Figure 5. Original Administration Building and Auditorium, VAFO, 1967

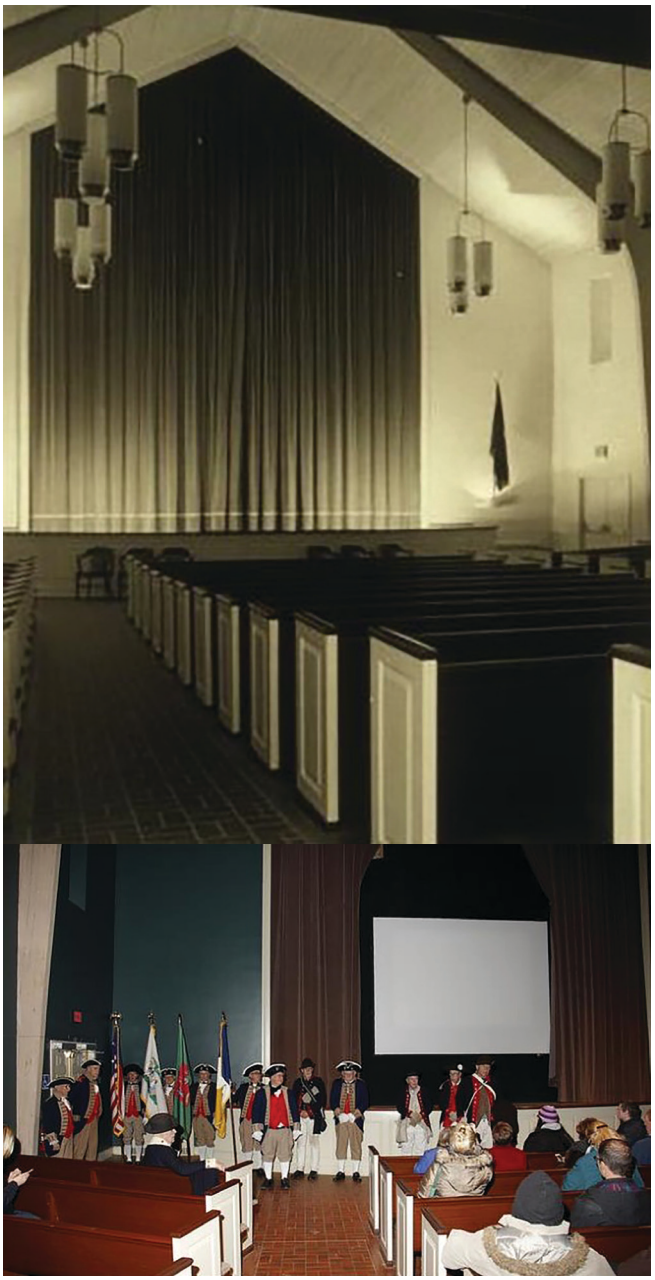


Figure 6. Original and Existing Auditorium, VAFO

the entire building enclosure. The testing is governed by the following two standards:

- Qualitative: ASTM E1186 – Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
- Quantitative: ASTM E779 – Test Method for Determining Air Leakage Rate by Fan Pressurization

Qualitative tests involve using blower door fans to create a pressure differential across the building enclosure and using smoke pencils, infrared thermography, or other tools to identify leakage locations. This test is a valuable forensic tool to investigate where air leakage occurs through the building enclosure.

Quantitative tests involve using blower door fans to create a pressure differential across the building enclosure and experimentally measuring the air leakage through the building enclosure. This test is a valuable forensic tool to investigate the amount of air leakage through the building enclosure.

Quantitative Testing Results

The most useful gauge of overall building envelope airtightness is the airflow per unit building envelope surface area at 75 pascals (0.30 inches of water). This gives us air flow across the building enclosure at a standard pressure, enabling us to compare air flow to industry standards.

The air leakage rates at the Auditorium and Administration Building range from 0.81 to 0.91 cubic feet per minute per square foot at 75 pascals for the Auditorium Building, and 1.60 to 1.70 cubic feet per minute per square foot at 75 pascals for the Administration Building.

Qualitative Testing Results

SGH observed thermal anomalies potentially associated with air exfiltration at the following locations in the Administration Building:

- The intersection between the two north chimneys and the roof
- The perimeter of entrances
- The roof eave on the west elevation lower roof
- The transition between the main roof and the south lower roof and the roof ridge
- The north gable end louver

SGH also observed thermal anomalies potentially associated with air exfiltration at the following locations in the Auditorium:

- The north and south gable ends of the main roof and the cupola above the mechanical space, which is reportedly the exhaust for the mechanical system
- Transitions at the west elevation lower awning
- South gable end louver perimeter
- West elevation covered louvers, west elevation roof eave, and west elevation lower awning roof ridge
- Perimeter of entrances

Discussion

SGH interpreted the test results of their air leakage testing to indicate that:

- The air leakage rates at both buildings are grossly higher (roughly two to seven times greater) than the relevant standards for new construction.
- The air leakage rates of 1.60 to 1.70 cubic feet per minute per square foot f at 75 pascals at the Administration Building (essentially an office building) are well beyond the high range of typical air leakage rates of 0.213 to 1.028 cubic feet per minute per square foot found for existing office buildings in a 1986 study.
- SGH does not know of any studies of typical air leakage rates for existing auditoriums, thus they were unable to compare the air leakage rates they measured at the Auditorium with other similar existing construction.

Excessive air leakage leads to the following concerns:

- Cold drafts and occupant discomfort could be a problem. While no cold drafts are reported, occupants may be accustomed to these drafts or constantly adjusting the temperature of the building (e.g., turning on and off heat/air conditioning) to accommodate the temperature swings.
- Heat loss resulting from the movement of air across the building enclosure increases the monthly utility bill. The utility bills for all three buildings (Administration Building, Auditorium and visitor center) are approximately $10,000 per month. Although SGH did not evaluate the visitor center, based on the general construction type, age and size of the visitor center, they anticipate it significantly contributes to utility bill costs.
- Air flow also carries moisture vapor across the enclosure, which may lead to condensation and potential mold growth. While building personnel do not report either condensation or mold growth, and SGH did not see them during their interior survey, these conditions can be concealed within the wall cavity.

Based on this analysis, SGH recommended a series of rehabilitation options, including consideration of the

impact of insulation and air sealing on moisture diffusion and long-term durability of the structure:

- Base scope: Limited air seals
- Additional scope option 1: Additional limited air seals at penetrations/transitions
- Additional scope option 2: Installation of a continuous air barrier and new insulation on the attic floor/roof assembly
- Additional scope option 3: Installation of a continuous air barrier

In considering these and other factors, it was recommended that NPS implement the base scope along with Options 1 and 2. Although this combination does not include the installation of a continuous air barrier over the entire building envelope (as does Option 3), addressing the air leakage that occurs at the attic floor and penetrations in the building should significantly decrease the air leakage rates of the building. Furthermore, the combination of the Base Scope plus Additional Scope Options 1 and 2 will provide good expected value to NPS (reduction in air leakage for the amount spent) with far less disruption, cost, change of appearance, and lost usable floor space as compared to the Base Scope plus Options 1, 2, and 3.

In order to identify the appropriate mechanical system, the methodology adopted was to thoroughly investigate and document existing systems and conditions, perform heat load calculations and preliminary selection of proposed alternative equipment with supporting systems like piping, ducting and controls, analyze energy consumption for each option, and obtain cost estimates to determine payback periods for add cost differences. Using

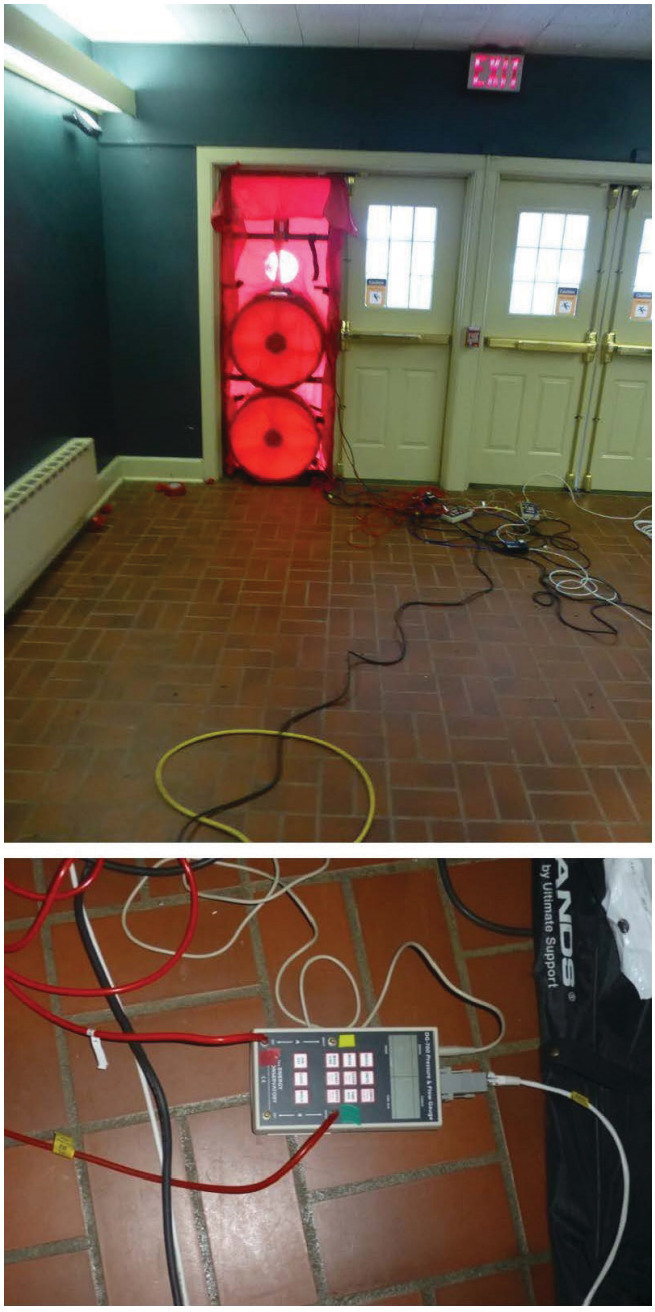


Figure 7. Blower Door Testing, VAFO



Figure 8. Infrared Thermography, VAFO

Trane Trace 700 software, EYP performed a preliminary heat load calculation and confirmed that a 100-ton chiller and pump system would adequately cool all spaces.

The Weidt Group performed a preliminary energy analysis using DOE-2.2, a sophisticated building simulation program that performs thermal and illuminance calculations on an hour-by-hour basis. It uses typical yearly climatic data to determine the energy loads and system requirements for the building. This early analysis assumes the building meets ASHRAE 2007 levels. NPS requested three alternative solutions for replacement of the existing chiller and cooling tower system. EYP performed energy analysis on seven HVAC system options based on the request by NPS to consider solar power as a possible energy source. The analysis compared the impact of these seven options on the energy use and costs of the building:

Option 1: Single zone air handling units with electric heat and cooling provided by an air-cooled chiller

Option 2: Single zone air handling units with heating provided by a condensing gas boiler and cooling provided by an air-cooled chiller

Option 3: Single zone air handling units with electric heat and cooling provided by a water-cooled chiller

Option 4: Single zone air handling units with heating provided by a condensing gas boiler and cooling provided by a water-cooled chiller

Option 5: Single zone air handling units with a ground coupled, water-cooled heat recovery chiller

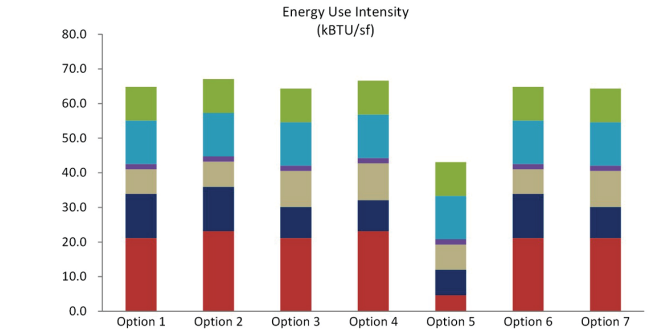
Option 6: Single zone air handling units with electric heat and cooling provided by an air-cooled chiller (Option 1) with photovoltaic array

Option 7: Single zone air handling units with electric heat and cooling provided by a water-cooled chiller (Option 3) with photovoltaic array

Based on these investigations, EYP presented and evaluated alternative solutions to upgrade the existing heating, cooling and ventilation systems for the Administration Building and Auditorium (See Tables 1 and 2). These alternatives were intended to provide a cost-effective system to better serve heating, cooling and ventilation needs of both buildings, and to reduce fossil fuel consumption, and resulting carbon dioxide equivalencies, at Valley Forge National Historical Park.

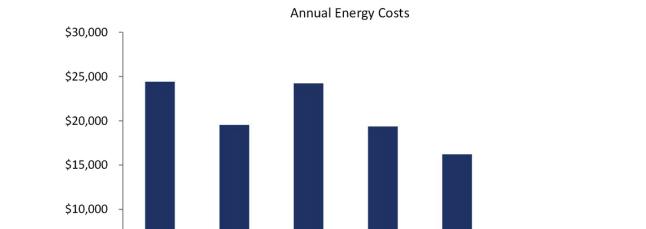
The alternatives were assessed by the government in accordance with requirements to improve energy efficiencies, reduce greenhouse gas production, and other pertinent requirements such as reliability and ease of operation of the system and controls. Selection of the preferred alternative to replace the existing water-cooled chiller system was based on annual energy costs, capital first costs, payback period, equipment location, operating noise levels, health and safety, and maintenance and operational costs, using a comparison matrix (See Table 3).

At the conclusion of this integrated design process, the government selected a preferred alternative. Option 1, a new air-cooled chiller with replacement of electric baseboard heat, was selected as the preferred option for the mechanical systems upgrade at the Administration Building and the Auditorium. The VAFO team stated that it was the intent of NPS to obtain solar energy for the Administration Building, Auditorium and visitor



	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Equipment	9.8	9.8	9.8	9.8	9.8	9.8	9.8
Lighting	12.5	12.5	12.5	12.5	12.5	12.5	12.5
SWH	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Fans & Pumps	7.1	7.3	10.4	10.6	7.2	7.1	10.4
Cooling	12.7	12.7	8.9	8.9	7.3	12.7	8.9
Heating	21.2	23.2	21.2	23.2	4.7	21.2	21.2
Total	64.8	67.1	64.4	66.6	43.1	64.8	64.4

Table 1: Energy Use Intensity, VAFO



	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Annual Electric	$24,410	$16,579	$24,232	$16,401	$16,217	$1,493	$1,315
Annual Natural Gas	$0	$2,959	$0	$2,959	$0	$0.00	$0.00
Total	$24,410	$19,538	$24,232	$19,360	$16,217	$1,493	$1,315

Table 2:. Annual Energy Costs, VAFO

Table 3. Comparison Matrix, VAFO

Criteria	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Initial Cost							
Energy Cost							
Payback Period							
Ease Of Access							
Maintenance							
Noise Levels							

Color Key: Green = Good; Yellow = Neutral; Red = Unfavorable

center complex in the foreseeable future. The proposed upgrade can be adapted to make use of the solar photovoltaic field when installed (similar to Option 6). The air-cooled chiller will be installed at grade above the existing pit and will be provided with a noise-muffling package to reduce noise impact.

In addition, at the Auditorium, the proximity of supply and return grilles at the rear wall currently prevents adequate air circulation and causes "short circuiting" of the supply air. New exposed ductwork was designed to improve the circulation of conditioned air throughout the space.

EYP subsequently provided the necessary services to design and prepare construction documents for the preferred alternative.

Conclusion

The historic resources of the National Park Service include a century of NPS built structures, including those of the Mission 66 campaign that signaled a recommitment to our national parks. As illustrated in these case studies at Booker T. Washington National Monument and Valley Forge National Historical Park, an integrated design approach that balances preservation and sustainability goals, as well as programmatic and interpretive requirements, can lead to a high-performance rehabilitation and modernization of these historic facilities that will serve the needs of the NPS and its visitors for the next 100 years and beyond.

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Modern Architecture and Preserving the Historical Milieu: Richard Neutra's Visitor Center and Cyclorama at Gettysburg

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Figure 1. Neutra & Alexander. Gettysburg Visitor Center and Lincoln Memorial. Photo by Thaddeus Longstreth. Thaddeus Longstreth Collection. University of Pennsylvania Architectural Archives

Abstract

Richard Neutra's Gettysburg Cyclorama and Visitor Center was hailed as a success for the Mission 66 program, a design initiative by the National Park Service to improve park facilities across the country, often with Modern-style architecture. At Gettysburg, Neutra's use of Modern architecture was more than stylistic; it considered the historical landscape in its proximity to a historic grove, its orientation towards the National Cemetery, and its relation to the Union line along Cemetery Ridge. The orientations and symbolism clearly had historical reverence evident in the site drawings. Photographs show how the building's glass reflected the contextual and spatial qualities of the place without reducing the architecture to a reenactment of the past. Neutra also designed a rostrum oriented towards the cemetery where Lincoln gave the Gettysburg Address to encourage public speeches and addresses regarding American society in its present and future state. Instead of making a monument to Modernism, the building animated the historical milieu through Modern architecture.

Introduction: History and Modern Architecture

The Gettysburg Cyclorama and Visitor Center [Figure 1] was dedicated on November 19, 1962, 99 years to the

day following the dedication of the Gettysburg National Cemetery when Abraham Lincoln gave his famous address. The building opened in time for the centennial anniversary of the Battle of Gettysburg (July 1-3, 1863). Its reception applauded the success of the National Park Service's (NPS) Mission 66 program, which attracted internationally renowned architects such as Richard Neutra (1892-1970) to improve park facilities.

As early as 1957, the same year Neutra first met with NPS officials about the Gettysburg Visitor Center design, architects found the ambitions of the Mission 66 program in promoting Modern architecture as a style appropriate for historical sites. Emerson Goble wrote in *Architectural Record*: "The continual effort to pretend a building isn't there [referring to the NPS's use of rustic looking structures] only makes it more prominent, by guaranteeing that it will not be designed to belong there."[1] Modern architecture, Goble argued, allowed the distinction between past and present to be clear. This implied that it could be possible to design a building that stood against the surrounding milieu without necessarily calling attention to itself.

In 1962, the same year the Gettysburg Visitor Center opened to the public, architectural and social critic Lewis Mumford critiqued the value of Modern architecture and its cultural responsibility. For Mumford, Modern architecture's imitation of an industrial aesthetic made the style "sterile." Mumford reminded architects to overcome the stifling effect of the technological *zeitgeist* of mid-century Modernism by looking to a "cumulative process of history and culture."[2] Mumford's interpretation of Modern architecture, however, was different than how other historians wrote about it at the time. In 1966, the Civil War Centennial Report to Congress claimed: "The *imposing* new Visitor's Center at Gettysburg was one of the outstanding achievements under the aegis of 'Mission 66'" [italics added].[3] Given the context of the statement and the concluding remark of an outstanding achievement, this was praise for the design. Yet "imposing" seems contradictory to the aims of the Mission 66 visitor center program of attending to the visitor rather than the architecture.

During the Mission 66 program, NPS understood preservation through a lens of interpretation. Ethan Carr observed that interpretation gained traction through Freeman Tilden's book *Interpreting Our Heritage* (1957).[4] Tilden's commentary on interpreting the past referred to three conditions: demonstration, participation, and animation. Tilden's distinction between demonstration and participation was dependent on who was doing an activity. A ranger at Gettysburg, for example, could demonstrate how to load and shoot a Springfield rifle and participation could be a group of visitors marching across the field in a reenactment of Pickett's Charge. Animation for Tilden comes closer to milieu, or as he described it, the "atmosphere." His example was entering Robert E. Lee's Arlington Mansion and witnessing someone playing the piano; this was an experience that could have happened to one of Lee's guests in the 1850s or even guests visiting houses in the 1950s.[5] The familiar atmosphere was a phenomenon that was ahistorical yet occurring in a historical setting. In the case of military or historical parks like Gettysburg, animation was a moment when those actions we do out of human nature became apparent in a historical site.

One such action was how visitors moved through the site. The choreography for visitors has also been well covered by historians—walking up a ramp to the cyclorama painting, then exiting to the outside ramp to ascend to the roof to view the battlefield from the same location as depicted in the painting, with the primary orientation towards the Bloody Angle.[6] From this location, one could see down Cemetery Ridge to the Round Tops terminating the southern end of the battlefield and back up Seminary Ridge defining the Confederate line. This procession was the heart of the interpretive nature of the design and very clear to the critics of the building.[7]

Yet given Neutra's penchant for designing the land as much as a building, and the fact that this particular piece of land is sacred, was there more to his design considerations regarding the history of the land and events than merely housing the cyclorama painting and creating an observation platform? This paper concentrates on the relation between the building to the land and to the degree Neutra's design addressed the historical milieu of Gettysburg. The 1962 building dedication, for instance, to mark the anniversary of Lincoln's Gettysburg Address was an act of animation of the historic site through the architecture. Indeed, Neutra's Visitor Center at Gettysburg recognized the significance of these historic events and participated in the historical milieu, which sounds contradictory to our common association of twentieth-century high-modern architecture as dogmatically conceived by a single architect.

Landscaping the Past

Initially, Neutra saw the Mission 66 program as improving parks known for natural beauty and not human

history. In 1957, Neutra wrote to the NPS expressing an interest in writing an article about Mission 66: "The National Park Service deals with parcels of nature millions of years old . . . I am, I think, the modern architect, with the most profound respect for the landscape of creation."[8] In *Mystery and Realities of the Site* (1951) Neutra wrote: "My experience, everything within me, is against an abstract approach to land and nature, and for the *profound assets rooted in each site* and buried in it like a treasurable wonder."[9] In the larger context of this statement, he described how Modern architecture engaged in a landscape millions of years old as a distinction to the age of the land. The claim was sympathetic to Emerson Goble's argument that Modern architecture's clear distinction from the historic setting made it clear between contemporary intervention and historic setting. Typically, the relation between land and building in Neutra's work concerned the natural assets of the site, such as wind, sun, and even flora, but Gettysburg offered a different challenge. Instead, the assets rooted in the site were historical as well as natural. The treasurable wonder Neutra had the opportunity to unearth was a significant part of American culture as much as a familiar American terrain.

Neutra had long considered making distinctions between his buildings and the site. In 1950, while preparing his book *Survival Through Design*, Neutra wrote about the relationship between the building and the landscape in a way that anticipated the Gettysburg Visitor Center design:

> While manifestly a foreign body in the landscape, a building can nonetheless be virtually fused with it. Together with its appendages, it can interlock convincingly with gradings [sic] of the site. Its fenestration can relate intimately to views, and the shading projections of its roof to the orientation. It can mirror its setting like a pool of water by the reflections of highly polished, impervious surfaces of glass and non-corrosive metal. And it will mirror not only the hills, the sea, the trees, but also the clouds, the changing illumination of every hour, the many moods which every natural setting offers over a period of time. It can be designed to glow in the last glimmer of twilight like an alpine peak over a lake. It can be made to silhouette itself somberly against the horizon or appear as a light apparition against masses of dark foliage.[10]

All of the actions—grading, orienting, mirroring—were found in the Gettysburg building but it is the silhouette against the horizon and the light apparition against masses of dark foliage which are most intriguing in the Gettysburg Visitor Center. The latter was very literal, as the pure white rotunda stood in contrast to the green foliage of the existing grove of trees. The former, the silhouette against the horizon, was more poetic but no less apparent in the low profile embedded into the back side of the ridge, crouching below the Union defense line against the Confederate line and concealing the National Cemetery just beyond the visible horizon.

Neutra's use of contrast between light and dark at Gettysburg was a distinction between background and foreground compositionally, and the past and present temporally. The building was adjacent to Ziegler's Grove so the woods screened the massive Cyclorama rotunda from the front approach and served as a backdrop at the entry. The Cyclorama rotunda surface was white, which contrasted the dark foliage in July. Compositionally the Cyclorama had less presence when approaching the battlefield and after seeing the painting because it was at the periphery of the main view across the battlefield from the upper lobby. After viewing the battlefield from the observation platform, the Cyclorama rotunda was front and center during the descent down to the ground. The temporal contrast in light and dark therefore made a clear separation between the historic landscape consisting of the dark grove, referring to the conflict in the past, and the white modern Cyclorama rotunda, which referred to the present.

While the Cyclorama was a clear contrast to the flora of the landscape, it had the semblance of the built monumental landscape of the present battlefield. Numerous monuments, many dedicated during the latter part of the nineteenth century, follow the crest of Cemetery Ridge; there are monuments for states, regiments, and generals which are now part of the historical milieu. The Cyclorama rotunda was another incarnation of these monuments, containing a painting instead of statues and reenacting the battle through 1960 media technology rather than through the iconography of ancient architectural types such as the obelisk and tholos.[11] Furthermore the Cyclorama was a monument for the North and South. While the monuments on Cemetery Ridge are for

the Union side of the conflict, the Cyclorama painting commemorates the heroism of the Confederate charge and the Federal defense. The Cyclorama rotunda was thus a different kind of monument on the battlefield; one that served as a memorial for both sides of the conflict, yet the purity of the modern white pure form clearly responded to the nineteenth-century marble monuments along the ridge [Figure 2].

Prior to Neutra accepting the commission, NPS architects developed a design scheme to house the nineteenth-century cyclorama painting of Pickett's Charge within a new Visitor Center. The site for the facility was adjacent to Ziegler's Grove, near General Meade's headquarters, the Bloody Angle, and the field where Pickett's Charge occurred. The NPS selected this prominent location not only because it was near the location depicted in the cyclorama painting but also because NPS historian Ronald Lee preferred visitor centers to be close to the main historical attraction. Lee argued that locating the Visitor Center in the middle of the battlefield made it easier for the average visitor to interpret the events.[12] It is possible Lee pressed this point to Neutra, as he was present at a meeting with the architect on April 13, 1958.[13]

That same year, Neutra's office began work on a new design scheme to replace the proposal developed by NPS architects. Neutra's design team included Thaddeus Longstreth, who once worked for Neutra and then moved to the Philadelphia area to establish his own practice.[14] Gettysburg Park Superintendent J. Walter Coleman gave a personal battlefield tour for Neutra and Longstreth and they kept a copy of the battlefield tour brochure. While on site the architects took photographs around the grove and noted historical positions



Figure 2. The monuments along Cemetery Ridge as seen from Little Round Top through a telephoto lens. The Cyclorama rotunda is at the right, mid-ground. Photo by author

and possible alternatives for the Visitor Center location. Longstreth's archival collection for the project had three possible orientations for the building, with the building's massing determined by that time. The earliest version had the administrative wing extending into Ziegler's Grove with the Cyclorama rotunda in full view on the battlefield.[15] Although there was no written record found in the Longstreth collection regarding the response of this plan, it was likely abandoned due to the visual prominence of the rotunda from sites on the battlefield.

The second option placed the rotunda at the edge of the grove, with the axial wing pointing southwest [Figure 3].[16] The grove partially concealed the drum and the administrative wing bisected the field between a gathering ground and the field used to begin history walks. This placement divided the site by preserving two distinct parts of the Gettysburg story. To the south was the vast interpretative area which was part of the Union line. The Taneytown Road and Cemetery Ridge were existing conditions dating before the battle which bounded the grounds.

Where Cemetery Ridge turns towards the National Cemetery, Neutra built a seven-foot mound to separate the parking area and the gathering ground. This concealed the ceremonial space just as the grove concealed the Cyclorama rotunda, which animated experience when approaching the building; the contour of the site and the grove concealed the building from the visitor, just as the contour was necessary to protect the Union army. This nesting into the ground articulated the importance of the topography for a military position.

There was also a gathering area north of the berm for the outdoor space adjacent to the rostrum. This area was symbolically more important given that it was the memorial to Lincoln's address. On the one hand, this distinction separated events in place and time—battle followed by dedication. In addition, the Visitor Center was less visually intrusive on the battlefield. The topography slopes considerably from the ridge down to the road and a two-story building would have a low profile due to the existing ridge line—only the Cyclorama would be elevated above the ground. Even though the Visitor Center was in a very conspicuous and significantly important location on the battlefield, Neutra's office attempted to respectfully insert the building into the site.

The building's position in the site made the ground contours legible to give the building a silhouette against the existing historic topography. The building was on the east

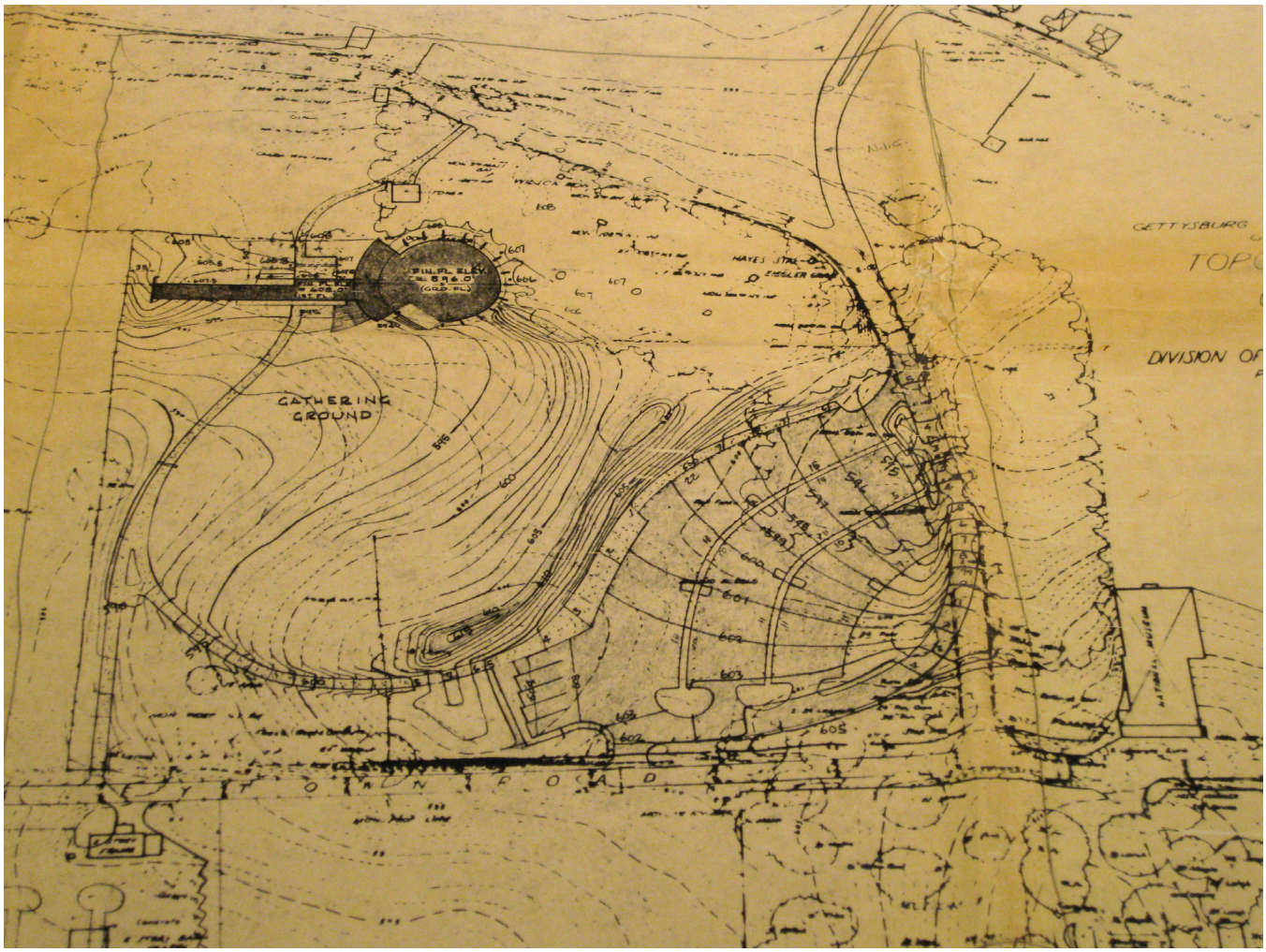


Figure 3. Neutra & Alexander. Gettysburg Visitor Center and Lincoln Memorial Site Plan. Thaddeus Longstreth Collection, University of Pennsylvania Architectural Archives

side of Cemetery Ridge, which defined the Union line during the second and third day of the battle. The land contour enabled a two-story building to appear as a single story when standing at the Union line facing the building. The complete building height was exposed at the main entry facing the gathering ground. Upon exiting the building at the upper level, the visitor faced the battlefield and would no longer be interested in facing the Visitor Center. If one turned around, the profile of the building was low, concealed either behind the ramp going to the rooftop observation platform or by Ziegler's Grove.

The manipulation of the land established new visible horizons around the building [Figure 4]. First, there was the low field of view with a horizon placed just above head height. The berm prevented a direct line of site to the gathering ground but it was low enough to be inviting, like a wall protecting a garden. One senses the presence of the symbolic field without actually seeing it, yet we know it is just beyond our view. The datum of the building also related to one's scale and extent of vision. The lower level was primarily walled with concrete, which indicated that the building was carved into Cemetery Ridge. The upper level had shading devices which acted as a screen to prevent any view across the upper level, yet indicating a different role for the level which aligned with the top of the ridge and indicating the Union line. These various horizontal zones on the building's façade articulate the visible horizon defined by the ridge and the historical horizon in the ways the buildings elements—ramp, shades, and walls—represented the actions which took place on that ridge and how visitors encountered them through the building's devices.

Reflecting The Past

The dark glass enclosing the public areas articulated the horizontal lines of the building running parallel to



Figure 4. Neutra & Alexander. Approach from parking area. Photo by Thaddeus Longstreth. University of Pennsylvania Architectural Archives



Figure 5. Neutra & Alexander. Entry at lower lobby. Photo by Thaddeus Longstreth. University of Pennsylvania Architectural Archives

the ridge. The presence of the building between the ridge (ground) and the roof (observation platform) receded into the background due to the glass reflecting the battlefield landscape as a silhouette. The tinted glass also obscured the interior, including the tourists inside. As one descended the ramp and looked inside, the visitors inside the building would appear in silhouette, moving about the reflection of the Gettysburg Battlefield. Modern visitors became the shades of people who walked about that field in the past and modern architecture's use of glass and spatial reflection enable the battlefield to be animated before visitors. When they stepped outside, the role reversed and the reflection of the historic field became the backdrop for the modern visitor standing before a modern building. At the threshold to walk onto the Union line from the interior of the Visitor Center, the historical milieu became apparent.

The entry lobby glass wall reflected people walking towards the building just as the adjacent pool reflected the adjoining white concrete wall penetrating the lobby [Figure 5]. The effect was such that the historic landscape, specifically the land across the Taneytown Road and adjacent to the National Cemetery, would be brought to the foreground as visitors walked towards the modern building. Before entering, they encountered a white wall which contrasted with the dark grove beyond it. The adjoining pool reflected the southern and western sunlight which penetrated deep within the entry lobby. The natural light drew one's attention back across the land now framed by Modern architecture foregrounding the historic landscape [Figure 6].

Neutra further utilized the reflective nature of glass to merge and compose the juxtaposition between Modern architecture and the historic landscape at the upper lob-



Figure 6. Neutra & Alexander. Lower lobby interior. Photo by Thaddeus Longstreth. University of Pennsylvania Architectural Archives

by. Standing inside the upper lobby looking towards the Confederate line along Seminary Ridge, the architecture frames the field where Pickett's Charge occurred. One also saw the reflection of the vertical shades on the opposite wall standing as abstracted sentries. The phenomenal nature of the reflection imposed a modern architectural abstraction onto the historic field; thus not only did the fins have a practical application of modulating light, but also two symbolic roles of screening the view from the main approach from the west and the ghostly presence of sentries on the battlefield [Figure 7].

The use of tinted glass at the operable wall in front of the rostrum had similar reflective qualities to the glass used elsewhere in the building. In this instance, the glass reflected the woods near the National Cemetery. Those trees were a silhouetted reflection in the dark glass.



Figure 7. Neutra and Alexander. Upper lobby interior. Photo by Thaddeus Longstreth. University of Pennsylvania Architectural Archives



Figure 8. Neutra & Alexander. Rostrum sliding glass door. Photo by Thaddeus Longstreth. University of Pennsylvania Architectural Archives

However, the stone clad supports for the rotunda were clearly reflected in color and texture in the glass.

Thus the rostrum windows foregrounded the architecture while the land became a silhouetted background to the scene.

Animating The Past

Neutra was also tasked with designing a memorial commemorating Lincoln's Gettysburg Address, which praised the courage and endurance of the common infantryman. In his drawings, Neutra labeled the memorial as: "Rostrum, illuminated symbol of the prophetic voice."[17] The rostrum was a raised platform oriented towards the gathering ground. Its purpose, according to Neutra, was to initiate a tradition at Gettysburg to carry on the significance of Lincoln's address [Figure 8]. Neutra anticipated famous orators from all over the world coming to Gettysburg on an annual basis to reaffirm Lincoln's message; namely, that in a time of crisis—such as the then present Cold War—the struggle would give a new birth of freedom. Despite the importance of the rostrum, it was only used at the building's dedication ceremony in 1962. Ideally the animation at Gettysburg would be at the rostrum; in reality the interpretative approach to Gettysburg was at best participation through the painting and overlooking the battlefield as a reenactment of the past rather than the continuity of the dedication.

As built, the Visitor Center required more interpretive imagination than the clients and visitors typically conceived. Hugh Miller pointed out that the building was a project which many NPS administrators and visitors did not fully understand or appreciate.[18] This led to negative criticism over the years, particularly regarding its location and character. It was an expensive building to maintain, many of the mechanical devices broke shortly after it opened, and the need for more space for staff and higher visitor numbers necessitated a larger facility. The NPS demolished the building in late 2012, shortly before the 150th anniversary of the battle of Gettysburg.[19] Neutra's building had numerous design considerations to animate the memory of the site for the visitor but it was unable to adapt for future expansion and the location contradicted new preservation beliefs appearing in the late 1970s. It was replaced by a new Visitor Center located east of the National Cemetery at a far less prominent location on the battlefield grounds around 2007.

Conclusion

Earlier there was a reference to *Mystery and Realities of the Site* in which Neutra wanted to uncover the qualities of the place. Landscape architect Garrett Eckbo agreed with Neutra's thesis in his book review and added that "[Neutra's book] indicates their nature and a direction for their solution, and leaves the specific application to the reader. This is as it should be."[20] This is in keeping with the spirit of Tilden's animation in interpreting and preserving the past at national historical parks. Neutra found a way to preserve the historical milieu by animating the site rather than either contrasting it or ignoring it. He recognized Modern architecture's ability to animate the site through careful choreography of visitor experience and the relation of the building to its historic and physical surroundings. The ways he achieved this were often subtle: the way the glass reflected the landscape

and the building, the articulation of the visible horizons, orienting the building to lead one towards the battlefield on the west side of the ridge, ask one to reflect on the significance of the National Cemetery to the east, and offering the opportunity for orating reconciliation in times of crisis.

Neutra's Visitor Center at Gettysburg was part of the Mission 66 development to introduce Modern architecture in national historical parks. It is quite obvious that the building had Neutra's signature for the modern aesthetic but the building offered more than mere stylistic appearances. It was the qualities of Modern architecture—spatial relations within the landscape and the properties of materials—which preserved the historical milieu. We have to look beyond the obvious means of representation through form and material associations to discover how Modern architecture respected history and context, which Neutra demonstrated at Gettysburg.

Endnotes

1 Emerson Goble, "Architecture (?) for the National Parks," *Architectural Record* 121, no. 1 (January 1957): 173-185. 178.

2 Lewis Mumford, "The Case Against Modern Architecture," *Architectural Record* 131 (April 1962): 155-162. 161.

3 *The Civil War Centennial: A Report to Congress*. U.S. Civil War Commission: Washington, DC, 1968. 35. My italics.

4 Carr. 189-190.

5 Freeman Tilden, *Interpreting Our Heritage* (Chapel Hill: University of North Carolina Press, 1957). 70-76.

6 Ethan Carr, *Mission 66: Modernism and the National Park Dilemma* (Amherst, MA: University of Massachusetts Press, 2007). 162-63; Thomas S. Hines, *Richard Neutra and the Search for Modern Architecture* (New York: Rizzoli, 2005). 266. The most detailed study of the Gettysburg Visitor Center is still Sarah Allaback's chapter in *Mission 66 Visitor Centers*. In that chapter, she covers the state of facilities for the nineteenth-century cyclorama painting and its restoration, the planning of a new visitor center by NPS and later by Neutra, a summary of the construction narrative from site reports by Thaddeus Longstreth, and the longevity of the building. See Sarah Allaback, *Mission 66 Visitor Centers: The History of a Building Type* (Washington, DC: National Park Service, 2000). 95-143.

7 James D. Van Trump, "Circular History: The Visitor Center and Cyclorama at Gettysburg, Pa," *Charette* 42 (October 1962): 21-23.

8 Richard Neutra. *Richard Neutra to W. G. Carnes, April 29, 1957*. Letter. University of Pennsylvania Architectural Archives, *Thaddeus Longstreth Collection*. Box 14, Folder 009.569. There is no further indication that Neutra actually wrote or published the essay.

9 Richard Neutra, *Mystery and Realities of the Site* (Scarsdale, NY: Morgan & Morgan, 1951). Original italics. 14. This arose from reading David Leatherbarrow's discussion on Neutra and Garrett Eckbo in *Topographical Stories: Studies in Landscape and Architecture* (Philadelphia: University of Pennsylvania Press, 2004). 62-82. Eckbo was particularly fascinated with this same statement by Neutra, which is his first quotation from the book in his review published in *Landscape Architect*, see note 17.

10 Richard Neutra, "Significance of the Natural Setting," *Magazine of Art* 43, no. 1 (January 1950): 18-22. 19. The article's illustrations were the Kaufmann House in Palm Springs.

11 Visitors bought tickets to see the Cyclorama painting as a theatrical show. Neutra's office included projectors, stage lighting, and a speaker system to recreate the sounds of explosions and shouting to bring the painting to life. The reference to ancient architecture is my own observation and not stated in Neutra's specifications or commentary. *Neutra and Alexander Inter Office Memo, February 24, 1959*. University of Pennsylvania Architectural Archives, *Thaddeus Longstreth Collection*. Box 14, Folder 009.569.

12 Carr. 155-197. NPS changed its position on inserting new buildings in historically significant areas by the 1970s. This new position was explained by Robert M. Utley in "A Preservation Ideal," *Historic Preservation*, April-June 1976: 40-44.

13 Ronald Lee also attended an early client meeting for the Gettysburg project with Neutra and Longstreth present (Thaddeus Longstreth. *Meeting Minutes, April 13, 1958*. Manuscript. From University of Pennsylvania Architectural Archives, *Thaddeus Longstreth Collection*. Box 14, Folder 009.569.).

14 Longstreth became an intermediary between Neutra's office in California and the National Park Service eastern office in Philadelphia for the Gettysburg project. Longstreth was a longtime associate of Richard Neutra and worked on the Kaufmann House in Palm Springs, CA. Emily T. Cooperman, "Longstreth, Thaddeus (1909-1997)," *Philadelphia Architects and Buildings* https://www.philadelphiabuildings.org/pab/app/ar_display.cfm/22922.

15 Neutra and Alexander. Site drawing dated April 19, 1958. Thaddeus Longstreth Collection, University of Pennsylvania Architectural Archives.

16 Neutra and Alexander. Site drawing dated December, 1958. Thaddeus Longstreth Collection, University of Pennsylvania Architectural Archives.

17 Floor plan dated April 7, 1958. From University of Pennsylvania Architectural Archives, *Thaddeus Longstreth Collection*. See also Neutra, *Life and Shape*. 311.

18 Hugh Miller, FAIA, comment following the presentation of this paper at *A Century of Design in the Parks* symposium (Santa Fe, NM, June 21-23, 2016). June 22.

19 For historic preservation arguments, see Christine Madrid French, "The Cyclorama Building: Neutra's Monumental Vision at Gettysburg," *Blueprints* (National Building Museum) 20, no. 2 (2001): 7-9; Christine Madrid French, "Bulldozing a Masterpiece: Richard Neutra's Modernist Gettysburg Memorial," *The Modernism Magazine*, July 2005: 104-113; John Beardsley, "Another Battle at Gettysburg: The Historic Cycloramam Should Hold Its Ground," *Landscape Architecture* 90, no. 9 (September 2000): 128, 125.

20 Garrett Eckbo, "Richard Neutra on Building: Mystery and Realities of the Site," *Landscape Architect* 42, no. 1 (October 1951): 41-42. 42.

Building on Dragons – Saving a Mission 66 NHL - The Quarry Visitor Center at Dinosaur National Monument

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Figure 1. Dinosaur National Monument – Quarry Visitor Center from the Green River valley, 2012 Photo Credit: Photography for Anderson Hallas Architects, PC

Abstract

Within a few years of its 1958 dedication, the Quarry Visitor Center was showing signs of distress, serious distress. A series of geotechnical evaluations revealed that the same geologic formation—bentonite and dipping bedrock—that encapsulated the world's most extensive collection of Jurassic fossils also presented a very unstable substrate for building foundations.

For over 50 years, the highly expansive soils seasonally shifted the building, deconstructing its rigid masonry, and bending its steel structure. Designated a National Historic Landmark (NHL) in 2003, the visitor center was concurrently fighting a losing battle to shattering window panels and spontaneously rupturing stud walls. Repairs to the structure were costing as much as $100,000 a year. The situation became so untenable that the structure was condemned in 2007 as too hazardous for human occupation.

All treatment options – from preservation to rehabilitation to complete deconstruction/ replacement – were explored. This session will explain what factors weighed into the final decision and how the preferred alternative saved this icon of NPS Mission 66 architecture.

Introduction

The Quarry Exhibit Hall (formerly known as the Quarry Visitor Center) located on the western edge of Dinosaur National Monument (DINO) near Vernal, Utah, is one of the most storied and beloved examples of the National Park Service's Mission 66 style. Essentially a glass, steel and concrete block shed built over the top of a massive, exposed Jurassic Fossil bed, the Exhibit Hall is an archetypical icon of mid-century modern architecture. Simple clean lines and wide open vistas of the entire fossil bed are hallmarks of the design with full height walls of glass that allow visitors to see the fossils from the outside as well as the vast expanses of folded and forbidding landscape that makes up the setting for this space-age building. Designated as a National Historic Landmark [NHL] in 2001 it was nominated primarily for its architectural character. To quote the nomination itself, "the striking appearance of the Quarry Visitor Center – and its enthusiastic public and critical acceptance – made the building an affirmation of the entire design and planning direction of the Mission 66 program." [1]

Unfortunately, some of the same features that make the building such an icon contribute directly to the deterioration and decline of the structure. The setting itself, among the jumble of slanted planes and sloping bedrock that brought the fossils so close to the surface, is the exposed edge of the Morrison Formation that appears on both sides of the Rocky Mountains. This formation, which gave us Red Rocks Park near Denver and the Garden of the Gods in Colorado Springs, both in Colorado, is perhaps best known (at least in the construction industry) for its extremely expansive soils. In the case of the DINO visitor center, which is built directly on top of this formation, the building has been "moving" since before construction was completed. Many of these events were described in the Historic Structure Report [HSR] generated by the NPS in 2003.

History

In 1909, eight fully-exposed and intact dinosaur vertebrae were discovered sticking out of the top of a ridge in northeast Utah by Earl Douglass, a paleontologist from the Carnegie Museum in Pittsburgh. Douglass settled in for the long haul, eventually shipping over 350 tons of fossils were slipped off to the Carnegie Museum, alone, over the course of several decades. Eventually, it became the single largest quarry of Late-Jurassic era fossils in the world. These prodigious discoveries led President Woodrow Wilson to proclaim Dinosaur a national monument in 1915.[2]

In 1923, Douglass suggested that the government "leave the bones and skeletons in relief and house them." Douglass believed that doing so would create "one of the most astounding and instructive sights imaginable." It took more than 30 years for his vision to become a reality, but Douglass's assertion was correct.[3]

It took over two decades to finally erect even a temporary structure over the quarry in an effort to protect the exposed fossil face from both the environment and the visitors. In the meantime, many different designs for a permanent structure were proposed and shelved and it wasn't until the introduction of the National Park Service, post-World War II building boom referred to as Mission 66—1966 being the end-date for the program—that a structure finally gained some traction. This NPS program was intended to provide access to an ever-more mobile, post-World War II, America as well as celebrating the 50-year anniversary of the parks. Oddly, the other factor that provided some much needed push was the controversy surrounding a proposed new dam at Echo Park (the confluence of the Green and Yampa Rivers) just a few miles to the east of Dinosaur and in the heart of this arid and little known park. This brought a great deal of attention to Dinosaur with a renewed focus on the protection of not just the park but the paleo resource itself.

By the time it became politically possible and necessary to create a structure at the fossil bed, the whole concept of the "visitor center" had emerged as a part of the Mission 66 effort. No longer just a shelter or a museum, Dinosaur's proposed visitor center was to become the center of the entire visitor experience – a



Figure 2. Temporary Shelter at Quarry Face, circa 1950
Photo Credit: unknown, National Park Service Archives

whole new building type had come into being. One of the great challenges of creating the "new" building type is that there was little or no data on which to evaluate its size and impact. How big did it need to be? How many visitors would need to be accommodated? What kind of spaces really need to be provided? How does one manage traffic flow? All of these questions would continue to be reviewed as the visitor center concept evolved. The Quarry Visitor Center, being one of the first of its kind, was an early attempt to forecast how visitors and staff would use the visitor center paradigm.

Once being committed to, the design and construction of the Quarry Visitor Center was extremely rapid – fewer than 24 months from start-to-finish. The architecture firm of Ashen and Allen was selected but the design direction and much of the design itself could also be attributed to the NPS Western Office of Design and Construction.[4] In keeping with the new trend toward modern architecture and the "Mission 66 Style"—a term now used to capture this period of NPS design and construction—the proposed design was clean, modern, and construction was to utilize readily available, "off-the-shelf' materials.

The aggressive construction schedule (dictated by a political need to show progress) did not allow for a thorough understanding of the area's geology and implications for large-scale construction on the site were imperfect at best. Design and construction proceeded with a shallow concrete foundation around the perimeter of the structure and standard caissons under the steel columns that defined the south side of the original quarry viewing area. This construction, combined with the necessary removal of considerable soil "overburden" on the fossils, led to a building that has been in a state of constant repair for half a century.

