CRM

CULTURAL RESOURCE MANAGEMENT

VOLUME 22 NO. 9 1999

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Location, Location, Location—The Arthur Ashe Monument and Monument Avenue
John T. Kneebone

Cover: Clockwise, windows restored and reinstalled on Midway, see story p. 9; statue of Mother and Child in Greenbelt, Maryland, see story p.53: foyer of the Aiken-Rhett House, photo courtesy Historic Charleston Foundation, see story p. 28.

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Public/Private Cooperation for Outreach and Education

Varna G. Boyd

U.S. 219 Meyersdale Bypass Project

Historically, most regulatory agencies have been reluctant to invite public input on federal undertakings. The recent revisions to Section 36 CFR Part 800, however, emphasize increased public involvement throughout the regulatory process. The U.S. 219 Meyersdale Bypass Project is an example of how public involvement can lead to a successful partnership between the community, the regulatory agency, and archeological consultants.

As part of the Meyersdale project, and in keeping with the provisions of the National Historic Preservation Act of 1966, the Pennsylvania Department of Transportation (PennDOT) District 9-0, in cooperation with the Federal Highway Administration, sponsored archeological investigations to determine the impact of roadway construction on cultural resources. The survey identified 68 sites, of which 21 were evaluated for their eligibility to the National Register of Historic Places. Eight of these sites were ultimately selected for data recovery investigations. The archeological data represent 12,000 years of prehistory and history in what is now the Borough of Meyersdale and Summit Township in Somerset County, Pennsylvania.

Meyersdale is a rural farming community that has long recognized the importance of its history; however, the breadth of local prehistory and the value of archeology generally had not been widely understood. Although there was some initial community support, there was concern that the archeological investigations would delay road construction, thereby hampering economic growth. In contrast, some residents hoped the archeological investigations would prevent roadway construction and the possibility of further development. Many of these residents felt the roadway would bring prospects of large fast-food restaurant chains and other "outside" interests that would diminish the small town appeal of Meyersdale. Also of concern to local farmers, especially the Amish, were the effects of the archeology on their agricultural fields and crop yields. Therefore, ever-present during the course of the archeological study was the challenge of turning the controversial highway project into a positive experience for the community. The project team determined early on that educating the public about archeological goals, responsibilities, and the regulatory process would best serve the needs of all involved. In an effort to educate the public and bring the past alive for the community, a public outreach and education program was developed to create opportunities for the community and archeologists to interact and educate one another.

Together, the community, PennDOT, the Pennsylvania State Historic Preservation Office, and Greenhorne & O'Mara, Inc. developed a public outreach and education program. Initially, meetings were held with a high school history teacher, the town librarian, and members of the historical society to gain insight on issues and approaches that would resonate within the community. Their ideas were then incorporated into the program, which involved a variety of activities aimed at attracting a diverse audience. The program included

- lectures at elementary and high schools, historical societies, and the community library,
- presentations for special interest groups such as Boy Scout and 4-H troops,
- participation at local fairs and festivals,
- field and laboratory tours throughout the course of the project,
- community volunteers in the field and laboratory,
- an invitation by the Meyersdale High School to participate in the Social Studies Curriculum Committee,

- communication with, and education of, local collectors and avocational archeologists,
- newsprint media (over 20 articles) and television features chronicling the progress of the archeology,
- a children's booklet,
- two PBS films on the project archeology: a documentary, "Ghosts of the Mountains," aired nationally; and an instructional film produced for museum, school, and state agency educational programs.

Although the community reaction to archeology was initially mixed, the program established a mechanism for discourse and resulted in increased support for the project. Through education, participation, and developing relationships and lasting friendships, many residents have a new found sense of stewardship of archeological resources. For example, after a flood that devastated many homes and farms, residents expressed concern about damage to the sites. The "Flood of '96 Remembered"* highlighted public concern on the effects of the flood on the archeological sites.

The program also fostered a partnership between project archeologists and local collectors. This increased the archeological knowledge base and provided an opportunity to educate collectors about proper recording techniques and anthropological goals.

Through educational and social interaction, a lasting relationship based on trust and shared information developed between the community and project staff. This atmosphere enabled the community to participate in both the archeological and regulatory processes. The growing community interest is also evident in the revival of the Somerset County Chapter of the Society for Pennsylvania Archaeology, which now comprises many citizens involved in the Meyersdale project efforts.

The program was well received by the local community, the Pennsylvania State Historic Preservation Office, and the Advisory Council for Historic Preservation. Specifically, the Advisory Council for Historic Preservation included the Meyersdale project in its *Selected Section 106 Cases, 1986-1996*, and stated "The project promises to be a model for public education in archeology." The program has allowed archeologists, PennDOT representatives, and the community to interact and establish clear and open lines of communication. For example, during archeological lectures, residents had the opportunity to ask questions and initiate dialog with PennDOT officials. According to PennDOT, the program and the resulting cooperative atmosphere was a key point in turning a controversial project into a winning project supported by the community. The relationship developed with the public during the course of the project resulted in a win/win situation for all involved. The community has a new roadway, a better understanding of the past, and a greater appreciation and respect for archeological resources. With community support, PennDOT was able to bring in the project on time and under budget. The archeologists gain through the data gathered, and by creating an atmosphere of mutual respect between the client, community, and archeologists.

The Meyersdale project has demonstrated that increasing public awareness and participation garners support for roadway projects, as well as cultural resources programs. In addition, the increased visibility and cooperation between agencies and the public can catch the attention of local and state politicians who can listen to not only the cries for better roadways, but also cries for historic preservation. PennDOT District 9-0 has received widespread praise, including the 1997 Preservation Pennsylvania "Initiative Award for Community Involvement," and the 1999 "Project Recognition Award" for the most outstanding project in the state.

By sharing information about local history and prehistory with the community, great strides have been made in creating an atmosphere in which archeologists will be welcome to the area for future studies. Perhaps the greatest benefit to the public and the discipline of archeology, however, is that by establishing a close relationship with the community, and especially local teachers, the data can be taken into the classroom to educate students about the importance of archeology and historic preservation. As such, the development of public outreach and education programs as an integral part of the archeology process is the best way to assure a future that honors the past, but recognizes and respects the needs of living communities.

Note

* Flood of '96 Remembered (Meyersdale, Pennsylvania: *The New Republic Newspaper*, 1996).

Varna G. Boyd, RPA, is Senior Archeologist for Greenhorne & O'Mara, Inc. in Greenbelt, Maryland.

John P. McCarthy, Michael Johnson, and Nancy Anthony

The Lorton Town Center Archeology Project Partnership

Cultural resources management activities, like most aspects of contemporary society, seek to provide maximum benefit at minimum cost. The conservation planning and research interests of public authorities seeking to maximize site preservation and/or data recovery are very often at odds with the cost minimization imperative of development interests, be they in the private or public sectors. Accordingly, archeologists and other cultural resource management professionals often feel caught in the middle between these conflicting considerations. In a project nearing completion, the Fairfax County Park Authority (FCPA) and Greenhorne & O'Mara, Inc. (G&O) are working with volunteers from the community to complete archeological evaluation and data recovery investigations at three significant prehistoric sites located along Pohick Creek in Northern Virginia prior to construction of a private development project.

This program represents an unusual partnership designed to not only achieve local research and compliance archeology objectives, but to also provide public outreach and involvement in local archeology. The critical factor in this project has been the FCPA's commitment of staff and volunteer resources to leverage the effectiveness of the private developer's financial commitment, resulting in a true cooperative venture.

Fairfax County Park Authority staff and volunteers, G&O staff, and Fairfax County Field School's teachers, excavating at, a fire-cracked rock scatter.

The project arose when the developer sought changes in the zoning to allow residential construction on a 206-acre parcel in southern Fairfax County. The property is adjacent to a commuter rail station and also has excellent access to one of the region's major commuter highways, Interstate 95. Local governments in the Washington, DC, metropolitan area routinely place a variety of requirements on developers seeking zoning changes and construction permits. In this case, because Fairfax County's Heritage Resource Management Plan established preservation of significant heritage resources as a matter of county policy, the county required that the developer evaluate the significance of 12 previously identified archeological resources at the proposed site of the Lorton Town Center development. The developer was also required to recover significant archeological data prior to construction.

Initial investigations, undertaken by G&O for the developer, indicated that three of the 12 sites warranted data recovery excavation to preserve representative site data and artifacts. Site 2076, a Late Archaic to Early Woodland occupation, is situated on a narrow terrace overlooking the adjacent creek that had never been plowed. Dense concentrations of fire-cracked rock having no charcoal suggest the possibility of sweatlodges at this location. Site 2079, located on a flat terrace also overlooking the creek that also had never been plowed, is a very functionally and temporally diverse occupation including workshop and domestic occupations dating from Paleo-Indian through Woodland periods. Finally, Site 2082 was a large lithic scatter, also located on a high terrace adjacent to the creek with a spring draining into the creek from one corner of the site. Although a large portion of this site had been subjected to plowing, portions of the site closest to the creek evidenced undisturbed buried deposits. This site appeared to have been occupied repeatedly from Early Archaic through Woodland period. As a group, these sites represent a microcosm of Northern Virginia prehis-

tory. Recovery of representative data would contribute to a greater understanding of the prehistoric residents of the area in accordance with the goals of the county's Heritage Resource Management Plan.

The FCPA and G&O, on behalf of its client, entered into a partnership to undertake further evaluation and data recovery excavation over two field seasons. FCPA and G&O share the leadership of the project; however, FCPA established the goals and objectives of the data recovery investigations and has lead the field efforts. The G&O team has supplied, at client expense, experienced field and laboratory supervisors and technical support for data analysis, while the county has supplied the services of its staff archeologist, geographic information systems support for data recording and analysis, and, most importantly, the services of a cadre of archeological volunteers, most of whom have many years of experience.

The county's program provides archeological opportunities in both the field and laboratory for people of all ages, from students to retirees. The county's volunteers receive hands-on training in the field and laboratory. Working closely with county staff, and during this project the volunteers also worked closely with experienced archeological supervisors from G&O's staff. The skills involved include shovel and trowel excavation, dry and wet screening of soil, artifact recognition in the field, making and recording field observations, drawing plans and soil profiles, and artifact processing and identification in the laboratory.

Excavations have sought to balance the quality and quantity of data collected. Fieldwork included close-interval shovel testing of the two unplowed sites and with the addition of intensive controlled surface collection of the plowed portion of the third site. Extensive manual excavation followed at Sites 2076 and 2079, while at site 2082 select locations were mechanically stripped of plowzone soil and examined for truncated subsurface features. The best-preserved portions of this site will be preserved in dedicated open-space. The jointly developed research design allowed for a flexible field strategy responsive to site data as it was recovered and artifacts processed and analyzed concurrently with field investigations. For example, the project team returned to Site 2076 to conduct additional field investigations this summer when analysis of data recovered last spring revealed a concentration of early cultural material in a corner of the site that warranted further investigation. Artifact processing, data analysis, and project report activities will continue at the FCPA laboratory facility through next spring.

In addition to hands-on volunteer participation in the field and the laboratory, the project has included several other outreach activities. While not a formally organized part of the project, a number of elementary, middle school, high school, and college groups of students have visited the sites to see archeologists at work and to learn about Native American cultures of the region. These activities seemed to grow naturally out of the county's volunteer program and its close ties to local educators. Many of the students also had an opportunity to participate in the fieldwork. One of these visits was featured as part of the introduction to the PBS video series "Ancient Civilizations for Children." Educators taking part in Fairfax County and Virginia Historical Society Teacher's Field Schools have participated in fieldwork at the sites, further increasing connections between educators and the county program. In addition, the developer is considering an interpretive display for its sales center and options for ongoing public interpretation are being discussed.

While the volunteers had the opportunity to gain, or refine, field and/or laboratory skills, they and site visitors alike had the opportunity to personally engage with the professional archeologists staffing the project, learning about careers in the field. Additionally, since the program involves volunteers of all ages, there has been opportunity for unusual intergenerational communication and sharing that has helped create a real sense of community among those involved in the project.

Hands-on participation de-mystified the processes of archeology, and hot, humid summer field conditions removed much of the romantic allure of the discipline. Yet, volunteers and visitors both had the opportunity to engage with the archeological record of the sites, and by extension, with the prehistoric residents of the region. They had the opportunity to see and touch materials last held by human hands thousands of years ago, and through this process feel a closer connection to the past.

Most important for cultural resources management, however, is the model that this project represents for achieving a balance between conflicting cost and research/preservation interests

that most cultural resource management professionals face on a daily basis. To date, the G&O team has worked over 2,500 hours on the project, including both the initial evaluation effort and subsequent project with the FCPA. FCPA staff and volunteers have contributed over 4,000 hours to the project. It is anticipated that G&O staff will participate in approximately another 1,000 hours of project effort matched by at least a similar number of FCPA staff and volunteer hours as fieldwork is completed and emphasis turns to artifact processing and data analysis. Clearly, FCPA's commitment of staff and volunteer labor has indeed leveraged the financial commitment of Lorton Town Center's private developer. The county's willingness to make a substantial contribution to a project in this way gives it considerable credibility when negotiating heritage preservation issues with developers.

It must be noted that this project was able to succeed because the developer addressed the cultural resources issues of the project well in advance of construction. Volunteer labor is not well-suited to aggressive schedule requirements. In this case, there was time to be flexible and responsive to site data as it was developed and to work with a volunteer pool of labor whose size differed each day, although a core group could be relied on. In addition, volunteer labor is not completely free. Volunteers require, and deserve, instruction and careful supervision beyond that needed by a professional excavation team. Nonetheless, all parties involved in the Lorton Town Center project count it an archeological success.

John P. McCarthy, RPA, is senior project manager–cultural resources with Greenhorne & O'Mara, Inc.

Michael Johnson is an archeologist with the Fairfax County Park Authority.

Nancy Anthony is archeology crew chief with Greenhorne & O'Mara, Inc.

Nathan Caldwell and Nancy Thomas

Volunteers Re-light Kilauea Point Lighthouse

Thanks to three dedicated, persistent volunteers who overcame several major obstacles, the historic Kilauea Point Lighthouse sent out it's signature double flash for the first time in over seven years—and only the second since February 1976—for the Volunteer Recognition Dinner at Kilauea Point National Wildlife Refuge on November 21, 1997.

Kilauea Point's four ton, eight foot high, second-order clamshell Fresnel lens, now the world's largest, began sending out its signature flash May 1, 1913. It went dark in February 1976 replaced by an automated beacon. The lens was lit for the lighthouse's 75th anniversary in 1988. Its clockworks were engaged and the lens lit in 1989 for the 200th anniversary of the U.S. Lighthouse Service.

Originally, the lens sat in a tray base supported on mercury and compressed air. A clockwork mechanism of weights and pulleys, rewound every three-and-one-half hours, turned the lens. Eventually, the light was electrified and its clock work mechanism replaced by an electric motor.

The lighthouse was placed on the National Register of Historic Places in 1979. In 1985 the lighthouse station on Kaua'i, at the northernmost point in the main Hawaiian Islands, was transferred to the U.S. Fish and Wildlife Service becoming Kilauea Point National Wildlife Refuge. Over 300,000 visitors annually view the lighthouse, seven species of seabirds and the endangered nene, or Hawaiian goose. It has also attracted hundreds of volunteers.

In 1986, then Refuge Manager Dan Moriarty convinced two volunteers, Herman Stiglemeier and Hal Frazier, to re-light the lens for the lighthouse's 75th anniversary. With the additional help of a Los Angeles firm called G Force, a laser light shown through the historic lens on its anniversary.

Getting the lens to rotate in 1989 for the 200th Anniversary of the U.S. Light House Service took Stiglemeier about a year. He redesigned and implemented a new motor operation and replaced the original bushings in the wheel bearings that the lens rotated on. The lens, showed its historic flash once again, but during a later cleaning a gear broke.

The lens stayed dark and frozen until 1996 when Jim Sparks, a volunteer with a mechanical background, asked Tom Alexander, the current refuge manager, "How can we get the lighthouse to work again?" With Alexander's permission and cooperation, and the assistance of another volunteer, Jim Hoffman, the saga began.

Hoffman and Sparks' first survey in October 1996 found a bracket missing at the top of the drive shaft. They designed a template, drew up a plan of the clockworks and took them to a machinist in Lihue, Kauai, to make a replacement. When the machine shop finished its work, a federal spending freeze prevented payment of the $250 bill. The funds and the gear were not released until May.

Sparks cleaned everything; installed the bracket, and turned on the main switch. A piece of wiring went up in smoke! Sparks replaced the old wiring and hit the switch again, but one of the motor's two double circuit- breakers had burned out. Sparks switched breakers to get power to the motor. After liberal lubrication, he tried again. The works groaned, turned one-half revolution, and spit out five teeth from the top gear. The tray that held the lamp had been raised, preventing it from turning

Sparks ordered a replacement gear from a manufacturer on the mainland. When the gear arrived, it was two inches taller than the original. Hoffman and Sparks took new measurements and searched Hawaii for a machinist to custom mill the gear but couldn't find one. They tracked down the manufacturer on the mainland to custom make the gear. The price, because of the intense labor required, was $437. The UPS strike lengthened the original five-week estimate! The gear finally arrived in August 1997.

Even with the gear and template installed and the motor overhauled, the lens would still not rotate. The wheel bearings could not touch the track they were designed to run in. The lens' weight had to be lifted to take the load off the tray to lower it to operating height.

Sparks called Stiglemeier, who described the technique used in 1988 to install the new bushings and bearings: putting in bolts with nuts and using them like small jacks taking the lens' weight off the mercury tray. Jim repeated the procedure; the tray slid into place, and the lens came down to its proper position. It was unbound and could be turned with one hand.

The lens' light source was a 1,000 watt lumens bulb, 10 times brighter than the original kerosene white vapor lamp. It was available at a local electrical supply store which stocks them for island church's chandeliers. Because the mercury and compressed air lubrication was much smoother than the bearings, Sparks installed a dampening mat under the lighting fixture to keep the bearings' vibrations from blowing out the filament. Not as smooth as the original, but safer for the environment, the historic lens was ready to send out its flash again.

The first official re-lighting of the lens was at the Refuge's annual volunteer dinner. As the lens rotated above them, Jim Sparks and Herman Stiglemeier were honored for their efforts. It has shown for several events since.

The lens is never rotated for more than an hour, keeping wear on the track and bearings to a minimum. When the Refuge plans to light the lens, it contacts the Coast Guard, who issues a Notice to Mariners about the change of the signal at Kilauea Point, and the local media to inform homeowners that live along the shoreline that the light may illuminate their windows.

The mission of Kilauea Point is still protection, but the emphasis has shifted from mariners to natural resources. To protect Newell's shearwater, a threatened seabird species found nesting on the refuge in 1997, the lens is not lit during their nesting season, including the lighthouse anniversary, the first weekend of May. Shearwaters feed at night, finding their way to the sea by the light of the moon and stars. They are drawn to bright lights and can injure or kill themselves crashing into them. The historic lens is much brighter, but less efficient, than the automated beacon, so biologists feared some Newell's might crash into it.

Nathan Caldwell is the outdoor recreation planner for the Oregon Coastal Refuges, Newport, Oregon. He was formerly outdoor recreation planner for the Kaua'a National Wildlife Refuge Complex.

Nancy Thomas is a volunteer at Kilauea Point National Wildlife Refuge.

For more information call Kilauea Point National Wildlife Refuge at (808) 828-1413.

David Pinyerd

Preservation Education on Midway Atoll

I now find myself doing preservation work on Midway Atoll, a tiny speck of land 1,200 miles northwest of Honolulu. Midway is one of those rare spots that had no human inhabitants before it was discovered in 1859. Shipwreck survivors wrote its early history with its first residents-by-choice arriving in April 1903. Twenty-three men were put ashore to set up a linking station for the first around-the-world telegraph transmission. The cable arrived just in time for Teddy Roosevelt's Fourth of July greeting a few months later.

The Commercial Pacific Cable Company started out in pre-fab buildings, but by 1905 they had moved into five permanent reinforced concrete structures designed by Henry H. Meyers of San Francisco. The buildings still stand today, looking quite picturesque with their hipped roofs and surrounding verandas framed by banyan trees. Each building has the same mass, yet each was designed with a very specific purpose: cable office, barracks, mess hall, superintendent's house, and servants' quarters. The two-story buildings are laid out in a quadrangle with a one-story servants' quarters building pushed off to one side.

The four principal cable buildings served as one of the work assignments for an Elderhostel service program that I led. An Elderhostel service program takes people 55 years and older and puts them to work on volunteer projects. I received a new crew every two weeks and worked with them on various preservation projects around the island, including drawing plans and creating a condition assessment report for the cable buildings.

Prior to the arrival of the Cable Company, Midway was a desolate atoll with little on it but sand, some small shrubs, and millions of seabirds. The atoll contains three islands within a five-mile ring of coral: Sand, Eastern, and Spit. Sand is the largest at 1,201 acres and was the first to be occupied. Japanese egg hunters used the atoll as a stop in which to gather albatross eggs for pickling. Midway was officially made a possession of the United States in 1867; however, it wasn't until the Cable Company's arrival in 1903 that the egg poachers were banned from the island. The Cable Company brought in shiploads of soil in which to grow food and to plant trees to make the island more hospitable. The dirt stabilized the soil but also brought in all of the insects (e.g., ants, termites, and cockroaches) that appear on the island today.

The next highlight in the history of Midway came in 1935 when Pan Am decided to expand its air routes across the Pacific and made Midway one of its stopovers. Huge flying boats made the trek once a week from San Francisco to Manila using Midway as a stepping stone. The planes landed in the lagoon within the atoll and disembarked passengers onto an awaiting boat for a short ride to the Pan Am Hotel. The flights were reserved for the elite who spent their time at such activities as playing golf on the brilliant white sand with black golf balls or diving into the lagoon sporting "underwater goggles."

Pacific Commercial Cable Company superintendent's house with banyan tree.

A few years after Pan Am got going on Midway, the Navy became interested in the atoll as a strategic site to counter the threats of Japan in the Pacific. In 1938 construction began on a harbor to serve primarily as a forward submarine and seaplane base and on an airstrip on Eastern Island. Albert Kahn's architecture office was commissioned to design a naval base on Sand in 1939. Kahn had started his firm in 1896 and built a reputation for designing cutting-edge factory buildings primarily for the auto industry. The office easily switched over to wartime production and was awarded $200,000,000 worth of government commissions during World War II.

Most people have heard of Midway because of the World War II Battle of Midway. Many, however, do not know that Midway, along with Pearl Harbor, was attacked on December 7, 1941. Two Japanese destroyers shelled the base at night causing chaos and destruction, some of which can still be seen today in the form of shrapnel damage to steel building members. On June 4, 1942, the Battle of Midway was begun with a Japanese bombardment of the atoll by 108 planes in an attempt to neutralize American air power on the ground and clear the way for an invasion force. Fortunately for the Americans, they had broken the Japanese code and knew much about the attack beforehand. The rest, as they say, is history with the Americans sinking four Japanese aircraft carriers, effectively turning the tide against Japan in the Pacific.

