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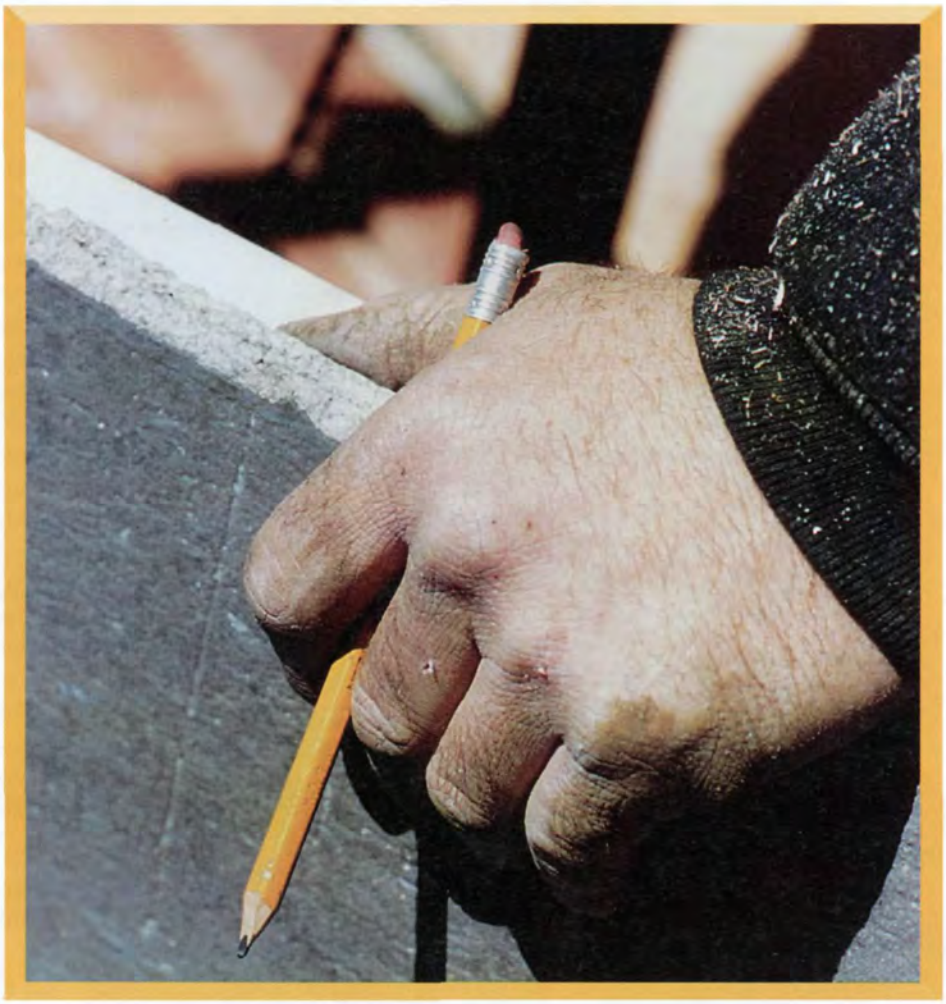
Preservation Trades and Crafts

Working in Preservation & Fostering the Trades



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To promote and maintain high standards for preserving and managing cultural resources

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The all-important tool of the craftsperson, the Hand. Photo by Leland Torrence.

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Foreword

I am very pleased to introduce this special issue of *CRM*, my first as Director, which focuses on the outstanding employees who work in the preservation trades and crafts. I have worked my entire federal career for the NPS, and I am deeply dedicated to its mission to preserve for all time America's cultural and historic treasures; likewise, I have gained a deep respect for the men and women working in preservation maintenance and the crafts, and those fostering the trade work in our parks.

The core mission of the National Park Service is to conserve our national heritage unimpaired for the enjoyment of future generations. This is the most fundamental trust that the American people and its leaders have bestowed upon us. As an organization, the Service cannot hope to meet this obligation without a stronger resource management and protection capability. The hands-on preservation of our historic structures by skilled and sensitive employees falls right in line with this objective. We are now bringing trade skills to our parks through partnership programs. One example of this activity is the International Preservation Trades Workshop with its myriad co-sponsors, that will bring preservation technicians together to further skills training. The Historic Preservation Training Center, now celebrating its 20th anniversary year, is assuming a leadership role in historic skills and crafts training; it is a leadership role that I welcome and encourage.

I strongly support the Service's commitment to training and diversifying its preservation technicians—and to providing a safe environment for employees and visitors—and I have supported efforts to encourage ongoing historic preservation skills and crafts development initiatives. I applaud this issue of *CRM* which brings together for the first time the voices of those whose work we see at our nation's heritage sites but seldom hear from, those whose very skills constitute the frontline work in preservation. I urge you to consider the viewpoints presented in this issue of *CRM*; they know from where they speak, their success comes from constant practice.

In my vision for the National Park Service, we will preserve and maintain the resources entrusted to our care to the highest levels of quality possible; and we will accomplish this through highly skilled, diverse, dedicated, and motivated staff. I extend my appreciation to the many dedicated maintenance and trade employees of the NPS family who demonstrate skill, devotion, and plain hard work, and I expect to hear more from you in the future. I look forward with pride and enthusiasm to working with you and all our partners to protect America's heritage resources.

Robert Stanton
Director, National Park Service

Thomas A. Vitanza

Connections — An Overview

The author discovering one of his early preservation skills training projects (Worthington House at Monocacy National Battlefield), is holding up well, 15 years later.

For those readers actively engaged in the preservation of historic structures, this issue of *CRM* features emerging points of view which are bringing vigorous new ideas to our chosen field. By actively engaged, I mean dealing with trades- and craftspeople on a daily basis, solving all the ritual dilemmas of in-the-field construction, and puzzling through the complex maze of preservation philosophy and construction realities; trying to get it to fit together and make a successful project as well. The concepts and proposals which are expressed in these articles come from those intimately involved with the preservation of heritage structures—preservation professionals (architects, conservators, preservationists, managers) and specialists in the building trades and traditional craft skills. This community of leaders are doing their very best to create and maintain those vital and future-oriented jobs in preservation trades and crafts as viable career options and lifestyle choices.

The ideas brought forth in this issue of the *CRM* are honest, passionate, thought provoking, and sincerely concerned with the subject "Preservation Trades and Crafts—Working in Preservation & Fostering the Trades." We have encouraged these views because they contain some of the best thinking in preservation today; especially frontline preservation, in-the-trenches preservation. It is a different world than that presented in many other forums.

The subject being developed here has yet to be dealt with in a conclusive way by the very industry so dependent upon it. As in any topic-oriented journal, there is the danger that articles presented offer a one-sided view of things. In this issue of *CRM*, the reader will find many varied opinions coming from very different realms within the preservation world, those not usually heard from. We have asked the authors to focus on the critical nature of the relationship between the head and hand, and despite different backgrounds there is a commonality—they are connected.

Look closely and find the connections between articles, connections which are sieved through the various viewpoints. Program administrators, contractors, material conservators, stonemasons, woodcrafters, preservation interns, architects, and landscape architects have all spoken eloquently of their concepts, proposals, and calls for action. People who work with trade unions and craft guilds, maintenance professionals and building managers, from within the National Park Service and from the many supporting organizations, all have a connection with preservation. Let's explore this connection together.

Several of the articles have been authored by representatives of organizations that co-sponsored the first International Preservation Trades Workshop. The very gathering of this preservation-based trade and craft community is a significant event. People who have devoted their careers to the development of programs and methodologies for fostering the future of these skills are creating powerful networks. Many of the co-sponsors are currently working with the National Park Service through cooperative agreements or other innovative partnering documents. We are working with them and others who have committed themselves to diversify the ways traditional preservation trades- and crafts-oriented persons are trained. We are forging partnerships, building new communities, being creative and solving problems, asking questions—challenging, training and learning from each other.

Recently, my dad gave me an old photo of my grandfather, one I had never seen before. My grandfather was a stone mason and I have seen some of his work, but had never seen him in the process of working; there is a lot to look at in that photo. He was a recent immigrant and had numer-

Toms' grandfather, Ignatzio "Tom" Vitanza, leading a stone masonry project in Cold Spring, New York, circa 1930.

ous obstacles to overcome in adjusting to his life in this country, but he was immediately sought after. No matter his trouble with the spoken and written language; one look at his work and people knew he was an accomplished mason. Much of his work is still in existence. When you look at it, you can see the quality of the work and the skill that went into building; the attention to detail comes through even in the photo. It is as timeless and irreplaceable as the work of every good tradesperson. After skipping one generation, I look around and see a brother in the masonry business and I'm an architect; both of us get very dirty in our jobs and wouldn't have it any other way. I'm glad there is a connection across the generations there. We're proud of the work we do; we're proud of the connection.

The value of skilled trades- and craftspersons cannot be overlooked. They are the essence of preservation, they are the front line. Without skilled, creative, and thinking building trade specialists it doesn't matter what the intent of the managers or designers is; nothing would be achieved. Several articles that follow look at the societal worth we have placed on saving cultural places and the seeming inequity of value placed on the workers; this is a very big concern. We are hoping this *CRM* will begin a dialogue. There are many questions here which need to be explored, many questions left open for discussion and debate. Preserving cultural resources remains a primary element and mission of the National Park Service. As Director Stanton says, "We expect to hear more from everyone involved."

The Preservation Trades Workshop has provided a venue for networking and community building, for demonstrating and learning from the talented artisans, and skilled crafts- and tradespeople who work with traditional building methods. One of our greatest achievements will be the future generations who have increased knowledge and the commitment and skills to conserve our national heritage. Is there a better way to learn?

Spend some time exploring this *CRM*. Find the common ground. Discover the connections between head and hand. Participate in the future!

Tom Vitanza, AIA, is guest editor of this issue of CRM. *He is a registered architect and has been affiliated with the WPTC team since completing his three-year training program in 1985. Senior Historical Architect since 1993, he is responsible for coordinating design activities at the HPTC; email: <tom_vitanza@nps.gov>.*

H. Thomas McGrath, Jr.

Qualification Standards for the Trades?

This past June, the National Park Service issued a proposal for review and comment to substantially revise the Secretary of the Interior's Historic Preservation Professional Qualification Standards. The new proposed standards address 13 professional fields related to historic preservation. Each of these professional disciplines are specifically mentioned in the National Historic Preservation Act. Additionally, the 13 disciplines are directly associated with an academic degree and, therefore, are defined as "professional." These new proposed preservation standards do not address the qualifications of the "preservation technicians" or preservation tradespeople who perform the work of applying the preservation treatments to our historic buildings. The proposed National Park Service standards offer a strict interpretation of the intent of Congress with respect to qualification standards only for professionals. I feel strongly that there should also be qualification standards for the preservation trades. Should the preservation community support a system that allows anyone who can pick up a hammer, trowel, or paintbrush show up at the job site to perform the labor of preservation, as long as they are supervised by a qualified professional? The intention of the Historic Preservation Act is currently being interpreted for professionals only because the preservation trades are not specifically identified in the legislation. The question, therefore, to ask is: "has the time come for the preservation industry to address the lack of qualification standards for the trades?"

It is my firm belief that the development and application of journey-level qualification standards for the preservation trades should be on a par with the application of the proposed professional qualification standards. They should support progress toward gaining the respect that people on the job who do the labor of historic preservation now

deserve. However, the need for qualification standards for the preservation trades extends far beyond workplace respect. Qualification standards for preservation professionals without a reciprocal standard for the preservation trades continues and perpetuates a construction site environment where continual close professional supervision of the trade worker is a requirement and we request only the "headless hand" from the craftsperson. Lacking common definition and acceptance of the training, experience, and standards by which to measure preservation technicians in their knowledge, skill, and abilities, technicians will continue their distance from the preservation community. Funding, recognition, respect, awards, training, and representation within the field of historic preservation for the trades now occurs intermittently or on an invited basis. When and if the preservation trades organize their own community and identify their special contributions to the preservation field, the trades should begin to get space at the table.

Training Center Superintendent Tom McGrath has been at HPTC since 1990.

Much has been written in the last several years about our nation's failure to develop secondary education programs or apprenticeships that adequately train our technicians and tradespeople. It has been widely recognized that the focus of the current American educational system has been on attainment of an academic education, and not necessarily on skills learning. For the past few generations, our high schools have relegated skills learning to shop, automotive, and home economics classes where few skills are learned that translate to jobs in the real world of work. While countries such as Germany are running technical apprenticeship programs that prepare students for jobs in industry, this country has been preparing youth—not bound for college—for work flipping burgers. In the past few years, some progress has been made toward developing entry-level training programs that develop skills directly related to technical trades in industry. For the building trades, older tradespeople learned their skill through trade unions or on the job from experienced mechanics. Unfortunately, many of the trade skills now learned on the job are inappropriate for preservation work and are very hard for mechanics to correct later in their careers. The installation skills of manufactured building components associated with modern commercial and residential buildings are unrelated to the traditional carpentry or masonry skills of constructing architectural elements and features. These are the trade skills necessary to preserve and maintain our historic buildings. Contemporary building techniques are similar to component assembly and are highly dependent on mechanical tools; hand skills used for the artistic crafting of wood and masonry, or the layering of paint have been replaced by skills that emphasize speed and production. Ironically, at the same time traditional sources for craft training seem to have disappeared from industry, the requirement for specialist technicians in the preservation trades has increased. The journey-level skills of the contemporary carpenter, painter, or mason are not always directly transferable to the specialized skill requirements of the preservation field.

If we accept that preservation work requires different and specialized trade skills from those used in contemporary construction, it should follow that we can define those competencies common to the preservation trades. Preservation professionals have recognized for more than a decade their professional skills were distinct from their professional peers who work outside of the field. It is now time for the construction trades to reflect the same form of recognition for those special skills required and necessary when working on historic structures. The evolution of distinct preservation trade carpenters, masons, and painters from their journey-level counterparts within the contemporary construction field should be encouraged. Therefore, I propose the answer to the challenge of the emerging preservation trades community is that reciprocal standards to the Professional Qualification Standards are now necessary and are desirable.

I propose that the historic preservation movement in America would be strengthened economically and creatively by moving toward an approach that shares the responsibility at the preservation job site between the professional and tradesperson. The goal should be to place trust with decision making of the qualified tradesperson. The economics of preservation are improved when there is less reliance on detailed specifications and excessive plans for simple preservation tasks. Most preservation professionals would prefer not to be required to provide close professional supervision of labor at our preservation work sites given the assurance that qualified preservation tradespeople are performing the work. Furthermore, the quality of the application of preservation treatments should improve when we foster and reward a preservation industry that pro-

vides fully trained and qualified preservation tradespeople at our job sites.

At a talk presented to a symposium titled "The State of Craftsmanship," held in Baltimore in 1996, I outlined some thoughts on what I called a Code of Practice for the preservation trades. Since then, the original eight points made in that presentation have been modified. The following listing of these eight proposed competencies might suggest one approach for developing qualifications for the skill training, historic trade experience, and products and activities that demonstrate journey-level qualification in the preservation trades:

- The preservation tradesperson shall demonstrate journey-level skill in his/her selected trade as defined by traditional hand tool skills and methods. The preservation tradesperson shall have a minimum of three years full-time journey-level trade experience that demonstrates the knowledge and ability to apply those craft skills appropriately to a wide range of historic resource types and examples.
- The preservation tradesperson shall demonstrate knowledge of the field of historic preservation. He/she shall have a working knowledge of historic preservation laws, regulations, philosophy, and practices as they apply to their specific trade.
- The preservation tradesperson shall have ability to demonstrate an awareness that work in the field of historic preservation is an interdisciplinary process. There are normally many disciplines involved in preservation project work and the trades technician shall demonstrate the ability to know when his/her work could have an adverse effect on a resource. The tradesperson shall demonstrate the knowledge to know when to stop work and seek guidance or consultation from a preservation professional.
- The preservation tradesperson shall demonstrate the skill and ability to document his/her own contributions to a preservation project. The trades technician shall demonstrate knowledge of the methods of documentation and the skill to provide appropriate documentation for his/her work when the tasks are completed.
- The preservation tradesperson shall have the ability to demonstrate a comprehensive understanding of sets of treatments and apply appropriate treatments as defined by the *Secretary of the Interior's Standards for Historic Preservation*. The work of the preservation technician shall reflect the hierarchy of preferred treatments that start with protecting and maintaining building features and then moves through repair treatment alternatives to replacement in-kind treatments. The preservation trades technician shall demonstrate the knowledge and ability to avoid irreversible damage that could result in diminishing the historic character of a structure.
- The historic preservation tradesperson shall demonstrate the ability to identify, evaluate, and document both contemporary and historic building materials, methods, and construction techniques.
- The preservation tradesperson shall demonstrate knowledge and skill in recognizing potential life safety hazards common to historic resources and preservation projects. The preservation trades technician shall demonstrate the ability to mitigate hazards in the course of his/her work.
- The preservation craftsperson shall demonstrate the knowledge and ability to apply and utilize sustainable practices in the execution of his/her preservation tradeswork.
- A master tradesperson shall demonstrate the knowledge, skill, and technical proficiency in the trade, as well as the knowledge in the business administration of the trade and laws relating to construction, occupational safety, historic preservation, as well as teaching skills in the trade. A person who successfully demonstrates master level competency and experience (master craftsperson) is thus also certified to train apprentices.

There are models to consider when discussing how to support the renaissance of the preservation trades in America. Certainly, the organization of the crafts and trades in Germany offers one approach worth studying. In Germany, Chambers of Crafts and Trades are organized as guilds at the town and country level and are responsible for vocational training and continuing education. The German guilds have been developed out of a rich tradition that dates back to the Middle Ages. A critical component of the German system is vocational certification. If we want to ensure that our historic buildings are preserved to the very highest standards, the preservation community needs to pay as much attention to the training, development, and economic opportunities for qualified preservation tradespeople as we are now doing for the preservation professionals.

H. Thomas McGrath, Jr., is Superintendent of the Historic Preservation Training Center of the National Park Service, Frederick, Maryland.

James M. Fitch

Proposed Academic Program for Craft Workers in Historic Preservation

An acute shortage of adequately trained craftsmen in the preservation field conceals an even graver shortage—that of craftsmen who are both technically proficient and artistically literate. This condition (of the so-called "headless hand") is the consequence of the industrialization of the building field during the last century or so—a process which effectively ended that symbiotic relationship between designer and fabricator, which had always characterized architectural and artifactual production in pre-industrial epochs. Such a dissolution might have been inevitable, given the ineluctable demands of standardized serial mass production; but it has not been achieved without costs, the most serious of which was to rob the craftsman of any role or voice in the design process itself. Robbed of such participation, the craftsman was also rendered illiterate; denied any functional access to the expertise and literature which characterized any craft—from gold smithing to cabinet work and stair building and ultimately to architecture itself. Robbed of any opportunity to apply his own talent and training to the solution of day-to-day problems in the field and workshops, the craftsman's critical capacities simply atrophied. Such a communal illiteracy has seriously compromised the ability of even the most competent craftsman in the field of historic preservation. In the contemporary building industry, this process is controlled by its working documents—specifications and working drawings—covering in minute detail every aspect of the process. Any creative participation by the building trade workers is explicitly forbidden. The craftsman becomes a "headless hand" and the atrophy of his critical capacity becomes inevitable.

What is needed urgently today is a nationwide network of training programs for historic preservation craftsmen which would complement the existing system of 57 colleges and universities offering the professional degree—M.Sc. in Historic Preservation. These proposed programs would be for a two-year undergraduate degree at the community college level. Curricula would aim at producing technically competent and artistically literate graduates. Curricula would combine handicraft, workshop, and technology lectures and lab classes along with art history and architectural classes and field trips. The curricula would include optional tracks for students wishing to specialize in carpentry, masonry, plaster, metal work, etc.