Conditions

In one of the main tenets of Feng Shui– the ancient Chinese art of "design harmony" – it is said that one should build a house with a "dragon" protecting its back.[5] Unfortunately, the Visitor Center in Dinosaur was built right over the dragon itself – even to the point of taking out the dragon's back to accommodate the "house" - not a very harmonious start. The problem, in a nutshell, was that "the building is founded upon the Morrison Formation, which consists of alternate layers of shales and sandstones and some limestone. Some of the shales contain bentonitic shales, which are moisture sensitive. Their volume can increase significantly as their moisture content increases. . . ."[6]

To add to this challenged—yet beautiful—setting, is that the entire parking lot for the visitor center was built on the tailings of the original quarry excavation. The first hints of problems emerged before construction was completed and included major cracks in the parking area, a vibration at the viewing level balcony, and some apparent upward movement in the foundation at the southeast corner. Within ten years, a major study had to be performed to evaluate the "adverse movement" at the building. Additional studies were initiated every



Figure 3. Early architect's sketch, circa 1956 Photo Credit: Sketch by Ashen & Allen Architects, NPS Archives

decade or so as the adverse conditions progressed and the structure continued to move. Several repairs and interventions were introduced over this period, not all of which were successful. By 2001, six separate studies and several "repairs" had been instigated and the situation continued to get worse.

Subsequent to being designated an NHL, in 2001, NPS formed a team and initiated an historic structures report (HSR) to assess the status of the building and to develop a series of short- and long-term recommendations for the rehabilitation of the visitor center. Recommendations included developing a Fire Protection and Life Safety Master Plan to address the fire and life safety deficiencies, creating a second emergency egress for the public, considering alternate staff offices locations, accelerating out-year construction funding and developing an interim strategy for the safe use of the building and health of all its occupant. [7]

By 2003, concrete masonry unit walls were cracked and repaired, walls were deforming, steel was bending, glass was breaking spontaneously, floors were heaving. Part of the HSR team's task would be to evaluate the structure and develop options for how to address the underlying structural issues. A wide array of evaluation methods and tools were utilized including water levels, crack monitors, stress monitors, torque analysis and photogrammetry. Soils testing was initiated to determine the immediate geology of the site as it related to the building itself.



Figure 4. CMU cracks and repairs on west end of Administrative wing, 2005 Photo Credit: Tom Soell, JVA, Inc.



Figure 5. Floor deflection in main lobby & gift shop, 2004 Photo Credit: Dave Anderson, Andrews & Anderson Architects, PC

The pressure of the expanding soils was crushing both interior and exterior walls. Walls on the east end were as much as 18" above the middle of the building and the west end was up about 11". The rotunda was elongated and tilting about 5 degrees and floors were out of level (by as much as 10 degrees in places) and cracking – the concrete in the area around the joint between the rotunda and the main gallery floor had been replaced 4 different times. Roofing on the rotunda was stretching in one axis and folded over on the other. The balcony tilted down toward the fossil face at a slope of almost 4 degrees.

In all, over the preceding decade, repairs alone cost $60-100,000 per year and were little more than a Band-Aid because the underlying issues were not fully addressed. In addition, the finishes and exterior skin that are integral to the structure were affected because all of the movement impacted the entire building. The glazing framing, which was welded directly to the structure, caused glass to crack (and in some instances, shatter) and doors no longer fit their frames. Sloping platforms had to be installed to keep wheeled task chairs from rolling away from desks.

In 2007, the structure determined to be unsafe for habitation, was closed to the public. The situation had become critical and a long-term solution needed to be implemented that would allow park staff to open Quarry Visitor Center as soon as possible.

Process

The HSR developed by the NPS in 2001-2003 was the first step in the process of creating a long-term solution for the Quarry Visitor Center. After this, the team of Andrews & Anderson Architects, PC, DHM Design, Inc. and

JVA, Inc. was brought on board to conduct a whole-building structural analysis. This in turn triggered the need for the geo-technical study performed by Yeh & Associates. The results of this study only served to reinforce the earlier findings of extremely moisture sensitive soils.[8]

Programming

An essential part of the comprehensive discussion about the condition, status, and eventual rehabilitation, repair, or replacement of the Quarry Visitor Center (QVC) was to develop a realistic and current program for the spaces that needed to be contained within or at least provided by the visitor center. As was stated earlier in the paper, the whole "Visitor Center" concept was extremely new, almost experimental, when the Quarry Visitor Center was first designed. Uses evolved over the next 50 years; the fossil face was no longer an active "dig" and the paleontology workshop had pretty much moved to other locations. Office space had taken over the lab and the book shop expanded into the exhibit space. There was little or no space for groups of visitors to queue up before entering or leaving the building. Shuttles moved people from remote parking areas because parking at the QVC itself was limited. The lack of air-conditioned space for the staff—offices or meeting spaces—was having an impact on the morale of the staff and the layout of offices meant that many offices and meeting rooms also served a dual function of visitor circulation as well. The geometry of the existing building forms did not allow for much flexibility of space, therefore spaces were defined out of whatever was available.

The need to address the physical condition of the building itself provided an opportunity to rethink just how the interior spaces needed to function. A full program was developed using both the existing staffing needs and the NPS program model for visitor centers. It was found that the overall square footage was adequate for the programatic needs, but the data was skewed – what other program had a 5,000 sf exhibit in the middle of the visitor center? The number of programs had to be adjusted to accommodate the elephant in the room—the open quarry exhibit. During the programming effort the following goals were developed:

- Protect both the paleontology and geology resources of the quarry.
- Meet current building codes, including access, exit and ADA accessibility, as well as solve health and safety issues.

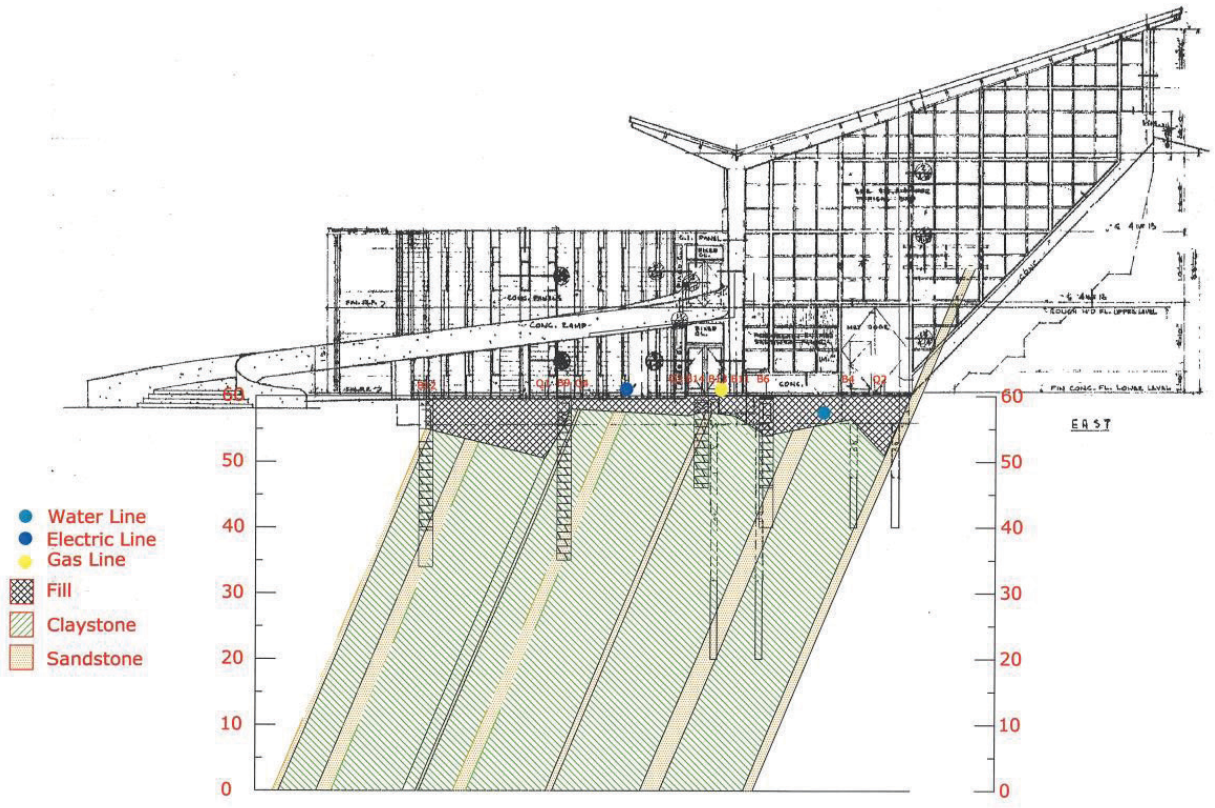


Figure 6. Geological Cross Section, East Elevation, 2006 Image Credit: Quarry Visitor Center Final Geotechnical Report, Project No. 29-065, Yeh & Associates

- Provide an environment where employees can work efficiently; provide space for staff offices, and meetings.
- Provide visitors opportunities to view fossils in situ by providing way-finding and interpretation of fossil wall.
- Incorporate sustainability goals by ensuring low or reasonable maintenance costs on an ongoing basis.
- Preserve and protect, unimpaired, the NHL structure that allows for continued and appropriate use of the visitor center.
- Provide an organized, intuitive visitor experience that allows visitors to learn about the quarry, its story, and the "paleo-ecology" it represents.

Design

- Protect resource and present the quarry in best possible environment
- Retain historic building fabric and design
- Build upon historic context from other previous structures
- Blend with existing landforms and textures
- Be light on the land – minimal impact on natural, cultural, and scenic resources
- Respond to the active soil conditions
- Respond to daylight for best viewing of resource
- Respond to circulation and movement of visitor
- Respond to views into the hall, out of the hall, and to the enclosed resource
- Provide a sustainable and energy efficient environment
- Relate to the story of the excavation of dinosaur artifacts
- Maintain a world class visitor experience
- Provide for visitor and employee safety
- Provide ABA accessibility

Value Analysis (VA) Workshops:

Between 2004 and 2009, a number of options were discussed and evaluated. In order to fully evaluate these options several value analysis ("Choosing-By-Advantage") workshops were held with all stakeholders able to participate in the discussion. Stakeholders included park staff, Denver Service Center (DSC) staff, Utah's state historic preservation office (SHPO, concessionaire, local businesses and scientists.

Figure 7. Value Analysis, Choosing-By-Advantage workshop, 2005 Photo Credit: Photo Credit: Bob Smith, DHM Design



Figure 4. CMU cracks and repairs on west end of Administrative wing, 2005 Photo Credit: Tom Soell, JVA, Inc.

First Value Analysis, 20059

Basic concepts were evaluated during this first, "Big Picture," value analysis. Primarily focused on overall master planning concepts, the initial options were:

1. "PMIS Scope with full Preservation"
   This alternative followed the scope of work proposed in the original NPS Project Management Information System (PMIS) statement requesting the full preservation of the entire Quarry Visitor Center to its original 1957 appearance on both the interior and exterior.
2. "HSR Scope with SHPO Consultation on NHL"
   Following the recommendations of the historic structure report, the Quarry Visitor Center would be restored to its 1957 appearance, but the South and Administrative wings would be removed and rebuilt. Interior functions would be modified to meet the changed program.
3. "Exhibit Hall with New Interpretation, Offices, & Book Shop"
   The exhibit hall area of the 1957 Quarry Visitor Center would be renovated, but the South and Administrative wings, along with the serpentine ramp, would be removed. A new addition would be constructed to accommodate lost space and to respond to the changed programmatic needs of the park staff.
4. "Exhibit Hall only – All other functions in new Visitor Center"
   The Exhibit Hall portion of the original Quarry Visitor Center would be renovated, but the south and administrative wings, along with the serpen-

tine ramp, would be removed. A new addition would be built to accommodate vertical circulation, ADA access, and minimal facilities. In addition, new building would be constructed at the existing visitor contact station to accommodate lost space and to respond to the changed programmatic needs of the park.

5. "Demolish, Start from Scratch – New VC @ Quarry"

   This alternative looked at removing the existing Quarry Visitor Center (exhibit hall, south and administrative wings and serpentine ramp) and construct a new visitor center in the same location to accommodate the changed programmatic needs of the park while eliminating the structural and design impediments of the 1957 building.

The team developed a number factors on which value analysis decisions could be based. They included:

- Minimize impact on the historic building
- Water management
- Minimize potential damage to fossil resources during construction
- Visitor experience and flow
- Provide visitor services
- Protect public health, safety, and welfare
- Improve operational efficiency
- Provide improvements to sustainability and energy efficiency

Eventually, the decision was made to separate the functions of the 1957 visitor center and locate new visitor contact functions elsewhere while maintaining protection of, and access to, the quarry resource. Critical issues involved in the decision were public safety, park functional needs, environmental impact of visitor parking and access on road to the quarry, on-going maintenance, and energy use. When costs (both initial and life-cycle) were added to the discussion, the need to separate functions was made even clearer.

The preferred alternative for the Quarry Visitor Center relocated all of the primary visitor center functions to a new facility located at the Lower Contact Station. The function of the existing Quarry Visitor Center would be changed to a free-standing exhibit hall over the original fossil bed (known as the "quarry face"). Scientific research functions would be relocated to a new curatorial facility in Vernal, Utah. The fossil face would be protected from the elements and would be accessible for viewing by the public. The steel frame and glass structure surrounding the quarry face could be renovated. If this solution proved untenable, a new structure could be built to replace it and still provide protection of the resource.

The development of a new visitor center presented an opportunity to provide interpretation for the entire park, not just the historic fossil quarry site. In the past, interpretation of the quarry face dominated the visitor opportunities and focused the majority of attention on the discovery, excavation, and interpretation of the fossils, to the exclusion of the rest of the park. The relocation of visitor center functions could take advantage of some of the amenities at the existing building (large shade structure, restrooms and some existing useable enclosed space), with additional space needing to be provided for new exhibits, book shop, additional restrooms, program space, offices, and support spaces.

Second Value Analysis, 2007

The second VA was split into two separate evaluations – A) the quarry exhibit hall in its original location, and B) a new visitor contact center located at the bottom of the road leading to the quarry location. Issues at the QVC centered around some basic circulation concepts:

- Maximize the "A Ha" or "Oh WOW" factor
- Viewing the building from a distance
- Viewing the fossils and exhibits up close / "touching the face"
- ADA accessibility as the main route

With these tenets in mind, the following concepts were presented and evaluated:

"Concept A1: Reuse existing exhibit hall structure"

This design approach rehabilitates and renovates the existing Mission 66-era exhibit hall at the Quarry as designed by Ashen and Allen Architects. The intent is to maintain the historic character and image established by the existing building. The basic framework and large steel 'Y' structure is maintained. The remainder of the building, including the round administration building, the one story research areas, the window walls, the viewing balcony, and the ramp would be demolished. A new viewing gallery would be constructed with access via stairs and either a ramp or a two-stop lift.

"Concept A2: New arched steel structure"

The exposed structure, or skeleton, of this concept mirrors the same condition of the fossils, which are exposed on a sloping plane. In this scheme, the ramp and fossil viewing areas extend much clos-

er to the resource for prime visitor viewing. It still allows lower levels and clear unobstructed views of the resource. Structure is an arched steel truss from new bearing points outside of the original structural footprint of the original building.

"Concept A3: new lightweight tensile structure"
This concept utilizes a pre-engineered structure, with a fabric covering, similar to those used in the aviation industry. Its attributes are excellent light quality, lower cost, and rapid installation, which reduces the impact on the resource and open the facility to visitors sooner. In this concept, one challenge is reducing the industrial character of the facility. This scheme also has three levels of viewing platforms that, again, allow unprecedented, close-in views.

The Choosing-by-Advantage process clearly indicated that keeping the existing frame and historic character of the original building was the most desirable approach, even allowing for the removal of the administrative and south wings. The concept respects the innovative image of the glass "bird cage" and maintains both the actual foot print, and as much of the original fabric as can be saved. It should be noted that keeping the original steel frame would require substantial effort and cost to minimize the impact of the expansive soils on the structure.

Additional VAs (2007-2008)

A series of additional VAs were held to evaluate a number of individual elements of the design. These included a number of "skin" designs that looked at how to apply a new glass curtain wall to the existing steel frame while allowing for variations in thermal expansion while still resisting wind loads and still allowing the building to "move." Various glazing options were evaluated to reduce glare on the fossil face, increase insulation, maintain color accuracy, and mitigate interior solar gain issues. Through the VA process, the different faces of the building were given different glazing characteristics to respond to the changing solar angles as well as daily heat or cold variations.

Circulation around and through the building became another VA topic as circulation was a major factor in the overall design. Through the workshop it was determined that a continuous ramp system on both the interior and exterior would allow the Quarry Exhibit Hall to function in much the same way as originally designed with all visitors sharing the same experience of entering the exhibit at the second floor overlooking the entire fossil face from above – the WOW event. ADA access was accommodated without any compromise in the experience and costs (initial, life-cycle costs, maintenance and operating) were minimized by a "passive" circulation.

The final VA on the project involved the building systems. Visitor and staff comfort, exhibit clarity and health, as well as safety and welfare all played a role in this VA. The solutions involved, not only design, but programmatic solutions. Even though a goal for LEED certification was not pursued for the exhibit hall, the mandate to achieve a sustainable solution played a role in all of the factors that contributed to the final VA. In the end, by deciding to keep all parking at the lower visitor center and restrict both visitor and staff access to shuttles (interpreters accompany the tours rather than being stationed at the exhibit hall full time), the need for a highly conditioned space was eliminated. Restrooms were relocated to a separate freestanding building, design temperatures were allowed to swing over 20^0F - thus reducing the size and type of mechanical heating and cooling equipment required—and lighting was developed as a supplement to natural daylighting. In addition, very low speed but high volume exhaust system was selected was selected to mitigate radon gas build up.

Approved design solution

Per the initial VA, the approved design solution was to develop a new visitor center facility at the bottom of the hill (about ¼ mile away) and rehabilitate the original steel structure as a free-standing exhibit hall. This limited the impact of heavy visitation on the paleontological resource and still maintained at least a part of the historic fabric.

The existing visitor contact station at the bottom of the hill would be expanded to allow for all visitor center activities to take place away from the paleontological resource – including restrooms, and non-viewing activities. The new, expanded visitor center achieved LEED silver certification while the Quarry Exhibit Hall did not pursue LEED certification because of the anomalies of being a relatively "unoccupied building" that eliminated offices and other functions that require full time occupation. Although it is not certified, a considerable amount of attention went into making it as sustainable as possible - accessed only by a shuttle system, reduced HVAC system, recycled materials, etc.

The proposed Quarry Exhibit Hall re-design removed the sections of the building that were "compromised beyond repair" and placed a new window system on the

outside of the structural steel frame. A new viewing platform and ADA access was provided while any and all water-related functions were removed from the building. A side benefit of the proposal allowed construction to take place with enough room to accomplish the necessary foundation repairs. Deep "micro-piles" were designed to be installed under the steel columns (without moving or displacing the structure) – the micro-piles penetrate up to 200 feet down through the sloping layers to solid bedrock. All water-related needs are relocated outside the building.

The new glazing is insulated, low-e panes that imitate the original pattern of the steel cased window system. The new system is designed to hang "loosely" on the steel frame with upwards of 2" play built in all directions. Because this is not the original material, a brushed aluminum finish was chosen to distinguish it from original fabric. The concrete serpentine ramp from the original building was removed and a new ADA accessible concrete ramp now serves as the main route – once again placing visitors at the top of the exhibit so they experience that "Oh WOW!" moment as you enter the space.

Endnotes

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Modern in the Mountains: Rustic Reinterpreted At Jackson Lake Lodge

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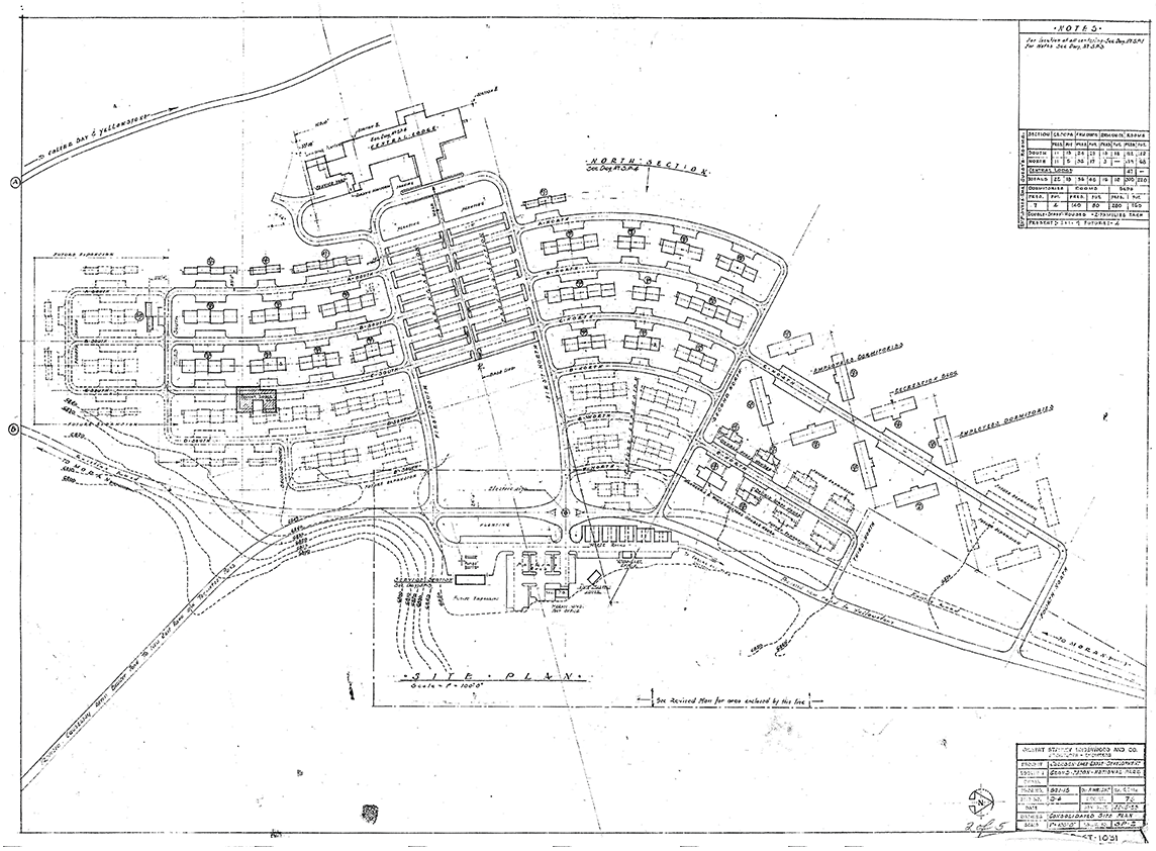


Figure 1. Consolidated site plan of Jackson Lake Lodge development by Gilbert Stanley Underwood and Co. Architects - Engineers. December 1953. Source: National Park Service GRTE_136_1031[156196]

Abstract

Increased visitation to America's national parks by a growing middle class during the thriving postwar era prompted the enlargement and upgrade of existing tourist accommodations. Aware of these circumstances, John D. Rockefeller, Jr. hired architect Gilbert Stanley Underwood to design Jackson Lake Lodge in Grand Teton National Park, Wyoming. The lodge, a motor-court style complex consisting of a concrete central lodge with compound cabins arranged in organic clusters, reinterpreted the well-known rustic architecture tradition by bringing Modernism into the national park system. Not without controversy, its design and construction marked a turning point for design within the National Park Service and strongly influenced Mission 66, a concessionaire development initiative undertaken by the National Park Service between 1956 and 1966.

In 2002, the property was listed as a historic district on the National Register of Historic Places and, in 2005 it was declared a National Historic Landmark. In 2007, Shapins Associates completed a cultural landscape inventory (CLI), and in 2014 a historic structure report

was begun by the authors in parallel with a cultural landscape report by Logan Simpson, Inc. A wealth of archival documents on the design and alteration of the lodge supplemented by physical investigation offered an unparalleled opportunity to deepen our understanding of the property's original design intent, its uncelebrated significance, and an opportunity to explore how it could be rehabilitated through selective restoration.

Earlier Experiences and Design Influences

Many factors influenced Jackson Lake Lodge's design and setting, from Gilbert Stanley Underwood's early practice and experience with rustic design solutions for the National Park Service (NPS) to his later embrace of the International style as a reflection of postwar life styles and social values.

Underwood embarked on the project around 1950. At the time, he was supervising architect for the federal government and had recently completed a hotel for John D. Rockefeller, Jr. at Colonial Williamsburg. Underwood conceived Jackson Lake Lodge as a larger development integrated into the greater territorial scale and long-range plan for the development of Grand Teton National Park. In "A Scheme for the Development of Public Concessions in Grand Teton National Park," Underwood proposed to develop three concessions of varying capacities for visitors at Jackson Lake, Jenny Lake, and Colter Bay, with Jackson Lake Lodge providing the largest number of accommodations. Unlike earlier utilitarian lodging facilities in the area, there was an interest in developing an upscale accommodation, to make the Teton Range and its lake a final destination rather than a pass to Yellowstone. (See Figure 1 on page 265)

Although the construction period for the lodge was short, the design and planning process took several years. Central to Underwood's design was the idea of the American motor lodge, emphasizing that new tourists were seeking modern conveniences, such as using their own automobiles in the park and having them easily accessible from their accommodations. Underwood's initial scheme was quite specific and discussed all aspects of the proposed Central Lodge and surrounding buildings, from utilities, to service stations and shops, to staff housing, and even to furnishings. The need for a fireproof or semi-fireproof construction in the Central Lodge relied on the use of reinforced concrete as the primary structural material, but not for the guest lodges, which were intended to be wood frame construction covered with asbestos cement shingles. Although there would be many changes to the interior of the lodge due to cost overruns, the overall design established in this proposal would remain intact.

Underwood had already implemented the idea of a central lodge surrounded by clusters of individual cabins at the Grand Canyon Lodge in Grand Canyon National Park, Arizona and, before that, at Zion National Park and Bryce Canyon National Monument. The prevailing custom of the time as practiced by the railroad companies advocated the construction of a large picturesque "destination resort" popular until the 1920s and 1930s.[1] In contrast, Underwood felt it was the automobile[2] that should shape public accommodation in parks such as Jackson Lake Lodge and inform the master plan, which was based on suburban development planning and new postwar American consumer demands.

The master plan was based on a segregated pattern of distinct lodging areas comprised of the Central Lodge, the guest lodges, and employee housing. The lodge's road layout originally extended from the old Yellowstone Highway, the existing old road to Moran. A loop encircling the main parking area connected this road, on the east side of the development, to the Central Lodge, on the west side. The Central Lodge was located on a privileged and middle area close to Moose Hill. From this point, the building could overlook a great length of the Teton Range across the wetlands and Jackson Lake westwards. This central position reinforced the role of servicing the whole site by housing the guest and administration services, as it still does today, while at the same time providing "democratic" access to the visitors staying in the guest lodges.

These guest lodges were symmetrically laid out in two different clusters in a butterfly-shaped configuration,



Figure 2. Jackson Lake Lodge with the Central Lodge in the background and a guest cabin in the foreground. Source: The Rockefeller Archive Center. Grand Teton Lodge Company records

one located at the south and the other one at the north of the loop, and the parking area leading to the Central Lodge. Underwood located these groups far enough away from the old road to Moran in order to provide adequate land for future expansion, as he had already outlined in his 1953 proposal and 1954 consolidated plan. Extending from the parking area and connected by their closed loop ends, a number of streets serviced the guest lodge groups on each side, allowing visitors to park conveniently close to their cabins.

Similar to the Central Lodge, the guest cabins, employee dormitories, staff housing, and service structures all drew on elements of the International style and incorporated prefabricated elements. Underwood's work for the federal government in Washington, DC likely stimulated him to embrace this style, which quickly moved from its avant-garde introduction to becoming a popular cultural reference for postwar modernity in the United States.

The lodge was constructed of a steel frame and cast-in-place reinforced concrete roofs, walls, and floor slabs. Overall, it is an asymmetrical but balanced composition of a series of interlocking rectangular and square volumes that are anchored by a central block of three stepped cubes covered with shallow cantilevered shed roofs. Two rectangular wings extend to the north and south, terminating on the south side in a service yard and the employee dining room, which projects eastward. The east elevation is the primary facade of the building and is characterized by a 180-foot wide porte-cochère—a further symbol of convenience for American motorists arriving by car. As highlighted by Elizabeth Engle (née Flint), and earlier by Joyce Zaitlin[3], the lodge's massing and composition was reminiscent of the development of temporary emergency housing in Washington, DC, where Underwood served as consulting architect. At the PBA Residence Hall for Women,[4] the typical residential hall was comprised of a series of rectangular aisles connected by a central block, flat roofs, and ribbon windows similar to Jackson Lake Lodge.

Underwood's attachment to modernist forms and consumer convenience was enhanced by two additional principles: comfort and variability, which Underwood addressed particularly in designs for the guest lodge complex. These buildings consist of a series of basic units (two- or four-room units) grouped in different lengths, with shallow shed roofs, and were deliberately staggered both vertically and horizontally to relieve the architectural monotony of the basic forms and to adjust for existing trees and topography (which were retained). The potential monotony of the forms was also countered by cladding the units with asbestos cement shingles stained in a range of three colors—"Autumn Brown," "Silver Gray," and "Weathered Gray"—and the individual entrance doors were painted in primary colors.

Asbestos cement shingles were also used for the other outbuildings, the grain texture of which, together with the stained "shadowood" in the interior, referenced the "rustic" and assured a uniform surface cladding across buildings and the entire complex. "Shadowood"[5] was Underwood's term for the sandblasted and stained interior plywood walls, as well as the singular application of board-marked, acid-stained concrete he used for the exterior of the lodge. This effect was intended to create the illusion of wooden panels, but was not literal wooden construction.

Like his contemporaries, Underwood interpreted the contextual requirements of his earlier rustic architecture as the integration of the buildings with their environment through the direct transposition of shapes and materials from nature. Underwood was already using modern methods and materials, such as concrete, in the Ahwahnee Hotel (1925-1927) in the Yosemite Valley. In this case, however, structural elements mimicked wooden construction. The concrete was carefully stained and shaped to resemble logs and given a rough wood grain texture. At the Sun Valley Lodge (1936), in Ketchum, Idaho, the concrete was cast and stained to resemble diagonal, vertical, and horizontal wooden boards inspired by European Alpine buildings.

At Jackson Lake Lodge, Underwood used shadowood as form liners to obtain a wood-grain finish on the exposed concrete. The form liners were made of sandblasted plywood of various widths and lengths unified



Figure 3. Guest lodges. North group. Ca. 1959. Source: The Rockefeller Archive Center. Grand Teton Lodge Company records



Figure 4. Close-up exterior view of "shadowood" showing the wood grain texture that has been recently overpainted concealing the original acid stains. 2014. Photographer: Joseph Elliott

into squares by a grid of recessed rustication joints. This distinctive grid pattern was utilized for aesthetic and practical considerations. As visual investigation has revealed, by using this technique, Underwood was able to hide the connection between each lift of concrete and to control concrete cracking. In essence, the surface design both informed and was formed by the formwork assembly and the method in which the concrete was poured, which was translated into a nearly perfect exterior concrete surface free of blemishes, cracks, and post-construction patching.

In addition to the textured fair-faced concrete, Underwood enlivened the relatively flat surface of the exterior with a tri-color application of acid stains. Although this technique was used on concrete beginning early in the 1920s, it was commonly recommended for concrete floors or a background for painted stenciling. Essentially, Underwood exploited the inherent variability of acid stain applications on fresh concrete by utilizing three different colors: brown, tan, and black, each applied and wiped off to simulate the variegation of natural weathered wood.6 This process showed a thorough understanding of the limitations of acid stains to achieve a uniform appearance and instead embraced the durability and variability of the stains as a desirable surface quality.

The overall result suggested regularized wood panel cladding in an updated reference that recalled the rustic wooden lodges of the past without a literal imitation of timber construction. In essence, this construction process reveals a thorough understanding of the relationship between Modernism's concern with the functional expression of materials as structure and the possibilities for their surface treatment to reference older traditions.

Significance & Alterations: The Historic Structure Report Project

The design and construction of Jackson Lake Lodge was characterized by strong personalities and difficult contract disputes. This is well documented in the correspondence between key players for the project, namely, Harold P. Fabian, Executive Vice President of the Board of the Grand Teton Lodge & Transportation Company (the concessionaire) and general manager for the project until the addition of Raymond Lillie; the contractor, Morrison-Knudsen, and their project manager and accountant, Paul Wise and Murray Burns; and of course,

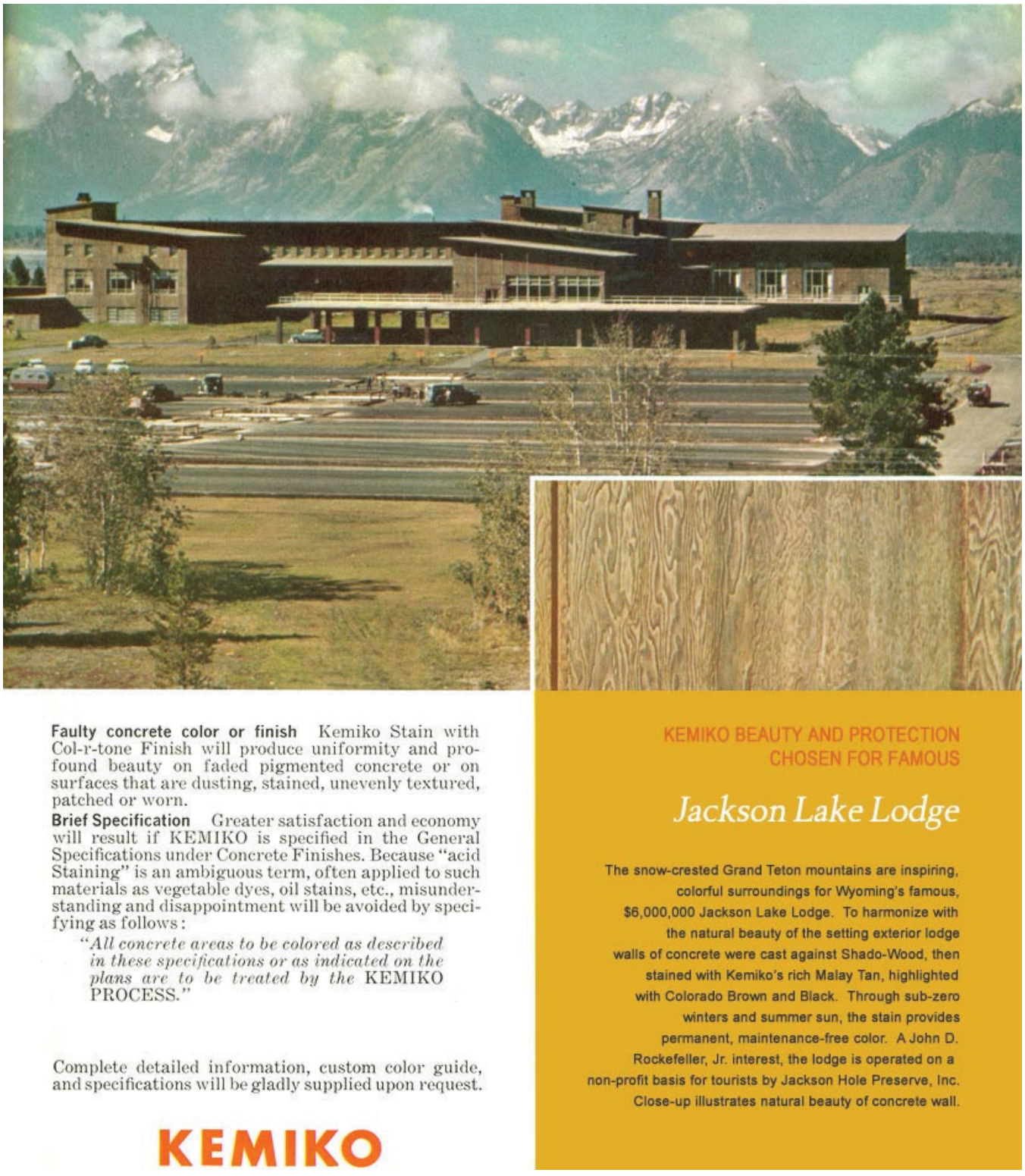


Figure 5. Advertisement for Kemico acid stains featuring Jackson Lake Lodge. Ca. 1956. Source: http://www.kemikostainforconcrete.com/history.html

Underwood as architect. Kenneth Chorley, manager of several Rockefeller operations including Colonial Williamsburg[7] and a close advisor of the Rockefellers, was often the recipient of these letters of correspondence, particularly from Fabian, and was typically the first point of contact for anything requiring Rockefeller's approval.

This complicated correspondence and the massive number of construction documents researched for this

project required the creation of an image-based relational database to prepare a construction chronology for the complex including its Central Lodge and outbuildings. In addition, by analyzing the information in this database, together with site maps and historical aerial photos, a complete chronology of morphological evolution of the property was possible.[8] In June 1955, when the complex opened its doors, Jackson Lake Lodge included the Central Lodge, 22 guest lodges, six employee dormitories, one employee recreation center, and four staff double-houses. The service area loop, the corral, and the gas station were under construction. Surprisingly, this is a smaller number of buildings than those eventually designated as contributing in the 2003 National Historic Landmark nomination, which established 1950 to 1955 as the period of significance.[9]

Alterations to the Central Lodge and outbuildings, especially the interior and landscape, came soon after the lodge opened. Physical site investigation enabled the research team to confirm the original details, early proposed alterations, additions, and the recent modifications that have altered the original character of the building and setting, and thus its historical integrity and original design intent.

Between 1956 and 1961, Jackson Lake Lodge operated at full capacity and became a popular destination. This prompted visitor capacity to increase by 300 rooms; however, only accomodation for 100 was added. It is worth mentioning that the first program of expansion followed Underwood's urban master plan. However, later additions, particularly the two- and one-story guest cottages proposed in 1960 by Spencer & Lee, moved away from Underwood's dictates. This action introduced new building typologies and reshaped Underwood's envisioned street pattern for future expansions by introducing a cul-de-sac at the south of the complex.

The late 1950s and 1960s also saw the creation of a Landscape Improvement Plan to better integrate the structures with the scenery, the construction of the current road access to the complex from the east, (both in agreement with Underwood's vision), and the installation of a swimming pool complex. Additionally, entrance porches were added to the guest lodges to create a shaded outdoor living space and increase the privacy of the bedrooms by Spencer & Lee. Since the end of the 1970s, the complex expanded gradually until it reached the current number of buildings by the end of the 1990s.

Alterations to the Central Lodge included the widening and re-detailing of the main stairway by Olsen Construction Company, the installation of a new dumbwaiter, and the elimination of the service bar in the dining room (all completed in 1957). In 1958, the space beneath the Explorer's Room was converted from a convention display space to additional meeting rooms and a place for outdoor events in inclement weather. In 1960, the exterior upper story windows were significantly altered and were enlarged with new enframements, destroying the exterior surface grid and the square module. Originally, nearly all the windows in the Central Lodge were louvered, emphasizing the horizontal aesthetic of each elevation and providing natural passive ventilation. Subsequent window frame modifications have also shifted the exterior palette from the original silver grey to the now dark anodized bronze finish.

These alterations to the windows and window openings over time have demonstrated a misunderstanding of their highly important role in the original design. The use of multiple louvered lights was not solely a functional feature for ventilation, but drew out the distinctive horizontal lines of the overall shape of the Central Lodge, as well as the deeply rusticated joints. This horizontality was deliberate, and was meant to maintain the



Figure 6. Guest lodges. Comparison between 2015 and before the 1960s remodeling. Source: Architectural Conservation Research Center based on photos of Joseph Elliot (2015) and Rockefeller Archive Center



Figure 7. West elevation Central Lodge looking north. Comparison between 2015 and ca. 1959. Source: Architectural Conservation Research Center based on photos of Joseph Elliot (2015) and Grand Teton Lodge Company Archives

Central Lodge's low profile on Moose Hill when viewed from the valley. Although the changes in the windows have maximized the view of the Teton Range from the interior, they have radically altered the experience of the building from the exterior.

Other major alterations came in the form of additions. In 1986, the Grand Teton Lodge Company ceased to be a subsidiary of Rockefeller's nonprofit organization Jackson Hole Preserve, Inc. With this change came the need for additional sources of income. As a result, a new bar was constructed on the west elevation and the Stockade Bar, designed around a nineteenth-century trapper theme, was replaced with new retail space. The new bar, called The Blue Heron, extends now toward Lunch Tree Hill from the north side of the upper lobby and breaks the plane of the exterior wall. In 1991, existing offices were expanded, adding space on the north side of the ground floor lobby. From the floor lobby, visitors and guests walked into the upper lobby. The architectural function of this space was primarily to set the stage for the view of the Teton Range with its cathedral-like proportions and three impressive picture windows overviewing the peaks. Both this architectural device and the conceptual model of the entry sequence was a hallmark of Underwood, as seen in his earlier monumental hotels within the national parks.

The upper lobby, the most important interior public space, still has the power to astonish and mesmerize visitors as they enter. The verticality at the upper lobby was heightened by the use of full-story piers, vertically-oriented fenestration, and vertically-trimmed shadowood paneling. Only the balconies provided horizontal accents and these were canted to offset the orthogonal grid. The interior color palette of the architecture was autumnal: tans, browns, and warm greys, and the surfaces were all textured, with the abstract figuration of the shadowood veneer and the rusticated natural sandstone. This palette and the grid of the exterior concrete were carried down to the stained concrete floor. Now, all the recent alterations cancel this emphasis on verticality and the subtle interplay of textured natural surfaces with the insertion of horizontal cornices and mouldings and the use of oak trim.



Figure 8. Upper lobby. Comparison between 2015 and ca. 1955. Source: Architectural Conservation Research Center based on photos of Joseph Elliot (2015) and Grand Teton Lodge Company Archives

The concealment or removal of nearly all of the shadowood veneer from the interior spaces and the major alterations of almost all of the windows has had a significant impact on Underwood's original design. The visual continuity between the interior and the exterior has been disrupted. The loss of the interior shadowood isolates the exterior finish as a unique, but disjointed, decorative feature. The replacement of furnishings and lighting also destroy Underwood's original integrated design. This important space could easily be restored with removal of these decorative insertions, restoring the recessed ceiling lighting, and either reuse or redesign of the original furniture.

In 1998, the Explorer's Room renovation and addition had a significant impact on the exterior. This space was expanded to create more breakout room spaces on the east side of the convention hall, which already had been renovated in the past. The pantry was also extended. The existing windows affected by the addition were removed and openings on the east elevation enlarged by cutting and removing the concrete walls. Outdoors, a balcony with aluminum railings connected to a terrace completed this expansion program, which also included a new mechanical pit on the north side.

Although the guest lodges were less modified, other outbuildings have undergone considerable changes. At the employee dormitories and staff housing, massing has been enlarged with additions and the interior retrofitted. In many areas, deterioration of asbestos cement shingles has resulted in siding replacement or concealment, either in kind or with board or board and batten siding either made of wood or a composite material. Fortunately the guest lodge exteriors retain a high degree of integrity and their mid-century aesthetic can be easily recovered with minor repairs.

Conclusion

As a continually operating hotel and conference center for the past 50 years, Jackson Lake Lodge has remained remarkably resilient in its original design to accommodate the needs of visitors and staff. The recent documentation and analysis of its design, construction, and alterations over time, as well as the material study of the buildings, has proven invaluable in providing a record of its critical, character-defining features and will help develop a phased program of repair and rehabilitation that embraces rather than conflicts with the vision both Underwood and Rockefeller were able to achieve with its construction.

Recent interest in Mission 66 and its legacy buildings has brought a new appreciation to the efforts of the National Park Service to remain true to its founding principles while being modern in the postwar years. Jackson Lake Lodge was an early experiment, the success of which helped usher in Modernism in the National Park System. While the building had its detractors when it opened, its longevity and success in accommodating visitors to the shores of Jackson Lake and its unrivaled view of the Tetons confirm the brilliance of Underwood's design. Rockefeller wanted a modern tourist accommodation for a modern America and Underwood delivered the right mix of effective spatial planning with contemporary technology. Time has proven that both Underwood and Rockefeller created a successful and durable democratic space for the American public to enjoy the scenic beauties of the West, one that used the language of the times that still has much to offer today.

Acknowledgements

Sincere appreciation goes to all the members of both the National Park Service and the Architectural Conservation Research Center and Laboratory who have contributed to the preparation of the Jackson Lake Lodge Historic Structure Report: Betsy Engle, John Hinchman, Nityaa Iyer, Julianne Wiesner-Chianese, as well as graduate interns Chuhan Zheng, Jean Jang, and Shuang Wu.

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Endnotes

1 Gilbert Stanley Underwood was employed by the Union Pacific Railroad to design resort hotels at Zion, Bryce Canyon, Yosemite, and Grand Canyon.

2 Between 1940 and 1960, automobile ownership progressively increased, the number of registered vehicles in the United States rose from 27,372,297 to 61,419,948, and the miles of paved road almost doubled from 1,367,000 to 2,557,000 through the Interstate Highway program, making cross-country travel accessible to American families as never before. Elizabeth Flint. *"Beneath the Jagged Tetons": Gilbert Stanley Underwood and the Architecture of Jackson Lake Lodge*. Master's Thesis (University of Virginia, 2009), 35.

3 Joyce Zaitlin was the author of a biography on Gilbert Stanley Underwood, including Jackson Lake Lodge, published in 1989.

4 "PBA Residence Hall for Women, Washington DC Designed to Meet the Acute Housing Problem" in *Architectural Record* vol. 92 n. 1 (July 1942), 40-43.

5 Although the origin of the "shadowood" name as used by Underwood is unclear, this was a commercial name for a new redwood plywood board introduced in the 1950s. The surface of this type of board was wire-brushed exposing a relief pattern.

6 Julianne Wiesner-Chianese. *Modern in the Mountains: An Analysis of the Structural and Decorative Concrete at Jackson Lake Lodge in Grand Teton National Park, WY*. Master's Thesis (University of Pennsylvania, 2015), 58

7 Elizabeth Flint, 12.

8 This chronology completes the one created by Logan Simpson Inc., for the Jackson Lake Lodge National Historic Landmark District: Cultural Landscape Report, Grand Teton National Park, National Park Service.

9 The CLI by Shapins already highlighted this inconsistency.

The Survival of Mission 66's Canyon Village in Yellowstone National Park: Historical Perspective on NPS Park Design

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Figure 1. Grand Canyon of the Yellowstone, as depicted by Thomas Moran 1893-1901

Abstract

Canyon Village in Yellowstone National Park was the first official Mission 66 project endorsed by the National Park Service (NPS) in 1955. It represented a joint planning and construction effort by NPS and Yellowstone's key concessioners. This development introduced several new concepts to the visitor experience: services located away from the natural resource, a sole building dedicated to the visitor center, roadways and parking lots accommodating the automobile and the shopping experience, and the "motel" concept with lodge and cabins.

Canyon Village was intended to set an example for other national parks, establishing design parameters, design process, and methods of construction. Several other large national parks were developed similarly as part of the Mission 66 program.

Canyon Village today generally appears as it did when completed in 1960, yet has suffered from a lack of appreciation for the modern building style. The NPS Visitor Center was replaced in 2007 with a building more akin to Yellowstone's rustic style—a perceived rejection of the origin of the visitor center as a typology and the mid-century style. While the NPS appears to have been slow in appreciating Mission 66, Yellowstone is now trying to embrace the strong presence of Mission 66 remaining at Canyon Village. In a Memorandum of Agreement (MOA) with the Wyoming State Historic Preservation Office (SHPO), the NPS has agreed to re-

store many of the Mission 66 features of Canyon Village Lodge. This MOA was prompted by the decision to remove 54 pre-manufactured plywood cabins behind the lodge. Interestingly, the rustic style hotel lodges, being erected in their place, are also comprised of prefabricated units.

Canyon Village Lodge was designed by a prominent architecture firm from Los Angeles—Welton Becket & Associates (WB&A)—that was well known for design of sleek shopping centers, department stores, and corporate offices. Canyon Lodge is a massive building constructed with modern materials and methods. The volumes, colors, and furnishings were integral components of the mid-century design style, yet only the volume remains today; the spirited character of the building has been watered down gradually over time, greatly diminishing interpretation of this Mission 66 landmark. The current renovation plans include the return of color and character to this building. It is hoped that this project will become a prototype for the treatment of Mission 66 buildings in our other national parks.

Brief History of Yellowstone National Park

The Beginning of the National Park Movement

Yellowstone National Park (Yellowstone) was established by Congress on March 1, 1872 "to protect, preserve and utilize the natural resources within its boundaries as a '*public park or pleasuring ground for the benefit and enjoyment of the people*.' The Congress at that time recognized the great value and the unusual character of the natural resources of Yellowstone."[1] The first stories of the wonders in the region—of the unique and eerie hot geysers, mud pots, steam vents, and the beautiful canyons, waterfalls, and mountains—were not trusted until formal scientific exploratory parties entered the area and documented the marvels seen. The leaders of the Washburn-Doane Expedition of 1870 published accounts of their trip, prompting a well-funded ($40,000) trip the next year, led by F.V. Hayden. The resultant detailed maps and photographs were used to present a case to Congress to designate the area a national park. This concept solidified and gave voice to the growing conservation movement that had named Yosemite a state park in 1864.

Yellowstone National Park is located in the northwest corner of Wyoming, with small overspills into Montana and Idaho. Of its 2.2 million acres, more than 95% remain wild and undeveloped.[2] Wilderness areas are reserved as sacrosanct; many tourists never see beyond the tarmac and manmade amenities that serve them around the figure-eight-shaped Grand Loop road. Yellowstone has sizable visitor services with overnight accommodations at Mammoth Hot Springs, Grand Canyon, Yellowstone Lake, Grant Village, and Old Faithful geyser basins. Elevations range from 5,314 feet at the north entrance to 10,317 feet at Mount Washburn. Annual visitation has risen to more than four million. The natural features and wildlife—bison, elk, otters, wolves, swans, etc.—attract tourists, hikers, and photographers.

The Grand Canyon of the Yellowstone

The Grand Canyon of the Yellowstone River is a striking geological formation that is one of four major tourist attractions in Yellowstone National Park. Spectacular colors grab the steep hillsides that tower 1,000 feet above the narrowing of the canyon where the river runs, passing through two waterfalls. The Lower Falls drop 308 feet and are the second most photographed feature in the park (the Old Faithful Geyser is the first); the Upper Falls drop 109 feet. In comparison, the Niagara Falls drop 167 feet.