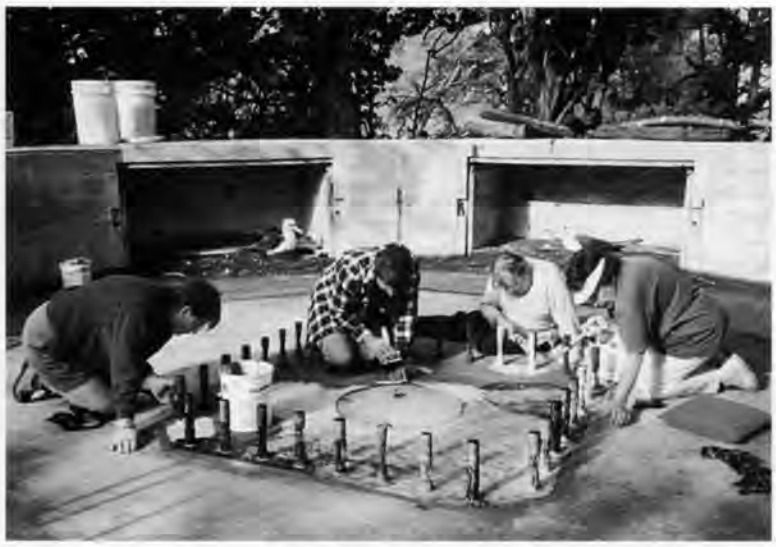
Marge Baldwin trimming off glazing compound at Midway recreation complex's game room.

During World War II, up to 15,000 men were stationed on Midway's 1,500 acres. However, within a year after the war, the Naval Air Station was put into caretaker status with less than 300 men assigned to the atoll. The Korean War re-activated the base, as did the Vietnam War, but it was the DEW (Distant Early Warning) line begun in 1958 that truly re-vitalized the base. At that time, $40,000,000 was sunk into Midway to make it the home for a squadron of planes that ran a continuous picket line between the atoll and Adak in the Aleutian chain. For years there was a Constellation leaving Midway every four hours, 24-hours a day, watching via radar for any Soviet incursions. Many of the structures, including an enormous hangar, remain on the island from the 1958 build-up.

I started work on Midway in October 1998 having been hired by Oceanic Society out of San Francisco to lead the preservation program on Midway. My first groups worked on several of the World War II remnants on the atoll. We cleaned out and conserved the metal on three 5" gun emplacements. These gun batteries are basically 30' wide concrete octagons placed on 20' high sand hills. For 50 years plant material had been allowed to accumulate taking its toll on the steel gun mounts. We also meticulously stripped 16 coats of paint off of a 5" gun and repainted it. We found grease fittings that still held lubrication, every part number, and many elements that still moved on the 20' long gun. And we undertook drastic measures to stabilize a 3" gun on Eastern Island. The 16' long gun was simply a lump of rust in the shape of a gun. We treated it with a rust-converting product that chemically reacted with the iron oxide to produce tannic oxide, which provided a stable, paintable surface. We then coated the gun with a rust-inhibitive primer and two enamel top coats.

My last two groups rehabilitated steel casement windows. The windows were in the recreation complex designed by Kahn's office in 1940 and were original to the building. Very little maintenance had been performed on the windows over the building's nearly 60-year life. Many of the panes were broken and most of the windows were inoperable.

Window rehab, I have found, is a perfect vehicle for hands-on preservation training. There's a variety of tasks, there's satisfaction in completing a job, there's tremendous cost savings as restoring windows is very labor intensive,



Elderhostelers and leader brushing on rust converter at Battery A East, Midway Atoll.

training is minimal, new skills are learned, and trainees can work indoors when it rains.

The windows we worked on were in the former game room of the recreation complex. The group stripped the windows down to bare metal, repainted and then reglazed them. It was apparent that the original exterior sash color was almost a British racing green, but since the only color available on the island was navy gray, plans are to top coat the windows with green during the next season. Logistics are a nightmare on Midway. It's one thing to not have a Home Depot just up the road, it's quite another to wait six months for a barge with your materials.

In addition to hands-on preservation work, we also archived the vast piles of paper that had been accumulating on the history of Midway. Almost every group got a chance to inventory some of the documents and then enter citations into a searchable database. What we created was a usable and secure archive that people should feel confident in contributing to. The groups also had an opportunity to interview several veterans of Midway to permanently record their memories of life on Midway.

In 1986, nine properties associated with World War II were designated the Midway Atoll National Historic Landmark. In 1992, 72 additional properties were listed as eligible for the National Register, but as part of the base's closure, 11 of those structures plus three of the NHL properties were demolished. After three years of clean up, the Navy handed the base over to the U.S. Fish and Wildlife Service.

Today, Fish and Wildlife operates the refuge through a cooperative agreement with Midway Phoenix. Midway Phoenix provides for the infrastructure and keeps the base running as a tourist destination. Oceanic Society runs the educational programs on the island, which includes spinner dolphin research and seabird research, as well as the brand new historic preservation program. Fish and Wildlife, meanwhile, cares for the natural aspects of the atoll, including the 750,000 albatross that make Midway their home. So far, the cooperative agreement is working and that allows for some valuable preservation work to be done on the atoll.

As with most any preservation program, funding is difficult. However, a bright spot has appeared on Midway's horizon. It was recently announced that Midway is a recipient of a Save America's Treasures grant. Launched by the White House in early 1998, the Save America's Treasures program was created to see that the nation's most important historic sites and objects make it into the new millennium. This funding will give a much needed boost to the preservation of Midway's historic structures and objects.

David Pinyerd is currently working on his thesis concerning the preservation of Life-Saving Service and early Coast Guard architecture in Oregon.

Photos by the author.

Suggested Reading

Samuel Eloit Morrison, *Coral Sea, Midway and Submarine Actions: History of the United States Naval Operations in World War II,* 1949.

Mitsuo Fuchida, *Midway: the Battle that Doomed Japan,* 1993.

Gordon Prange, *Miracle at Midway,* 1983.

Robert D. Ballard, *Return to Midway: The Quest to Find the Lost Ships from the Greatest Naval Battle of the Pacific,* 1999.

Recommended Web Sites

Pacific Naval Battles in World War II
<http://www.skypoint.net./members/jbp/map.htm>

Midway: Americas Four Most Important Days
<http://www.centuryinter.net./midway/midway.html>

Return to Midway
<http://www.nationalgeographic.com/features/98/midway>

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Lincoln Park
Evolution of a Landscape

Although an important site for visitors to Washington, DC, in the late-19th and early-20th centuries, Capitol Hill's Lincoln Park today is a little-known treasure seldom included in the typical tourist pilgrimages. Located a mile directly east of the Capitol, and surrounded by some of the grandest and best-preserved Victorian homes in the Capitol Hill Historic District, the park is primarily used by local residents and is seen as little more than a pleasant patch of green in a relatively dense part of the city or a convenient exercise yard for the family canine. It is cared for by the National Park Service as one of many disparate elements of the administrative grouping known as National Capitol Parks-East, and, though relatively well-maintained, provides virtually no clues of its history and significance.

For the few who take the time to investigate on their own, however, Lincoln Park offers a fascinating glimpse into Washington and the nation's past. The seven-acre swath of open space tells many stories. The ground itself, how it was planted and walks were laid through it, reveals much about the growth of the city of Washington and 19th- and 20th-century landscape ideas. An even richer vein of history is represented by the park's two sculptures, the Emancipation Group and the Bethune Memorial, installed almost 100 years apart, which face each other across the central greensward as if engaged in a symbolic dialogue.

Laid out in L'Enfant's plan for Washington as a square to hold a monumental column from which point all distances on the continent would be measured, the park, like East Capitol Street, was slow to develop, and, in fact, was used for years as a dumping ground. During the Civil War, it was the site of the Lincoln Hospital, named after the president, and among the places visited by Walt Whitman, who made rounds to comfort the injured and dying soldiers. The name apparently stuck and, in 1867, Congress authorized it to be called Lincoln Square as a memorial to the martyred leader, the first site to bear his name.

Consecrating the place to Lincoln's memory really took hold several years later, however, through the efforts begun shortly after the assassination by an African-American woman named Charlotte Scott of Virginia. Using her first $5 earned in freedom, Scott kicked off a fund raising campaign among freed blacks as a way of paying homage to the president who had issued the Emancipation Proclamation that liberated the slaves in the Confederate States. The campaign for the Freedmen's Memorial Monument to Abraham Lincoln, as it was to be known, was not the only effort of the time to build a monument to Lincoln; however, as the only one soliciting contributions exclusively from those who had most directly benefited from Lincoln's act of emancipation it had a special appeal. The funds were collected solely from freed slaves (primarily from African-American Union veterans), however, the organization controlling the effort and keeping the funds was a white-run, war-relief agency based in St.Louis, the Western Sanitary Commission. Initially, the Commission proposed a grandiose 'pyramid of sculpture' whose cost would far exceed the $20,000 that was raised in the first few months of the campaign. When additional appeals failed to produce the requisite funds, the Commission considered merging its efforts with other campaigns for a national monument to Lincoln (including one that would have placed the monument on the Capitol grounds).

After several years, the Commission abandoned its plans for an elaborate memorial and settled on a much simpler plan. This more modest sculpture was based on a design developed by an American artist living in Italy who, upon hearing of Lincoln's assassination, had independently produced a model for a statue of Lincoln and a kneeling, newly-freed slave. In 1871 the Western Sanitary Commission paid Thomas Ball to execute a monument based on his original model. Unlike the Commission's first scheme, Ball's sculpture failed in a fundamental way to capture the spirit of emancipation—that the former slaves were now free and equal to their fellow white citizens. The great abolitionist, Frederick Douglass, disliked the sculpture's not-so-subtle implication that the slave plays no role in his own liberation, kneeling servant-like beneath Mr. Lincoln's outstretched hand. On some level, the Commission recognized the problem and

required Ball to make minor modifications that in its view overcame it. The monument was cast in Munich in 1875 and shipped to Washington in 1876. Congress accepted the Emancipation Group, as it came to be known, from the "colored citizens of the United States" for placement in Lincoln Square and appropriated $3,000 for a pedestal upon which it would rest.

On the day of the statue's dedication, the 11th anniversary of Lincoln's assassination, April 14, 1876, Congress declared a holiday in the city and a parade was held down Pennsylvania Avenue around the Capitol and along East Capitol Street to the park. Among the marchers were African-American organizations such as the 21st Battalion of Colored Troops, Masonic units, and the Sons of Purity wearing white aprons and carrying the colors. President Ulysses S. Grant presided at the dedication ceremony which included the participation of dignitaries, such as members of the Cabinet and the Supreme Court as well as Congressmen and Senators. The Emancipation Proclamation was read and Mr. Douglass delivered a speech in which he recounted that Lincoln had been the only white man with whom he could speak for more than a few minutes who didn't point out the color of his skin or make him feel like less than an equal. Douglass overcame his personal distaste of the sculpture and ultimately supported the effort to build the monument primarily because he believed it would serve blacks as a defense should they ever be accused of ingratitude toward the man who was seen as largely responsible for their freedom.

In spite of its limitations, the statue proved popular enough that a replica (paid for by a wealthy abolitionist) was made in 1877 for the city of Boston, long a bastion of anti-slavery sentiment, and was placed in Park Square where it stands today. As the principal monument to Lincoln in the capital city of the late-19th and early-20th century, the statue was an important stop on tourist itineraries and views of it were reproduced in souvenir postcard books. In addition, it became the definitive sculptural treatment and visual representation of Emancipation, appearing on a three-cent commemorative stamp in 1940. Its role as a memorial to Lincoln was eclipsed, of course, by the Lincoln Memorial in West Potomac Park which was dedicated in 1922. Significantly, the new Lincoln Memorial emphasized Lincoln's role as 'Defender of the Union' rather than as 'the Great Emancipator.' (In an unlikely coincidence, one of Ball's students at the American Academy in Rome was Daniel Chester French, who sculpted the most famous representation of Lincoln, housed in the Lincoln Memorial.)

The installation of the monument provided the impetus for the federal government to finance landscape improvements for the park. By the time of the dedication, an iron post and chain fence enclosed at least a portion of the park. When the Washington Gaslight Company laid city gas mains in the neighborhood in 1874, lines were extended into the park to allow 15 gas lamps to be installed along graveled park walks. In keeping with English romantic landscape traditions, the walks had been laid out in curvilinear patterns. In the following year, a small wooden park lodge providing bathroom facilities and storage for tools was built. The park's plantings were improved during this period as well. By 1886, inventories prepared by the U.S. Army Corps of Engineers reported that the park was planted with 322 evergreen and deciduous trees of 38 varieties and 24 shrubs of 11 varieties, interspersed with flower beds. By 1884, two small ornamental fountains with spray jets, stone

EMANCIPATION STATUE
LINCOLN PARK

From a 19th-century souvenir postcard.

copings, and basins of Portland cement had been installed on the north and south sides of the park just east of the 12th Street axis.

The park's landscape remained essentially unchanged with a few minor exceptions until 1934. In 1894 a five-foot-wide asphalt walk from the Lincoln statue to the East Capitol Street entrance was built. Also among the changes was the replacement, in 1914, of the original lodge by a trellised, stucco building sited at the eastern side of the park. Identical to the lodges constructed at the same time in other city parks, including the one that still stands in LaFayette Park across from the White House, the second structure survived until the mid-1970s when it was torn down to make way for the Bethune statue.

In 1931, plans were made to significantly alter the park's landscape, particularly the layout of the walks. The infrastructure by then had begun to suffer from insufficient maintenance, and an extensive refurbishing was necessary. The funds for the work did not become available in large quantities until the beginning of the Roosevelt Administration and the Works Progress Administration began awarding grants for Federal Works Projects. The work done at Lincoln park included tree surgery and replacement, regrading of walks, repair of benches and other general maintenance work. As part of these improvements, the park's 19th-century curvilinear walks, characteristic of the Victorian period's penchant for English Romantic landscape traditions, were replaced with more uniformly diagonal and circular paths which began to give it the appearance it would have in modern times. The Romantic landscape was giving way to a more formal landscape inspired by Beaux Arts concerns with symmetry and axiality (also characteristic of the work being carried out by the National Park Service during the same period to restore the National Mall according to the dictates of the McMillan Plan.)

Ironically, the New Deal refurbishing of the park coincided with a plan first proposed by the National Capital Park and Planning Commission in the late 1920s that would have destroyed the park and replaced it with Independence Square, the centerpiece of a proposed extension of the Mall eastward along East Capitol Street. The proposal to line East Capitol Street with monumental federal buildings was kept alive until the late 1940s and may have played a role in the neighborhood's decline during the same period. In the 1950s a segment of a proposed Inner Loop freeway circling central Washington would have marred the park's western side.

In spite of threats to the park's existence from federal planners and highway engineers, neighborhood residents and others continued over the years to use it as a gathering place. Among the events which the park hosted were religious services, outdoor band concerts (primarily the military service bands), freedom rallies (during the Civil Rights era) and commemorations of Emancipation and the Lincoln statue dedication.

The most recent major chapter in the park's evolution began in 1959 when Congress authorized the National Council of Negro Women to build a memorial to its founder, Mary McLeod Bethune, a well-known African-American educator and government advisor. Conceived originally to celebrate the 100th anniversary of the Emancipation Proclamation in 1963, the monument was not dedicated until 1974 because of problems with fundraising (the bronze memorial ended up costing $400,000) and the priority given by the Council, an umbrella organization of African-American women's groups, to the efforts in support of the Civil Rights movement.

The new memorial required a new landscape design for the park, which was produced by Hilyard Robinson, a well-known, DC-based African-American architect. In order to accommodate the Bethune Memorial, the Lincoln statue was turned 180° to face east and moved east to be in line with 12th Street nearer to the center of the park. The 1914 lodge at the park's east end was removed and replaced with a large plaza in which the new statue would be placed. Since the figure of Mrs. Bethune (standing on her pedestal) is 17 feet high there was some concern that the new memorial would overshadow the Lincoln statue. In order to ensure the latter's preeminence, the plaza and the adjoining greensward (a new feature in the park) were set several feet below grade. Neighborhood needs were addressed by the two small children's play areas flanking the Bethune Memorial.

The sculptor of the Bethune Memorial was Robert Berks, an African-American artist based in New York. On the day of the assassination of President John F. Kennedy, which took place while Berks was working on the commission for

the Bethune statue, Berks sculpted a half-life size head of the President which ultimately became the gigantic Kennedy bust in the Grand Foyer of Washington's Kennedy Center for the Performing Arts. When it was dedicated in 1974, the Bethune Memorial was the first statue of an African American or a woman of any race on public park land in Washington. (The only previous statue of a black person was that of the freed slave in the Emancipation Group, which was based on Alexander Archer, the last man captured under the Fugitive Slave Act.)

The completion of the new landscape plan and the installation of the Bethune Memorial essentially transformed the park's landscape into the one that exists today. Minor changes are regularly carried out by the National Park Service, such as new lighting installed several years ago and routine tree replacement. The continual change and transformation of this landscape over the last 130 years leave a rich legacy, a layering of history that makes it a key component of the Capitol Hill Historic District.

With its national monuments commemorating the history of the nation's struggle for racial equality, the park is the crown jewel of Capitol Hill's urban squares and a special place in Washington. Local residents, represented by the Capitol Hill Restoration Society, and other interested groups, are working with officials of National Capital Parks-East to develop and install an appropriate wayside marker to interpret the diverse history of the site. Interpretation will ensure that the park is thought of not only as a great spot to walk the dog or enjoy flowering trees but also, once again, as one of the capital's most important historical sites.

References

Goode, James M., *The Outdoor Sculpture of Washington, DC,* Smithsonian Institution, 1974

Olszewski, George J., *Lincoln Park,* National Park Service, Division of History, Office of Archeology and Historic Preservation, July 1968

Peterson, Merrill D., *Lincoln in American Memory,* Oxford University Press, March 1994

Savage, Kirk, *Standing Soldier and Kneeling Slaves: Race, War, and Monument in 19th Century America,* Princeton University Press, November 1997

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Learning About Lowell

Lowell National Historical Park preserves and interprets the history of the American Industrial Revolution in Lowell, Massachusetts. The park includes historic cotton textile mills, canals, operating gatehouses, and worker housing. Turn-of-the-century trolleys operate, and boat tours trace the city's canals in the summer.

While the National Park Service has prepared many fine technical reports on the history of Lowell and its mill workers, much of this material is not easily available to the general public. Anyone interested in learning more about Lowell should visit the park's web site <http://www.nps.gov/lowe>. The following publications provide useful information about Lowell as well.

The historic resources of Lowell are varied and complex.Photo by Ron Greenberg.

Bibliography

Bewett, Mary H. *The Last Generation: Work and Life in the Textile Mills of Lowell Massachusetts, 1910-1960.* Amherst: University of Massachusetts press, 1990.

Dublin, *Thomas. Lowell: The Story of an Industrial City.* Washington, DC: U.S. Department of the Interior, National Park Service, Division of Publications, 1992.

Dublin, Thomas. *Women at Work: The Transformation of Work and Community in Lowell, Massachusetts, 1826-1860.* New York: Columbia University Press, 1979.

Gross, Laurence F. *The Course of Industrial Decline: The Boott Cotton Mills of Lowell, Massachusetts, 1835-1955.* Baltimore: The Johns Hopkins University Press, 1993.

Mrozowski, Stephen A., Grace H. Ziesing, and Mary C. Beaudry. *Living on the Boot: Historical Archaeology at the Boott Mills Boardinghouses, Lowell, Massachusetts.* Amherst: University of Massachusetts Press, 1996.

Weible, Robert, editor. *The Continuing Revolution: A History of Lowell, Massachusetts. [Lowell], Lowell Historical Society, 1991.*

Harry A. Butowsky

The Legacy of Mission 66

"Mission 66," the National Park Service construction program initiated in 1956, was responsible for many park facilities—including over 100 visitor centers—which continue to provide vital services throughout the national park system. With new construction funds recently being made available, many national park managers are now looking forward to completing needed rehabilitation, modernization, or replacement of visitor centers and other Mission 66-era facilities. At the same time, the preservation of monuments of modern design has increasingly concerned preservationists who believe that the potential historical significance of Mission 66 architecture may be overlooked. The following two articles report on some of the recent efforts of the NPS Park Historic Structures and Cultural Landscapes Program to research and assess the legacy of Mission 66 in the national parks.

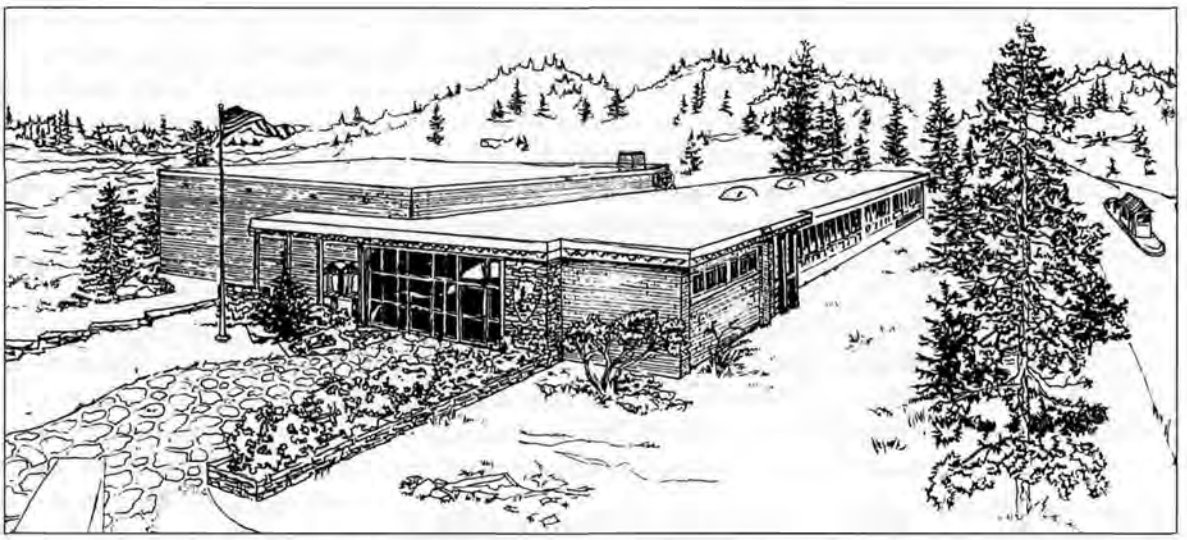
Ethan Carr

Mission 66 and "Rustication"

The goals of national park planning and design have remained remarkably constant since the earliest days of the National Park Service: park buildings and other structures should be kept to a minimum and be designed so that they "harmonize" with their landscape settings and reduce impacts on natural systems. What has changed, over time, is what we mean by "harmonize," and how we perceive and understand natural systems and the extent of impacts to those systems. If preserving nature has remained a constant goal for park planning, nature itself has been a shifting concept.