Historically, in the modern building industry as a whole, this process of producing "the headless hand" might have been inevitable. There is, however, one sector of the industry in which such a condition is not inevitable—namely, the preservation and restoration of historic structures. Here, all the pre-industrial norms are fully operational: the crafts of brick and stone masonry, plastering, glazing, metal work, water, and sanitary, heating, and ventilation systems all employ pre-industrial materials, methods, and theories. When the conservationist employs these historic means of restoring a historic house, he is in effect reviving a dead technology. He is simultaneously recreating the conditions for a revival of the lost symbiosis between building designers and building craftsmen.

At first glance, this might be mistaken for the sort of revival which John Ruskin and William Morris visualized in the 19th century, when they proposed handicraft production as being a viable alternative to the industrialized mass production which was sweeping across the Western World. To a limited extent, Morris did succeed in craft production of some elegant, upper-class products such as fabrics, papers, and carpets. But his shops were never able really to compete with mass industrialized production. The situation is different in America today, when a large and growing percentage of the building industry dollar is already represented by the preservation, renovation, and modification of buildings. This provides the objective basis for visualizing a closing of the gap between designer and craftsman, at least in this sector of American life; and thereby the possibility of restoring that symbiosis which characterized all artifact-making before the industrial revolution.

Dr. James M. Fitch is Professor Emeritus, Graduate School of Architecture, Planning and Preservation, Columbia University; and Director Emeritus of Historic Preservation, a program which he established in 1964 and directed until his retirement in 1979. He is currently Director of Preservation for the New York firm of Beyer, Blinder, Belle, of which he is a partner.

William A. Dupont

Historic Site Stewardship at the National Trust

The historic sites open to the public across the United States—some sources say there may be as many as 8,000 of them—are important for a number of reasons. First, and most obviously, they give us the opportunity to see history, touch it, walk through it, learn from it. They also serve a significant civic function as community gathering places, neighborhood anchors, and a focus for local pride. Finally, they play a major role in the growth of the preservation movement: a visit to a historic site leads many people to their first realization that old buildings and neighborhoods are part of the fabric of their own communities—and that their communities would suffer if those places were to disappear.

Because they are so important—and so fragile—historic sites require the most conscientious stewardship from those entrusted with their care and interpretation. As the owner of a score of sites stretching from Massachusetts to California and spanning 250 years of American history, the National Trust has always sought to demonstrate the best in maintenance and management practices. Our efforts in this regard have recently been given a welcome boost by Graham Gund, one of this country's most distinguished architects, who has provided a very generous gift to endow a full-time architect's position in the Trust's Department of Stewardship of Historic Sites. William Dupont, the author of this article, is the first to bear the title of Graham Gund Architect of the National Trust—a title which symbolically links the best of contemporary design with the richness of America's heritage.

We hope that this overview of procedures and techniques will prove helpful to all who are involved in the challenging task of providing thoughtful, sensitive stewardship at historic sites. These places deserve our very best efforts, because they are much more than bricks and boards. They bring the past alive, lift it off the page and into the here-and-now. They help us understand why preservation is important. They are a tangible expression of the dreams of people long dead, an entryway into the community's collective memory. We can't afford to lose that memory—or the places where it resides.

Richard Moe
President, National Trust for Historic Preservation

They go by many names—maintenance superintendent, director of operations, buildings and grounds manager, clerk-of-the-works, maintenance technician, restoration project manager, staff architect—but their objective is always the same: proper care and stewardship of the historic site. There are 20 National Trust Historic Sites, and each has a variety of staff with different backgrounds and skills. The Historic Sites themselves are varied by, for example, age, materials, building type, size, and nature of landscape. Most significantly, the Sites are also varied by the size of their endowment, with almost all operating under financial constraints. When the funding is limited and the Site is large, the job of the maintenance superintendent can be extremely demanding, or as one National Trust maintenance superintendent recently said, "we do so much with so little for so long, that the expectation becomes to do everything with nothing forever."

The mission of the National Trust is to provide leadership, education, and advocacy to save America's diverse historic places and revitalize our communities. The National Trust's congressional charter from 1949 directs the organization, among other things, "to receive donations of sites, buildings, and objects significant in American history and culture, [and] to preserve and administer them for public benefit." The mission is achievable at the Historic Sites, but requires a lot of creative training, education, communication, and programs. If time and money were not restricted, the National Trust would do a lot more, both internally and externally, regarding preservation trades and crafts. But the reality is that the work of the National Trust is limited by the available funding sources: membership and donors. Individual Historic Sites can also earn income from admissions, special property uses, and gift shop sales, but not enough to generate surplus funds. This article explains some current practices at the National Trust Historic Sites in the hope that it will benefit other managers of cultural resources.

Purpose and Methodology of Conservation

Not all old properties are historic sites. The distinguishing characteristic of a historic site is education, which means offering the public a quality visitor experience and solid interpretive pro-

National Trust maintenance superintendents on tour at Kykuit, Tarrytown, NY, during a recent conference. A behind-the-scenes tour of another site is an excellent educational and motivational tool. Photo by John Kidder.

grams. There are numerous historic sites in the United States, all in the business of education in some form or another. Visitors to these sites expect that buildings and grounds will be clean, safe, and restored (or simply preserved), as well as properly maintained. Because the maintenance superintendent has day-to-day control over what visitors see (in the same way the tour guide controls what visitors hear) their role is critical. The physical artifacts (landscape, structures, and objects) are the *raisons d'etre* of the site, as well as the delivery vehicle for educational messages.

At National Trust Historic Sites, the maintenance responsibilities are typically divided into two related categories: collections and buildings/grounds. But regardless of staffing particulars, the ongoing care of the built environment is the primary challenge of the maintenance personnel, with the custodial and janitorial aspects of the work being the largest consumers of time. In addition, the maintenance superintendents need to have good knowledge of all the relevant preservation trades and crafts for their site, and in accomplishing their objectives, must be part horticulturist, construction manager, office administrator, industrial hygienist (site safety), and above all, architectural conservator.

The portion of the work that is architectural conservation requires the ability to follow a unique process, or methodology, of decision making to determine appropriate actions, interventions or treatments. At the outset, one must be thoroughly familiar with a fair amount of background information which can be broadly divided into two categories: historic significance and use. Historic significance, typically cultural, architectural, or associated with an event, must be known for the site, the feature or structure at hand, and the actual material or object under consideration. The historic uses, and the chronology of physical change they may have brought upon a structure, must also be known, along with a complete understanding of the current or proposed uses. The maintenance superintendent must gain this knowledge by any means possible, but it is most frequently found in the various documents of scholarly research and primary source archival material. This type of essential information is typically brought together in one comprehensive planning document, such as a Historic Structure Report. Unfortunately, some National Trust Historic Sites do not have this body of knowledge organized and readily available because of the great expense involved. In any event, the process of learning the existing (and usually growing) knowledge based on historic significance and use at a particular site can take months, even years. Pride and a sense of ownership, and also the need to make informed decisions, drive the maintenance personnel to study, read, attend lectures, and otherwise learn what they must know.

A recent masonry preservation workshop at Montpelier, Orange County, Virginia was attended by seven staff members from National Trust Historic Sites. Technical training is important for practitioners as well as managers. Photo by Mark Haskins.

At many historic sites the proposed use is a period restoration of a structure and adjacent landscape that will be open for public tours. Although levels of sophistication are possible regarding historical significance and use which will affect the outcome of conservation treatment decisions, the process of making the decisions should always be the same. The steps in the methodology of architectural conservation can be briefly summarized as follows: study the problem, find the cause, execute the solution. The symptoms of a problem will sometimes distract, and budget constraints will tempt one to defer treatment of the real cause, but these pitfalls must be avoided. At National Trust Historic Sites, the decision making process of architectural conservation is rigorously followed because it is good stewardship.

Document for the Future

Mechanisms, procedures, and policies must be in place at all historic sites which serve as training tools and guides for the future. Chief among these is archival recordkeeping, which includes completion reports for capital projects, as well as maintenance logs with information on the daily routine. The standard completion report is a brief narrative description of the project, with labeled photographs, plus a listing of all relevant personnel, including consultants and contractors. Documents generated during the course of the project, including as-built drawings, are archived with the completion report. Looking at past activities allows predictions of future performance of products and materials, as well as frequency of service and repair. The log provides information on what has worked and what has not. Together, the completion reports and the logs provide an excellent source of information for assessment of an existing problem—highlighting trouble before it becomes more serious. And finally, these documents are wonderful training tools for new staff.

Develop a Maintenance Plan

The National Trust is a strong advocate of maintenance planning, and frequently offers educational sessions on this topic at its national preservation conferences. All building owners and managers recognize the value of maintenance, but the value of maintenance planning is often overlooked, and it is a very important component of good stewardship for a historic site. The first objective of a maintenance plan is to foster more planned and less unpredicted maintenance. With good prediction, action can precede system failure or material loss. Long-term cyclical improvements can be charted and scheduled, with the advantage that both staff and finances are budgeted in advance of the need. Unpredicted maintenance, especially a crisis or emergency, is undesirable because it corresponds with loss of historic fabric and authenticity, and ultimately decreases the cultural value of the property.

A good maintenance plan also includes two major benefits which can save time and money—the task list and the schedule. The task list breaks down the maintenance into smaller tasks which are easier for everyone to identify, prioritize, and accomplish. The schedule allows tasks to be purposefully spread out, gives staff the opportunity to plan ahead to perform similar tasks in one operation, and helps control the frequency of tasks. Consequently, economies of scale are realized, staff time is effectively allocated, and efforts are focused on the most important items.

Continuity is another important benefit of the maintenance plan. New staff can be trained faster and easier, and they will not lose ground as readily in situations where they come in without an overlapping training period. The plan becomes a useful tool that is constantly available to all personnel. As time passes, the plan also functions as a progress chart, and accomplishments are recorded in the process.

Meet and Confer with Peers

All National Trust Historic Sites develop their own maintenance plans, usually based on a shell document (essentially an outline) provided by the headquarters office. In order for the plan to work, rather than remain untouched on some library shelf, it should be written, implemented, and utilized by the on-site maintenance personnel. This is often a daunting task, so the National Trust holds a biannual conference of maintenance superintendents to help keep the process going.

Trimming slate at Brucemore, Cedar Rapids, Iowa, a roofer provides informal training. Whenever an outside contractor completes work, staff can take the opportunity to learn about installation, ongoing care, and maintenance. Photo by William J. Stevenson.

The real significance of the conference is very simple—it refocuses personnel on preservation issues. Over the years between conferences, the superintendents tend to be weighed down by janitorial, lawn care, and special event responsibilities, as well as the stress of operating on limited budgets which inhibit pursuit of restoration projects. The social interaction at the conference reinforces their very important functions, and the interaction with peers from other sites—simply talking about common problems and sharing success stories—is a tremendous benefit. Tours of other historic sites—two or three are arranged for each conference—have also proven to be excellent for ongoing education and motivation.

The conferences also have educational sessions, typically focused on site and workplace safety, disaster preparedness, maintenance planning, administrative procedures, and techniques to help achieve the daily responsibilities of the job. Sleepy slide shows are avoided, and every effort is made to offer lively presentations and activities. The conference is planned and presented by personnel from headquarters and the sites, with only

Preservation work was explained during the construction process at Pope-Leighey House, Mt. Vernon, Virginia (Woodlawn Plantation). Good job site tours, which require a collaboration with the contractors and artisans, are always popular as well as educational. Photo by the author.

a few invited speakers to address specific topics. The agenda of the next conference will integrate technical workshops and hands-on demonstrations of preservation skills.

Conduct Training Programs

Success with technical training workshops was recently demonstrated at Montpelier, where a three-day masonry workshop was attended by seven staff members from National Trust Historic Sites. These small, highly focused training sessions can be very effective for those who will practice what they learn, as well as for those who manage projects. Appreciation and solid working knowledge of a preservation skill is more often what is required rather than mastery of the skill. For large jobs, and any projects that involve trades and crafts outside the ability of on-site staff, the work is contracted out to qualified firms and individuals.

The use of outside contractors can be an informal part of the training program. Whenever someone comes on site to do a job, the maintenance superintendent has the opportunity to learn new techniques and methods which can be applied to future projects. In addition, it is very important to gain the knowledge necessary for the ongoing care and maintenance of the recently completed work. For example, a new slate roof was recently applied to the mansion at Brucemore, and the specifications required the roofer to supply a set of slater's tools and provide instruction on how to execute repairs.

The education of staff who are responsible for the stewardship of National Trust Historic Sites is a collaborative effort, requiring a running dialogue among all the players. The primary conduit for the transfer and dissemination of information is the staff at Trust headquarters in Washington, but knowledge frequently flows from the sites back to headquarters. In this sense, everyone has to be a sponge, soaking up knowledge from any viable source and then making it available to others at the right place and time. Good communication is key, and the Internet will play a major role as well as continued use of the telephone, telefax transmissions, and simple newsletters.

Integrate Ongoing Preservation Work

The mission of the National Trust also calls for a broader reach of educational initiatives. At the Historic Sites, this is mostly achieved through the standard interpretive tours, programs, and special events which address the history and significance of the site. However, Historic Sites also have an extra advantage they can offer to visitors. Because the work of preservation, including trades and crafts, is practiced at the sites, visitors can observe and learn something in addition to the standard historical interpretation. These issues of care and stewardship often relate to what the visitors do at home or with volunteer groups.

Methods to achieve integration of preservation work with the visitor experience are varied, and can be casual or purposeful. At Lyndhurst, for example, visitors have been able to witness ongoing restoration of decorative plaster ceilings. This process requires that the guides receive a good explanation of the preservation work visitors will see. The guides can then describe the work to visitors. When an outside contractor is employed, as at Lyndhurst, good collaboration is also necessary so that specific questions can be handled in a professional manner and without undue interruption of the contractor's work.

During the recent relocation and restoration of Frank Lloyd Wright's Pope-Leighey House, interpretation of the preservation work was purposeful. Specific tours of the work site were organized and the restoration carpenter in charge of the work devoted time from his busy schedule to explain what was happening. The tours were popular among architectural students, and all participants developed a better understanding about historic site stewardship and the specifics of restoration carpentry. Due to the importance and success of many such initiatives, all contracts let for preservation work at National Trust Historic Sites now include provisions for collaboration on public education.

Outside consultants from the fields of architecture, engineering, and conservation are often necessary to help assess conditions, design solutions, and observe construction. These consultants can also become part of the public education objectives. A clause now added to all consultant contracts requires submission of an article about the work suitable for publication in a scholarly journal such as *Preservation Forum*. The goals are

to promote and disseminate solutions to technical preservation issues, and to showcase the work accomplished at National Trust Historic Sites. In addition, the consultants are expected to make presentations, in collaboration with National Trust staff, about their work.

Capitalize Volunteer Participation

For the maintenance superintendent, perhaps the most gratifying technique of public training and education is through volunteer and internship programs. Filoli, in Woodside, California, has approximately 1,000 volunteers, many assisting with the care of their 654 acres, which include large formal gardens. Lyndhurst, in Tarrytown, New York, uses students from the North Bennet Street School to perform a variety of restoration projects. The goal is to get outsiders involved in a constructive manner beneficial to both parties. To be productive and successful, volunteer and internship programs require a lot of administrative work, careful planning, thoughtful training, and attention to individual needs of participants.

Promote Preservation Scholarship

Of course, the most traditional ways to promote preservation work and offer educational content are by lecture at conferences, and by writing articles and books. The National Trust has always promoted and sponsored its employees and others to expand the body of preservation scholarship, and will continue to do so. Staff have written and contributed to books and articles, offered numerous lectures and presentations, and frequently volunteer technical advice as time allows. An example of this ongoing initiative was the National Preservation Conference in Santa Fe (October 14-19, 1997), where a full day of educational sessions was devoted to technical topics of interest to stewards of historic sites. All of these venues for education of the public provide direct training, and foster a preservation ethic and greater appreciation of the trades and crafts necessary for quality care of historic sites.

There are two other significant methods to reach large audiences with a preservation message using historic sites— television and the Internet. These venues are underutilized or unavailable for most individual historic sites, although the world of communication is rapidly changing. Many National Trust Historic Sites are featured on A&E's "America's Castles," and there will be a PBS show released this fall, "About Your House," which is sponsored by the National Trust and will include footage of ongoing preservation work at Brucemore, in Cedar Rapids, Iowa, and Chesterwood, in Stockbridge, Massachusetts. The National Trust website <http://www.nthp.org>, recently rated a "top pick" by *USA Today*, is already an excellent source of information on preservation issues and a popular destination for "net surfers." Content on preservation work, of interest to both homeowners and managers of historic sites, will be added as the website continues to grow and develop.

Conclusion

Leadership, education, and advocacy are sound objectives for the only nationwide, private, non-profit historic preservation organization. However, they are also lofty aspirations which are sometimes easier to talk about than to achieve. The maintenance superintendent's contribution to the mission of the organization begins by setting good examples. Whether the work is performed with on-site staff or with assistance from outside consultants and contractors, the objective is the same—to practice the highest possible quality of stewardship and be a model of preservation excellence. Beyond this straightforward yet formidable objective, the other components of preservation education at the Historic Sites are born of necessity and opportunity. When the education is needed for maintenance staff, it is acquired or provided within the constraints of available resources. When the opportunity presents itself, education is offered for the public benefit, and the Historic Sites serve as advocates of good preservation practice.

Interns assisted with the restoration of the Bowling Alley at Lyndhurst, Tarrytown, New York. Volunteer and internship programs get outsiders involved in a constructive manner beneficial to all parties. Photo by David Overholt.

William A. Dupont is the Graham Gund Architect at the National Trust for Historic Preservation, Washington, DC.

Laurie E. Hempton

Beyond the Trades —

Working on the Creative Side

See Trades Workshop Notice, p. 19.

The evolution of the first preservation trades workshop and its community is the product of garnered creativity and sincere compassion expressed by individual tradespeople from around the country interested in exchanging ideas and preservation techniques. The idea to create a community among the preservation trades has come about during discussions with various experts over the years.

It takes a special blend of talent, character and courage to be a tradesperson. The experts of the preservation trades are creative, steadfast individuals confident in their knowledge, skills and abilities of a particular craft. As individuals, they tend to stand tall as genuine role models. It's not enough just to be novel and useful—it takes creativity and leadership. Creativity involves reaching out to other people; it goes beyond the individual—things come together when interacting with others. There is also a critical social dimension necessary for any creative action to be successful. Community is that source of creativity—the diversity and differences found among members of a group stimulates the development of beneficial relationships.

There are three key characteristics of a creative person:

- An essential characteristic is having the expertise in a specific area: skills that represent your basic mastery of a field. For example, to have such skills means that you know how to skillfully use a hand chisel if you're a timber framer, or a trowel if you're a stone mason. Many people have a flair for something. Talent is the natural ability for being able to produce great work in a particular domain. Without training in the skills of a trade, even the most promising talent will languish. But with proper skill development, even an average talent can become an expert.
- The second characteristic is creative thinking skills: ways of approaching the world that allow you to find a novel solution and see it through to completion. These creative thinking skills include being able to imagine a diverse range of possibilities, being persistent in tackling a problem, and having high standards for work. They also include the ability to turn things over in your mind, like trying to make the strange familiar and the familiar strange. Many of these skills have to do with being an independent person, being willing to take risks and having the courage to try something you've never done before.
- The final key element is passion: the urge to do something for the sheer pleasure of doing it rather than for any prize or compensation. Creativity occurs when people are motivated by the pure enjoyment of what they are doing.

The basis for creating the preservation trades workshop is not new—it's called networking. When you get people together with like interests, knowledge and skills—the result is the production of innovative and creative ideas and solutions. Creating an event of this type is just one way of pulling people together. It will provide an opportunity for those logistically not able to network, due to rural locations or time constraints, to exchange the latest information and techniques.