Due to the popularity of this feature, the first visitor accommodations (for 75 guests) were provided near the west rim of the Upper Falls in 1883. This temporary tent village—subjected to storms, wind gusts, and early snow falls—was replaced with more permanent and sturdy hotels in 1886 and 1891. The latter of these was erected by the Yellowstone Park Association, one of the park's hotel concessioners. This hotel was located more than 1/4 mile from the rim, in compliance with a specific clause in the 1883 Sundry Civil Bill Authorizing Military Assistance for Protecting the Park.

A new Canyon Hotel, designed by architect Robert Reamer, was built by the Yellowstone Park Transportation Company in 1909-1911. Harry Child was part owner of the company, which he would transform into a park-wide firm that built and managed hotels near all the major park features. Reamer's long and rambling Canyon Hotel was built as an extension to the second hotel; it was the largest structure ever built in Yellowstone. Poor soils that undermined the foundation, and the National Park Service's Mission 66 perception that hotels were not the preferred accommodation type, contributed to the decision to decommission it in 1959.

Mission 66 in Yellowstone National Park

Mission 66 was created to help the national parks implement master plans that had been developed in the 1920s and 1930s. Lack of funding had allowed these planning efforts to languish, until boosted by the management and funding program created by NPS Director Conrad Wirth. This program was the National Park Service's response to increased use of the parks and the growing dissatisfaction of their poor condition. Although the conservation-based concept of Canyon Village at a location away from the Canyon Rim had originated in 1935, it was refreshed to reflect the three primary tenets of Mission 66:

1. "Disregard precedents;
2. Be imaginative in considering all problems to the end that ideas may be produced which are worthy of adoption;
3. Bring up something effective in achieving the twin objectives of protection and optimum use."[3]

Wirth, and the Mission 66 Advisory Committee, made concerted efforts—throughout the 10-year course of the program—to stress that it was "… in fact a conservation program and not a disguised public works program."[4]

Canyon Village in Yellowstone National Park was chosen as the first official Mission 66 project endorsed by the National Park Service in 1955, to incorporate it into a new 20-year concession contract and respect its "first" status. It represented a joint planning and construction effort by the NPS and Yellowstone's key concessioners—the Yellowstone Park Company, Hamilton Stores, and Haynes Photo Shops. This development introduced several new concepts to the visitor experience: services located away from the natural resource, a sole building dedicated to the visitor center, roadways and parking lots accommodating the automobile and the shopping experience, and the "motel" concept with lodge and cabins. Canyon Village also took advantage of pre-manufactured custom motel units.

As a prototypical effort, Canyon Village was intended to set an example for future developments in other national parks. This development set the stage for the design parameters, design process, economic pro formas, and methods of construction. The role of the concessioner was becoming more controlled by the NPS, requiring greater capital investment and the associated risks. Several other large national parks—Yosemite, Grand Canyon, Big Bend, Glacier Bay—were developed similarly as part of the Mission 66 program, yet seemed to have run on their own steam and been little affected by the steep learning curve of the rushed design and construction of Canyon Village in Yellowstone.

Concession Contracts Set to Expire

Concessioners—like the Yellowstone Park Company (a descendant of Harry Child's earlier Yellowstone Park Transportation Company) and Hamilton Stores (established as a general store by Charles Hamilton in 1915)—had contracts with the National Park Service that established rules for use of the land and buildings, set franchise fees and profit-sharing percentages, and mandated the type and cost of improvements they would make. Both of these major contracts at Yellowstone were set to expire on December 31, 1955. The Park Service and times had changed since the contracts were last negotiated in the early 1930s. As early as 1953, Conrad Wirth was working personally with the presidents and accountants of both firms, and the park superintendent, in anticipation of this sea change. The concessioners were now required to invest larger sums of money in new developments, abandoning the existing ones at Canyon and Lake. For the first time, both companies would take out large loans, banking on the promised financial return of the new developments.

Yellowstone Park Company (YPC) took out a $3.5 million loan to build a new Canyon Village lodge, administration building, recreation hall, three staff dormitories, and 300 motel units. For a firm that typically invested no more than $500,000 annually, and had only been constructing additions to existing buildings since its last new construction of 1911, this was a huge undertaking. The loan was later increased to $5 million, reflecting the expanded costs for the new facilities.

The Need for a Prototype

Conrad Wirth recognized that his, and the National Park Service's, reputation and future depended upon a successful first year of Mission 66. He needed a role model project for the rest of the projects to come. After reviewing various pilot projects at a cross section of parks across the country, he and the steering committee met with the Yellowstone Park superintendent, landscape architect, chief ranger, and chief naturalist to review Yellowstone's master plan in detail. The project at Canyon Village was identified as a large enough project that would satisfy all Mission 66 goals. YPC had engaged a large, experienced architectural firm, Welton Becket & Associates, and a comparable contractor, O'Neill Construction, who were well poised to make this a successful

project. NPS Associate Director E.T. Simpson reiterated the importance of this project to YNP's superintendent in March 1956:

> "At Canyon, your high priority projects are nearly complete [in terms of design] and we are using the development of your area as an example of the way we hope to do things in more places, not only in Yellowstone but in other areas of the System."[5]

Canyon Village Design

The Shopping Mall

Canyon Village is located away from the Canyon Rim. The prior rim development (located less than 1/8 mile from the rim, in the sacred zone)—Canyon Lodge, the stores, food services, and guest cabins—was removed. Canyon Village was located at a new intersection of a shifted Grand Loop Road and Norris-Canyon Road. The "commercial" development was located at the southeast corner of the intersection and the camping and laundry facilities were located at the northeast corner, across from the drive that led to the Canyon. This general layout had been part of the park's 1939 master plan. Welton Becket & Associates, experienced in shopping center design, developed it further with a horseshoe shaped parking lot surrounded by the commercial buildings: Canyon Administration Building, Canyon Lodge, the Recreation Hall, Hamilton General Store, Haynes Photo Shop, and the Visitor Center. The latter building, constructed by the NPS, was intentionally located at the entry to the parking lot. The village remains intact, except for the Recreation Hall, which was never built due to lack of funding, and the Visitor Center, which was replaced in 2007.

Canyon Village Lodge and Administration Building

Welton Becket & Associates—well known for design of hotels, department stores, and corporate offices, and the ability to manage large projects—started designing the massive Canyon Village Lodge in the fall of 1955. The main building portion is 320 feet long by 62 feet wide, intersected by a cross-gabled kitchen wing measuring 70 feet wide by 86 feet long. The building is similar to a bank barn built into the hillside. The steep gable roof slopes reflect the change in grade level from the long west entry façade to the lower service level along the east side. While some of the materials were traditional,

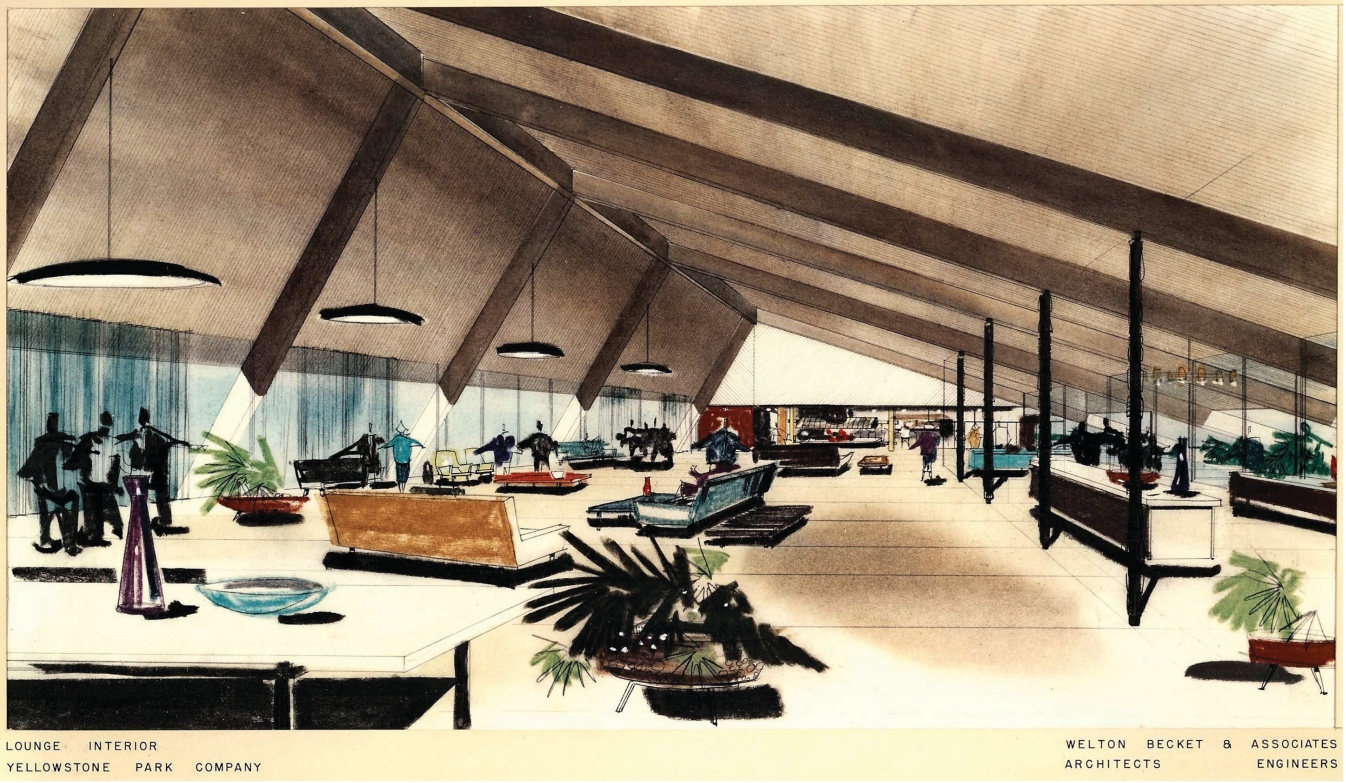


Figure 2: Welton Becket & Associates' October 1955 rendering of the Canyon Village Lodge lounge. Render courtesy of AECOM

such as plaster, stone, ceramic tile, and wood shakes, others were indicative of mid-century experimentation. Glu-lams, exterior-grade plywood, and large plate glass windows contributed to the openness of the building. The primary interior space soars to the ridge height of 27 feet, supported by the glu-lam beams that extend over the exterior wall's storefront glazing to beyond the adjacent walkway. The design goal was to directly connect the interior to the exterior.

The Administration Building is a small companion building of 2,610 square feet, dedicated to cabin registrations. Covered by a flat roof that extended over glazed storefronts, and accented by a planar stone wall, its detailing is nearly identical to that of the lodge.

Canyon Village Hamilton Store

Hamilton General Store, also designed by WB&A, continued many of the same features as the lodge. The massing, roofing, and detailing are nearly identical, although the building, with the main portion measuring 200 feet by 60 feet, is smaller.

Canyon Village Photo Shop

Haynes Photo Shop was designed by Bozeman architect William Grabow, who was facile in modern design. A low-sloped front gable roof over the full-height storefront glazing allows for transparency at the retail level. Glu-lam beams extend from interior supports to the exterior, with additional beams used in trellises at the entry. The established grid within the structure produces a regular alternating pattern of vertical wood siding and glazing on the side walls.

Canyon Village Visitor Center

The Visitor Center was one of the first 10 visitor centers constructed by the National Park Service. The Hurt & Trudell (of San Francisco) design was similar to that of Cecil Doty's design for the Moose Visitor Center in Grand Teton National Park.

Canyon Village as a Historic District

Recent Analysis

The National Park Service, in tune with the rest of the nation, has been slow to accept modern architecture and specifically the Mission 66 heritage in the parks. Canyon Village is no exception. The parks are traditionally known for their rustic architecture, the timber and stone lodges and hotels—epitomized by Yellowstone's Old Faithful Inn and Yosemite's Ahwahnee Hotel—constructed at the early part of the twentieth century, that now draw thousands of visitors.

As recently as 1987, the Canyon Village Lodging Redevelopment Plan was initiated in response to visitor criticism of the low, one-story eight-plex cabins, which had been built in 1956-58 to satisfy the perceived need for motel-type rooms. Yet the study viewed the village as one that "…did not focus on the longevity of the product or the enhancement of a visitor's experience … this concept has been superseded with a need for design sensitivity which will improve visitor experiences within the park. The objective of this concept plan is to redefine appropriate building character and establish a design standard suited to a national park experience." It was further determined that, "The existing built image is inappropriate for a quality visitor experience, and building character should draw from historical regional styles rather than duplicate contemporary examples."[6]

The 1987 plan has come to fruition in the current 2014-2016 construction, nearly complete, that has replaced 54 cabins. The hotels include the "…architecture of roof, balconies and porches …central to the design concept." They " …blend rather than affront the landscape."[7]

Determination of Eligibility

In 1996, YNP planned a rehabilitation of the Canyon Visitor Center, which had been deemed "inadequate" as early as the 1970s. Although there were structural issues, the programmatic ones were most pressing: space was now needed for educational and interpretative exhibits, a nonprofit association educational bookstore, expanded restrooms, and a back-country permitting office. To



Figure 3: New hotel lodges have replaced the Mission 66 cabins at Canyon Village, out of view of the commercial area

proceed further, Yellowstone was required to prepare an assessment of the project for a regional NPS Mission 66 panel, which was authorized in October 1998 to " …review any major changes proposed to Mission 66 buildings even though these facilities are not yet considered historic with regard to their age." The assessment, completed in 2000, determined that Canyon Village was eligible for listing in the National Register of Historic Places—for "its importance to the NPS Mission 66 history." Because the rehabilitation of the Visitor Center would alter its historic appearance, an Environmental Assessment was prepared.[8]

Although determined eligible for listing in the National Register under criteria A and G (for its far-reaching impact on the architectural and landscape character of the nation's parks), Canyon Village has not been nominated. The Yellowstone website proudly lists its National Register properties, several of which are National Historic Landmarks. The newest property is the Mammoth Post Office from 1938, listed as part of a multiple property documentation for Wyoming post offices built from 1908 to 1939. Is the understanding that we don't appreciate our history until it is at least 50 years old—or lost—good enough reasoning for this lapse? Interestingly, much support for the design of the modern era comes from younger generations; they respond positively to the vibrancy and sophistication of Mission 66.

The Struggle to Retain Character

Replacement of the Visitor Center

The 2001 Environmental Assessment of the 1957 Canyon Visitor Center determined that the structural defects could be corrected, but that the preferred alternative would double the size of the building by adding a second story. "A new roof that is appropriate for the environmental conditions would be designed …[and] adequate restroom facilities would be constructed." In consultation with the Wyoming SHPO, it was agreed that, "The proposed building reflects and melds the Mission 66 architectural philosophy, which embodied a manufactured, 'modern' appearance, and the architectural philosophy of the Arts and Crafts period, which was reflected in the Canyon Hotel [built in 1911]." A wayside exhibit would explain the Mission 66 era and architectural features.[9]

This solution was modified in final design, to a larger 1½-story building reusing only part of the foundation of the original building. The new design is out of keeping



Figure 4: 1958 image of the Canyon Visitor Center. Photograph by Haynes Studios Inc., courtesy of Montana Historical Society RCPA Haynes Foundation Collection



Figure 5: Canyon Visitor Center constructed in 2007. Photograph courtesy CTA Architects Engineers

with the Mission 66 Canyon Village and is reflective of the still nascent understanding of Mission 66 in the early 2000s.[10]

Memorandum of Agreement

As determined in the 1987 Canyon Village Lodging Redevelopment Plan, the cabins were substandard and should be replaced. As the plans were developed further, a greater respect for and understanding of Mission 66 resulted in a 2013 Memorandum of Agreement with the park and the Wyoming SHPO. The MOA acknowledges that 54 Mission 66 cabins would be demolished as part of the Canyon Redevelopment Plan, yet since the cabins were eligible for listing in the National Register of Historic Places, mitigation of this adverse effect would be required. The mitigation consisted of HABS documentation, a Historic Structure Report for the Canyon Village Lodge and Administration Building, interpretive



Figure 6: Canyon Village Lodge Lounge, looking north. 1957 photograph by Haynes Studios Inc., courtesy of Montana State Historical Society RCPA Haynes Foundation Collection

displays, and preservation of the Mission 66 aspects of the lodge. Specifically:

> "Based on the results of the HSR, the YNP will preserve the Mission 66 interior elements of the main floor of the Canyon Lodge, design future improvements to be compatible with the Mission 66 era and will return, where feasible, any interior elements to the Mission 66 period of significance. This may include furniture, furnishings, finishes, floor and wall coverings, and removal of non-historic elements …This work will comply with Secretary of the Interiors Standards for Treatment of Historic Properties and will require consultation and concurrence from/with WYSHPO."[11]

Current NPS and Concessioner Plans

Canyon Village Lodge Food & Beverage Enhancement

Xanterra Parks & Resorts is the concessioner that operates the hotels in Yellowstone. The $6.2 million Canyon Village Lodge enhancement project is a contractual obligation. Like any concessioner, their facilities need to generate income, while complying with the requirements of the MOA. Xanterra's goal is to serve up to 70,000 visitors that pass through Canyon Lodge in a single day, quickly and satisfactorily. The function of the building is being transformed into a multi-food delivery and style concourse.



Figure 5: Canyon Visitor Center constructed in 2007. Photograph courtesy CTA Architects Engineers

In 2015 CTA Architects Engineers was selected for the project because the firm demonstrated enthusiasm about the ability to provide for this economic base while celebrating and embracing Mission 66.

Current Condition–Remaining Character-Defining Features

Canyon Village Lodge's original massing remains, its wood shake roof has been replicated, the structure has been enhanced to withstand the seismic activity of the area, the original plate glass curtain walls and storefronts retained, and some interior walls and the fireplace remain. During the preparation of the HSR, it was discovered that the following original materials that had been covered were extant: end-grain wood block flooring, terrazzo flooring, one original orange-upholstered couch, and some wall finishes of wood and stone. Many of the original materials were—unlike common perceptions of Mission 66 design—high quality materials designed for longevity and ease of maintenance.

Several original features had been altered sufficiently so that their original character was obscured. Starlight chandeliers—once painted yellow, orange, blue, and green—had been painted white; translucent panels in screen walls had been replaced with opaque fiberboard; screen walls had been extended in height; and the heavy concrete frame supporting the fireplace had been painted. The original clear finishes on exterior and some interior wood had been painted over. The natural materials and textures that were part of the subtle Modernist expression had been masked.

The original horse-shoe shaped parking lot remained.

Current Condition–Lost Character-Defining Features

In addition to the concealment of original features, the exterior plaza was recently reconfigured by the National Park Service. The aggregate-rich concrete walks were replaced, and the simple, straight, stone retaining wall that paralleled the covered walkway was replaced with horse-shoe shaped stone picnic areas, woven around the thrust blocks of the glu-lam beams. While this softens what is perceived as an unfriendly building, and provides outside seating areas, it detracts from the clean horizontal lines introduced by the building.

Some interior features were removed in their entirety: the line art (as recently as the 1980s), the George Nelson clock, the tall sheer curtains, screen walls, and the back bar. The question-mark-shaped bar itself had been retained, since its early relocation in 1964, yet truncated by five feet; its plywood face since covered with knotty pine paneling. Several iterations of serving operations have since supplanted the original U-shaped coffee counters. Blocks of restrooms were added in the dining area. All the furniture had been replaced with monochrome pieces.

The modicum of exterior color—an orange fascia to offset the turquoise fascia of the Hamilton Store—had been painted Park Service brown years ago.

Restoration Efforts

The project parameters establish that commercial expectations have changed and that the serving and dining configurations and operations need to respond to modern needs. This is similar to the Mission 66 goals and what the preservation industry expects of commercial storefronts. The goals of this project align with the MOA: to restore the remaining original materials and introduce compatible new features. The backbone of this MOA has enabled the design team to push for restoration of the wood block flooring. There was resistance by both Xanterra and the NPS to the team's insistence that the wood was in good condition and a high quality durable product. The firm that likely provided the original material came to the site and concurred that it could be restored.

The original screen walls will be restored to their original (lower) height, which will not interfere with the



Figure 8: The original 1957 bar had a black-lit mural of Miro-like quality. Photograph by Haynes Studios Inc., courtesy of Montana State Historical Society RCPA Haynes Foundation Collection

soaring volume, and translucent panels will lighten the visual weight. The concrete fireplace supports will be stripped and the original concrete exposed; the original starlight chandeliers will be stripped, repainted, and fitted with LED lamping; the restroom intrusions will be removed, returning the south eating area to its original size; the exterior fascias and rakes will be painted orange. The original plate glass is being retained, and shades and tinting films are being provided to lessen heat gain and glare. (The building is not open in the winter, reducing the need for energy-efficient glass.) The original bar will be relocated and restored back to its original length, with an accessible-height extension; the plywood face restored; and the once black-lit mural at the back bar recreated in 3-Form translucent panel doors.

SHPO provided the insight that the majority of the interior materials were part of a neutral background, and that color accents were few and meaningful. The restoration efforts will be enhanced by the introduction of tables, chairs, stools, and couches of modern design and color that also provide for the variety of seating and configuration types that are part of the new way of dining—"slow food fast." Flooring—long since covered or removed at the south 2/3 of the building—will be primarily linoleum, with carpeting at the small sit-down dining area and the gift shop. The dining area will be defined and buffered by screen walls similar to the original. Lastly, the line art on the large wall area above the serving lines will not be reconstructed, as SHPO deemed the historic photographs an insufficient resource for the reconstruction of such a prominent original feature. Since the canyon's colors were the basis for the original colors used in the building, a mural of the Grand Canyon of the Yellowstone, the natural resource protected by the National Park Service as part of the original Mission 66 project, was planned to be located here in its stead. The mural has unfortunately been removed from the project.

Goal

It is hoped that this project, scheduled for completion in May 2017, will bring much-needed visibility and enjoyment of Mission 66 to an appreciative public. This enhancement project will demonstrate why Mission 66 should be embraced and respected. Yellowstone's Canyon area is a highly visible and visited national park resource, which can once again be a prototype—this time for the treatment of Mission 66 buildings and villages in our other national parks.

Endnotes

1 YNP, "Mission 66 Prospectus," Nov. 1955 (YNP-HRC, Coll. YELL 281386, Series 1, Box 21, Folder 1).
2 Conrad L. Wirth memo to Washington DC office and all field offices, May 24, 1956. YNP-HRC Coll. YELL 182386, Series 1, Box 20, Folder 10.
3 Conrad Wirth, memo to the Washington DC office and all field offices, "MISSION 66 Policies and Procedures," April 17, 1955. YNP-HRC, Coll. YELL 182386, Series 01, Box 20, Folder 11.
4 Mission 66 Advisory Committee's recommendations, April 2, 1957. YNP-HRC Coll. YELL 182386, Series 01, Box 8, and Folder 11.
5 E.T. Simpson, letter to YNP superintendent, March 5, 1956. YNP-HRC Coll. YELL 182386, Series 01, Box 20, Folder 10.
6 Yellowstone National Park Denver Service Center, "Canyon Village Lodging Redevelopment," March 1987.
7 Ibid.
8 Beth Kaeding, Diane Chalfant, Linda Young, Lon Johnson, & Doug Madsen, "Environmental Assessment Canyon Visitor Center Rehabilitation," February 2001.
9 Canyon Environmental Assessment, 2001.
10 The 1968-1970 Old Faithful Visitor Center demolition was completed in 2006 and has been replaced with a new center that borrowed some of its features, but more closely resembles the Old Faithful Inn. The 1968 visitor center was the only Mission 66 style building in the Old Faithful Historic District.
11 "Memorandum of Agreement among Yellowstone National Park and the Wyoming State Historic Preservation Office Regarding Mitigation of Adverse Effect resulting from the Demolition of 54 Canyon Cabins," signed April and May 2013, p. 2.

Navajo Lake State Park and the Rediscovery of a Mission 66 Complex in New Mexico

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Figure 1. Location of Navajo Lake in northwestern New Mexico.

Abstract

In late 2014, New Mexico State Parks proposed to renovate the Navajo Lake-Pine River visitor center, a small mid-century modern building constructed in 1965. The old visitor center was no longer sufficient to accommodate increasing public visitation at Navajo Lake State Park, located on the San Juan River near Farmington, New Mexico. The US Bureau of Reclamation is the land owner and principal custodian of the visitor center, though they work in close partnership with New Mexico State Parks which manages recreation at the reservoir under a long-term agreement. Construction of Navajo Dam began in 1957, concurrent with Reclamation's Colorado River Storage Project dam at Glen Canyon, which coincided with the National Park Service Mission 66 program, an aggressive park system infrastructure rebuilding campaign from 1956 to 1966. Research on the building's history was undertaken by New Mexico State Parks, which discovered that its visitor center was a previously unknown Mission 66 building. Not unexpectedly, the consultation process took a new turn. Using this example as a case study for evaluating Mission 66 at state parks, this paper provides: 1) a brief description of the project and consultation, 2) an overview of the Mission 66 program; 3) the story of how New Mexico State Parks came to recognize the historic importance of the visitor center through archival research, and how the visitor center fits historically within the Navajo Lake recreation facilities built under the Mission 66 program, and 4) how New Mexico State Parks and Reclamation, in consultation with the New Mexico State Historic Preservation Office, moved to preserve the visitor center because of its association with Mission 66 and a state park system.

Navajo Lake State Park

In 1962, the US Bureau of Reclamation (Reclamation) held the grand opening ceremonies for the completion of Navajo Dam and the filling of the reservoir behind it. The lake is formed by the San Juan River and its tributaries upriver from Farmington, New Mexico, and encompasses 15,000 acres (Figure 1). The National Park Service (NPS) design team at the Western Office of Design and Construction (WODC) in San Francisco provided plans for the recreation facilities, including a visitor center, roads, infrastructure, and campground at the Pine River Recreation Area. Sims Mesa Recreation Area, on the northeast side across the canyon from Pine, and Arboles Recreation Area, near the northern end of the lake in Colorado, had fewer planned amenities. Reclamation turned over management of the Pine and Sims recreation areas to the state of New Mexico, which established Navajo Lake State Park in 1962. The Pine visitor center is the primary point of contact between park staff and the public, with current annual park visitation at nearly 500,000. Lost over the years was the understanding that the Navajo Lake recreation complex was constructed as part of the NPS Mission 66 program, which was an effort to improve visitor services in national parks during a ten-year period between 1956 and 1966. A seemingly routine consultation on proposed renovations to the Pine visitor center between New Mexico State Parks, Reclamation, and the New Mexico State Historic Preservation Office (SHPO) in 2015 led to the rediscovery of the NPS Mission 66 work at the lake, which is the only example of Mission 66 in the New Mexico State Park system. This paper presents a brief history of the nationwide Mission 66 program, followed by a discussion of the NPS' role at Navajo Lake and the rediscovery of the facilities they designed and its impacts on the consultation process.

Mission 66 in the National Parks

The Mission 66 program has not been the focus of historians and it is not well understood by the public, so it is not surprising that the complex at Navajo Lake State Park was not previously identified as part of the larger framework of Mission 66. The publication of Sarah Allaback's *Mission 66 Visitor Centers: The History of a Building Type* in 2000 and Ethan Carr's *Mission 66: Modernism and the National Park Dilemma* in 2007, have had national park resource managers and state historic preservation office staff scrambling to account for the precise meaning and significance of the Mission 66 program, and for good reason. The program is hardly a household name even today, though it was the largest public works program ever commissioned by the NPS. Begun in 1956, Mission 66 was a ten-year, multi-billion dollar building campaign that set out to fix the parks after two decades of neglect and was to be completed in time for the NPS' 50th anniversary. The 1930s and 1940s were economically difficult for Americans and especially national parks. Severe budget cuts coupled with draconian staff reductions wreaked havoc on park infrastructure. If it were not for the work of the Civilian Conservation Corps (CCC), the parks most likely would have experienced catastrophic losses. Money was tight and the war years were especially hard. It was a time of

government rationing which effectively put an end to park visitation. Not until 1954 did the parks show signs of life. By then, however, the parks had endured almost 20 years of neglect. Buildings, structures, entrance stations, bathrooms, and campgrounds all needed to be repaired or replaced. It was a daunting challenge. But perhaps more daunting, and somewhat unexpected, was a trend that began to gain momentum in the late 1940s. Part of a national healing, returning GIs and their growing families started to visit the national parks in record numbers. The promise of affordable vacations and inspiring landscapes was the perfect antidote for a nation searching for peace and a place to forget their troubles.

A transitional figure during this period was Conrad Wirth, then a twenty-year NPS employee who joined the agency in 1931 after a successful stint with the National Capital Parks and Planning Commission. Wirth was an academically trained landscape architect who served under NPS Director Horace Albright. It was Wirth who predicted the uptick in park visitation, and it was he who conceived the initial planning for the Mission 66 program.[1] Wirth's vision emboldened a second great phase of park development. The first was during the system's infancy under the first NPS Director Stephen T. Mather. From 1916 to 1929, the parks slowly transitioned away from a transportation model that relied on the major railroads. Under Mather, the automobile became king, which called for more hotels and campgrounds, and hundreds of miles of new roads. Parks were designed by professional engineers. Staff architects like Herbert Maier stamped the landscape with beautifully designed rustic buildings made of stone and wood, structures in perfect keeping with the rugged wilderness of the American West.

By the early 1950s, conditions were right for a second revolution in national park development. All the constituent parts were in place: World War II was over, the Korean conflict was winding down, the economy was picking up steam, and President Eisenhower sought to replicate the German Autobahn, which led to a massive overhaul of the nation's highway system. Despite omnipresent fear during the Cold War, Americans were ready to abandon their Depression-era blues and begin to experience a country they so desperately fought to protect during World War II. Like Mather's NPS, lofty patriotic rhetoric ruled the day, and the symbols of this renewed Americana looked back to the 1920s and to the national parks for inspiration. In some ways, the 1950s posed a more serious challenge for the NPS. Wirth's task was to remake the parks to oblige a traveling public hungry for new experiences, and to do so in a manner consistent with their expectations. Wirth, like Mather, saw the success of the parks linked to comfort, but nothing as luxurious as the El Tovar and Ahwahnee hotels in the Grand Canyon and Yosemite national parks. Rather, he envisioned modest facilities that could be built cheaply and quickly.

Conrad Wirth and the Emergence of Mission 66

Planning for Mission 66 began immediately after Wirth became NPS director in 1951, and things moved quickly from there. A residential prototype was designed in 1952 and funding strategies were in place two years later. The Eisenhower administration was eager to publicly endorse the program, and did so in 1956. The national parks were now ready to reboot and parallel the rise of post-war tourism, and there was a massive shift in attitude that fully embraced recreation as a right for all Americans. For the first time, the middle class was sufficient in numbers to move public policy. This was manifested most clearly in the growth and development of suburban neighborhoods from Boston to Los Angeles. Tract housing dominated the landscape and thousands of suburbs made possible the American dream of owning a home. The idea of neatly designed ranch houses, an example of mid-20th-century modern architecture, infiltrated the halls of the US Department of the Interior Building. Wirth was not the only one in the park service to recognize what needed to be done, but he did see and appreciate an emerging trend in architecture embraced by a specific demographic of park visitors. Mission 66 took its form and direction from this and imposed on the parks a version of modernism that would become known as "Park Service Modern."[2]

As a way of introduction, the NPS in 1955 published a public primer which attempted to describe and explain the constituent parts of Mission 66. *Our Heritage: A Plan for Its Protection and Use* surmised the situation in this way: "The problem is simply this: the National Parks are neither equipped nor staffed to protect their irreplaceable features, nor to take care of the increasing millions of visitors." Current conditions threatened to undermine the essential directive of the NPS Organic Act, known informally as the Mission Statement, whereby the parks were tasked "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations," a

familiar refrain for NPS employees and a challenging directive under any circumstance. By the mid-1950s, however, the NPS mission was in serious doubt and the park system fraught with an aging infrastructure incapable of balancing use and protection.

For the 50th anniversary of the NPS in 1966, Wirth envisioned the largest infrastructure improvement in the agency's history. His comprehensive eight-part process to effectively rebuild the parks comprised: 1) engage private enterprise; 2) provide government operated facilities, such as visitor centers and public-use buildings; 3) make parks more usable; 4) increase staffing; 5) provide adequate living quarters for employees; 6) acquire additional water rights; 7) institute a coordinated nationwide recreation plan; and 8) protect wilderness. Recent thinking about Mission 66 has focused primarily on the significance of visitor centers, but Wirth's vision included better living quarters for employees, and more applicable for this paper, instituting a coordinated nationwide recreation plan.[3] Here, Wirth reached back to Mather's early directive that national parks were not singular resources acting alone. Local and state parks, as well, were part of a broader web of recreation facilities and whenever possible the NPS should help support these critical resources. Soon after becoming director in 1916, Mather was approached by the National Conference on State Parks to speak at their annual gathering. He laid out a sophisticated plan to integrate the state and national park systems called, "A State Park Every Hundred Miles." "I believe," said Mather, "we should have comfortable camps each night in a good scenic spot, preferably a state park. I hope that someday the motorist will be able to round up his family each night on some kind of public land."[4]

Mission 66 beyond the Boundaries of the National Park System

Now 40 years later, Conrad Wirth, though less engaged with the National Conference on State Parks, did include state parks as part of an integrated system within the Mission 66 framework. Perhaps more specific to Wirth was not an abiding commitment to Mather's memory, but rather a deep belief in President Franklin D. Roosevelt's New Deal and the CCC. Wirth came of age in the NPS during the 1930s. He understood the value of resource protection, and he respected the role of conservation in American life. The New Deal, though understood principally as a federal program, was far more connected to the states, offering planning services and land transfers to help build regional recreation facilities. Significant legislation, like the *Park, Parkway, and Recreational-Area Study Act of 1936*, "was long . . . recognized," argued Wirth, "and was repeatedly demonstrated during the emergency programs, particularly in selecting and developing additional park and recreation areas to round out park systems."[5]

The National Resources Board directed the NPS to write a report on the "Recreational Use of Lands in the United States." The study was published as part of the board's report on land planning and to offer "an overall picture of recreational land use and the problems that must be faced in providing land to satisfy the needs of the people."[6] In 1937, the NPS followed up with a brochure for public distribution, highlighting what they saw as the types of activities state parks should consider. Principal among them were "sports of all kinds—hiking, riding, etc."

Two years into his directorship, Wirth's support of recreation facilities was a topic for debate over the proposed Echo Park Dam in Dinosaur National Monument. Just after World War II, the Department of the Interior and Reclamation launched an aggressive campaign to build several dams in the American West. Targeted for development were two national park units, the Grand Canyon and Dinosaur National Monument. Like the Hetch-Hetchy controversy in Yosemite thirty-five years earlier, the debate centered on the efficacy of building large reclamation projects within NPS sites. Wirth succeeded the immensely popular Director Newton Drury, who was forced out by Interior Secretary Oscar Chapman in April 1951 for refusing to support the Echo Park project. For many, Wirth was seen as the logical choice because of his commitment to New Deal planning and his penchant for recreational facilities.

But in the end, Wirth sided with the more conservative faction within the NPS, and rather than sacrifice Echo Park, he took the position supported by the Sierra Club and its executive director David Brower. Behind closed doors, representatives of Reclamation, NPS, and the Sierra Club had agreed in early in 1954 to forego the Echo Park dam. Understanding the bigger picture, the Dinosaur project, after careful calculation, could not provide the water density necessary to develop the upper Green River basin of Colorado, Utah, and Wyoming. To the South, however, a larger and more promising Colorado River project was put on the table. Glen Canyon's potential as a water source was seen second only to damming the Grand Canyon. To Wirth and Brower, the com-

promise made sense (though later Brower regretted his decision and considered Glen Canyon the biggest mistake of his career). But Wirth felt differently. Consistent with his New Deal ideology, the proposed Glen Canyon Dam accomplished three essential goals of his administration: 1) protect the sanctity of NPS units, such as Grand Canyon and Dinosaur; 2) further develop new NPS recreation facilities; and 3) support the growth of the American West, a strategy first approached by Stephen Mather, who courted the railroads for similar reasons. In his work in the West, Wirth connected more water to more people as he generated more enthusiasm for national and state parks.

Achievements of the Mission 66 Program

The years from 1956 to 1966 were busy ones for the NPS. Planning new recreational offerings, combined with the most ambitious infrastructure project in its history, the Mission 66 program is an insightful case study for understanding America's remarkable post-war economic expansion. In 1948, the US gross domestic product (GDP) was a meager $275 billion. By 1969, however, GDP was an astonishing $1.1 trillion, an upward fiscal forecast that allowed Wirth to build, as part of Mission 66, 114 new visitor centers, 575 campgrounds, 221 administrative and service buildings, 1,239 employee housing structures, and 1,570 miles of new roads. At the same time, Reclamation and the NPS coordinated plans for Glen Canyon National Recreational Area, a massive capital campaign and construction project that started in 1956. The dam began operations ten years later, just as the NPS was completing work on the Jefferson National Expansion Memorial in St. Louis, a project considered to be the ceremonial end to Mission 66.

A confluence of factors in the mid-1950s helped lead Wirth from his position among Roosevelt's New Deal advocates to the Echo Park proposal, Glen Canyon, and ultimately Mission 66. Throughout his 14-year NPS directorship, Wirth never abandoned his support for state parks. A nearby beneficiary, and the topic of the recent consultation between State Parks, Reclamation, and SHPO, was Navajo Lake State Park. Wirth's efforts resulted in locating a Mission 66 visitor center at Navajo Lake State Park in 1964, 300 miles from the popular Mission 66 visitor center at Glen Canyon. At the heart of every good consultation is a simple promise to identify and evaluate what makes a structure significant and the Pine visitor center at Navajo Lake reflects the ideals promoted by Wirth through the Mission 66 program.

Navajo Lake State Park and Proposed Renovations to the Pine Visitor Center

In late 2014, New Mexico State Parks began developing plans for renovating and expanding the Pine visitor center at Navajo Lake State Park. The Pine visitor center contains the services typically found at such buildings, including park information, displays, restrooms, Park staff on hand to answer questions, and park management offices. The visitor center is located on a low knoll at the edge of a bluff overlooking the lake and the Navajo Lake Marina; the open patio at the rear of the visitor center offers spectacular views of the lake and dramatic canyons. However, because visitation to the park continues to increase, the original visitor center could no longer adequately serve the public during the busy summer season. Additionally, the building was experiencing a host of functional problems, including a leaking flat roof, poor insulation, poorly functioning heating and cooling systems, lack of conduit and ductwork space for modern cable and utility systems, and lack of space for park staff. Although the building experienced minor upgrades in 1996 with the addition of a restroom wing and a coating of stucco on the exterior to create an "adobe" look, the working space within the building did not change, with the exception of the conversion of the interior staff restroom into a small office.

Robert Vadurro, the State Parks architect in charge of the expansion project, envisioned saving the core of the building with planned additions attached to its northern and southern ends. At the south end, a large single room addition would serve as the Education Room with seating for large groups of people, a built-in screen and projector for presentations, AV storage space, a refreshment counter for park staff and guests, and a double doorway that opened onto an expanded rear patio. At the north end adjacent to the 1996 restroom wing, a new staff meeting room was designed. The planned additions were designed to extend the existing horizontal aspect of the original building, enlarging its overall footprint. However, because the floor of the original building is poured concrete, which included subfloor ductwork that has partially collapsed, it became necessary to design a new space for the planned expansion of ductwork, cables, and piping. The only alternative was to elevate the roof. Given the snows of winter and heavy summer rains, a new flat roof to match the original roof line was deemed a poor choice for long term maintenance. A shed roof was initially considered, but would force all of the ductwork, cables, and piping to

one side of the building. As a result, State Parks decided that a low-pitched gable roof was the most sensible alternative, although it would alter the appearance of the original building. Vadurro, having worked on other historic buildings, was sensitive to preserving what he considered to be the character-defining features of the original building, and he believed that the loss of a flat roof in favor of a low-pitched roof was an acceptable alternative to serve the long-term needs of the building.

A Mission 66 Complex Rediscovered at Navajo Lake

With the completion of the preliminary design plans in early 2015, New Mexico State Parks began the compliance process with Reclamation as the owner of the park and building. This step was undertaken by the New Mexico State Parks cultural and natural resources section. There, it was recognized that the building would turn 50 years of age in 2015, making it potentially eligible for listing in the National Register of Historic Places. New Mexico State Parks archeologist, Robert Stokes, and architectural historian Christy Tafoya made plans to visit the building and conduct an architectural assessment in order to complete a State of New Mexico Historic Cultural Property Inventory (HCPI) form. New Mexico State Parks assumed that the visitor center was a stylish, but small example of mid-20th-century modernism (Figure 2), and that completion of the HCPI form and supporting documentation would be sufficient to obtain clearance to proceed from Reclamation and SHPO. At this point, there was no reason to suspect that the building was historically significant. However, the New Mexico State Parks Design and Development Bureau Chief Judy Kowalski, who supervises the architects, suggested that the building might have a Mission 66 connection. She was a former NPS employee who was involved in the early stages of assessing the historic potential of Mission 66 buildings in national parks. Kowalski suggested that because the building was located on federal land and was built in 1965, it could be part of the Mission 66 program.

The first clue that the Pine visitor center had a NPS connection was found in a passage from the 1962 Dam Dedication Portfolio.[7] That document provided a history of the Navajo Dam project and the personalities involved in its design, funding, and development. One section focused on recreation plans for the new lake, and noted that the NPS was in charge of designing and building recreation facilities, including visitor centers, roads,



Figure 2. The Pine visitor center ca. 1995 prior to remodeling.

infrastructure, and marinas at the three park entrances (Figure 3). The portfolio further explained that Pine River would be the first facility to be designed and built, including the visitor center. This information confirmed a connection between the Pine visitor center and NPS, although by 1965, the Mission 66 program was winding down. A search of archival records at the New Mexico State Parks main office in Santa Fe uncovered large-format printout copies of the original 1964 design plans for the visitor center and related facilities, including comfort stations and picnic pavilions. Plans were also found for the 1967 visitor contact and recreation areas for Sims and Arboles. In the lower right corner of each sheet was the attribution information, which clearly stated that the plans came from the NPS design team at the WODC in San Francisco, which was one of the two NPS Mission 66 design centers. With these design plans, it was confirmed that the original recreation facilities at the lake were indeed part of the Mission 66 program, including the Pine visitor center. To this point, no Mission 66 structures were known to exist in any state park in New Mexico, making the NPS work at Navajo Lake a unique and unexpected occurrence for New Mexico.

This new discovery of the historical significance of the Pine visitor center changed the trajectory of the consultation with Reclamation and SHPO. New Mexico State Parks completed the HCPI documentation, which included an extensive array of photographs and architectural descriptions, but the historical narrative changed dramatically.[8] What was once considered a modest example of mid-20th-century modern design became a historically important Park Service Modern-style building with a direct connection to the WODC and Mission 66 program. Robert Newcomb is listed as the primary architect for Pine, and the plans were reviewed and ap-

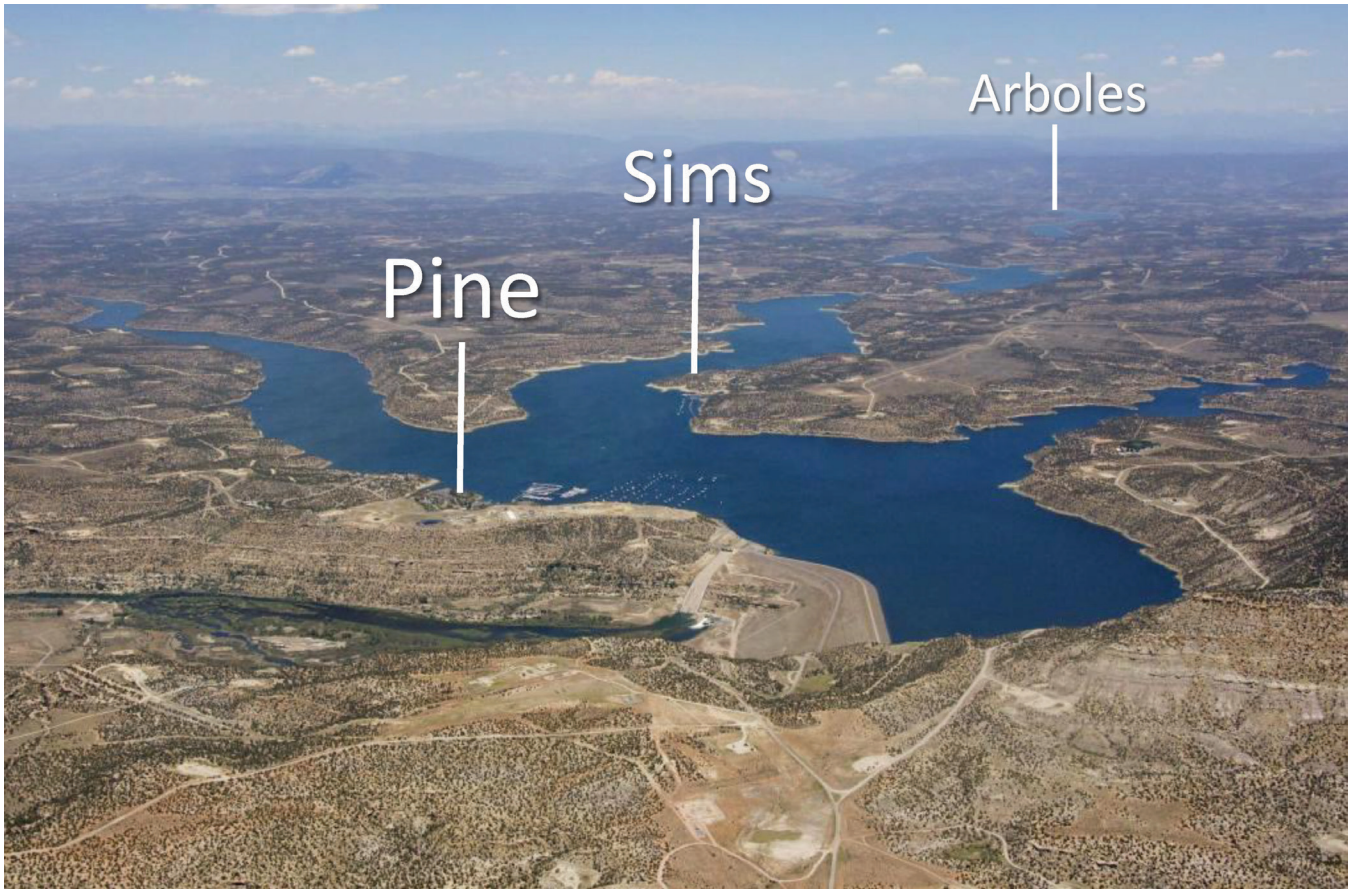


Figure 3. The three public entrances to Navajo Lake State Park.

proved by Curtis Richey in 1964, both of whom were important to the Mission 66 program at WODC. With regard to eligibility for listing in the National Register, New Mexico State Parks originally anticipated a finding of not eligible, but this was subsequently changed to eligible under Criterion C for its significant architectural design based on the criteria considerations described by Sarah Allaback for Mission 66 visitor centers.[9] Reclamation and New Mexico State Parks opened the Section 106 consultation process under the National Historic Preservation Act with the New Mexico SHPO, presenting the information outlined above with a finding of adverse effect. At this point, it was agreed that the building was also eligible under Criterion A for its association with the Mission 66 program. A set of proposed measures to mitigate these effects was agreed upon and implemented, including development and installation of Mission 66 interpretative panels in the visitor center, whereupon Reclamation and New Mexico State Parks received SHPO concurrence for the Pine visitor center expansion project.[10] The Pine visitor center is an excellent example of a building whose historical significance changed based on archival research demonstrating important, but previously unknown, historical associations with national events important in our past.

The Pine Visitor Center

The Pine visitor center was designed in 1964 and completed the following year. Plans include floor layout, elevations, and detail sheets for utilities, materials, and other schedules. The title block attributes the designs to the "U.S. Department of the Interior—NPS, Division of Landscape Architecture, WODC," along with the architects associated with the project, including Curtis Richey, Robert Newcomb, R.R. Wiley, K. Kroo, and Earhart. Richey also approved the Sims plans, created by architects Romigh, Falk, and Andraychek. (First names or initials were not always notated on the plan sheets).

The Pine visitor center is a one-story building with a flat roof and wing walls constructed of irregular stone rubble (see Figure 2). The southern third of the building was used as the visitor entry point, with an aluminum-and-glass door on the west side of the building facing the parking lot. The door opened onto a short hallway flanked by a wall on the interior and a three-quarter-height aluminum-frame window on the op-

posite wall, which overlooks the parking lot. The large wing wall adjacent to the window then continued as a full-height rock wall on the interior and exterior of the building; it extended beyond the building's southwest corner as a free-standing wall (Figure 4). A full-height aluminum-frame window at the corner allowed for views of the wall outside of the building. The short hallway opened into a large room with a counter where visitors interacted with park staff, displays along the concrete-block south wall, and an east wall of full-height aluminum-framed windows which overlooked a small rear outdoor patio, the lake and marina, and canyons below the visitor center (Figure 5); these are viewscape elements that are representative of NPS location decisions under both Mather and Wirth. The aluminum-frame full-height glass entrance to the patio was located at the southeast corner of the room. The flat roof extended over the doorway and patio windows to provide shade and protection from the weather (Figure 6). The patio was surrounded by a low brick wall and a small irregular-rock wing wall at its northwestern corner that extended from the exterior to the interior of the building. Three small flush planter boxes with concrete benches attached to two of them in the patio area provided a respite for visitors to enjoy the view. The northern two-thirds of the building comprised small offices and a restroom for park staff. The ceiling throughout the building was constructed of narrow tongue-and-groove wood slats held in place by wood beams set on edge, all of which were varnished. There was no restroom facility for visitors in the building; comfort stations were built nearby at the campground, picnic area, and marina.

The building's exterior brick veneer with the vertical mortar joint filled and the horizontal joint struck emphasizing horizontal lines is a feature of mid-20th-century modernism. Based on the plans, the exterior brick veneer covered structural concrete blocks, but the wall was covered with stucco in 1996. The stone rubble wing walls provided a decorative element comprising natural materials at the two corners of the main west elevation. The smaller wing wall adjoining the patio provided a decorative element that delimited the patio from the staff offices. The flat roof and vertical windows are also typical components of modernism, and were used extensively in Mission 66 visitor centers in national parks. The completed building featured a low profile on the small knoll overlooking the lake and was shaded by large trees, which enabled the building to blend in with its sur-



Figure 5. Pine visitor center with windows overlooking the patio and lake.