A first generation of Park Service designers provided a powerful response to this challenge in the form of Park Service "rustic" construction. Park Service rustic was essentially picturesque architecture that allowed buildings and other structures to be perceived as aesthetically harmonious elements of larger landscape compositions. The pseudo-vernacular imagery and rough-hewn materials of this style conformed with the artistic conventions of landscape genres, and therefore constituted "appropriate" architectural elements in the perceived scene. The logs and boulders of rustic façades added to the illusion of vernacular craft, and reduced visual contrasts between building and site. But Park Service rustic design did not harmonize simply because building materials suggested the textures and colors of nearby trees and rock formations. Elaborately ornamental façades, for example, often called attention to themselves, and buildings were conspicuously sited as scenic focal points. Rustic buildings harmonized with the site not just by being unobtrusive, but also by being consistent with an aesthetic appreciation of the place. Rustic development helped preserve nature, in this sense, because nature was conceived largely as scenery.

But by the 1930s different ideas about both nature and architecture began to be felt at the Park Service. Advances in wildlife biology and other natural sciences began to yield a more complex, scientific idea of nature. As recently described by Richard West Sellars, Park Service biologist George M. Wright, in particular, forced at least some park managers to face the fact that the biological degradation of parks could be invisible, in the sense that it had no effect (or even, according to some, a positive effect) on park scenery. This more scientific approach began to define nature in the parks more as biology than as scenery. American architecture also began to change fundamentally in the 1930s, as architects began to consider new approaches to design more or less directly inspired by European Modernism. Changes in building technology following World War II encouraged this trend. Advances in steel framing, reinforced concrete,



and prefabricated architectural elements offered profound practical and economic advantages over more craft-oriented construction techniques. By the end of World War II, both nature and architecture were in the process of conceptual transformations in the United States.

At the same time, the national park system was immersed in one of the largest crises it had ever faced. During the postwar years, more visitors than ever before overwhelmed many of the most popular national parks, and virtually everyone arrived by car. Rustic facilities developed 20 or 30 years earlier were overwhelmed in many parks, where long lines formed outside comfort stations and automobiles spilled onto meadows and roadsides. In 1956, Park Service director Conrad L. Wirth initiated the "Mission 66" construction program, a 10-year campaign of new park development to address what had become deplorable conditions. Wirth was trained as a landscape architect, and in the 1930s he had been responsible for the Park Service's state park development program. His chief of planning and design, Thomas C. Vint, had been chief landscape architect since 1927 and was one of the originators of the Park Service rustic style. Other Park Service designers active in the 1950s, such as architect Cecil Doty, had been principal Park Service designers during the rustic era. But if in many ways this group continued the tradition of park planning that they had created over the previous decades, in other ways, postwar conditions, changing ideas about nature, and new practices in the construction industry necessitated new approaches. Mission 66 designers needed to find new ways for park development to "harmonize" with park settings.

As the negative effects of larger numbers of visitors and their vehicles began to be better understood, for example, Mission 66 planners responded by centralizing services and controlling visitor "flow" in what were called "visitor centers." In some cases, planners proposed removing some park facilities and relying on

Proposed "Rustication" at Bryce Canyon National Park. Current proposals call for this Mission 66 visitor center (Cannon & Mullen/WODC, 1958) to be remodeled, as shown below.

motels and other businesses springing up in gateway communities to serve visitors. Enlarging parking lots and widening roads encouraged this trend, since faster roads made access in and out of parks quicker; but under Mission 66, parking lots, comfort stations, gas stations, and other visitor services were bound to proliferate, in any case. Conrad Wirth remained firmly committed to the idea that the parks were "for the people." Mission 66 planning proceeded under the longstanding assumption at the Park Service that increased numbers of visitors (and their cars) should be accommodated. Modernized and expanded park development, usually restricted to existing road corridors within the parks, was therefore proposed as the essential means of preserving nature to the greatest degree possible, while making sure visitors were not turned away.

New Harmony?

The Visitor Center and Cyclorama Building, Gettysburg National Military Park (above), and the Panther Junction Visitor Center, Big Bend National Park (below), are important examples of Mission 66 visitor centers. In order to complete the volume of work created by Mission 66, the NPS relied on consultants as well as in-house designers. The Cyclorama Building was designed in 1958 by the preeminent architect Richard J. Neutra with his partner Robert E. Alexander, and houses a 19th-century panoramic painting of the battle. The Panther Junction Visitor Center was designed in 1964 by NPS architect Cecil Doty, with other designers in the NPS Western Office of Design and Construction (WODC). Functional and restrained, postwar park architecture sought to "harmonize" with park landscapes in new ways.

But if Mission 66 continued traditional assumptions, it also exploited the functional advantages offered by postwar architectural theory and construction techniques. Mission 66 architects (whether in-house or consultants) employed free plans, flat roofs, and other established elements of modern design in order to create spaces in which large numbers of visitors could circulate easily and locate essential services efficiently. The architects also used concrete construction and prefabricated components for buildings, highways, and other structures. Development was often sited according to new criteria, as well. Visitor centers were located according to functional concerns relating to park circulation, and so were not calculated as components of larger landscape compositions. Although Mission 66 park development was no longer truly part of the landscape, in this sense, in many cases this meant that buildings could be sited less obtrusively, near park entrances or along main roads within the park. Stone veneers, earth-toned colors, and low, horizontal massing also helped continue the tradition of reducing visual contrasts between building and site. Mission 66 architecture was not picturesque or rustic, but it did "harmonize" with its setting (at least in more successful examples), although in a new way. Stripped of the ornamentation and associations of rustic design, Mission 66 development could be both more understated and more efficient than rustic buildings.

Architectural tastes, however, continue to evolve, as does the idea of nature. The widespread construction of Mission 66 caused a backlash among environmentalists who wanted less development in parks, even if it meant effectively restricting public access. Modern architecture has also been condemned as insensitive, and "neo-rustic" has been espoused as a contemporary style more appropriate for park settings. But it is difficult for neo-rustic architecture to do more than recall the meaning and authority of the original. Façades may once again be covered with stone and logs, but this stylistic revival has not included a return to the planning and design theory of the rustic era, which sited development in or near scenic areas in order to create total landscape compositions of structures and site. Park develop-

ment today is often sited where it will have the least "environmental impact," even if the chosen areas lack scenic qualities. The preservation of nature, as it is understood today, demands a planning process that to some degree prevents picturesque architecture from "harmonizing" as it did in the past.

The taste for neo-rustic design has also resulted in numerous proposals to "rusticate" Mission 66-era architecture by adding new façades of log, stone, or simulated adobe. Original rustic façades, in fact, typically covered standard balloon-frames and concrete foundations, so why not add neo-rustic façades to Park Service modern buildings? At times, this approach may be very successful. New façades, however, will not change the basic planning assumptions under which the buildings were sited. Neither will they alter structural systems and materials that allowed the use of free floor plans and unorthodox fenestration. Original Mission 66 designs were often successful, in their own way. But by rusticating exteriors, we may lose the chance to restore the original aesthetic and functional integrity of these buildings (many of which have suffered ad hoc alterations over the years), and in the worst cases we may end up with second-rate, modern-neo-rustic hybrids, with neither aesthetic nor functional coherence.

The original rustic era was a period of great accomplishment at the Park Service. There is less sympathy, today, for the Mission 66 planning techniques and design styles devised by many of the same Park Service professionals in the 1950s. But Mission 66 produced many fine examples of public architecture imbued with a progressive sense of government's role in the management of national parks and historic sites. In terms of both historic preservation and simple practicality, it makes sense to learn more about Mission 66.

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Sarah Allaback

The Mission 66 Visitor Center

A change in philosophy .... That's why you started seeing [concrete] block in a lot of things. We couldn't help but change ... I can't understand how anyone could think otherwise, how it could keep from changing.

Cecil Doty, architect, National Park Service, 1986

When Cecil Doty began his career with the Park Service in the early 1930s, adobe, boulders, and hand-hewn timber were the basic materials for park buildings. The rustic style not only reflected the current philosophy toward park stewardship, but also the contemporary economic situation and nationally popular architectural trends, such as Craftsman bungalows. With an excess of manpower and raw materials, the Park Service could afford extraordinarily well-crafted facilities. After World War II, everything changed. The Park Service experienced an explosion of visitors: an increase from 3,500,000 per year in 1931 to almost 30,000,000 by 1948. As an architect for the Western Office of Design and Construction (WODC) in 1954, Doty would find himself accommodating Park Service needs with modern buildings of steel, glass and concrete block.

Doty felt that Mission 66 planners had little choice but the modern style in which to clothe their innovative plans for the nation's parks. The need to supervise and educate increasing numbers of visitors created an urgent call for scores of "visitor centers," which would centralize activities and services and prevent the public from venturing thoughtlessly into fragile natural areas. In the postwar era, modern architecture not only represented progress, efficiency, and a scientific approach, but it also came "ready-made" in mass-produced parts that could be constructed on site cheaply and efficiently, which was important considering the urgency of the situation. Like the other park architects confronting the postwar crisis, Doty designed centralized visi-

tor facilities that provided access to diverse basic services and introduced visitors to the park environment. When possible, the new facilities featured important views, which could be exploited with the large windows typical of the period architecture. If rustic buildings were designed to be seen, Mission 66 visitor centers were often designed to see from, whether through a window wall or from an integral outdoor terrace.

The four Mission 66 visitor centers that have been determined to meet National Register criteria (the Quarry Visitor Center at Dinosaur National Monument, the Wright Brothers National Memorial Visitor Center, the Visitor Center and Cyclorama Building at Gettysburg National Battlefield, and the Administration Building at Rocky Mountain National Park) illustrate the importance of siting and circulation to this new building type. The "change in philosophy" so obvious to Doty involved more than substituting concrete block for adobe.

When Conrad Wirth approved the design of Quarry Visitor Center in 1957, curators in the Museum Department knew that traditional Park Service interpretation was changing. The museum staff had asked for a windowless building with artificial lighting, conducive to the display of interpretive materials and objects. But architects in the WODC favored a radically different approach. The San Francisco architectural firm of Anshen and Allen, as consultants to the Park Service, designed a visitor center with extensive glazing that they felt would emphasize the site's location on a natural stone ridge. Visitors were offered a very different experience than that of the traditional park museum. After walking up a curving concrete ramp to the second floor terrace, they could view the fossilized dinosaur bones themselves, *in situ*. A stairway at the far end of the terrace led to the lower level and museum exhibits, including a window into the paleontologists' working laboratory. Circulation through Quarry Visitor Center gave visitors a unique sense of the continuous fossil deposit encased in the rock, as well as an idea of the paleontologists' daily activities. The use of modern materials and building techniques allowed Anshen and Allen to create this relationship with the site, and the flexible building program resulted in a dynamic experience.

Siting and spatial planning were an equally significant part of the visitor center Ehrman Mitchell and Romaldo Giurgola designed for Wright Brothers National Memorial in 1958. As they entered the lobby, visitors could see through large glass panels to the "first flight" area beyond. After proceeding through a dimly lit exhibit room, they entered a double-height assembly space with a dome roof and floor-to-ceiling windows. Interpretive rangers gave talks here, where they could point out the reconstructed hanger and bunker outside, as well as the markers indicating the distances of four early flights. The memorial erected to honor the Wrights in 1903 was clearly visible to the south, high atop Kill Devil Hill. By the time they left the building, visitors were familiar with most of the significant themes and features of the site. Again, modern design and construction was used effectively to create strong connections between the interpretive spaces inside, and the features preserved in the park itself.

As at the Wright Brothers site, circulation was also used to create a strong sense of commemoration in the design of the visitor center for Gettysburg National Military Park. The primary programmatic requirement at Gettysburg was to provide a massive cylindrical space to house the historic cyclorama painting. But architects Richard J. Neutra and Robert E. Alexander used the building program to create a memorable procession through the building. As visitors followed the path from the parking lot, they were introduced to the enormous drum housing the

Salt Pond Visitor Center, Cape Cod National Seashore. Designed by the NPS Eastern Office of Design and Construction in 1964, this visitor center set the "architectural theme" for development throughout the national seashore, which was the first development program of its type completed by the NPS. Photo by Jack Boucher, c. 1970, courtesy Denver Service Center, Technical Information Center.

Visitor Center, Rocky Mountain National Park. Designed by Taliesin Associates (Frank Lloyd Wright's successor firm) between 1964 and 1967, this building featured an innovative Cor-ten steel structural frame, expressed as a frieze-like motif on the building's façade. Seen here is the rear (administrative) elevation of the building. Photo by E. Carr.

cyclorama. A mysterious source of water above the office wing fed a ground level reflecting pool. The sense of mystery increased once they entered the building and followed a corridor to the cyclorama entrance. A spiraling ramp took them through the semi-darkness and into the center of the cylindrical painting. After viewing the painting, visitors then exited onto the second floor and emerged on the other side of the building, where a ramped walkway led up to a rooftop viewing terrace. From here, the panoramic view of the battlefield was almost identical to that of the painted depiction. The trip from the parking lot, through the building, and out to the battlefield was carefully choreographed to orient visitors, to interpret the historical significance of the site, and to provide a dynamic relationship between interpretation and the subsequent experience of the park itself.

Even the Administration Building at Rocky Mountain National Park, a facility actually sited outside the park, incorporated scenic views of park features into its circulation plan. The visitor center designed by Taliesin Associated Architects in 1964-65 faced the main road into the park; but circulation inside was oriented toward views of the Front Range on the opposite side of the building. An exterior balcony around the auditorium end of the building framed the highest mountain in the park—Long's Peak—in a bay of the balcony. Visitors entered the balcony from one end of the main lobby and, after walking around three sides of the exterior, re-entered the mezzanine of the auditorium. From here, they could either walk downstairs to the main auditorium or return to the lobby. Circulation through the building depended on this route from the lobby, "to the park," and then back inside.

Although these buildings have the integrity to qualify for the National Register, today none retain the original circulation patterns described here. Quarry Visitor Center is often entered via its original exit. The windows that used to reveal the "first flight" area at Wright Brothers are now obscured by a bookshop. The Cyclorama Building lacks its water features, and visitors are no longer directed up to the exterior terrace; and here, as well, the lobby has been cluttered with retail sales items, a common problem with visitor centers of this period. At Rocky Mountain, the Administration Building's balcony still exists, but was rendered useless by a projection booth that sealed the auditorium entrance. These alterations significantly affect our experience of each building. In fact, many of the qualities Mission 66 architecture is sometimes assumed to lack—relationship to the park landscape, sensitivity toward the visitor's experience, and concern for the natural environment—were often carefully considered aspects of the original designs, subsequently impaired by alterations.

As we begin to assess the National Register eligibility of the remaining original Mission 66 visitor centers, it is important to remember that decades of change have already influenced the appearance and use of buildings we now call Mission 66. The philosophy behind the Mission 66 program was not merely a matter of employing modern architecture, but a strategy to preserve resources, educate the public, and provide standard services in parks throughout the country. Whenever possible, Mission 66 visitor centers should be evaluated according to their successful fulfillment of such valuable historical functions.

Sarah Allaback, Ph.D., is an architectural historian and author of Mission 66 Visitor Centers: The History of a Building Type *(draft) Washington, DC: Park Historic Structures and Cultural Landscapes Program, 1999.*

Douglas C. Comer

Continuing Education
My Fulbright in Thailand

Days in Bangkok began before sunrise. I would rise to work with my laptop computer on a deck overlooking the street next to our apartment. Dimly lit in a bluish hue, I must have looked eerie to passers-by. At dawn monks would begin to make their daily rounds, dressed in the saffron robes that were their only possession except for the metal bowls they carried. Housewives, moved by a characteristic Thai generosity and the desire to make the merit necessary for a better life in their next incarnation, would come out of their homes to dish plain rice into the bowls, providing each monk a day's sustenance.

I envied the monks the simplicity of their lives as I worked furiously to meet deadlines. The host institution for my Fulbright Senior Scholarship in cultural resource management was the Thai Office of the National Culture Commission, but my workplace was at SEAMEO-SPAFA (the Southeast Asian Ministers of Education Center for Archaeology and the Fine Arts). My assignment was to write cultural resource management guidelines for the Southeast Asian Ministers of Education Organization (SEAMEO). SPAFA would then promulgate the guidelines to the nine member countries of SEAMEO (Brunei, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam).

An office in the new SPAFA building was a great asset in this endeavor. The five-story facility housed one of the finest archeology, art, and architecture libraries in Southeast Asia, put together under the leadership of Khunying Manmas Chavalit, former Director of the Thai National Library. The Director of SPAFA, Dr. Ruang Charoenchai (now deceased) made the resources of not only the library, but also the graphics and publishing department readily available to me. The SPAFA Senior Archaeologist, Ajarn Pisit Charoenwongsa, one of the foremost Southeast Asian archeologists and a pioneer in the region for cultural resource management, introduced me to other leading researchers in Southeast Asia and led me to the material I would need in order to prepare the guidelines. The guidelines had been his idea. His staff provided tours of archeological sites that filled almost every weekend and holiday for my family and myself. Also, he arranged for me to present lectures and conduct review meetings at venues in Thailand, Malaysia, Singapore, and Cambodia.

Enveloped by a world where the ideal was a "cool heart," I began to perceive my determination to achieve my objectives as being perhaps too heated. On Saturday mornings we would pass Lumpini Park on our way out of town to whatever archeological site we were visiting that weekend. Groups of people would be in the park, practicing *tai chi*, a regimen of rhythmic movements thought to harmonize body and soul with lines of force in the world. Next weekend I really should try that, I would think.

I have been back several times since my departure in April of 1994, but so far, regrettably, I have not joined those in Lumpini Park. By the time we bid a reluctant farewell to Bangkok, SPAFA had printed a draft version of the guidelines, which were distributed for review to the nine member nations. One year later, in May of 1995, SPAFA held a conference at the National University of Singapore at which review comments were presented. Informed by the comments of representatives from the nine countries, and the enlightening discussions that followed, I made revisions to the guidelines, which were then approved as *The SPAFA Integrated Cultural Resource Management Guidelines for Southeast Asia, Vol. 1, Material Culture.* The printing was in English, which is the *lingua franca* in all countries in Southeast Asia, with the exception of those in what was once French Indo-China. The guidelines have also, therefore, been translated into Vietnamese.

Participants in a cultural site management course taught at SPAFA.

A monumental Buddha image made in the 14th or 15th century at Souvanna-koumkham in Borkeo province, Laos. Note holes in torso produced by looters searching for artifacts that are often associated with such monuments. Photo by Bounheung Bouasiseng-paseuth.

In the summer of 1997 my wife and I returned to SPAFA to teach a course on the management of cultural sites. Students were from not only the SPAFA countries, but also Myanmar and Taiwan. In 1998 I presented a symposium about cultural resource management, which featured the guidelines, at the Indo Pacific Prehistory Association (IPPA) conference in Melaka, Malaysia. With Dr. Richard Englehardt, Director of the UNESCO Principal Regional Office for Asia and the Pacific (PROAP), I am co-editing a volume about CRM in Southeast Asia to be jointly published by UNESCO and the IPPA. I have become a Research Fellow at SPAFA. At the request of the Cambodian Ministry of Culture and Fine Arts and the Royal University of Phnom Penh, and in collaboration with Dr. Miriam Stark and Dr. Bion Griffin of the University of Hawaii, I have launched production of a geographical information system (GIS) database for the lower Mekong delta in Cambodia. The GIS will be the basis for a management plan we will write for the area. The area, about 60 miles south of Phnom Penh, is to be sustainably developed as a destination for tourists, encouraging them to spend more time in the capital and nearby. It includes Angkor Borei, an archeological site that might hold the key to understanding the development of the Khmer civilization that flourished at Angkor Wat and other sites in northeast Thailand, and persists in the modern nation of Cambodia. Over the next two years I will participate in two training courses to be held in Bangkok by the UNESCO Principal Regional Office for Asia and the Pacific (PROAP), and the establishment by PROAP of GIS/cultural resource management centers in Nanjing, China and Sri Lanka. During that same period, in conjunction with US/ICOMOS, I will be conducting several projects in Southeast Asia that demonstrate the use of aerial and satellite remote sensing and geographical information systems in finding and managing archeological and other heritage sites. These sites include not only Angkor Borei, but also the Plain of Jars in Laos and Vigan, a colonial era town, in the Philippines. This program is being conducted with support from the Environmental Systems Research Institute, Inc. (ESRI). My tenure with the Fulbright program has also led to research and involvement with cultural resource management efforts in the mid-East and Africa.

When we first returned from Thailand, I would awake very early each morning, still impelled by the sense that I had only a short time in which to absorb a great deal of material and then to produce something useful from that material. I still feel that urgency. Sites in Southeast Asia are being damaged or destroyed at a truly alarming rate. Destruction brought about by development may have slackened with the economic downturn in the region, but these economic woes provide even greater incentive to loot. David Byrne has estimated that 80 percent of the sites in Thailand have been looted, a figure probably equaled in other Southeast Asian countries. Illicit trafficking in Cambodian artifacts, for example, is rampant. Sites in Southeast Asia should be very important to all of us. They are often exquisite, and reveal an aesthetic system that is intriguing because it is different from the Western one to which most of us are accustomed. Scientifically, the sites inform us about the ancient links between East and West, links of trade and the diffusion of religious and political ideas. The antiquity of these links, and the ways in which they operated, have yet to be finally determined. The need for action draws me back to Bangkok. An equal attraction, however, is a fascination with a culture that takes a long view, and which teaches the patience that will be necessary to solve the problem of site destruction in Southeast Asia in a way acceptable to all involved.

After 23 years with the National Park Service, for most of that time as Chief of the Applied Archeology Center, Douglas C. Comer (comer@wam.umd.edu) is now principal of Cultural Sites Research and Management (CSRM), a non-profit organization. Over the next two years he will lead the US/ICOMOS Cultural Sites Analysis Initiative. In this capacity he will write standards and protocols for the use of aerial and satellite remote sensing in the finding and management of archeological and other heritage sites.

Lee Goodwin

Retrofitting an Advanced Fire Protection System

An effective cultural resource management program must include protection of the resource against a variety of hazards. Often, however, protective measures conflict with the inherent conditions of historic or artistic properties. In these circumstances, considerable thought must be given to finding the best means of protection without compromising the integrity of the resource. Smoke detection and fire suppression systems in particular pose such conflicts, yet they can provide the most important protection against catastrophic loss. With careful planning, such systems can be installed with minimal alteration to the facility's historic fabric and the least visible intrusion of its aesthetic design. A recent project at the School of American Research, Santa Fe, New Mexico, shows how a risk management program can be implemented in this context.