The dynamics of networking are as such: the development of an individual's creative abilities involves a process of taking in new ideas, of being made to think from inside out, or upside down, then trying to reach some compromise to achieve a new solution. Networking is a form of creative processing involving the combination of new and different ideas into a reasonable whole. To remain creative, the individual must keep collecting new information and experiences. Group creativity works in similar ways. Initially, there is a tremendous flurry of activity and an exchange of new ideas and cross-cultural encounters. The group is then confronted with putting all this diversity and complexity together in some harmonious way. What results is a community that enters a "golden age"—it becomes creative and energized and hopefully can use its diversity to develop a unique vision for the future.

References

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Laurie Hempton is a Preservation Landscape Architect with the New York State Historic Preservation Office. While on a two-year detail with the NPS Historic Preservation Training Center, she is the event coordinator for the International Preservation Trades Workshop.

J. Bryan Blundell

An Idea Whose Time Has Come — Preservation Trades Network

Preservation Trades Network (PTN) is an idea and has the promise to represent many different ideas to many different people. That is the hope and the challenge that PTN faces.

In the mere act of creating PTN, issues came up over the name and the focus of the group. As a result, there are now two groups, PTN and Preservation Industry Network/New York (PIN/NY). One of the first things that any group needs to deal with is determining who are the people it represents and what is the intent of the group. I hope the intent of PTN, PIN, and any other collection of individuals dealing with contracting, suppliers, and trades issues is to create an environment where we, the PTNs or PINs of the world gather, interact, agree, disagree, and ultimately take an active, positive stand for the knowledge and skills represented within our community.

For too long, tradespeople have allowed the concept to persist that there is no validation of knowledge outside of academia. In preservation, we have allowed memorization of bits of information to be certified as understanding, knowledge, and skill. It has gone so far as to allow government agencies to incorporate regulations mandating academic training levels without acknowledging field experience. I find this particularly interesting because our society values academic education and sports stars. The tradespeople that are dedicated to their career combine both the working of the mind with the masterful control of the body.

I have heard individuals in charge of training programs belittle the trades for their lack of interest and response to the efforts that are being made for the trades. This response always reminds me of the housing problem in Pittsburgh as the steel industry was growing. Families from the Appalachian Mountains that had lived a traditional rural mountain lifestyle were flocking to the city for the men to work in the mills. An apartment building was built to house some of the families. The building and the apartments were configured in the standard urban style. A small lobby, narrow stairs and halls, living/dining room, kitchen, two bedrooms, and one bath. In very little time, the building was in a mess. People loitering in the halls and stairs, families sleeping in the living room while using the bedrooms for storage, pigs and chickens being slaughtered in the bath tubs, and other "inappropriate" behavior. Were these people stupid? Did they not know how to behave like civilized humans? Of course they were not stupid and yes they behaved in very civil ways. It was just that the people that built the building did not understand who the occupants were. They were people with a social tradition of entertaining friends on their porches in nice weather or around the stove in cold weather. The family houses were of mountain vernacular in design, such as Dog-Trot and two-room cabins with full-width front porches. These people were used to feeding themselves from their gardens and livestock. The building was for city dwellers and not rural mountain people. The point here is that people in the trades are letting others make decisions for them and the results have not been pretty.

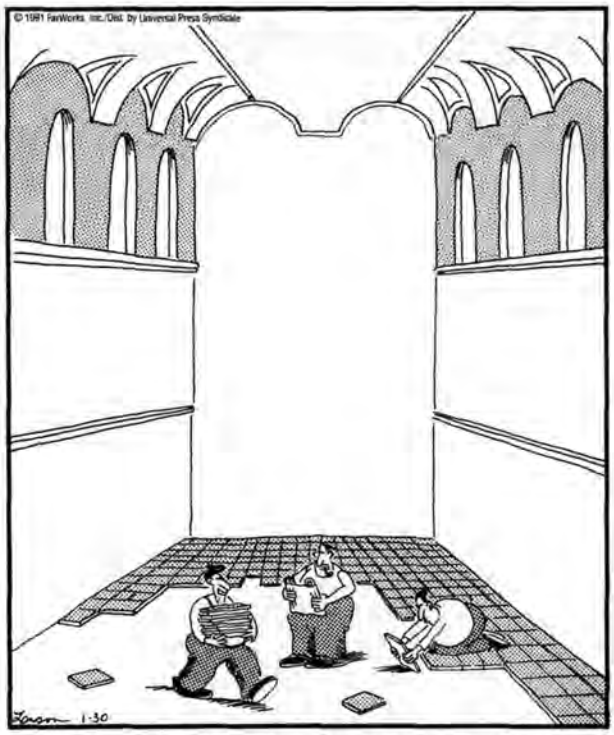
We need to ask many questions: "Who should determine what value to place on varying years of field experience?" "Who should influence determining the value of academic and vocational programs in relation to field experience?" "Who should have input on pre-qualification criteria?" "Who should be on review panels to determine funding for training programs?" We all have our own areas of interest where we see things that could, and should, be different. Yes, PTN is an idea whose time has come.

Creating groups that come together to form a community is not going to be easy. The different voices will clash at times, but that is just part of the process. The different voices will also agree at times. Maybe we can have a hands-on and open discussion. Maybe we can look at each others' work and occasionally say, "'that's real nice, here's an award'." Maybe we can recognize those among us with the skill and ability in the field and with a knack for training others. We need to position individuals from among our group onto boards, panels, and to author articles.

Who is a tradesperson? Let's start off with the following definition.

A preservation tradesperson is an individual with an intimate involvement in the understanding and use of labor and materials to produce a product for which they earn a living and create a career identity.

THE FAR SIDE By GARY LARSON



Although history has long forgotten them, Lambini & Sons are generally credited with the Sistine Chapel floor.

A tradesperson is not the person who labors to round out his/her life (hobby), is not someone who looks at the history of materials and production without the physical interaction (architect, historian), is not the person who purchases a tool and materials along with instructions (a hammer and a pick-up truck does not make a carpenter). The key items here are "earn a living" and "create a career identity." Someone who has become intimately involved in learning to produce a product as varied as those required within the preservation community must deal with understanding the processes of labor and experience the qualities of materials. They need to recognize the evolution of techniques and materials. They need to learn from the generations of workers that have gone before them. They need to observe and analyze the work of others so that they may pick up the lessons that have been set before them. They need to "earn the identity" of being a person that is a professional in his/her field. This identity is first bestowed on the individual by the individual themselves and then can be acknowledged by others.

The recognition by others is an important process. It is very important when that recognition is from peers. Recognition from some sources can actually be detrimental. I remember visiting a woodworker's shop that was located in a "craft complex" at a historic site. The "craft" buying public ooh'd and aah'd over products of questionable skill, causing the workers to be happy with their quality of work and to believe that they worked at a master's level of skill and knowledge.

What do we need to do to bring about the changes that are needed? We do this by realizing that it takes a commitment from many people. Many people leveraging a little time and effort can do amazing things. Breakfast meetings, lunch meetings, site visits, after work gatherings, demonstrations, make an effort to meet with others and find out what are the common issues. Realize that no matter what is tried, it will not work for everyone. Just get things started; do not try to be perfect.

Will being a member of the Preservation Trade Network make a difference? Hopefully it will, but only time will tell. What should PTN set as its first goals? PTN has the support of the Association for Preservation Technology. It has planned the first International Preservation Trades Workshop (IPTW)—a conference/training/organizational event by and for the preservation trade community. PTN has a long list of cooperating groups helping with the IPTW. Those involved in PTN activities have already set in motion efforts to get more trade-related representation on boards and panels. This issue of the *CRM* is allowing more trade-related individuals to express their views in articles. More people involved in more activities are needed to develop more momentum. The basic goal of developing a stronger voice for the preservation trades community is happening. To make some real advances, each trades-related person should have access to the Internet and establish an email address. This will allow information to flow back and forth without the high costs and time consuming process of printing and mailing. The Internet can not only provide access to information on products and materials, but also makes it possible to ask questions of people whether they are next door or on the other side of the world. We now have the ability to form a community without the cost of long-distance calls or the time and expense of travel. The Internet is a very useful tool and should be used. Currently, there is a PTN website at <http://www.prginc.com/ptn-index/>. If you have information to be included, please send it by email to the website or mail it to PTN, P. O. Box 1815, Rockville, MD 20849-1815.

J. Bryan Blundell is President of the Dell Corporation, a preservation specialties contractor, Rockville, Maryland, and Preservation Trades Network (PTN) Liaison to the Association for Preservation Technology International (APTI) Board of Directors

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Carolyn Murray-Wooley and Richard Tufnell

The DRY Stone Age — The Dry Stone Conservancy Promotes an Ancient Craft

The United States has a magnificent dry stone tradition. Richer and more diverse than most people realize, it is a heritage forged from labor, ingenuity, and sheer necessity. Dry stone masonry is the assembly of stone structures without mortar, relying on the forces of gravity and frictional resistance to construct buildings that can last hundreds, sometimes thousands, of years.

Archeologists have determined that the Chinese built dry stone terraces at least 10,000 years ago. In Britain, ancient tribes built dry stone shelters just after the last ice age, 8,000 years ago. High quality stone tools recently found in Europe are 2.2 million years old. Here in the United States, dry stone work represents but the latest in the series of migrations of peoples and skills—the continuation of movements whose origins are far back in pre-history.

During the 18th and 19th centuries, Americans utilized dry stone masonry on a vast scale. Most of us are familiar with the dry stone walls and buildings that characterize many regions of colonial agriculture. Less well recognized are our dry-stone industrial structures, some of which represent major engineering feats on any international scale. The Chesapeake and Ohio canal consumed 1% of the United States' entire gross national product during its construction in the early part of the 19th century. In other countries, such important dry stone structures are World Heritage Sites.

The fence top is leveled to string height, forming a crisp line.

Many of these important resources are in serious disrepair. As with any building form, dry stone walls need a certain minimum maintenance, and for various reasons, routine upkeep has not taken place. In areas where land fertility diminished, stone walls were abandoned and the pastures allowed to revert to woodland. Larger structures—mills, dams, furnaces, kilns, and canals—lapsed into poor condition or were entirely demolished. Through misguided advice to farmers, thousands of miles of rock fences were put through rock crushers and used as road base or spread on the fields as limestone fertilizer. In some regions, only 5% to 10% of the original rock fences and stone walls remain.

In addition to the neglect and destruction of historic structures, the craft is handicapped by lack of technical information and lack of skilled preservation personnel. Construction and engineering data that professionals need are scarce and, if recorded at all, are difficult to locate. Drystone masons are few in number and much in demand. Furthermore, suitable stone is expensive because quarrying practices have changed. The craft is endangered both regionally and nationwide.

Despite all these problems, many states still contain large numbers of dry-laid structures that add an invaluable perspective to the evolution of our historic landscapes. Some of these are much appreciated and cared for. Other masterpieces of the craft are hidden and unknown to all but a few back-packers or residents in the immediate vicinity. All of these structures and sites are critical to our understanding of American history and prehistory.

The current state of masonry skills is a major problem in conserving dry stone structures. It is unfortunate that the appeal and romance of the craft, particularly to the media, means that dry stone masons are often uncritically lauded for what is very poor workmanship. Repairs that last but a year or two are depressingly common. Very few American masons today have anything like the knowledge and skills of their European counter-

parts. Misguided restoration techniques such as concrete repairs and the use of semi-skilled labor yields unauthentic results and a considerable waste of resources. Worse still, such efforts often damage the integrity of the structures. This means that the various organizations responsible for caring for and restoring America's dry stone heritage require a source of advice and expertise. The Dry Stone Conservancy (DSC) was organized to respond to these needs

In 1995, the Kentucky Transportation Cabinet engaged Richard Tufnell, International Coordinator for the Dry Stone Walling Association of Great Britain, to teach a series of courses in connection with the relocation of traditional rock fences bordering the historic Lexington to Paris Turnpike. Television documentaries, news articles, and public lectures increasingly brought dry stone buildings and techniques to the public's attention. Widespread interest made clear that a nonprofit organization dedicated to all aspects of dry-laid stone and stone-and-earth masonry would be a valuable and overdue element in the preservation of this important building tradition. The DSC was formally organized in 1995 with the overall purpose to preserve the structures and promote the craft. We record, collect, and disseminate material useful to archeologists, preservationists, architects, landscape architects, geographers, conservationists, engineers, masons, contractors, and landowners.

The DSC has a unique blend of in-house expertise, with Richard Tufnell as Executive Director; Carolyn Murray-Wooley, architectural historian, as Director of Administration; and Jane M. Wooley, registered Landscape Architect, as Programs Coordinator. Board members are professionals in the fields of geography, archeology, landscape architecture, environmental conservation, and historic preservation. The DSC is a not-for-profit corporation whose goal is to revive dry stone skills in the United States and to become a national and international center for the craft. Our program, operating expenses, and various projects are funded by grants, product sales, and workshop, training, and consulting fees. We have had an extremely successful period since formation—conducting training, setting up a Master Craftsman's Program, advising numerous state and national bodies, and undertaking project management for specialist construction situations, receiving four environmental awards in the process.

The "batter frame" outlines the inward slope of the side walls, here placed at the wallhead.

This dry-stone road-retaining wall bordering Olmsted-designed Cherokee Park in Louisville failed after 130 years because of improper us of clay backfill.

As part of the program to produce a comprehensive range of high quality training aids, the DSC has published a handbook on how to build and repair rock fences, already in its third printing. We have produced a training video for the NPS National Center for Preservation Technology and Training entitled *Walls of Stone. We* are building a slide and reference library and are collecting and translating widely-dispersed technical data that specialists need.

The DSC conducts training programs to answer the need for skilled masons and provides a registry of Qualified Dry Stone Masons that government agencies, contractors, and the general public use to obtain skilled craftsmen. The Kentucky Department of Parks has retained the Conservancy to provide consultation and continuing training for state park employees. We will continue to teach and assist people in economically-struggling regions of the world and plan to extend this aid to poor areas of the United States.

Completed consultation projects include the reconstruction of a road retaining wall bordering a Louisville park designed by America's renowned landscape architect, Frederick Law Olmsted, which was the subject of television programs in Louisville and Cincinnati. We recorded each stage of the work for use in a future instructional video. It is of note that this project, using authentic dry stone methods, cost $100,000 less than the price quoted for a conventional concrete replacement wall. Conservation and training activities include a

The park wall was completely dismantled and authentically rebuilt at a savings of $100,000 over the bid for a concrete replacement.

project for clean water restoration and water run off management in a nature preserve for the Scott County Soil Conservation Agency. We are also working with natural resource management agencies to obtain affordable stone sources for landowners and masons.

Initial success has brought more opportunities, and we receive increasing requests from enthusiastic governmental agencies, professional and non-profit groups, and the general public. We are developing a prototype for preservation that can be followed in other states and countries. Additional plans and projects include:

- Producing a series of technical books covering both dry stone and stone and earth building methods and a catalog of regional dry-stone construction styles and locations throughout the country.
- Obtaining grants for property owners for repair of existing dry stone structures.
- Collecting additional data and information, including recording of lost or dying techniques, conducting field experiments with archeologists to determine labor needed to transport stone, and translating from foreign languages obscure texts regarding dry stone construction.

The craft comes to life during public demonstrations at fairs and museums. Kentucky Education Television filmed a documentary at the Kentucky State Fair while visitors watched in fascination as one hundred feet of high-quality rock fence rose from the floor of the exhibition hall. Last year, the DSC built a full-scale stone wall indoors at the National Building Museum in Washington, DC, for the exhibit on American fences, at which the public had the opportunity to try their hands at this ancient craft.

Carolyn Murray-Wooley is Director of Administration for the Dry Stone Conservancy, Lexington, Kentucky. Richard Tuffnell is the Conservancy's Executive Director.

ANNOUNCEMENT

The International Preservation Trades Workshop

Hosted by the Historic Preservation Training Center of the National Park Service, in partnership with the Preservation Trades Network, a task force of the Association for Preservation Technology International.

Wednesday through Friday, November 5-7, 1997. Two and one-half days of preservation trades demonstrations: Brick and stone masonry conservation—Traditional timber framing techniques—Dry laid stone wall construction methods—Use of historic woodworking tools—Concrete repairs—Epoxy repair methods—Historic plaster restoration—Copper flashing skills—Slate roofing repairs and restoration—Shake and shingle repairs—Rigging and scaffolding safety—Lead paint removal techniques—Lime mortar preparation and application—Window and door restoration—Fabricating historic millwork—and much more....

Registration for the 2 1/2 day event is $295.00 per person. To register, or for further information—please contact: Laurie Hempton, Event Coordinator, National Park Service, Historic Preservation Training Center, 4801-A Urbana Pike, Frederick, MD 21704; phone: 301-663-8206; email: <laurie_hempton@nps.gov>. We're on the internet too...for the latest preservation trades network workshop schedule and registration materials, check in at <www.prginc.com/ptn-index/index.html>, the "PRG Website" and select the International Preservation Trades Workshop or Preservation Trades Network button.

Co-Sponsors: Drystone Masonry Conservancy; Eastfield Village; Frederick County Dept. of Public Works, Bureau of Parks and Recreation; Frederick Historic Sites Consortium; Guild Institute of Stone and Restoration Masonry; THE GUILD of Fine Craftsmen and Artisans; Historic Medley District, Inc.; Institute for Preservation Training, Intermountain Cultural Resources Center of the National Park Service, International Masonry Institute, Jefferson's Poplar Forest; Maryland-National Capital Park and Planning Commission, Historic Preservation Section; Northeast Cultural Resources Center of the National Park Service; *Old House Journal*; Preservation Industry Network/New York; Preservation Institute for the Building Crafts; Preservation Resource Group; RESTORE; This Old House; Timber Framers Guild of North America; and Traditional Building.

Leland Torrence

There's No Such Thing as a Craftsman

Historically speaking, guilds have usually been formed during weak or flat markets. They are distinguished from labor unions in that all members are self employed. The primary weakness of the old guilds was the monopolistic character which evolved from the fact that most originating artisans became greedy and as controlling officers were not elected by the members allowing a few to control many. They no longer served their membership's needs.

THE GUILD of Fine Craftsmen and Artisans was founded in 1995. The association is a non-profit membership organization dedicated to the preservation and promotion of quality and standards in the building and restoration trades. The association advocates the sharing of ideas, methods, and techniques to foster outstanding performance as the cornerstone to lives of independence, dignity, and purpose.

The membership is open to all qualified craftsmen who meet the standards and practices of THE GUILD. Members must have a demonstrated experience and proven ability in a recognized trade for a specified period of time. The men and women of THE GUILD are recognized for their character and integrity in dealing with others.

What Makes the Organization Unique?

Only practicing craftsmen as full members. Many old guilds were criticized for their monopolistic character. As they grew, the originating members became powerful and wealthy and wanted to control the members to their own ends. By limiting full voting membership to practicing craftsmen, it will insure the control of the membership in meeting the goals of maximizing the benefits of the organization for the tradesperson.

Minimum of 10 years' experience in stated craft. This and other requirements ensure that not only is the member skilled but he has withstood the test of time as a tradesperson. Anyone can learn a trade sufficiently to do a job adequately in the eyes of untrained persons, but it takes many years of experience before one can be called a master craftsman.

Coppersmith Pat Tarantino fabricates base flashing detail for copper roof as part of a restoration project on an 1890s Victorian structure in New Haven, Connecticut.

THE GUILD standards. All members sign a notarized agreement to uphold THE GUILD Standards. The standards cover a range of issues involving ethics and proper business protocol both within the membership and between members and the public. The written standards are available to all with the idea of promoting honest and realistic expectations.