Figure 4. Rock rubble wall adjacent to the front entrance at the Pine visitor center.



Figure 6. Pine visitor center with flat roof and wall of windows.

roundings. As a result, the building did not overwhelm or detract from the grand views of the lake and canyons.

The Mission 66 Recreation Program at Navajo Lake State Park

According to information in Reclamation's Dam Dedication Portfolio, the NPS designed the recreation facilities at the new lake.[11] Both agencies are administered by the Department of the Interior, and cooperation between the agencies was likely the most efficient way to keep projects such as Navajo Dam and Reservoir moving and on track; the two agencies were also partners at Glen Canyon Dam and Reservoir (1957–1964), which was designated a National Recreational Area in 1972. The visitor center adjacent to Glen Canyon Dam is also an early 1960s Mission 66 building attributed to Cecil Doty, long-time NPS architect, and the WODC.[12] Clearly, Reclamation and the NPS were working in tandem at both of Reclamation's major 1950s to early 1960s reservoir projects associated with the Colorado River Storage Project. However, the Mission 66 design program at Navajo Lake was largely forgotten after work was completed because Navajo Lake, unlike Lake Powell behind Glen Canyon Dam, never became part of the National Park System.

Management of the state park is divided between New Mexico State Parks, which operates the Pine and Sims Recreation Areas, and Colorado Parks and Wildlife, which operates the Arboles Recreation Area. The 1962 dedication portfolio briefly describes the NPS work at Pine, which was the first of the three sites to be built. It mentions that the marina and boat ramp were being prepared and plans for the visitor center and concessioner facilities were completed, although recent archival research by New Mexico State Parks demonstrated that the NPS was behind schedule and had turned over the marina and concessioner construction tasks to the New Mexico State Park Commission in 1964.[13] The NPS design team was also preparing plans for a variety of park facilities, as shown on the WODC plan sheets. The dedication portfolio notes that the facilities were designed to accommodate up to 2,500 people per day, which the park often experiences and exceeds during the busy summer months.[14]

At Sims, the WODC designed in 1967 a small visitor contact building attached to park staff, maintenance and water treatment buildings, and flat-roofed staff carports rather than a full-service visitor center. The Sims visitor contact building was a smaller, plainer version of the Pine visitor center, with a bank of full-height aluminum-sided windows forming one full wall and two partial walls facing the reservoir. It also had a flat roof and was built using concrete blocks, but lacked rock rubble wing walls or any other form of ornamentation. The Sims plan sheets depict comfort stations and picnic pavilions for large groups with a low-pitched metal roof, along with several smaller picnic shelters with single-sided metal shed roofs for water runoff and shade. The larger picnic pavilions are two of the smaller units put together. Each shelter contained concrete-and-metal picnic tables. The three large picnic pavilions remain at Sims, which retain their late 1960s Mission 66 appearance (Figure 7), but unfortunately all of the smaller campsite shelters were replaced after the 1990s. The WODC also designed fire pit rings and grills, of which at least one survives at one of the group shelters. The comfort stations were designed with the brick similar to the Pine visitor center and had shallow-pitched gable roofs; similar extant examples can be seen at Bandelier National Monument in New Mexico. Unfortunately, all of the comfort stations have been replaced at Sims and Pine. The Sims visitor contact building was demolished in the late 1990s by State Parks and replaced with a larger building that was designed with a different architectural style. All of the original buildings behind the visitor contact-park office building remain, although the large maintenance shop building was clad in stucco to match the adjacent new visitor center.

Less information is available regarding the Arboles visitor center and facilities designed in 1967–1968 by the WODC. New Mexico State Parks does not have a full set of plans for Arboles. What is available are plans for roads, comfort stations, and picnic pavilions, which were of the same design as those at Sims. Information



Figure 7. Mission 66 group shelter at Sims Recreation Area.

provided by park staff at Arboles confirmed that the "old" building was torn down in the early 2000s and was replaced with a new visitor center. Images of the new visitor center show that, like Sims, the new building does not resemble the original Mission 66-Park Service Modern style. As a result, the Pine visitor center is the sole survivor of the three Mission 66 visitor centers built by the NPS at Navajo Lake.

Summary

The NPS and the WODC played a major role in the development of recreation facilities at three visitor contact points and recreation areas at Navajo Lake. The completed facilities comprised visitor centers and related buildings, park roads and marina ramps, utilities, infrastructure, and campgrounds with comfort stations, picnic shelters and tables, and fire rings and grills. When the facilities were transferred to New Mexico State Parks oversight by Reclamation, visitor recreation at the lake was able to commence immediately from Pine. Additional facilities were subsequently built by New Mexico State Parks, including campgrounds to accommodate steadily increasing use of the lake. The NPS-built recreation areas formed the cornerstone of the success of Navajo Lake State Park. However, the fate of the Sims and Arboles visitor centers, and remodeling episodes at Pine, demonstrate the limitations of the Mission 66 program and the use of inexpensive construction materials, and occasionally inappropriate design styles and elements for specific environmental settings and conditions. Both New Mexico and Colorado State Parks determined that it was more effective to replace the original Sims and Arboles visitor center buildings than attempt to repair, renovate, and expand them. In retrospect, it is fortunate that the Pine visitor center survived the 1990s, with Sims selected for total reconstruction instead. It is also fortunate that when extensive work at the Pine visitor center was planned that New Mexico State Parks had specialist staff who recognized and were sensitive to the historical attributes of the existing building. As a result, an important and previously unknown Mission 66 visitor center at a New Mexico state park was preserved for the enjoyment of future generations.

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Effects of Climate Change on the Long-Term Deterioration Trends of Wood in Cultural Heritage

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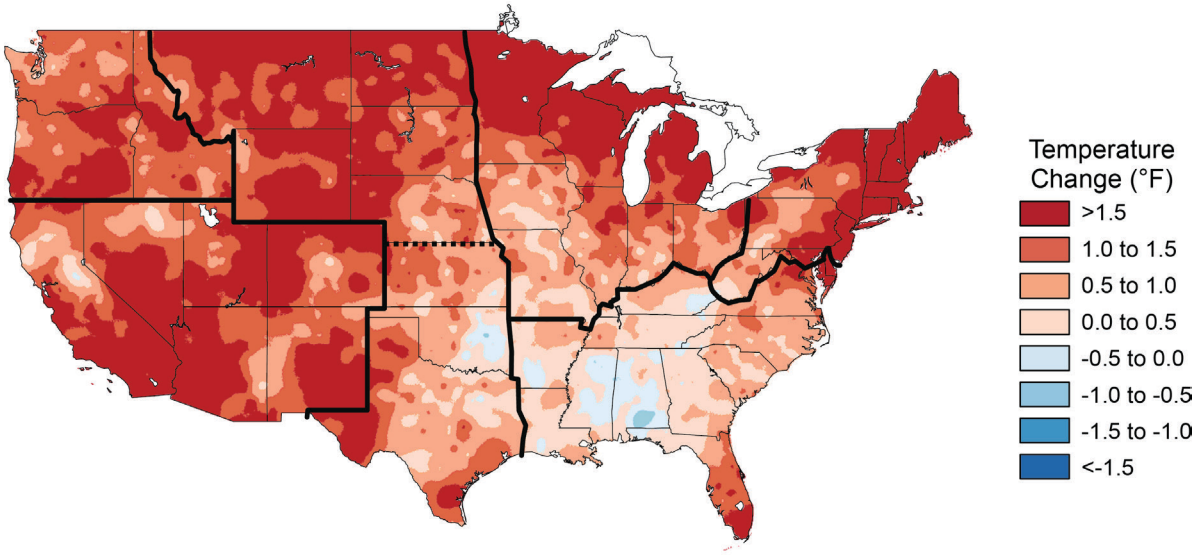


Figure 1. Observed U.S. temperature change. The colors on the map show temperature changes over the past 22 years (1991-2012) compared to the 1901-1960 average. Figure source: NOAA NCDC / CICS-NC.

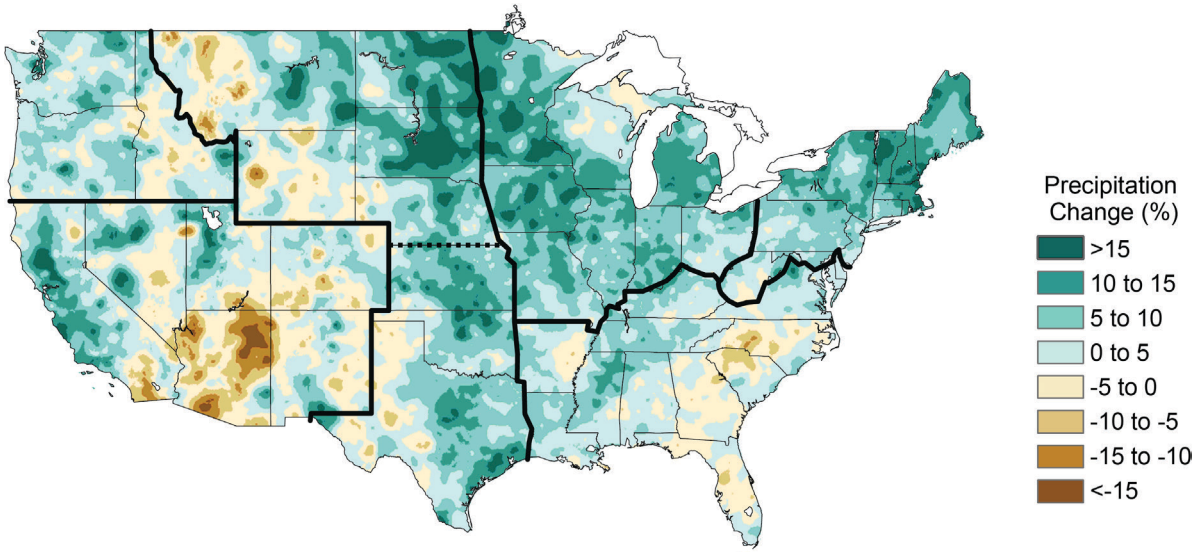


Figure 2. Observed U.S. precipitation change. The colors on the map show annual total precipitation changes for 1991-2012 compared to the 1901-1960 average. Figure source: NOAA NCDC / CICS-NC, adapted from Peterson et al. (2013).

Abstract

Wood is one of the most common materials featured in the built environment in the U.S. and a prominent building material in the U.S. National and State Parks. The longevity and integrity of wooden buildings and structures depend on the susceptibility of wood to degradation caused by biological organisms, among which true wood-decay fungi and wood-boring insects are known to cause the greatest damage. Wood degradation risks and rates are correlated to the environmental exposure conditions of the building element in service. Corresponding relationships between environmental variables and the durability of wooden structures have been adequately understood and incorporated throughout history into building practices, codes and standards. At present, it is evident that climate change will significantly alter the environmental conditions that control wood degradation in exterior settings, with potentially dramatic consequences on heritage wooden structures. This paper intends to synthesize the current scientific knowledge on the effects of projected climate variables on the deterioration of wood, to review recent advances in modeling the long-term deterioration risks, and to discuss future preservation priorities for the wood-built structures managed by U.S. National Park Service.

Introduction

It is becoming widely recognized that effective climate change adaptation strategies are vital for future preservation of historic buildings and structures. National and international agencies including UNESCO World Heritage Centre, European Commission, and U.S National Park Service (NPS) have been developing policy frameworks for dealing with climate change impacts on cultural heritage (World Heritage Centre 2008, English Heritage 2008, Sabbioni et al. 2010, Kaslegard 2011). Development of effective mitigation and adaptation strategies for cultural resources is critically dependent on the scope and depth of understanding of the nature and magnitude of future climate change impacts.

Climate change presents a high risk to the integrity and durability of materials that comprise built infrastructure in general and historic built heritage in particular (WHC 2008, Sabbioni et al. 2010, Kaslegard 2011). The effects of climate change on historic materials are complex interactions between climate variables (i.e. temperature, precipitation, wind speed, etc.), specific material properties, deterioration agents, and building loading conditions (Sabbioni et al. 2010).

In contrast to other prominent building materials that typically age and deteriorate *via* chemical and physical processes, wood is mostly degraded through biological processes resulting from the colonization of wood by various organisms, including fungi and insects. Wood moisture content and temperature are critical factors for biodeterioration of wood by all wood-degrading organisms (Scheffer and Verrall 1973, Zabel and Morrell 1992). Climate conditions are also critical for proliferation and geographical spreading of existing and new species of wood-deteriorating insects and fungi in. Principal climate change impacts on wood in cultural heritage are therefore twofold, by affecting the susceptibility of wood to degradation and by affecting the geographic distribution and population dynamics of wood-deteriorating organisms.

The latest International Panel on Climate Change Assessment Report (IPCC AR5) suggests growing scientific confidence in the ability of climate models to project future climate using climate change scenarios that differ in terms of the future GHG emissions based on different rates of global socio-economic growth (IPCC 2014). According to current scientific knowledge, general climate change tendencies in North America include an increase in average annual temperatures, resulting in a higher frequency of more temperate winters and warm summers; an intensification of the hydrological cycle with increased intensity of rainfall events, and on average wetter winters, but more frequent droughts in arid and semi-arid areas (Fig. 1 and Fig. 2). Winter and spring precipitation is projected to increase for the northern United States, and decrease for the Southwest (Melillo et al. 2014). Similarly, a study on the climate change exposure of 289 parks administered by the U.S. National Park Service (NPS) found that the parks are experiencing extreme climates for several studied variables including temperature (e.g., annual mean temperature, minimum temperature of the coldest month, mean temperature of the warmest quarter). Precipitation patterns were geographically more heterogeneous across parks, as shown in Figure 3 (Monahan and Fisichelli 2014).

The main objective of this research is to evaluate future trends for wood deterioration by common decay fungi and wood-boring insects in the U.S in response to long-term changes in temperature and precipitation. Review of the pertinent scientific literature and other publications will be used to summarize up-to-date knowledge on the subject and to identify current knowledge gaps

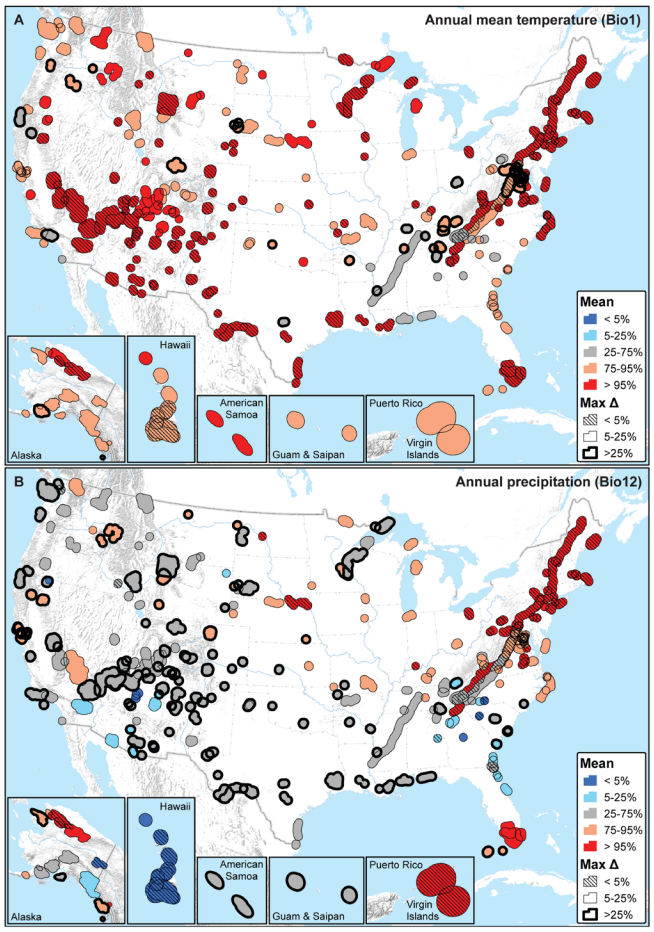


Figure 3. Climate Change in U.S. National Parks. The average (Mean) values and maximum difference (MaxΔ) of recent percentiles calculated for moving window means. A) Annual mean temperature; B) Annual precipitation. Adopted from Monahan and Fisichelli (2014).

and future research needs of significance to climate change adaptation strategies for wood in historic buildings and structures.

Durability of Wood in Cultural Heritage

Parks managed by the U.S NPS encompass numerous wooden buildings and structures that are important part of cultural heritage, including houses, barns, outbuildings, industrial and religious buildings, bridges, etc. Wood in the built environment is susceptible to biodeterioration by diverse organisms, including decay fungi and wood-boring insects, especially when the moisture content in wood is high for long periods. Many historic buildings were designed for a specific local climate and built with the understanding of the conditions and exposures that lead to wood deterioration. Traditional building practices often either ensured that wood is kept dry through proper building design and detailing, or that naturally durable or preservative treated wood is used in situations when high moisture risk is imminent (Scheffer and Verrall 1973).

Being hygroscopic material, wood equilibrates its moisture content (MC) in response to relative humidity of the environment. Wood in buildings normally does not reach MC conducive to deterioration, unless it is in direct contact with the moisture source (i.e. soil), or liquid water from precipitation (i.e. exposed to rainfall or to splashes from the ground). Within the building, wood moisture contents depend on the construction design, detailing, presence of coatings and coating type and condition, direction relative to wind driven rain, elevation, shading, and the vicinity of vegetation (Viitanen et al. 2010).

Fungal Decay Risks and Climate Change

Fungal decay is a leading cause of damage, structural failures, and loss of historic fabric in wooden buildings and structures (Scheffer and Verrall 1973, Viitanen et al. 2010). While some fungi cause only localized discoloration such as surface staining produced by mold fungi, true decay fungi are capable of degrading structural wood components, diminishing the strength and load bearing capacity of building members, and irreversibly damaging historic wood fabric.

Wood-decay fungi are classified broadly into three large groups based on the wood deterioration pattern: brown-rot, white-rot, and soft-rot fungi. Brown-rot fungi comprise by far the largest number of significant wood decay fungi found in the built environment in the U.S. (Scheffer and Verrall 1973).

Environmental conditions have similar effects on life cycle and decay potential of most fungi. For initial attack (colonization) to take place, fungi typically require MC in wood in excess to 28-30% (so called “fiber saturation point”), but once established, they can continue to grow at MCs as low as 20% with optimal MC of 40-60% (Scheffer and Verrall 1973, Zabel and Morrell 1992). Over the course of fungal growth, progressive softening of the cellular structure is accompanied by a mass loss, which is the most commonly used measure of the decay rate and strength loss (Wilcox 1978).

The influence of moisture and temperature conditions on the wood decay potential in buildings and structures is manifested on several levels: i) **macroclimate** - defined by average climate conditions for a given geographic region (rainfall, temperature), ii) **mesoclimate** – determined by the *in situ* factors such as setting/location of the building, distance to water bodies, presence

of vegetation, wood positioning and structural detailing within the structure and iii) **microclimate** – described by the conditions at the surface and within a particulate wood member (Viitanen 2010, Brischke et al. 2006). Deterioration risks are pronounced in climate regions with high humidity and mild average temperatures, on shaded - typically north and west building elevations, and in parts of the structure exposed to higher precipitation such as roofs and exposed rafters, or closer to the source of moisture such as cladding, lower parts of the walls, and foundations and any structural detail which trap moisture.

Climate Modeling of Wood Decay

The relationship between macroclimate and fungal decay risks has long been recognized and applied for decay modeling. Macroclimate variables - specifically historic precipitation and temperature records have been used to model above-ground wood decay hazards by developing climate indexes (i.e. Scheffer 1971, Morris and Wang 2008). The first such model was the "Scheffer model", developed in 1971 (Scheffer 1971). It was based on the mean monthly temperatures and the mean monthly number of days with precipitation of 0.25 mm or more over a 30-year period and calibrated using relative natural exposure decay test data. The "Scheffer index" was used to create decay hazard maps for the U.S by differentiating three zones based on the index value: low hazard (< 35); moderate hazard (35-65); and high hazard (> 65) as shown in Figure 4 (Scheffer 1971). As an illustration, an index of 0 corresponded to Las Vegas, Nevada and an index of 137.5 to West Palm Beach, Florida. The Scheffer index has been criticized because of the lack of adequate sensitivity to climate, for not modeling the "microclimate" effects, or incorporating tendency of a wood system to trap moisture (Brischke et al. 2006, Morris and Wang 2008). However, climate generalizations inherent to Scheffer's model, based solely on long-term precipitation and temperature data, make this model extremely useful for understanding and comparing potential geographic decay patterns. Furthermore, Scheffer's model is applicable for developing temporal decay risk maps by using future climate projections.

The potential of the Scheffer index as a tool for the assessment of climate change effects on wood decay risks was recognized in 2009 by Canadian researchers (Morris and Wang 2008) who revisited Scheffer indexes previously published for Canada and the U.S using climate data sets spanning the periods of 1941-1970 (Scheffer 1971) and 1951 -1980 (Setliff 1986). Morris and Wang (2008) used climate data for the period from 1970 to 2000 and observed an increase in Scheffer index values coinciding with increase in temperature and rainfall in some locations in Canada that could possibly be attributed to directional climate change. In 2009, U.S. Forest Products Lab (FPL) published a revised U.S. decay risk map (Fig. 5) based on Scheffer indexes calculated for 1971-2000 climate data sets (Carll 2009), which suggested a moderate increase in the decay hazard indexes in conterminous U.S. in comparison to 1941-1970 (Scheffer 1971). Although the deviations from historic decay patterns observed in both studies are consistent with IPCC findings (IPCC 2014) suggesting a sharp increase in global temperature and a change in precipitation patterns starting around the 1970s, neither study closely investigated the effect of climate change on ob-

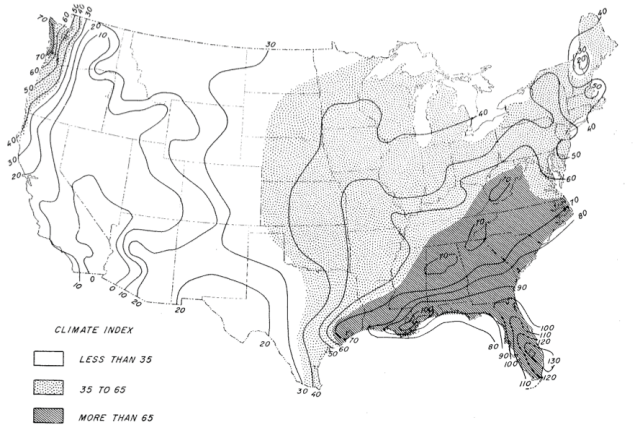


Figure 4. Climate index map of the United States prepared by the U.S. Weather Bureau based on Scheffer indexes. Three index zones represent three levels of aboveground decay potential. Image source: Carll (2009).

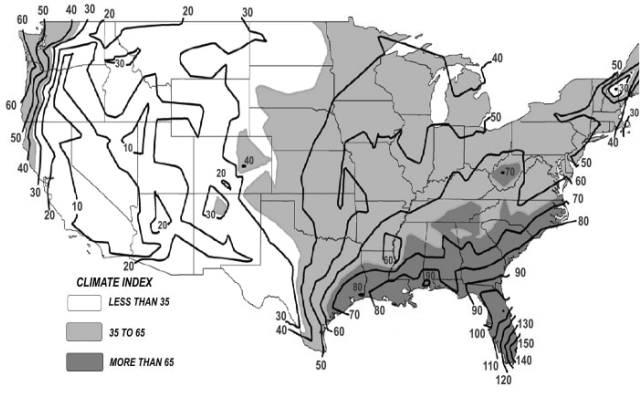


Figure 5. Revised climate (Scheffer) index map for decay hazard based on climate data for the period 1971–2000. Higher index values indicate greater decay hazard. Image source: Carll (2009).

served decay hazard trends. A similar study conducted in Korea demonstrated a trending increase of Scheffer index values for Korea over the period of 1973 to 2012 that the authors contributed to climate change effects (Taegyun and Ra 2013). Brischke and Rapp (2010) used mathematical modeling to study potential impacts of climate change on wood deterioration in Europe and found strong correlations between increase in temperature and wood moisture and service life of wooden building components.

Future Fungal Decay Risks Projections

Modeling of future decay risks using climate indexes, based on projected precipitation and temperature data, has also been used to produce wood decay risk maps for the 21st century for several world regions. For example, detailed risk maps corresponding to climate change have been published for the European Union (Sabbioni et al. 2010, Brischke et al. 2010), Norway (Lisø et al 2006, Almås et al. 2011), and Australia (Wang and Wang 2012). Almås et al. (2011) used a model based on the historical climate data (1961–1990), future climate projections (2071–2100) and the building characteristics of the Norwegian timber building stock to estimate future decay risks. The results suggested that the number of buildings at the high potential risk of wood decay will increase from about 615,000 buildings at the time of the study to roughly 2.4 million in 2100. The results of this study are consistent with findings of the European Commission project on Global Climate Change Impact on Built Heritage and Cultural Landscapes (Noah's Ark), which produced decay risk maps for timber in cultural heritage in the European Union (Sabbioni et al. 2010). The modeling of fungal growth was projected to increase up to 50% in the North and East of Europe between 1961 and 2099, and decrease up to 30% in the South and West of Europe. The risk models used in the study were based on the future temperature and precipitation projections and simulations included an index that represents moisture content profiles in wood when the MC was above the threshold for fungal growth. The results are illustrated in maps showing changes in the near future (defined as the period 2010-2039) and the distant future (2070-2099), both compared with the recent past (1961-1990).

Wang and Wang (2012) modeled the decay hazard for structural timber in ground contact in three typical Australian climates for three IPCC climate scenarios and found that projected decay rates (mm/year) increased and projected residual strength wood decreased in all instances. For timber of less durable wood species 50 years after installation, the residual strength under climate change could be almost 25% lower than that without climate change.

Although detailed predictive models have not been developed for the U.S., it can be expected that the incidence of fungal decay will change relative to historic patterns depending on the climate change and especially with respect to precipitation, with a potential to decrease in regions experiencing warmer and drier climates corresponding to the U.S. West and Southwest, and increase in regions with increased annual precipitation such as the U.S. Northeast.

Wood Deterioration by Insects

Wood-destroying insects are, next to fungi, the second major class of wood-deteriorating organisms. While fungi in general share common lifecycle and wood deterioration patterns, wood-boring insects differ significantly with respect to their growth requirements, geographic distribution, and wood utilization habits (Scheffer and Verrall 1973). Among many wood-destroying insects found in U.S. termites, carpenter ants and wood-boring beetles can present substantial risks to wood members in historic buildings and structures within their geographic distribution range.

Termites that attack building timber in the U.S. encompass subterranean termites, which feed on wood but build mounds in the soil, and dampwood and drywood termites which inhabit and feed on wet and dry wood respectively.

Subterranean termites are by far the most significant termites in terms of structural damage and the economic loss they cause. Several species of subterranean termites are native to the U.S. (*Reticulitermes* spp., *Coptotermes* spp. and *Heterotermes* spp.) and Formosan subterranean termite (*Coptotermes formosanus* Shiraki) is an introduced species. The Eastern subterranean termite *Reticulitermes flavipes* is the most common wood-deteriorating termite, found in most eastern states. Formosan subterranean termite is currently the most destructive termite species in the U.S owing to extremely large colonies (several million individuals) and broad foraging distances (300 ft. in soil) (Su and Tamashiro 1987). Formosan termites pose serious threats to all cultural resources because they are capable of destroying historic buildings as well as standing trees and any wood in the vicinity of the colony, as illustrated by the non-selective destruction of historic buildings in the French Quarter along with

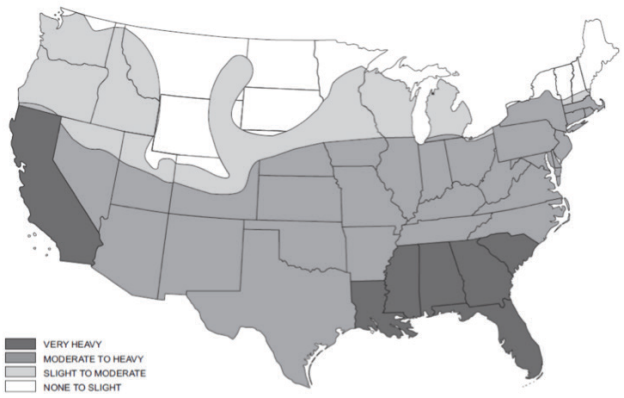


Figure 6. Termite infestation probability map for the U.S. Image source: ICC (2007).

the live oak and cypress trees in New Orleans (Suszkiw 1998). Native to East Asia, Formosan termites were first introduced to contiguous U.S. after WWII, established in Florida by the 1980s, and are now present in Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, North and South Carolina, Tennessee, Virginia, and Texas, with their distribution range still steadily increasing.

Drywood termites (*Cryptotermes* and *Incisitermes)* have been recorded only in the narrow strip of land extending in the furthest South and in the Southwest of the U.S. Unlike subterranean termites, drywood termites in the genus *Cryptotermes* have an extreme desiccation tolerance capacity and are adapted to feed and live in dry wood with MC of 10-13% (Steward 1998, Brammer and Scheffrahn 2002). Although the cumulative damage caused by drywood termites is minor when compared to subterranean termites, they are significant pests in historic buildings due to difficult detection and control, and a capability to inflict irreparable damage to historic timber in 2-4 years. Buildings in natural settings resembling many U.S. NPS parks are at a higher risk of infestation since their colonies are found in nature.

Dampwood termite (*Zootermopsi*) is found in the Pacific Nortwest, in the Southwest and in southern Florida. Similar to drywood termites, they have small colonies and utilize wood both as a food source and a shelter, but unlike drywood termites, they require wet wood for survival, typically in direct connection to a water source such as in ground contact. They cause only minor localized damage to historic wood material.

Carpenter ants (*Camponotus*) are distributed throughout the U.S., but they cause significant damage to building timber only in the Pacific Northwest. Carpenter ants are social insects, building nests in wood but foraging outside for food and water. They have a preference for softer, moist, and decayed wood although they will continue to bore into sound wood once the colony is established. Because the same carpenter ant species that infest wood in buildings also live in nature, buildings and structures in forested settings or that are surrounded with abundant vegetation are at high risks of infestations.

Wood-boring beetles include numerous indigenous and introduced species (i.e. *Anobiidae*, *Lyctidae*, *Bostrichidae*, *Cerambycidae*, and *Buprestidae*) and are found throughout the U.S. Most wood-boring beetles have limited geographic ranges; specific feeding preferences with respect to wood species, sapwood/heartwood and MC; and small populations. Deterioration to structural timber is usually considered insignificant, but infestations are typically difficult to prevent, detect and control, which makes them important pests to historic wood fabric and wood artifacts.

Wood-boring Insects and Climate Change

Climate change is already having a measurable impact on the distribution, reproduction and behavior of insect species (Hellmann et al. 2008). Geographic distribution of wood-boring insects is largely governed by temperature. Due to short life and reproduction cycles and migration capability, insect species respond fast to global warming by shifting the northern boundary of their distribution range. In addition, the timing of their biological cycle is being altered in response to warming of their current habitat, and the population control is diminished by rising of lethal winter temperatures. Resulting changes in insect-caused damage to wood in historic buildings and structures can be expected to closely follow temperature trends, with larger damage to wood in regions experiencing increased annual and summer temperature averages. Indirectly, many of the wood-deteriorating species such as wood-boring beetles and termites have the potential to alter or extend their natural geographic range in response to regional temperature changes. Wood-boring insects, which have high wood MC requirements, or prefer to colonize decaying wood (i.e. carpenter ants, dampwood termites and some beetles) will be positively affected in regions with more precipitation in the future.

There is very limited research on individual wood-boring insect species, with exception of economically significant subterranean termites, to aid understanding of their possible adaptation to climate change. Subterranean termite survival is typically greatest at high humid-

ity and moderate temperatures (Smith and Rust 1994). Cao and Su (2016) studied the effects of temperature on *survivorship* and *wood consumption rate* in particular to understand the effects of climate change on the extent of losses caused by economically important termites. The study showed that the northern distribution boundaries of the four studied termite species coincided with the mean daily minimum temperatures in the U.S. and suggested that the lowest winter temperatures are the limiting factor for the northern termite distribution boundary. The temperature-determined distribution range boundaries tend only to deviate in geographic regions with low humidity, such as Arizona, possibly because the humidity is below the level required to sustain termites. Subterranean termites spread very slowly naturally and man-caused spreading has been far more rapid and over large distances (Tonini et al. 2013), but the extent of species dispersal is limited by favorable environmental conditions. Global warming can be postulated to shift or extend the habitat of all economically important subterranean termite species northward; to cause changes in their wood-consumption rate; and consequently change their building damage potential. Predicting the future spreading of subterranean termite infestation can be facilitated through modeling climate conditions in the potential geographic distribution range - namely temperature and precipitation that affect atmospheric and soil moisture.

Future Recommendations

- Efficient technology and knowledge transfer between parks in different geographic regions can be considered critical when attempting to treat new infestations in wooden buildings and structures in an effective and timely manner. In spite of the impending changes in magnitude and the type of wood deterioration in many regions, extensive knowledge about most decay species and deterioration mechanisms is already in existence; and effective prevention and decontamination strategies are already in place within the historic geographic range of each species.
- The most important preventive measures that are grounded in current understanding of future deterioration risks are: i) regular inspection, ii) maintenance of park properties, and iii) long term monitoring and timely condition assessments (particularly using non-destructive diagnostic techniques and remote sensing).
- Existing practices of using preventive or remedial treatments including wood repairs, painting, wood preservatives, pesticides and baiting systems for termites may need to be re-evaluated and/or used more frequently in endangered historic buildings.
- Vulnerability-based risk modeling can be applied to identify threatened historic structures, to determine the types and severity of threats, and to plan for mitigation and preservation accordingly. For example, it has been suggested to categorize heritage objects based on their sensitivity to climate change as robust, or with low, medium, high and extreme sensitivity to climate change (Sabbioni et al. 2010).
- Models that have built-in climate change scenarios, ecological responses of wood-deteriorating species to future climate, and building and material parameters critical for making projections for particular building type or individual structures would prove extremely valuable and should be considered as an approach to developing climate change adaption strategies for cultural resources. A science-based approach to monitoring and compilation of field data from the structures could be implemented in simulation models and for re-evaluating and refining management planning.
- The development of regional risk and vulnerability maps has a practical value for interpreting the effects of climate change on wood deterioration risks in cultural resources. Overlaying risk maps for different deterioration risks or climate change scenarios with maps of cultural resources could improve cost and time effectiveness of management strategies and make them more comprehensive and adaptable. Composition maps could further be used as a starting point for considering adjustment strategies for monitoring, abatement and long-term conservation of wood in historic built environment.
- Predictive models for species migration and population dynamics can prove valuable in cases of those species that have not been previously encountered by historic property managers, which can lead to the late detection and problem oversight. Monitoring of species vectors can also be used as an early prevention strategy in case of invasive species (i.e. Formosan termite), which are typically more successful, abundant, and climate-tolerant than native species.

Conclusions

Since the effects of climate change on individual wood-deteriorating fungal or insect species are largely unknown, current assessment of future deterioration trends of wood in historic built environment is largely based on general understanding of the life cycle of wood-deteriorating organisms. Review of the current research pertinent to understanding effects of climate change on wood in cultural heritage suggests impending short- and long-term changes in historic patterns of biodeterioration of wood in cultural resources.

Although detailed predictive models have not been developed for the U.S., it can be expected that the incidence of fungal decay will decrease in regions experiencing warmer and drier climate, and increase in regions with increased annual precipitation. There is sufficient scientific evidence that the insect caused damage to wood in built structures can be expected to follow temperature change trends, with increased insect population dynamics, infestation spreading rates, and larger damage to wood in regions experiencing increased annual and summer temperature averages.

Regular inspection and recordation using the U.S. NPS List of Classified Structures (LCS) and maintenance of wooden buildings and structures can be considered to be most sensible preventive measure, while environment and infestation monitoring and modeling can be considered as most practical long-term approach to continued preservation of park properties by U.S. NPS.

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Learning from the Texas Wildfires: Bastrop State Park and Beyond

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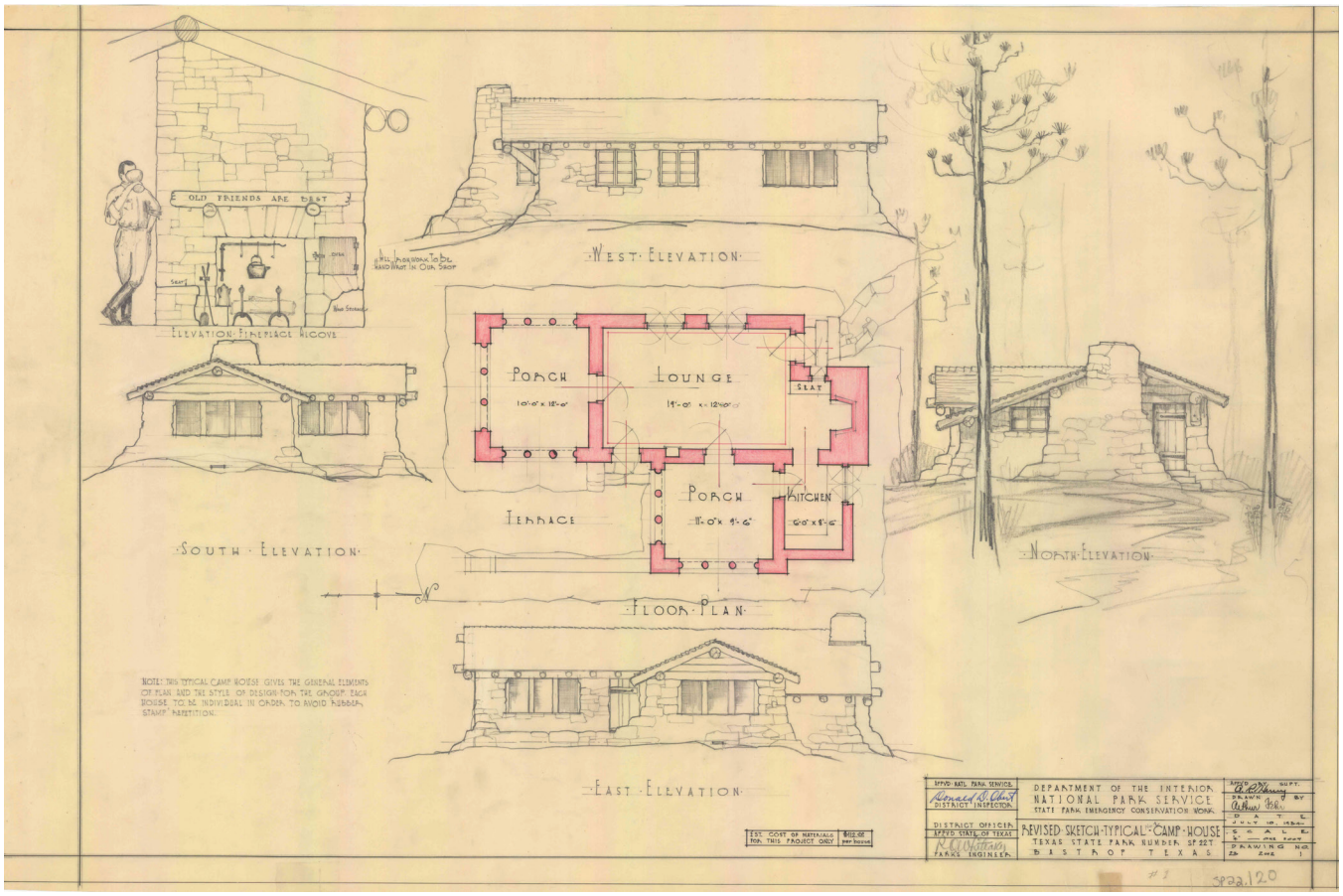


Figure 1. CCC Drawing of Bastrop Cabins, Texas State Archives

Abstract

During September, 2011, a massive wildfire in Central Texas consumed over 30,000 acres and destroyed nearly 1,700 structures. The Bastrop Complex Wildfire was the largest wildland-urban interface fire in Texas history and the third largest nationally. In its path was Bastrop State Park, home to a National Historic Landmark collection of 1930s Civilian Conservation Corps (CCC) cabins and other structures. Bastrop State Park is located in the "Lost Pines" area of central Texas, and CCC workers harvested local timber and quarried nearby sandstone to construct the park's many rustic-style structures. Architect Arthur Fehr, who directed most of the CCC work at the park, embraced the design principles of the National Park Service, emphasizing harmony with the surrounding natural landscape.

Although the 2011 fire devastated most of the forested area of Bastrop State Park, firefighters saved the historic sandstone cabins and most of the CCC facilities. Two overlook structures, located in the path of the fire, lost their timber framed roofs with wooden shakes. Our recent NCPTT grant project focused on investigating

the effects of the 2011 wildfire on cultural resources of Bastrop State Park and providing recommendations for preparing historic structures for future wildfires. To accomplish our work, we made site visits to inspect conditions, conducted interviews with Bastrop State Park firefighters, reviewed previous research on fire damage to cultural materials, carried out laboratory testing, and surveyed disaster preparedness and recovery strategies used by state, federal, and international organizations.

This paper describes our investigation of the effects of the 2011 wildfire on Bastrop State Park historic structures and the guidelines that we developed for preparing for future wildfires. Our findings underscore the importance of assembling a team of firefighters and historic preservation specialists that can establish priority areas for prescribed burns, develop strategies for improving communication during a wildfire, and balance fire prevention strategies with maintaining historical integrity of the buildings and structures.

Introduction

In 2012, Texas Parks and Wildlife Department (TPWD) was awarded a National Center for Preservation Technology and Training (NCPTT) grant to investigate the effects of the 2011 Bastrop Complex Wildfire on cultural resources in Bastrop State Park. In addition to TPWD staff, our team included a faculty member, student, and recent alumna from University of Texas School of Architecture[1]. Grant project work included archival research, a literature review of wildfire disaster recovery and preparedness, oral history interviews of TPWD staff involved with efforts to contain the wildfire, and an on-site assessment of fire damage to cultural resources, including the Civilian Conservation Corps (CCC) cabins, refectory, entry wall, culverts and overlook structures. This paper describes work that was accomplished during the grant period, including our recommendations for stabilizing conditions of historic buildings and structures affected by the fire. A particular challenge of the project was developing guidelines for protecting these same resources from future damage associated with wildfires while maintaining the park's rustic style design used by the National Park Service in the 1930s.

Bastrop State Park

Bastrop State Park is located in Bastrop County near the town of Bastrop, Texas. The park was established in 1933 when the City of Bastrop and private donors gave 2,100 acres to the Texas State Parks Board.[2] The park gained 1,450 acres in 1979 and another 100 in 2000. With additional land purchases made in 2001, Bastrop State Park totals 5,926 acres.

Construction of buildings and structures in Bastrop State Park began shortly after 1933 as part of U.S. President Franklin Roosevelt's New Deal, and was primarily carried out by the CCC. Bastrop State Park is a flagship of the Texas state park system and remains one of the best examples of the National Park Service Rustic Style. A pivotal figure in the creation of this style was Region III Director Herbert Maier, which included Texas, Oklahoma, and the Southwest.[3] Maier designed national park buildings and structures in Yosemite, Yellowstone, and the Grand Canyon before working with the CCC and, although he did not design the buildings at Bastrop, he supervised the planning and design efforts.[4] More direct control was given to Arthur Fehr who came to Bastrop in 1934 with the title of park architect and construction supervisor. Fehr designed all 1930s buildings except for the entrance portals and refectory exterior, which came from the State Parks Board. Fehr often worked at the site on drawings and developed relationships with CCC workers.[5] Landscape architects Norfleet Bone, H.L. Scogland, and Rufus Hirsch further contributed to the rustic and naturalistic architectural style. CCC companies 1805 and 1811 arrived on site late in 1933 and early 1934.

Between 1933 and 1937, the CCC completed construction of the entry structures, refectory, cabins, overlook shelters, and some erosion-control and landscape beautification work for the park, including park roads and associated culverts.[6] Because there was no funding to buy building materials and transport them from other locations, CCC enrollees quarried local stone and cut nearby trees for park structures.[7] Although the locations of the Bastrop quarries are uncertain, interviews with former CCC members place them a few miles outside the park.[8] Stone was blasted with dynamite, loaded into trucks, and hauled to the park. Original woodwork was also created from locally sourced trees including oak and pine.[9] (See Figure 1 on page 302)

The majority of historic structures in Bastrop State Park are intact, and subsequent building in the park is in keeping with the master plan developed between 1933 and 1942. The principal idea behind the spatial organization of the park was to make all developed features accessible by vehicle via the main park loop (Park Road A), while limiting vehicle intrusion in less developed

areas. The roadways and structures are also sensitive to the park's topography: the CCC enhanced the artificial lake on Copperas Creek, constructed overlooks at natural high places, and used the western level space for golf course and day use buildings.[10] Landscape and forestry work was also conducted by the CCC alongside roadways and trails and "landscape naturalization" following construction of the cabins and other structures was carried out to enhance the buildings.[11] Circulation through the park was part of the master plan, focusing on control of vehicle access through a single park entrance and the separation of vehicle and foot traffic.

Characteristic of the National Park Service Rustic style, low buildings are constructed of wood and roughly cut stone, with wide, deeply struck mortar joints. Lower courses of walls have larger blocks of stone than the upper courses, and unbroken horizontal joints are avoided. CCC recruit Otto Pruetz recalls cutting his first stone: "The first time I made one, I think I spent all day on it. They had a foreman and he came along and he measured them and put them down in the book. [H]e told me, go ahead and chip on that and make it look a little rougher. It was too smooth."[12]

The degree of this rustic style varies from the developed area of the park, where buildings and walls were constructed with regular cut-stone blocks, to the cabins and overlooks which are nestled more deeply in the forest. Their random coursed stonework blends in with the naturalistic landscape. Masonry walls are load-bearing, and the heavy timbered roofs are covered with heavy wood shingles.[13] Lost Pines Overlook on the park loop road is constructed with "six heavily battered round columns built of irregularly coursed sandstone." The hexagonal floor is sandstone, and the overlook structure was originally covered with a hipped, wooden roof



Figure 2. Bastrop State Park Cabin



Figure 3. The Bastrop Complex Fire engulfs the park pines

with heavy timber frame and shakes.[14] Photos taken of the Lost Pines Overlook before 2011 show what is likely to be a replacement original roof, and it is apparent that the masonry was repointed at some time. The second overlook structure, also known as Fehr's Overlook, is rectangular in shape with sandstone walls, steps, and floors. This overlook structure burned in an earlier fire, and its roof was replaced in 2006.

Bastrop Complex Wildfire

On September 4, 2011, the Bastrop Complex Wildfire became the largest Wildland-Urban Interface fire in Texas history, and the third largest nationally. It impacted 32,400 acres, 1,696 structures and 96% of Bastrop State Park's pine-dominated forest.[15] Sparked by a downed power line, and fed by weather and drought factors, the wildfire spread at a rate of 5 miles per hour for the first few hours. Wind speeds encouraged heavy spotting: it is estimated the spotting distance in the Bastrop fire was almost 3 miles. The extreme heat and wind created vertical and horizontal vortices, which propelled the fire forward, increasing its speed, and crown spread.

Battling a blaze of this size required a coordinated effort among several fire departments at the local and state levels. Bastrop State Park had its own fire department working to save the structures, but the larger area of the fire was battled by local fire departments and the Texas Forest Service. In addition, hundreds of firefighters from across the state, and as far away as California, assisted in the effort once the severity of the wildfire was understood. The response was swift and organized, in part because many of the fire departments had received specialized wildland firefighting training. Containment lines were built using shovels, axes and bulldozers, which aided in containing the spread of the fire to oth-

er populated areas of Bastrop County. Because of the fast response by park staff, visitors to Bastrop State Park were completely evacuated as soon as the fire began to threaten the park.

While most of the forested area of the park was lost to the massive and fast-moving fire, firefighters were able to save all of the park's cabins and larger structures, losing only the roofs of the two overlook structures. While the fire spread rapidly, its arrival to the historic structures of the park was not immediate, giving firefighters time to protect the cabins as best they could. The overlook structures' roofs were lost because of their remote locations and associated hilly terrain, the latter causing updrafts that intensified the fire. The firefighting focused on the areas with dense collections of historically significant buildings that also were more easily accessible.

During the 2011 Bastrop Complex wildfire, firefighters remotely communicated with historic preservation specialists who, because of safety concerns, were not allowed in the park during the fire or immediately afterwards until roads and the park itself were deemed safe for entry. Information about the condition of CCC buildings was relayed to preservation staff at TPWD headquarters in Austin immediately after the fire's suppression. At that time, they learned that overlooks were badly damaged and that the main buildings were saved from the fire event. When Bastrop State Park was declared safe for access by assessment teams, archeologists were among the first to begin an assessment of cultural damage.

In describing the efforts made by wildland firefighters to save the cabins and day use buildings, Wildland Fire Program Manager Jeff Sparks sheds light on how historic preservation staff participated in the process. According to Sparks, there were a number of certified firefighters from Bastrop State Park and the Regional Office who were on the fireline, providing critical information regarding structures and assisting other firefighters and the incident management team with prioritization for response and protection. Firefighters were in constant contact with park and regional personnel including Cultural Resource Specialist Rich Mahoney, and with their help, firefighters were able to identify and prioritize efforts to protect historic resources.[16]



Figure 4. Bastrop State Park Firefighter douses cabin roofs ahead of the wildfire

Aftermath: Effects of the Fire

Direct Impacts on Building and Structure Materials

During our May 2012, site visit, we briefly inspected conditions of the overlooks in the park. Although the shingles and rafters of the Lost Pines Overlook roof had been destroyed by the wildfire, a charred horizontal beam survived the blaze and some of the lower beam pockets contained charred remains. At Fehr's Overlook, the structure's roof was entirely gone. All that remained were scattered charred wood pieces on the floor of the overlook structure and on the ground outside.