The School of American Research is a private nonprofit center for advanced studies that contributes to the understanding of the human condition by supporting the study and practice of anthropology and Southwest Indian arts. The School holds a preeminent collection of traditional Southwest Native American art and artifacts, covering the 450-year period from Spanish contact to the present. This collection is housed at the Indian Arts Research Center, an open storage facility designed to show the objects in an aesthetically pleasing setting while maintaining the highest level of control over environmental conditions and security. Unlike a museum, the IARC does not exhibit its own collection, but rather curates it for study by Native Americans and by scholars, and for public education through guided tours, publications, and loans of objects to other institutions for interpretive exhibitions.

Several years ago, as part of its comprehensive security and risk management program, the School initiated a phased plan to upgrade the IARC facility's environmental and security systems and to re-arrange collection storage to maximize the use of space. Since the building's construction in 1977, the collections have nearly tripled in size from approximately 4,000 objects to nearly 12,000. Under this project, funding from an anonymous source was used to install an early-warning high-sensitivity smoke detection system and FM-200 fire suppression system. Although the concept seemed straightforward, the School faced numerous challenges in selecting and installing a sophisticated system in a space that simply had not been designed for it.

The IARC's two storage vaults accommodate multiple activities of the various programs through which the collection is used. The Native American Heritage Program, which provides outreach to tribal communities and facilitates their use of the collection, serves individuals and groups ranging from elementary school children to elders. Native American artist convocations annually bring groups of artists together to discuss their work, the collection, and broader issues in a given medium. Research appointments allow scholars to work closely with the collection for studies ranging from art historical to technical scientific analyses. The Native American artist residency program offers a selected artist studio space and unrestricted access to the collection each summer. Public tours of the collection are

Installation of FM-200 fire suppression system. Temporary barriers have been constructed around collection shelving. The discharge piping is installed along existing vigas, and later enclosed with finish carpentry so the viga appears wider than it was originally. Each storage container weighs approximately 850 pounds. The two vaults required a total of six containers, which were later enclosed in cabinets.

A portion of the main storage vault. The discharge nozzles are the only visible part of the fire detection and suppression system. Three are visible in this photo, at the base of the corbels.

conducted weekly, and quarterly membership lectures highlight different collection areas. In order to permit instantaneous visual and physical access to objects during these activities, the facility was specifically designed for open storage.

Conceptually, the design complements the beauty of the collection. Pueblo-style architecture and decor provide a setting conducive to understanding the works within. The subdued design neither detracts from nor intrudes upon the visual presentation of the objects. Together, the collection and setting are about aesthetics, and enhance the activities that take place there. Given these parameters, it was important to select a system that could quickly detect and extinguish a fire without damage to invaluable, often fragile objects on open shelves, while at the same time blending in with the building fabric and aesthetic design as inconspicuously as possible.

After soliciting and reviewing project proposals, the School selected E and M International (EMI), of Albuquerque, New Mexico, as its contractor. EMI understood that the practical realities of funding nonprofit operations can make it difficult to justify major capital expenses for risk management. They proposed a system designed to eliminate false alarms or an accidental discharge of the suppression agent, to provide the earliest possible detection of fire, and to rapidly extinguish any class of fire. This type of system is increasingly being used in museum and archival settings.

The system selected combines a Fenwal AnaLASER high-sensitivity smoke detector (HSSD) system with a Fenwal FM-200 fire suppression system. Component functions are controlled by a system monitored by a third-party service provider. The HSSD system actively samples air on a continuous basis. The air is passed through a laser beam in the detection chamber, where a photon sensor can distinguish between smoke particles and room dust or other airborne contaminants. The products of combustion can be detected in the incipient stage of a fire, even when smoke concentrations are at extremely low levels. The system can also detect precombustion emission from overheated electrical components.

FM-200 is a colorless, odorless gas that extinguishes fire by removing heat energy so that the combustion reaction cannot be sustained. It does not significantly reduce oxygen levels, nor is it toxic to humans or the environment. It is rapidly deployed, but does not overpressurize a closed space by displacing room air. It has no particulates or residues. It is, therefore, safe for use in occupied areas and where museum objects are stored. These characteristics enabled FM-200 to meet the parameters defined by the use of space in the IARC facility.

The staff at EMI and Fenwal Protection Systems faced several challenges in the system design in order to minimize potential risk to the collection in the event of a discharge. The two vaults encompass a variety of spaces, from large, two-story open expanses to small, partially enclosed areas. Since the shape and proportions of the space affect air flow, the placement of detectors was crucial to optimize their performance. Equally important was the placement of the FM-200 discharge nozzles. Not only did they need to be strategically configured for fire suppression, they could not be too close to open shelving where fragile kachinas or pottery were stored. Since FM-200 is released under pressure, staff at the School was concerned about the physical effects of discharge on items close to the nozzles. Finally, because it had been determined from the outset that the system would be concealed by finish carpentry to blend into the room, it was necessary to place all of the piping, conduits and storage canisters in such a way as to accomplish this.

Together, all of these requirements necessitated months of redesigning and revising the engineering of the discharge pipes, the number

and placement of the discharge nozzles, and the number of FM-200 storage containers. Final plans were reviewed by the building architect, the environmental engineer who designed the automated climate control system, and the local fire department. Structural analysis determined that the floor deck in one area would have to be reinforced due to the load of the storage containers. Before installation could begin, temporary barriers had to be constructed to protect the collection against dust or other physical damage.

The system was configured so that piping and conduits ran along existing vigas (exposed beams), and then were enclosed so that the viga simply appeared as a wider beam. The storage canisters were arranged near walls, and cabinets were built around them to match the existing storage furniture. Discharge nozzles were placed at a safe distance from objects on shelves while still providing maximum protection. Because the School's needs had been articulated from the outset, the contractor was able to successfully complete the project within both the aesthetic and technical requirements for the facility.

The School's experience demonstrates that it is possible to retrofit existing buildings with technical systems that seem incompatible with original design elements. The installation of bulky storage canisters and large-diameter pipes in areas that were not planned for such components can be achieved with careful attention to engineering and structural issues, as well as aesthetics. Preservation of cultural property and the safety of the people who use them are primary concerns of resource management. Given the potentially catastrophic effects of loss or damage from fire, the labor and expense involved in protecting against this hazard are easily justified.

Lee Goodwin is IARC Coordinator with the School of American Research.

Thanks to Gina De Vargas and Ed Vaillancourt of EMI and to Marv Charney of Kidde-Fenwal for consultation.

John L. Cotter

Dr. John L. Cotter died in Philadelphia on February 5. As Curator Emeritus of the University Museum at the University of Pennsylvania, John had kept working on numerous projects in his office at the Museum until shortly before his death. John Cotter's contributions to education, scholarship, and preservation are impressive indeed. For his numerous colleagues and friends in the National Park Service he is remembered as a semi-legendary figure whose achievements included archeological excavations and research at Jamestown, Virginia, the Natchez Trace Parkway, and Independence National Historical Park. He helped to co-found the Society for Historical Archaeology and served as its first president and first editor. He was the chief of the research team which investigated the Clovis Type site under the sponsorship of the Academy of Natural Sciences. His important publications ranged from Jamestown to his seminal (with Dan Roberts and Michael Parrington) study of Philadelphia's archeological legacy. This latter work has spawned a series on the Archaeology of Great North American Cities. He was an NPS manager at Tuzigoot National Monument (he completed almost four decades of service in the NPS). He served as the state supervisor of the archeological survey of Kentucky. He taught what was probably the first course in historical archeology at the University of Pennsylvania and was the young discipline's ardent champion. His interests in cultural history stretched from the "Paleo Indian to the ever arriving present." His bicentennial publication *Above Ground Archaeology* proclaimed our most recent past as grist for the archeological mill. His honors and awards include the J.C. Harrington award for contributions in the field of historical archeology, presented by the Society for Historical Archaeology, and the David E. Finley Award for outstanding achievement in historic preservation, presented by the National Trust for Historic Preservation.

David G. Orr
Director
Valley Forge Center for Cultural Resources

David Casebolt

Foamed Boron Preservative

A Wood Treatment Alternative

San Francisco Maritime National Historical Park manages a collection of seven historic ships, more than 100 small craft and thousands of maritime artifacts. This collection includes numerous wooden industrial artifacts that were exposed to decay fungus or insects during their long years of service. Ongoing decay of historic artifacts can be difficult to treat utilizing conventional methods. This is especially true of structures such as ships, which often incorporate numerous voids within their design. We have undertaken testing and initial application of foamed boron preservatives to specifically treat these spaces. These treatments appear highly successful, providing for the first time, treatment of these vulnerable areas.

Past preservation treatments, mostly using chemicals in petroleum-based oil and grease carriers were of limited effectiveness. Many were highly toxic and presented significant health and environmental risks. Most often these preservatives were applied topically and there was little migration of preservative beyond the surface. These preservatives were fairly effective in small-dimensioned lumber but not in large timbers, because significant portions of the wood were untreated and remained vulnerable to decay.

Roller, brush, and spray application of borate preservative is effective when the wood to be treated is accessible. Treatment of the hold of C.A. Thayer *was accomplished in less than four hours. The area was accessible for public use the following day. Photo by Tim Campbell.*

Since 1985, we have incorporated a variety of boron based wood preservatives into our Integrated Pest Management Program to treat wood decay and insect infestation within our collection.

Boron is a ubiquitous element, present in fresh water, sea water, the soil, and all plants. Water soluble boron preservatives or borates, are effective against a broad spectrum of wood destroying organisms. Borates are highly toxic to wood decay fungi yet low in toxicity to mammals and fish. Borate applications can also effectively control subterranean termites, Formosan termites, drywood termites, carpenter ants, and many wood-boring beetles. Borate preservatives do not break down or otherwise become ineffective over time; however, borate treated wood can lose effectiveness due to leaching by water. Care must be taken to protect treated wood from the weather.

Because they are clear, borates do not interfere with the visual appearance of wood surfaces. This is an important consideration when treating historic objects or structures.

High wood moisture content contributes to an environment that promotes the decay of wooden ships. We are now using that high moisture environment to our advantage, and gaining the most thorough preservative treatment to date. Borates are most commonly applied to wood surfaces and allowed to diffuse deep into the wood. Diffusion is enhanced by high wood moisture content. Borate diffusion can be improved by treating and then covering treated material with plastic sheeting to slow the drying process.

Treatment of large wooden components of historic ships has presented particularly difficult challenges to the preservation staff of the park. Foremost among these challenges has been the difficulty in effectively treating internal structural components of vessels. Much like the cavities in a wood stud wall, portions of a ship's wooden hull are difficult to access and treat with preservatives. While limited access can be provided, sprays,

mists, and powdered formulations are often unable to reach many of the vessels most vulnerable components. To achieve complete treatment, we have recently incorporated high volume water-based foam generators into our treatment arsenal. These machines permit us to direct preservative rich foam into hull cavities, coating surfaces completely and providing the protection they require.

The use of foam machines permits effective borate application throughout the vessels while creating only minimal inconvenience. Our initial large scale treatment of the steam schooner *Wapama* in 1988-89 utilized a complex system of fixed pipes and spray nozzles which, although effective in the areas treated, was highly intrusive and limited public enjoyment of the vessel. Portions of the vessel, including those not reached by the spray, remain untreated.

Foamed borate has a number of distinct advantages over standard liquid treatments. Foam adheres well to the surfaces it contacts. It can fill voids entirely and may be pumped or poured into spaces where it often remains undisturbed for many days. This encourages high levels of initial absorption and in components with high moisture content can permit diffusion to begin immediately. Repeat application can provide sufficient boron for protection of even the largest timbers.

Commercial foaming equipment is available for use with borate products, and is very effective for residential-sized structures. Our requirements for large ships were far greater. We needed equipment that could generate several thousand gallons of foamed preservative quickly and efficiently. We investigated foam-generating equipment utilized by other industries and evaluated several designed for use by fire departments to quickly produce dense blankets of foam. These proved highly successful. The equipment we selected can produce 15,000 gallons of foam using 250 gallons of 15 percent borate solution in about 20 minutes. Pre-mixed borate solution is pumped to the foam generator where a foaming agent is injected and foam produced. We can quickly fill internal voids with thick, preservative rich foam that flows into every space.

In addition to foamed borate application we continue to utilize a 10-15 percent solution for application by spray, brush, roller or dipping. We also use low volume mists, fused boron rods, and powder applications. Much has been learned during the years since 1985, and our experience with boron treatments has proven to us that this preservative can provide an increased level of protection of the wooden vessels and artifacts in our care.

David Casebolt is a museum specialist (conservation) at San Francisco Maritime National Historic Park, CA.

Michael Laws

The Aiken-Rhett House

Historic Charleston Foundation Looks at its Past and Sees its Future

The docent began her tour by saying, "At Drayton Hall, they haven't added anything to the building. Here at the Aiken-Rhett House, we haven't taken anything away." And it's true. Throughout the Aiken-Rhett House, along with pealing paint and exposed plaster lathe, the visitor clearly sees the efforts to update and add comfort for the residents. For example, in the kitchen area, the oil lamp still hangs from the ceiling, the gas line runs next to it. The early 20th-century knob and tube wiring is stretched over the gas line, and the old gaslight is now electric. It is all still there, frozen in a time capsule that spans one-and-a-half centuries and countless lives.

When acquired by the Charleston Museum in 1975, the Aiken-Rhett House posed a unique problem. Other historic properties in Charleston, South Carolina were restored to a particular period and told a specific story. What era and historic depiction should be represented by this

1817 urban plantation, complete with dependencies, slave quarters, and even original privies? William Aiken, Jr. extensively renovated the house in the 1830s. His family lived there in opulent luxury. They entertained the highest members of society. Even the President of the Confederate States, Jefferson Davis, was their guest. Few properties could better depict the grandeur of the Antebellum South. Aiken was the largest slave holder in his state. The lives of African Americans, upon whose free labor the luxurious living of the owners was financed, can not be forgotten. After the war, the house, along with the city, fell into disrepair. Its significance was overlooked as Charleston slowly recovered a century later, and the house was never renovated. It remained a dusty mirror, reflecting the Reconstruction period. All are significant stories; however, the question was which should the Aiken-Rhett house tell. The answer was "all of them."

John Robinson, a cotton factor in Charleston, constructed the house on the outskirts of Charleston around 1817. Debts forced him to sell the house in 1826 to one of his creditors, William Aiken, Sr.. Aiken used it as rental property. A carriage accident took the life of Aiken in 1831, and his business and the house passed to his son, William, Jr.

William and his newly-wed wife, Harriet, began an extensive renovation of the house. The sandstone steps were removed and the main entrance was relocated to the side. The first floor was converted to twin drawing rooms. An addition was added to the east end, containing a dining room on the first floor, and a luxurious ballroom on the upper level. The brick exterior was stuccoed, changing the architecture from Federal to Greek Revival. The slave quarters, located above the detached kitchen, were enlarged, presumably to house the increased number of domestic servants needed to operate the urban plantation and entertain guests. The block-long rear lot also included a two-story stable with additional slave quarters in the upper level, a cow shed, chicken shed, and two privies. All were constructed of brick, and surrounded by a ten-foot high brick wall.

The Aiken-Rhett House. Photo courtesy the author.

Aiken was extremely successful in business. He inherited his father's mercantile business, but was a successful rice planter in his own right. He owned Jehossee Island, a 3,300-acre plantation. He was the largest slaveholder in South Carolina, and reportedly the wealthiest man in the state. He entered politics in 1838, serving as a legislator, then a senator in the state government. In 1844, he became governor of South Carolina. He was elected to the United States Congress in 1851, and served three terms. During this time, he and Harriet entertained the highest members of society in their home.

In 1857, he retired from the political world and, with his wife and their daughter, toured Europe. During their grand tour, which lasted for more than a year, they purchased several pieces of art. Arrangements were made with Aiken's cousin, Joseph Daniel Aiken, to supervise the construction of an art gallery addition to their house. The gallery was located off the main entrance.

With the coming of the Civil War, life would drastically change in Charleston. Aiken, although a unionist before the war, strongly supported the Confederacy. When Confederate President Jefferson Davis visited the city in 1863, he stayed at the Aiken's home. Aiken gave a lavish dinner party for the president, attended by Charleston's finest. Mary Boykin Chesnut recorded in her diary that "Mr. Aiken's perfect old Carolina style of living delighted Jefferson." Even though the war raged, it could not stop another joyous occasion that occurred at the home. Aiken's daughter, Henrietta, married a young Confederate officer, Captain A. B. Rhett and the celebration was one of the grandest ever hosted in the city.

Charleston suffered greatly during the war. Union gunboats shelled the city almost daily. In 1863, a fire destroyed a huge area of the downtown section. However, the Aiken house escaped

Docents escorting visitors through the house provide interpretation as well as insure preservation. Photo courtesy Historic Charleston Foundation.

the damage suffered by residences built closer in to the town. After the war, the pall of economic depression covered the city. The South was defeated, and Charleston was almost dead. Aiken spent the next two decades working to restore its prosperity, but it was not to come. William Aiken died in 1887. Harriet Aiken lived with her daughter and son-in-law until she died five years after her husband.

Just as the city withered in the post-war years, so did the house. Henrietta Aiken Rhett began to close off the parts that were not being used. No longer needed for lavish parties, the ballroom became a storage room. The glory that was such a part of the house before the war was forever gone. Over the years, the portion used for living space continued to decrease as funds dwindled. Improvements were made to the home's working systems; however, the old plumbing and wiring were not removed. The property passed to the Rhett's son. His widow, Frances Hinson Dill Rhett, donated the property to the Charleston Museum in 1975.

Work was begun to assess the immediate needs of the property. More than $1.2 million was spent to stabilize and protect the structure. In 1982, the house was finally opened for public visitation. The leaking roof, and the piazzas which had become unsafe, were replaced in the 1980s. Then in 1889, Hurricane Hugo struck a direct hit on Charleston. The chimneys of the Aiken-Rhett House toppled in the blow, trees were uprooted, the cow shed and one of the privies were demolished. Repairs were made to make the house weather tight again, and the two unrepairable outbuildings were replaced with replicas. However, the visitation fell off drastically. Charleston Museum closed the Aiken-Rhett House to daily visitation in 1993, and transferred ownership to Historic Charleston Foundation (HCF) two years later.

HCF continues the policy of preservation as much as possible, and uses interpretation in that effort. If the visitors know the history, the whole history, and understand its significance, they will appreciate the need to save what is left of the house. Therefore, docents endeavor to give the most complete picture possible. The extravagant lifestyle lived by the Aiken family was only possible because of slavery. Even though the life of the house servants was considerably better than that of a field slave, they were still enslaved. The slave quarters, just a few yards from the main house, are stark and cold. The visitors, who moments before were marveling at the beauty and splendor of Aiken's home, can be overwhelmed when they realize that bits of coral or light blue paint remaining on the walls in the slave's home were applied by the slaves who lived there one-and-a-half centuries before. These are all that remain of what would have been considered a luxury by the occupants.

"We are dedicated to preserving the house, rather than restoring it," says HCF's Executive Director, Carter Hudgins. Therefore, a three-pronged approach based upon preservation, restoration, and archeology has been developed. The goal, Hudgins explains, is to maintain the interior of the house and the dependencies in their current condition. However, in order to accomplish this, the exterior must be restored to be completely weather tight. "We have a completely different set of standards for exterior restoration as compared with interior preservation. We must maintain the exterior, or we will lose the interior."

With visitation numbers increasing yearly (20,598 in 1998), protection and carrying capacity are the critical issues. Hudgins looks to discover the "best future" for the Aiken-Rhett House. Regardless of what that "best future" of the Aiken-Rhett house is, the past, not just the glorious heritage of the Antebellum South, but the entire legacy, is preserved at the Aiken-Rhett House. Like the building itself, it may not be pretty, but it is authentic. The management and staff are dedicated to saving all of it, and telling the complete history.

Michael Laws is a National Park Service park ranger at National Capital Parks-Central in Washington, DC.

Wade H. Broadhead

Cattle, Control, and Conservation

For over 100 years cattle have grazed on public lands throughout the West and their impact to vegetation communities and their role as agents of erosion have been well documented.[1] While substantial efforts have been conducted to understand the interchange between cattle grazing, wildlife, and ecosystems, archeologists have long pondered the effects cattle have on archeological sites. A recent federal court ruling (Comb Wash decision) requiring the BLM to intensify its NEPA (National Environmental Protection Act) analysis regarding the issuance of grazing permits has given us the chance to study cattle grazing on archeological sites. In 1998, the Gunnison Colorado Field Office began a new process to evaluate the renewal of grazing permits. The Bureau of Land management, Gunnison Field Office, developed a three-pronged cultural management plan utilizing predictive modeling, archeological inventory, and experimental archeology to better understand, assess, and react to cattle grazing on BLM land. The Gunnison Office has begun a long-term project to both understand how cattle shape the archeological landscape, and identify those undiscovered sites currently being shaped.

The Gunnison field office encompasses over 600,000 acres in a high mountain environment in West Central Colorado and is almost blanketed in archeological sites. A majority of the sites in this upland environment is relatively shallow lithic scatters highly susceptible to surface disruption. Archeologists at the Gunnison Field office have noticed obvious displacement of artifacts at cattle watering holes, and they wanted to understand how sites frequented by cattle differ from those sites, which are completely ungrazed by cattle. A project was begun to develop a better understanding of livestock grazing along with other natural processes which also shape archeological sites.

The first tool utilized in the attempt to understand the impact of cattle grazing on archeological sites was an intensive literature review. Over 20 years of previous research and inventory were examined for each allotment currently being re-evaluated. All previously recorded sites and projects were transferred onto a GIS generated map, which also included the digitized allotment boundaries. This activity produced a fine GIS map with the allotment boundaries, and all cultural sites located within that area. A separate sheet was kept which recorded the percentage of acres already inventoried and the eligibility of those sites. To these maps were added the assiduously collected monitoring data by our Range and Biological staff indicating areas heavily grazed (heavily grazed was defined as the removal of 60-80 percent of the years current plant production). The heavy grazing data was then sketched on the "base" cultural map in red. The Field Office now had one base map that could illustrate areas heavily impacted by cattle compared to the previously identified archeological resources. This map now allowed the staff to know where the cattle are grazing heavily enough to affect the local vegetation, and which of those areas has or has not been inventoried. Target zones, those areas where cattle have removed the vegetation and increased erosion, but have not been examined for archeological resources, readily revealed themselves after these differing sets of data were brought together on one map.

With only one full-time archeologist and one summer seasonal it was apparent that the Resource Area needed to narrow the search corridor. A plan was devised to use a rough predictive

The lack of plant height and interspacing indicates the overgrazed character of the range outside an exclosure in Gunnison County, Colorado. Photo courtesy the author.

model to understand where significant archeological resources should occur. Data was taken from the largest inventory ever done in the Field Area to construct a GIS/Arcview coverage which, when applied to a USGS topographic map, highlighted all areas where important archeological sites should be found. The coverage was generated using the simplest criteria of slope, aspect, and distance to water. The Field Office now had a set of base maps with lightly shaded regions indicating where we should find sites. These maps were cross-referenced with the first maps to identify those regions that are being adversely effected by cattle and are likely to be the location of archeological sites.