Evaluation and quality control. Members are accepted only after careful evaluation of their work by other craftsman and careful review of their references. In addition, the organization routinely calls customers of its members to make performance evaluations in the effort to constantly improve on past performance. No other guild that we are aware of has set standards for entry into the organization.

Non-partisan and non-denominational. Many early guilds and even associations in this century have met their downfall due to political or religious dogmatism. It is not the place of this organization to be involved in matters of church and state, neither to lobby for or organize against

Carpenter/woodworker Billy Evans constructs a detailed carved connection while restoring a cornice on the 1890s Victorian.

Shabazz, a painter, applies goldleaf to an Ionic column capitol as part of the restoration project in New Haven, Connecticut.

the interests of others. The goal is to promote the value of good craftsmanship through practicing it.

Reasons for a Modern Guild

Preserving craft and skilled workmanship. The response of today's construction industry to the lack of skilled craftsmen is to produce products that can be installed with unskilled workers with no efforts to educate the public about quality. Replacement materials and inferior products with limited or reduced life expectancies promote an obsolescence that bears a great cost to society. An appreciation for older things and the value of skilled labor to refurbish and maintain these objects encourages development of a culture less inclined to waste precious resources.

Creating standards for good business practice. These standards and ethics are to be understood and upheld by all members for the purpose of better understanding and communication between tradespeople. In addition, the written *Standards* are available to the public so that those requiring the service of a member can have accurate expectations as to the performance of a member.

Exchanging ideas and methods. Through meetings, newsletters, lectures, the Internet, communication with other like organizations, and a research library, craftsman will be able to refine construction techniques and monitor the effectiveness of materials. Many skilled and experienced craftsmen are reluctant to train or share ideas with someone they are not sure can be trusted; hence, much valuable knowledge is being lost. A strong organization is needed to reduce these fears and begin the flow of information.

Providing a quality of life. Through the growing numbers in the organization we will be able to reduce costs or increase coverages for medical plans, pensions, disability insurance's, liability and worker's compensation, college funds, and many other benefits. Many older craftsman are forced to work physically long after retirement age either because they never had time to plan for old age or did not belong to an organization that could offer an alternative such as teaching or research.

Recognizing ability and experience. In many areas of America there is no licensing or accreditation by states for skilled services such as roofing, carpentry, and masonry. This is changing, but in many cases it takes the form of a registration with no appropriate means of determining skills or good practice. Neither the contractor nor the public has a reliable source for qualifying workers in terms of abilities or reliability. "Word of mouth" is not an effective means either to satisfy the public or to create the stable life of a craftsman. An organization is needed to network and accredit those with superior skills.

Call to Arms

The mini-boom in the field of preservation seems to be stabilizing. Many new organizations have been formed or are in the makings that deal with issues of networking, training, and certification.

Similar organizations need to learn from each other and band together so as not to waste valuable monetary resources reinventing the wheel or duplicating efforts. Further, as associations we need to offer more services to our members and through strength in numbers help lower the cost of

Good construction technology reflects the craftsman's skills. Here the coppersmith solders a roof gutter installation at the 1890s Victorian structure.

doing business and minimize the risks that are unavoidable for the self-employed craftsman.

We must not only have the vocational schools, training programs, and source lists, we need to employ the services of the old masters in the field. Apprenticeships are a necessary part of learning a skilled trade. We must create an organization for which the young can have pride of membership and the old can teach in the twilight of their careers, while having the economic security of a viable career as a sole proprietor.

Yes, there is such a thing as a craftsman. However, we must work to redefine the role, set achievement goals, and meet modern societal needs. As a tree needs a forest, so a craftsman needs a guild.

Leland Torrence is President of Leland Torrence Enterprises and a member of THE GUILD of Fine Craftsmen and Artisans.

Photos by the author.

Back in the booming 1980s, you couldn't find anybody in the Northeast to do skilled restoration work. The few that had the capabilities had promised their services for the next two years at an undetermined cost. Getting an estimate was as difficult as guessing the market value of your home: "How much?", "You mean today or in two weeks."

A short-term boom market is as great a threat to quality craftsmanship as the bust is to the craftsmen and their families. Good and excellent contractors spoke of their relief as the demand began to wane. Many in the trades assumed three things would occur as the economy slowed: 1) an apprentice or assistant would stay on at least until he knew his trade, let alone the business; 2) that quality builders, like cream, would rise to the top; and 3) that we would have a better quality of life when demand and supply for services began to even out.

In the summer of 1992, my father called me from Vermont. He was doing some restorations on his 1750s residence and lamenting that there weren't any real craftsmen anymore. In Vermont? That beautiful state full of Yankees, ingenious enough to do or make anything? The state where I had apprenticed under three different master carpenters to learn my trade 25 years ago? How could this be? My answer at the time was, "Of course there are. However, the craftsman of today isn't also an accountant, administrator, salesman, estimator, manager, and marketing director, and he's not working for the same wage as two decades ago."

There are many mom and pop, second- and third-generation businesses out there operating in a vacuum. It's a family affair, and a typical breakdown has the mom as accountant and administrator; pop is the estimator, salesman, and foreman; while the offspring are the young and strong hands to the eyes of the trained and experienced dad. (By the way, guess who works for free in this scenario?) All too often the kids look at the old man and decide this is not for us. He works like a dog, his knees are shot, he has arthritis in his hands, and he can't even retire. He is wise, skilled, honest, well respected, but not worthy of emulation. With this image in mind, I began to research the history of guilds and trades organizations to ascertain the strengths and weaknesses of past efforts to provide enduring careers for builders and craftsmen.

There are references in Greek and Latin to the first guilds of stone masons. In fact, the origin of the word can be taken back to the German *gelth*—'pay', or the Dutch *geld*—'money', and with less certainty through the words *gilde* and *gold* to the Latin origins *aurorum* and *aurora*, meaning gold and dawn. The point of interest is the undeniable link from the earliest times between the word origin and a day's pay.

From the 6th and 7th centuries, medieval times and early modern times we find that guilds were most always associations of self-employed individuals where membership fees and dues (more fashionable in modern times than payments and sacrifices) were paid for the common good of the group. Although one must distinguish between the merchant guilds, whose purpose was often the freedom of a township, and the crafts guilds, which were often started by the artisans to allow sole proprietorship, they all had essentially the same goals: 1) freedom to practice one's craft; 2) regulate quality, production, and training; and 3) create economic stability. "It was generally considered a threat to the entire township if someone operated a business or performed a trade without serving a proper and approved apprenticeship."*

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* *Preston Guild Merchant*, "Preston's Week of Pageantry as celebrated from 1328 to 1952," by Thomas R. Flintoff. Kaymar Printing. No date of publication.

Rudy R. Christian

Traditional Timber Framing Today

The Timber Framers Guild of North America was formed in 1985 at its first annual national conference at Hancock Shaker Village in Pittsfield, Massachusetts. The Guild was created, as a not-for-profit organization, in response to the growing need for a network to allow craftsmen who specialized in timber frame building methods to exchange knowledge. A renewed interest in timber frame construction had created a demand for specialists; however, the educational resources available to those interested in pursuing that historic craft were extremely limited. The Guild set as its own mandate the development of those educational opportunities.

Initially, educational conferences were the platform used to educate both professional and amateur enthusiasts. Annual conferences were held, in both the US and Canada, which offered seminars, workshops, and panel discussions relating to design, materials, layout methods, joinery, raising, and the history of heavy timber framing. As the Guild evolved, so did the conference format which today includes three conferences each year. The seminar topics have grown to include business, forestry, health, safety, recycling, and regulatory issues. The conferences also feature extended sessions and workshops which allow for in depth study and hands-on experience in the more technical aspects of timber framing.

In addition to conferences, the Guild has developed a stand alone workshop program and created an annual rendezvous which allows for a totally focused educational experience. Students who attend a workshop may learn the methods for grading timber for structural uses, or how to understand and practice joinery layout using the "square rule" system, or assist in the reconstruction of an historic structure. Three years ago a Guild workshop recreated a timber framed building, using the "French Scribe" layout system, at St. Marie of the Iroquois in Syracuse, NY. The barracks is part of the reconstruction of an early Jesuit missionary settlement. The workshop format enabled students to work side by side for two weeks with master timber framers from the US and Great Britain. The focus of the workshop was to teach the intricacies of a centuries-old system of layout still used today by European craftsmen.

More recently, the TFGNA has developed the concept of a rendezvous coupled with a work project. In 1994, Guild members met at Malabar Farms State Park in Ohio, to recreate a "hand raising" of the main dairy barn which had been lost to fire. The frame had been "cut up" ahead of time, by a group of professional framers, using historically accurate joinery and framing typologies. The raising not only offered an opportunity to work in a community environment, but provided for an event which was open to the public: 55,000 people took advantage of that educational opportunity. Most recently, the Guild joined forces with the Forest Service in the restoration of the Dolly Copp pavilion at the foot of Mount Washington in New Hampshire. The pavilion was built as a CCC project in the 1930s, using "scribe rule" layout to join wall and roof timbers that were worked "in the round." The restoration was effected by replacing timbers that were no longer structural with new logs from trees which had been planted for that very purpose as part of the CCC program. As many of the original logs as possible were retained.

The Guild has also developed an editorial staff to provide access to information about activities, facilities, and technical issues specific to the trade. Conference scheduling, workshop and rendezvous dates, and general timber frame news and information are published in a monthly newsletter called *Scantlings*. Reports on conference proceedings, editorials, book reviews, and technical and historical articles are published in a quarterly magazine called *Timber Framing*. In 1996, the *Timber Frame Joinery & Design Workbook* was

Main dairy barn at Malabar Farms State Park. "Hand raising" of timber frame bent with the help of Ohio Governor Voinovich.

Completed timber frame at main dairy barn, Malabar Farms State Park.

released. As both a collection of previously published technical articles and newly released research and design data, the workbook is the most popular publication of its kind. It provides easy access for architects, builders, restoration and preservation tradesmen, and aficionados of the historic craft to information specific to planning and design.

Future educational programs planned for the Guild include a series of repeating workshops which would travel around the country for development of skills at timber framing shops, schools, and other educational settings. These workshops would focus on specific framing techniques as well as design and preservation issues. In conjunction with this, the Guild recently received certification from the AIA which will allow architects to receive credit for attending Guild forums, seminars, and workshops. The Guild is also developing relationships with other organizations and institutions in the form of sponsorships and cooperative efforts. The Timber Framers Guild is one of the sponsors of the upcoming International Preservation Trades Workshop hosted by the National Park Service.

Several years after the Guild was formed, a faction of its membership voiced the need for a focus on issues specifically relating to historical timber framing. Many Guild members specialize in restoration and preservation aspects of the trade, which made access to educational formats specific to historical topics and the need for documentation of existing timber frame buildings critical. Subsequently, the Guild approved the formation of the Traditional Timberframe Research and Advisory Group. The creation of TTRAG allowed the use of the existing Guild infrastructure to augment the willingness of many of its members to share the knowledge and perspective which can only come from hands-on involvement in preserving and recording early timber framed buildings.

TTRAG set its goals apart from those of its parent organization by creating a membership requirement based on active involvement. In order to become a member, an individual is required to submit surveys of existing historical framed structures and participate actively in the research of preservation trades through submission of articles for publication or presentation at a conference of a seminar specific to historical framing issues. Maintenance of membership is also based on activity. In this way, TTRAG initiated the first concentrated Guild effort to work toward the development of an archive of timber frame buildings.

TTRAG began developing its own educational format immediately after its creation. Following in the footsteps of its parent organization, it created a conference schedule to enable its members to share their experiences and needs. Again taking a tack toward active members, the initial conferences were developed with a requirement of those attending presenting a survey, report, or discussion relating to a historic project with which they were involved. This created an environment in which attendees had an interest in sharing their experiences with all the others in attendance. These conferences grew to include an open symposium each year to allow greater access to this information. Currently TTRAG hosts a steering committee meeting each year which requires every attendee to give a presentation, and an open conference which exclusively addresses historic issues relating to timber frame structures.

As with the Guild itself, TTRAG has realized the need for more in-depth presentations dealing with preservation issues. At its 1997 annual conference, held in Rosendale, NY, in addition to presentations dealing with the primal forest, mill structures, Dutch-American framing, and extinct bridge trusses, a three-hour workshop entitled "Old Ways of Measuring" dealt specifically with how early framers dealt with laying out joinery, on hand hewn timbers, through the use of patterns and very distinct systems of referencing. The fact that one system known as "square rule" would seem to be an early American development was of great interest to many in attendance.

One very popular activity at each open TTRAG conference is known as "tool time." This show-and-tell format activity creates an opportunity for conference attendees to share their knowledge of the tools they have learned to use in their own practices, as well as attempting to identify tools of unknown use and origin. Often, it is these what's-its that open lines of communication between seemingly unrelated fields of preservation

work. This cross platform networking has proven invaluable in many scenarios.

TTRAG is also active in editorial contributions to Guild publications. Much of the content of the Guild quarterly *Timber Framing* is articles on preservation and historical topics. This fact is also represented in the Guild's design workbook which accents the fact that most of today's timber frame technology is based on its historical application. Through the surveys and studies of its members, historians, preservation artisans, state and federal institutions, TTRAG is beginning to network the past, present, and future of timber frame building systems.

Although much knowledge has been lost that relates to the use of heavy timber construction and timber frame joinery systems, the formation of the TFGNA and TTRAG has opened the door to connecting those who are actively engaged in the work of preserving timber frame buildings and preserving the trade of building them itself, with those who would have an interest in seeing them preserved. As public awareness and the interests of private and public agencies grow, so will the demand for greater understanding of the preservation technologies on which the existence of our historic timber frame structures depend. It is the mandate of these organizations to develop the programs and networks that will allow access to all information that may benefit such a cause. By expanding the knowledge that is available and improving the access to that knowledge, the prospect of preserving our magnificent architectural heritage will be greatly improved. It is to this effort we should recommit our energies.

Rudy R. Christian is on the Board of Directors of the Timber Framers Guild of North America and the Steering Committee for the Traditional Timberframe Research and Advisory Group. He is also President of Christian and Son, Inc., a timber framing company specializing in both new construction and preservation and restoration of historic timber frame structures in Burbank, Ohio.

Photos by the author.

Robert Cagnetta

The Diversity of Application

The International Preservation Trades Workshop (IPTW) responds to the growing interest and demand for proper historic preservation skills training. Historic preservation has increasingly become more isolated as a trade, where preservation consultants and technicians are performing projects of growing significance and scope. The preservation of our nation's treasured heritage needs refined professionals, and our cities and towns require a more sensitive, cost effective approach in maintaining our built environment. The Institute for Preservation Training (IPT), a co-sponsor of IPTW, seeks to provide a new generation of historic preservation services, through an integration of vocational training, education, and contracting. IPT provides a program of training and heritage education, to people of a variety skill levels, who become active in all aspects of our projects. The success of the program relies on maintaining proper evaluation and placement of our participants, enabling a comprehensive, complete work exposure, as well as providing our customers a quality cost-effective work product. Expansion of the demand for higher historic preservation services will provide the means toward maintaining successful training and placement of qualified professionals in the field.

As the American built environment continues to be restored, the demand for cost-effective restoration methods will become more prevalent. Despite this growth of building re-use and preservation, the development of professional training has not yet fully responded. Projects are being completed with unqualified professionals, where a building's resources are mis-used and wasted, materials are being improperly applied and buildings are being grossly under-used. Yet the process may be as simple as a more disciplined approach—saving money, labor, materials, and most importantly, paying tribute to a building's historical design and use. The trends for increased preservation services are most apparent in the increasing requests for proposals requiring the contracting professionals to be versed in historic building restoration, although there is no real standard in which they are qualified. Parallel to the need for proper building preservation and qualified professionals, there is a growing necessity for the downsizing of federally-subsidized assistance job training programs. The growing demand for real job skills training for people with disabilities and barriers to employment has created an opportunity for a unique work force to participate in building preservation. The combined demand for greater professionalism in the field of

historic preservation and vocational training led to the development of IPT, a program where historic preservation can be used as a vehicle for providing education and training, while simultaneously producing fee-for-service contracting.

In July 1994, John P. Canham began to design a program which could incorporate people with disabilities into the field of historic preservation. By February of the following year, Vocational Resources, Inc. (now Goodwill Industries of Rhode Island), a 134-year-old vocational training agency, adopted the program as an extension to its current services. At Goodwill Industries of Rhode Island, the mission is to "provide services which expand vocational and economic opportunities for people with disabilities and related challenges in order to enhance their capacity for living, increased quality of life, and work." The program concept was formed to expand the variety of services offered to their "clients," using contract services to maintain the program, in an attempt to minimize the program's dependency on private or public funding. Maturing strategic business alliances and expanding social service programs allowed IPT to serve a greater population of people with disabilities and barriers to employment, while complementing the program's mission to serve historic preservation in general as a method for training and education.

IPT has been successful in several arenas. From community revitalization and rehabilitation, to the restoration of our national historic sites, IPT has provided real work experiences to people with disabilities and barriers to employment, and has begun the first registered apprenticeship training program recognized by the Department of Labor. IPT's program uses the concepts of vocational training through construction, with minimal public assistance or subsidies. We exist on the premise that our program can maintain a solid customer base which has the need for building restoration and rehabilitation, while providing our participants the training and education necessary for long-term, gainful employment.

The work adjustment program for participants provides training and education in several facets. Each of our projects is customized to the special needs of our participants. Our program can evaluate, place, and monitor our participants throughout the process of work exposure. During placement, the participants, consisting of people with disabilities and barriers to employment, use historic preservation as the means for their work training. For these participants, historic preservation provides the context in which they can learn the skills to gain self confidence, work experience, and socio-economic independence. The length of participation depends on their needs in vocational training. Some may require only a work-exposure experience, where they may only seek to gain the basic skills in work adjustment. Others may wish to learn the basic skills of carpentry and property maintenance, where they would then seek higher entry level positions, completing basic skills competencies which can be applied to new work opportunities. In both instances, the acquired skills allow participants to learn certain aspects of building rehabilitation, from framing to drywall, to finish carpentry, to painting. Historic preservation becomes not only practical, but a useful tool for a participant in gaining a greater understanding of building construction and maintenance.

The program concept of using this unique workforce has been implemented in several projects in Providence, Rhode Island. In Olneyville, a developing, low income, culturally diverse historic community within Providence, IPT has worked in cooperation with local and city organizations to assist in the rehabilitation of several community homes within the district. The "Olneyville Initiative" was established with three main objectives: education, training, and developing community partnerships. For education, the restoration of historic buildings provides a unique focal point around which to develop educational programs in local history, architecture, and culture. The program, therefore, seeks to provide information and education to community residents on the history of these buildings and the people and society that built them. For training, skills related to the planning of the project, implementation, and construction can be taught through the execution of each project. The quintessential motive of the program is creating partnerships with city, local, and grass roots organizations. In order to have greater communication and access to the neighborhoods, IPT works in conjunction with local organizations to facilitate an ongoing dialogue and partnerships to address a wide range of issues relating to community revitalization. Our activities in Providence provided us the opportunity to participate in the first YouthBuild program for the city where local at-risk youth from the ages of 17-24 will gain the necessary education and work experiences toward socio-economic independence.

Those participants seeking a greater level of skills training enroll in the apprenticeship training program with IPT. The apprenticeship program, labeled "Carpenter (Preservation)," requires 8,000 hours (4 years) of work experience and 576 hours of instruction of related subjects. The apprenticeship program culminated from the growing necessity for an established work and education training program in historic preservation. The apprenticeship program was developed in cooperation and was registered with the Bureau of Apprenticeship and Training, Employment and Training

WP TC 1977 HP TC 1997

NATIONAL PARK SERVICE

1977–1997: A Retrospective of the Work of the Historic Preservation Training Center

On November 5, 1997, the Historic Preservation Training Center (HPTC) will celebrate its 20th Anniversary as an organization. For these 20 years, the mission of the HPTC has been to support the preservation and maintenance work of the National Park Service by providing a comprehensive program of preservation trades skills training. Established in 1977 to meet the growing national demand for specialists within the NPS who possessed the skills to perform the work necessary to maintain and preserve thousands of historic resources within the national park system, the Center continues to fulfill the original mission.