Regarding the stonework, there was an initial concern about the dark color of the sandstone of the overlooks, which in some cases appeared charred and ashy with granular disaggregation. The team suspected that these characteristics indicated the stone had suffered thermal shock and was altered on a micro level. From burned samples taken at the overlooks and compared to unburned sample from the cabin area, we used a scanning electron microscope (SEM) to compare exterior surfaces and interior surfaces to determine if exposure to fire impacted the stone's integrity. The samples showed no definitive fire decay: the matrix appeared to be intact, except for a few instances of cracking. We observed gaps between the quartz grains and the crust, which may be signs of matrix shrinkage and separation due to the thermal differences between grain and crust. However, we do not believe this has major implications to the stone's integrity.

Effects of the wildfire on masonry mortar at the overlook structures were not obvious during the inspections that we carried out during our July 2012 visit to Bastrop State Park. The mortar joints of Lost Pines and Fehr's Overlooks appeared to be in generally good condition, with little discoloration or damage. The mortars of Lost Pines Overlook appeared to be repointing mortars, and not original to the structure. The beam pockets, located in the columns several feet above the shelter floor, were empty and dark-colored soiling (presumably from soot)

was noted on their interior surfaces. At Fehr's Overlook, some of the existing mortar was white and, in other locations, the mortar had a darker, grey color. The latter appeared to contain Portland cement, which was used by the CCC in some construction, but it is also possible some of it is not original. There were numerous open joints, but this condition may have been unrelated to the wildfire. Although we did not detect mortar discoloration, powdering, or other damage that might be attributable to direct impact, exposure to the wildfire may have affected porosity and other physical and chemical properties that determine the mortar's long-term performance.

Except for wood members, the Bastrop State Park materials did not exhibit signs of immediate decay: variations in color across both mortar and sandstone reflect their composition. However, based on the research published by other conservation scientists, we believe that exposure to the 2011 wildfire may have long-term effects on weathering of the sandstone, especially in combination with deterioration processes such as salt crystallization. We did note more severe granular disaggregation on fired sandstone in comparison with the sandstone taken from the cabins, but beyond this qualitative observation, no quantitative or conclusive evidence of stone decay was discovered.

Indirect Impacts

After the 2011 fire, the park was at increased risk for soil erosion because ground-covering plants were burned off as the fire moved through the forest floor. In addition to the direct fire impacts to wildlife and natural resources, soil erosion that followed flooding events, damaged cultural resources. Although the scenic overlooks are located in steeply sloped areas that were heavily burned during the 2011 wildfire, the overlooks and cabins escaped damage from soil erosion because all were built on high ground and erosion did not appear to affecte their condition as much as resources in other areas. In contrast, deterioration of many of the sandstone culverts appears to be the direct result of flooding and associated soil erosion. The culverts were constructed by the CCC along Park Road 1-C that connects Bastrop State Park with Buescher State Park. Local sandstone was used to face the culverts and to construct retaining walls, guard walls, and abutments. To visitors, the appearance of the culverts is similar to the cabins and other historic buildings and, according to the National Historic Landmark nomination, the "rustic construction and stylistic uniformity" of these structures contribute to the significance of Bastrop State Park.



Figure 5. Fehr Overlook after the fire, roof missing

We inspected 15 culverts along Park Road 1-C to identify deterioration related to the 2011 wildfire and to assess damage caused by rains and subsequent flooding that occurred following a 2012 storm. Deteriorated conditions appeared to be related to flooding and soil erosion, including sandstone displacement, surface erosion, missing stones, and silt- and debris-covered stone work. In some cases, the condition of sandstone walls was judged to be unstable and immediate repair work recommended.

Recovery

Recovery from a wildfire begins with an assessment of resource damage related to exposure to the fire and its byproducts. In addition, assessment includes an inventory of adverse effects that are related to fire management actions and fire-induced changes to the sites. With historic structures, managers must consider how recovery efforts impact the integrity and significance of the cultural resource before beginning repair or replacement of damaged materials. Although much initial work can be accomplished in a relatively short timeframe, the recovery process is generally slow, and fraught with challenges along the way.

Cleaning

TPWD hired a local firm specializing in cleaning smoke and water-damaged property to carry out soot removal and deodorization of two buildings in Bastrop State Park. They used dry sponge cleaning, chemical cleaning, and hot water extraction to clean damaged materials and an ozone generating machine to deodorize affected buildings. Although the work completed by the local firm was acceptable, the team's recommenda-

tions for cleaning cultural resources are generally less aggressive. Conservators recommend removing soot and other residue using a dry, soft natural bristle brush or sponge. If additional cleaning is required, a mild pH-neutral detergent should be used for wet cleaning operations. Pressure water rinsing and the use of acidic or strongly alkaline cleaning agents are not recommended for historic building materials.

Stabilizing Erosion

In the immediate aftermath of the fire, virtually all ground cover had been consumed and there was up to a foot of ash covering the ground throughout the park. Logs continued to burn for weeks, and there were hidden sinkholes created from burnt stumps that pocketed the landscape. These treacherous conditions made the assessment teams' work more challenging. Changing weather was an immediate concern as drought gave way to heavy rains. With vegetative cover burned away, dealing with soil erosion became a top priority. Sections of the park road collapsed, placing the CCC culverts in jeopardy. The rolling terrain, devoid of groundcover, was in danger of serious erosion, placing numerous cultural resources and artifacts in jeopardy. Recovery crews moved quickly to fell trees, place bio-degradable wattle diversion systems to control run-off, and then to step-up reseeding efforts to repair the denuded landscape.

Overlook Roof Reconstruction

In the fall of 2012, TPWD preservation craftsmen replaced the roofs at both the Lost Pines and Fehr's Overlooks. Neither of the roofs lost in the fire was original. The Lost Pines roof design was changed significantly from the original at some earlier, but unknown, date and bore little resemblance to the original CCC design. Because of the total loss of the roof framing, an opportunity presented itself to return the Lost Pine overlook roof to the way it looked originally, as depicted in the CCC design drawings.



Figure 6. Severe Erosion in Bastrop State Park since the fire

The Fehr's Overlook roof had been missing for years, but in 2006 the Historic Sites and Structures Program of the State Parks Division of Texas Parks and Wildlife received an award of $5,000 from the National Park Service Heritage Partnerships Program towards its replacement using historic documentation. Unfortunately, the new roof was completely destroyed in the wildfire. Post-fire, the original CCC drawings were used as a guide and the Fehr's Overlook roof structure once again reflects the historic design intent.

Preparing for Future Wildfires

In the wake of natural disasters such as a wildfire, historic preservation specialists face difficult decisions if preservation treatments for damaged historic properties are undecided or poorly understood prior to recovery efforts.[17] While the most important concern in disaster planning is protecting human life, saving historic buildings and important local landmarks can help survivors retain a sense of place and security amid an otherwise devastated landscape. With historic structures and cultural landscapes that are at risk of damage from future wildfires, it is important to document them with Historic Structure Reports and Cultural Landscape Reports that include photographs and drawings of existing conditions.

Our recommendations for reducing the future risk of fire damage to cultural materials considered the use of fire-resistant substitute materials that would not impact the significance and integrity of historic structures in Bastrop State Park. Regarding the historic wood shingle roofs, the substitute materials that comply with the Secretary of the Interior Preservation Standards include treated cedar shingles, which is Class A fire resistant. Regarding durability, cedar has a service life of 25-30 years in temperate climates. Although the lifespan of cedar is reduced significantly in Texas where it is exposed to extreme heat during the summer months, this substitute material is still more durable than the period pine shingles.

Defensible Space

Defensible space is defined as the area around a building or structure where fuels and vegetation are treated, cleared, or reduced to slow the spread of wildfire towards the building or structure and to create an area where firefighters can work during a fire event. Because the Bastrop State Park historic structures are located in wooded areas, providing recommendations for creating defensible space was particularly challenging. At the time of their construction, the surrounding forest was much different from its 2011 appearance. Over the last 80 years, with little forest management, tree densities increased dramatically and species such as yaupon (Ilex vomitoria), an extremely volatile fuel, dominated the under- and mid-story of the canopy, allowing fire to move easily from the ground to the large tree crowns and made fire suppression more difficult.

Balancing the inherent character-defining features of the forest with the need for defensible space around historic structures is sometimes challenging and requires balancing historic preservation issues with fire safety. Compromises may be necessary to attain an acceptable defensible space while retaining as many of the important forest elements as possible. In an effort to develop guidelines for creating defensible space within the historic setting at Bastrop State Park, we researched recommendations provided by the International Wildland Urban Interface Code and by the National Fire Protection Association's Firewise program. Firewise is co-sponsored by the USDA Forest Service, US Department of the Interior and the National Association of State Foresters. The table 1 provides defensible space recommendations made by the WUI Code, Firewise and California's Wild Urban Interface Code.

While helpful, these codes were written for homes in the Wildland Urban Interface, not for historic buildings in a historic setting at the state park. The park buildings designed by the NPS and constructed by the CCC were intended to nestle into the woods, subordinate to their natural surroundings, and unobtrusive to the visitor. Our challenge was to provide guidelines for this historic setting that would not adversely affect the rustic character of the park design. Our recommendations for the overlooks, culverts, and cabins are below.

The overlook structures were the two structures most damaged by the fire. With the post-fire landscape stripped of surplus fuel, the Lost Pines Overlook has adequate horizontal and vertical separation from the forest. Fehr's Overlook is accessed by a trail and an unpaved park road. Because of its remote woodland location, Fehr's Overlook was and is at greater risk and our recommended is to remove close growing small trees, trim back the overhanging branches, and create a non-combustible perimeter around the structure—possibly with gravel—to protect the structure but still blend into the natural environment.

Regarding the historic culverts, we recommended thinning out close growing trees to slow the spread of future fires. The culverts are generally covered with vegetation.

	"Defensible space radius"	Trees within Radius	Shrubs Within Radius	Maintenance
WUI Code	30 Feet	Yes - horizontal distance of 10 feet from structure and other tree crowns. Lowest limb must be 6 feet from ground or higher.	Yes - as long as it does not encourage fire spreading. Non-fire resistant plants	Remove dead growth, trees pruned
Firewise	30 feet (Zone 1)	None	Must be 5 feet from building	
	30 - 100 feet (Zone2)	No crown touching, trimmed	Well spaced	Remove dead growth. Metal Mesh protecting under decks/attic/soffet vents.
	100 - 200 feet (Zone 3)	Well spaced	Low volume, well spaced	
California Code	30 feet	Single trees only, lowest branch 6 - 15 feet above vegetation, depending on slope.	Welll pruned	
	30 - 100 feet (zone 2)	Stumps removed, dead trees limited to one per acre		Remove dead growth, grass kept to 4 inches and shorter, aalthough if well separated from toher fuel, can be 18 inches.

Table 1. Defensible Space recommendations from the WUI Code

This growth helps prevent soil erosion, and it may be important to allow vegetation to grow as high as 18 inches.

The CCC cabins were saved with great effort by firefighters. Before the wildfire reached the CCC cabins, firefighters prepared the area by wetting the cabins with water from nearby sources, clearing leaves and pine needles, and building fire breaks. These activities contributed to making a defensible space: a clear area where firefighters could work and keep fire away from the buildings.

The cabins provide the greatest challenge for creating defensible spaces while maintaining the integrity of the rustic style. Most of the cabins have close growing trees and yaupon and other smaller vegetation that created an understory that allowed fire to burn hotter and travel up into the pine canopy. Towards creating defensible spaces, we recommend regular landscape maintenance to reduce their vulnerability by installing a nearby, dependable, high volume water source (such as a hydrant) in areas with a density of historic structures. Additional recommendations include removing or trimming trees growing up against the cabins as well as remove overhanging branches and flammable vegetation from within five feet of the cabins.

Concluding Remarks

The 2011 wildfire consumed much of Bastrop State Park's forest and is considered a large-scale disaster. However, the wildfire provided a valuable teaching tool for Texas Parks and Wildlife and Bastrop State Park and serves as a preservation treatment case study while at the same time illustrates the success of park firefighters. The thoughtful actions taken by the Bastrop State Park firefighters saved some of the best examples of CCC park architecture in Texas.

The Bastrop State Park wildfire also demonstrated the importance and value of a highly trained and organized firefighting team, who were proactively instructed on the significance of the historic structures. Historic preservation specialists need to continue to educate park staff about ways to balance defensible space principles with appropriate historic landscape appearances. In addition, they must create a disaster plan that records, locates, and prioritizes each historic structure to provide incident management personnel a resource for training and response, should a wildfire threaten a park. To better understand what firefighters face, preservation staff should receive training in incident management. This co-training could provide information about protecting historic buildings and landscapes during wildfires. It is hoped that the results of our grant project on the Bastrop State Park wildfire will help other state parks begin the process of preparing a plan for disaster response and recovery.

The Texas Parks and Wildlife Department staff members are stewards of significant CCC structures that are treasures enjoyed by the citizens of Texas and visitors from all over. These structures are distinct in their vulnerability to the ravages of wildfire because of their natural settings. Protecting the historic resources requires a combination of proactive training, responsible mainte-

nance focused on defensible spaces, and fuel mitigation. It also requires a quick and focused fire suppression and rapid response once a wildfire is identified. The example of Bastrop State Park shows that parks can both survive and recover from wildfire devastation as well as provide lessons from which others may learn.

Endnotes

1 This paper was developed from the report submitted for NCPTT Grant project #MT-2210-12-NC-10. Grant report authors also included Miriam Tworek-Hoffstetter, a 2013 graduate of the University Texas at Austin Historic Preservation Program and State Parks Wildland Fire Program Manager Jeff Sparks.
2 Maxwell, Ross. "*A Geologic and Historic Guide to State Parks of Texas", (*Bureau of Economic Geology, 1970),44.
3 National Register of Historic Places Nomination, Bastrop State Park, 4.
4 *ibid* 24.
5 Steely, James Wright. "*Parks for Texas", (*Austin, University of Texas Press, 2009), 199; Interview with Sam Jones, 13.
6 While the majority of the park was built by CCC, additions were made by other groups both under the New Deal and afterwards. The original nine-hole golf course and swimming pool were in part WPA projects. In the 1950s, TPWD built another group of cabins (separate from CCC cabins), and by 1997 they also added nine holes to the golf course. Steely, *Parks for Texas,* 200.
7 Steely, *Parks for Texas,* 9.
8 Interview with Otto Pruetz, 3.
9 Ibid, 7-8.
10 *ibid* 6.
11 *ibid* 7.
12 Interview with Otto Pruetz, 3.
13 National Register of Historic Places Nomination, Bastrop State Park, 9.
14 National Register of Historic Places Nomination, Bastrop State Park, 12.
15 Bastrop Fire Report, p 4.
16 Email communication with Jeff Sparks
17 For example see Craigo, "A Helping Hand,"18, on the situation after the Loma Prieta Earthquake.

Earthen Architectural Conservation in American Southwest National Parks

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Figure 1. Shelter over Casa Grande, Casa Grande Ruins National Monument. (Photo by Jeff Anderson)

Abstract

The Southwest of the United States is home to a ubiquitous earthen architectural heritage. For 100 years the National Park Service (NPS) has managed and preserved prehistoric and historic earthen sites in the region. These sites embody American cultural and pre-Columbian archeological values. The 1906 Antiquities Act impacted the American consciousness significantly and the subsequent establishment of national monuments included many earthen architectural resources. Archeology evolved from site robbery and destruction toward being a non-invasive integrated science while technology of conserving earthen architecture matured from simple construction practice to applied science. The preservation of earthen ruins started in 1891 at the Casa Grande resulting in a protective shelter by 1901. The NPS was established in 1916 and major interventions took place at Tumacacori Mission National Monument in 1921. In 1923, the NPS created the Southwest Monuments Office institutionalizing the management of southwest ruins. During the 1930s, innovative strategies were sought. Depression era programs enhanced parks and national historic preservation efforts coincided with an urgent recognition in southwest parks of the fragility of earth-

en resources. Soil cements (earthen materials mixed with Portland cement) were being tested and used to preserve walls. Chemical treatments were tried off and on after the war, but experiments were inconclusive. By the 1970s, preservationists became aware of the problems with using Portland cement in conservation and the concern led to the first scientific evaluation of treatments. The results of the internal research program led to the use of two chemical amendments which were quickly embraced by many parks. But in some cases, traditional treatments continued to be used. At the turn of the twenty first century, Fort Union National Monument embarked on a strategy to apply a pragmatic agenda incorporating field data, site analysis, historical documentation and scientific approaches to better manage earthen resources and a model was created. Currently the NPS manages earthen architectural resources at eight major sites in three southwestern states.

Introduction

More than a hundred of years of experience are contained in the cumulative history of the United States Federal Government (National Park Service after 1916) archeological site management and ruins treatment in the southwest of the United States. That legacy has continued unbroken and, since 1998, is managed in part by the Vanishing Treasures Program within the Intermountain Region of the NPS. The current mission of the program states that "The Vanishing Treasures Program supports the preservation of traditionally-built architecture in the Western United States, facilitates the perpetuation of traditional skills, and promotes connections between culturally associated communities and places of their heritage."

The Program originally focused on just 45 parks with diverse archeological resources spanning centuries, even millennia, and most included earthen building materials. Many are built entirely of earth. Earthen ruins exposed to the forces of nature present the most challenging preservation problems and reviewing the history of treatments at several sites illustrates some of the most compelling issues.

Throughout the history of ruins preservation, the central goals, whether local or regional, have not changed since 1916. The 1916 Organic Act establishing the National Park Service states "…conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Origins

Archeological site management in the United States began in 1889 at the ruins of Casa Grande (later to be proclaimed a national monument) in south central Arizona when a congressional declaration stated

> To repair and protect the ruin of Casa Grande, situated in Pinal County, near Florence, Arizona, two thousand dollars and the President is authorized to reserve from settlement and sale the land on which said ruin is situated and so much of the public land adjacent thereto as in his judgment may be necessary for the protection of said ruin and of the ancient city of which it is a part (Clemeson, 1992, p. 33).

Casa Grande is a three-story puddled earth structure constructed of a caliche (carbonate/clay rich soil) by the Hohokam culture that thrived in the area from around 550 AD to 1450 AD. Casa Grande was built in the 1200s and abandoned in the 1400s.

The Jesuit Missionary Eusabio Kino encountered the Casa Grande during his exploration of the Sonoran desert in 1694. Between this time and the legislation of 1889, any changes at the site were not recorded. Of note, a major earthquake that occurred in Northern Sonora, Mexico in 1887 heavily affected southern Arizona. While it is not documented, damage is likely to have occurred to sections of the freestanding walls. Pre-1887 photos showing sections of walls that do not appear in photos taken post-earthquake lend credence to this supposition.

By 1891 the first ruins stabilization scope of work was developed and included six objectives:

1. protective fencing
2. a site management custodian
3. site cleaning, underpinning basal erosion
4. capping exposed walls
5. reinforcing free standing walls
6. a sheltering roof plan

Although archeological evaluation, research, and documentation were not included, the fundamentals for earthen structure preservation are remarkably complete. At this time, archeology focused on collecting and dispersing artifacts. Among the scope items, sheltering has proven to be the most useful, but also the most controversial of the treatments. While the other scope items

were achieved relatively quickly, it wasn't until 1902 that the first simple barn-like structure was erected. This one was replaced in 1932 with the more permanent steel one which survives today. The construction of the shelter altered the uninhibited view of the Casa Grande, changing the landscape and its most prominent feature. Since most of the walls of the structure had survived so many centuries without any form of maintenance, some likely argued the shelter was unnecessary. Even so, erosion was evident and, in hindsight, the shelter has provided a significant amount of benign protection as simply evidenced by the deterioration of the other earthen structures left exposed on site, many of which have totally disappeared.

The treatment for basal erosion amounted to clearing debris from the base of walls, preparing the puddled earth surface, and installing a fired brick veneer set in Portland cement mortar. Due to the unsightly incompatible appearance of the brick, it was later surfaced with cement stucco tinted to match the color of the walls. The relatively impermeable masonry skirt has survived. In the early years, preservation actions led to reactions. Advocates for using more compatible materials discovered sources for the caliche- rich soils and prescribed their use for repair. While the Casa Grande was substantially protected, other portions of the site required routine treatments, mostly in the form of capping. Coatings of un-amended earthen materials may have been tried but encapsulation of walls in cement mortars that were coated with modified soils has been the longest used treatment through today. The ongoing problems were succinctly expressed by Custodian Pinkley who wrote of his concern about the exposed ruins in his annual report in 1910, "….from which there seems no practical method to protect the greater part of them." (Clemenson, 1992).

The passage of the Antiquities Act in 1906 had an enormous impact on the management of archeological sites. Fundamentally an act to protect sites from looting, it also gave power to the President of the United States to proclaim national monuments. This resulted in many sites of compelling importance to be designated and thus fall under the protection of the federal government. Archeological sites and the findings within them were subsequently fundamentally and legally protected. Ten years later the National Park Service was established and many of the monuments proclaimed in the 1906 Act were transferred to the new agency to manage, protect, and make available to the public.

In 1918 the Tumacacori Mission, just south of Casa Grande was added to the National Park System. This adobe Mission was constructed in 1691 by Father Kino as part of a group of missions linking up a large area of the Sonoran desert frontier of New Spain in what is now southern Arizona and Northern Mexico. By the early 1900s all of the decorated surfaces of painted lime plaster characteristic of the Spanish colonial mission system were compromised. Casa Grande Custodian Pinkley was given the responsibility for Tumacacori and in 1921 he supervised the reconstruction of the flat roof. Any philosophical discussion concerning the choice of sheltering as at Casa Grande versus the reconstruction of a roof is not available, if it exists. The project stands as a testament to partial reconstruction in order to preserve architectural fabric which otherwise would surely have been compromised and most likely lost had the roof not been reconstructed. The roof provided protection for interior resources setting the stage for future conservation-focused treatments. While the roof protected the interior, many exterior elements on the Mission and nearby structures remained at risk. Architectural elements of the façade were partly reconstructed providing enhancement for lost definition. A certain restraint is apparent as only selected portions of the façade were reconstructed leaving other parts as found, with the overall effect of a partial ruin. This project predates the 1931 Athens Charter which begins to address preservation philosophy and its application. The Southwest Monuments management group was set up in the early 1920s with Pinkley in charge to better coordinate preservation and interpretive programs between 13 parks and sites (Moss, 2007).

Search for solutions (miracles)

By 1930 as many as 22 parks and sites with ruins had been incorporated into the NPS. On March 31, 1931, in response to perceived issues around the fragility of earthen and earth and stone ruins, the National Park Service issued the following notice:

> National Park Service is seeking means of protecting Pueblo ruins from weathering. The ideal solution would be a transparent, waterproof coating which could be sprayed on the walls, but no suitable product has been found, and the Service announced today it would welcome suggestions for a substitute (Trott, 1997, p. 47).

In response, in 1932 Standard Oil Inc. provided Soil-Bitumen 1, an emulsified asphalt that could be added to an earthen mix to render a more weather resistant material. This product was to be used as an amendment to earthen mortar. Field application began soon and the use of bitumen amendments were used extensively during the 1937-1940 period and there was intermittent use up into the 1950s. Due to reactions with salts which affected cohesion, difficulties with controlling mixture ratios, and the darkening discoloration, the material eventually ceased being used in ruins preservation. The adobe industry of the day took note and, in new construction, this material found a solid footing. Contemporary stabilized and semi-stabilized adobe are manufactured with an aqueous based asphalt emulsion and these asphalt-stabilized adobe bricks have become a commercial industry standard with widespread use in new construction in New Mexico. However, this amendment did not satisfy a 'no optical change' requirement desired by NPS practitioners.

In broadening the search, Stanford University responded with an experimental vinyl resin, that they labeled NPSX. Little is recorded about this material other than its application in early 1935 to the exterior façade and interior of the nave of the Tumacacori Mission. The results of these treatments were not assessed but for an unknown reason the use of this material was not continued. The lack of documentation and use of the scientific method on site experiments such as this one have limited the evaluation of early treatment attempts. The effort is referenced in an internal memorandum. In 1940 NPS managers convened a meeting at the regional headquarters in Santa Fe, NM, in which the following statements emerged:

> The basic deficiency is material. It is highly probably that superior methods of application will quickly follow the development of suitable materials….Existing stabilization measures are founded almost entirely upon the use of native soils, cement mortar as capping, cement mortar and soil mortar masonry and particularly at Chaco Canyon, native soil stabilized with bitumen. A single attempt to apply modern plastics was made between 1933 and 1935 which consisted largely of experimental work and which failing to recognize the physics and mechanics inherent in the problem, resulted in little, if any positive value. In concluding this section, they remark:….must be supplemented by materials of different characteristics which probably will be found only in the developments of industrial chemistry. The resins, and silicon ester in particular, appear to offer hope of eventual solution. (Trott, 1997, p. 47).

The comment about silicon ester (ethyl silicate or tetraethyl orthosilicate) is prescient since it has been of substantial use in the consolidation of earthen fabric in the latter third of the twentieth century. The committee's comment does not reference any first experimentation. In 1946, experimental field application is recorded at Casa Grande, again without documentation. It is also recorded as being sprayed on a wall at Tumacacori in 1954, indicating that some positive results were likely to have been perceived from the earlier use.

Field practitioners engaged in diverse experimentation and, during 1941-1946, some controlled testing of soil cement (Portland cement mixed in ratios from 5-20% by volume with local soils) occurred at the standing stone and earth ruins site of Wupatki National Monument located in northern Arizona. These tests were simply coupons or briquettes measuring 7x l0x 3/4" that were made of various proportions of soil and cement mixtures which were exposed to the environment over a four year plus period. As a result of its resistance to weathering, soil cement attained a new level of legitimacy and found a more consistent place in the palette of treatments available for earthen material strengthening. Soil cements were used for repair materials rather than as a spray-on coatings or penetrating consolident.

In 1946 a survey at Tumacacori identified adobe basal deterioration, apparent widening of cracks, and plaster deterioration at the Mission. Following the survey, work to repair adobe occurred in 1947. Basal repair and crack filling can be considered the endless summer of preservation treatments of earthen ruins as these and capping deterioration are chronic conditions for exposed earthen walls. In addition to needed structural repairs, recognition of the values associated with the decorated interior lime plasters led to an art conservator coming to the site in 1949. The painted surfaces were surveyed and recommendations were made, including the use of a polyvinyl acetate (PVA) consolident to stabilize the friable surfaces. Also, recommendations included edging and cleaning of surfaces. This project represents the first

application of art conservation methods to conserve architectural fabric within the NPS in the Southwest.

In 1955 preservation workers at both Casa Grande and Tumacacori requested the purchase of Daracone (an industrial silicone-based waterproofing product). Experimental test walls had been constructed in 1954 at Chaco Canyon in north central New Mexico (a stone and earth site) which convinced some that improvements in weather resistance were achieved in comparison to the use of un-amended soils. Evaluations of the amended mortars were made by hosing down walls. The silicone product performed well in these test applications as a water repellent. A spray-on product like Darcone was seemingly effective, but unsustainable since, over time, it restricts the evaporation of water from surfaces that absorb moisture through capillary action. The application of these water repellent surface treatments versus the consolidating PVA used on the plasters indicates a distinction being recognized by these practitioners regarding the fundamentals of material use and the differing objectives. These same practitioners were using the soils strengthened with the bitumen or cement, particularly where it was necessary to correct basal erosion. At this point in time, one solution was not being sought to cure all problems.

By 1960, ruins preservation workers began using Daraweld C (a polyvinyl acetate copolymer dispersion in water) as a substitute for the Daracone, Portland cement, and bitumen. The search for a transparent material without optical effects was continually sought and Daraweld C offered that characteristic. The rationale for the shift away from Daracone to the Daraweld C is not recorded, but the fact that Daraweld C may be both intermixed as well as applied to a surface while Daracone was a surface coating only, may explain the shift from Daracone.

Field failures and problems persisted and, in 1971, a University of Arizona soil scientist was tasked with researching the moisture problems in the walls at Tucmacacori. This request reflects an understanding that complex soil and moisture dynamic processes were at work in earthen building materials. Rather than simply continuing to treat a symptom, an effort to understand the cause of the problem was behind the request. Questions clearly were: what is the source of the moisture, what is the quantity, how does it move in the materials, and what can be done to address the problem. By 1975 the fundamentals of a new approach including laboratory material analysis, recognition of the processes of deterioration, monitoring for rate of change, increased levels of documentation, a multi-disciplinary team approach, and critical review were being put into place. A plan emerged which included a more judicious application of conservation materials which could be scientifically evaluated through monitoring. A maintenance program was laid out and implemented at various levels of complexity. The consolident Acryloid B-72 (an acrylic resin used extensively in the art conservation world) was used in the stabilization of the decorated surfaces. Allowing the walls to breathe without encapsulation by water repellents was recognized as a desirable attribute. An international conservation project sponsored by the NPS was launched at Tumacacori which enriched the perspective of NPS practitioners. (Crosby, 1985)

Fort Union, similar sites and more treatments

In 1956, Fort Union (some 56 structures of adobe ruins with over 150,000 square feet of unroofed walls), located on a high open plain in Northern New Mexico, was designated a national monument. First constructed in the mid-19th century, this adobe fort was constantly a maintenance problem from day one. A quote taken from the historical record of the 19th century stated, "Indeed, from the moment they were completed until their abandonment in 1891, the fort's adobe structures were in an almost constant state of unremitting deterioration."(Oliver, 1996, p. 8)

A brief summary of preservation activity since the establishment of the Monument is:

- 1956-1958 excavation, site clearing, and structural stabilization
- 1959-1962 capping with soil-cement adobes and spraying with silicone water repellent
- 1963-1980 applying soil-cement shelter coats and spraying with silicone water repellent
- 1981 application of un-amended soil shelter coats
- 1996-2003 implementation of Preservation Action Plan, major recapping 100% of ruins
- 1999-2000 initial and limited application of Rhoplex-amended soil shelter coats

The fundamental treatment program initiated at Fort Union in 1959 focused on capping walls with soil-cement adobes and spraying adobe walls with a 5% solution of Dow Corning Silaneal 772 (silicone) in water. The Silaneal was chosen after several years of exposure on test walls in which the Daracone and Silaneal performed equally well in shedding water. This type of treatment

is directly inherited from previous work at Tumacacori. The Silaneal was considerably cheaper than the Daracone and chosen since the square footage of walls was so great. Soil cement was applied to basal erosion areas. In August of 1961 the records stated;

> The maintenance crew applied silicone coating to the walls that needed it twice a year, but the silicone created a thin, whitish film which was easily damaged by hail and was regarded as unsatisfactory. In 1963…. the collapse of several walls due to high winds renewed the search for more reliable methods of stabilization and preservation (Oliver, 1996).

Resurfacing of adobe walls with a coil-cement shelter coat is noted in 1963 indicating a perceived need to gain more strength on the wall than what could be afforded by a spray-on treatment. In 1972 the Regional Office report on Fort Union activities stated:

> The present method of stabilization consists of capping wall tops with soil cement mortar colored to match the adobe and filling eroded places in adobe bricks with soil cement. The adobe walls are then sprayed with a water soluble silicone solution called Silaneal 772 manufactured by Dow Corning Corporation to waterproof them. Following hail storms and strong rainstorms, the walls affected are re-sprayed to reseal cracks and fractures in the silicone seal. Each wall at the fort is treated this way on a 5-year cycle. The report also recommended….experiment with a capping and patching material of mud mixed with silicone instead of soil cement. This material will bind better to the old adobe and crack less (Oliver, 1996, p. 11)

These approaches persisted into the 1980s. In 1971, after a visit to Casa Grande and other southwest sites, a retired chemist Dr. Darrel Butterbaugh, initiated a program of field testing an acrylic emulsion product designed for use with Portland cement concrete – Rhoplex E-330. His professional background was with Rohm and Haas Corporation, manufacturer of the E-330. He made a few confirming bricks and field tested mixes using the E-330 as an intermixed earthen modifier in the lab and at several parks on actual walls. E-330 had no optical effect and provided increased resistance to weathering. Others followed in 1974 with the development of a proprietary product – F325 Adobeseal (an ionized extended water miscible polysiloxane). A field test was applied at Fort Bowie which must have impressed some as it was followed by wholesale treatment when some 20,000 square feet of the surface was treated by spraying with as many as three coats of this material applied to exposed adobe walls. Fort Bowie is a very isolated adobe frontier fort in ruins located in southeastern Arizona designated as a national historic site in 1964 and receiving national monument status in 1972.

Questioning the efficacy of the various treatment programs emerges in 1974 when the NPS headquarters in Washington DC stated, "We have observed the use of many modern materials in the restoration and maintenance of our historic structures which have questionable value and which in many cases do permanent damage." (files, NPS, unpublished). In acting on their concerns NPS management engaged the National Bureau of Standards in a testing program under the direction of Dr. James Clifton. Publications on adobe as a material resulted in 1977 and 1978.

In 1975, Dr. Dennis Fenn, Soils Scientist at the University of Arizona, was engaged by the NPS Southwest Regional Office to initiate a testing program for preserving earthen materials in ruins (a familiar refrain since the 30s). Fenn became an NPS employee and he started where Butterbaugh left off, only now he was working inside the agency. His approach was similar to others in building test walls on several sites (thereby accommodating differing environments) where various chemically amended earthen mortars and plasters were introduced. In the case of test walls at Casa Grande and Tumacacori, the walls were built entirely of earth. The significant difference was the extensive documentation of the work with photographs and multiple observations over time afforded by his being an employee and not a contractor. By 1978 he reported recommendations including the potential use of Rhoplex as an amendment. A team, including the author, revisited the Chaco walls with Dr. Fenn in 2004 and he noted that all the results remained essentially the same after more than 20 years of exposure. The walls remain as a testament to the validity of his findings. Some amended mortars tested in these wall surfaces that do not receive direct rainfall appear clearly to perform better than un-amended mortars. This same statement cannot be applied to capping

because the direct damage caused by rain and snow on caps has proven to negatively affect the chemically modified soil much more than in the more protected joints below. Soil cement was not tested in a test wall program.

The E-330 that Butterbaugh had advanced, along with Daraweld C, were verified through these field tests to be useful as amendments for earthen mortars as proven by test walls. Also, the Clifton work set the stage for better understanding the basics of adobe material composition. The application of these two chemicals in ruins stabilization spread rapidly.

While the use of these amendments spread to earth and stone sites, at Fort Union, beginning in 1981, the maintenance staff abandoned the soil-cement and silicone regimen in favor of a return to "traditional" materials, namely the use of un-amended soils for adobe blocks and shelter coats. For an undocumented reason, interest in continued experimentation with new materials had faded at this site. A new plan had these objectives:

1. Return to the use of original materials in adobe and foundation work, rather than the cement and chemically stabilized material used in past years,
2. Concentrate on repair of ruins whose condition constituted major safety hazards to employees and/or visitors, and
3. Repair foundations where identity of entire buildings or of remaining adobe walls was about to be lost (Oliver, 1996, p. 21).

This approach was sustained at the fort into the 1990s until it was recognized that staff and resources were not sufficient to keep applying shelter coats year after year. In 1991 the NPS initiated a partnership with the Graduate Program in Historic Preservation at the University of Pennsylvania to engage in problem solving, conduct research and pilot treatments, and provide training. The specific focus was to be the preservation of lime plasters on the adobe walls. The research, treatment development, and training program ran for 3 years. Several Master degreed professionals matriculated from the field schools and participated in developing a new preservation plan for the monument. This work was completed in 1996 and resulted in a new agenda which established baseline date and solid recommendations:

1. Chemical characterization of the historic materials,
2. Review deterioration history and past conservation treatment
3. Conduct a structural survey and analysis of the walls
4. The establishment of a monitoring program for present and future assessment of conditions, and
5. The design of a testing program of current and proposed treatments (Oliver, 1996, p. 3)

This Action Plan represented a holistic approach for the preservation problems at the Fort which could lead to a modification of the maintenance program. Ultimately the value of this work was to redirect limited resources toward prioritized preservation needs that were established based on scientific findings. This focusing of resources provided the park with a rational method of approaching annual work and established priorities for that work. One result of the analysis demonstrated the effectiveness of the 1960s capping. Lintels and corners also played into the formula, as did weathering patterns and environmental influences. A realization emerged that neither magic formulas nor new chemical products were unlikely to solve the age-old quandary of adobe deterioration; rather, focused routine maintenance was the only realistic option. By 2002 all capping on the Fort had been replaced with new similar compatible soil cement caps. Adobe wall repairs were applied to the critical zones with in-kind repairs. Limited E-330 amended earthen plasters were used in particularly vulnerable areas of walls. Corners and lintels received maintenance attention. The plan and implementation program seemed at the time to be a benchmark for earthen preservation activities due to its scientific, multiyear, and comprehensive approach. (Oliver, et al. 1998)

Located not far to the southwest of Fort Union, Pecos National Historical Park, established in 1965, is an extensive exposed adobe ruin of the Spanish Colonial Mission and *Convento* which was located adjoining and on top of a major Puebloan earth and stone village site. This area has recorded human history extending back thousands of years with major architectural structures of consolidated villages occurring around 1200 AD. As with many other southwestern sites, Spanish missionaries chose major village sites to establish their Catholic missions. The initial Pecos preservation treatments differed from those at Fort Union in that soil seal (a chemical referred to in documentation added to the adobe) amended adobe replaced the use of soil cement, perhaps as a field test to compare the validity of certain treatments from site to site. The problem of the aesthetics of soil cement and the need to add colorant, which was hard to control, was fundamental to the shift. The

evolution at Pecos ultimately involved substituting the E-330 for the soil seal and the virtual encapsulation of the walls in the amended earthen material. In 1974 the Pecos restoration archeologist wrote

But I think that the basic problem then and even now, remains the same. We do not yet know how to stabilize and preserve exposed adobe or earth walls. A lot of people in and out of the Park Service have and are working on the problem and progress is being made, but we have a long way to go (Matlock, 1975, p,. 18)

The history that unfolded at Fort Bowie, mentioned previously in reference to the spray-on coatings, followed a somewhat different path than that of Fort Union or Pecos. After having undergone the same initial treatments of soil cement caps and spray-on water repellents for walls, a dramatic change of direction was set out in 1977 in the historic structures preservation guide which stated, "The preservation of above grade adobe ruins will comprise complete removal of soil cement caps, veneer, basal erosion fill, and reconstruction." (Hartzler 2001, p. 15). In 1978 work to remove the caps was undertaken in earnest. Measurement of damage and scientific evaluation of deterioration caused by the cement was undertaken. An account of the decision to take this action is not clear beyond an expressed intent to use only compatible materials and allow the site to better conform to the intended abandoned description. This is in sharp contrast to the developments at Fort Union where the soil cement caps were shown to have performed admirably for nearly 40 years, confirmed by the 1990s decision to replace these caps in a similar manner. Fort Bowie suffered serious losses after the caps were removed and ultimately lime plaster shelter coats or encapsulations (starting in 1988) have been applied to forestall deterioration of historic fabric which had been eroding unprotected after the cap removal. While the NPS is one agency, practitioners from one site to another have taken very different approaches, often at odds with each other. On December 13, 1984, a moratorium went out from a NPS central office, allowing Portland cement to be used only for emergency structural purposes. It stated "In short, cement will be used only where the structural integrity of the architectural features is so impaired that collapse of the historic material is eminent."(files, NPS, unpublished). This fits the attitude that was motivational at Fort Bowie.

Partnerships

Partnering with university preservation programs yielded benefits during the 1990's and into the new century. Following the early work at Fort Union, the Graduate Program in Historic Preservation at the University of Pennsylvania held field schools at multiple parks engaging in primary research focused towards preserving earthen architectural fabrics, both structural and surface context. The initial work establishing grouts for the reattachment of lime plasters to adobe walls led to research and treatment programs for the conservation of earthen plasters on earthen and stone substrates within cliff dwellings at Mesa Verde National Park and the cave sites at Bandelier National Monument. In the process, graduate students participated by engaging in developmental research, adding skills and knowledge incrementally year by year to the work of their predecessors. Some joined the park service to continue the work they began as students. Two examples of research which provided a direct resource effect were Hartzler's work on Rhoplex E-330 and Del Bono's work on the surfaces of Casa Grande. Hartzler's research on Rhoplex established and clarified the behavior of this material in relation to specific parameters of use such as percent solutions to use, the soil types, grain size, and environmental conditions required to achieve optimum performance. The limitations of the benefits were clearly illuminated. Del Bono, in her work examining and analyzing the caliche walls of Casa Grande, showed through laboratory analysis that carbonate rich substrates have been enriching the surface layer of the walls, thereby creating a kind of case hardening of that surface. In essence, she demonstrated that capillary moisture migrating to the surface of the walls in the evaporative process was depositing a residue of carbonates at the molecular level to enrich this surface. This remarkable conclusion demonstrated that when building materials inherently provide the level of protection needed, a hands-off approach may be advisable.

This summary and limited historical review reveals the extensive effort of empirical trial-and-error cycles which ultimately evolved into an application of scientific methods. The lessons of site specific analysis coupled with a sober realization that magic solutions for earthen material preservation remain unlikely are cause for pragmatic, realistic approaches. Also to be recognized over the 100 year time span is the transformation of archeology from the pot and relic hunting era to a non-destructive and preservation motivated agenda focused on

site values utilizing modern technologies to offset the need to continually excavate. The National Park Service's efforts at preserving earthen ruins during the 20th century offers an experiential contribution to the field.

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Emerging Technologies: Their Evolution and Limitations within the Fields of Cultural Landscape Preservation and Interpretation

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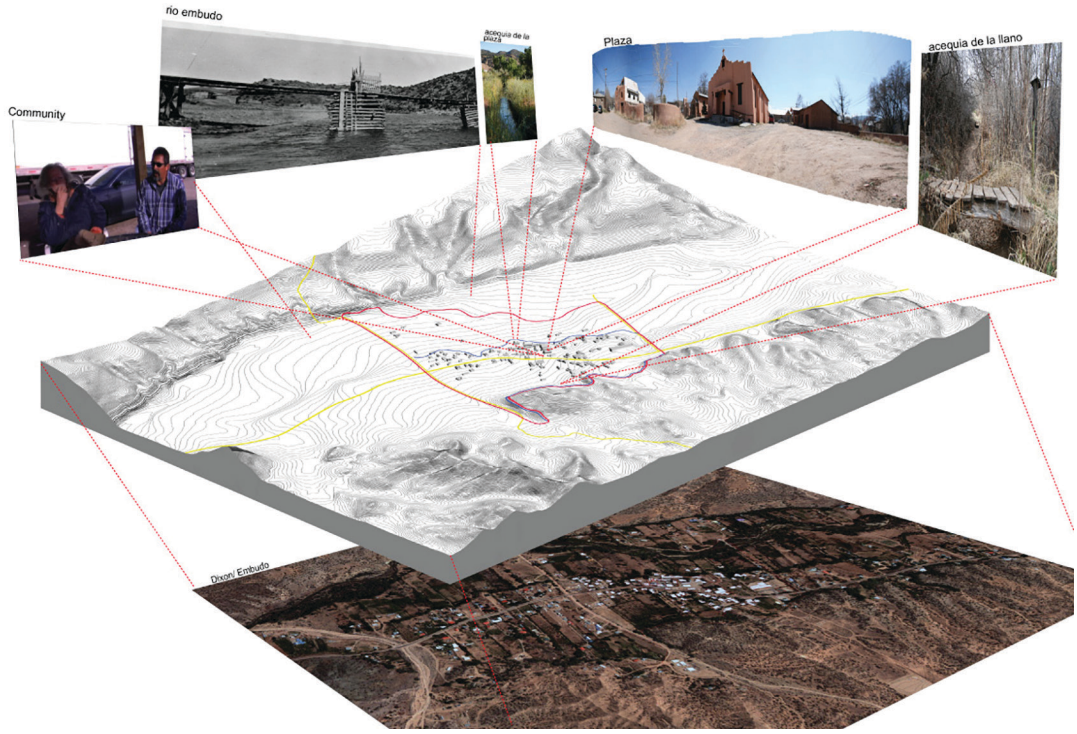


Figure 1. Cultural Systems Map

Abstract

The role of technology in the fields of preservation, interpretation, and resources management is rapidly changing. We are interested in ways that federal, state, and local agencies tasked with work in these fields can best use emergent technology as a tool. Our research focuses on the question; what can emergent technologies do to help us reach our preservation and interpretive goals? Another focus of this research is the limits of today's technologies, the evolution of technologies, and technological obsolescence.

In 2008, our research began in the Dixon/Embudo, New Mexico region working in collaboration with an interdisciplinary team of faculty, students, and the community. The research scope started with the investigation focused on the evolution of the acequia system that had its origins dating back to the early settlement of the Spanish in northern New Mexico in the early 1600s. In working with the team and community members, we created the Virtual Embudo Project.

The Virtual Embudo Project grew and evolved into the Virtual New Mexico Project, an open-source cultural

digital media archive platform that is utilizing a variety of technologies which incorporated geospatial referencing, digital photography, aerial imagery, and digital video documentation. The emergence of Google Earth as a user-friendly platform allowed the team to facilitate a platform that community members could utilize to better understand the historical evolution of their community.

In ongoing evaluations of the VNMP we are finding that there are many limitations to using a technology that, when we started using it back in 2008, was both emergent and cutting edge. We were using the Google Earth platform to disseminate our research to a larger audience as an open-source tool and a geo-referencing data visualization tool. As technologies continue to change and companies continue to alter their meaning of "open source" we strive to evolve with these emergent platforms. There are many ways we try to stay atop and overcome these limitations. We are constantly bringing in new technologies and testing their limits, we work with professionals, faculty, and students to keep atop these changes, and because we are the research laboratory at the state's flagship university there is an expectation for us to lead the charge within the growing field of historical and cultural digital documentation.

We continue to pursue an iterative methodology in evaluating emergent platforms. We are pursuing new technologies that support our efforts in cultural digital documentation of public spaces across the state of New Mexico. This project proposal seeks to look at new immersive 3d visualization technology based on gigapan panoramic images, and photogrammetry models layered into a game engine for historical interpretation and preservation purposes. While typical game engines excel at creating an immersive environment produced from high-resolution photography, our work will explore how to embed historical sources and their current limitations. We intend to highlight the importance of historic preservation and the story behind the present day facade. Our project will demonstrate new methods and approaches to visual communication that include history, preservation, and the morphology of place.

Introduction

The impetus for this project was formulated by the opportunity to articulate the incredible history and multiculturalism of New Mexico dating back thousands of years. It is precisely because of this history that we are interested not only in preserving the built environment, but also the larger context of the state's cultural landscapes (acequias, mining) and the notion of place, how it changes, and what that means for the surrounding cultural and environmental landscapes.

The Virtual New Mexico Project (VNMP) is a public digital repository, developed primarily with funding from the Center for Regional Studies at the University of New Mexico. The VNMP has been developed to archive the historical evolution of the people and their communities around the state. The VNMP is a digital repository developed in an interactive media platform. It is created as an opensource application intended to both empower the communities to take control of their future by enabling conversations with local and global communities through digital technologies.

People and Place

Our research began in 2008 in Dixon/Embudo region of New Mexico, as defined by Professor Castillo and Professor Forbes-Isaias, who are architecture faculty members at the University of New Mexico. The scope of the investigation focused on the evolution of the people in this region colonized by Spain in northern New Mexico by the early 1600s. In understanding the history of this region, we learned that Juan de Onate began moving his colonists into an area approximately 25-miles south of present-day Santa Fe. Sections of land were identified by settlers and granted by the Spanish governor for colonization. In 1680 the Tewa Pueblo people of the area banded together and attacked the first group of Spanish colonists, killing many, driving the survivors first to Santa Fe then out of New Mexico altogether. The Spaniards were tenacious and thirteen years later another expedition of soldiers and settlers led by Diego de Vargas arrived in northern New Mexico. By the late 1600s, this second wave of settlements were established along the fertile land in the Embudo Watershed at the base of the Sangre de Cristo Mountains.[1] (See Figure 1 on page 320)

The settlers of the Embudo Valley were farmers who cultivated the land. The Spanish colonists, when establishing communities in New Mexico, brought with them an intricate system of waterway infrastructure that was successfully adopted in Spain from their Arabic populations. Spaniards called this irrigation system acequias and they were used for irrigation of agricultural fields. Acequias were gravity flow ditches that served as a primary irrigation source, and because they water an entire community's fields, they also served as a socio-political structure for communities in the region. This form of

democratized farming still is practiced in many of the communities in Northern New Mexico.[2]

From the project's beginnings, the research team primary interest was in the historical evolution of the acequia infrastructure system and how the people in this region maintained the system for generations. By working with local community members and engaging in preliminary discussions about how the team would approach our research, we quickly realized that we needed to expand our scope to capture the historical diversity that comprises the complex and culturally rich evolution of people in the Embudo Valley (Figure 1).

New Model for Documentation

The framework for documenting the people and place evolved into a more dynamic and interactive model that could better demonstrate the complexity of the community and historical evolution. The recalibration by the lead investigators initiated a process that deviated from traditional geographic information systems (GIS) modeling and searched for a tool/information system that was user-friendly and community oriented. The process led to a new direction formulated from earlier research that was conducted in Albuquerque in 2007, and inspired by the Manhattan Timeformations project.[4] Professor Castillo and a team of students created a repository utilizing a web interface that was Flash based, and used GIS data to communicate the evolution of the communities of Artisco, Old Town Albuquerque, and Martinez town.

In conducting a post-analysis evaluation of the user interface created for managing the data, we determined that it was difficult for community users to interact with the information and utilize the data to its full capacity. This pushed the team to search for a new tool. It was determined that Google Earth had the capability to communicate geospatial data, while at the same time, allow the communities the opportunity to upload their own data to build a more complete digital repository (Figure 2).