The third approach to understanding the impacts of grazing at the BLM was to scientifically examine cattle trampling on a typical site for the region. The author and Eric Bjornstead, a research assistant from Western State College of Colorado, banded together to create a lithic scatter site composed of 200 manufactured stone flakes. The "site" was placed across a fenced exclosure, which has not been grazed in 20 years, and outside the exclosure into an adjacent heavily grazed extinct water source. The site was chosen for its lack of pre-existing cultural resources, its ability to represent typical grazing conditions across the Field Area, and its location in an area already heavily grazed in the past. With the inception of this experiment the archeologists hoped to understand how one season of cattle grazing affected a typical site in the representative region. Archeologists wanted to see if they could decant the effects cattle have on sites from those of Mother Nature.

The site was seeded in typical lithic scatter pattern with lithic concentrations and scattered isolated flakes. The site was divided into two sections, the grazed section and the ungrazed exclosure section. Each flake was numbered and its location recorded with a laser transit and placed number side down. All types of material found in the Gunnison Basin were incorporated into the study as well as every size category. Six tools were made for both sites including fine unnumbered projectile points. Since projectile points are often chronological indicators for archeologists it was deemed necessary to add them to the study to see how they fared. The site was located on the 43, 486 acre Iola allotment that is grazed for three weeks by 1,200 yearlings.

The site was visited just after grazing ceased and re-recorded using the laser transit, which has a 1 cm margin of error. Only 74 percent of the artifacts were found on the ungrazed site compared to while only 70 percent recovered on the grazed section. The average amount of movement for the ungrazed site was 2.2cm with no greater than a 7cm move. The cattle site saw an average of 13.25cm movement with some flakes displaced more than one meter. The locality offered a sandy loam soil and in only two weeks the researchers observed artifacts almost totally buried. Surprisingly, lichens were observed already established on one flake after only three weeks. All tools and points were found inside the exclosure while three projectile points were missing from the grazed site. Whether the points were taken or merely sunk into the substrata is unknown. No other evidence of looting was identified. The site was left intact for another recording at the end of the summer to allow researchers to study the non-grazing effects and natural site formation processes.

The BLM Gunnison Field Office has taken a proactive stance concerning cattle grazing and continuation of this project will depend on the future availability of funding and manpower. It is hoped that this experiment will help future archeologists understand the scope and nature of cattle disturbance on sites, which have been heavily grazed. Since the BLM is a multi-use land management agency, methods are being devised so that grazing and archeology can coexist. After the goals of this project are realized, identification of significant sites and understanding of the effects of cattle to those sites, the next step will be to develop methods of appropriate mitigation. Archeologists at the BLM Gunnison Field Office have begun a long process of effectively managing cattle grazing in relation to cultural resources in the hopes of preserving sites of importance for many generations to come.

Notes

1 A. Mendel and S.Trimble." The Cow as a Geomorphic Agent- a Critical Review." *Geomorphology* 13 (1995) 233-353.

T. Fleischner. "Ecological Costs of Grazing in Western North America." *Conservation Biology*, Vol. 8 No. 3, September 1994.

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Steven M. Baumann

Integrating GIS and Cultural Resources Databases for Archeological Site Monitoring

The National Park Service, Western Archeological and Conservation Center (WACC) has developed a GIS and database system that allows parks to better manage cultural resources by linking all available descriptive data and graphics into a unified desktop computer system. The system is WACC's Integrated Cultural Resources Databank (ICRD). The ICRD was developed as a tool for managing prehistoric and historic-period archeological resources, and it can aid in the protection and monitoring of those resources.

For many national parks with threatened cultural resources, systematic archeological site monitoring programs generate necessary information that aids resource managers in effectively planning and budgeting for site preservation, protection, and archeological data recovery. The purpose of site monitoring programs is grounded in the National Park Service's mission to preserve and protect those resources. However, many sites on park lands have never been revisited by archeologists or other resource management professionals subsequent to their original discovery and documentation. Only 27 percent of the National Register eligible sites in the Archeological Sites Management Information System (ASMIS) database for 17 Pacific West and Intermountain Region parks have been revisited since they were first documented. This is due in part to limitations on staff and funding, but also is in part the result of the absence of clear monitoring goals and effective, usable monitoring systems. The WACC system is one tool that can partially overcome these limitations. Baseline site data including professional recommendations can provide managers with consolidated information to better identify and prioritize monitoring activities for at-risk sites, so that it may not be necessary to monitor all sites. However, data must be readily accessible. The ICRD system is a useful tool that can provide accessible and unified cultural resources information at low cost.

When at-risk sites are identified, how can resource managers maintain, interpret, and use monitoring data? The ICRD system is based on a geo-referenced databank designed for managing Section 106 compliance and site monitoring. ICRD links archeological base maps, document archives, site maps, images, and collections data with archeological site data recorded in the ASMIS. Using industry standard, off-the-shelf database, GIS, and imaging software, NPS-standard archeological databases including the ASMIS, List of Classified Structures, National Register of Historic Places, and Automated National Catalog System (ANCS+) are integrated with state-level site data and archeological project data. Development of the system was supported by four Intermountain and Pacific West region parks, Amistad and Lake Mead national recreations areas, the Mojave National Preserve, and Death Valley National Park. Completion of additional systems is planned for four additional parks. The evolution and refinement of the system benefited from collaboration with NPS archeologists and computer specialists in the Intermountain System Support Office (Santa Fe) the GIS Field Technical Support Center (Albuquerque), and GIS specialists at Scientific Technologies Corporation (Tucson).

The ICRD originated as a database and GIS project for Amistad National Recreation Area (NRA), Texas. It is modeled on the paper system of archeological base maps and electronic databases that have been in use at WACC since 1979. The original WACC system linked information on archeological projects, sites, collections, archives, and compliance activities. The goal of the Amistad NRA project was and is to consolidate all descriptive and graphic data into a user-friendly system—in essence to automate the WACC Archeological Databank and link those

data with graphic files. When used at its full potential, the ICRD system provides resource managers with a tool to manage Section 106 compliance, track programmatic activities, project budgets, identify potential resource projects, monitor sites and changes in site condition, provide comprehensive information for making eligibility determinations, and identify preservation, protection, and maintenance priorities.

The ICRD is an ArcView-based interface for accessing both dynamic and static cultural-resources data in a drill-down system of maps, databases, and digital archives. Dynamic data are information that can be changed or updated (e.g., ASMIS site data, monitoring data, base maps). Static data are the archival information accessible from the system (e.g., digital site forms, sketch maps, and photographs). Three integrated components form the core of the system: the geographic, database, and digital imagery components.

The geographic component of the system is made up of dynamic data that includes maps and map themes, USGS quad maps, shaded-relief maps, archeological base maps, AutoCAD technical maps, and ARC/INFO coverages. In ArcView, a map theme is a layer or collection of geographic features and attributes. Accessing maps and themes in the ICRD's geographic component is accomplished with point and click navigation. Users navigate or "drill-down" from a small-scale (1:250,000) shaded relief map in the system's main view to large-scale USGS map quads (1:24,000), shaded relief maps, AutoCAD technical maps, ARC/INFO coverages, and other map themes.

The database component is comprised of data for map themes, as well as, dynamic external databases with archeological site, project, collection, and NAGPRA data. Pre-programmed ArcView menu, button, or switchboard selections allow ICRD users to plot sites, create site themes and legends, query and display site and project data, and go directly to external site, project, collections, and NAGPRA databases. The system draws on external data sources to plot, display, and query information. The system design permits users to add information in one place and one time only and to access or output that information from and to multiple sources. Users need only update or "feed" external databases, such as ASMIS or ANCS+, to bring current data into the system.

The imagery component of the system also provides both dynamic and static data. It combines photographs with scanned images of original site forms, site sketch maps and technical maps, site and project notes, and illustrations. From any site point or polygon plotted on a USGS quad map, shaded relief map or other map, users can link to the digital images for a particular site, thereby having most, if not all, site data available from a single desktop computer.

From a single site point or polygon on a map, ICRD users can drill-down to access a wide array of archeological data. This is particularly useful when current or historical data are needed for compliance or site monitoring purposes. Once monitoring data are collected, they can be plugged into the system easily and, along with baseline site data, made directly accessible to resource managers. Once a monitoring program is in place, maintaining current data in a usable format is both a management and technical challenge. The flow of data from the field, to the office, to the computer system and back (out of the system) to park managers in a usable form must be standardized and user-friendly. The ICRD system is the repository for the information and allows integrated access to it. Archeologists or cultural-resource specialists must develop a protocol for collecting the data, processing the paperwork and associated materials, and inputting the information into the system's constituent parts.

For example, baseline site data are collected during initial site documentation. State site forms and site sketch maps, artifact inventories, and photographs are primary information sources. Supplemental data, including ASMIS impact and condition assessment data, also can form part of the baseline site record. WACC field archeologists have collected ASMIS data since 1989. A simple one-page ASMIS Field Form is attached to state site forms for fieldwork. The two together provide baseline site information in the site database that can be output to required state and NPS paper and electronic formats. Collecting baseline ASMIS data including impact, condition, and research-potential assessments with a chronological record of monitoring, provides a comparative basis for subsequent monitoring activities. When used for site monitoring, these same data fields can be plugged back into the ASMIS database. Additional data fields can be added to suit specific needs. Although many

state site forms evaluate site impacts and condition, ASMIS provides the ICRD system with NPS-standard assessment values that are linked to the Government Performance and Results Act (GPRA) goals.

Ease of use and standardization are fundamental to the ICRD system. Both dynamic and static baseline monitoring and site data are accessible from multiple sources linked to the ICRD system. Static data are the digital archives. Digital images of original site forms, sketch maps, and photographs stored as Adobe Acrobat documents are linked to each site in the geographic component. Like paper archives, these documents provide access to primary source information and therefore can not be changed. For monitoring, they provide comparative information that is the basis for documenting physical changes at a site over time. Copies of archive documents can be printed from ICRD to provide reference in the field for site monitoring. New impacts to sites can be documented on monitoring forms and disturbances plotted on site map and photograph copies. The monitoring data are then entered into the system and the updated map and photographs are scanned and added to the system. A separate monitoring map and photographs may be scanned and continually updated through digitization. Links to the new map file are predefined; all the ICRD user must do is make the site trinomial the name of the scanned map file. Then from site point or polygon, ICRD users can display or print the original site map and documentation, current monitoring data from the ASMIS database, and the monitoring site map.

The ICRD system includes additional monitoring data links. Microsoft PowerPoint users can create monitoring slide shows from digital images of sketch maps, forms, and photographs. The slide show may include multiple photographs and maps accessible by mouse click from site points or polygons on USGS map quads. The click opens the Site Information Switchboard, and the user need only click the switchboard button labeled "Site Monitoring" to start the slide show. Links are predefined; the users identify the slide show by the site trinomial (temporary numbers may be substituted for trinomials) and store it a predefined directory.

There are numerous advantages to the ICRD system over a paper record system. All descriptive site and monitoring data, maps, and graphics are easily accessible from a point or polygon on a USGS map quad or by site query. If the databases are updated, information also is updated in the GIS. Digital archives are easily accessible for reference and they can be used, printed, and copied without damage to the originals. There are few limitations to changing or updating slide shows, the digitized site monitoring maps, or the site and monitoring databases.

Integrating baseline site data, professional and management recommendations, with a georeferenced system of maps, archives, and photographs, provides an easy-to-use yet powerful resource management tool. Overall, the design and use of ICRD supports GPRA goals to enhance cultural resources preservation, protection, and interpretation.

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Grand Canyon NP Opens New Curatorial Research and Storage Facility

Grand Canyon National Park recently hosted an open house and ribbon cutting ceremony to celebrate the opening of its new Curatorial Research and Storage Facility. The park's Collection Storage Plan, prepared in 1989, recommended a new museum storage building to replace the sub-standard building which housed over 250,000 catalogued objects. Over a 10-year period, work on the new storage building was accomplished in stages as funding became available. The new facility features state-of-the-art environmental systems for heating and cooling, dust filtering, humidity control, fire detection and suppression, and interior and exterior security. The controlled climate storage is designed to help protect and preserve valuable artifacts such as the Thomas Moran paintings, split-twig figurines, archives documenting tourism development at Grand Canyon since the late 1800s, pioneer artifacts, Ancestral Puebloan pottery, 10,000-year-old giant sloth bones, and paleontology specimens from various layers of the canyon.

For further information, contact Sandra Perl, management assistant, Grand Canyon National Park.

Candace Clifford

Moving Lighthouses

Seven Foot Knoll Lighthouse, Baltimore, Maryland. Photo courtesy JCC/NPS.

In recent weeks much media coverage has been devoted to the relocation of the Cape Hatteras Light Station away from the eroding shoreline. The 199-foot-tall brick tower, along with the station's oil house and two keepers' dwellings have been moved 2,900 feet to place them 1,600 feet from the shoreline. In the new location, they have approximately the same orientation with the sea as when the tower was completed in 1870. Although many lighthouses have been moved, this is the most spectacular lighthouse relocation ever attempted.

The tallest lighthouse in the United States, Cape Hatteras has a granite foundation supporting a conical tower made from one-and-a-quarter million bricks. Originally 1,500 feet from the shoreline, the tower stood 300 feet from the ocean in 1919; the Bureau of Lighthouses installed 900 feet of "interlocking sheetpile groins" in 1930. Because the groins proved inadequate, the Lighthouse Service moved the light in 1935 from the 1870 tower to a 150-foot-tall skeletal tower located one mile to the northwest. In the late 1930s, erosion control efforts by the Civilian Conservation Corps and the National Park Service arrested the erosion and the beach began to accrete. The light was returned to the 1870 tower in 1950. After a destructive 1955 hurricane, the park built up the beach with sand. In the 1960s more sand was pumped onto the beach and sandbags placed in front of the tower. Three reinforced concrete groins were constructed in 1969. More beach nourishment was conducted in the 1970s. In 1974, the North Carolina's Coastal Area Management Act discouraged efforts to further harden or artificially stabilize retreating shorelines. The 1980s saw an experiment with artificial seaweed planted to stabilize the sand just offshore, more sandbags, and the extension and stabilization of the groin nearest the lighthouse.

In 1988, a study by the National Academy of Sciences and a subsequent update by the University of North Carolina in 1997 reviewed various options for saving the lighthouse and concluded the most effective option was to move it. In recent decades, moving heavy structures had become easier with the development of a unified jacking system which can push large loads uniformly with a 30,000th of an inch accuracy. Within the last five years, three lighthouses along the New England coast–Block Island Southeast, Cape Cod (Highland), and Nauset Beach, have been moved using this technology. In the case of Cape Hatteras, Joe Jakubik of International Chimney, one of the contractors for the move, stated that the biggest concern of the project was the potential of a destructive storm. Many precautions were taken to help alleviate this risk. The move mat (steel beams supporting the tracks) was placed below ground level so that in a storm sand would tend to wash into the site rather than out, lessening the vulnerability. The contractors also had the ability to lower and lock the hydraulic jacks and infill with oak cribbing so that the tower could rest on a solid foundation if a bad storm was predicted.

Before the move, material sampling and testing allowed them to determine the stresses that the lighthouse could endure; geotechnical testing was also performed on the ground along the move route. Once the limits of the materials and ground were known, adequate support bracing and soil improvements were designed and implemented so as not to approach those limits. In addition, it was determined that the move

would not jeopardize the property's listing in the National Register of Historic Places.

The greatest challenge of moving the 4,800-ton Cape Hatteras Lighthouse from the perspective of Bob Woody, Chief of Planning and Partnership at Cape Hatteras National Seashore, was "overcoming the social, political, and economic issues that surrounded the project—that didn't take but about 18 years! The actual relocation effort, though complex, was not difficult from a technical view...." When asked what advice to pass on to others considering a lighthouse relocation, Rob Bolling, a historian for the site offered,

> Based on sound science, articulate the problem and the rationale behind relocation to constituents, and the momentum will build when funding is the issue. Present the issue fairly and professionally, and know what you are saying when doing so. Be respectful of opposing viewpoints, but gently persuasive. Promptly correct any misinformation from move opponents.

Previous to these recent moves of masonry towers, most lighthouses that have been moved have been made of either wood or cast-iron plate. In fact, the cast-iron-plate towers were designed with the idea that they might be potentially dismantled, moved, and reassembled at a new location. Examples of cast-iron towers being moved include the 1852 Matagorda Island Lighthouse, Texas, moved in 1873; the 1875 Hunting Island Lighthouse, South Carolina, moved in 1889, the 144-foot-tall 1868 Cape Canaveral Light, Florida, moved in 1894. The latter two were moved to avoid erosion.

Drum Point lighthouse at the Calvert Marine Museum, Solomons, Maryland. NPS photo.

Cape Canaveral Lighthouse and oil house. NPS photo.

The Lighthouse Establishment often moved a lighthouse to serve an entirely different station. The 1820 brick tower first constructed on Great Cumberland Island, Georgia, was relocated in 1838 to serve Amelia Island at the entrance to St. Mary's River, Florida. The 1824 granite tower on Goat Island in Newport Harbor, Rhode Island, was relocated in 1851 to serve the east side of Sandy Point in Narragansett Bay. An example of a tower moved to better serve its current station, the 1893 cast-iron Chicago Harbor Light on Lake Michigan was moved to a new breakwater in 1919.

Although eroding shorelines seem to be the primary motivation for moving a lighthouse, many light stations have been moved to ensure their preservation after their careers as active aids to navigation have ceased. Drum Point Light Station marking the entrance to the Patuxent River on the Chesapeake Bay in Maryland, was replaced in 1962 by a nearby modern light on steel piles. To preserve the superstructure, the Calvert Marine Museum moved it ashore in 1975

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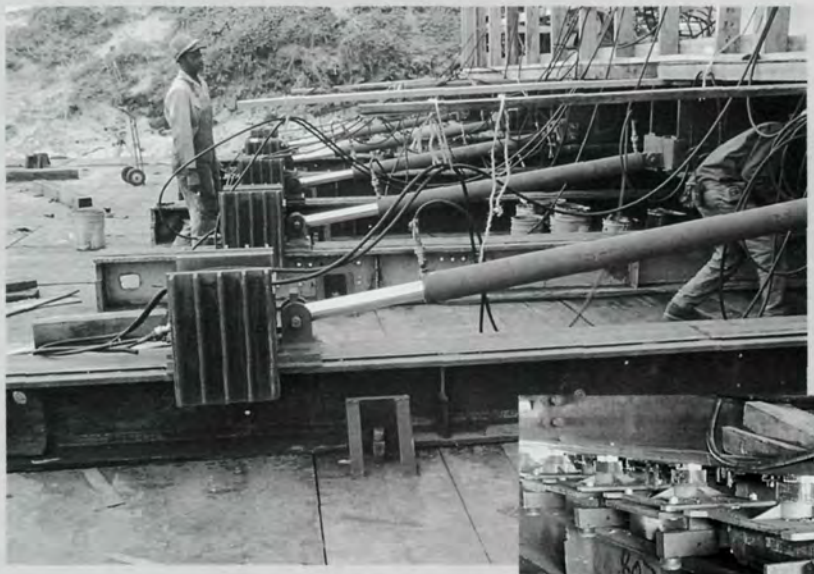
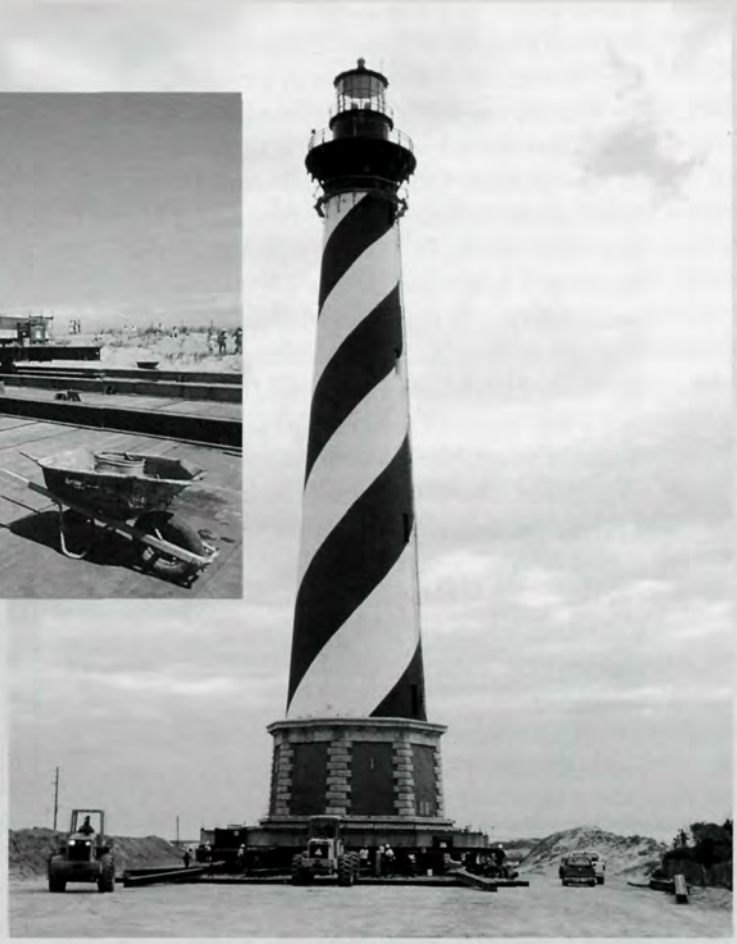
NPS photo.

Moving Cape Hatteras Lighthouse



Left, hydraulic push jacks. Below, beneath the light, Hilman rollers on hydraulic jacks.



Above, the rail and steel mat are constantly moved forward. Right, the lighthouse about 600 feet from its original site.

View of the move path of the Cape Hatteras Lighthouse.

Photos by Mike Booher, unless otherwise noted.

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to its grounds in Solomons, Maryland. As a moved property, it was initially taken off the National Register of Historic Places and relisted after its successful restoration in accordance with the Secretary of the Interior's Standards. The station is interpreted and accessible to the public at its new location. Other screwpile structures relocated ashore include the 1855 Seven Foot Knoll, Maryland, moved in 1987 to Pier 5 on Baltimore's Inner Harbor; the 1879 Hooper Strait, Maryland, moved in 1967 to the Chesapeake Bay Maritime Museum in St. Michaels; Half Moon Reef, Texas, moved in 1980 to the Port Lavaca Community Park; and the Roanoke River, North Carolina, moved in 1955 to Edenton, North Carolina. The latter serves as a private residence. Several other towers were moved after they were purchased by private owners, including Southampton Shoals Light Station, California, which became a yacht club and Oakland Harbor Light Station, California, now a restaurant.