Previously called the Williamsport Preservation Training Center, a new name was adopted in 1996 when the Center moved from Williamsport, MD, to Frederick, MD. The Center has a permanent staff of 40 employees. The headquarters and training facilities are found within Monacacy National Battlefield at the historic Gambrill House. In 1996, the Center initiated an innovative partnership with the City of Frederick that secured the use of the abandoned historic Jenkins Cannery Complex in downtown Frederick for use as a shop, training facility, depot, and operations base. Rehabilitation of the Cannery Complex is now underway.

The HPTC uses historic preservation projects as the "hands-on" vehicle for program participants to acquire building craft skills, receive instruction in preservation philosophy, and gain experience in historic building technology and project management. Over 481 preservation projects, with a combined construction value of more than $27,300,000, have been completed by the HPTC since 1977. These completed projects include preservation treatment work on dozens of National Historic Landmark buildings throughout the United States.

Teamwork is emphasized on HPTC projects and flexibility is encouraged. The positive impact of the 56 men and women who have completed the HPTC training programs has extended beyond the NPS to other preservation organizations. Hundreds of other preservation maintenance workers, both within and outside the NPS, have attended or participated in HPTC training projects or workshops over the past 20 years at many famous historic sites. HPTC programs have produced empowered preservation trade workers.

All the operations of the Center are entirely funded by the project revenue raised from funds produced by the preservation construction work completed by the program participants and staff. The HPTC has been recognized for accomplishment in quality historic preservation trade training and project craftsmanship. In 1995, the Maryland Historical Trust awarded the Center a Preservation Service Award for "its significant contribution to historic resources in Maryland's National Park System through its unique preservation craft training program, preservation construction services, technical advice, and its educational outreach...." We intend to continue these contributions for the next 20 years.

H. Thomas McGrath, Jr.
Superintendent

This is the most recent HPTC photo. As always not everyone could be there. From top to bottom, left to right: Dale Lupton, Bob Williams, Michael Seibert, Marty Vittore, Karen 'Petey' Bender, Roddy Rohrer; Bill 'Chappy' Chapman, Bill Hose, Doug Hicks, Gary Allen Dinehart, Fritz Rushlow, Dorothy Printup, Archie Kendle, Sharon Roof, Norma Dale, Sue McGregor, Eric Ford, Chris McGuigan, Tinuadra Foster, Bernie George, Ralph Doell, Billy Hendrick, Laurie Hempton, Donnie Runion; Paul Neidinger, Lynne Goddard, Reed Robinson, Bill Thompson, Connie Hetzel, Tom Vitanza, Tom McGrath, Jamie Wilburn, John Hoover, Dean Wigfield; Not pictured: Robert Boydston, Jeff Chipley, Dominic DeRubis, Amy Hite, Ross Hunt, Scott Jones, Les Messer, Ken Sandri. Photo by Beverly Rinaldi-Alt.

Learning from Each Other

A Conversation with Jim Askins, first Chief of the Williamsport Preservation Training Center

Where did the original idea of an NPS historic preservation craft training center come from?

You have to go back a long way to the early 1960s. After I had been in the Park Service for a little while, I left Harpers Ferry, worked at Pea Ridge, Vicksburg, and then moved back to Harpers Ferry. When I came back, I had developed an understanding of how the NPS conducted its business. At that particular time almost all historic preservation projects were done out of the lump-sum program. They were relatively small in scope and small in funding. There wasn't a great deal of design or planning done in concert with small projects. These projects were being attempted by people who did not understand historic preservation, were doing irreparable damage to the cultural resources, and it was happening year after year after year.

Jim Askins with his dog, Tess, at home in Pennsylvania. Photo by Doug Hicks.

There was very little control over this lump-sum program. I became cognizant of the fact that the NPS lacked the resources to adequately deal with the sophistication of historic preservation type projects. I raised this question numerous times in the mid- to late- 1960s. When the 1966 Historic Preservation Act took effect we were bound to do certain impact statements before we touched the resources. There wasn't anyone in the Park Service with that kind of experience. If I remember, and we're talking ancient history, there were only three or four of us who had hands-on historic preservation craft capability in the NPS—Bob Vorhees, Gordie Wittington, Harry Martin, and myself. All of a sudden under this lump-sum program, each of the regions programmed 15 or 20 small projects. There weren't enough people to do them. I decided that we needed more trained people able to work on these small cultural resource projects that could be completed without specific planning, design, or supervision. In 1967, I started training people at Harpers Ferry. The idea of Williamsport started here. I had 45 people working for me when Nixon got elected. I went hunting for two weeks; and when I came back, they had terminated all of my people. They were all temporary people. Some of those people had been in the NPS and exposed to historic preservation for 8–10 years. There was a tremendous amount of talent and skill in that group of people that was just arbitrarily terminated.

We then tried to do this work by contract which was an absolute disaster because the planning and design necessary to control the specifics of historic preservation ate up all the money and nothing was ever accomplished in terms of bricks and mortar. This is when I began preaching that we needed to develop people. I started again in 1968 to draw people together to a central location to do millwork and special things at Harpers Ferry and started training people like Bob Flickinger, Sam May, and Sherman Grove. When we started the C&O Canal restoration team I already had a cadre of people together. We used the C&O Canal program as a background to train and hold them together because it was large enough and had enough funding. I kept trying to sell the idea that we needed to produce these people because they weren't available anywhere.

By the mid 1970s I had developed enough visibility and had the ear of enough people that they started to take me seriously. In 1976, at the Regional Directors Meeting in Santa Fe they had a meeting of everyone who was interested in historic preservation to determine what the needs of the Service were. The Regional Directors decided what they needed most was a cadre of qualified historic preservation craftspeople. They put together three panels to search the construction industry, the Service, and academia to see where these people

might be. They found out that these people did not exist in the NPS, academia did not deal with historic preservation crafts, and the construction industry thought historic preservation was a joke. The Regional Directors, then through the Director of the Denver Service Center (DSC), asked Don Bressler to come to Williamsport to find out what I needed to start a training program to meet the NPS needs and that's how Williamsport got started.

What was the original mission or vision for the training program?

Just as it was in 1989 when I retired, to develop a cadre of people who would be able to take care of the cultural resources under the jurisdiction of the NPS. I told them in 1977 that we could not meet that goal in 30 years because we were starting with so few people to develop that critical mass.

Why did NPS management approve the program?

Criticism. The sophistication of the public who realized that the NPS was doing a terrible job of taking care of the cultural resources of this country. That's what caused Williamsport to happen more than anything else.

Did you envision a union-type apprenticeship program or a college curriculum?

In order for someone to work independently in the federal sector and not screw up a resource they had to have a tremendous array of skills. You had to have craft skills, administrative skills, people skills, and you had to have academic skills—it was the marriage of these things that I had in mind. It was why I selected a cross section of people as trainees knowing that I would not have the fiscal resources to hire instructors. The participants would help expose the other participants to their strong suits. I mixed craftspeople with professional people with people who had administrative skills and people skills. The concept was that they would learn from each other. That's what the philosophy of Williamsport was.

The first group was John Marsh, an architect, Jerry Shaffer, a mason, Bob Hartman, a mason, and Michael Lee, a carpenter. Fran Lucas came just a little later as a woodcrafter. Tom Crellin, Sam May, and Ken Bennet were part of my staff on the C&O Canal and I used those people as mentors. I took contract and day-labor work on the C&O and used it as a vehicle to train these people. I had a lot of planning and design projects so trainees got involved in collecting information, doing evaluations, and assisting with planning and design.

You directed the program between 1977 and your retirement in 1989. During that time the WPTC grew from 8 employees to 35, was administratively transferred, and completed in excess of 200 projects. What stands out as your greatest accomplishment?

When Don Bressler came to Williamsport and asked me to start a training center, he asked me what I would need. I said I would not touch Williamsport without having 25 permanent full-time positions. I was not going to go through all the temporary stuff like Harpers Ferry again and lose all the people after they had been trained. I said I would absolutely not do it with temporary employees. Bressler went back to DSC and made his report and they gave me 25 permanent full-time positions to start Williamsport. I also insisted on free reign to work in all 10 regions. The team concept that existed in Denver just wasn't going to work for a training center. I got the authorization to work anywhere in the NPS that I wanted, but the funding was my responsibility. I wanted the program to be project funded because I wouldn't consider being placed anywhere in the Service except the Denver Service Center. My Service Center job had a national scope and I didn't want to give that up and have a training program that was locked into a specific area. When we moved from DSC to Harpers Ferry Center in 1987, the program got an additional 10 positions, one from each region, to bring the total to 35.

My greatest contribution was to show that what we were doing was destroying cultural resources under the guise of maintaining them. We made people understand that they needed to do business a different way. If I contributed anything to the NPS, it was that idea. That idea may not have been original to me, but through my visibility and the amount of noise and people I beat over the head, I raised the awareness level of the special needs of cultural resources.

How would you define craftsmanship?

Craftsmanship is a well planned and managed execution of a specific design. Most people in the trades today are builders, not craftsmen. They assemble pre-manufactured components but do not construct. A friend of my generation and I were talking this past spring, if you walked into a lumber yard today the materials you are confronted with are so alien to my generation you can't even find what we used 40 years ago. Sizes have changed, materials are prepackaged or premixed, the building technology has changed. You can't equate the materials we used during our apprenticeships with the materials in a lumber yard today. If I had to go out and build a house today of the materials that are available, I would be better off being a shoemaker.¤

This interview was conducted by Doug Hicks, Deputy Superintendent, HPTC, in September 1997, with the idea of documenting the Center's beginnings.

Preservation in

Left, Exhibits Specialist Dave Thomas instructs an NPS Facility Manager at an Advanced Woodworking Skills Seminar at the HPTC shop.

Right, HPTC Intern Fritz Rushlow demonstrates lead paint removal techniques at Trophy Park Gazebo, Norfolk Naval Shipyard.

Exhibits Specialist Marty Vittore (r) and Carpenter Archie Kendle (l) in the field repairing historic log cabin frame at Jefferson National Forest.

Left, Historical Architect Eric Ford concentrates on a design plan in the garret studio in Gambrill House, HPTC headquarters.

Right, Exhibits Specialist Chris Robinson sizes and shapes a new post for the reconstruction of lock gates at Cuyahoga Valley National Recreation Area.

Constant Practice

Left, HPTC staff Masonry Leader Dominic DeRubis (l) teaches the basics of preservation masonry in specialized workshops held at park locations.

Right, Staff Exhibits Specialist Dean Wigfield (l) instructs a Job Corp Co-Op as part of the Trophy Park Gazebo preservation project.

The Grey Towers mansion NHL receives the finishing touches on its new slate roof from HPTC Supervisory Exhibits Specialist Bill Hose.

Left, Preservation Skills Workshop for New York State Parks provided hands-on opportunities for the participants to make repairs.

Right, Cleaning bricks is part of the project for Preservation Maintenance Worker Sue McGregor at the Dairy House, Hampton Mansion NHS.

THAT WILLIAMSPORT EXPERIENCE

Williamsport was the name of a place in Pennsylvania I recalled passing along I-80 years ago, before that town in Maryland came to be associated with a very focused and important one year in my professional life from 1980 to 1981. In the summer of 1980, I had taken a special assignment with HABS/HAER in Virginia City, Nevada, on detail from Technical Preservation Services in the Washington Office. With regionalization of the programs to which I was attached, I was looking at a major career choice as to which regional office to apply if I wanted to stay with the career path I had been on. During that rather frantic time, I found out about an architect-trainee position at the Williamsport Preservation Training Center, and this job struck me as presenting an opportunity for exploring an entirely different path in architecture and historic preservation.

My one year architect-trainee detail, which was a fast-track experiment compared to the multi-year assignments of other architects before and after me, had a very focused end goal—to complete a historic structure report on the Piper Barn at Antietam National Battlefield. Intertwined with my days at the Piper Barn or in the library at Antietam, I was to pursue an intense schedule of training courses and details at offices in Washington, Charlestown Navy Yard, and others, plus actual hands-on "real work" with my fellow preservation crafts trainees at different construction sites such as the wood shingle re-roofing of the bank barn at Hopewell Village National Historic Site, Elverson, Pennsylvania. I was also assigned the job of fabricating a window or door in the woodshop at Williamsport to fill in the idle time I may encounter.

During that year at Williamsport, I was given opportunities to learn about and gain experiences in aspects of architecture and historic preservation that have become important professional tools in my personal "kit." Williamsport provided the introduction to the hands-on physical reality of historic preservation. I view the Williamsport Preservation Training Center Certificate as an important milestone in post-graduate education on the road to becoming an architect and a historic preservationist. I recall the times spent with Jim Askins as being major learning experiences. At

Arlington House, I recall lying on the floor with Jim looking up at the ceiling plaster to discern tell-tale patterns in the shadows, colors, and materials. The other senior staff I met and learned from in my string of duty assignments each presented very unique and important episodes in my training program.

Williamsport presented me with the growth opportunities in developing my eye and abilities in preservation tools such as visual analysis, historic material analysis, measured drawing and photographic documentation, archival research, interpretation of other disciplines input such as archeologists and historians, production of a professional document that would pass muster for major construction funding, management training in supervising a team, and the hands-on teamwork of a construction project working with the people skilled in the different crafts, trades, and materials such as carpentry, masonry, metalworking, and painting. Since leaving Williamsport in 1981, and eventually leaving the National Park Service in 1985, I have come to understand that my year there provided the experiences that created the professional knowledge and abilities that I use in my practice as an architect and historic preservationist.

—George Siekkinen
Senior Architect, Technical Services
National Trust for Historic Preservation

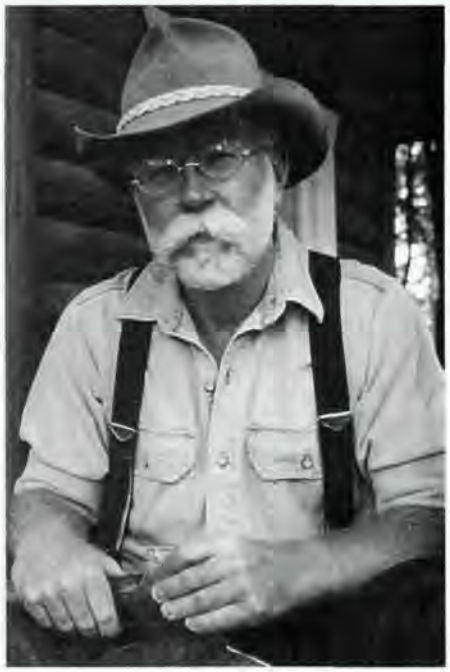
Photos on preceding two pages courtesy HPTC staff including: Laurie Hempton, Tom McGrath, Chris McGuigan, Paul Neidinger, Dorothy Printup, Ken Sandri, Bill Thompson, and Marty Vittore.

PUTTING MORE TOOLS IN MY TOOLBOX

My involvement in the National Park Service and the Williamsport Preservation Training Center may be a little different from most.

I came to the NPS and federal employment at 40 years of age and in the middle of my preservation career. I was accepted into the WPTC program in 1986. I moved from Boulder, Colorado, not knowing wholly what to expect. It was not easy. What was particularly upsetting was the fact that the WPTC did not give me the opportunity to work on log projects, which were my specialty. I was given the reason, but I did not readily accept or understand their rationale, until I got further into the program. They wanted me to put "more tools in my toolbox" and that would not have been accomplished working on log buildings.

My supervisor, Bill Hose, wisely suggested that I investigate areas in preservation completely different from my background. I decided to pursue working on masonry and wood structures in a coastal environment and dealing with the challenges of salt, sand, and wind. Before I joined the NPS, I had visited Cape Hatteras National Seashore's Ocracoke Island in the Outer Banks of North Carolina and the lighthouse. At the time, I thought how wonderful it would



be to work on that lighthouse. It was not long before a project came up on Ocracoke Island, working on the lighthouse keepers' quarters, and I got the project!

I worked on other projects around the country during the next two years, but the work at Cape Hatteras National Seashore was a special experience. I got along well with the superintendent and I was asked back on several projects. During my third year at the WPTC, I accepted a one-year detail which eventually led to a permanent position with the park.

At present, I am working with Jill Osborn, the Forest Service national training coordinator, and Joe Gallagher, who is in historic preservation with the Forest Service out of Utah. Together we are developing a national training program for the Forest Service. It's a very exciting detail, with some important implications for raising the skill level of agency staff in historic preservation.

I have concluded that at this stage in my career, training people in the techniques of historic preservation is where I can make the most valuable contribution. This is where I think I can have the most impact and impart some of the knowledge I have gained over the years, including those important years at the WPTC.

The NPS Historic Preservation Training Center has been critical to my success in the federal government. I acquired some valuable training, particularly in craft skills. Primarily what I learned was how to get a project completed efficiently and professionally within the federal animal. I learned how to pull all the elements together and make a project work. That has benefited me every working day of my career.

—Bernie Weisgerber
Historic Preservation Specialist,
USDA Forest Service, Region One

WHAT A RIDE!

In December of 1994, I arrived in Williamsport, Maryland, to begin my three years of training in the field of preservation as an exhibit specialist intern. With the three years now nearly completed, I can look back and say "what a ride!" The method of training I had pictured in my mind when we loaded up the van in Yellowstone and

headed east was soon to be forgotten. The idea of sitting behind a desk and being instructed changed to being assigned a laptop and heading into the field as a project leader. This new role, complete with procurement, contracting, managing a field crew, tracking a ledger, documenting, and producing a report every time you turned around, all seemed more than a bit overwhelming. More than once I asked myself why I had left that quiet spot in the Rockies. But as time passed, and I began to feel more comfortable with my new role, I started to appreciate the knowledge and information that I was absorbing. The staff at the HPTC is always there to offer their assistance, and the craftsmen that are in the field are quick to share their skills.

The Historic Preservation Training Center allows each intern the opportunity to chart his own course through his Individual Development Plan. The plan may increase your expertise in a specific craft and/or grant you the knowledge needed to manage a complex project from start to finish.

I have to say that the past three years, working and learning at the HPTC, has been the best possible opportunity for my future goals with the National Park Service. I would strongly encourage anyone with a desire for preservation and maintenance and a pride for the National Park Service to apply to the HPTC, and hold on for the "ride of your life!"

—Bill Thompson
3rd year Exhibits Specialist
(Restoration)

GIVE 'TIL IT HURTS

My initial attraction to the Historic Preservation Training Center was the work ethic displayed by its crew members. The HPTC is unlike any related government or private operation. The center is an infusion of knowledge, teamwork, and leadership. A trainee first notices an organized structure that requires and stresses production.

Another facet is the remarkable abundance of formal training—a dichotomy. Because I will leave the HPTC with a particular title, I had better have the experience and knowledge to be a specialist. My Individual Development Plan is critical to the path I have chosen to reach a particular professional goal. I am aggressive in my request for training, and the HPTC has responded favorably. The National Park Service, and the tax-

payers, send me all over the country in pursuit of knowledge and experience. There is an unspoken understanding—an implied contract—and personal conviction that results in such an investment. For example, while on Cumberland Island National Seashore re-roofing a cedar shingle building, I awoke every day with my heart soaring, chills on my skin, and butterflies in my stomach. I was ready to work. I have a reason. This country, the NPS, and the HPTC have given me the opportunity to give back—give more that I take—give 'til it hurts.