The diversity of data incorporated into the *Virtual Embudo Project*, required a team that could address the broad range of topics articulated throughout the project's evolution. The selected research team had backgrounds in historic preservation, architecture, community and regional planning, landscape architecture, economics, demographics, informatics and digital visualization. The multifaceted platform allowed for a variety of data to be incorporated into a robust platform. The database was established into several layers of content that included; cultural, infrastructure, geographi-

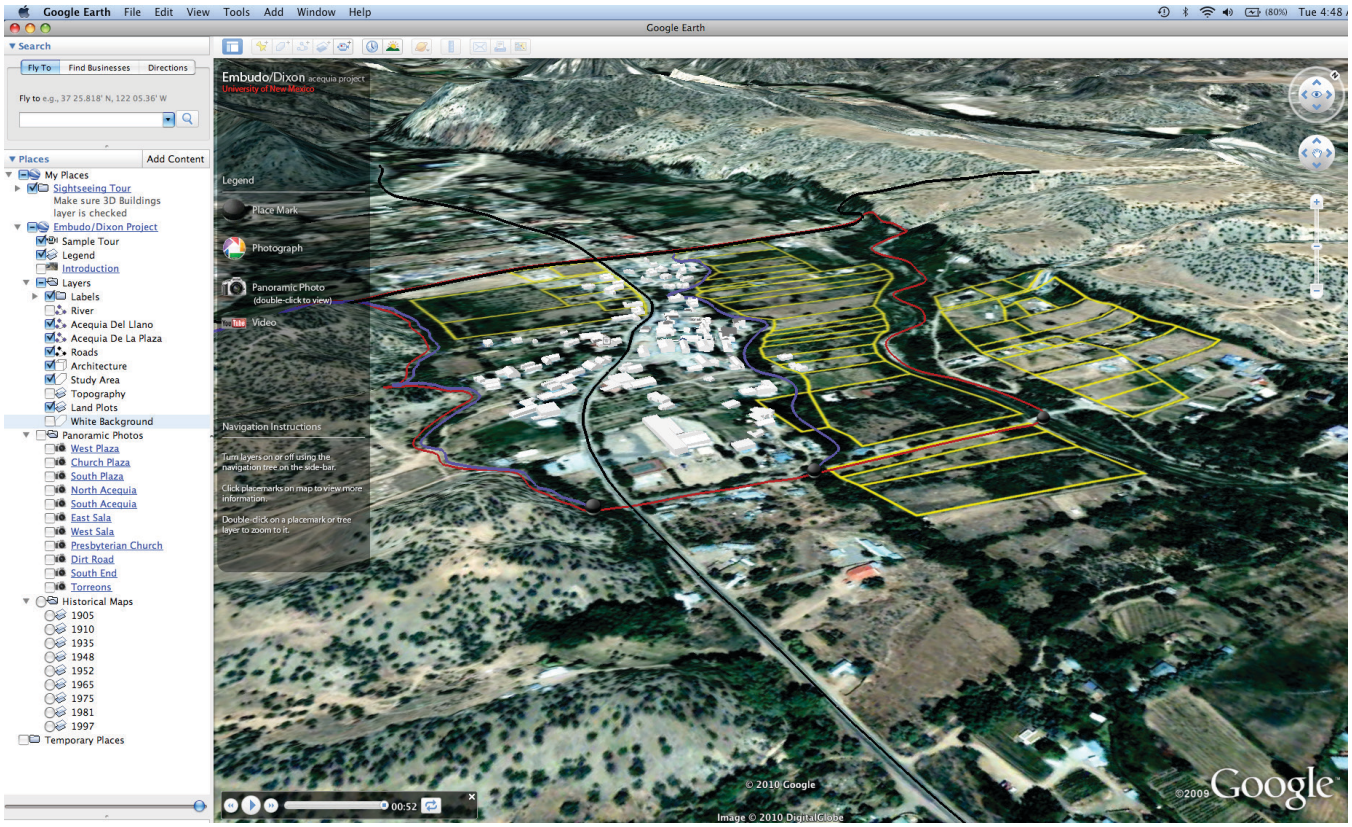


Figure 2. Google Earth Model Dixon, NM

cal, economic, and historical information that could be overlaid on the built environment. The adopted format allowed videos, historical photographs, maps, and aerial photographs to be assembled in a way that was user-friendly and that communicated the environmental complexities of the people in the Embudo valley.

Virtual Embudo Project [VEP] Expanded to the Virtual New Mexico Project [VNMP]

The evolution of the Virtual Embudo Project continued and results were disseminated regionally and nationally in many different forums. The VEP garnered the attention of the director of the Historical Preservation program at the University of New Mexico and he was interested in pulling a team of professors together from various disciplines to research the region of Santa Rosa, New Mexico. Professor Chris Wilson, director of the HPR program recruited Professor Castillo, Professor Enrique Lamadrid former director to the Spanish and Portuguese program and expert in the history of New Mexico and Professor Miguel Gandert of the communication and journalism department.

Professor Gandert and Professor Lamadrid were also experts in cultural media. They became very interested in utilizing the VEP model as a potential new form of dissemination that could tie cultural narrative to geospatial content. The model was the primary tool utilized in a historic preservation program graduate class that researched the community of Santa Rosa, New Mexico. Utilizing YouTube and the image archive in the Google toolkit, the students created a series of videos that brought critical research into short one minute to three-minute videos that expressed a variety of topics discussing the historical evolution of the Santa Rosa region.[3] This increased the reach into digital communities the previous work in Embudo had not been able to access. The team found that the video format was easier for users to access without having to explore the datasets provided in Google Earth.

Audience

The development of the new model utilizing visual narrative and parametric data systems transformed the Virtual Embudo Project into a new platform that has since become the Virtual New Mexico Project. At the completion of the historical preservation class, Adriane Zacmanidis, became one of the research scholars and a new addition to the team. Ms. Zacmanidis brought a wealth of knowledge from her career in the fields of education, design, and cultural resource management. Her expertise was important to developing new UX [user experience], focusing on end user interactivity. The data infrastructure was based on a stratified content framework that was on both the web and Google Earth platforms. The problem with this approach was the difficulty new users had with interacting with content: Google Earth tutorials needed to navigate content and content difficult to access on mobile devices.

The team began exploring new web platforms based in the HTML 5 framework. In moving to this new platform, which allowed greater opportunities for data to be accessed and digested. The incorporation of more video narratives in YouTube and Vimeo allowed for a more intuitive user experience. The team was conscious of the multiplicity of users ranging from K-12 students, academic researchers, tourists and residents of rural communities. It was a goal of the team to create a new platform that is easily accessible, yet diverse in cultural content for each community.

Applying the Model Elsewhere

The Center for Regional Studies at the University of New Mexico continued to provide funding to the Virtual New Mexico Project allowing the team to continue its research into the mining region of Silver City, New Mexico. We were very interested in the rural condition and the small towns of New Mexico that Silver City represented because it allowed the team to really "deep dive" into the notion of place and understand its evolution through our layers model. From the team's work in Santa Rosa, New Mexico, we learned that videos were a user-friendly format to disseminate the research to a broader audience.

Google Earth had very significant limitations in that it did not allow for the novice to easily interact with the research. It also made it difficult for those who were not able to download the program, for any number of reasons, to fully interact with the information. The finding as part of our User Experience research: People were not interacting with the Google Earth platform as intended. This forced us to pivot to a video narrative format and to begin the process of incorporating emergent technologies into a motion graphic medium easily disseminated on a web or mobile platform. When the team identified this technology, the result was a more accessible and scalable program.

While working with the Silver City research data set, the team started to question how the data and the as-

sets could perform for users. Previously in our research in other communities, we were in pursuit of gathering data as comprised pieces of a whole. We were now starting to see that when all assets were laid out, patterns began to emerge and comparisons between layers, and between research areas, could be made and connected. The team was specifically interested in the ways that economic drivers impacted the growth and decline of place. Specifically, the correlations between the expansion or decline of the mines in Silver City and the town's corresponding growth or the decline and the effects on the town. There are a number of economic drivers in each research area and when each was expressed, the correlations became patterns that played themselves out in our data visualizations. This took the research from simply being an archive to becoming an interactive tool for these communities to query to help inform their future.

As we started to look at these layers of place we brought on a Humberto Lopez, an architecture graduate student, to the research team and tasked him with creating a number of maps that illustrated the layers of place using animation that illustrated the story of the map layers individually or as a part of the whole.

The diagrams served as a model for the way we wanted to articulate the data layers for our research areas. Research layers could be expanded to show the urban complexity and condition. Through this process, Mr. Lopez created two-dimensional maps that could be used to generate three-dimensional animations that were both spatial and temporal. These maps were created using GIS data, which was then delineated in architectural visualization software and finally disseminated through vector-based animation software to produce a series of videos. These videos began to inform another way for our team to use the research to tell the story of place (Figure 3).

Las Vegas, New Mexico, was the next research community. The research team selected Las Vegas because of its rich history as a ranching and railroad boom town, as well as its connections to Santa Rosa on the Llano (plains or lowlands). For this project, we hired Carly Piccarello, a graduate student from the landscape architecture program with a Master of Fine Arts in photography. Ms. Piccarello challenged the boundaries of the technologies and storytelling we were using up to that point by bringing her work with ESRI's Story Maps web application (Figure 4). Her extensive photography experience, along with her training in landscape architecture, allowed Ms. Piccarello to create a "Now and Then" photo series illustrating the morphology of the built environment at both the macro- and micro- levels. She embedded her "Now and Then" photographs as timeline videos in the ESRI's Story Maps platform, which is web-based and accessible to broad audiences. This platform allows the user to leave our research VNMP website and interact with the our data sets for the Las Vegas region in an interactive format,[5] thus moving the model forward towards new and meaningful forms and wider dissemination.

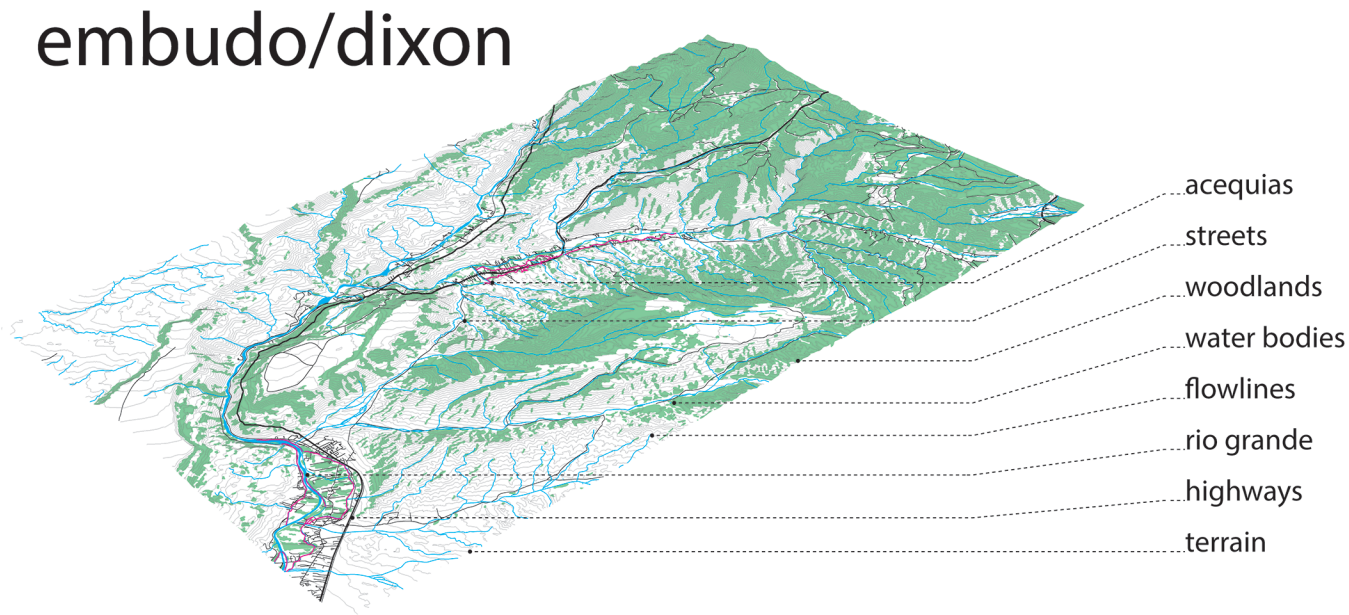


Figure 3. Systems Map-Embudo/Dixon

Emergent Tools

Throughout the project, from inception to the present, the VNMP team continued to explore emergent technologies to further our research. We are interested in testing these new technologies to see which support our data sets, answer our research questions, and ultimately useable by our audiences. With anything new, there are always issues that include a learning curve, applicability, cost, and whether or not the technology helps drive the research forward. Coming to the intersection of technology, architecture, landscape architecture, design, the humanities, and education we never did or will do anything for the sake of using new technology. We can be captivated by technological innovation but that did not mean that it served our purpose or take our project to the next level. Testing technologies took time, grounding, and expertise, which was largely possible because or our team being housed in a media lab at the State's flagship university. We had the tools, the faculty, students, and staff, and most importantly, the support to work through failures, which aided in the "testing" process. Over the years, technologies we tested have come and gone, which is an important lesson for a project that is meant to be used long-term. We continue to test emergent tools and technologies that we believe will further evolve our research.

Examples of our current research efforts include using drones, 360° still imagery and film, augmented reality, and virtual reality. Each of these tools helps us to further convey the complexity and rich narrative of place. These tools meet our test of being easily incorporated and scaled for both web and mobile platforms, and are easily accessible for broad audiences. Continued support from the Center for Regional Studies at the University of New Mexico, allowed us to test the boundaries of these tools with two talented students in the interdisciplinary film and digital media program in the School of Fine Arts. Kel Cruz and Isaiah Smith brought a wealth of knowledge in digital storytelling and expertise in emergent technologies. Their contributions have helped us to continue to push the boundaries of our research (Figure 5).

Drone technology allows us to shoot aerial images once limited to projects with big budgets. This affordable technology allows us to compare historical aerial photography with current conditions, which aid us in visualizing the evolution and existing conditions of our research areas. We can also use the current drone footage to take audiences on a journey through video narrative. These videos are shot in 4k resolution allowing the viewer to zoom-in on the smallest detail, which was not possible in Google Earth or Google Maps platforms. The imagery helps to inform the current condition and aids in better understanding the evolution of place when juxtaposed with historical aerials.

360 degree imagery and video is just now becoming available in new easy to process formats. Obtaining 360° imagery used to take several days to teach students, but



Figure 4. Then and Now Las Vegas, NM



Figure 5. 360º VR image-Catholic Church Santa Rosa, NM

now, it is easy to use for most technology based photography and video artists. What used to take up to 12 hours of post-production time to reproduce one of these 360º immersive images or videos because of a complex stitching process can now be completed by ready-made apps created for the camera and image formats. This ease of production allows us to capture a wide range of conditions from both the external built environment and natural landscapes to the interiors of historic buildings.

Augmented Reality is not a new form of technology but it is being applied in new and emergent ways. Specifically, we are using it in our research to add rich layers to our 360º images, videos, and drone footage. We are also using it to add layers of historical images and information to our current 360º immersive images and videos. These additions create a more complete narrative and allow the audience to interact with the information in deeper and more meaningful ways. Instead of simply seeing a very compelling 360º image of a streetscape you now experience "hot spots" that reference a rich layering of metadata (historic imagery, text, and video).

Virtual reality is garnering extensive attention in the technology community. Companies such as Facebook and Google are investing billions of dollars into this emergent technology. The VNMP team is using virtual reality to convey the narrative in an immersive but also very personal way. In combination with 360º imagery, video, and augmented reality, we are able to move the story into immersive platforms such as the Oculus Rift or Google Cardboard, so that anybody with access to a cellphone or a headset can experience our research locations as though they were taking a stroll through the towns.

Limitations

The primary limitations of using emergent media are cost and availability. These are, and will be, issues to consider when working on the forefront of emergent technology within the limited budgets of a university setting. Another limitation is the commitment on students, who naturally come and go as their studies are completed. While students' bring amazing expertise to any project, their leaving before the work's completion, or just when the team has a breakthrough, has impacts to the project. Costs to use cutting-edge technologies can be prohibitive and fundraising or obtaining grants in a university setting can be too slow to capture the emergent technology while it is still "cutting edge." We have learned that saving for the next technology is easier than fundraising for a program that is just released. This means that we do a lot of front-end research to stay abreast of what is next on the horizon.

Technology's evolution is another cause for concern and emphasizes the need for good solid planning if it is key to a project's success. The tech world moves very quickly and often a technology that seems to be the "new thing," can be untested and fail to live up to the original hype. It takes a lot of research to understand

what the technology is, what it does, and how it can be best applied to the research model in order to determine whether or not it is worth the cost. A positive aspect is a lot of new technology is offered free for a trial period to educational institutions, which means you can test the technologies to see if they are right for your research. A limitation or downside to be aware of is that you might not have the staff or student capacity to test these new products because each comes with its own learning curve. In a research institution, a limited trial period may not serve your needs.

Our focus on new technology creates limitations for our team, our audiences, as well as for other researchers who want to interact with the datasets. We have seen the evolution of technology and its impact for better or worse on our project. As software continues to evolve, programs will often have an expiration date, limiting accessibility. In today's world of cloud computing, the updates and accessibility of different versions of a program are easier to work with, however, older technologies or technologies no longer popular in the market place, are often next to impossible to retrieve once they are decommissioned.

We constantly need to upgrade, update, and make sure that we are transferring data sets from old technologies into new technologies. Old data sets designed in obsolete technologies are archived and when possible, transferred to new platforms and updated, but this can be very challenging. There can be steep costs associated with this process, not to mention time and manpower. Here again, we are up against the clock and always looking ahead to ensure that we do not lose our research data sets to obsolescence of a software program or hardware that is no longer serviceable. This is no easy task and one that must be planned for to ensure continued sustainability of the project.

Conclusion

The Virtual New Mexico model has evolved since its inception and we continue to think about its portability and application as it applies to different contexts and environments. We feel that our primary challenge is the rapidly evolving field of visual communication while trying to expand and extend a clear narrative that transcends the generational and technology gaps that are inherent to every community where we work.

We feel fortunate to be given the opportunity this coming year to partner with the National Park Service in the Intermountain Cultural Landscape Inventory (CLI) Program to apply our parametric systems visualization techniques. The team is forging new partnerships with external visualization teams globally as a means of collaboration to further extend new techniques in emergent technologies. The team is confident that we have embarked on a format/model/technology that has potential for sustainability. We are optimistic that this project will influence generations to come as we capture and make available information about the evolution of the people and the places of the State of New Mexico.

Endnotes

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The Power and Process of Creating Independence National Historical Park in Urban Philadelphia - Details Matter

Cynthia MacLeod, Independence National Historical Park, Philadelphia, Pennsylvania



Figure 1. Independence Square and the dense building north of Chestnut Street between 5th and 6th Streets in the 1940s. Photo from Independence National Historical Park archives

Abstract

Congress's 1948 legislation for Independence National Historical Park (INHP) opened opportunities for a new kind of national park. The efforts of Philadelphians to establish and then be involved in the design of the federal park have been sustained through generations. The federal designation of approximately 50 acres in Philadelphia, with Independence Hall at the core, highlighted history and national landmarks, championed partnerships, and was planned also to revitalize private investment in neighboring historic properties and to establish connector green spaces between federal property and city property. Those were new ideas in 1948. Design opinions from local and federal experts were not always

in sync but all agreed that the new park would be a major civic improvement. Architectural and landscape design have been conscientiously edited and selected in every phase of the park's physical evolution from the 1950s to the current day and have been precedent setting in many ways. Interestingly, while the significance of events and historic buildings are the raison d'etre for the park, the green spaces have proven to be of vital importance. The variety within the theme of colonial walls, fences, and gates provides genius connective tissue. By most accounts the original goals for the park have been realized.

First, massive building demolition sparked some controversy that occasionally echoes today. Colonial revival design walls and gates, which are probably mistaken today as 18th century elements, were constructed to knit the city blocks into a subtly identifiable whole park and associated properties, like Christ Church Burial Ground and Washington Square. Advocates for formal axes (Jacques Greber and Edmund Bacon) won with the creation of open land to the north of Independence Hall, while advocates for use of historic street patterns and an urban sense of enclosure (Charles Peterson) could see their vision realized in the treatment of property east of Independence Hall, in ground level pavement, and in low brick wall outlines of missing buildings. Numerous historic structures were restored to their original appearance and some almost completely reconstructed. Venturi and Scott-Brown's Franklin Court provided innovation in design rather than reconstruction of historic buildings, while using traditional materials. New gardens received special treatment from partners.

In 1997 there was both an opportunity to reexamine the mall design and an obligation to correct a location miscalculation of the park visitor center. Non-federal money enabled the mall to be redesigned in the late 1990s through the OLIN Partnership and other prominent architectural firms (Bohlin-Cywinski-Jackson, KMW, and Pei). This redesign was informed by a rigorous public engagement process for a master plan and adhered to the original vista concept. The new visitor center was built on the mall in 2001; in 2003 a building to house the Liberty Bell was constructed on the west side of the mall (and amended to interpret the Presidents' House site); and the Independence Mall landscape was re-designed, and bookended in 2000 at the north end of the third block by the National Constitution Center/museum, that breaks from tradition in its form. Ideas new in 1948 have been sustained and are still proving their worth even if perspective on the novelty has changed.

Independence National Historical Park

In 1948, Congressional legislation for Independence National Historical Park opened opportunities for a new kind of federal park. Yellowstone National Park and other great natural parks out west were well known and had been carved out of property owned by the federal government. Philadelphians were starting almost from scratch to transform private and city-owned property that had densely developed over 200 years. The effort of the Philadelphia community to see the federal legislation come to fruition was a sustained one over many years in the early 20th century. The early and strong local interest in the federal park and its benefits for Philadelphia continues to the present day. Park development has been a public-private partnership from day one with significant donations from most philanthropic foundations in Philadelphia, national organizations, individual major contributors, and the first official friends group in the National Park Service.

The idea for an Independence Hall park dates from before 1948 to the 1870s when Philadelphians, thinking about the Centennial of the United States, turned their creative and patriotic thoughts to re-design of Independence Square, aiming to re-make it as a national shrine. The ideas were many, and they changed over numerous decades before the national government took action. The ideas garnered and lost attention in fits and starts as political currents changed nationally and locally. Joseph Leeds' plan included new museums, statuary, lamps, trees, and a new monument; George Gordon's plan was heavy on statues and flower beds; Charles Smedley's plan apparently favored more green space and paths; other designs were floated, and in 1874 only a modest refurbishment under a plan known as William Dixey's (Dixey was Commissioner of the Bureau of City Property) was realized; the grander monument concept faded due to lack of funds. When the city government left the Independence Hall complex in 1895, a building restoration to the revolution era was contemplated with private funds and with design help from the local chapter of the American Institute of Architects (AIA). Most immediately realized were flower beds with patriotic colors and designs; arguments proliferated about what trees and lamps were appropriate, and all work was confined to the grounds of Independence Square.

When the city government moved west, the neighborhood around Independence Square began to lose residential value and started to decline. The Philadelphia chapter of the AIA continued its interest in the Inde-

pendence Hall building complex and led a restoration there 1911-1913. More improvements to Independence Square grounds followed in 1914 & 1915, establishing the exterior brick and marble wall design that currently exists and which can be credited to Thomas M. Kellogg, a Beaux-Arts style trained architect, under the direction of the AIA committee headed by Horace Wells Sellers. This AIA committee was the Committee on Preservation of Historic Monuments, an early historic preservation organization. Sellers used as a selling point for his wall design the precedent of local colonial era garden walls and, specifically, the walls of St. Peter's Church nearby in Philadelphia. The history of the various walls and entrances on Independence Square is worthy of its own paper.

City Beautiful/Beaux-Arts design influence appears in suggestions for the areas adjacent to Independence Square by 1912. One suggested a 10-block long east-west parkway approach to Independence Square via Washington Square along Locust Street from the more fashionable western part of the city. Paul Cret, then on faculty at the University of Pennsylvania, was on a committee for improvements to Washington Square by 1914, and most of the architects involved with this era of improvement for Independence and Washington Squares were associated with the University of Pennsylvania and many were known nationally.



Figure 2. Independence Square walls, brick with water table, bluestone cap, and pillars with bluestone orb finial from 1915 design. Variations used for Independence National Historical Park walls 1950-2004. Photo by author

The next goals of these luminaries were to provide Independence Hall with a setting that would literally set it apart from other buildings in the densely constructed environment for protection from fire. Another motivation was for large, dignified, patriotic ceremonies to be held on the north side of Independence Hall and provide for sufficient room for comfort and visual appreciation. AIA committee members David Knickerbacker Boyd and Albert Kelsey had proposed a plan for the city to buy half of the block north of Independence Hall in 1915 but there was no action. The neighborhood continued to deteriorate as economic investment had moved west with City Hall's move, although patriotic groups held firm to their devotion to Independence Hall. From 1917 through 1924, various plans by Paul Cret and by Jacques Greber (of the Benjamin Franklin Parkway design) and others envisioned different size formal parks across Chestnut Street; but nothing happened and opposition arose particularly to Greber's grandiose plan that included removing the Liberty Bell from the Hall for the new formal plaza and redesigning Independence Square with colonnades, pavilions, and statues. Boyd and Kelsey revived their 1915 plan in 1929, and in 1930 Greber was again hired to create a design. Interestingly, no one proposed anything like the design aesthetic of Frederick Law Olmsted, Jr. or Sr. whose influence on other local and national parks were substantial. Nothing of substance was built, and the cycle of neglect and reseeding, planting, and pavement repair in the square continued to spin.

Other Philadelphians in the 1930s were thinking more expansively about the real estate north of Independence Hall and between Independence Hall and the new 1934 Custom House to its east. A 1937 plan for "Redevelopment of Historic Area" drawn by Roy Larson of Paul Cret's office and later of H2L2, for the preservation committee of the AIA shows this interest and again, or still, the influence of the Beaux-Arts trained professionals in the grand axes and broad vistas and elimination of post 1835 buildings. The proposed park design included both Washington Square and Franklin Square and two blocks north of the entrance to the Ben Franklin Bridge to New Jersey, for a length of five full blocks; it also excluded historic buildings south of Harmony Lane that

front onto Walnut Street. This initiative perhaps played off other ideas to have national park units in the eastern United States. Remember, President Roosevelt in 1930, 1933, and 1935 had expanded the National Park Service "idea" with holdings in the east; a significant change from the establishment of the NPS in 1916 with most parks located in the west. Only the Jefferson National Expansion Memorial in 1935 came close to the enormous vision of the ideas for Independence National Historical Park (NHP). In the 1930s, the only source of funding to carry out any great improvements was the federal government, and even it wasn't ready to invest heavily in Philadelphia at this time.

Determining the fate of the Second Bank building, which is located on Chestnut Street between Independence Hall and the new in 1934 United States Custom House to the east, could have been a catalyst for the national park. The architecturally significant Second Bank building, which had been used as the Custom House, became redundant in 1934, and its preservation was advocated by local and national level figures, including those from the National Park Service. Transfer of the Second Bank building to the NPS in 1939 was the first step in NPS involvement in historic preservation in Philadelphia. However, local politics and WW II made for bad timing for investment by the NPS in any other plans.

Meanwhile, the desire to change the built environment for safety and appreciation of Independence Hall did not wane in Philadelphia.

In 1941 the effort to implement a park plan was reset on the political stage first by Isidor Ostroff and then in 1942 by Judge Edwin O. Lewis and David Knickerbocker Boyd, who were organizing key movers and shakers in the new Independence Hall Association (IHA), an advocacy as well as a funding group. Judge Lewis continued his profound influence through the 1970s. The IHA plan was not without detractors who said the Hall would like a peanut on the mall or a tee on a golf course, and that the Hall was never envisioned to be a piece of a Beaux-Arts plan but was based on English town precedents of a city hall on a busy street with an open green square adjacent. Real estate interests, city boosters, patriots, and big thinkers prevailed finally with the creation in theory of Independence National Historical Park in 1948.

The 1948 federal designation of approximately 50 acres in Philadelphia, with Independence Hall at the spiritual core, highlighted preservation of several national landmarks, championed partnerships, and was planned also

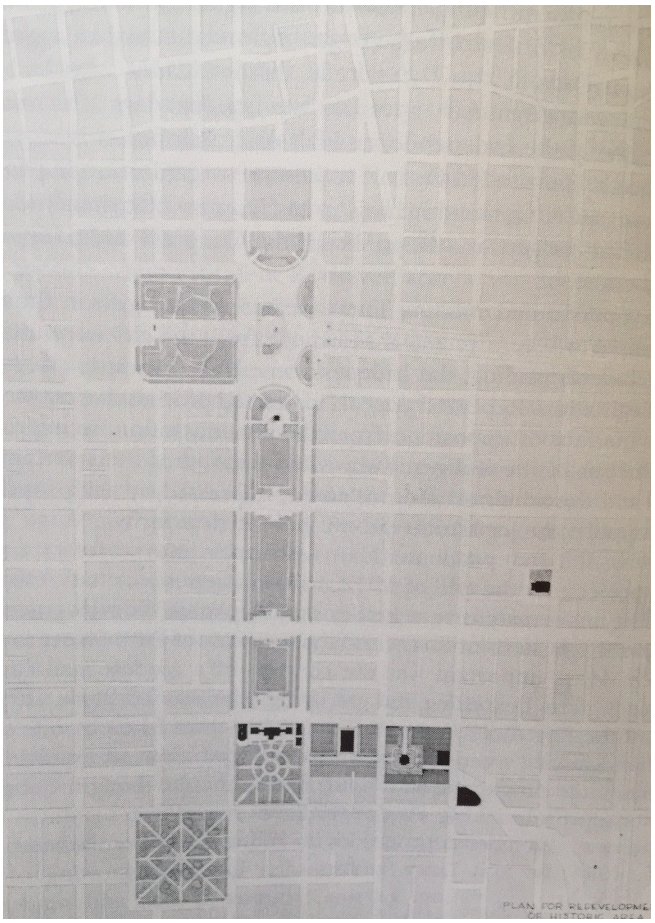


Figure 3. 1937 Plan drawn by Roy Larsen showing Independence Hall complex, Second Bank, Carpenters' Hall, First Bank, Merchants Exchange Building, and Christ Church as the only buildings worthy of salvage in the proposed park. Plan from Independence National Historical Park archives

to revitalize private investment in neighboring historic properties and to establish connector green spaces between federal property and city and private property. The 1937 plan was not included in the legislation. The three blocks to the north of Independence Hall were made property of the Commonwealth of Pennsylvania in 1945, and demolition by the state ensued to make a state park there. The area of Philadelphia east and south of the new park was considered blighted by neglect and decay. Only Independence Square was conveyed relatively quickly in 1950 to NPS management. The remainder of the federally designated property had to be acquired or arranged for cooperative partnership relationships. Design opinions from experts such as the AIA committee members, Philadelphia city planner Edmund Bacon, NPS architect and landscape architect Charles Peterson, and civic tour-de-force Judge Lewis were not always in sync– in fact, it was an epic battle played out

over decades, but all were in agreement that the new park would be a positive civic improvement for Philadelphia and a patriotic tribute to the nation.

While the master plan for the park was being prepared by the NPS in the early 1950s, some 22 external organizations were voicing their interest in locating within the park, including the Company of Military Historians who wanted a military museum, a member of the congregation of Mikveh Israel who wanted to reconstruct the synagogue a block and one half from Independence Hall, and the Pennsylvania Horticultural Society that wanted office and garden space. Charles Peterson put forth a plan that showed retention of many 18th and 19th century buildings on the east axis of the park, buildings for which the park did not necessarily have a use or foundation for financial feasibility but which were desired by numerous outside groups.

The 1954 master plan by the NPS shows little of Peterson's influence. Carpenters' Hall sits in green isolation. There was to be more garden than wall on Walnut Street. The plans show all green along Chestnut Street.

A modified plan later in 1954 shows a little more of the forecourt for Independence Hall and the beginning of the connector garden to the south of Walnut Street. Lots of trees dot the plan and it would have been more rectilinearly planted than in the design created earlier that year. Under this plan there would be massive demolition of everything except colonial and early republic landmark buildings. This design featured two perpendicular malls with the shrine buildings isolated in green Beaux-Arts splendor.

Independence National Historical Park (INHP) was still in planning mode in 1957, and Judge Lewis and the NPS were frustrated by lack of funds and progress. Various iterations were considered with different amounts of demolition and green spaces. One prominent plan ignored the historic streets that were marked in previous schemes and included a walkway east-west and more trees than buildings, although Carpenters' Court buildings would be reconstructed north of Carpenters' Hall; in one plan, four houses were retained on Walnut Street and the connector garden to Locust Street was further developed with historic houses retained and rehabilitated.

The October 1957 plan that the NPS Director Conrad Wirth, and Thomas Vint, Chief of the NPS Branch of Plans and Designs, stamped as approved, was yet another configuration and was further modified as it was implemented. Implementation was in a piecemeal fashion, as execution was dependent on land acquisition. As funds became available, options were weighed anew. The Mission 66 initiative of Director Wirth was a godsend to the long suffering plans for INHP. The com-

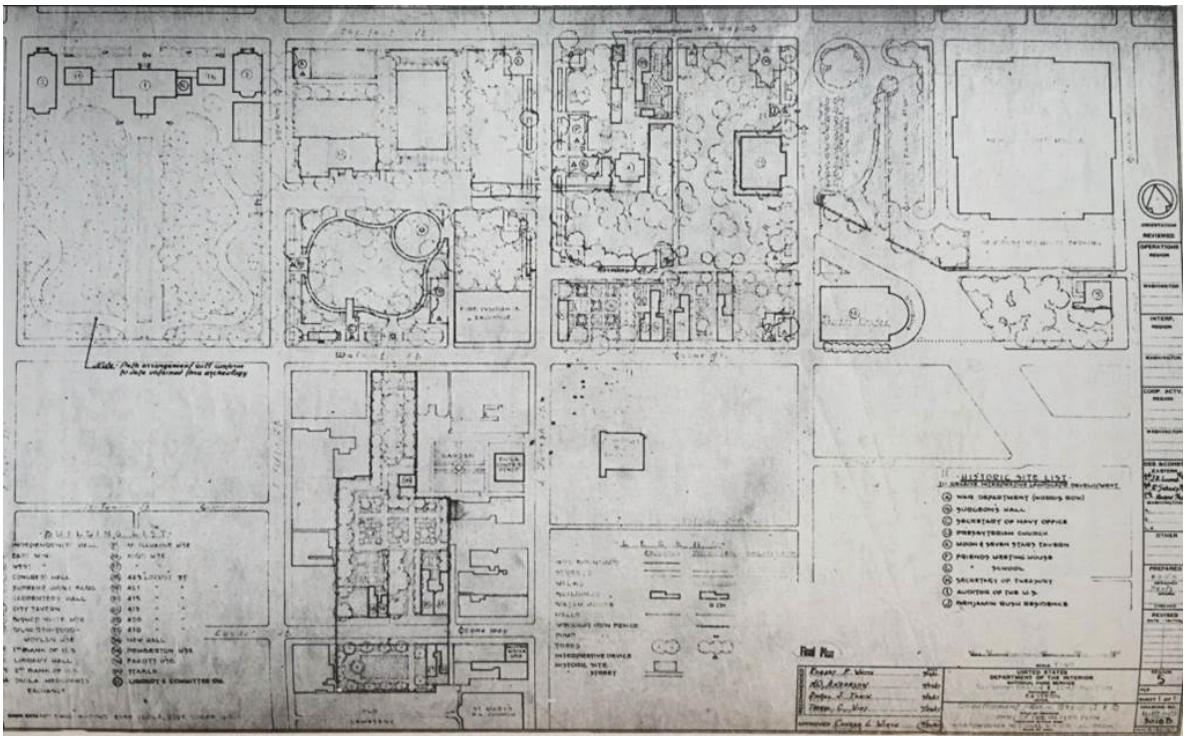


Figure 4. Plan approved Oct 1957 by NPS Director Wirth for Independence National Historical Park. Plan from Independence National Historical Park archives

plications experienced for this park were not usual for the NPS; parcels of land were not always available to become part of the park when the designs were ready; the National Park Service was unaccustomed to buying land for their parks.

The massive demolition of buildings on the purchased properties was controversial then and occasionally echoes today. There are photographs with a dramatic story to show before during and after demolition of some buildings on Chestnut Street. Carpenters Hall, First Bank, Second Bank, and Independence Hall all remain. Frank Furness's 1876 Provident Bank Building, his 1890 taller Provident Building, and the eight-story Jayne Building, by John McArthur, Jr., were considered by most as in the way of the more significant buildings; their demolition was, and still is, enormously controversial.



Figure 5. Independence Mall looking north of Walnut Street between 5th and 6th Streets in the 1960s. Photo from Independence National Historical Park archives



Figure 6. Independence Square looking north of Walnut Street between 5th and 6th Streets in 2013, showing the Independence Hall complex, the Liberty Bell Center and the Visitor Center along 6th Street edge, and the National Constitution Center at the top, closing the Mall designed by OLIN. Photo by Joe Elliott for NPS

Aerial views from Independence Square looking north show the progression of several plans. Comparison of a photo from the1950s and later shows how many buildings were demolished to provide that forecourt and firebreak for Independence Hall. Demolition and restoration projects were underway by 1959. A photo from the 1960s shows very rectilinear plantings and a large fountain on the mall on state park land; by 1979, the design by H2L2 for the third block, which some called fascist, had been imposed; and, after transfer to the National Park Service, the property has the current softer, history referencing, and purposefully more idiosyncratic design by the Olin Studio (OLIN), an internationally known landscape architecture firm, on the 3-block long, north-south mall of the park. Post 2000, the mall part of Independence National Historical Park also gained a new Liberty Bell Center, a new visitor center, and a new National Constitution Center, one on each of the three blocks north of Independence Hall.

The care of the park's architectural treasures started in 1959 by National Park Service experts with demolition of unwanted structures and continued through the 1970s with restorations, reconstructions, landscape modifications, and site interpretations. Funding in-

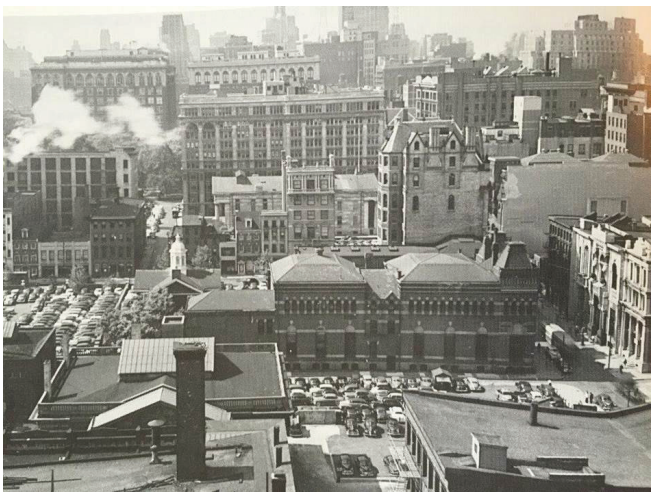


Figure 7. View from the 1934 U.S. Custom House at 200 Chestnut Street, looking east in 1950. Portico Roof of First Bank of the U.S. is visible in foreground, cupola of Carpenters' Hall visible in left center, double porticos of Second Bank of the U.S. visible in center; Independence Hall not visible; Furness buildings, the Jayne Building, and others would be demolished to make the shrine buildings more prominent visually. Photo from Independence National Historical Park archives

creased during the run up to 1966, the 50th anniversary of the NPS. The careful process undertaken by the NPS team was a role model for historic preservation within and outside of the National Park Service. The NPS restoration of Independence Hall was undertaken by NPS architects who treated the whole building as an archeological site, gleaning clues by studying every detail during interior deconstruction, doing comparative analyses with other historic structures, studying historic documents, and recording and sharing their pioneering work as teaching tools for a new historic preservation movement. Thank you, Lee Nelson, Penny Batchelor, and Nick Gianopulos.

After painstaking research, the NPS completely reconstructed the forecourt buildings of Carpenters' Hall, which is owned by the Carpenters' Company of Philadelphia and managed cooperatively with INHP. Today we cannot imagine this part of the park otherwise – but a great Frank Furness building and the Jayne Building were lost in the process. Numerous historic structures were restored to their original appearance, including the Bishop White House and the Dolley Todd House on Walnut Street. The whole row of houses in between on Walnut Street was refaced in the 1960s and 70s to create a circa 1800 streetscape and physical support for the Bishop White House. More historic vernacular houses on Locust Street were rehabilitated for park employee housing.

When it came to what to do with the area around the site of Ben Franklin's house, the NPS took a new approach in the early 1970s. After internal disagreements over treatment and an intense archeological investigation, the park hired Robert Venturi and Denise Scott Brown. Their design for Franklin Court deserves its own National Historic Landmark designation. Venturi and Scott-Brown's Franklin Court provided innovation in design rather than reconstruction of Franklin's House and Print Shop. The multi-faceted scheme uses traditional materials in a completely novel way at the time – 1974 --and established what is known as the ghost house -- painted steel pieces, raised garden beds on a grid, brick walls, a slate and cobblestone street, and viewing scopes for the archeology, in lieu of a total reconstruction with few known details. The heretofore impulse to reconstruct missing buildings received a serious check with this highly successful minimalist structure and rich interpretation of Franklin's home in Philadelphia.

Not all forays into modern design had been successful. When the Commonwealth of Pennsylvania was ready to convey the blocks north of Market Street to the NPS in



Figure 8. Franklin Court and Market Street buildings 1974 interpretation of Benjamin Franklin's property. Photo from Independence National Historical Park archives

1998, there was both an opportunity to reexamine the state mall design and intent, and an obligation to correct a miscalculation that located the park visitor center two blocks east of Independence Hall.

Private money enabled the mall to be reconceived and re designed in the late 1990s through the OLIN Partnership and others, with clear leadership from Mayor Ed Rendell and the National Park Service. Millions came from the Pew Charitable Trusts, Annenberg Foundation, Delaware River Port Authority, the City the Commonwealth, and Connolly and Knight Foundations. This redesign was informed by a rigorous public engagement process. The NPS then prescribed clear guidelines for the redevelopment of the newest part of the national historical park. The new design was skillful in being faithful to the axis concept while using curved lines and small garden spaces to soften the previous rectilinear and hard landscape. A new wall of buildings on the west side helps shrink the monumental mall space and mitigate criticism that Independence Hall looks like a

peanut on the landscape. Emphasis on the minor street locations and diagonal crossways keeps the mall pedestrian friendly with an overall green appearance. Separate and individual gardens also give an opportunity for a person to enjoy an intimate scale within a very large space, incorporating some of the best concepts from the areas east of Independence Hall. It is still a challenge to ameliorate the incongruous scale of the mall given the size of Independence Hall.

Closing Independence Mall at the north end with the new in 2000 private non-profit National Constitution Center helps create a community of space and museums. The building, owned by the federal government and designed by I.M. Pei's firm, veers from tradition in form but not material.

The controversial design by Peter Chermayeff and location of the 1976 visitor center at 3rd and Chestnut Streets left it vulnerable to change. In 2001 it was replaced by a new visitor center building by KMW Architects at 6th and Market Streets on the mall. It was designed as a long, thin building, really a wall along the west side of Block Two, leaving the mall in front of the Hall an open greensward.

In 2003, to the design of Bohlin-Cywinski-Jackson Architects, the Liberty Bell Center (LBC) was constructed, replacing the Liberty Bell Pavilion designed by Mitchell|Giurgola which had been built for the 1976 Bicentennial; in 2008, the north side of the LBC was amended to interpret the Presidents' House site with a design commissioned by the City to Kelly/Maiello architects.

The preceding has been a chronological tour of the development of the park. It is important to look closely at some of the elements that make INHP a park with design integrity and a genius of its own. A pictorial tour is necessary to alert a visitor to details of the park that a bucket-list visitor might not notice, understand or remember individually. These details, in fact, make all the difference to the success of the layout of the park plan. Throughout its history, none of the factions that differed about how to develop the park seem to have disagreed about the use of Colonial Revival walls and gates in the landscape. Once you notice them, you realize that these details and landscape elements are fundamental to the ambience and identity of the park. Once you study them, you marvel at the variety within the theme.

Advocates for use of minor street and alley patterns and an urban sense of enclosure during the 1950s could see their vision partially realized in the treatment of property east of Independence Hall and suggested in ground level pavement and low brick walls and interpretive signs. OLIN's plan for the Mall used some of these concepts as well in 2004. The names that surface for the 1959-65 era of design for landscape and walls and fences are Dick Wittpenn, James Kiryakakis, Robert Steenhagen, and Ben Howland, all under the guidance of Thomas Vint.

Brickwork and stone masonry are of the highest quality in design and execution 1959-65. Dock Creek is an important element in the landscape, interpreted by a swale and a low, brick bridge. 3rd Street and 4th Street are excellent places to look for the low brick walls that outline missing 18th century buildings. The sidewalks on Chestnut Street show a change in brick pattern where there was a change in property ownership historically. Brick is a dominant material for sidewalks and pathways in the park. Cobblestones in historic streets evoke an 18th century ambience. Pennsylvania bluestone is used for sidewalks in front of the 19th century landmark buildings' (Second Bank and Merchant Exchange Building). Details matter!

Everywhere in the park and around associated 18th century buildings' grounds, there are unifying elements of (1960s) colonial revival design walls and gates. These elements have an amazing array of variations on the theme; they are probably mistaken today as 18th century elements and are too often unappreciated. They are based on 18th century walls and iron work that was extant in the early 20th century. The walls around Independence Square have a curved marble cap; some brick walls from 1960-1975 have a double-ogee shaped or a flat marble cap; some of those newer brick walls are low with iron railing; others have brick, double-ogee coping with no iron railing; others are higher brick walls with a



Figure 9. Fences and walls designed and built 1975 for Independence National Historical Park at 5th and Walnut Streets. This iron work by Crescent Ironworks. Photo by author



Figure 10. Fences and walls designed and built by NPS for Independence National Historical Park on Chestnut Street between 3rd and 4th and Streets. Note brick change in sidewalk. Photo by author

double-slanted marble cap; still others have only a granite base and iron railing. Some brick walls are finished with brick columns and pyramidal marble caps; other are finished with stone balls on the top of the column. Some have water tables, others rise straight from ground to finish. Some iron pickets are tapered, some are twisted with extra curls. The vocabulary is recognizable, delightful, and unifying for the park property.

Within feet of each other, the two different gates on Chestnut Street are a study in contrast. The iron gate to Carpenters' Court features masonic symbols in the ironwork, subtle but geometrically intricate; the iron gate to Orianna Street has more abstract curls and twists. Many of the iron gates and fence work were by the Samuel Yellin Metalworkers Company who worked in the park from 1959-1965. Crescent Ironworks was responsible for some later work in 1975 that could be installed only when the property was finally acquired and non-significant buildings removed. The iron gates to the rose garden features yet more elaborate designs by Yellin. Many linear feet of iron fence show distinctive hallmarks and variation of the Yellin artisanship, not to mention the excellent quality of this 20th century craftsmanship. A visit to the 18th-century referencing park is enhanced when one scrutinizes the 20th century craftsmanship and understands the relevance to place.

Nearby on 3rd Street is the National Historic Landmark First Bank of the United States, splendid in itself, and enhanced in its landscape with extra features to enjoy; in this case, gilding is added to the eagle, stars, and flairs or arrows applied to the gates, designed by James Kiryakakis around 1975. Watch-boxes, cobblestone streets, fences were all added to the landscape as interpretive elements, to reinforce the message of "18th centuryness" in the park.

These architectural landscape elements were constructed to knit the city blocks into a subtly identifiable whole, and with the craftsmanship of companies like Yellin, will never be boring or repetitive and always enhance the interpretive message of Independence National Historical Park.



Figure 11. Gate to Carpenters' Court on Chestnut Street. Photo by author



Figure 12. Yellin Gate from Walnut Street. Photo by author



Figure 13. Gate for First Bank Building walkway. By Harvey Yellin. Photo by author

Other individual gardens of the landscape are also important features of this national historical park shaped so much by partnerships. The Magnolia Garden was a gift to the park from the Garden Club of America in 1959. It is splendid anytime of the year, and is located adjacent to the former superintendent's residence. (And there are more Yellin-made gates with additional unique designs.) The 18th century garden next to the Todd House was tended many years by the Pennsylvania Horticultural Society and now by volunteers, supplemented by park staff. The Rose Garden was designed for the Bicentennial, with roses populated by the Daughters of the American Revolution. Another small garden on the site of the Benjamin Rush house will be the new home of the Bicentennial Bell once our friends group raises the funds. Donors and volunteers are vital in ensuring that the gardens thrive. This national historical park is really also an arboretum in the park, with 100s of trees from Franklinia to American Chestnuts to a Moon tree clone (sycamore).

The creation of the park had many compromises in the early years and evolved even into the 21st century with the help of substantial partners. All have benefited from the committed interest in the park from world class designers and professionals in Philadelphia. The national park status is apparent on the grounds, and at the same time the function of the park has also always been to complement and assist the neighboring areas. Independence was one of the first national urban park to be conceived and executed as much as an urban renewal, civic improvement project as a national shrine.

Ideas new in 1948 have been sustained and are still proving their worth even if perspective on the novelty has changed. Architectural and landscape design have been conscientiously edited and selected in every phase of the park's physical evolution from the 1950s to the current era. While the significance of events and the historic buildings are the raison d'etre for the park, the green spaces, fences, and gates have proven to be of vital importance. The big bones of the design concept have remained constant since 1960: Some large formal axes; zones with intimate scale; a mix of landmark and period infill buildings; articulated minor streets. The use of brick, marble, bluestone, and wrought iron, and the importance of green space as connective tissue have truly been leitmotifs in this park's design, enjoyable in all seasons.

None of this would be possible without dedicated National Park Staff, generous donors, reasonable critics, caring partners, and volunteers. As superintendent in 2016, I am very grateful to those who came before and those to whom I will entrust this place. Independence National Historical Park is a national park, above all others, that is, to borrow a phrase, by the people and for the people.

I am indebted to research and writing by Constance M. Greiff in her book Independence, The Creation of a National Park, published in 1987 by the University of Pennsylvania Press; and to Anna Coxe Toogood, Historian, Independence National Historical Park, for her 2004 Cultural Landscape Report on Independence Square, Volume One, Historical Narrative.