Cape Hatteras Light will be re-lit in a special ceremony. The navigational light is currently created by a DCB-24 installed in 1972; the park is actively searching for a first-order Fresnel lens to replace this modern optic. The Seashore plans to reopen the tower to visitors around Memorial Day. As part of the overall preservation plan, the light station will be interpreted to its 1890s period. Saving the tower from the eroding shoreline was a crucial phase in its preservation. The successful move to its new location assures that millions of visitors will continue to enjoy this National Historic Landmark.

Candace Clifford is a consultant to the National Conference of State Historic Preservation Officers, working with the National Maritime Initiative of the National Park Service.

For more information on the Cape Hatteras Light Station relocation project, visit <http://www.nps.gov/caha/lrp.htm>.

For more on lighthouses in general, visit the National Maritime Initiative's Lighthouse Heritage web site <http://www.cr.nps.gov/maritime/lt_index.htm>.

Michelle C. Saxman

The Canton Asylum for Insane Indians

The South Dakota State Historical Society/State Historic Preservation Office (SHPO) was contacted by Harold Iron Shield concerning the protection of the Canton Asylum cemetery. He requested that a National Register nomination be prepared for the cemetery so it would have some protection, as it is located on the Municipal Golf Course. He was concerned that golfers were playing through the cemetery. We suggested that Mr. Iron Shield contact the owner of the property, the city of Canton, to resolve this issue. He informed us that his appeals to the City of Canton were unheeded. We informed him that it is not easy to list a cemetery on the National Register of Historic Places unless it was associated with an important historical event. We also informed him that listing on National Register would not stop people from golfing on the property, although it might provide some recognition of the cemetery.

The City of Canton was contacted to inquire if they would object to the listing of the cemetery. The city supported nominating the cemetery. At the beginning of the research process, the SHPO discovered that there was very little information concerning the Canton Asylum. We had to rely on several secondary resources to write the nomination. The SHPO survey form noted that information could be found at the South Dakota State Archives. Reviewing the articles in the archives, we discovered that the cemetery was the only remaining site associated with the Asylum. A nomination was prepared, and the cemetery was placed on the National Register of Historic Places in February 1998.

The Canton Asylum for Insane Indians was established by Congress in 1899 and the Indian

Main Building, Hiawatha Indian Asylum, Canton, South Dakota.

Appropriation Act of 1900 set aside $3,000 for land and $42,000 for construction of a building. Passage of the Act had met with strong opposition from the Department of the Interior and the Superintendent of the U. S. government's St. Elizabeths Hospital for the Insane in Washington, DC. Both felt that adding to the Washington Institution would better serve the interest of the patients and the public.[1]

Because of its central location among the Western states with large Indian populations and because of the influence of Representative O.S. Gifford and Senator R. R. Pettigrew, Canton was chosen as the site for the asylum. One hundred acres were purchased one mile east of Canton on the hills overlooking the Sioux River.[2] The first building was erected in 1901 at a cost of $55,000, plus $1,000 for improvements.[3] John Charles of Wisconsin was the supervising architect. The three-story structure, constructed in the form of a Maltese cross, had 75 rooms.

Oscar Gifford was appointed the first superintendent. He assumed responsibility in November 1901, while the building was under construction. A year later, his staff consisted of Dr. John F. Turner, a financial clerk, a matron, a seamstress, a cook, a laundress, a night watchman, an engineer, two attendants, and two laborers.[4]

The first patient, a Sioux man, age 33, was sent to Canton directly from the Santee reservation in Nebraska on December 31, 1902. The Hiawatha Asylum, as it was known locally, began formally accepting patients in 1903.[5] By the end of the year, the asylum housed 16 patients, 10 males and 6 females, with 1 man dying during the year. "The patients' tribal affiliations were Cherokee, Comanche, Ossage, Pawnee, Mission Indian of California, Winnebago, Shoshone, Chippewa, and Sioux."[6] These first patients were diagnosed with eight different types of mental conditions: chronic epileptic dementia, alcoholic dementia, senile dementia, congenital epileptic idiocy, congenital imbecility, acute melancholia, chronic melancholia, and chronic mania.

The first death occurred on May 20, 1903. The patient was a 21-year old Sioux male. He was diagnosed as "dementia, epileptic chronic." He suffered a violent epileptic convulsion that caused his death. Superintendent Gifford notified the agent of the reservation where the dead patient had originally lived. However, after receiving no request to send the body home, the superintendent made arrangement for an interment on the grounds. A section of land was reserved, and over the next 30 years, it received the remains of the patients from the asylum. The Bureau of Indian Affairs informed Mr. Gifford that stone markers were unwarranted, so the graves were unmarked. On a chart hanging in the office, the superintendent recorded the name and location of each deceased patient.

In the history of the institution, the asylum had only two superintendents. Dr. Harry Hummer accepted the position as superintendent, when Mr. Gifford resigned. In 1912, under the direction of Dr. Hummer a two-story hospital was constructed, with a separate dining room for employees, a hydrotherapy unit and solarium. However, the hospital had no medical facilities beyond a drug room and a simple operating room. The building was used primarily for housing.[7]

In 1929, an investigation of Canton Asylum was conducted. Dr. Silk performed this investigation. Dr. Hummer ordered this investigation because he wanted an impartial and unbiased report of the conditions at the asylum. Dr. Silk described the asylum as "a place of padlocks and chamber pots."[8] Attendants used their own discretion about using restraints and locking patients in their room. Dr. Silk noted the lack of maintaining patient records. It suggested poor medical care and supervision of the patients. Case summaries of patients who died were lacking, only death certificates were found. Hummer failed to keep precise essential records of daily treatment and patient's response. Dr. Silk was shocked to learn that 50 percent of the deaths at the asylum were attributed to tuberculosis and that patients were not being treated for syphilis. The final report concluded that intolerable conditions existed in all departments. However, he had one positive comment, the patients diet was wholesome and adequate.

In March 1929, Indian Affairs officials in Washington authorized three major actions: the replacement of Superintendent Hummer, the closing of the Canton Asylum, and the transfer of patients to state institutions. However, Congress approved the request to keep the asylum operating at full capacity.

It was not until John Collier assumed office as commissioner of Indian Affairs in 1932, that the office took notice of the asylum again. Mr. Collier reviewed all past reports and was outraged by the practices at the asylum. The Secretary of the Interior approved the use of funds from the Public Works Administration to enlarge facilities at Saint Elizabeths and then set a January 1934 closing date for the Canton Asylum. However, the citizens of Canton urged the Secretary of the Interior to re-consider his action. They stated that closing the asylum would cause a severe financial loss to the city. An injunction was issued.

Dr. Silk conducted another investigation of the asylum. He found conditions the same as they had been in 1929. Several patients exhibited no symptoms of mental illness. Dr. Hummer would not release patients without sterilizing them. However, the asylum did not have the equipment to perform the surgery, so he refused to discharge patients. "Of the estimated 10 discharges per year, nine occurred through the death of the inmate. Some of those who died at the asylum were buried at their agencies, others in a cemetery on the asylum grounds."[9]

The District Court of the United States dismissed the injunction order for the District of South Dakota in December of 1933. This decision opened the way for transferal of patients. Sixty-nine patients left Canton for St. Elizabeths on December 21, 1933. Two additional patients were sent to Washington, when they were well enough to travel. The remaining patients were released back to the reservations.

Between 1933 and 1939 the property was used as a state penitentiary. The property of the asylum was given to the city of Canton in 1946. In 1949, the Canton-Inwood Hospital was opened in the old asylum hospital. However, in the late 1940s the remaining buildings were razed for a new hospital on the site. A golf course was opened in 1986 on part of the original site and the cemetery is now within the fairway between the 5th hole and 6th holes.

"From 1902 to 1934, approximately 374 Indians from 50 tribes were sent to the asylum. By 1970, a complete burial stone with a bronze plaque had been placed in the cemetery there. Listed on the plaque were the names of 120 inmates who had died and were buried at Canton during the 32 years of that institution's tumultuous but forgotten existence."[10]

As a reminder to the citizens of Canton, the Native American Reburial Restoration Committee organizes annual prayer ceremonies at the cemetery. As the last remaining evidence of the Canton Asylum, the cemetery was listed on the National Register of Historic Places and is currently being investigated as a potential National Historic Landmark.

Having the cemetery listed on the National Register has increased public awareness. After the nomination process began the City of Canton posted signage to deter golfers from playing within the fenced off cemetery boundaries. Further research is necessary including archeological survey to determine the locations of the graves as it is possible that some graves rest outside the protection of the wooden fence.

Notes

1 *The History of Lincoln County, SD,* Lincoln County History Committee, 1985.
2 Ibid, page 37
3 Hoover, Herbert T. *Canton Asylum,* 1984.
4 Putney, Diane T. The Canton Asylum for Insane Indians, 1902-1934 *South Dakota History* 14 Spring 1984: 4.
5 According to *Canton Asylum for Insane, 1902-1934.* The first patient arrived on December 31, 1902.
6 Putney, Diane T. Canton Asylum for Insane Indians, 1902-1934 *South Dakota History* 14(Spring 1984):4.
7 Riney, Scott Power and Powerlessness: The People of the Canton Asylum for Insane Indians. *South Dakota History* 2(Spring/Summer 1997): 44
8 Ibid, 17.
9 Riney, Scott. Power and Powerlessness: The People of the Canton Asylum for the Insane. *South Dakota History* 2(Spring/Summer 1997): 51.
10 Putney, Diane T. The Canton Asylum for Insane Indians, 1902-1934 *South Dakota History* 14(Spring 1984): 30.

Bibliography

Hoover, Herbert T. *Canton Asylum,* 1984.
Putney, Diane T. "The Canton Asylum for Insane Indians, 1902-1934" *South Dakota History* 14(Spring 1984):1-30.
Riney, Scott. "Power and Powerlessness: The People of the Canton Asylum for the Insane." *South Dakota History* 2(Spring/Summer 1997): 41-62.
The History of Lincoln County, SD, Lincoln County History Committee, 1985.

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Roger E. Kelly

Romancing a Galleon (and Other Lost Ships) at Point Reyes Seashore

As persistent as Shakespearean suitors pursuing fair damsels unsuccessfully, since 1982 the Service, with partnership agencies and friends, has been attempting to locate and identify a 16th-century Spanish galleon and other lost ships along Point Reyes Seashore's Pacific coast. The pursuit of these illusive and ghostly fair vessels has been vigorous but as yet to no avail. The scientific suitors continue their quest in this long and dramatic tale of sailors and the sea.

Fall 1595

En route from Manila, after making landfall near today's Point St. George, California, *San Agustin* sailed south, commanded by Captain Sebastian Rodriguez Cermano, reaching a large open bay and estuary now called Drakes Bay, within the national seashore. After three months at sea, this crescent-shaped bay must have been a welcome sight! Within a few days, Cermano's crew, officers, traveling clergy, and passengers had established a shore camp, interacted with Coast Miwok people several times, and completed inland scouting trips, as his Royal orders directed. *San Agustin* was likely constructed about 1590, early in the history of Manila's colonial shipyards, from Philippine woods and materials, by local craftsmen, directed by Spanish or Portuguese masters. As reconstructed from surviving marine architecture archives, she was probably 80 feet long, about 45 feet wide, had a 14-foot draft, and was about 200 ton capacity. But no documents exist about *San Agustin*'s construction or voyages before Cermano's purchase. She was likely a smaller trade vessel–or *nao*–not a larger armed Royal galleon, outfitted for battle.

San Agustin, shore camp, and entire ship's company were hit by a fierce late November storm which determined a different historical significance to Cermano's voyage. About 70 survivors did reach Acapulco seven weeks later, sailing in an open launch which had been brought to the shore camp before the storm. Official inquiries were held and testimony made regarding the loss but only a few documents about *San Agustin's* wreck have come to light. In 1603, a second galleon–*San Diego*–was dispatched to the same bay to ascertain if any salvage was possible, as was the Spanish custom. But *San Diego* stayed only a short time and reported no evidence of the lost galleon. In maps of the late 1770s, the wreck location is noted accurately in Spanish maps of the San Francisco Bay region.

October 1982

Announced as the first interagency, interdisciplinary and scientific search for shipwrecks lost since 1595 in Point Reyes waters, the National Park Service and NOAA Marine Sanctuary Program fielded a team of archeologists, remote sensing experts, maritime historians, volunteer divers and others. Using a small Coast Guard patrol vessel and later a 1938 wooden hulled fishing boat, electronic devices were deployed to record sonar images, magnetometer readings, and acoustic profiler penetration into the submerged sands and underlying rock formations of Drakes Bay. Mapped lines of each vessel transect carrying these instruments were made from transmitted signals sent by shoreline repeaters to a moving vessel. The Bay was thoroughly covered by these instruments and magnetometer readings revealed several possible locations for sunken vessels. Divers attempted to see what may be causing anomalous magnetic readings or shadows on side scan sonar records, but little was observed.

Several historic ships were found for which informative photos, plans, or archives existed. *Richfield* (1913–1930) was an early oil tanker associated with California's petroleum industry while *Munleon* (1919–1931) a freighter, *Shasta* (1908–1939), a wooden hulled steam schooner and *Pomo* (1903–1914), a lumber schooner were studied. Several other known wreck losses, such as *Ayacucho* (1841), *Nehumkerg* (1867) and several lost single mast schooners were not found. Only a cluster of suspected magnetometer readings at the likely anchorage for *San Agustin* were found. In 1984, two project reports were published by NPS Submerged Cultural Resources Unit which contained available information on the lost galleon,

other vessels, and remote sensing information about Drakes Bay's maritime history.

Fall 1997–98

Fifteen years later, invigorated interest from park superintendent Neubacher and other circumstances had developed to plan field work in Drakes Bay again. Old and new partners—California State Lands Commission, NOAA's Marine Sanctuary program, San Francisco National Maritime Historic Park staff, Drake Navigators Guild, and volunteering individuals joined NPS staff at the project table. Significantly, within the 15-year period, advances in remote sensing, marine locational systems, diver-topside communication links, and diver safety (shark repellent) measures had been made. Thus, more effective side-scan sonar, magnetometer operations and data analysis, GPS locational and GIS mapping techniques, and other improvements were employed. Several investigations and salvage projects of 16th-century galleons in the Pacific Rim region had been completed which provided published comparative information from such known vessels as *San Diego* (1600 at Sebu Island, Philippines), *Concepcion* (1638 on Saipan), *'Pilar Wreck'* (1690 on Guam) and *Batavir* (1629 on Western Australia). More analysis of Chinese Ming Dynasty porcelain cargos was now available and a large collection of porcelain fragments from Seashore beaches and protohistoric native village sites had been accessioned by NPS staff. Data regarding magnetometer analysis by computer programs, coupled with vessel positions determined via satellite links resulted in more accurate mapping of potential 'hits' for diver investigations. A terrestrial shoreline survey of Drakes Estero to study deposition patterns for drifted materials and mapping of later beached ships' elements from *Pomo* and *Shasta* were done to ascertain the survivability of buoyant wooden vessel pieces over time. Finally, a possible location for Cermano's shore camp was investigated by the Drake Navigators Guild under an AAPA permit which authorized use of magnetometer, metal detectors, and auger tests.

These newer approaches and methods have not located *San Agustin*—she remains as elusive as ever. But during a short 15-year period, significant improvements in scientific research on submerged cultural resources give us better tools to search and locate evidence for human activities and accomplishments. The curtain has not been closed on this historical drama at Drakes Bay!

References

Aker, Raymond 1965 *The Cermeno Expedition At Drakes Bay, 1595.* Drakes Navigator Guild, Palo Rito, Ca.

Murphy, Larry (ed) 1984 *Submerged Cultural Resources Survey Portions Of Point Reyes National Seashore And Point Reyes–Farallon Islands National Marine Sanctuary:* 1982. NPS Santa Fe.

Carrell, Toni 1984 *Submerged Cultural Resources Inventory; Portions Of Point Reyes National Seashore And Point Reyes–Farallon Islands National Marine Sanctuary:* 1983. Santa Fe.

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Archeological Research at the Presidio

More than 60 archeologists worked during the summer on research projects to identify and preserve cultural artifacts hidden beneath the surface of the historic Presidio of San Francisco. Excavation activities are intended to protect the park's cultural resources in anticipation of rehabilitation efforts soon to be conducted on some Presidio historic structures. Information gathered from the digs will also improve visitor interpretive services at the park.

The Presidio Trust and the University of California at Berkeley have formed a partnership to conduct archeological investigations at the park. The first project is focusing on the park's Funston Avenue, one of the most historically significant regions. Researchers are studying the area now occupied by Civil War era structures to identify the Presidio's original stone foundation built by Spanish settlers in the early-19th century.

Students participating in the Cabrillo Archaeological Technology Program are locating the foundation of the Spanish-colonial period chapel adjacent to the Presidio's Officers' Club. The Officer's Club, constructed in 1776, is the oldest Presidio building and one of the most significant historical structures on the west coast. The Trust expects rehabilitation at the Officer's Club to begin next year.

Archeologists under the supervision of the National Park Service at Crissy Field are identifying historic artifacts as part of an effort to rehabilitate the waterfront area by restoring beaches, wetlands, and a historic grass airfield. The park improvement is scheduled to be completed in summer 2000.

For more information, contact Lynn Wallace at 415-561-5300.

Rustin Quaide

Documenting the Cold War

Investigating Available Resources

On March 5, 1946, former British Prime Minister Winston Churchill, accompanied by President Harry S. Truman, delivered a speech at Fulton, Missouri, where he announced:

> From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent. Behind that line lie all the capitals of the ancient states of central and eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia, all these famous cities and the populations around them lie in what I must call the Soviet sphere, and are subject in one form or another, not only to Soviet influence but to a very high and, in many cases, increasing control from Moscow.

Joseph Stalin, ruler of the Soviet Union, responded in *Pravda,* claiming that Churchill's speech was "a dangerous move, calculated to sow the seeds of dissension among the Allied states." Geopolitically, after World War II Europe was divided between the United and the Soviet Union along the lines outlined by Churchill in his Fulton, Missouri speech.

After a period of time this division was called the Cold War, a term popularized by Walter Lippman, and was used to describe the state of "neither war nor peace" between the Western powers and the Communist nations following World War II. This state of affairs lasted until 1990 when the Soviet Union collapsed and the Cold War and the division of Europe ended.

The history of the years after 1990 present problems for the modern researcher. The rapid dissemination of new information pertaining to the Cold War period and the subsequent military, cultural and political history of the era are too recent for a definitive summary. The amount of material that must be sorted and evaluated is immense. Uncovering records, opening state archives, gathering memoirs and documenting places and events around the world are time consuming tasks. Ongoing studies, such as the Woodrow Wilson International Center for Scholars Cold War International History Project, are extremely helpful (especially in light of recently-opened Soviet archives), but the interpretation of Cold War criteria can be overwhelming from a cultural resources management point of view, when sites, objects and thematic studies associated with the Cold War confront various federal agencies and historians with issues involving interpretation and documentation strategies.

The Department of Defense (DOD) manages a wide range of cultural resources on its 25 million acres of public land. The cultural resources within them are protected by The National Historic Preservation Act, the Native American Graves Protection and Repatriation Act and the Archeological Resources Protection Act. In 1991, the DOD Legacy Resource Management Program was established under the Defense Appropriations Act of 1991. The Cold War Project emerged from this as one of the Legacy's nine task areas. Broad in scope, the Cold War Project seeks to "inventory, protect, and conserve the Department of Defense's physical and literary property and relics" associated with the Cold War. The history of managing and documenting Cold War resources within the DOD falls under the different branches of the Armed Services. These records prove invaluable research tools.

The Air Force Project originated between the National Park Service and the United States Air Force after the Air Force was taken to court over inadequate handling of their Section 106 responsibilities involving a building at Randolph Air Force Base. The Air Force contacted the National Park Service, and a cooperative agreement was reached where the National Park Service designed the database to handle the historic information gath-

ered at 11 different Air Force installations. GIS (Geographic Information Survey) software was customized for each location, leaving each base with a functional database to enter their historic data. The Historic Preservation Program for Army installations was developed in response to specific federal agency tasks and deadlines set forth in Executive Order 11593, signed by President Richard Nixon on May 13, 1971. The Navy has individual officers assigned to reserve units who gather information for historical purposes.

The end of the Cold War itself affected historic documentation of Cold War sites within the United States. When the military base closings began, Section 106 of the National Preservation Act required that DOD give the Advisory Council on Historic Preservation (an independent federal agency) a "reasonable opportunity to comment" on actions that involve historic properties and applies to properties that have been listed in the National Register of Historic Places, properties that have been determined to be eligible for inclusion in the register, and properties that may be eligible but have not yet been evaluated. A consensus on what constituted significance to Cold War sites had to be determined. It was generally agreed by the Air Force and Army in their intermittent guidelines that Cold War base housing was ineligible for listing. Missile related properties, flightlines, hangars, and scientific laboratories contribute to a broader understanding of specific historic defense needs and the national defense history as a whole, even when such sites are contributing components of larger districts. Overall, the legacy of the Cold War helped bring about a better appreciation for the military's own recent history. Becoming involved in Section 106 work, the military began a systematic documentation of its own history. Most of the historic research done for the military has been prepared by consultants for the various agencies. The National Park Service's involvement has consisted mainly of assisting the various agencies on various questions of historic interpretation, and matters of a more legalistic nature, developing Section 106.

Strategies for nominating Cold War sites and properties begin with the National Register guidelines. There are four categories of eligibility for districts, buildings, structures, sites and objects found in the National Register Bulletin: *How to Apply the National Register Criteria for Evaluation.* The National Register criteria provide for the recognition of historic places that have achieved significance within the past 50 years; a site or property of that vintage may be eligible if it is of exceptional importance at the national, state, or local level. More then a half century has passed since Winston Churchill made his remarks at Fulton, Missouri and the Cold War's beginnings have passed the 50-year mark. Some Cold War sites entered the National Register of Historic Places due to their exceptional importance in recent history, achieving significance within the past 50 years. Documenting the recent past will continue, as new sources are uncovered, thus helping us understand the events which shaped the Cold War era. Below are listed some useful sources for those investigating this period.

Research Tools

General

Chafe, William H. *The Unfinished Journey, America Since World War II,* Oxford University Press, New York, 1999.

Chafe, William H. and Harvard Sitkoff, editors *A History of Our Time, Readings on Postwar America,* Oxford University Press, New York 1999.

Cook, Linda with Karen Bretz, Brian Coffey, Anna Lee Hewko, and Frank Broderick *Elmendorf Air Force Base Volume 1 Historic Context of World war II Buildings and Structures,* United States Department of the Interior, National Park Service, 1999. Excellent analysis and inventory of Elmendorf AFB, northeast of Anchorage, Alaska. The final chapter details Elmendorf AFB's Role in the Cold War.