I am also using the HPTC as a vehicle for promotion. Initially, my Lakota heritage drew me to natural resource oriented parks. I now have a profound and educated respect for historic structures, their personal history, structural and decorative elements, and the disciplines used in constructing them.

The HPTC has a bold mission, a strong reputation, a three-year overlapping revolving door that has worked for 20 years. I give credit to the core staff who are masters and teachers of the trades and the administration that allows it to happen. As a Preservation Specialist, it will be my duty to perpetuate or enhance the gifts derived from the HPTC. I paint a pretty picture—but it is my picture.

—Reed Robinson
2nd year Preservation Trainee

IT WAS WORTH THE WAIT

I joined the National Park Service in the spring of 1990 at Cape Hatteras National Seashore as a temporary employee. While there, I was introduced to historic preservation. I later learned that a position was open at the Historic Preservation Training Center (Williamsport). Although it was not to be at that time, seven years later I was selected for a Preservation Trainee position. Coming to the training center, I had

some preconceived notions, and so far it has greatly surpassed all of my expectations. I have already received several hours of class and shop training and an almost overwhelming amount of information on preservation philosophy. These aspects have truly excited me, although there is another aspect of the training center that has awed me. The staff and other trainees are the most efficient, knowledgeable, and personable Park Service employees I have met so far in my career. Their ability to share the knowledge of the delicate aspects of preservation has enhanced my craft skills.

Thus far, I have participated in plaster stabilization, lead abatement, and other preservation techniques training courses. The project that I have worked on since my arrival here has given me a chance to increase my skills in weak areas such as masonry. I am just awed by the thought of how much more knowledge, skills, and abilities I will obtain by the end of three years of training.

—William Chapman
1st year Preservation Trainee

HPTC'*U*'—CHANGING COURSES

I first became interested in working for the Williamsport Preservation Training Center when my father, who is a seasonal ranger with the C&O Canal NHP, gave me a brochure that described the center and its functions. This encounter soon led to a change in my course of study at the University of Maryland from architectural design to an individual study of architectural history. This change in study was geared to prepare me for a career in the preservation field, more specifically with the Williamsport Preservation Training Center.

After a series of related positions in the preservation field including a summer tour with the Historic American Buildings Survey, I was hired by WPTC under contract as a research architectural historian to complete a historic structure report for Harpers Ferry NHP. My six-month contract soon turned into almost three years. During this time I worked on a variety of projects ranging from editing and writing reports to painting the interior of the Gambrill House. The most interesting of these projects was the *Historic Lighthouse Preservation Handbook*. This project lasted nearly two years and entailed visiting over 35 lighthouses. The product of this project is a comprehensive preservation guideline for government and civilian lighthouse managers.

In March 1997, I was hired as an exhibits specialist intern. Since I started my duties as an intern, I have had the opportunity to work on a variety of pro-

jects. My first project was located in Appomattox Courthouse, Virginia, where I worked under exhibits specialist Lynne Goddard, gaining experience and familiarity with the staff and the daily procedures of day labor projects. I have since started my own project at Allegheny Portage Railroad NHS. The scope of this project includes the cutting and shaping of stones for a culvert retaining wall using traditional methods.

My feelings about the program are strong. I view my three years at the Center as preservation graduate school. I plan to draw heavily on the institutional knowledge of the day labor staff and section leaders to help me perform as effectively as possible when executing treatments on historic structures. I believe there is no other place in the country where someone can have the opportunity to perform preservation treatments on the variety of structures and under the variety of conditions as they can while working at the HPTC. In addition to project-related experiences, the Center provides the funding and opportunity to attend training programs that further develop preservation skills. This aspect of the Center has provided me with a "curriculum" that will further groom me as a preservation professional in the National Park Service. I feel when I complete my time at the Center I will be well versed in the field of historic preservation and a valuable asset to the National Park Service.

—Mike Seibert
1st year Exhibits Specialist
(Restoration)

IPT's training participants receive shingling instruction from Dave Gengo, Preservation Specialist, in Harpers Ferry National Historical Park.

Administration, US Department of Labor, in February of 1995. The certification of the apprenticeship program by the Department of Labor enables historic preservation to be recognized as a legitimate trade, beginning a movement toward isolated professionalism. The North Atlantic Region of the National Park Service also participated in the development of the apprenticeship program, where the results of the apprenticeship have led to a mutually-beneficial program enabling the exchange of training and preservation services through the execution of National Park Service historic preservation projects.

Our first project with the National Park Service was at Weir Farm National Historic Site in Wilton, Connecticut. The 15-month restoration of an 18th-century timber frame barn complex and studio spaces was the first use of the apprenticeship program. The project consisted of instruction on the proper methodologies and techniques required in the execution of the scope, including timber frame, shingling, and vertical siding manufacturing, assembly and repair, sash and fenestration restoration, and documentation. Also, the activities provided rudimentary classroom instruction, giving a historic context to the site, the restoration methodology, as well as reviews on historic preservation law, federal, state, local, and private organizations and their respective roles, stylistic and construction techniques. The apprenticeship provided the necessary background toward making the participants more conscious in their role within preserving the built environment, while their skills were refined during the project's execution.

Our second and most current project with the National Park Service is in Harpers Ferry National Historic Park in Harpers Ferry, West Virginia. With a year in between the projects, the program has matured, enabling a greater exposure of training and education. The staff consists of a second-year apprentice, an intern from Roger Williams University's Historic Preservation Program, and four craftspeople participating in the 15-week project. A combination of increased research resources and available professionals enables the trainees to have a greater sense of historical context, proper restoration methodologies, and applications. They have received diverse work experiences and training from several NPS staff, industry professionals, and IPT staff, which encompass the entire scope of the project. Real work experience and education has become essential criteria toward gaining a comprehensive apprenticeship and internship in the field of historic preservation, preparing the future professionals who will participate in the restoration of our cultural and built environment.

IPT's program exists on two very simple concepts: our program will be used by the demand for quality historic preservation services; and training can be proven to be cost effective, while enabling participants to learn the skills of a trade. IPT has been involved in a variety of projects, from community rehabilitation, to the conservation of significant historic homes, to the interpretive reconstruction and restoration of national historic sites. Yet, not all participants are appropriate for every project; each must be properly evaluated, placed and monitored, to ensure the most effective work exposure for the participant, as well as to maintain quality on the site. Successful placement of the participants is based on their evaluated skill level, matching the required skill levels of the project with the skills and interests of the individual. Once placed, a participant's training and education becomes an integral component of the project, where the participants are exposed to the entire project, from proposal to completion, and learn each step toward completion. They can also learn how to interpret a building and its environment, think critically and understand the nuances of building construction and conservation. IPT's program addresses the needs of our changing culture, utilizing historic preservation as a vehicle for education and training. From short-term work exposures to apprenticeship training, participants gain a greater understanding of the development and use of our diverse cultural and built environments. The International Preservation Trades Workshop provides a cardinal forum in designing the criteria in which historic preservation shall carry the past into our future.

Robert Cagnetta is the Program Manager of the Historic Preservation Division of the Institute for Preservation Training, a program of Goodwill Industries of Rhode Island.

Photo by the author.

Judy L. Hayward

Certification in Preservation Skills and Technology

The Preservation Institute, a division of Historic Windsor, Inc., (PI/HWI) has offered continuing education for building professionals since 1982. Two years ago, after several years of study and searching for an academic partner, PI launched, in cooperation with the Norwich University Division of Architecture and Art, a program of study leading to a Certificate in Preservation Skills and Technology. This article reviews the Preservation Institute's experience with training, the process that lead to the creation of the Certificate Program, and an overview of the curriculum as developed thus far.

A Brief History

PI has employed four methods to teach preservation skills : slide/lecture programs in classroom settings; demonstrations and hands-on work in vocational school classrooms or privately owned studios; field trips to historic sites; and on-site, hands-on training at historic properties in non profit or public ownership. One or more instructors with demonstrated skills in the workshop subjects are employed on a contractual basis to teach. Team teaching has proven to be very effective when offering one to four day programs on narrowly defined topics. Eight to thirty-two hours of training in a few days is very demanding for two or more instructors, let alone one. Team teaching permits a low teacher-to-student ratio and is virtually essential when more than eight students enroll in hands-on training programs on site. Enrollment in on-site programs never exceeds 15 people. Classroom programs could enroll up to 25 people theoretically, but average from 10-15 students per program.

Specialization in the building trades is the norm today. Graduates go on to careers in carpentry, masonry, plumbing, and electricity. Preservationists need familiarity and expertise in a number of areas. The object of their work has already been built; it is an interconnected system created by separate trades at an earlier date, but in need of repair by professionals who understand the value in, the problems of, and solutions for the care of historic properties now. In 1986, the National Park Service developed a Skills Development Plan for Historical Architects. The list of selected skills needed by historical architects outlined in that Plan addresses the same skills and understanding of materials needed by tradespeople working on historic buildings including the following: wood, masonry, paint, landscapes, moldings, foundations, structural systems, wall cladding, roofing, windows, flooring, mortar and repointing, plaster, stucco, mechanical and electrical systems, fire protection, and maintenance systems. Since the publication of the Plan, the following new subjects could be added: photography and documentation process, health and safety, access to historic properties for persons with disabilities, archeology, and computer applications for research, Internet, and project management.

PI has had success in developing educational programs for many of the skills and systems outlined in the preceding paragraph. Initially, educational programs were offered in classroom settings emphasizing slides, lectures, and demonstrations or contrived hands on training—building a brick wall with a historic mortar formula instead of repointing one, for example. The next step in training involved taking adult students

Jan Lewandoski points to some cracks in a fireplace during a workshop titled, Structural Evaluation and Repair. This workshop was presented with grant support from the NPS National Center for Preservation Technology and Training in Natchitoches, Louisiana in 1996.

Sculptor and ornamental plasterer David Flaharty instructs students in casting and mold making during an on-site session of Ornamental Plaster Repair.

on field trips—visits to attics and basements of historic buildings instead of mainstream historical tours of rooms. Training in identification of architectural styles and in investigation of changes in building construction practice moved from slides and lectures to homes, commercial structures, and institutional buildings throughout Vermont and New Hampshire. On-site training was the next step. PI partnered with other nonprofit organizations or the State of Vermont to offer training in skills on-the-job at no cost to the host site. Not only did the students have the best possible environment in which to learn, they became invested in the preservation of the buildings on which they worked. Completion of projects was found to be crucial to the success of this type of training; the students must leave knowing they have helped to save a structure.

Slide and lecture programs and field trips are relatively inexpensive. They inspire and offer essential information prior to on-site and hands-on training. They have become part of all on-site programs. All on-site programs are preceded by a tour of the Site to place the students' work in context. On-site training is costly. More hours to train, materials, insurance, food expenses, and logistics drive up the per student cost; nevertheless, it is the best way to learn and practice preservation skills. The only disadvantage with on-site training is that if a student needs to practice a specific skill such as troweling plaster for example, there may not be enough time to hone those skills, if a project must be completed within the workshop's time limitations.

Development of the Program

Historic Windsor, Inc., commissioned Craig Dreezen, director of the University of Massachusetts Arts Extension Service, to supervise a study of the feasibility of a certificate program in preservation skills. Dr. Dreezen, a former boat builder, had developed a similar certificate program in Arts Management at the University of Massachusetts. Dr. Dreezen worked with the board and staff of HWI to outline how the certificate program could be organized and administered. He developed a survey and 500 former PI students were invited to participate. Forty percent of the students responded to the survey. The most significant information gained included:

- Students would enroll in a certificate program because they believed it would make them more competitive in bidding or lead to advancement in the workplace.
- It was important for the credibility of PI to be associated with a recognized college, university, or trades school.
- College credit was of less interest to most students than increasing their knowledge of preservation philosophy and skills associated with the care and repair of buildings. Many of PI's existing students have attended or graduated from college. Graduate credit was of significant interest to vocational building trades teachers.

A number of conversations were held with faculty at several colleges in Northern New England about partnering on this program. Ultimately, it was the fact that three active members of Historic Windsor, Inc., had undertaken graduate and undergraduate study through Vermont College at Norwich University that led to the partnership with the Division of Architecture and Art, the only NAAB accredited program in Maine, New Hampshire, or Vermont. Its five-year program of study leads to a bachelor of architecture degree. Norwich University has earned a distinguished reputation in many areas; limited residency, adult education being one. One of HWI's board members (an alumnus of Vermont College at Norwich University) wrote to Vice President Richard Hansen of Norwich about the concept of the Certificate Program who shared the information with the faculty. Professor Sharon Carter Matthews, Chair of the Division of Architecture and Art, began discussions with HWI Executive Director Judy Hayward in December 1994.

Students practice making a simple medallion during an Ornamental Plaster workshop.

Partnership with School of Architecture

Matthews and Hayward came to agreement quite quickly that such a partnership was not only

feasible but desirable. The conflict that arises on job sites due to lack of respect and understanding for the roles and skills that architects, contractors, and tradespeople play is a costly problem for owners and for those working in preservation. The Institute could address this problem by placing architecture students and architects in workshops along side tradespeople. Matthews and Hayward agreed that a certain number of Norwich University students would be admitted to the program in trade for use of the facilities. Other Vermont-based, construction and design education programs had contacted the Division of Architecture and Art about partnerships at the same time Hayward and Matthews were in negotiations. While these partnerships are in their infancy, they have laid the ground work for a trades education program that welcomes architects, architecture students, other design professionals, and community planners to learn side by side. The theory is that if design professionals and tradespeople enjoy learning together they will work more cooperatively together.

Hayward drafted the curriculum for the Certificate Program and the architecture faculty reviewed it and made suggestions. The curriculum was reviewed by Dr. Dreezen and by preservation craftspeople as well. A simple contract was developed and approved by the administration of Norwich University and Historic Windsor's Board of Directors and signed in early 1996. The L. J. and Mary C. Skaggs Foundation funded the development of the partnership.

The Curriculum

The objective of this program of study is to provide continuing education for building professionals in the field of historic preservation leading to a certification of the participants' completion of eight required courses, five electives, and a community service preservation project.

The following eight courses offer students the required information and skills that should be shared between tradespeople and related building professionals employed on historic preservation projects: Preservation Philosophy; American Building Design and Technology; Structural Evaluation: Timber Frame; Structural Evaluation: Masonry; Historic Plaster Repair; Paint: History and Practice; The Business Side of Preservation; and Health and Safety for Preservation Professionals.

Thirty-one electives have been identified from previously offered PI workshops or potential new workshops from which students may choose to enroll. Each year four or five of the required workshops are offered with up to ten electives. If students wish to design an independent study, that option is permitted as well.

The Certificate Program is designed for building professionals including tradespeople, contractors, architects, building trades teachers, engineers, specification writers, and interior design professionals. At least one or two years of professional experience is required for admission. Homeowners and interested lay people may be admitted if they can demonstrate their knowledge of and skills in construction. Students are graded pass/fail, and in order to complete the Certificate Program, they must design and implement a Community Service Project for a non profit or government owned historic site under the supervision of a mentor approved by the Preservation Institute. The historic site covers the cost of materials; PI doesn't charge tuition, but the student pays the mentor a modest honorarium of $250. Fifteen students enrolled in the Certificate Program in 1996; the first community service projects will begin in late 1997 or early 1998. The purpose of the Community Service Project is two fold: to remind students that although they can earn a living by working on historic buildings, that volunteerism and philanthropy continue to be the backbone of historic preservation in the U.S.; and to demonstrate the knowledge and skills that they have acquired while being enrolled in the Certificate Program. Based on tuition and registration fees as of 1997, the program can be completed for approximately $3,000 in a minimum of two years or up to five. Currently, the Certificate Program workshops do not have college credit, but it is anticipated that such an option might be available in the future.

The Certification Program presents an opportunity to recognize the efforts of tradespeople who pursue continuing education in historic preservation skills. The program equips them with the knowledge and skills to work with design and conservation professionals during work on historic properties. The partnership with the Norwich University Division of Architecture and Art permits tradespeople and architectural professionals to learn side by side about historic preservation and the role that each plays in executing sound preservation work. The students prove their proficiency by completing a community service project on a qualified historic site under the supervision of an approved mentor.

Judy L. Hayward is the Executive Director of The Preservation Institute, Historic Windsor, Inc.

Photos by the author.

Jan C. K. Anderson

RESTORE Training for Restoration — The Bridge Between Theory and Practice

One of the critical preservation issues we face in the next century is the education and training of the ever increasing number of craftsworkers and design professionals who are becoming involved in the field of building restoration and preservation maintenance. For the remainder of this century and in the next, the majority of dollars spent in the construction industry in the United States will be spent on the preservation maintenance of the existing building stock. To meet the marketplace demand for building restoration, many design professionals as well as craftsworkers have entered this specialized field without the requisite training. Those who are new to the field of architectural restoration often are not familiar with new technology, materials, or procedures. Many design professionals and craftsworkers practice architectural conservation on a "learn-as-you-go," trial-and-error basis, often with disastrous and costly consequences.

National Needs Addressed By Training

The care and maintenance of our architectural heritage is often entrusted to individuals who, through a lack of basic knowledge and training, do not understand the properties of the materials that they are working with or how to analyze and diagnose the problems they encounter daily. As a result, they draft specifications which build in time bombs addressing the symptoms not the problems, e.g., selecting the wrong cleaning method or designing and installing an improper composite repair mix. Several universities offer full-time programs, training design and management professionals for careers in preservation. However, little attention has been given to preservation education of the man or woman on the scaffold, or to the practicing design professional. This is a serious shortcoming which has serious consequences for our architectural heritage.

It is difficult for practicing professionals and craftsworkers to acquire the necessary knowledge and skills. Few schools of architecture address these issues in their curricula. Continuing education courses for masons, bricklayers, and other craftsworkers rarely deal with the specific concerns of preservation maintenance work. Most apprenticeship programs focus on current building practice and do not provide training for work on old or historic buildings.

Craftsworker training is especially important in light of the fact that 85% of preservation maintenance projects are done by contractors working directly with the building owner or manager, without the input of a knowledgeable architect or architectural conservator. In the end, it is ultimately the work of the man or woman on the scaffold that we see; therefore, informed, competent, well trained, contractors and craftsworkers are critical to the success of a restoration or preservation maintenance project.

This is precisely the issue that RESTORE is addressing. RESTORE is a not-for-profit educational corporation which offers a broad range of innovative programs related to architectural conservation and preservation maintenance technology for people in the building industry. Founded in 1976, RESTORE is incorporated by the Board of Regents under the New York State Education Law and is a registered provider of Quality Level Three Continuing Education Units for the American Institute of Architects. RESTORE's educational programs and services include:

- Specialized Workshops on Preservation Maintenance Technology

The field workshop segments of the RESTORE Two-Semester Course on Masonry Conservation include demonstrations of traditional stone carving techniques.

Participants in the RESTORE Five-Day Intensive Workshop on Masonry Conservation prepare mortar sample for chemical analysis.