Preservation, Innovation, and Education: Exploring The University Design Studio as a Platform for New Thinking in Resource Protection, Treatment, and Sustainability For The Next 100 Years

Julie D. McGilvray, National Park Service, Intermountain Region, Santa Fe, New Mexico

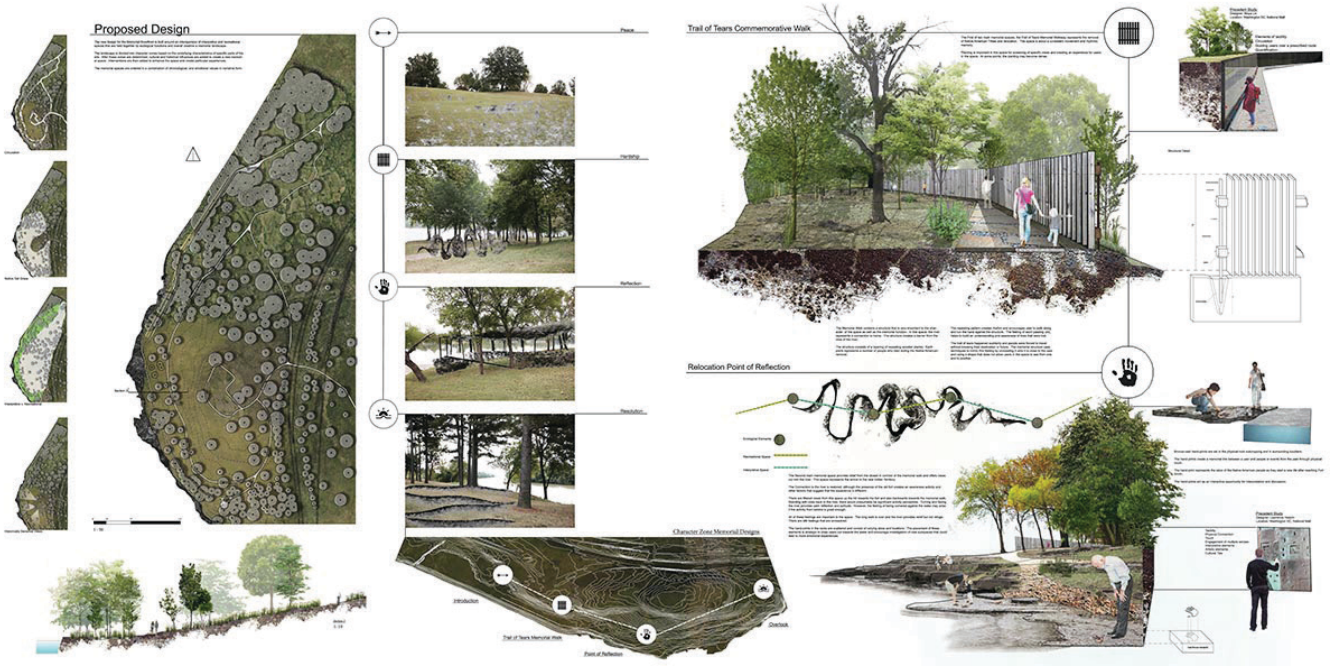


Figure 1. University of Arkansas undergraduate student project from the Fort Smith National Historic Site Trail of Tears Memorial Studio, Fall Semester 2015. Student: Jacob Costello. Image courtesy of the University of Arkansas.

Abstract

This presentation explores the roles, opportunities, and limitations of studio-based partnerships between the National Park Service (NPS) and universities that are designed to push the limits of standard preservation practices and treatment solutions. The primary case study is the Badlands National Park Centennial Design Studio (Badlands Studio), created in partnership with the University of Texas at Austin School of Architecture and the Lady Bird Johnson Wildflower Center. As the NPS celebrates 100 years, we face a very different set of planning and preservation issues than that of the twentieth century. Partnerships with our nation's architecture schools offer innovative approaches to protect and sustain the historic built environments of our national parks. Specifically, the design studio format provides creative, cutting-edge research, planning, and design solutions while educating a new generation of designers.

The Badlands Studio, conducted during the Fall Semester of 2015, pinpointed the rehabilitation of the

Cedar Pass Developed Area (Cedar Pass) of Badlands National Park, South Dakota. Cedar Pass is a designated cultural landscape and the only developed area within the remote and rugged park landscape. The cultural landscape of Cedar Pass originated from 1920s early tourism, was later bolstered by the Civilian Conservation Corps (CCC) in the 1930s, and finally master-planned and completed by the Mission 66 program of the NPS (1956 – 1966). Through these iterative building efforts, the cultural landscape contains vernacular and designed features including a lodge, cabins, campground, visitor center, housing, roadways, and vegetation. By the early 2000s, Cedar Pass suffered from neglect and was undervalued, threatening overall landscape integrity.

In 2014, the NPS was in need of a comprehensive preservation plan for Cedar Pass. Rather than turn to standard planning tools and procedures, the NPS looked for ways to create a plan with a structured sustainability component capable of producing a systems-based method for treatment. Further, NPS staff wanted to create an approach to address perceived polemics of nature versus culture and sustainability versus preservation. In order to accomplish these research, planning, and design goals, NPS staff produced a framework for a multi-disciplinary cultural landscape-based design studio coupled with the ecosystems services guidance of the Sustainable Sites Initiative (SITES). The University of Texas at Austin was targeted for this project due to their robust and interdisciplinary approach to design education and their invaluable landscape and ecology research unit, the Lady Bird Johnson Wildflower Center. Studio outcomes reflected both the areas of study and interests of the students and their instructors. Equally important, the studio provided the NPS with new perspectives and solutions for the aging landscape. The studio process made clear that the constraints and challenges introduced by this type of partnership push boundaries for both the NPS and their partner universities. Those constraints and challenges have the potential to create new and innovative planning tools for the future of our parks.

Introduction

As we celebrate 100 years of design in the National Park Service (NPS), new and different challenges face parks and partners. In addition to changes in funding and hiring practices, planning and preservation standards have evolved. Further, demands such as universal access, sustainability, and evolving opportunities for visitor experience push designers to think and pull from multiple disciplines. The university-led design studio format has potential to push the NPS in new directions in historic preservation, creative research, planning, and design while educating the next generation through a set of real-world issues connected to heritage and place. This study will argue that the studio has a role in the future of NPS design and planning though an overview of project concepts and perspectives. Each project and perspective reveals common themes as opportunities and limitations. With a better understanding of roles (NPS, faculty, and student) and a set of defined expectations, the studio offers great opportunities for dynamic partnerships, idea generation, and may act as a guide for the next century of innovative design in our parks.

National Efforts

The NPS has an established history with the university-led design studio applied across the county. In addition to individual park efforts, the *Designing the Parks* initiative was a large scale project created to give design a leading role in future park planning and engage students from architecture, landscape architecture, and other related disciplines. *Designing the Parks* partnered the NPS with the Van Alen Institute, a New York City-based organization focused on stake holder engagement at multiple scales in research, public programs, and design competitions.[1] A 2008 conference set the tone of the project by outlining six guiding principles: a reverence for place, engagement of all people, expansion beyond traditional boundaries, sustainability, informed decision-making, and an integrated research, planning, design, and review process. Along with the NPS and the Van Alen Institute, conference partners included the University of Virginia, the National Parks Conservation Association, the Cultural Landscape Foundation, and the Golden Gate National Parks Conservancy.[2]

The initial project under *Designing the Parks*, named *Parks for the People*, ran from 2011 -- 2012. It engaged seven parks in total, together reflecting the range of park types and visitor experiences across the NPS. Structured in two phases, *Parks for the People* began with a competition brief and a call for proposals from university design programs for a 2012 studio and student design competition. Studio proposals focused on park-identified issues along with creative approaches to enhance visitor experience. Nine of the multidisciplinary faculty and student teams were chosen to move into the studio phase of the project. Following the studio and design competition, eight participating students were selected for a paid summer internship with the NPS.[3]

Nicodemus National Historic Site in Kansas received two of the nine studios through City College of New York and Kansas State University. Mark Weaver, a landscape architect by training and former faculty member at the University of Auburn, was superintendent of the park at the time. His observations on the studio process were positive, noting students were freer and more innovative in their responses to design questions and issues than working with NPS staff or contractors.[4] Shaun Eyring, NPS member of the *Parks for the People* Advisory Committee, stated that great ideas came out of the nine universities. Further, the teams were able to find new ways to combine information, proving beneficial to parks. Ultimately, the project used "design as a critical method of preservation."[5]

Robert Melnick, Professor Emeritus of Landscape Architecture at the University of Oregon, has led multiple design studios with NPS partners. He believes that a successful studio is based on a clear understanding of roles for both universities and the NPS. While these roles are different, both parties should find common ground, acting in mutual support. Melnick also believes student support is critical for a good studio experience. This support comes in the form of NPS staff availability for conversations and perspectives, and also through the supply of good materials such as photographs, geospatial information, and other background research.[6]

Kimball Erdman, Professor of Landscape Architecture at the University of Arkansas, recently led an undergraduate class of landscape architecture students in a studio directed at the redesign of the Trail of Tears Memorial along the waterfront at Fort Smith National Historic Site, Arkansas (Figure 1). Erdman believes that the university and the NPS missions dovetail nicely through education. Further, real-world issues of NPS studios are often motivating to students and provide a richer learning experience for young designers. Conversely, he believes that through the studio process, students are generally given a complex set of issues without time and experience to tackle in great detail. Studio-generated ideas and products may not be directly applicable to park issues and can vary in quality from class to class, sometimes leaving the NPS without a clear and readily usable product. Both Melnick and Erdman state that studio outcomes, through concepts, designs, and research, must be fluid and without a final product in mind, giving the student freedom to experiment with real-world issues while not "confined by their constraints."[7] Very often the seeds of good NPS projects can be found in "idea generating" studio projects.[8]

The Students

Student experience and education is key in any university-led studio and NPS partnership. As discussed above, students bring a fresh perspective to design problems and are not shackled with pre-conceived ideas of NPS issues, methods, and products. Since studio classes often contain 10-plus students and faculty members, this format allows idea generation on a greater scale with multiple and often diverse perspectives on a given issue.[9] From the student viewpoint, real sites matter.[10] With those sites come complex issues and challenges, which may be confusing and even odd for students who have only been exposed to faculty-created design problems previously. Being thrown into complex and real situations can be rewarding.[11] Mirroring the thoughts of Melnick and Erdman, support is also a key element from the student perspective. NPS staff involvement, through conversations providing feedback and insight, is critical.[12] With a rich design heritage through buildings, landscapes, interpretation, and planning, NPS-based studios not only provide students with a real world site, but also may reveal the need for true interdisciplinary thinking. This pushes students to use a wide array of design tools from sketching, to GIS, to three dimensional modeling. Good visual communication is part of any studio learning curve, but NPS sites may allow students to experiment with new formats of diagramming, mapping, and expressing design concepts based on exposure to different data and materials supplied by parks. This in turn may prove beneficial to the NPS as standard formats are altered to create new forms of communications with an eye on aesthetics.[13]

Students learn through the studio process how to become designers but they also learn about the places they design. There is value in learning about the NPS, its mission, and seeing how passionate staff can be about their parks.[14] Kelsey Riddle, a historic preservation graduate student at the University of Texas at Austin and participant in the Badlands National Park studio compared the NPS to something "fantastical" saying that its mission seems at first impractical yet national parks are greatly loved and supported culturally. She went on to compare this to the studio concept itself, as something that may produce wild and unfeasible concepts but with a second look and a little time, may produce great ideas.[15] Ultimately these design students may be the next generation of NPS staff or consultants -- an outcome and future investment of the studio partnership and educational experience.[16]

The Badlands Centennial Design Studio as a Case Study

The Badlands Centennial Design Studio was created through a partnership between the University of Texas at Austin School of Architecture, Badlands National Park in South Dakota, and the NPS Midwest Regional Office in Omaha, Nebraska. The studio project concept developed over time as a way to address historic preservation issues, infill needs, and as a means to enhance visitor experience. Park and regional office staff discussed multiple ways to respond to these issues, but the studio concept was championed by the park superintendent, who had previous experience with studios and the NPS. The superintendent believed the studio would not only serve as an educational tool for students but would help park staff develop a deeper understanding of historic preservation and cultural landscapes. Further, the project would act to engage and invigorate staff, bringing them together to plan for future stewardship and development.

The Cedar Pass Developed Area (Cedar Pass) of Badlands National Park began as a tourist stop, complete with a dance hall, a lodge, and tourist cabins in the 1920s -- at the dawn of the automobile age and before the park was established. Cedar Pass played a critical role in early tourism in the area, providing the only wayside amenity to adventurers driving through the rugged badlands and open plains of southwestern South Dakota. Tied to an early tourist loop road, Cedar Pass continued to evolve over time, responding to increased tourism needs. By 1939, the park unit was established and development assistance came through the Civilian Conservation Corps (CCC) under the design philosophy of NPS landscape architect, Thomas Vint. Under Vint's guidance, park master planning set a standard for development and construction that would cause minimal change to the natural setting. Building elements would focus on the rustic, with the native or naturalistic preferred. Preservation of scenic grandeur was critical, and buildings were clustered in a specified area with as little impact as possible to views and vistas. Cedar Pass was surveyed by NPS landscape architect Howard W. Baker in 1935, as one of two ideal development areas for the new park. With two master plans in place by 1938, Cedar Pass eventually became the choice location, with ease of access and ties to a steady water supply. CCC work on the new park followed, with the addition of a ranger station and needed infrastructure.[17] While the privately built Cedar Pass lodge, cabins, and filling station did not comply with Vint's design philosophy for parks, the buildings remained in place and the small development grew over the 1930s and 1940s with the addition of new cabins, a wing on the lodge, and a filling station.

The largest development phase at Cedar Pass came under the master-planning efforts of the NPS Mission 66 program. The national program, created as a strategy to handle a massive uptick in park visitation of the post-World War II era, ran from 1956 -- 1966 and built the automobile-friendly, visitor oriented park experiences common today. Under the Mission 66 program, two main clusters of development straddled the older lodge and cabins and encompassed earlier CCC infrastructure (Figure 2). Nestled against, and with views of the striking Wall Formation of the badlands, the loop road-oriented visitor center functioned as the hub of park activity. Under NPS architect Cecil Doty, the visitor center was Modernist in style, with clean lines and a low profile, intentionally subservient to the surrounding landscape (Figure 3). The building was flanked to the south by the older CCC ranger station, a set of Ranch-style houses for park staff, and a small apartment complex. The houses and apartments followed mid-century standards of the time, with simple designs, wooden *brise soleil*, and ample space for cars either through garages (in the case of the houses) or a parking lot (for the apartments). This main hub connected across the landscape via a service road, which led to the park maintenance yard deep in the badlands formations and out of visitor's views. A Mission 66-designed campground was built on the other side of the older Lodge and cabin area. The campground comprised three lobes of loop roads with camping pullouts, three comfort stations, and an amphitheater for evening lectures by park rangers. Campground planning was based on the design principles of Emilio P. Meinecke, who stressed the importance of individual campsites of sufficient size with privacy and shade. Campsites were clustered to create a sense of community while protecting the surrounding landscape from random campsite creation, new roads, and trails. Mission 66 program designers used Meinecke's design principles, building multiple loop roads to contain and reduce traffic impacts to the environment.[18] Mission 66 shade structures were used at each campsite since the area lacked natural shade trees (Figure 4).

Together, the two Mission 66 development areas, both oriented to the 1920s loop road, worked in tandem with the older 1920s lodge and cabins in between to serve travelers and provide much needed rest and interpretation opportunities. For many park staff, Cedar Pass functioned as

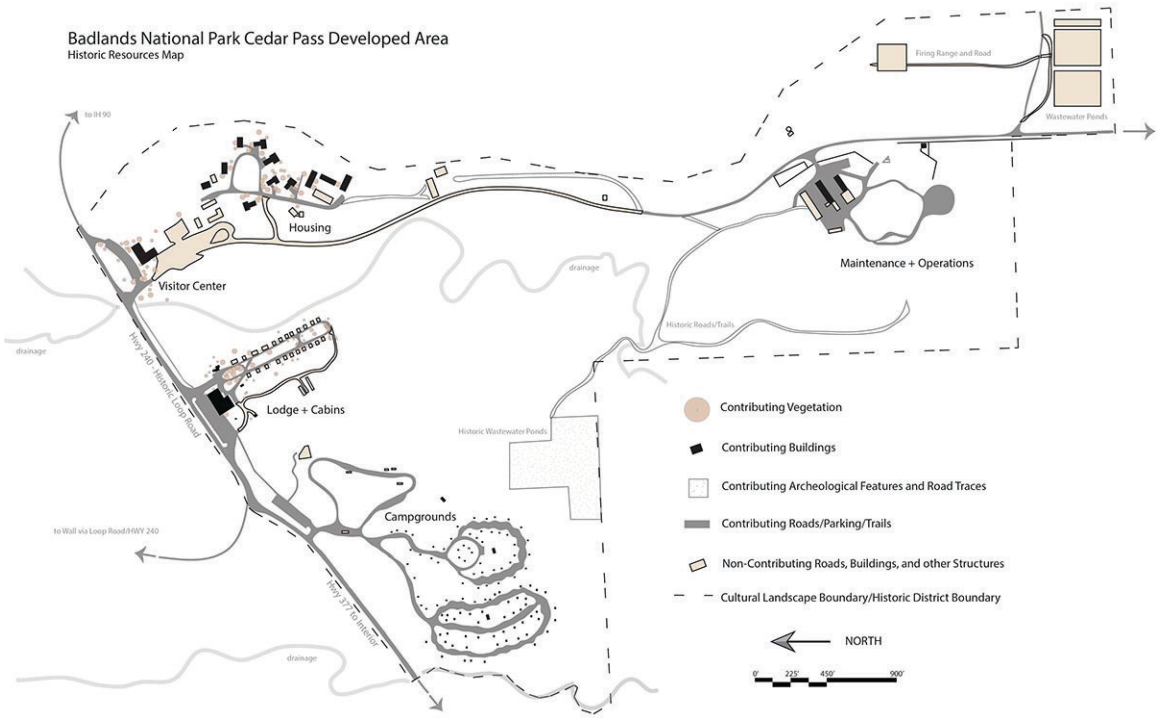


Figure 2. Overview of the Badlands National Park Cedar Pass Developed Area. Image created by J. McGilvray, 2014.

home and office, with modern housing built in clusters to create a sense of community. However, by the early 2000s, older buildings and infrastructure of Cedar Pass were in need of change. Park growth and traveler demands, as well as additional office space needed for park staff, left the late-1950s designed visitor center and master-planned area woefully insufficient. Housing, by modern standards, seemed cramped and outdated, and a need for more units pushed the NPS to undertake a large housing study to consider how and where to build. Accessibility issues at the campground and throughout all buildings weighed on the park. Further, the 1920s lodge and associated cabins constructed over two decades in the early-twentieth century were in poor condition, receiving unsatisfactory reviews by visitors and park staff alike.

As changes were planned for the Cedar Pass visitor center and the lodge cabins, the Midwest Region Historic Architecture and Landscapes Program documented Cedar Pass as a cultural landscape and as eligible for the National Register of Historic Places as a district, with a period of significance from 1928 – 1966. Areas of significance include: Early Tourism, CCC Development, and Mission 66 Development. This documentation did little to stop unplanned and multiple changes to Cedar



Figure 3. The Badlands National Park visitor center, ca. 1960. NPS image.



Figure 4. The iconic Mission 66 – era shade structure, Badlands National Park. No Date. NPS image.

Pass. By 2011, integrity was greatly diminished due to alterations to the visitor center, the removal and replacement of historic cabins, and piecemeal material changes (such as roofing and window materials) that were not compatible with historic character.

Under guidance from the NPS Midwest Regional Office, park staff began to look for ways to address planning and preservation needs at multiple scales for Cedar Pass. The park needed a forward-looking plan to guide new development needs within the cultural landscape while setting preservation guidance and standards to protect existing resources. Park and regional office staff decided on a two-phased approach to Cedar Pass preservation needs: an interdisciplinary university-led design studio to engage students and NPS staff, identify real needs and desires, and create new ideas through an NPS provided framework, followed by a set of design guidelines with concrete guidance for the park to use in the future. The NPS designed studio framework was four-part with an emphasis on cultural landscape preservation, sustainability, accessibility, and visitor experience tied to four areas of the park in need of assistance: the visitor center, the lodge area, housing, and the landscape. Through this framework, the NPS hoped to create a systems-based approached to help all involved imagine a resilient future for Cedar Pass.

The NPS targeted the University of Texas at Austin (UT) as a studio partner. UT's School of Architecture is robust with full master-level programs in historic preservation, architecture, landscape architecture, and planning. Further, UT's Lady Bird Johnson Wildflower Center (LBJWC) was one of three partners (along with the US Botanic Garden and the American Society of Landscape Architects) to develop the Sustainable Sites Initiative (SITES), which functions as a metric for sustainable landscape design and is based on ecosystem services practice and philosophy. The LBJWC also houses the Ecosystem Design Group, a set of landscape architects and ecologists with previous experience on NPS ecological restoration projects. From these resources, UT built an interdisciplinary team of faculty and staff to support students from architecture, landscape architecture, planning, and historic preservation, creating a truly interdisciplinary studio project.

Preservation, Innovation, and Education: A Studio Summary

Together, the studio partnership merged preservation, innovation, and education. These themes ran through the studio project, introducing the concept of cultural landscapes and their preservation to both NPS staff and students alike (Figure 5). The history and physical man-



Figure 5. Badlands National Park Design Studio concept allowing changes in the visitor center to better interpret erosion in the larger landscape. Student: Xiaomeng Ma. NPS image, 2016.

ifestations of important twentieth century design concepts were revealed, creating provocative discussions in construction, style, and cultural value. Students used the SITES framework to guide new ways to merge ecology and preservation within the larger cultural landscape. New concepts of universal access were considered, and when intertwined with visitor experience and preservation needs, created interesting design questions, problems, and balances. With the four-fold framework acting as a guide to push and pull ideas and concepts, students and NPS staff grappled with the challenges of creating robust and resilient systems within parks. Through this process, Cedar Pass transcended its role as an aging tourist amenity and became a lab for idea generation in systems-thinking and information spillover. With no single student able to create one working plan for Cedar Pass due to its complexities and needs, multiple ideas across multiple scales served as a set of design concepts that planted seeds of interest and curiosity for NPS staff, who attended both mid-semester and final reviews. This allowed NPS staff from all backgrounds a chance to see a studio in action, get a glimpse of the design process, and participate with opportunities for feedback.

Intended and unintended outcomes of the studio were equally important. While student design concepts ran from two new visions for the visitor center (Figure 6) and lodge (Figure 7) to large-scale ecological restoration planning for the prairie of Cedar Pass (Figure 8), smaller projects -- such as finding a way to connect the area to a larger cycling network and the introduction of tiny houses as seasonal housing -- grabbed park attention. As SITES was truly tested as applied to a cultural landscape, issues arose, creating a research opportunity for further work for the LBJWC and the NPS. The idea to retool SITES for cultural landscapes and to look deeply at ways to apply ecosystem services to park landscapes continues as a separate research project between UT and the NPS.

The Badlands studio not only functioned as a means to generate great concepts through the fall semester of 2015 but also had a second component, which ran through the spring semester of 2016. NPS staff and two graduate research assistants from UT completed a set of design guidelines for Cedar Pass. This second phase of work defined the character of Cedar Pass, created a list of all contributing features, providing guidance for preservation and rehabilitation needs. The project also summarized several compelling ideas from the studio to help the park understand better ways to pursue new design concepts. The design guidelines were added to the

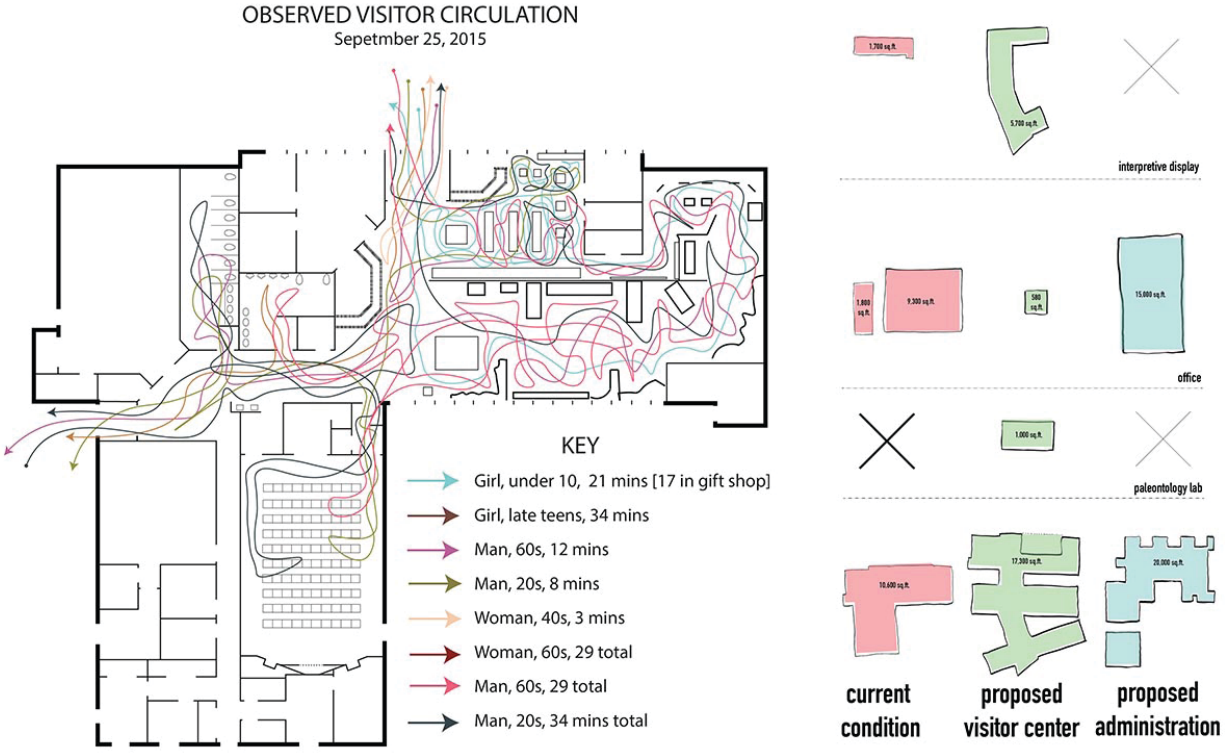


Figure 6. Badlands National Park Design Studio research on visitor movement within the existing visitor center. This data was used to help with new design strategies. Student: Kathleen Conti. NPS image, 2016.

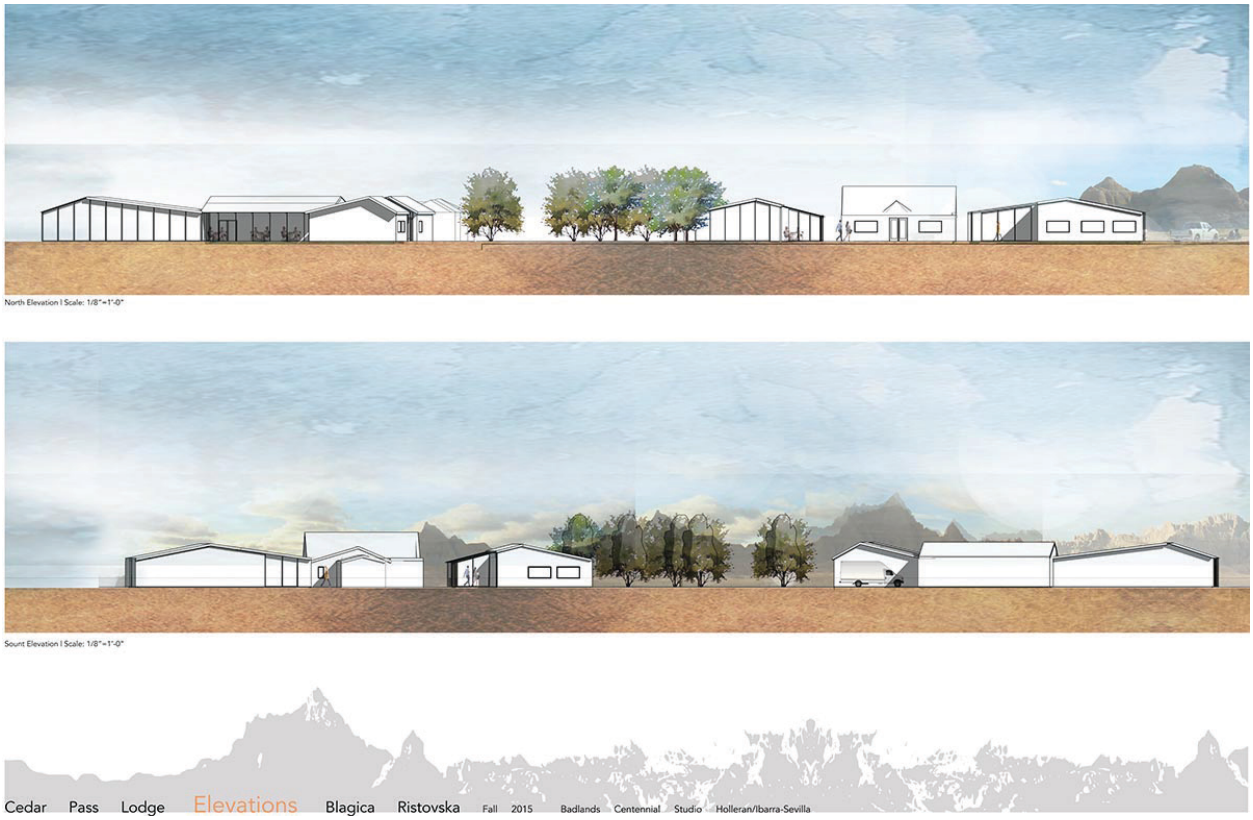


Figure 7. Badlands National Park Design Studio concept for a new lodge. Student: Blagica Ristovska. NPS image, 2016.

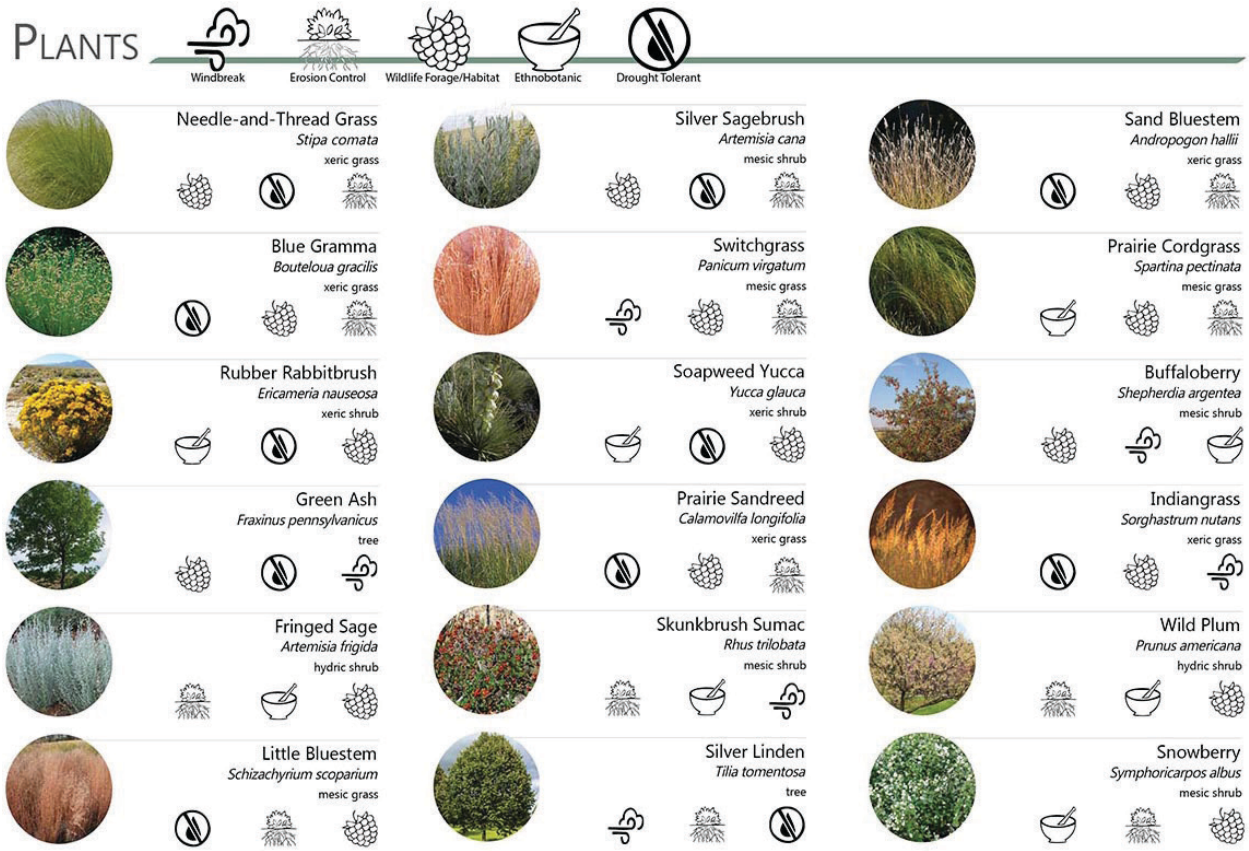


Figure 8. Badlands National Park Design Studio prairie restoration plant palette. Students: Amy Grossman and Warner Cook. NPS image, 2016.

studio project as a way to give the park a final document that was in a familiar format and truly applicable to park needs and desires.

The NPS and the Design Studio: Expectations and Outcomes

While the Cedar Pass studio, like many university-led design studios previously, created a platform for idea-generation and education for all involved, some NPS staff struggled with the lack of measurable products or outcome for the studio itself, despite the promise of associated design guidelines. Substantial investment of time and funding also came into question as staff without a background in design struggled with the goals of the studio process. To address these concerns, basic expectations must be set at the start of any studio partnership with the NPS. First, it is critical that park staff understand that a studio is fluid and primarily process. A set outcome or product is not feasible. If a set product is desired as the final outcome, add a second phase to the project to include a support document (such as with the design guidelines of the Badlands studio) or reconsider using a studio as the right project for the job at hand. Second, students require support. This support comes in the form of availability for discussions, reviews, and as a supplier of data needed to complete the project. Third, planning for a studio takes time. Syncing university and park schedules can be a challenge. Allow ample time for studio planning and logistics. Last, the NPS must be a full partner in this process. This need surpasses support with time and materials. The NPS must have an equal role in the design of the studio framework with university faculty by identifying critical issues, needs, and desires. This level of involvement by NPS staff helps craft the real-world component so valued in these studio experiences.

Conclusion

In conclusion, university-led design studios should have a role in the future design of our parks. They are important tools in the preservation and protection of existing park buildings, structures, and landscapes. They allow creative thinking and push critical issues in new directions by engaging young designers. Studios link design with heritage and allow students to interject new meaning, understanding, and stories to places we value. Beyond education, they are a way to link generations, fields of study and work, and perspectives. With careful planning and a set of established expectations by all involved parties, the university-led design studio has potential to carry the NPS into its next century with great design and imagination.

Endnotes

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Badlands National Park Centennial Studio

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Figure 1. Cedar Pass Developed Area, Badlands National Park, 2014

Abstract

The University of Texas (UT)-Austin's Fall 2015 Preservation Studio focused on the Cedar Pass area of Badlands National Park. Cedar Pass is a cultural landscape dating mainly from Mission 66 that has been compromised through piecemeal changes. The studio involved 13 students from six graduate degree programs, two faculty members, and the six-member Ecological Design Group of the Lady Bird Johnson Wildflower Center. The studio made a week-long site visit in September, and worked through the semester with three reviews including members of the National Park Service (NPS) staff who traveled to Austin or participated by webcast. The studio's output is multiple projects, at different scales, loosely fitting together but separable. Equally important, NPS staff have explained and explored the issues with students; the studio products are tokens within an ongoing conversation. The NPS, with UT, continued to process this work during the spring of 2016 for use by the park. A paper by NPS historical landscape architect Julie McGilvray frames this project from the NPS perspective; this paper describes how we set up the studio and how it worked.

With the Badlands Studio as our most recent example, we offer observations on sponsored studios' usefulness as a tool for park planning. The sponsored studio is not a substitute for a consultant or internship project; its essence is open-ended creative exploration. Its value is as an immersive process, for NPS staff as well as students. The sponsored studio gives design students an opportunity to engage with the reality of designing and managing parks, while the sponsor can gain new perspectives that expand the solution space available in reality. The studio requires serious logistical planning to ensure that students have access to places, information, and most importantly people. Where these conditions are met, it is a most promising tool.

The Cedar Pass area of Badlands National Park (BADL) is a cultural landscape dating mainly from Mission 66, incorporating traces from the 1920s to the '40s [Figure 1]. It includes a Mission 66 Vistors' Center, park housing and campground, and a lodge and cabin court laid out earlier (and much altered). To respect the natural setting while greatly expanding facilities, Mission 66 site planning was particularly subtle, because the Badlands formations are intimately scaled and the prairie around them not visually absorptive. This landscape has since suffered a sort of design entropy; its essence in nuanced siting and architectural restraint was particularly vulnerable to small changes.

The Badlands National Park Centennial Studio explored solutions for adding and rehabilitating buildings and landscapes to improve accessibility and the visitor experience, and to improve ecosystem function and sustainability. McGilvray's paper frames this project from the NPS perspective; this paper discusses how we set up the studio and how it worked.

The Badlands Studio

UT-Austin preservation studios focus on real projects, engaging with real clients and communities. They are interdisciplinary; the Badlands studio included students from six graduate degrees, including Architecture, Landscape Architecture, Community and Regional Planning, and Sustainable Design, in addition to Historic Preservation. The Ecological Design Group, from UT's Lady Bird Johnson Wildflower Center (WFC), brought perspectives on ecology and sustainable landscape management, which they have applied in a number of NPS projects. The Wildflower Center was one of three organizations (along with the American Society of Landscape Architects and the US Botanical Garden) to develop the Sustainable Sites Initiative (SITES) rating system.

The Badlands Studio involved more than a year of preparation, and more than six months of follow-up. During the fall 2015 semester, the studio was immersive for all: students, faculty, Wildflower Center staff, and a number of NPS staff. A week-long site visit in late September included 13 graduate students plus two faculty and the whole six-member Ecosystem Design Group. Students had already worked to prepare an analysis of problems, potential solutions, and an agenda for investigation during the week and the remainder of the semester, and began the week by presenting this to the full park staff. The rest of the week included intensive site investigations and interactions with stakeholders. Students visited and learned from other parks in the region and the Pine Ridge Reservation. In charrettes they explored design solutions and presented again to the park staff at the end of the week. We made full projects available digitally for detailed feedback, which NPS staff and others provided.

Back in Austin, students worked in interdisciplinary groups, further developing the most promising alternatives. They remained in touch with NPS staff and other stakeholders by e-mail, phone, and videoconference. Three reviews included NPS staff members, and outside professional and academic reviewers, up to 18 reviewers for the final. Each review was webcast for broader participation, particularly by BADL staff who could not all travel to Austin.

The studio's output is multiple projects, at different scales, loosely fitting together but separable. As an example, students in multiple groups encountered the erosion and deposition of material from the Badlands formations as a long-term chronic problem [Figure 2]. It damages buildings and landscape, disrupts hydrology and ecology as it interacts with the human-modified drainage of the site, and uncovers archaeological and paleontological resources that need to be protected. But of course erosion, and the resources it uncovers, are the very reason for the park. Students observed and mapped erosion and deposition, documenting it over decades, and explored siting alternatives to avoid some of the problems it caused. There were few alternatives, it turned out, since formations are almost ubiquitous even within the Cedar Pass developed area, and the few sites that were relatively far from erosion and deposition were visually intrusive locations for development. Instead, students took inspiration from Mission 66 siting, which placed buildings and trails in intimate relation to formations, as part of the user experience for both visitors and resident staff. Students created multiple projects exploring this relationship, together with ways of managing and even taking advantage of it:

- Staff housing—"tiny houses," sited next to formations, but movable;
- A Visitor Center addition even closer to formations, with drainage and deposition channeled around the building in a dynamic landscape;

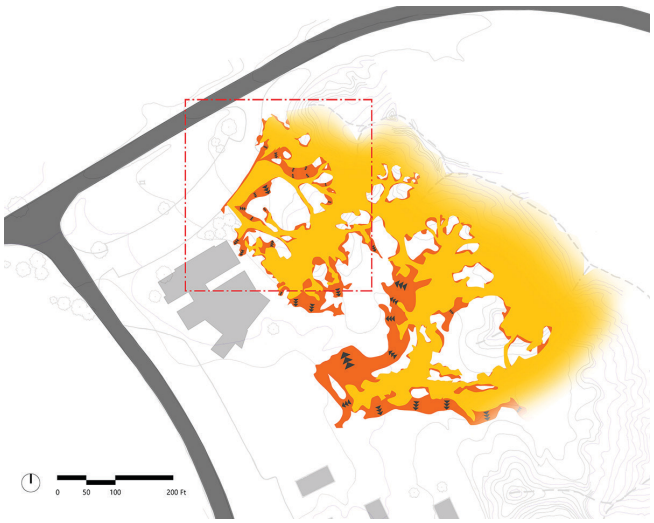


Figure 2. Deposition from recent erosion near the Ben Reifel Visitors Center (Xiaomeng Ma)

- Perhaps most striking, a "Theater of Erosion," as a landscape interpretation of geological process.

Equally important, the studio products are tokens within an ongoing conversation. NPS staff have explained and explored issues and methods with students. That conversation included an exploration of sustainability and ecological restorations, and how they relate to Mission 66 and to earlier vernacular landscape designs. This conversation creates broader awareness of the qualities of these designs, and how they relate to challenges today. It demonstrates, particularly to NPS staff not from design backgrounds, the range of possibilities in design thinking and design interventions.

All student work, including raw materials such as photos, GIS layers, and CAD files, have been archived and shared with the NPS (before joining the studio, students agreed to grant non-exclusive rights to the NPS for the intellectual property they were about to create, as well as waiving their student privacy rights so that they could be identified as the authors of their work). All final products are archived digitally and in hard copy at UT's Alexander Architectural Archive. A studio publication in hard copy and PDF shows in abridged form some of the products of each of the students and groups.

During the spring of 2016, UT graduate research assistants Hannah Simonson and Kelsey Riddle, working with NPS historical landscape architect Julie McGilvray, used many of the studio projects as the basis for preparing a set of Design Guidelines for future rehabilitation and development in Cedar Pass. We will present it at the park in September 2016.

Using the Studio as a Tool

We are writing with the intention of encouraging design studios as a valuable tool for the national parks. That agenda will best be served by getting studios right. We offer advice on when and how to use this tool, both for our colleagues running studios, and to potential NPS sponsors; this advice comes from decades of experience with sponsored and community- and client-centered studios, using the Badlands Studio as our example.

1. [To sponsors:] If you can write specs for deliverables, it's not a studio.

   A studio is not a substitute for a consultant or intern project. The studio deploys the energy and imagination of a number of students; it is essential that we do *not* know exactly where that will lead. Students need to be responsible for conceiving their products [Figure 3]. It may help for sponsors to think of the studio's value in the aggregate, rather than in terms of each and every item submitted.

   That does not mean that the studio should have no definition; students need structure in order to elicit their imagination. Students need to know when and to whom they will present, and their audience's expectations.

2. The process is (a big part of) the product.

   Students examined and defined the scope of the whole studio project. They started with the framework proposed by the NPS, not as axiomatic but as something to be tested. By explaining the issues back to park staff and stakeholders, they learned whether they had comprehended the materials they reviewed. At the same time, this was a form of groundtruthing, in terms of whether documents produced over the years still reflected the realities encountered now by staff.

   The site visit was a major event for the park and for the UT visitors. Twenty-one energetic students, and faculty and professional staff, descended on the park. Students worked both individually and in groups to investigate the site with the NPS and concessionaire personnel, and to interview them about issues and opportunities. The park staff's experience of conveying their work and their park, in these intensive and sustained interactions, was one important product [Figure 4]. Staff are subject experts in their jobs; some have local knowledge that has been handed down for gener-



Figure 3. Discourse Map of terms used in visitor reviews of Badlands National Park on Trip Advisor (Kathleen Conti)

ations. Some of our students, on the other hand, had never encountered the Great Plains or much of rural America (six of 13 were international students, from five different countries; one was from South Dakota, and came to our program from nearby Rapid City). The students brought subject expertise in environmental science, history, and structural engineering in addition to their current degree programs. By translating across these many subject boundaries to help students understand solutions that might work, NPS staff made discoveries themselves.

The process uncovered differences, disagreements, and even conflicts among staff and other stakeholders. When different people in authority gave conflicting instructions, students learned the essential lesson that they could not function as professionals simply by following directions; they had no choice but to exercise independent judgment. In the real world of the park and the Park Service, these conflicts will need to be worked out. The students' job was to provide the rationale for their decisions, and explore the alternatives, including some that no one had considered. For the NPS, these contradictions could be uncovered and explored outside of the organizational hierarchy [see 4 below].

3. [To instructors:] Embrace reality.

   Design studios can have a reputation—for example, as impractical and producing pretty pictures unconnected with reality—and sometimes they deserve that reputation, despite the intentions of instructors and students. It can be hard to learn financial and operational details or the constraints of institutional process or culture. The sponsored studio offers that opportunity: our students met not only with superintendents, subject experts and designers, but also with rangers and staff members who interact with the public and who take care of the buildings and landscapes. They learned details of building maintenance, mowing and irrigation (or, mainly the absence of irrigation), and wildlife management, varying visitor expectations and misunderstandings. These staff voices continued to be heard in the studio, as students channeled the people with whom they had spoken ("Z would want us to put it there instead," for example).

   The students knew when a proposal would increase or decrease maintenance, irrigation, and user interface requirements of park staff. This knowledge led to some projects that were minimal and elegantly integrated solutions.

4. [To sponsors:] Transcend reality.

   Students can expand the solution space. This is perhaps the most important use of the studio. Planning discourse can be constrained as certain possibilities become red lines that people avoid, political dead zones, or remnants of processes that may have left bruised feelings. Students start without knowing any of this. They can touch the third rail and it does not shock! If it still carries juice—if it rips old scars and results in general howling—well, they are only students and they might not have known. If, on the other hand, an off-the-wall solution looks like it might really be an answer, some congratulations are due to the staff sponsors foresighted enough to bring in the studio. We explained to staff that "can't do that" was advice to be offered sparingly at the initial idea-generation stage. Students would choose alternatives to develop further, and NPS staff would be able to give feedback to select among them.

5. Take logistics seriously.

   The studio needs access to people, places, and information. Semester dates are fixed. For a travel studio such as Badlands, lodging and air reservations must be made long before the semester starts. Even more important is the commitment of staff to be available and engaged. Schedule presentations and meetings well ahead of time.



Figure 4. Final charrette presentations in Badlands National Park, September 2015

It is worth attention to detail. Will there be difficulties fitting 20 people in spaces that easily accommodate three? Are there proprietary or security issues, and can they be overcome? Access to information can be a technical issue if systems or formats are incompatible.

There are also logistics of improvisation and serendipity. We purposely arranged transportation with more cars than we needed, so that each team could schedule its meetings and site visits autonomously, and so teams could expand or split up.

6. The semester is not enough.

   The Badlands Studio was conceived more than two years before it began. In various combinations, the two faculty and a WFC staff person visited the park more than a year before, and again two months before, the studio, as well as visiting NPS midwest regional staff in Omaha. In the intensity of the site visit week, it was particularly helpful that we had met most of the key actors, with time for exploring plans and expectations. A graduate research assistant in Austin (who also visited the park with us) worked during the summer before the studio, together with an intern in the Omaha office, gathering base information, data and images, and arranging logistics.

   The value of the studio for the sponsor will also depend on follow-up. The final product should not come on the last day of class, directly from what the students have submitted for their grades. It is better to provide specs for individual and small-group submission formats, and fund at least one or two students for at least a few weeks to pull things together for publication and exhibit.

7. Not all studios are created equal.

   It is probably evident that Badlands was not an average studio. Here are some factors for recognizing better-than-average prospects for success:

   - *Faculty experience with serving clients:* Experience in professional practice is helpful, but not enough. Mediating between a professional or community environment and a learning environment is a set of skills that must be learned.
   - *Sponsor's knowledge and preparation:* A level of commitment is necessary; participation cannot be tentative. Continuing relationships between sponsors and schools work best—that is clearly no help in setting up a first studio, but suggests including team members with experience;
   - *Institutional and student culture:* The UT-Austin School of Architecture's studio culture supports interdisciplinary studios: students are accustomed to working in teams, even for final projects. It is important to match studio structure with studio culture.
   - *Interdisciplinarity:* We are not sure that this is a necessary characteristic (a studio comprised entirely of architecture students can of course be a success), but the diversity of professional backgrounds and methods among the students helps greatly as they interact with park staff from a variety of backgrounds. It helps as they encounter problems that can be defined and approached in different ways. The interdisciplinary studio models, in an organic way, the integrative design process in the Sustainable Sites Initiative (SITES).

Conclusion

At the beginning of our site visit, we introduced the students and their professional qualifications, and told the park staff that these were the people who in two years would be their high-priced consultants. If that served the purpose of getting the students taken seriously, it understated the value of the gathering. Once these graduates are in their consultant roles, they will operate with greater constraints on their freedom of imagination. Equally important, the Badlands Studio has imprinted the realities and the ethos of the Park Service on one talented cohort of new professionals.

From the perspective of the studio sponsor, and for studio instructors, the sponsored studio is a higher risk when compared to alternatives. Yet, although it is more work, the sponsored studio can bring greater rewards, both for students and for parks.

Assessing Climate Vulnerability in Cultural Landscapes of the Pacific West: A Multi-Level Investigation

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Figure 1. Grapevine Canyon flood zone, east view, within the historic district, four months after severe flood event. Impacts on topography, including soil loss, are evident here, and the canyon remains closed to visitors. (Photo: CLRG/ Kerr, 2016)

Abstract

Cultural landscapes embody a dynamic and often difficult facet of the National Parks' 21st Century preservation mandate — places characterized by their essential reflection of both ecological and human forces on the land. Cultural resource managers must often confront the growing stresses of climate change at the park unit level, demonstrating a need for strategic decision-making guidance responsive to both climate events and climate trends. This paper discusses a synthesis of mod-

eled climate change projections with inventory analysis; the approach also draws on selected case study sites located within the NPS Pacific West Region. Historic impacts as well as potential climate-related vulnerabilities facing character-defining landscape features are addressed, with implications for future management of NPS-designed historic landscape resources.

Introduction

During the past half-century, the National Park System (NPS) has witnessed profound growth in recognition of its cultural resource inheritance. The Cultural Landscape Inventory (CLI) system, culminating in a standardized database by 1998, in particular, offers a case in point.[1] From the 1960s forward, expanding consideration for historic landscapes through prepared "Historic Grounds Reports" and formal recognition of historic sites (1968) communicated a broadening perception of cultural significance in the wake of Mission 66.[2] With the emergence of technical guidance by the early 1980s, such as *Cultural Landscapes: Rural Historic Districts in the National Parks*, this realm of resource stewardship highlighted a deeply entwined relationship: these resources exist as a nexus of distinct human and natural forces acting upon the land.[3] Moreover, their lasting historic character remains defined by it; as Ludomir Lonzy urges, this engenders a simultaneous experience of natural and cultural realms.[4] This relationship continues to inform NPS management practice today, underlining these places' inherent biological and cultural dynamism. Moreover, it guarantees persistent — and at times frustrating — changes in historic features: a heritage planting reaches the end of its natural lifespan; rain and wind wear at soil; ecological succession persists. Effective stewardship, according to many such realities, at times, requires accommodating change at one scale while slowing it or even arresting it at another.