Evans, Graham and Jeffrey Newham *The Penguin Dictionary of International Relations,* Penguin Putnam Inc, New York, 1998.

Milbrooke, Anne with Patrick Andrus, Jody Cook, and David B. Whipple *National Register Bulletin Guidelines for Evaluating and Documenting Historic Aviation Properties,* U.S. Department of the Interior, National Park Service, National Register of Historic Places, 1998. Guideline which takes the researcher from the beginning of American aviation through rocket technology, offering advice on defining aviation related terms pertinent to the National Register of Historic Places

Sontag, Shery, Christopher Drew and Annette Lawrence Drew. *Blind Man's Bluff: The Untold Story of American Submarine Espionage,* Thorndike Press, 1999. The end of the Cold War produces a daunting task for researchers shifting through the historic record. A book detailing American submarine espionage during the Cold War.

Walker, Martin. *The Cold War,* Henry Holt and Company, New York, 1993. An overview of Cold War history.

Ramirez, Constance Werner. "A Summary History of the Army's Preservation Program," *CRM* Vol. 20, No.13, 1997.

Cold War International History Project Bulletin Woodrow Wilson International Center for Scholars, 1000 Jefferson Drive, S.W. Washington, DC, 20560. With the opening of the Russian archives, a useful source for historians and scholars on numerous issues connected with the Cold War.

Note: Good references for historians include servicewide phone books for compiling histories of the various armed forces agencies.

Specific

Lonnquest, John C. and David F. Winkler. *To Defend and Deter The Legacy of the United States Cold War Missile Program.* USACERL Special Report 97/01 November 1996. A study sponsored by the Department of Defense Legacy Resource Management Program Cold War Project: The definitive study on the impact of long-range and air defense missiles on the American landscape. Cultural resource managers evaluating specific resources will find the bibliography a useful guide.

Stapp, Darby C. "Documenting a Cold War Nuclear Reactor, Attempting Innovation Balancing Historic Preservation Needs with the Operation of Highly Technical or Scientific Facilities," *CRM* Vol 20, No.13, Stapp's article deals with the documentation of the Hanford N-Reactor Complex, and the cooperation and planning between the Department of Energy and the Washington State Historic Preservation Office. For an approach dealing with technical and scientific matters, it is a good source.

Winkler, David F. *Searching the Skies: The Legacy of the United States Cold War Defense Radar Program,* prepared for United States Air Force Combat Command. June 1997. Excellent study of the impact that the construction of radar stations and command facilities had on the American landscape, exploring patterns, themes, and trends that created, influenced, and formed the backdrop to the Cold War defense radar program.

Useful Web Sites

www.army.mil/cmh-pg
www.history.navy.mil/
www.au.af.mil/au/afhra/hisstud.htm
www.airforcehistory.hq.af.mil
www.cwihp.si.edu/default.htm.
www.h-net.msu.edu/~war

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The author thanks Paul Lusignan, Diane Miller, Dr. Harry Butowsky, and Russ Sackett for assistance in writing this article.

Jeane Wharton

Interpreting the Cold War

"When I was growing up [in Milbank], we would always count the missile silos on the way to the Black Hills."

Dr. Steven Bucklin, USD

Images of the Cold War—etched in our national memory—are images of the missile silos, bomb shelters and "duck and cover drills" that once impacted daily American life. The Minuteman Missile was one of the country's most important Cold War weapons, and many historic preservationists are looking to provide future generations with a physical reminder of that time.

Minuteman Background

More than 1,000 Minuteman ICBM (intercontinental ballistic missile) sites were deployed in hardened underground silos across the nation's heartland by 1967. The Minuteman was an inconspicuous, silent sentinel on the nation's landscape.

For almost 30 years, Minuteman missiles served as part of the nuclear triad of land-based ICBM's, submarine-launched missiles, and manned bombers poised to deliver a nuclear warhead to a Soviet target within a half hour. Then, in 1991, with the passage of the Strategic Arms Reduction Treaty (START), the Air Force began deactivating the Minuteman force.

The operational center of the Minuteman missile system was the underground Launch Control Center (LCC). During their round-the-clock duty, the missile crews monitored missiles and conducted tests in the LCC.

Among the deactivated sites were 15 launch control facilities and 150 missile silos of the 44th Missile Wing at Ellsworth Air Force Base in South Dakota.

Missiles and the Badlands

Soon after the deactivation began, the National Park Service and the Air Force recognized that Ellsworth's Minuteman facilities might be excellent candidates for long-term preservation. The Ellsworth sites were among the oldest, and they are the least-altered from the original configuration

I was fortunate to be included in a discussion and short tour of two of the sites near Badlands National Park in southwestern South Dakota. As we viewed the crew areas, I noted that much of the technology dated back to the Cuban Missile Crisis era. It almost looked as though the crew had gone to dinner and would return shortly.

Other participants included University of South Dakota professors Dr. Steven Bucklin and Dr. Robert Hilderbrand, who are interested in conducting an oral history project; Badlands National Park Superintendent William Supernaugh; Badlands Chief of Education/Cultural Resources Marianne Mills; State Historic Preservation Office Staff Archaeologist Bruce Penner; SHPO Architectural Historian Steve Rogers and Tim Pavek, Civilian Engineer for the U.S. Air Force at Ellsworth Air Force Base.

The Minuteman story must be told, the group agreed. It is an important story, and not just of missile silos. It's the story of the local rancher who helped mine (during a fierce winter blizzard) the 80-foot-deep holes that would become the missile silos. It's a story of the landowner who told the deactivation crews they wouldn't have to blow up her missile site—she wouldn't tell anyone, since we might need it again some day. The sites should be preserved for all Americans as a reminder of this significant period in our history.

Management Bill to be Re-Introduced

In 1998, legislation was introduced in the U. S. Senate that would allow the National Park Service, in conjunction with the U. S. Air Force to acquire, preserve and interpret the Delta One Launch Control Facility and Delta Nine Launch Facility as a national historic site. The site would commemorate the history and significance of the Cold War, the Minuteman missile system, and the Arms Race.

Supporters for the legislation included South Dakota Senators Tim Johnson and Tom Daschle. Both made statements before the Subcommittee on National Parks, Historic Preservation, and Recreation Subcommittee of the Senate Committee on Energy and Natural Resources in July. Both senators stated that they looked forward to working on an effort to "preserve part of the Minuteman II missile system and an important chapter of our nation's history."

The legislation passed the Senate on March 25, 1999, and was sent to the House on April 12, 1999, for further action.

Jeane Wharton is Historic South Dakota Executive Director.

Photos courtesy Tim Pavek, U.S. Air Force.

Like the crews who painted "nose art" on military aircraft during World War II, the Cold War's missileers often decorated the blast doors of underground LCCs.

David G. Blick and Renee A. Sciuto

Cold War Historic Properties at Aberdeen Proving Ground

In the spring of 1997, the Cultural Resource Management Program at Aberdeen Proving Ground (APG) initiated a survey and evaluation of its Cold War era (1946-1989) historic properties. After two years of archival and field work, APG recently submitted its final evaluations to the Maryland Historical Trust (MHT) for review and approval, per Title 36, Part 800, of the Code of Federal Regulations. The installation's cultural resource manager developed and oversaw the project, and completed it with research participants from the Oak Ridge Institute for Science and Education (ORISE) student fellowship program. The study served as a compliance project mandated by Section 110 of the National Historic Preservation Act (NHPA) of 1966, and Army Regulation 200-4, "Cultural Resources Management."

Established in 1917, APG is the Army's premier installation for research and development, testing and evaluation, and soldier training. Located on the western shore of the upper Chesapeake Bay, about 25 miles northeast of Baltimore, Maryland, APG occupies approximately 75,000 acres. Aberdeen Proving Ground's cultural resources encompass a wide breadth of the American experience. They include prehistoric and historic archeology sites, as well as extant colonial-era buildings, an early 19th-century lighthouse, turn-of-the-century farmhouses, and World Wars I and II military facilities, all of which are subject to provisions of the NHPA.

Terminal Ballistics Laboratory, c. March 1949. Photo courtesy U.S. Army Garrison, APG, DSHE.

With the end of the Cold War (marked by the collapse of the Berlin Wall in 1989), public historians within academia and the federal government initiated studies to examine its impact on American society, including the military. Through the early 1990s, the Department of Defense's Legacy Resource Management Program provided grants for Cold War related research projects, and in 1995, the Army produced interim guidance to address issues of National Register eligibility. This interim guidance evolved into a section of the Army's pamphlet on cultural resources and a comprehensive historic context, entitled Thematic Study and Guidelines: Identification and Evaluation of U.S. Army Cold War Era Military-Industrial Historic Properties. In 1997-98, APG developed its own installation-specific historic context and in the same year embarked on a survey of over 800 buildings and structures on the post.

The ORISE research participants used various CRM tools to complete the survey and evaluation project. The installation's state-of-the-art geographic information system (GIS) provided detailed maps which enabled the students to locate and photograph the properties in a timely fashion. By applying the Army historic contexts and National Register criteria, the researchers focused on particular property types, specifically those associated with Army production and combat subsystems. For proving grounds, identified property types consisted primarily of research laboratories and testing facilities.

Through consultation with the MHT, APG identified property types considered not exceptionally significant. Between December 1998 and January 1999, APG and the MHT agreed that 698 of the buildings surveyed did not meet

National Register criteria consideration G for properties less than 50 years old. In June 1999, APG submitted the remaining 100-plus properties on MHT-requested National Register eligibility forms. The submissions included black and white photographs, site maps, and National Register evaluations. Overall, APG inventoried and evaluated a total of 813 Cold War properties, of which only 12 met the National Register eligibility criteria. As of September 1999, APG is awaiting concurrence from the MHT.

Building 309, the Terminal Ballistics Laboratory, is an example of an APG Cold War historic property that ORISE participants surveyed and evaluated. Constructed in 1947, this building served as a primary laboratory for the Ballistics Research Laboratory complex, focusing on technological advances in ballistics and high-speed photography. During the survey and evaluation project, the building occupant proposed replacing all 86 of the existing metal-framed, multi-paned windows. The ORISE participants and MHT concurred that #309 was eligible for the National Register and agreed that the new windows would be an "adverse effect." Upon additional consultation with the MHT and Advisory Council for Historic Preservation, APG entered into a memorandum of agreement (MOA) that required APG to document the building on a Maryland Historic Property Inventory Form. The documentation is now available in the MHT's archives.

Besides the NHPA compliance aspects of this project, one of its real successes was the use of the ORISE program. An interagency agreement between the Departments of Energy and Defense allows the Army to transfer funds into a student fellowship program overseen by ORISE. In turn, ORISE solicits resumes from students, competitively screens applicants based on interviews and scholastic performance, and places the successful candidates with a Defense agency. While the students are not ORISE or Defense employees, they serve as program participants, receive mentoring, and take on specific environmental or engineering research projects.

During the course of the Cold War project, APG's use of the ORISE program significantly reduced the cost of the compliance-based project. Instead of hiring a private cultural resource firm that could charge as much as $400 to survey and evaluate a single property, APG utilized the ORISE student fellowship program at a cost of approximately $85 per property. A survey and evaluation project such as APG's, involving over 800 properties, could have cost the Army $320,000. Instead, with ORISE, the project cost under $70,000, a significant savings for the Army and federal government.

Another important aspect of APG's Cold War identification and evaluation project is that it served as a practical training exercise for aspiring historic preservationists. It gave three college students (Tracy Dunne, Sameena Nooruddin, and Renee Sciuto) the experience of working at the federal agency level while performing a real, compliance-based cultural resource project. The skills acquired by these students during the course of the project, such as researching historic properties and applying National Register criteria, have made them competitive candidates for graduate school, public agencies, and the private sector.

Overall, by dealing with issues of preserving the recent past at APG, the Army has demonstrated proactive stewardship of its Cold War era historic properties. Not only does APG now have a better handle on its Cold War era properties that are eligible for the National Register, but it also has streamlined its management responsibilities for compliance with Section 106 of the NHPA. By completing the identification and evaluation project, APG has significantly reduced the amount of time and effort needed to review future mission-related undertakings. As a result, APG has enhanced military readiness at APG and the quality of life for its soldier and civilian communities.

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Any opinion expressed in this article does not necessarily reflect the view of the Department of the Army.

Bob Chenoweth

Clearwater Battle Artifacts Returned

Around noon, July 11, 1877, 400 U.S. Army soldiers under the command of General O.O. Howard began an attack on the encampment of non-treaty Nez Perce Indians by the South Fork of the Clearwater River near present-day Kamiah, Idaho. The Nez Perce included about 550 women and children and about 200 warriors, plus 2,000 to 3,000 horses. After initially surprising the Nez Perce the soldiers found themselves surrounded and unable to advance. By about 2:30 p.m. on July 12th, the soldiers renewed their attack after the arrival of reinforcements. The Nez Perce evacuated their families and horses around this time amid disagreement among the warriors as to whether to continue the fight.

"We were not whipped! We held all soldiers off the the first day and, having better rifle pits, we could still have held them back. Not until the last of us leaped away did the soldiers make their charge. Some tepees, robes, clothing and food were left. The warriors were disagreeing, quitting the fight, had no time to pack the camp."

Yellow Wolf*

General Howard failed to follow-up his pursuit, instead allowing his soldiers to swarm through the tipis and help themselves to the personal possessions the Nez Perce were compelled to leave in their haste to escape.

A young Lieutenant, Harry L. Bailey of B Company, 21st Infantry was one of those who took possessions from the village. Bailey retired in Allen County, Ohio at the end of his military service and donated papers, photos, and artifacts to the Allen County Historical Society (ACHS) in Lima. The artifacts and Bailey's actions were documented by L.V. McWhorter in his books *Yellow Wolf, His Own Story* and *Hear Me, My Chiefs!* Bailey described the plunder by civilian volunteers and soldiers and his own efforts to get "a few things as souvenirs." He describes how each thing was taken from him as he looked after his troops but concludes, "I saved a few and sent them to Ft. Lapwai by pack train ... a very few are now in the Allen County, Ohio, Memorial Building of Lima, Ohio." (McWhorter 1986: 322)

NPS historian Jerome Greene found out about the artifacts during a research visit to Lima. He was writing a Historic Resource Study on the 1877 War for Nez Perce NHP and called the artifacts to my attention in 1995. The collection consisted of an unadorned child's deer hide dress, a beaded sheath and five brass trade bells.

In July, I called Raymond Schuck the Director of the Museum in Lima to discuss whether the ACHS would consider allowing these artifacts to be returned to their homeland, either to the National Park Service or the Nez Perce Tribe. I explained that they had been taken from people who had not wanted war and whose descendants felt a very strong connection to them. Mr. Schuck agreed to bring the question before the board of directors. At the time of this contact, I was deeply involved in the efforts to return the Spalding-Allen Collection, then owned by the Ohio Historical Society, to Nez Perce Country. No agreement had been made at that time between the Nez Perce and OHS and so the discussion with the Allen County Historical Society took on a sensitive aspect that could only be resolved by the passage of time.

After discussions with Mr. Schuck it became clear that the board of directors of the ACHS would look favorably on a request to return the artifacts to Idaho regardless of whether it came from the NPS or the tribe. This was so, because the collection was clearly documented in collection records and in the written and oral record of the 1877 war. The ACHS believed that under the circumstances it was simply the right thing to do.

After making this known to the Nez Perce Tribe, we decided in the fall of 1997 that the Nez Perce Tribe would make a formal request asking for the return of the collection, and that the NPS would write in support of that request. ACHS was concerned for the professional care of the

* McWhorter 1983:100.

artifacts once they were returned to Idaho. Our letter described the collection storage facilities at the Spalding Visitor Center and our staff situation. We explained that Nez Perce Park has housed and cared for an important collection of artifacts owned by the tribe for many years through a cooperative agreement. This was a logical arrangement stemming from the park's enabling legislation and from years of cooperation and trust built up between park staff, tribal members and tribal government. The Nez Perce Tribe does not have a facility to house its collection and so it was agreed some time ago that given the importance of this collection, the park would store, curate, and display it.

It was not until March 2, 1998, that the formal request from the tribe was sent to the ACHS. Our letter of support followed shortly after. In July, Josiah Pinkham, the tribe's ethnographer called me with the news that ACHS was returning the artifacts to the tribe.

On August 12, Nez Perce Tribal Executive Committee Chair, Samuel Penney and Josiah Pinkham were in the Allen County Museum with museum staff and Board members. A solemn and simple ceremony marked the return of the artifacts to the Nez Perce tribe. "It was good that these people knew the proper place for these artifacts and I am thankful that they were willing to follow their heart.The toughest thing to look at was the dress; to think that a child that small would be involved in a war."(Josiah Pinkham) Two days later, Josiah Pinkham and Nakia Williamson, also from the tribe's Cultural Resources Department, brought the artifacts to the Nez Perce National Historical Park's Cultural Resources office. Within a short time the loan agreement was signed, accession documents prepared, catalog numbers assigned and a storage space selected.

We stood looking at the dress and other artifacts and could not help being moved by their presence. How could one look at these things and not wonder what untold story they held. What had become of the young girl to whom this dress belonged? Had she survived the 1,300-mile flight to escape the Army? What about the owner of the beaded sheath? Was it an awl case or had it been used to hold medicine? What had the owner of the trade bells intended to use them for and what had happened to cause them to be left behind? These are touch stones to one of the most tragic events in Nez Perce and American history. They speak of the lives and hopes and dreams of a people who had prided themselves on their good relations with the white intruders to their land. They speak of a creative, strong and intelligent people who, when forced to fight, gave an account of themselves which is now legendary.

Almost three years had elapsed between first learning of these artifacts and their return to Nez Perce country. Many other things had occurred during that time. Foremost was the successful fundraising effort that allowed the Nez Perce people to purchase the Spalding-Allen Collection and return it to Idaho. This was a sweet success because of the overwhelming support of the American public who contributed to this cause.

The return of the Clearwater Battlefield artifacts carried this same sweet feeling for me, but for different reasons. The staff and leadership of the Allen County Museum simply made a professional decision based on understanding, an appreciation of the importance of local history, and the need to have the artifacts returned to the people and place where their story resides. This may seem like a small thing, an easy thing. But in this time where many institutions choose to "capitalize" on a situation to their advantage, Walter White, Raymond Schuck and the others at the Allen County Museum chose simply to give back what had been taken so many years before.

References

McWhorter, L.V. *Yellow Wolf, His Own Story*, Caxton Press, Caldwell, Idaho, 1983 Revised and Enlarged Edition.

McWhorter, L.V. *Hear Me, My Chiefs!*, Caxton Press, Caldwell, Idaho, 1986

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Charleston, South Carolina will host the Restoration® & Renovation® Conference and Trade Show on November 7-9, 1999. The show will highlight over 130 exhibitors and more than 40 conference seminars. Workshops will cover such topics as wood window restoration, antique conservation, cemetery preservation, and disaster planning and recovery. Regular conference sessions cover a variety of subjects, including period interior decoration, seismic retrofit, stucco conservation, and historic landscapes. For more information on the show, including registration, visit the R&R web site: <www.egiexhib.com>, or contact EGI Exhibitions at 800-982-6247; fax: 978-664-5822; email: show@egiexhib.com. For travel and hotel information, contact OMNI Travel at 888-823-7676.

Deborah Sheiman Shprentz

Greenbelt, Maryland

Preservation of a Historic Planned Community

GREENBELT: 2 BR, 1 BA townhouse in historic area. Walk to shopping, movies, fitness center, indoor and outdoor pools, library, and community center. $39,900.

A classified ad highlights the charms of Greenbelt, Maryland,—a historic planned community built by the federal government in the 1930s during the administration of President Franklin Delano Roosevelt. Homes in old Greenbelt, a suburb of Washington, DC, are available at reasonable prices, yet offer access to incredible community amenities.

What is remarkable about the historic center of Greenbelt is the extent to which the original planned community of residences in a park-like setting adjacent to a town center, remains intact. There have been some modern structures built, and some modifications to the exterior of homes, but for the most part, the core historic area has been remarkably preserved. Development pressures are ever present but have been largely resisted due to an extraordinary sensitivity to the town's historic values.

Greenbelt in Brief

Greenbelt, Maryland, is one of three planned communities built by the federal government along garden city principles during the New Deal of the Roosevelt Administration. Rexford Guy Tugwell, director of the Resettlement Administration, spearheaded the project, as part of the New Deal Communities Program. Other federal green towns were built in Greendale, Wisconsin, and Greenhills, Ohio.

The Greenbelt project had several goals: to provide useful employment; to demonstrate a new type of community; and to provide affordable housing in suburban areas.[1]

Tugwell was inspired by the Garden City Movement popularized by an English planner, Sir Ebenezer Howard, and by the 1927 development of Radburn, New Jersey, designed by Clarence Stein and Henry Wright. A number of Radburn's revolutionary features were incorporated into the plan for Greenbelt: the superblock of housing and open space where vehicular traffic is excluded; extensive use of walkways and underpasses to facilitate pedestrian movement; placing the service entrance of residences at the street side of the house, and the main entrance in the rear facing parkland; and establishing the elementary school as a focal point for the community.[2]

Additional original features in Greenbelt a commercial town center, a gas station, a police and fire station, a manmade lake, a swimming pool, athletic fields, numerous playgrounds, community gardens and an extensive "green belt" of open space and woodlands. Some of the original green belt has been preserved, but much of the land was condemned for the construction of the Baltimore-Washington Parkway and the Capital Beltway, while other lands were sold off for commercial and residential development.

The original development of 800 residential townhouse and apartment units built in 1937 was supplemented by 1,000 units of defense housing built by the Farm Security Administration in 1941-1942.[3]

Later new town developments such as Reston, Virginia, and Columbia, Maryland, were based on many of the design principles pioneered in Greenbelt.[4]

Community Building/Elementary School in Greenbelt, Maryland. Photo courtesy Elizabeth Jo Lampl.

Greenbelt is also significant for its development of cooperative forms of enterprise, including a housing cooperative, a coop grocery store and pharmacy, a community newspaper, and a cooperative nursery school, all of which continue to operate today.[5]

Historic Preservation Efforts

On November 25, 1980, the Greenbelt Historic District was officially entered on the National Register of Historic Places.[6] The listing proved to be a significant factor motivating preservation efforts when in 1983, the Prince George's County Board of Education proposed to demolish the Center School, one of the most architecturally significant structures in the community.