- A comprehensive Two-Semester Course on Masonry Conservation
- Videotape series on Architectural Conservation Techniques
- Architectural Conservation Library
- Technical Clearing House for Information on Building Conservation

RESTORE's goal is to provide everyone practicing architectural preservation—from design professionals to craftworkers and cultural resource managers—with a common basis of practical knowledge in restoration technology. Everyone involved in the preservation process on the job site should look upon their work as part of a range of different teamwork skills. RESTORE is based on the premise that preservation work requires thinking craftworkers who, like the architect or preservation consultant, should be equipped to make sophisticated judgments. To be productive members of a team, all must be properly trained in state-of-the-art preservation technology. They must have a thorough understanding of the properties of materials, old and new techniques, a sound knowledge of their craft, and a basic knowledge of crafts related to their own. RESTORE has a material science approach to architectural conservation. RESTORE equips students with state-of-the-art information about the proper materials and processes used in the preservation maintenance process. The objective of RESTORE is to show the architect, engineer, contractor, and craftsworker how to think through, analyze, and resolve the problems they face daily when dealing with the maintenance and preservation of masonry structures of any vintage. Basic to this process is an understanding of the chemical and physical properties of materials and the many factors that contribute to their deterioration. RESTORE's training includes lectures, laboratory, and field-workshop demonstration sessions in six basic areas:

- Properties of Materials and Problem Analysis of Masonry Decay Processes
- Technology of Masonry Cleaning
- Technology of Masonry Repair and Replacement
- Mortar Analysis, Pointing, and Caulking
- Special Problems Related to Design and Detailing
- Health and Environmental Hazards Inherent in Restoration Materials and Processes
- Health and Environmental Hazards Inherent in Conservation Materials and Processes

Another aspect of the field that RESTORE has effectively addressed is the issue of health and environmental hazards inherent in conservation materials and processes. Today's technology is evolving so rapidly that it is often difficult for design professionals, craftsworkers, materials conservators, archeologists, and others in the field to keep abreast of new information. As a by-product of changing technology, new health and environmental hazards inherent in conservation processes are being identified and strictly regulated. A host of hazards and environmental issues affect the way we work, how we design, and how we specify, use, store, and dispose of materials. Often, irreversible or inappropriate work is done because architects, engineers, and preservation craftsworkers do not understand how to read and interpret a Material Safety Data Sheet and often try various products on a trial-and-error basis.

Understanding the health risks posed by many restoration materials and process is essential to the safe and effective treatment of conservation problems. This is a cutting edge issue. Yet this problem is not being addressed adequately, or often not at all, by the schools that train design professionals. Indeed, RESTORE has been at the forefront of addressing this critical issue for those in the field of preservation today.

The RESTORE curricula equips one to make informed decisions about critical architectural preservation problems related to the hazards and environmental impact of the technology we specify and use today. In addition, RESTORE is publishing a *Technical Field Guide on Understanding the Health and Environmental Hazards Inherent in*

Conservation Materials and Processes which will be a focused summary of this information.

RESTORE's aim is to bring those working in the field of architectural preservation up to speed with the safe use of materials and processes that technological advances have made available. State-of-the-art conservation technology will be viable only if design professionals and craftsworkers understand and can respond to the potential hazards of the materials and processes they specify and use every day, e.g., cleaning chemicals, epoxies, adhesives, coatings, and consolidants.

To this end, RESTORE Workshops and the Technical Field Guide on Understanding the Health and Environmental Hazards Inherent in Conservation Materials and Processes provide:

- an understanding of materials and processes used in architectural preservation work and their inherent hazards;
- guidelines for evaluating and selecting the right "generic products" and preservation processes;
- methods for working safely with hazardous materials when their use is necessary;
- guidelines for the selection of proper materials and protective equipment for preservation work.

Understanding the health risks posed by many restoration materials and processes is clearly essential to achieve both safe conservation as well as effective conservation. RESTORE's training equips design professionals and craftworkers with the knowledge to make informed decisions so that they are able to design and produce safe, cost effective, and viable projects.

A craftsman explains the manufacture of cast sone to participants in the RESTORE Workshop on Architectural Replacement Materials.

RESTORE recruits a diverse faculty that enriches the curriculum with current research and case studies on architectural preservation practices. The RESTORE faculty consists of a team of nationally and internationally recognized building conservators, masonry craftsworkers, architects, engineers, chemists, geologists, and materials consultants, all of whom are actively engaged in the field of architectural restoration and preservation maintenance.

RESTORE's Programs and Services

The RESTORE Two-Semester Course on Masonry Conservation is taught in New York City and meets one evening a week, from October through May. During April and May, students participate in laboratory and field-workshop sessions. RESTORE applies a materials science approach to the preservation maintenance process. Through lectures, case studies, and field demonstrations, students gain a comprehensive understanding of the underlying properties of masonry materials, including chemical composition and physical properties, as well as decay processes. The information presented on the properties of materials and treatments is not only pertinent to the preservation of existing structures, but is also important to the design, construction, and maintenance of new structures as well.

The RESTORE curricula also includes "hands-on" laboratory sessions that focus on mortar analysis, efflorescence analysis, water absorption testing, examination, and experiments with a variety of cleaning procedures, and microscopic analysis of various coatings and consolidants for masonry. The field-workshop sessions focus on mortar analysis and mortar matching in the field, cleaning tests, and masonry repair and replacement techniques.

Since 1976, architectural and engineering firms, trade unions, mason contractors, government agencies, and preservation organizations across the United States and Canada have sponsored employees to attend RESTORE's programs. In New York alone, restoration projects overseen by RESTORE graduates include Ellis Island, Grand Central Terminal, the Smithsonian Museum of Natural History, the New York Carnegie Public Library Buildings, the New York Botanical Garden, the Brooklyn Botanic Gardens, the Brooklyn Bridge, The Empire State Building, the Chrysler Building, Carnegie Hall, and the Woolworth Building, to name a few.

RESTORE Intensive Workshops on Architectural Conservation Techniques offer an in-depth examination of specific issues relating to the latest conservation materials and methods. The

workshops are designed to travel to various parts of the country and include the annual five-day intensive course that covers all aspects of masonry conservation. Other workshops last from two to three days and can be tailored to the specific needs of any organization. The portable laboratory enables RESTORE participants to gain hands-on experience in the identification and basic analysis of materials and preservation treatments. RESTORE workshops have been sponsored by government agencies, preservation organizations, and labor and industry organizations. Workshop topics include: technology of masonry cleaning, composite repairs, mortar matching, coatings and consolidants, and the health and environmental hazards inherent in restoration materials and processes.

Additional components of RESTORE's educational programs include:

Videotape Series on Architectural Conservation Techniques. The following preservation procedures are addressed in professionally produced videos:

Architectural Replacement Materials: Cast Stone and Terra Cotta explains procedures involved in documenting existing architectural elements, discusses properties of replacement materials, demonstrates replication processes, and installation techniques.

Cleaning Masonry Structures and Guidelines for Using Consolidants and Coatings demonstrates methods for removal of paints, coatings, stains, and other soiling from masonry materials. The complex issues related to the use of coatings and chemical consolidants and their applications are also addressed.

Mortar Matching Techniques and Composite Repairs for Stone demonstrates methods for conducting mortar analyses, formulating replication mortars, and composite patching compounds.

These videos run approximately 30 minutes and illustrate step-by-step action of restoration techniques that are difficult to effectively demonstrate within the time constraints of a lecture or laboratory session.

Architectural Conservation Library. RESTORE's Library contains a select collection of books and articles on the technical study, conservation, and preservation maintenance of masonry structures and is open by appointment to people in the building industry.

Technical Clearing House. RESTORE serves as an on-line consultant, providing the building industry with current, field-tested research on critical preservation problems.

RESTORE is developing a Series of Technical Field Guides on Architectural Conservation Techniques which will address specific issues concerning the technical aspects of architectural conservation and the health and environmental hazards inherent in preservation maintenance materials and processes.

The key to architectural preservation is getting information into the hands of those who most need it, namely the design professionals and craftsworkers working in the field. This task is done most effectively through a productive dialogue between the many groups responsible for the preservation of our built environment, e.g., design professionals, preservationists, cultural resource managers, educators, public officials, and building trade unions and their members. These diverse segments of the preservation community are most effectively brought together through cooperative training and educational programs. Since 1976, RESTORE has helped to foster this spirit of collaboration, creating a unique forum which gives colleagues from related fields to learn, as well as the opportunity to share their knowledge and experience.

For all of us entrusted with the preservation of our cultural and architectural heritage, there is a fundamental need for further education about the technology of architectural conservation and the inherent hazards of the processes and materials used in this field. Clearly, craftsworkers and design professionals who are trained and are knowledgeable about preservation materials and processes are equipped to make knowledgeable decisions and to avoid hazardous situations which are costly for the project and cause irreversible damage to our cultural heritage, to the health of craftsworkers, to the public, and to the environment. Education is key to understanding the risks posed by many restoration materials and processes and to achieve both safe conservation, as well as good conservation practice. RESTORE's training fosters professional excellence and addresses key preservation issues of national significance for craftworkers and design professionals alike. The end result is that people benefit, the environment benefits, and ultimately our architectural heritage benefits.

Jan C.K. Anderson is Executive Director of RESTORE, Inc., New York, New York.

Photos courtesy the author.

Ken Follett

A Contractor's View of Craft Training

James Marston Fitch, commenting on the need for a national program of training of craftspersons, has noted the following: "Such young workers as are entering this very important area are doing so on a personal, ad hoc basis, picking up what training may be assimilated by observation and apprenticeship in small, scattered restoration projects." This is true.

The September/October issue of the National Trust for Historic Preservation's newsletter, *forum news*, contains a chart of degree programs in historic preservation. Of the 60 programs listed, two programs indicate that they provide hands-on training. I find this disheartening. It appears that a large number of consultants are going to be produced, and that only a small amount of resources are going into assuring a future supply of skilled craftspeople. The question I have is, where do we all expect the craftspeople to arrive from? Where will those individuals who are essential to actually do all the fine restoration work that the best and brightest have been trained, at great expense, to eloquently chatter about, spontaneously going to appear from... if there is not a conscious intent on the part of those with the monetary resources to develop a skilled workforce capable of doing the work?

Sadly, I imagine Mr. Fitch felt compelled to hedge his bet on the future of the preservation industry, since he was not able to say that droves of energetic young workers are flooding the preservation trades, and that these droves can expect to make a decent living and receive the enduring respect of our nation. Indeed, I can attest the opposite from personal experience. The very idea that any modestly literate young individual should choose anything but a college education seems to run contrary to an economically-driven myth of our education system. (In crude terms, I think the myth runs something like: Pay up, and we will teach you how to capture the golden goose.) As well, respect paid to the trade of an artisan becomes a threat to the dreams of hard-working parents. Parents who work with their hands, especially, hope their children will not follow them in a career of physical labor.

Why is the preservation industry so incredibly lopsided in favor of intellectual occupations, to the neglect of hands-on craft?

Henry Miller, in one of his less erotic and potentially more lucid moments, suggested that children should be taught first to use a hammer. Children should not only be taught to use a hammer, but taught with pride to use a hammer in the best way possible, to build or rebuild in their own environment. Instead, children are taught to build with virtual hammers in an imaginary world where there is no pain, no gain, no blood or mud.

I have not met many people who think that a young person following a trade career is not headed on a difficult way in life, especially where higher education is available. Granted, physical labor makes a person tired. But it does not reduce brain cells. On the other hand, too much schooling can dull the senses, inhibit thirst for life, and inflate an individual's self-importance. And however much is spent on an education, it does not increase the quantity of brain cells.

The harsh reality of years working as a stonemason, including a lot of backache and bashed thumbs, defines the framework by which I gauge education in the preservation trades. It is also the basis of a complex set of rules, gained by experience, that I apply when I evaluate the competence of individuals, including design professionals, to do historic preservation work. A favorite tool of mine is to ask people their opinion of the intelligence of a wet rock as opposed to a dry rock. The test is to see if the individual can think outside of a standard framework, how creative are they, can they laugh, and do they have character. Character, desire, and a good attitude, in my opinion, rule over technical competence, which can be learned. I don't look for people that simply go through motions without asking questions.

Sometimes the patronizing of craftspeople takes another form. From a lack of life experience, the book-educated take refuge in a hearty, back-slapping idealization of the craftsperson as an updated version of the Natural Man. This mythologizing of hands-on craft fosters a trend whereby middle-class youth complete their undergraduate studies and then take up their great-grandfather's tools. Hands-on work is not a refuge in a simpler life and it is unfortunate if a vital national resource, the skilled craftsperson working in traditional trades, is allowed to be stereotyped as a theme worker whereby anyone can take it up as a hobby.

Construction contracting is not trivial; it is highly complex and demanding. There is an undeniable amount of pain in the fully engaged practice of hoisting two cement bags at one time: this is

not a pursuit that comes easy. Progress is measured, not by a high grade-point average, but by food on the table. The gap between those who design and those who implement, between those who think about it and those who have a constant backache and dirty hands, is a convergence of two economic classes. The educational ideals of these two classes, totally foreign, collide at the building site. And neither system of ideals seems disposed to admit the validity of the other. There are few exceptions.

A few educational programs are made accessible to the trades, but nowhere near enough to satisfy the actual needs of the preservation industry. Also, these craft training programs, which emphasize technique, do not provide a remedy for the problems of career valuation in our society. They do not motivate the creation of stonemasons and carpenters out of a world of television advertisements for sneakers. They do not get involved in a young person's life early enough to create that first life altering spark, the flaming desire that causes an individual to drop other future prospects in order to pursue careers as craftspeople.

In the United States I do not see a national program of training craftspersons in preservation trades, such as Mr. Fitch recommends, and I do not believe there ever will be one. Despite this, the example of Europe in many ways provides an inspiration for all of us. An associate of mine, a Polish-trained preservation architect, told me that after World War II his people had no choice but to start a national preservation program, 40 years prior to America getting warm on the idea. The reason they had no choice was that they had lost everything. As a society, they felt a very human compulsion to rebuild their past, with an intensity of spirit that I believe is exceedingly rare.

As a contractor, I employ mechanics trained in hands-on application, and I perceive craft training programs as supplemental to an ongoing day-to-day training mission internal to our company. The important questions when workers return from a training class are, "What did you learn? What can you teach? Who did you talk to? Who can you call? Was it worth it? Did you have a good time?" If the answers sound muddled, then we have to question either the ability of the worker to learn or the ability of the educator to teach. Sometimes the students return with enthusiasm to teach their peers on the work site, and sometimes they are deathly silent. Attitude counts for most everything.

In the late 1980s in New York City, with a downturn of construction following on the jitters of an overinflated market, droves of workers, finding themselves suddenly unemployed, stampeded out of the construction industry, not to return. For the most part, I do not see this as a loss to historic preservation, as there was little gained by the preservation industry to begin with. These were not individuals who were drawn to the business simply because they felt it was the right thing to do to fix up old buildings—they were workers putting one foot in front of the other and expecting good wages, health benefits, and a pension. Amazingly, these middle-class workers, suddenly without work, saw no honor in poverty. Their exodus from the trades drew into the preservation industry large numbers of immigrant workers. Many of these workers begin without the needed skills and acquire them, if they are lucky, on the job. The unlucky ones are put to work by contractors who don't know how to do the job, either.

This brings us to the issue of contractor prequalification, which speaks directly to the need of the preservation industry to maintain a resource of workers skillful enough to do the right thing. The only way a skilled work force can be maintained is by making sure that skill is a factor in getting the work. If low cost, and not quality and experience, are the determining factors in the allocation of work, then skilled craftspeople and responsible preservation contractors cannot compete against unskilled laborers and inexperienced general contractors. Unless design professionals and property owners become more aware of the different skill levels among providers of construction services, the preservation industry will not be healthy. There will be a lot of desire, a lot of need, and no satisfaction. Too often, design professionals and property owners seem to be unaware of the difference or of what is at stake.

Of course, my bias is showing—I have to deal with this every day.

We have to show respect for the trades. Those who understand the world through their hands and shape the language of materials in our buildings, don't deserve to be treated poorly. Without a clearer understanding, the preservation industry will remain the responsibility of individuals with a desire—or those driven by the concrete immediacy of survival as best possible—along with the example of some contracting organizations that build, train, and maintain a work force capable of doing the bull work of historic preservation.

Ken Follett is Vice President of Apple Restorations and Waterproofing, Inc., Brooklyn, New York , Founder of the Preservation Industry Network, New York, and on the Board of Directors of the Association for Preservation Technology International (1997-98).

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Jake Barrow and Pam Meck

PAST Comes to Walnut Canyon National Monument

In September 1994, Flagstaff Area Parks (Flagstaff, AZ.) was faced with extensive repairs on the two historic Civilian Conservation Corps (CCC) rustic houses at Walnut Canyon National Monument. The park took an unprecedented step of turning the project into training. Roofing deterioration, unsightly accretions to the buildings, masonry failures, structural deficiencies, and peeling paint were among the litany of itemized deferred maintenance tasks waiting for funding. Recently added to the NPS List of Classified Structures, these two stone, timber, and frame houses represent some of the best of what the Park Service assembled for staff lodging during the depression era.

The parks gamble paid off. Two weeks, 27 ready craftsmen and craftswomen, a pile of lumber, a stack of shingles, nails, stone, cement, and a few gallons of paint got the project going. When the last truck pulled out Friday afternoon, the park had a completed project—20 Preservation and Skills Trainees had picked up new skills, and a sense of accomplishment was shared around.

This cooperative effort was launched by the Williamsport Preservation Training Center (WPTC), Flagstaff Area Parks, and the Southwest Cultural Resources Center now called the Intermountain Cultural Resources Center. WPTC used this project as a hands-on training for National Park Service employees who participated in the first Preservation and Skills Training (PAST) Program (1993-1995). The training center was charged with the responsibility of managing PAST. This project was accomplished during the third Skills Training Workshop for the PAST trainees and mentors. The training session benefitted the park directly by accomplishing an identified and significant project within the park that otherwise would have taken several years of piecemeal steps.

PAST represents a new National Park Service initiative to train maintenance personnel in craft and preservation skills leading to a Historic Preservation Maintenance worker certificate. This first program was comprised of 18 trainees and 9 mentors from throughout the national park system. The trainees build their knowledge of preservation maintenance and skills over the course of two years with the guidance of mentors experienced in preservation craftsmanship. Mentors and trainees were selected in a match up designed to provide a suitable development of skills in either the masonry or carpentry fields. Each mentor took on two trainees and individually worked with them on specific mutually agreed upon projects. The majority of the work during the two-year program was done in the trainees' park. During the course of the two years, four total group classroom sessions of several days followed by hands-on sessions from 6-8 days were held. Each group session emphasized selected preservation problems and techniques.

Session three of the 1994 class, held at Walnut Canyon, combined rustic architectural history, documentation, project planning, estimating, project management, framing and trim carpentry, structural stabilization, shake roof replacement, repointing masonry, stone masonry repair, painting, and safety issues.

In 1993, the need to replace the roofing on the two structures HB-1 and HB-2 was well recognized. The harsh environment in Flagstaff had not been gentle on the cedar shakes. They were extremely deteriorated (desiccated, cracking, eroded, and loose) and deficiencies were noted in the chimneys, gutters, and trim. Both houses had nonhistoric garages constructed with flat built up roofs that were leaking. These flat roofs were unsympathetic to the character-defining quality of

PAST program participants tear off roof at Residence No. 1.

the historic buildings. Deterioration of stone masonry patios, paint, and structural components were also identified.

The park maintenance staff began the work of repairing the deficiencies in the Spring of 1994. During the initial process of repair, the logic of incorporating the re-roofing into the PAST program surfaced. WPTC chief Tom McGrath visited the site in early summer with SWR Supervisory Exhibit Specialist Jake Barrow, Park Facility Manager Richard Sullivan, B&U Foreman Gary Reeb, and Park Maintenance Worker Pam Meck to plan the project. An agreement was reached regarding clear delineation of responsibilities. WPTC provided a design package and the park

Work in progress: new roof framing system being installed. Photo by Christina Armijo.

was responsible for acquiring all materials for the job. Section 106 of the Historic Preservation Act of 1966 (compliance) and preparation for the project was completed in the summer prior to work. The preliminary field work helped to identify specific areas of concern. Design and preservation planning assistance was provided by the WPTC and the Division of Conservation in the Cultural Resources Center.