Climate change now brings a new enigma into to our conception and care of these places. How might shifting systems, both natural and human, influence the efficacy of existing tools in landscape preservation, like condition assessment? The proverbial target appears to be moving, perhaps indefinitely. Projected shifts in familiar ranges of climate extremes invoke disquieting prospects, including alterations to air temperature and precipitation. Concerns regarding changing sea level, affecting coastal environs like Pu'ukoholā Heiau National Historical Site on Hawai'i, poses yet another dimension to potential climate hazards.

At its core, acknowledging uncertainty is central to any useful response. This remains particularly important for a region encompassing diverse land forms and systems, such as the Pacific West Region of NPS. Severe climate *events* frequently demonstrate a recognizable effect, and are rightly concerning. In one recent instance, seen in Death Valley, convective rainfall triggered the October 18, 2015 flash flood of Grapevine Canyon; in two days, the locale received the rough equivalent of its annual historical norm. Flooding wrought havoc across Scotty's Castle Historic District, with discharge exceeding 3,000 ft3/sec. (85 m3/sec.) (fig. 1). To effectively gauge the implications of potentially more frequent extremes for cultural landscape features beyond a single park setting, managers would benefit from a systematic means of distinguishing baseline conditions.[5] (See Figure 1 on page 352)

Delineating Change in Cultural Landscapes

Along with the consequences of a changing new world, as Brabec and Chilton remind us, comes tacit risk of catastrophic events with consequences felt well beyond the historic built environment.[6] Climate *trends*, at times less immediately apparent, pose an equally severe threat to landscape systems. These embody a longer-term record of climate variables, often considered at a century-length scale.[7] The need to distinguish these two phenomena becomes more urgent, particularly in how each influences the susceptibility of both natural and cultural systems to character-altering change. Cultural resource managers now grapple with this reality, particularly at the regional and local level, and under pressure from budgetary and staffing restraints. Such limitations inform what Barclay Jones describes as varying "thresholds of tolerable risk" between cultural resources, in that effective management responses will ultimately vary from park to park.[8] "The capacity of an organization or an individual to take care of [a cultural resource]," Jones suggests, "is quite unrelated to the fact of possessing it."[9] Here, variations in the capacities among individual parks and staffs are particularly germane.

Cultural landscapes continue to invite our fascination as living, evolving systems. Yet existing evaluation and management protocols retain the underlying assumption that a controlled, predictable equilibrium governs these sites over time.[10] This paradigm must shift along with effective climate response tools. Maintaining a clear-cut sense of some historic attributes protected in these sites, meanwhile — as evaluated according to Na-

tional Register of Historic Places (NRHP) and Cultural Landscapes Inventory (CLI) — becomes an increasingly slippery prospect. A horticulturalist works to delay entropy in elderly specimen plants, while a preservation carpenter grapples with an increasingly scarcity of old-growth timber for historically appropriate building repairs.[11] The passage of time marked in the 2016 NPS Organic Act centenary serves as a reminder of the depth of such changes quietly at work. Recognizing the critical role of climate variables as moving parts, meanwhile, amplifies the need to differentiate inherent system change from the uncertainty implicit in climate shifts. To do so appreciates climate impact as a key influence in park character. Moreover, this perspective enables us to better engage what Angela Richman emphasizes as the "whole story" of cultural landscapes in the Park legacy.[12]

The project discussed here does not aim to catalog the effects of climate change across an entire region. Nor can it offer calculations of disaster. Rather, it seeks to aid an early stage in program decision-making, addressing the need for adaptive cultural resource management planning and frameworks. Through a cooperative agreement with the NPS Pacific West Region (PWR) Cultural Resources division and grant support from NCPTT, ongoing work by the University of Oregon Cultural Landscape Research Group (CLRG) addresses a series of park landscapes within the Pacific West Region. This paper discusses aspects of this effort, which applies climate research to the investigation and analysis of existing PWR cultural landscapes.

The 2013 assessment reports by Working Group I-III of the United Nations Intergovernmental Panel on Climate Change (IPCC) encourage us to amend existing cultural resource assessment protocols with an added layer of adaptability to climate change.[13] Such efforts should acknowledge that changing conditions reveal the delicate and sometimes tenuous nature of our policies surrounding the valuation of regional place — in addi-

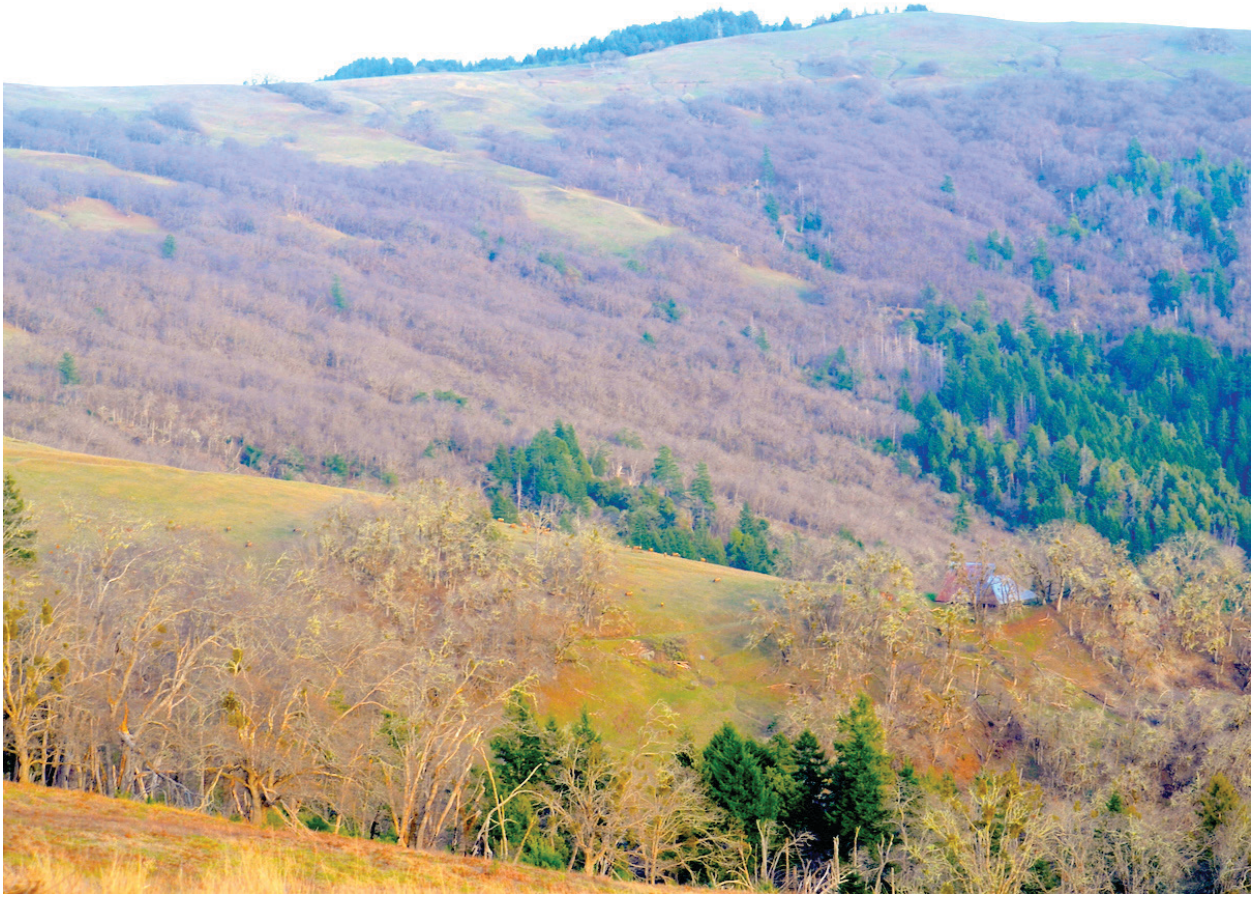


Figure 2. Redwood National Park's Bald Hills, east view, as seen from the Home Place roadbed within the Lyons' Ranches Historic District. Plant communities herein include prairie, Oregon white oak (Quercus garryana) woodland, and fir forest, intertwined today with historic and contemporary agricultural infrastructure. (Photo: CLRG/Malinay, 2016)



Figure 3. The Buckner homestead, northeast view, as seen within the Stehekin Valley context. Orchard foliage within the core of the historic district, center, can be seen against dense fir forest. (Photo: CLRG/Kerr, 2016)

tion to vulnerability seen in diverse landscapes therein.[14] In the case of the Pacific Northwest, asserts Dalton, Mote, and Snow, "these changes mean that many of the climatic assumptions inherent in decisions, infrastructure and policy…will become increasingly incorrect."[15] As much has already become clear for cultural landscapes like Buckner Homestead Historic District, situated within Lake Chelan National Recreation Area (North Cascades NPC) in North Central Washington, where concerns over catastrophic river avulsion, riparian erosion, and wildfire persist.[16] Elsewhere in PWR, similar patterns also emerge, as those familiar with Nisqually River inundation of Mt. Rainier's Longmire Complex can attest. *This* is the new reality facing many cultural landscape stewards—a reality underlying the landscape heritage of the coming century.

Attempts to attribute climate change depredations on a site-specific basis raise, at best, a convoluted task. Park cultural landscapes offer few exceptions, and are subject to broad variation and complexity—particularly across expansive spatial scales in rural areas. Lyons' Ranches Historic District, for one, entails 5,660 acres (2,290 hectares) across numerous and deeply interrelated natural and cultural systems along the Bald Hills spine of eastern Redwood National Park. Its historic prairie systems, sheep grazing outposts, fir forest, oak woodland, remnant orchards, circulation systems, and wildlife cannot be addressed in isolation from one another (fig. 2). These continue to be shaped by diverse influences: upland conifer succession, coastal fog incursion, invasive vegetation, ecological restoration efforts, traditional cultural practices, historical changes in land use, and even contemporary incidents of vandalism, to name a few. In contrast, the Buckner landscape, inhabits a comparatively compact 105.5 acres (42.7 ha), and is intimately situated in those broader systems affecting the narrow Stehekin River Valley, its surrounding second-growth conifer forest, and the enclosing North Cascade range (fig. 3).

Forces past and present inevitably mingle in a cultural landscape. Still, a clearer conception of the interplay between broad climate deviations and vulnerability specific to discrete, character-defining features remains a focus in assessing climate risk.[17] To that end, this project emphasizes a key temporal distinction, in an attempt to differentiate the influence of known alterations to landscape systems from those as yet unknown. These efforts consider historical impacts, or *past* documented changes, as distinct from *present* climate variables, further separated from those vulnerabilities yet to become clear.

Research Design and Methods

From its inception, this project aims for a functional integration of climate science with cultural landscape

assessment protocols. As a comprehensive survey across NPS Pacific West Region (PWR) cultural landscape types, this work examines climate vulnerability in cultural landscape characteristics and features — seen through both region-wide and localized lenses, according to selected climate variables. At their core, both levels of investigation share two fundamental questions. First, which cultural landscape systems, characteristics, or features are likely to be adversely affected by projected changes? And, no less significant, why and how are they likely to be vulnerable?[18] At the regional level, addressing these concerns aids development of a prioritization model for PWR resource managers, allowing for cohesive strategies concerning shared regional attributes.

Documentary analysis pairs a region-wide overlay of significant characteristics and features (grouped according to landscape) with climate projections at global, regional, and localized scales. A more focused lens, meanwhile, follows a selection of six field case studies. This component capitalizes on site-specific insights, in order to "ground truth" broader analysis, but also to engage the vital insights of resource managers and specialists in the immediate context of their stewardship efforts.

Regional Analysis

As of this writing, PWR manages 164 cultural landscapes with CLIs. With guidance from the region's Cultural Landscape program, team members began by developing a working profile for each cultural landscape. Identifying, extracting, and summarizing those "contributing" landscape features inventoried within each CLI document provides an iterative technique to mine key data resources. This largely qualitative data then populates a working matrix organized by each landscape's alphanumeric park unit designation and CLI code, as well as cultural landscape characteristic type (Natural Systems & Features, Circulation Patterns, Constructed Water Features, etc.). As with any evolving body of documents, practical delays between certification of and updates to individual CLIs create inherent variations in available information. In one case, the CLI for San Francisco Maritime National Park's Aquatic Park, certified in 2001, precedes that of Olympic National Park's Peter Roose Homestead by more than a decade.

Next, IPCC, NPS, and United States Geological Survey (USGS) projections for air temperature, precipitation, and sea-level rise (where applicable), are paired with CLI feature lists. Here, historic data and modeled climate projections are assessed at global, national, county, and park scales. Temperatures at Pu`uhonua O Hōnaunau National Historical Park, Hawai'i, for instance, show increases of 3.0 ± 0.5° Fahrenheit (+1.5 ± 0.3° Celsius) during the past half-century, whereas modeled projections suggest potential increases of 6.0 ± 1.3°F (+3.3 ± 0.7°C) by the year 2100.[19] Pairing climate projections with CLI feature and impact lists, then, creates a flexible analytical tool for assessing vulnerability.[20] As the foundation for a searchable database, this kind of working index could also enable managers to cross-reference and compare across multiple landscapes, parks, networks, or other shared attributes. Development of this resource continues at present, with guidance from program staff in the Pacific West Region, the NPS Cultural Landscapes Program, the NPS Climate Change Adaptation Coordinator for Cultural Resources, the NPS Climate Change Response Program, and the Pacific Islands Climate Change Cooperative.

Modeling Vulnerability

This process furthers work to develop an applied model for analyzing vulnerability. As the effects of climate variables on individual landscape characteristics and features become more evident, so too does the possibility of more effectively establishing comparative scores for overall cultural landscape vulnerability. Drawing on regional GIS resources, model development also takes on a spatially-explicit dimension. Ultimately, such a tool may assist managers in the prioritization of efforts and resources at regional and park levels.

The product of this analysis comprises a key desired outcome for the project, as well as a generous source of unanswered questions. In transforming inventories of character-defining features into quantitative data, for example, how can we meaningfully represent the historic, often-thematic character of these living landscapes? Can we, in fact, distinguish a working spectrum of vulnerability across such diverse places, while avoiding the temptation to privilege some contributing features over others? These are fascinating problems, to be certain.

Case Studies / Field Investigation

This inquiry expresses the conviction that effective discussion of current landscape conditions necessitates focused field investigation. At its outset, the project included a determination of representative case study landscapes across PWR; this process deliberated ecological composition, geographic context, and condition

Cultural Landscape Name	Park Code	Network Code	Cultural Landscape Type
Lyons' Ranches Historic District	REDW	KLMN	vernacular
Scotty's Castle Historic District	DEVA	MOJN	historic designed
Pu'ukoholā Heaiu National Historical Site	PUHE	PACN	ethnographic
Eugene O'Neill National Historic Site	EUON	SFAN	historic designed
Buckner Homestead Historic District	NOCA	NCCN	vernacular
East Kamiah / "Heart of the Monster"	NEPE	SIEN	ethnographic

Table 1. Case study sites selected from within NPS PWR cultural landscapes.

attributes. Final selection of regional case study locations referenced three core considerations:

- Representing diversity of NPS networks across PWR (roughly analogous to eco-region)
- Reflecting breadth of cultural landscape types
- Engaging local park staff interest, availability, and managerial insight

Each of the resulting case studies follows a format intended to provide the field research team with updated awareness of landscape conditions, in effect bridging the primary-source gap between impacts noted in CLI documents (in some cases, several years old), and those having since emerged. Field techniques incorporate a combination of ground-level reconnaissance, photo-documentation, and field notation, and are informed by a process of engaging directly with park staff. Advance preparation begins with a webinar-based discussion with a diverse group of site resource managers and specialists. All contributing webinar participants have thus far ranged in expertise from orchard husbandry to archaeology, from wildlife biology to fire ecology, and address impacts both documented and newly emergent. Guided by systematic questions and information, this format allows for a flexible dialogue, which in turn emphasizes the merits of qualitative observations from those more closely engaged with the cultural landscape itself.

Prior to each site visit, team members prepare a field log, detailing a matrix of character-defining landscape features, along with known impacts and condition-related observations (fig. 4). Though familiar as a conditional assessment technique, this approach also differs somewhat from existing protocols: documentation here informs an analysis of landscape character within the context of climate change. In doing so, it draws on visual data as an accessible, repeatable baseline for future work. Building on this method with other rigorous visual techniques (e.g. remote-sensing, repeat photography, among others), stands beyond the scope of current work, yet raises opportunities for future investigation.



Figure 4. Members of the University of Oregon's Cultural Landscape Research Group review sections of a feature recordation log, at the outset of fieldwork at Scotty's Castle Historic District. (Photo: CLRG/Kerr, 2016)

Preliminary Discussion

Systematic documentation supports the growth of both an extensive and intensive record for current feature conditions in case study sites. Here, documenting the interplay of landscape systems embedded onsite also serves an awareness of sources for potential resilience in some cultural landscapes. In one instance, a historical spring-fed seep in California's Las Trampas foothills supplements water storage and courtyard garden irrigation at Eugene O'Neill NHS (fig. 5). This approach may aid future efforts to track change in the same location over time, but remain limited to site-specific use.

Within the CLI component hierarchy, retaining a sense of scale helps to anchor comparisons in landscape vulnerability. In some cases, impacts known to affect discrete features may influence vulnerability, as in the case of coastal wind effects on traditional stone construction at Pu'ukoholā Heiau. Meanwhile, impacts caused by the 2015 Scotty's Castle flood event particularly affected broader, systemic features such as hydrology, topography, and circulation networks. Other catastrophic climate events, including landslides and wildfire, may characterize a similar spectrum.



Figure 5. A system of wood-stave storage tanks, southeast view, comprises an integral part of water management practiced at Eugene O'Neill National Historic Site. The working role of these cultural landscape features remains particularly vital, in light of recent California drought trends. (Photo: CLRG/Kerr, 2016)

Comparisons may also address relative severity across similar types of impacts. Burrowing activity by ground squirrels (*Otospermophilus beecheyi*) now contributes to modest stress on the remnant walnut *(Juglans regia)* orchard at Eugene O'Neill — documented as a form of pest impact on historic vegetation — in contrast to crown damage wrought by local elk (*Cervus elaphus*) and black bears (*Ursus americanus*) within Buckner Homestead's historic apple (*Malus domestica var. 'Common Delicious')* orchard.[21] Projected changes in temperature and precipitation affecting wildlife ecology in such areas may exacerbate similar concerns. Likewise, an apparent trend in ongoing erosion threatens the Stehekin River's east bank, including historic pasture and spatial organization at Buckner Homestead (fig. 6), while wind and water erosion at Scotty's Castle affect features across its arid historic district. Assessing otherwise diverse phenomena according to levels of climate exposure and sensitivity may reveal further insight, particularly given the often-subtle development characterizing climate trends.

The concerns facing cultural resource managers in this era of climate change are substantial. Answering those challenges in cultural landscapes requires focused attention on several scales of both quantitative and qualitative investigation, as demonstrated in this multi-year research effort. The work also demands a deeper awareness of the historic range of cultural landscape dynamics, and how that understood range of change may be affected by climate variables outside our historic lexicon. The greatest challenge, perhaps, comes in accepting that there exists a multitude of unknowns — even within the scope of known variations. The work continues.



Figure 6. Extensive bank erosion now affects the Stehekin River boundary of Buckner Homestead Historic District, south view. Vida Germano coordinates ongoing PWR efforts to document and track such impacts. (Photo: CLRG/Kerr, 2016)

Endnotes

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20 Unsurprisingly, a number of counties contain multiple cultural landscape units. Eugene O'Neill National Historic Site in Danville, California, and John Muir National Historic Site in nearby Martinez both reflect projections for Contra Costa County.

21 The 'Common Delicious' apple variety, cultivated since 1912 in this homestead orchard, has virtually disappeared from modern nursery markets. Here, propagation through historically appropriate grafting practices maintains this rare natural resource.

Designing the Parks: Formative Years and Risk Taking Revisited

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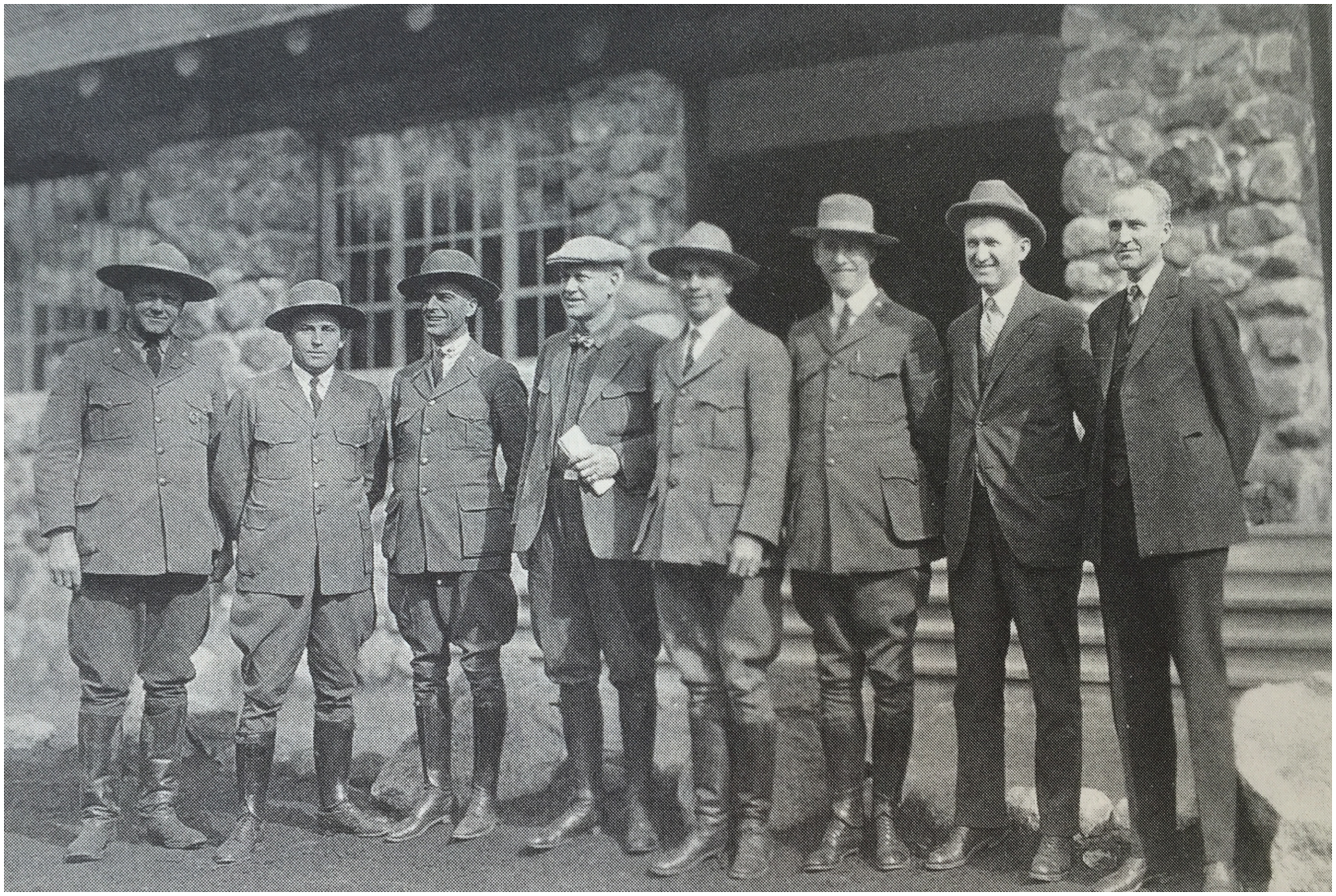


Figure 1. National Park Service Director, Assistant Director, Chiefs, and Planners, including Daniel Hull (second from left) at Yosemite National Park, 1926. Courtesy of NPS Historic Photograph Collection, Harpers Ferry Center.

Abstract

This paper highlights two millennial initiatives known as the 'Designing the Parks' and 'Branching Out' programs, which are engaging the next generation of park stewards. The paper also reflects on the formative experiences of early National Park Service visionaries and designers. By learning from the past and thinking about the future, young people from diverse backgrounds are engaged in solving National Park Service design, preservation, and treatment issues. Case studies from the field highlight the work of these young professionals, their "ah-ha" moments, and their park design solutions. Issues addressed by students include site enhancements to improve visitor experience, incorporating new materials into rehabilitation treatments, and responding to climate change. Our demographics and tools of the trade have changed, but the importance of formative experiences and risk taking are still at the core of our park designs.

Introduction

In his book "Place, Race, and Story" Ned Kaufman asks the reader to consider two philosophies for historic preservation and, by extension, park design. One looks inward and focuses on authenticity and technical competence. The other considers social relevance and utility. In the latter approach, Kaufman asks designers, planners, and preservationists to create places where people can live well and connect to meaningful narratives about history, culture, and identity. He points to the importance of interpretation for parks that focus on the stories of communities of color, immigrants, and working people, and the tremendous need for designers, planners, and preservationists to promote the living heritage of communities within cities. He states, "Though preservation cannot solve the nation's racial problems, cure environmental injustice, or save everyone's sacred places, it can renovate itself by addressing these challenges." With this charge in mind, what can we do to engage the next generation in addressing these challenges? And, how do we value diversity and incorporate social justice into our preservation approach?

The National Park Service stewards hundreds of cultural landscapes across the country that reflect human interaction with the physical environment. While the types of human interaction that shaped these landscapes are in the past, their significance continues to emerge with new lines of scholarly inquiry, changing user demographics, and evolving social consciousness.

This paper stems from years of research on how park planners influenced the physical development of parks and many years of hosting interns in our office; seeing how interns actively engage in park planning projects.. Hopefully, the outcome will be to think strategically about how we can create and support the experiences and career paths for our next generation of park designers and foster their ability to identify significance and care for these places. This study features several early park planners who influenced the design of national park service properties in the Northeast—places that we will revisit a century later with our 'Designing the Parks' and 'Branching Out' programs. These landscape architects, architects, and engineers were among dozens who were actively engaged in the design and construction of our National Parks (many others are featured in this symposium). The five questions asked in preparing this paper include:

- What experiences in their formative years led them to park design?
- Were there "ah-ha" moments that they later recalled as pivotal in their park design philosophies?
- What empowered them to take the risk of proposing a radical design intervention?
- How did they consider a park as a place for an array experiences—relevant and inclusive?
- What can we learn from them that will inspire the next generation of park designers and engineers?

Early park designers revisited in this paper include Frederick Law Olmsted, the father of landscape architecture; Charles Eliot, a young luminary in the area of land protection and regional planning; Daniel Ray Hull, pioneer of rustic design principles and head of the NPS Landscape Architecture Division, and Norman Newton, NPS Northeast Region Resident Landscape Architect. These individuals made significant contributions to park design at Boston Harbor Islands National Park Area (Olmsted), Acadia National Park (Eliot, Hull), and Salem Maritime National Historic Site (Newton). Here are some general observations about their formative years.

- They grew up in urban or rapidly growing communities, and were keenly aware of the changing demographics as well as the changing physical environment associated with the industrialism, transportation, communication, and population growth.
- They were well educated and key members or leaders of societies such as the American Society of Landscape Architects (ASLA) that focused on design and planning
- They had opportunities to travel across the country, to Europe, and throughout the world, either with their family, scouting, through military service, fellowships, or for work.
- Beginning in their high school years or earlier, they had opportunities to gain in depth knowledge of natural and cultural resources through self-study, exploration, and apprenticeships.
- Their wealth of knowledge—gained beginning at a young age--enabled them to advance with confidence large scale projects, which may have appeared risky or daunting to others.
- A growing network of professionals and commissions provided review comments on their designs, serving as checks and balances throughout the design process
- They were all Euro-American men with varying degrees of financial means.

Recognizing that were not all Euro-American men, we will take a look at other aspects of their experiences, associations, and training that are relevant today.

Our Park Programs as Paths to Relevancy, Diversity, and Inclusion

As demonstrated by the success of the early park makers and popularity of our National Parks, we as a country hold a passion for protecting and preserving special places. At each of our parks, we seek to inspire visitors, offering them moments of unparalleled scenic beauty and time to reflect upon significant people and events in our nation's history. However, we need to be sure that we invite new audiences and meet the needs of our ever evolving society and environment. Specifically, the NPS is actively advancing the goal to create a mosaic of experiences that are respectful of relevancy, diversity, and inclusion. This effort is supported by the NPS Call to Action goals of "connecting people to parks" and "enhancing professional and organizational excellence in the next century" and is highlighted in highlighted in the videos, NPS Youth Programs and Yeah, We're Beautiful.

At the heart of this effort is the NPS Office of Relevancy, Diversity, and Inclusion (RDI). Their mission is to champion an organizational culture that is increasingly inclusive and participatory, which values the diverse ideas, experience, and background of every individual, and empowers an innovative, flexible, and resilient NPS to engage the opportunities and challenges of the future. The Office of RDI works collaboratively with NPS stakeholders to embed these best practices into the organization and provide the support needed to ensure their implementation. The National Park Service defines relevancy, diversity, and inclusion as:

- Relevancy is achieved when all Americans are able to establish a personal connection to the National Park Service parks and programs and find meaning and value in the mission of the National Park Service.
- Diversity represents the practice of actively incorporating people of different backgrounds, perspectives, thoughts and beliefs throughout the organization to ensure that NPS is advantaged by the best thinking possible. Diversity represents the wide range of visible and invisible differences and similarities that make each of us unique.
- Inclusion is the practice of intentionally building a culture that is flexible, values diverse ideas, and embraces the meaningful participation of all.

How do we keep these goals in mind as we set about to address issues in National Parks? The Office of Relevancy, Diversity, and Inclusion provides program support to parks and offices throughout the country, including several programs that will be described in greater detail in this paper, and all of which are listed in the Sources section. In our work at the Olmsted Center, we have benefited tremendously by hosting students and young professionals to explore park design and historic preservation practices.



Figure 2. NPS Designing the Parks team and Partners at the Olmsted Center for Landscape Preservation.

Education, Training, and Engagement through the Olmsted Center for Landscape Preservation

The RDI mission fits well with the Olmsted Center's mission that is to provide research, planning, stewardship, and education services predominantly for national parks in the Northeast Region and to strengthen the capacity of parks to manage cultural landscapes that reflect our national heritage. Established in 1992 and based in Boston, Massachusetts, the Center collaborates with parks, universities, and nonprofit organizations to deploy specialized landscape preservation teams with the skills and expertise to meet the needs of each park and project. To improve the stewardship capacity of parks, the Center offers training and career development opportunities that build and enhance employee knowledge, skills, and abilities in landscape preservation concepts and techniques. Finally, to develop and nurture life-long connections between the public and parks—especially for young people—the Center coordinates programs that engage youth in national park cultural landscape management learning experiences. To date, we have engaged more than 300 high school, undergrads, graduate students, and recent graduates in park projects ranging from 6-week to year-long to multi-year internships. Many of these interns are now employed in key positions in the stewardship of public lands. The next part of this paper highlights two

programs, 'Branching Out' and 'Designing the Parks' and how these programs engage young people from diverse backgrounds in stewardship and in solving park design and treatment issues.

Branching Out Youth Program

Started in 2005, the Branching Out Youth Program engages people between the ages of 15 – 25 from diverse backgrounds in learning concepts and techniques of sustainable resource stewardship for National Park Service properties. The program offers a wonderful balance of learning, working, and team building. The program has partnered with local public schools and youth-service organizations to create a multi-year educational and career development program. As the program progresses, the participants are faced with increasingly complex, hands-on challenges, all meant to give them meaningful experiences and to inspire them to become lifelong land stewards. Now in its 11th year, graduates of the program are now serving as team leaders. The goals of Branching Out are to:

- Offer youth experience in park resource management and stewardship
- Provide pathways for participants to pursue employment and education
- Introduce participants to the National Park Service and its mission
- Provide resource management support to national parks and associated sites
- Forge connections between young people, their community landscapes, and the outdoors

Young people engaged in this program forge a bond with these significant places and are then entrusted to protect and preserve these important spaces. Participants develop a keen sense of pride for the work they accomplish, the sites they care for, and the value of landscapes. Their enthusiasm is captured in blogs, poetry, and raps. To draw a parallel with Frederick Law Olmsted, Sr., he served as a surveyor's apprentice during his high school years, and spent much of his time actively engaged in documenting landscape conditions.

> "…because Franklin Park is the only part of Olmsted's plan that's in my backyard I didn't plan it, must have been a gift from of this planet the idea must have landed in Fred's head when I was born and gave me the love because now I adore, doing what I do and keeping these sites safe having the mind set to annihilate any weed any single type of breed to prevent them from dropping seeds I've seen how this helps now by any means…" -Raldison Berroa, age 16



Figure 3. Branching Out and Designing the Parks teams visit Franklin Park, part of Boston's Emerald Necklace designed by Frederick Law Olmsted, Sr.

In 2015, the Branching Out Youth Program" received a GreenGov Presidential Award. The GreenGov Presidential Awards celebrate extraordinary achievement in the pursuit of President Obama's Federal Sustainability goals. *Branching Out* received the Good Neighbor Award which recognizes exemplary federal agency employees and programs actively involved in local community planning, pursuit of collaborative sustainability goals, and success in aligning policies and practices with community partners to achieve those goals.

Designing the Parks Program

The *Designing the Parks* program emerged from two park planning and design conferences held in 2008, the first examined lessons from past approaches, and the second focused on the present and future state of our parks. The conference, A Century of Design in the



Figure 4. Branching Out youth assist with constructing a plant arbor in the historic cutting garden at the Eleanor Roosevelt National Historic Site, 2015.

Parks, offers another building block in this endeavor. The *Designing the Parks* program aims to reinvigorate the design of national parks and bolster the National Park Service's role as a leader in public park design. The program engages five principles:

- respect place
- engage all
- model sustainability
- design beyond boundaries
- communicate clearly

To carry out this effort, the *Designing the Parks* program introduces young diverse groups of students to National Park Service design and planning professions through two initiatives. A *Parks for the People* student design competition was held in 2011–12, challenging college and university design students to reimagine the national parks and examine their roles in contemporary society. The *Designing the Parks Program* was initiated in 2012 at Independence National Historical Park in Philadelphia.

Program Partners and Focus

Now in its fifth year, the 'Designing the Parks' program has benefited from ongoing collaborations with parks, academics, professionals, and the partner organizations listed here. Some of the internships have been fully funded by partners. Partners include the Golden Gate Parks Conservancy, Student Conservation Association, Latino Heritage Intern Program, Hispanic Access Foundation, Cultural Resources Diversity Intern Program, American Conservation Experience, Greening Youth Foundation HBCUI Program, State University of New York College of Environmental Science and Forestry, and National Center for Preservation Technology and Training.

In addition to the five principles above, the Olmsted Center identifies a variety of projects in national parks throughout the Northeast Region that gives intern the opportunity to explore various aspects of cultural landscape preservation practice. The aim of this project work is to be:

- **Visionary**: to introduce young design professionals to the field of cultural landscape preservation and its relationship to the National Park Service mission.
- **Experiential**: to provide participants with the opportunity to explore with design issues facing national parks.
- **Practical**: to provide participants with the opportunity to produce a variety of products that can assist on-going management of National Park Service sites.

At the end of each week, the students are asked to reflect on their lessons learned and engagement with respect to the five principles and three aims. Generally we follow a schedule much like a design studio, though the duration ranges from 6 to weeks to longer periods. The following themes are considered throughout the internship experience:

1. Respecting Historical Context

   Participants are introduced to the role that historical context of a property plays in cultural landscape management. Participants engage in historical research to ground future design interventions and landscape treatments. The team discusses landscape preservation philosophy, treatment approaches, and treatment measures that balance historical accuracy with contemporary program and visitor needs. Questions asked include: How have the project area landscapes changed over time (physical structures, vegetation and tree cover, cultural uses)? How important are historically accurate and longstanding landscape patterns and relationships such as viewsheds, patterns of field and forest, and patterns of movement, to the cultural and historical narrative? To what degree can one balance historical accuracy with natural resource values and goals? How can each landscape support interpretive and educational goals of the park sites?
2. Natural Resources, Conservation, and Land Use

   Participants are introduced to concepts relating to natural resource management, conservation, and land use. In particular, the team investigates and documents the presence of native vs. non-native plant species, invasive plants, and plant management for cultural landscapes. For each project, the team discusses the opportunities and constraints of preserving historic plant material, replacing it in kind, or proposing alternative species that are resilient, and adaptable to the impacts of climate change and sea level rise. Questions asked include: How can the landscape be managed ecologically and sustainably? How do we balance the desire to recreate historical vistas with the removal of trees? How do we balance visual aesthetics with long-term maintenance costs? How do we use plants as design elements and to create a sense of place? What kind of habitat and ecology exists and how can these environments provide learning opportunities for visitors?

3. The Visitor Experience

   Participants encounter firsthand the 'visitor experience' during site visits. The team examines how park managers and designers can create or preserve the spaces and opportunities for learning and recreation that will engage visitors and encourage repeat visitation. From design concept to solutions, participants will consider how a treatment philosophy and specific landscape treatment tasks will shape the visitor experience. Questions asked include: How do we create a sequence of spaces and the context that supports the use of historical landscapes as public parks? How can historic and cultural landscape spaces be treated in support of a relevant visitor experience, as well as used recreationally? Is there a need for more park furnishings including benches, signs, and for additional visitor amenities such as picnic tables, shade trees, indoor spaces and facilities? What are the quality of the roads, trails, and connections serving the park area? What are the relevant visitor safety issues, or accessibility issues? Is there a need for handrails, fencing, and other barriers? What are the experiences and activities that would encourage repeat visitation?

   Another key component is to enjoy the parks. Looking back at the college years of Charles Eliot, in the 1880s, Eliot and his classmates formed the "Champlain Society" and camped for the summer on Mount Desert Island in Maine. Here, they inventoried the flora and fauna and wrote about the need to protect what would become Acadia National Park. Just as Eliot and his classmates camped, we integrate an overnight park experience into both the 'Branching Out' and 'Designing the Parks' programs. Though the campfire discussions that led to the formation of the National Park Service may be a myth, enjoying a campfire with a team of young visionaries is an invaluable experience.

Highlights from the Field

The final portion of this paper highlights success stories from the *Designing the Parks* (DTP) program that draw inspiration from our early park designers. And spotlight a career story that aligns with Secretary' Jewell's "Play-Learn-Serve-Work" Initiative and the Olmsted Center's framework of exploring "Visionary-Experiential-Practical Opportunities." Because the DTP team emphasizes blogging and videos, it is relatively easy to share highlights of the Designing the Parks program at designingtheparksoclp.wordpress.com

The 2013 program hosted by the National Park Service Olmsted Center for Landscape Preservation provided four high school and college students an opportunity to participate in park planning and design through a combination of site visits, observations, interviews with professionals, historical research, and development of management and maintenance recommendations. The interns worked with park staff and design professionals to improve visitor experiences, while protecting and managing cultural and natural resources at Boston Harbor Islands National Recreation Area. In addition to their video, Designing the Parks 2013: Reimagining Peddocks Island, the interns recorded their experiences in a blog.

Each year since, the structure of the program has evolved. The 2013 program focused on team design, while the 2014 program provided in depth project development for each intern. In 2015, we adopted a hybrid approach of team research and independent exploration, which we continued for our 2016 program. Team activities includes site visits and problem solving discussions as a team, along with park staff and stakeholders; meeting with allied NPS program professionals as well as local landscape architects; and creating videos and a blog, and a final presentation and report. Independent work includes historical research and writing; photography, sketching, and developing written narratives for specific sites; creating maps using GIS, computer aided design (CAD), and the Adobe Creative Suite; and creating independent components of a presentation and report. This model of team collaboration and individual concentration for team members allows participants to learn from each other as well as develop their personal areas of interest with respect to research, design, and documentation in National Park Service sites.

We are fortunate to have the Frederick Law Olmsted National Historic Site nearby to explore his park making design principles. Each team participates in the "Good Neighbors Program" model shop. Although the NPS Frederick Law Olmsted NHS "Good Neighbors: Landscape Design and Community Building" was developed for elementary school-aged children, it offers and engaging opportunity for all ages. The emphasis on "explore-investigate-create" parallels the aims of the 'Designing the Parks' program. Here students can understand Olmsted's belief in "the genius of a place."

Many of the participants have never been to a large national park, but have been inspired by a public space such as a state, city, or municipal park, zoo, camp, public garden, or urban garden plots. For example, Shanasia Sylman who is from San Antonio, Texas, and was majoring in engineering at MIT discovered the field of landscape architecture while visiting the High Line in New York City. She writes, after visiting the High Line, "my career aspirations have never been the same." Shanasia is now working on her Masters in Landscape Architecture.

In her blog following a visit to the Frederick Law Olmsted National Historic Site, Shanasia writes, "As a visitor, I was able to step back into the late 1800s/early 1900s; back to the early days of landscape architecture. The tour was exceptional and I learned plenty, but the shining moment during my visiting time was seeing the Good Neighbors program. I had never even heard of landscape architecture until I was 20 years old, halfway through my engineering degree, but here were these elementary students in the Olmsted barn designing their own parks to fit their clients' requests. It may sound crazy but I was a little jealous. They may not realize it now but to get that exposure to park planning and design is priceless. A whole new avenue of passions and careers was opened up to them. It's the perfect type of children's workshop to have in the Olmsted residence; A successful way to illustrate what went on in the home long ago: the tools, the thoughts, the process."

The 2013 DTP team focused on Peddocks Island within Boston Harbor Islands National Recreation Area, a partnership park established in 1996. Ethan Carr, Professor of Landscape Architecture at UMass joined the



Figure 5. Interns participate in the "Good Neighbors Program" at Frederick Law Olmsted National Historic Site.



Figure 6. Photo simulation of trees along walkway at Fort Andrews, Boston Harbor Islands National Recreation Area.

2013 DTP team and shared a proposal by Frederick Law Olmsted to reforest the denuded and neglected islands. Olmsted proposed a mix of fast growing, reliable species, such as birch with slower growing native trees. The design team focused on Peddocks Island, and similarly proposed a palette of native tree species to offer shaded walkways and campsite privacy. DTP team leader Grace Ng compiled the team's ideas into a fun and visionary video using Photoshop and Adobe After Effects. Many of their ideas have been implemented. For example, mirroring Olmsted's recollection of his grandfather's pride in planting a tree, we call the newly planted trees along the parade ground "Sasha Bachier's trees" because she specified them in her site rehabilitation plan using AutoCAD and Sketch Up 3-D Modeling. We hope that she will be able to visit Peddocks and watch these trees mature in the years ahead. Also being implemented are Chup Chiu's staircase rehabilitation and Romana Hussain's campground improvements.

In the 2014 DTP program, Andre Thomas gained a greater understanding and appreciation for landscape architecture during his 10-week internship. An architecture student at Howard University who grew up in Detroit, Michigan, Andre's individual project was to document the existing conditions of the Harriet Tubman Underground Railroad National Monument. In addition to creating site maps, Andre recorded two videos about the property and his internship, which are on Youtube. Video served as an engaging tool to record landscape character, capturing both a sense of place and Andre's first impressions of this new park.

In 2015, the DTP team traveled to Acadia National Park in Maine to conduct an in-depth inventory of trail features for the Cultural Landscape Inventory. Their

work involved understanding the design philosophies, park planning visions, and design solutions of early park makers such as Charles Eliot, Daniel Hull, and Thomas Vint. They also considered new solutions to park access issues and damaged trails, including reopening an abandoned trail and village connector. The team also experimented with new methods of data collection including a web-based Google Forms method and video data collection and condition assessments compiled with Adobe Premiere Pro. The team utilized the park's GIS layers to organize and gather data with both GPS points along the hiking trails as well as use a detailed linear referencing method for collecting data.

As part of the 2015 DTP program, we would like to highlight the project work of Ashley Braquet who worked in our office for a year. Ashley is from New Orleans, Louisiana. After living through Hurricane Katrina and its aftermath, Ashley has a keen interest in Climate Change and Coastal Resiliency and this was the focus of her graduate studies while earning a Master's degree at the University of Pennsylvania in landscape architecture and historic preservation. Ashley contributed to a cultural landscape report for Salem Maritime National Historic Site in Massachusetts, and developed a climate change response strategy. Since the park's designation as the first National Historic Site in the park system, its purpose and significance have evolved. From its inception, the park has adopted a rehabilitation approach.

In 1939, Norman Newton penned a vision for Salem's derelict and abandoned industrial waterfront landscape. His design was to create and appropriate a park-like setting, which we now describe as a Colonial Revival landscape. To draw a parallel between, Norman Newton and Ashley's motivations. Newton came into the profession of landscape architecture in a turbulent time in history, between the two World Wars and during the Great Depression. During World War II he was a "monument man." The idea of preserving derelict or run down places that contain historic gems and reviving them into a place of order, safety, and harmony seems fitting. In our current terminology of treatment approaches, he focused on rehabilitation. Two of Newton's signature parks, Salem and the Statue of Liberty on Liberty Island are now faced with climate change and the effects of sea level rise.

Ashley and other team members began with a careful documentation of existing conditions. Then compiled the most recent guidance and data from the National Park Service Climate Change Response Program and other useful sources. Sources included the four pillars of climate change response from a workshop entitled "Preserving Coastal Heritage, Summary Report" April 2014. Ashley adapted the cultural landscape response to climate change from Professor Melnick and his team's draft publication entitled "Climate Change and Cultural Landscapes: Research, Planning, and Stewardship," draft February 2015. She also looked at predictive models. For example, a Hurricane Inundation map illustrates that a Category 4 Hurricane will inundate the entire park.

Ashley and the project team then explored seven alternative treatment approaches for the park's waterfront area, while revisiting Norman Newton's 1939 Master Plan. For each alternative they described associated inputs of labor, funds, and materials; the short- and long-term implications for park resources integrity, visitor experience, and park management priorities; and the physical alterations necessary to implement the alternative. Ashley used AutoCAD, Adobe Illustrator, and



Figure 7. Photo simulation of promenade that incorporates coastal resilience design elements along Derby Street at Salem Maritime National Historic Site.

Photoshop to illustrate alternative approaches. Treatments considered included strengthening and raising the bulkhead walls of the historic wharf, hardening the surface of the wharf, adding grasses with stronger and longer roots systems, adding more pins to hold together the historic granite blocks, and addressing overwash by hardening the surface, and adding deep rooted grasses. Ashley also addressed resilience strategies further inland. For example, a photo simulation of the Derby Street corridor incorporates salt-tolerant trees in raised planters in a brick promenade to better withstand salt intrusion.

Finally, we would like to highlight the career story of Kristi Lin, who joined our DTP as the youngest member of our 2015 DTP team. As an undergrad at the University of California at Davis, she discovered the field of landscape architecture and had recently changed her major. As part of our Brown Bag Lunch series, she connected with Frank Hays, the NPS Northeast Region Associate Regional Director for Resource Stewardship and Science, who was previously the Superintendent at Manzanar National Historic Site. Kristi blogged, "As a Japanese American, I believe that Manzanar is a very valuable resource for telling the Japanese American experience, and my visit to Manzanar definitely got me interested in cultural landscape preservation. Talking to Frank about his work with the NPS and the Japanese American community gave me insight into possible career paths that I might want to look into in the future. When reflecting on her DTP experience, Kristi writes, "I learned about the potential of the past to reveal the motives and tendencies governing human behavior today. I learned the importance of building a "collective memory" so that when we encounter injustices today, they will trigger us to take action." Most recently in April Kristi received an NPS scholarship to attend the Asian and Pacific Islander Americans in Historic Preservation (APIAHiP) National Forum in Stockton, CA. In May attended the 47th Manzanar Pilgrimage. She shared how incredible it was to hear former incarcerees talk about their memories of being at Manzanar or other camps, and how this encounter renewed her passion for the site and its relevancy today.

While at the Olmsted Center, Kristi also collaborated with team members to gather information on the farming practices at Martin Van Buren National Historic Site in Kinderhook, NY, to include in a series of Best Practice Guidelines for the park. The team visited several local farms to learn about current sustainable practices. This ignited Kristi's interest in the history and significance of agriculture. Back at school in the fall, she entered and won a design competition for a UC Davis courtyard with her design entitled, "Honoring the Past, Designing our Future," which focused on the significance of agriculture. Here, Kristi translated what she learned at the Olmsted Center to a new place and created a physical space that would inspire others. Kristi shared photographs with us the initial phase of installation of her courtyard design. We are thrilled to see how ideas formed through park service projects, are taking root in a university courtyard.

Key Elements of the Branching Out and Designing the Parks Experience

As we have refined the model of individual versus team-based learning and project focus, we have identified the key elements of our 'Designing the Parks' experience, many of which also apply to the 'Branching Out' experience:

- Facilitate experiences that are socially, emotionally, and physically appropriate for the youth participants, and create experiences utilizing the youth development approach.
- Reflect on principles, practices, and ah-ha moments through a blog and continued conversations that reflect on the principles and goals of the agency and profession
- Clearly define team projects and individual projects, with an emphasis on collaboration
- Incorporate teach backs with youth, professionals, partners, and educators



Figure 8. Learning about sustainable farm practices in situ from a local farmer.

- Provide exposure to the breadth of NPS programmatic resources through Brown Bag lunches and field trips — look broadly at what NPS offers and what we could/should offer.
- Offer exposure to each intern's area of interest through the service-wide network of resource management professionals
- Maintain contact with interns, celebrate accomplishments, provide references, and opportunities for reconnection (i.e. create a community and keep in touch)
- And, of course, enjoy the parks!

We are really excited about the paths that our interns have taken and are so glad that we have been able to ignite a passion for stewardship that could propel them into promising careers. While we recognize the disparity between the diversity of communities and the makeup of the park's professional staff, we hope that this will improve in the future, and we see that the formative years are critical for stewards in the next century. We need to support middle and high school and college programs that raise awareness of the importance of the design professions. We also need to support student involvement in societies that are forward thinking and engaged in community development and park making. We need to create opportunities for field experience and park exploration. Building core knowledge is critical, and with this knowledge comes confidence, and with this confidence, risk is minimized and daunting tasks become achievable.

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