In 1983, a tip from a reporter alerted Richard Striner, president of the newly formed Art Deco Society of Washington, to a small budget item in the *Washington Post.* The article signaled the intention of the Prince George's County Board of Education to replace the Greenbelt Center School with a new structure. The impending destruction of the Greenbelt Center School, the cultural and architectural centerpiece of the historic Greenbelt community, propelled Striner into action.[7] Earlier in 1983, the Art Deco Societies of America recognized the school as among the 10 finest examples of art deco architecture in the country.[8]

The Greenbelt Center School was designed in 1936 by Douglas Ellington and Reginald D. Wadsworth, the architects for Greenbelt. But unlike the residential buildings designed in the International Style, the school is a streamlined Art Deco masterpiece with fluted struts adorning the sides and front of the building. Sculptured bas-relief panels appear below the bank of five large windows that admit light to the combined auditorium and gymnasium. The panels use images of workers to depict the preamble to the Constitution: "We the people...to form a more perfect union...establish justice...insure domestic tranquility...provide for the common defense...promote the general welfare." The panels were sculpted on-site by Lenore Thomas. The design is reminiscent of architect Paul P. Cret's Folger Shakespeare Library in Washington DC.[9]

The local PTA strongly supported razing the building to erect a larger, more modern school for Greenbelt's children.[10] Faced with local opposition, the Art Deco Society used a three-pronged strategy to save the building: extensive publicity in local newspapers and on local television; liaison with local and county preservation groups such as the Prince George's County Cultural and Historical Trust and the Historic Preservation Commission; and enlisting the support of a long list of prominent scholars and elected officials.[11]

In order to protect the Greenbelt Center School from further threats, the Art Deco Society of Washington and the City of Greenbelt filed a successful application with the Prince George's County Historic Preservation Commission to designate the school as a "county historic site" and to include it in the county's Historic Sites and Districts Plan.[12] The Prince George's County Historic Preservation Ordinance establishes restrictions against alterations or demolition of designated "historic sites." The application received final approval from the Prince George's County Council in 1984.[13]

The school was threatened again in 1988, when the Prince George's County Board of Education proposed a school expansion plan that would preserve only the façade of the building. Ultimately, the City of Greenbelt engineered a land swap with the County, which enabled a new elementary school to be built outside the historic district, and the original school to be converted to a community center.

Today, the community center has been sensitively renovated and houses a museum exhibit room, nursery school, senior center, café, active sports and arts programs, studio space for artists, and provides space for other community activities. A permanent exhibit of historic photographs documenting the planning, construction, and early years of Greenbelt lines the corridors of the community center.

The Greenbelt Museum

The Greenbelt Museum was established in 1987, on the occasion of the 50th anniversary of Greenbelt, to educate the public about the history of Greenbelt and the value of planned communities.

The City of Greenbelt purchased the house at 10-B Crescent Road for use as a museum in 1986.[14] The purchase price of $53,400 was authorized by a bond issue that was approved in a voter referendum.[15]

The building was one of the units constructed in the first wave of federal construction in the 1930s in Greenbelt. It is a concrete block, flat-roofed, two story duplex. It features a small kitchen, combined living/dining room, upstairs bathroom, master bedroom, and a small chil-

Mother and Child statue in Greenbelt, Maryland, commercial center, by Lenore Thomas, Works Progress Administration.

dren's bedroom. It overlooks a large, open common area.

Most of the museum's artifacts were donated by Greenbelt residents, who used them during the 1930s and 1940s. Of special interest is the government commissioned furniture designed to fit the small rooms of the Greenbelt homes. One could fully furnish a home with Danish modern furniture for $240, paid in regular installments of $5 per month.[16]

The beautifully restored unit stands in stark contrast to the neighboring half of the duplex which has a rear addition, has been covered with vinyl siding and has new vinyl windows and shutters.

The museum mounts various special exhibits in the house from time to time on topics such as textiles, Art Deco timepieces, and "Women at Work." In 1998, Friends of the Greenbelt Museum received grants from the Maryland Historical Trust and the Maryland Humanities Council to mount an exhibit in the community center: "Fashionable, Functional, and Frugal: Modern Style Comes Home, 1930-1946."[17] The exhibit features modern-style depression glass, streamlined chrome appliances, Bakelite knick-knacks, furniture, and other stylish objects.

The Greenbelt Museum maintains an active partnership with the University of Maryland's American Studies Program. The University sends students in its Material Culture classes to the museum to "curate" individual objects in the collection. Dozens of the students' research papers and photographs of the objects are posted on the University's "Virtual Greenbelt" web page. This web site contains a slide show on the history, planning, and construction of Greenbelt, complete with historic photos from the Library of Congress. The internet address is <http://www.otal.umd.edu/~vg/>.

National Historic Landmark Designation

On February 18, 1997, in recognition of the 60th anniversary of Greenbelt, the community was designated a National Historic Landmark by the Secretary of the Interior. This recognition of the historical significance of Greenbelt is a major honor for the community. The documentation of the historic resources of Greenbelt contained in the nomination was thoroughly researched by consultant Elizabeth Jo Lampl, and edited by Carolyn Pitts of the National Park Service.[18] The nomination form contains a detailed chronology of major land transfers and development, and an extensive bibliography of published and unpublished sources.

Possible Designation as Historic District

Since 1992, Greenbelt citizens have considered additional means to provide protection for their historic community. The Greenbelt Historic District Study, published in February 1994, summarized a series of potential strategies, including historic district designation for old Greenbelt under the Prince George's County ordinance.[19]

Subtitle 29 of the Prince George's County Code contains the regulations governing the preservation of historic resources in the County. The regulations lay out requirements for Historic Area Work Permit applications to be reviewed by the Historic Preservation Commission prior to any construction, exterior modification, relocation, grading, demolition, or placement of signs in historic areas. These permit provisions require adherence to design guidelines and are the teeth of the county historic preservation ordinance. The permit process provides an orderly mechanism for consideration of historic preservation objectives in managing change within the historic district.

To illustrate how the permit process would impact Greenbelt, extremely specific design guidelines have been proposed by the Maryland-National Capital Park and Planning Commission, in consultation with the Greenbelt City Planning Department and Greenbelt Homes, Inc., the housing coop.[20] The draft guidelines are based upon the design requirements laid out in the Greenbelt Homes, Inc. member handbook, but are stricter in defining how additions and modifications can be made in a manner compatible with the original design. Pre-existing alterations would be grandfathered.

A county historic designation would make certain replacement and maintenance costs eligible for county property tax credits. Retroactive benefits would be available for improvements completed up to five years prior to designation. A

Maryland state income tax deduction is already available for rehabilitation of historic sites listed on the National Register of Historic Places.

In spring 1999, residents of Greenbelt Homes, Inc. voted to designate the original town as a historic district. The Greenbelt City Council must now decide whether or not to apply for historic district designation from Prince George's County. If the Greenbelt City Council gives a green light, the next step is for the Prince George's County Council to consider the designation.

The historic area of Greenbelt faces continual challenges. Roosevelt Plaza, the commercial center, is currently undergoing renovation, and while the city has a façade easement, individual property owners previously secured zoning approval from the County to increase the height of their buildings. Parking shortages sometimes result in suggestions to widen roads.[21] The continued operation of the historic movie theatre was threatened, but citizens and the city government have banded together to promote the theatre.

Conclusion

Greenbelt today is a community remarkably attune to its historic roots. It is a community whose citizens and city government have been inspired to put resources into historic preservation. The Greenbelt Museum does an excellent job of educating residents and visitors about Greenbelt's history and contributions. The citizens have realized the benefits of a vibrant community center, a beautiful system of parks, pathways, and open space, and architecturally intact residential, civic, and commercial buildings. The recent referendum on historic district designation was an important validation of residents' willingness to retain the integrity of their community and to protect it from future development.

Notes

1 Capitman, Barbara, Kinerk, Michael D., and Wilhelm, Dennis W. *Rediscovering Art Deco U.S.A.: A Nationwide Tour of Architectural Delights*, New York: Viking Studio Books, 1994.

2 Maryland-National Capital Park and Planning Commission, *Greenbelt: Historic District Study*, February, 1994.

3 *National Historic Landmark Nomination, Greenbelt Maryland, Historic District*, designated February 18, 1997.

4 Klaus, Susan L. "Links in the Chain: Greenbelt, Maryland, and the New Town Movement in America: An Annotated Bibliography on the Occasion of the Fiftieth Anniversary of Greenbelt, Maryland" Center for Washington Area Studies, George Washington University, GW Washington Studies No. 13., 1987.

5 Knepper, Cathy D. "Greenbelt: A New Deal Remnant in Our Midst," *Maryland Humanities*, November 1998.

6 Attachment to Letter from Ronald L. Andrews, National Register Coordinator, Maryland Historical Trust, to Mr. Dennis E. Piendak, Assistant City Manager, City of Greenbelt, re "Greenbelt Historic District, Prince George's County, Maryland," December 30, 1980.

7 Lecture by Richard Striner, Founder and former president of the Art Deco Society of Washington, "Saving Our Art Deco Heritage: Preservation War Stories," January 21, 1999.

8 Sporkin, Elizabeth. "Honoring Art Deco's 10 Best." *USA Today*, January 11, 1983.

9 Gebhard, David, *The National Trust Guide to Art Deco in America*. New York: John Wiley & Sons, Inc., 1996, p. 37.

10 Wynter, Leon, "Rallying 'Round a Symbol of Greenbelt," *Washington Post*, August 17, 1983.

11 Striner, Richard. "The Saving of Greenbelt School," *Trans-Lux*, Volume I, Issue 4, November 1983.

12 Striner, Richard, president, Art Deco Society of Washington, letter to mayor Gil Weidenfeld and members of the City Council, City of Greenbelt, November 2, 1983.

13 Striner, Richard. "Greenbelt School Update." *Trans-Lux*, Vol. 11, No. 1, March 1984; and *Maryland National Capitol Park and Planning Commission, Greenbelt Historic District Study*, February 1994.

14 Testimony of Mary Lindstrom, November 5, 1986.

15 Regular Meeting of Greenbelt City Council, Agenda Comments, Item 13, "Ordinance to Appropriate Funds in the Amount of $53,400 for Acquisition of a Museum," November 10, 1986.

16 Likowski, Barbara and McCarl, Jay, "Social Construction" in *Greenbelt: History of a New Town-1937-1987*, edited by Mary Lou Williamson, Virginia Beach: The Downing Company, 1997, p. 82.

17 *FOGM Newsletter* Vol. 7, No. 2, November 1998, and "Maryland's Best Kept Humanities Secrets—The Greenbelt Museum," *Maryland Humanities*, November 1998.

18 Lampl, Elizabeth Jo. *National Historic Landmark Nomination: Greenbelt, Maryland, Historic District*, March 22, 1996.

19 Berger, Howard S. and Rivers, Robert D., Maryland-National Capital Park and Planning Commission, *Greenbelt Historic District Study*, February 1994.

20 The Maryland-National Capital Park and Planning Commission, *Potential Greenbelt Historic District Guidelines*, Draft, July 1997.

21 Geiger, Al, "Parking Solutions Cause Neighbors to Disagree," *Greenbelt News Review*, Volume 62, Number 12, February 11, 1999.

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Jill Cowley

Sisters Across the Ocean

Observations on Women in Cultural Heritage in Australia

Women in Australia and the United States share experiences, feelings, and hopes, and our histories have much in common. Women's experiences in Australia have a different texture, due to a combination of factors including Australia's close relationship to Asia, membership in the British Commonwealth, and interactions with Australia's unique natural environment. Aboriginal women struggled with their European invaders; and European women struggled with settling in a new country under harsh conditions. In Australia there are many on-going efforts to have women's voices heard in political and cultural arenas, including work toward equal and accurate representation of women's history and experience in heritage conservation (historic preservation).

In this paper, I offer a sampling of Australian approaches and activities relevant to women's heritage. This sampling is neither comprehensive nor representative; rather, it is based on research completed during my stay as a visiting lecturer at Charles Sturt University. While I mention the experiences and issues of aboriginal women, I refer readers to aboriginal women writers for first hand accounts of their experiences and views (e.g., D. Deacon, S. Morgan, L. Thompson).

Pioneer Women's Hut, Tumbarumba, New South Wales. Photo courtesy the author.

Women in Australian Cultural Heritage

As in the U.S., women in Australia have been involved in the range of cultural life and in activities that responded to and modified the landscape. Recent ethnographic research is showing that aboriginal women play a major role in spiritual life—both ceremony and land management—contrary to years of research where only aboriginal men were interviewed and where it was assumed that women did not play an active role (Brock 1989). Thought for many years to be prostitutes only, women shipped to Australia as convicts both contributed to the labor force in early colonial days and, as ex-convict, free women, played active and independent roles in farming, community development, and industry (Robinson 1994). Many women, like Annie Bryce of Wonnangatta Station in the Australian Alps, ran pastoral stations for years after their husbands died (Domicelj & Marshall 1994). Women immigrating to Australia from China and other Asian countries provided community services in Sydney and other urban areas while enduring discrimination from white Australians (Yen 1994).

For a number of years, writers, academics and institution builders in Australia have been concerned with correcting the underrepresentation and misrepresentation of women's role in Australian history, and with adding the women's perspective at existing historic sites and protected areas. Some are also concerned with finding out what places are significant to women and why, and being able to articulate women's experiences and places through women's eyes and using women's voices.

Individual women in Australia have had significant impacts on the environment, and their contributions and their places have been the subject of recent research and some preservation attention. For instance, Elizabeth MacQuarie, whose husband was governor of the new colony,

landscaped the grounds of Sydney Government House and the Female Orphan School (Bickford 1992). Quoting from Sagazio, Edna Walling, "one of Australia's most influential garden designers and conservationists...(was) one of the first Australian gardeners to appreciate the aesthetic and practical qualities of native plants" (Sagazio 1989). Distinctly women's places include the Cascades Female Factory in Tasmania—the women's equivalent of Port Arthur men's convict prison—which was entered in the Register of the National Estate in 1978 (Australian Heritage Commission n.d.), and which is now open to the public with interpretive programs in place (du Cros 1997).

Individual names and accurate histories are being added to the stories of women who historically have been remembered only generically, as the capable "bush mum" or self-sacrificing wives (Anderson 1993). Significant women researchers, such as anthropologist Olive Pink, are being brought out of obscurity and their reputations changed from women of quaint eccentricity to women who have made valid and significant contributions (Marcus 1991). Women anthropologists working with Aboriginal communities have started to correct research gender biases by bringing to light Aboriginal women's integral roles in Aboriginal ceremonial culture and land management (Brock 1989). In deconstructions of the interpretation of archeological research, Chabot, Jones and Pay and others have exposed how contemporary gender biases can be imposed on interpretations of the past (Chabot 1991; Jones & Pay 1990). For example, because 19th- and 20th-century assumptions about gender put women in domestic and more passive roles, some interpretations of archeological research have not considered the possibility of women as hunters and warriors, even though there was no evidence to the contrary (Chabot 1991). The Pioneer Women's Hut in Tumbarumba, New South Wales, was established in the mid-1980s specifically to develop and house a collection of artifacts and documents which make visible the lives of European settler women. And the Fourth Women in Archaeology Conference, held in northern Queensland in 1997, focused on moving beyond the identification of the problem to development of an action plan (Comber 1996).

Correcting under representation and misrepresentation is not only a matter of making women visible, but also of shifting focus from product to process. In Australian European history, men have more often been in a position of control over landscape modification and placemaking. Because traditional European heritage conservation efforts focus on material evidence (tools, structures, engineered features, and large-scale land modifications), these efforts tend to focus on the actions and products of men. The need to shift focus from large to small scale and from product to process is discussed by those concerned with including and accurately representing women's contributions. Given that European women, overall, have been more involved in the processes of making families and communities rather than making large-scale places (Johnston 1991), putting more emphasis on non-material culture and cultural processes, and blending knowledge of social relationships with knowledge of tangible resources, can bring women's contributions to light.

Perspectives on Historic Themes

Historic themes in both countries have recently undergone revision, and in both cases, previous emphasis on politics, economics, and technology and on individuals have given way to a more holistic approach, where social history, vernacular trends, and areas in which women have traditionally been more involved (domestic life, unpaid work, volunteer organizations) are now formally recognized. Interestingly, while the U.S. national park system places family, community,and life cycle topics within the "Peopling Places" theme (U.S.D.I. NPS 1996), where they can be overshadowed by discussions of population migrations, the Australian system has a separate category for "Marking phases of life" (Australian Heritage Commission 1995).

Studies addressing women's heritage also include discussions on historic themes, for example, Miranda Morris' *Placing Women: A Methodology for the Identification, Interpretation and Promotion of the Heritage of Women in Tasmania* (Morris 1997), funded by the Australian Commonwealth National Estates Grants Programme. In her section on themes, Morris offers an alternative framework which focuses on "women's life enhancing contributions in the free economy ... divided ... into 14 categories: giving birth, producing food, providing shelter, clothing, keeping well, raising children, sharing knowledge, expressing imagination, forming relationships, creating communities, keeping in touch, exchanging, dealing with

death, nourishing the spirit" (Morris 1997). This framework recognizes unpaid work, and emphasizes the sustainability of human activity.

Deconstructing Language Patterns

In her 1989 book, *Women and the Bush: Forces of Desire in the Australian Cultural Tradition,* Kay Schaffer takes a detailed look at the Aussie bushman character, how this character has been embedded in networks of meaning, how this character has developed in opposition to the land which is characterized as female, and how these characterizations have influenced attitudes toward the land and land management. All quotes in this section are from Schaffer 1989.

Schaffer shows us how "... the Australian tradition involves a struggle for a national identity against the otherness of the bush" (136). "Bush" refers to rural, outback, and wild places. The tough, anti-authoritarian, white, male bushman battling for survival against the bush has long been equated with Australian national identity in folklore, literature, politics, and daily life. The bushman is the "native son" who struggles to develop an identity separate from the English parent culture. Sometimes merged into the native son identity along with the bushman are the "digger" (gold-seekers in the 1850s goldrush) and Australian soldiers. Rich landholders or urban men have often been excluded, and women, Aboriginal women and men, and Chinese and other immigrants have almost always been excluded.

Quoting Schaffer, "The landscape provides a feminine other against which the bushman-as-hero is constructed." (52). The native son establishes his identity in opposition to the land, which is characterized as female. "She" is alternately experienced by the native son as seductive (through her natural beauty) and threatening (with her fires, floods, and expanses of isolated spaces), and ultimately as the "cruel mother" when she is perceived to deny nurturance and present obstacles to man's efforts to control the land and natural forces. Schaffer quotes Miriam Dixson, "Australia is like the body of an unloved woman." (51). So, the bush is both "No Place for a Woman" and is characterized as female (62). These language patterns have influenced attitudes toward the Australian environment and its management to a large degree.

Schaffer's deconstruction shows the native-son-against-cruel-mother-land tradition as a European projection that has become imbedded in discourses on national identity and which influences behavior. Her deconstruction challenges the transference of this projection onto real women and their role in Australia's history. Additionally, Schaffer's deconstruction allows the space and clarity of vision for women's history to be viewed more accurately.

Future Directions

While the bushman-as-hero has been, and still is to a large degree, the accepted Australian ideal character (Hollywood's Crocodile Dundee is a recent if somewhat modified version), this association is being challenged on many fronts. Writers like Schaffer, those involved in civil rights movements, womens' and mens' movements, Aboriginal speakers and writers, and those researching the contributions of immigrants are all gradually replacing the traditional characterization with a more pluralistic, inclusive and environmentally sustainable one. Australian indigenous relationships with country and traditional land management practices are increasingly being researched and used as models for the management of government land (D.E.S.T. 1996). These efforts may change the land from being characterized as "the body of an unloved woman" to being a place that is cared for by both women and men. Women and men in Australia and the U.S. can work together in the cultural heritage field to make research and interpretation more accurate and inclusive, not just with respect to women, but with respect to all communities who have been marginalized in traditional approaches.

References

Anderson, Margaret. "In Search of Women's Public History: Heritage and Gender." *Public History Review* 2(1993): pp. 1-19.

Australian Heritage Commission. "Cascades Female Factory." Two-page brochure. Canberra, n.d.

Australian Heritage Commission. *Proposed Revised Framework for Historic Themes* (Draft). Canberra, 1995.

Bickford, Anne. "Women's Historic Sites." In *Women in Archaeology: A Feminist Critique,* edited by H. du Cros and L. Smith. Albury, New South Wales: Charles Sturt University, 1992.

Brock, Peggy, ed. *Women Rites and Sites.* Sydney: Allen and Unwin, 1989.

Chabot, Nancy Jo. "A Man Called Lucy: Self-Reflection in a Museum Display." In *Writing the Past for the Present,* edited by J. Thomas and F. Baker. Lampeter: Saint David's University College, 1991.

Comber, Jillian, Personal Communication. 1996.

Deacon, Destiny. "Koori Women: Racism and Politics." In *Australia for Women,* edited by S.

Hawthorne and R. Klein. North Melbourne: Spinifex Press, 1994.

Department of Environment, Sport and Territories (D.E.S.T.). *Renomination of Uluru - Kata Tjuta National Park to the World Heritage List.* Canberra: Australian Department of Environment, Sport and Territories, 1996.

Domicelj, Joan, and Duncan Marshall. *Diversity, Place and the Ethics of Conservation: A Discussion Paper.* Prepared for the Australian Heritage Commission, on behalf of Australia ICOMOS. Canberra: Australian Heritage Commission, 1994.

Du Cros, Hilary. Personal communication. 1997.

Jones, Sian, and Sharon Pay. "The Legacy of Eve." In *The Politics of the Past,* edited by P. Gathercole and D. Lowenthal. London: Unwin Hyman, 1990.

Johnston, Chris. "Gaps in the Record: Finding Women's Places." Paper prepared for the Women in Archaeology Conference, Charles Sturt University, Albury, New South Wales, February 1991.

Longino, Helen E. "Subjects, Power and Knowledge: Description and Prescription in Feminist Philosophies of Science." In *Feminism and Science,* edited by E.F. Keller, and H. Longino. New York: Oxford University Press, 1996.

Marcus, Julie. *Yours Truly Olive M. Pink.* Canberra: The Olive Pink Society, 1991.

Morgan, Sally. *My Place.* New York: Arcade Publishing, 1989.

Morris, Miranda. *Placing Women: A Methodology for the Identification, Interpretation and Promotion of the Heritage of Women in Tasmania.* Canberra: Australian Heritage Commission, 1997.

Robinson, Portia. "Women Convicts". In *Australia for Women,* edited by S. Hawthorne and R. Klein. North Melbourne: Spinifex Press, 1994.

Sagazio, Celestina. "Women in the Historic Environment." *Trust News,* June 1989:10-14.

Schaffer, Kay. *Women and the Bush: Forces of Desire in the Australian Tradition.* Melbourne: Cambridge University Press, 1989.

Thompson, Liz, ed. *Aboriginal Voices: Contemporary Aboriginal Artists, Writers and Performers.* Sydney: Simon and Schuster, 1990.

U.S.D.I. National Park Service. *Revision of the National Park Service's Thematic Framework.* Washington, DC: U.S.D.I National Park Service, 1996.

Yen, Mavis. "Memories of Sydney's Chinatown." In *Australia for Women,* edited by S. Hawthorne and R. Klein. North Melbourne: Spinifex Press, 1994.

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