By June, preparation work was underway to remove the unsightly non-historic breezeways, modify gutter boxes for new shop-made inserts, and manage a contract to have shallow-pitched roof areas recovered with new built-up roofs. Later in the summer demolition of garage roofing using tarps to keep inclement weather out was timed ahead to have the site as ready as possible. Dutchman repairs were made to a beam and rotted facia boards were replaced with salvaged boards from the demolished breezeway. These tasks were realized to be essential precursors to the larger project. Getting them out of the way cleared the deck for PAST. Further preparations included analyzing mortar samples, using reduction techniques to determine appropriate new compatible mixes. Replacement stones for the patios were acquired. Lumber and 52 squares of Certi-ridge tapersawn fire retardant treated red cedar shakes 24" long were ordered based on site and documentary evidence of exposure. Tom McGrath took on the task of designing a compatible appearance for the garages. Garage trusses matching the 4:12 pitch of the houses were acquired. More than compatibility, these new garage roofs were meant to have improved longevity and reduced cyclic repair.

Project planning included acquisition of all materials, supplies, and special tools required. As was usual in PAST training, craftspeople brought their own hand tools. Park scaffolding was insufficient for the whole job and additional sets were acquired from Casa Grande National Monument and Grand Canyon National Park. Denver Service Center Structural Engineer Steve Schremp was contacted to review the structural capacity of the roofing systems. He performed an inspection of the structures and produced detailed recommendations for repairs which included the installation of glue lam beams under the rafters for additional live loading needs. The buildings had not benefitted from engineering at construction and while the rafters seemed adequate, safety could not be assured.

Training began on Sept. 19 with Superintendent Sam Henderson providing an introduction to the park overlooking the spectacular ruins of the Canyon. During the course of the two weeks, ample time was made for participants

Attention to detail: completed chimney has been re-pointed and re-flashed. Photo by Pam Meck.

to see the sites in the park. Also, one day was set aside toward the end to take participants to nearby Wupatki National Monument and into the Grand Canyon to see historic preservation projects underway at these two units. The first two days of introductory classroom work concluded and the group commenced the field work on Wednesday, September 21.

Jake Barrow managed the day-to-day operation of the project with assistance from Pam Meck. Teams were assembled starting with mentors and their respective trainees. As the work progressed, trainees moved around the project to get different experiences.

Labor was divided among separate groups accomplishing the garages, the house roofs, and the two house masonry projects respectively. At the outset of each day a safety meeting was held to review the safety program and discuss any new issues.

In the five days of actual hands-on work sessions, considerable accomplishments were realized. Twenty-seven individuals were organized and provided with tools and supplies to carry out preplanned tasks. Pitched roofs at 4:12 were built on both garages, including finished gable ends. Old roofing shingles were demolished, debris was hauled away, and approximately 4,000 square feet of cedar shake roof was installed. Custom roof vents were built on site. Custom supplemental trusses were built on site. Deteriorated sandstone was replaced on porch patio areas. Board and batten was restored on gable ends of both houses replacing non-historic shingling. Rotten sections in old garage decking, support members, trim, gutter boards, and raker boards were repaired and replaced. Two chimneys were reflashed, repointed, and had new caps built. Gluelam beams were installed to DSC engineer specifications in residence #2. (Residence #1 beams were installed later). Structures were primed and painted. Classroom training was accomplished. Planing and preparations turned what could have been months of work into five fast-moving efficient days. The weather cooperated and not one minute of time was lost.

A contented Superintendent and Facility Manager reviewed the results and proclaimed the training project a great success. The total team effort resulted in a high quality product exceeding work initially planned by the park. Skills brought by the individuals, both mentors and trainees, were encouraged to fruition. High energy people, thinkers, master craftspeople, designers, and learners all got something from the group dynamic.

The Park accomplished extensive work both before the training and after the training which, together with the accomplishments of PAST, represented a major preservation achievement by the National Park Service. Two very valuable resources have a new lease on life for many years to come.

Jake Barrow is a Supervisory Exhibit Specialist and Project Manager for the Conservation Program in the Intermountain Cultural Resources Center. He served as Mentor in the first PAST program.

Pam Meck is a Maintenance Worker for Flagstaff Area Parks stationed at Walnut Canyon. She received her PAST certificate in October 1995.

The accomplishments of this project are the direct result of the effort put forth by the participants in the 93-95 PAST program. Thus, we want to identify those people in addition to the authors who did the work and their respective parks at the time.

Mentors:

Bruce Kozlowski, Fort Larned National Historic Site
Keith Edge, Grant-Kohrs Ranch National Historic Site
Dan Brown, Golden Gate National Recreation Area
Charlie Masten, North Atlantic Preservation Center
Frank Doyle, Independence National Historical Park
Mike Fortin, North Atlantic Preservation Center
John Wood, Charles Pinckney National Historic Site
Lisa Sasser, Washington Office, National Park Service

Trainees:

Mike McNerney, Bent's Old Fort National Historic Site
Rodney Prioleau, Fort Sumter National Monument
Michele Cefola, Harry S Truman National Historic Site
Ken Coss, San Juan Island National Historical Park
Bill Thompson, Historic Preservation Training Center
Christina Armijo, Pecos National Monument
Darren Bryant, Guadalupe Mountains National Park
Rick Maestas, Manassas National Battlefield Park
James Davis, Natchez National Historical Park
Joseph Temple, Colonial National Historical Park
George Barrett, Casa Grande National Monument
Steve Giese, Grant-Kohrs Ranch National Historic Site
Charles Schultheis, Golden Gate National Recreation Area
Jesse Sherrod, Fort McHenry National Monument & Historical Shrine
Sandy Eickmeyer, Petersburg National Battlefield
Doug Cap, Chiricahua National Monument
Paul Taylor, Lincoln Boyhood National Memorial
Stanley Zilinski, Lowell National Historic Park
Kent Garland, Boston National Historic Park

S. Elizabeth Sasser

What Historical Architects Can Learn From the Preservation Trades — and Why They Should

Historic preservation is an enormous and diverse field. It combines science, art, economics, law, and public policy. However, at its most basic, historic preservation is about buildings— rural and urban; high style and vernacular; instantly recognizable national icons, or integrated anonymously into the fabric of community and landscape. It is only in the bricks and mortar, structure, form, and finish executed over time by the hands of workers of all levels of skill, sophistication, or inspiration that there is anything to value, or to preserve.

People who commit themselves to careers in preservation do so because they really care about old buildings and what they represent, and spend many years in training for a demanding field not generally noted for excessive financial rewards. However, anyone who has worked in preservation for any length of time can tell horror stories about exceptional historic buildings butchered through the application of heavy-handed treatments prescribed by the most highly trained and credentialed professionals, or point out jewels of restoration completed by amateurs with a sensitive eye. Preservation philosophy has been thoroughly articulated in laws, policies, standards, and guidelines, all of which attempt, at some level, to address the significance and integrity of historic structures and encourage compatible and sympathetic treatments. Technologies for diagnosing and treating the problems of historic buildings are becoming increasingly sophisticated. So why are there so many horror stories? I believe that one of the principal reasons is that many architects both in general practice and in historic preservation, have become increasingly isolated from the actual physical processes of building construction, repair, and maintenance.

Nick Wyman, assistant park historical architect, and Lenette Curtis, architecture intern, learning masonry skills at a brick repointing workshop at Independence National Historical Park. Photo by the author.

Since the architectural firm of Perry, Shaw, and Hepburn undertook the pioneering work of restoring Colonial Williamsburg in the 1930s and initiated the professionalization of preservation practice, it has been pretty much axiomatic that architects are the lead preservation professionals. Orin Bullock wrote in 1966 in *The Restoration Manual*, one of the first preservation textbooks, that:

> The architect for a restoration project should be responsible for the entire operation including historical, archaeological, and special research as well as the architectural research. Such centralization of responsibility will prove economical to the sponsor in the long run. Whether the architect has full charge of the work or not, it will still be necessary for him to coordinate and evaluate information and eventually recommend the exact scope of the project .... In any event, every step of the restoration project must be under the close and meticulous supervision of the architect in charge.[1]

However, in accepting responsibility for the overall direction and guidance of preservation projects, the most respected historical architects have always acknowledged the role of the craftsmen who actually performed the work. Charles E. Peterson wrote:

> The men who actually assemble a building on its site— by hand or with machines— work closely with the architect. In practice, it is just about impossible to define the boundaries between the two vocations. Architects must still rely on traditional practices and standards of the trades, for no building can be built with all of its details fully covered by drawings and written specifications. There is a great deal of give-and-take on the job, especially in restoration work. To me, working

directly with good mechanics in solving problems is one of the great pleasures of building.[2]

The respect accorded to the building trades was combined with the fear that many traditional craft skills were in danger of dying out. These two factors provided the impetus for a number of proposals regarding the establishment of preservation training centers and development of career programs for preservation craftsmen. In 1968, the state of preservation training was assessed in a document entitled "Report of Committee on Professional and Public Education for Historic Preservation to the Trustees of the National Trust for Historic Preservation." The Committee, chaired by Wallace Muir Whitehill, director of the Boston Athenaeum, characterized the state of preservation education as "elementary," citing a "relatively small awareness within the architectural and planning professions of the importance of restoration and preservation techniques." The report concluded that professional education in historic preservation should be focused on both architecture *and* the building crafts. Emphasizing the need for on-the-job training for journeymen craftsmen, the Subcommittee on Conservation of the Traditional Building Crafts also recommended the establishment of a clearinghouse to put craftsmen and restoration teams in contact with clients rehabilitating historic properties.[3] These recommendations, along with a report from the National Park Service Office of Archaeology and Historic Preservation, eventually led the National Park Service to establish a Building Restoration Specialist classification for preservation craftsmen, and to the establishment of the Williamsport Preservation Training Center in 1977.

The first annual University of Oregon Summer Preservation Field School in 1995, featured "hands on" training in carpentry and masonry for preservation students, working side-by-side with maintenance workers and preservations specialists from the USDA Forest Service, National Park Service, and Oregon State Parks and Recreation Department. Photograph by Lorraine Platz.

In 1997, it is evident that, far from dying out, the preservation trades are flourishing. Programs like those at Belmont Technical College, the Institute for Preservation Training, and the Preservation Institute for the Building Crafts offer broad-based training not just in trade skills, but in project planning, and management, as well as the philosophical basis for preservation work. The renaissance in this sector of the building trades is part of a broad cultural movement represented by the proliferation of publications like *The Old House Journal* and *Fine Homebuilding*. Ordinary people, reacting against shoddy, mass-produced new construction, have embraced restoration and the production of new hand-crafted houses with a passion, embarking on do-it-yourself projects, and creating new markets for craftsmen with traditional and hybrid trade skills. The Timber Framers Guild of North America and the Canadian Log Builders Association have evolved as dynamic and creative forces in promoting high quality craft-centered construction. The Timber Framers Guild, Traditional Timberframe Research and Advisory Group represents one example of a trades organization with a highly sophisticated preservation component. Ironically, these developments have largely escaped the notice of the architectural and preservation community.

Professional preservation education opportunities also experienced dramatic growth in the years following the publication of the Whitehill Report. Since Columbia University instituted the first degree program in 1973, a total of 15 institutions have developed graduate programs in historic preservation, along with approximately 55 other colleges and universities now offering coursework or certificate programs. With professionalization comes specialization. In 1977, the Secretary of the Interior's Professional Qualification Standards recognized six specific disciplines for professional practice in the field of historic preservation. Responding to the 1992 amendments to the Historic Preservation Act, proposed revisions call for a new set of Historic Preservation Professional Qualifications and Guidelines providing standards for a total of 13 separate fields. The new draft document provides standards for: Prehistoric Archeology; Architectural History; Conservation; Cultural Anthropology; Curation; Folklore; Historic Architecture; Historic Landscape Architecture; Historic Preservation Planning; Historic Preservation; History; and Historic Engineering.[4] While five of the disciplines include some level of responsibility for specifying or directing physical treatment of historic structures, discussion of the trade skills required to execute the work is notably absent. The invisibility of the building trades was addressed in a 1986 report of the U.S. Congressional Office of Technology Assessment citing the need for training programs to:

> ...return to craftsmen the decision-making capability that has been gradually and systematically denied them by the construction and building industries for the last few

decades. Craftsmanship has been sacrificed to uniformity, mass-production, and economy. Restoration is challenging, varied, and often difficult. Every practitioner involved in structural restoration and rehabilitation should comprehend the behavior of materials and their basic physical and chemical properties.[5]

Professor James Marston Fitch has characterized the disenfranchisement of the building trades as a condition analogous to the "headless hand." The corollary condition, prevalent among architects and preservation professionals, is that of the "handless head." The symbiotic relationship between architect and craftsman described by Charles Peterson requires communication and informed participation by both parties. While it is undeniably true that there is a critical need for expanded preservation training opportunities in the trades, there is an equally acute shortage of architects and preservation professionals with the training and skills to participate meaningfully in a dialog with the people who actually do the physical work of preservation.

This lack of engagement with the process of construction is one aspect of a widening gap between theoretical and practical knowledge in the general practice of architecture. A 1995 study by the National Academy of Sciences National Research Council entitled "Education of Architects and Engineers for Careers in Facility Design and Construction" found that a large percentage of recent graduates in architecture and engineering were "unfamiliar with practical problems of design and construction." Similar findings emerged in a report by the National Institute for Architectural Education, which stated that many intern architects "lack skills as well as a sensibility to the real world environment of professional practice."[6] One program at Arizona State University developed to remedy this educational deficit involved architecture students in tracking the progress of actual construction projects, and interviewing contractors and builders. The instructor noted that "[t]he students are usually shocked to discover that a design decision might actually happen on the construction site [and] that a detail drawing might get tossed altogether, and figured out right there."[7] Programs like this are the exception rather than the norm, and relatively few architects have the opportunity to learn what actually takes place on the construction site before they become responsible for directing projects.

This distinction between the design detail and the constructed element is the basis for British woodcraftsman David Pye's proposition that "design proposes, workmanship disposes" which he explored as follows in *The Art and Nature of Workmanship*:

> Design is what, for practical purposes, can be conveyed in words and by drawing: workmanship is what, for practical purposes, can not. In practice the designer hopes the workmanship will be good, but the workman decides whether it shall be good or not. On the workman's decision depends a great part of the quality of our environment.... Our environment in its visible aspect owes far more to workmanship than we realize. There is in the man-made world a whole domain of quality which is not the result of design and owes little to the designer. On the contrary, indeed, the designer is deep in its debt, for every card in his hand was put there originally by the workman. No architect could specify ashlar until a mason had perfected it and shown him that it could be done.[8]

The implications of this statement are especially relevant in preservation, where so much of the actual work of preserving buildings involves either the use of archaic craft skills, or the disciplined employment of contemporary technologies in a specialized fashion. David Pye's definition of "craftsmanship" can also serve as a model description for many aspects of preservation work, as opposed to standardized conventional construction:

> If I must ascribe a meaning to the word "craftsmanship," I shall say as a first approximation that it means simply workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgement, dexterity and care which the maker exercises as he works. The essential idea is that the quality of the result is continually at risk during the process of making.... With the workmanship of risk we may contrast the workmanship of certainty, always to be found in quantity production, and found in its pure state in full automation. In workmanship of this sort the quality of the result is exactly determined before a single saleable thing is made.[9]

Most contemporary architectural practice is defined by the intention that working drawings and specifications will control every aspect of the construction process, and that standardized construction materials and systems make it at least theoretically possible for the construction of new buildings to be realized solely by the "workmanship of certainty." On the other hand, most preservation work falls, to some degree, into the category of "workmanship of risk," which by its very nature is highly dependent on the skill and judgement of the people performing the work. It's interesting to compare construction drawings for preservation projects done in the 1940s and '50s, with those being produced today. Typically, the older drawings consist of

The Peter French Round Barn in Harney County Oregon, subject of the first annual University of Oregon Summer Preservation Field School. Photo by the author.

only a few pages of usually elegantly rendered plans or elevations, a handful of details, and some notes indicating the general scope and extent of the work. Newer construction documents tend to be voluminous and exhaustive, prescribing every imaginable condition and treatment technique in excruciating detail. This evolution in the format and content of construction documents speaks volumes about the change in the relationship between architects and craftsmen. Specifications and drawings have replaced dialog, and the give-and-take of the close working relationship described by Charles Peterson. There are a number of reasons for the breakdown in communication between designers and builders. One of the most common is a continuing belief in the myth that all the good craftsmen really have disappeared, and that it is up to the architect to extract decent workmanship from mediocre and unscrupulous contractors by means of iron-clad construction documents.

There are also many aspects of the design and contracting process which discourage communication between the designer and the people who execute the work. Architects rarely have the opportunity to follow a project all the way through design and construction. Design work, project management, and construction supervision are often performed by a number of people over the course of a project. Continuity and contact among professionals at different stages of a project may be minimal. Contracting practices (especially in public sector work) usually follow a low-bid, worst-case scenario, discourage pre-qualification of bidders, and in many cases prohibit communication with qualified potential contractors. Lack of flexibility in contracting can make it difficult to separate out "preservation intensive" elements for separate award to specialized preservation teams. Architects have few opportunities to communicate with individual craftsmen on a job, and the fear of costly change orders limits their willingness to make design changes or alter scopes of work during construction. Also, the lack of opportunities for post-construction evaluation mean that architects rarely get to see first hand what works, and what doesn't work on projects.

Because preservation has grown into such a large, complex, and multi-disciplinary enterprise, it would be almost impossible to reproduce the learning and working environment that existed when people like Charles Peterson and Henry Judd served as mentors to most of the handful of active preservation professionals. Hugh Miller, former NPS Chief Historical Architect, described the experience of working with them as follows:

> They knew most of the practicing historical architects and critiqued NPS and private restoration projects, sometimes ruthlessly. Under their guidance, we researched a project, developed the construction documents, and restored the building. We learned a lot and were able to talk about our successes and failures. The "carpenters carnivals" held by the NPS in the 1960s were forums for the exchange of ideas and skills learned on site. However, by 1970 the highly structured often diverse, organizations of the various NPS parks and regional and central design offices provided little opportunity for learning from the building or even from each other.[10]

Realizing the critical need for a new way of providing these kinds of experiences for historical architects, Lee Nelson, Hugh Miller, and Emogene Bevitt created The Skills Development Plan for Historical Architects in the National Park Service in 1986. It was a significant attempt to catalog the broad range of knowledge and skills required to treat historic structures, and set up a systematic framework for acquiring them. A large percentage of the skills identified as fundamental for historical architects deal specifically with understanding traditional building materials and craft practices, affirming once again the critical nature of the link between head and hand.

There are a number of encouraging signs that new bonds are being formed among preservation professionals—architects, conservators, and preservationists—and specialists in the building trades. The emergence of the Preservation Trades Network as a task force of the Association for Preservation Technology is an indication of the vitality of the trades, and their ability to contribute actively throughout all stages of preservation projects. Emerging cooperative agreements between preservation skills programs and academic preservation programs have the potential to enrich the students of each, and develop patterns of communication and mutual respect that can only benefit the conservation of the built environment. In historic preservation the relationship between design and

craftsmanship is analogous to the correspondence between significance and integrity. It is only in reference to each other that the full potential and meaning of each can be realized.

Notes

1 Orin M. Bullock, Jr. *The Restoration Manual.* (Norwalk, Connecticut, Silvermine Publishers Inc., 1966) pp. 3-4.

2 Charles E. Peterson, "The Role of the Architect in Historical Restorations." *Preservation and Conservation: Principles and Practices.* Sharon Timmons ed. (Washington, DC, The Preservation Press, 1976) p. 5.

3 Stephen W. Jacobs, A.I.A. "The Education of Architectural Preservation Specialists in the United States." *Preservation and Conservation: Principles and Practices*, Sharon Timmons, ed. (Washington DC, The Preservation Press, 1976) pp. 460-477.

4 Federal Register: June 20, 1997 (Volume 62, Number 119). From the Federal Register Online via GPO Access [wais.access.gpo.gov].

5 U.S. Congress, Office of Technology Assessment, Technologies for Prehistoric and Historic Preservation, OTA-E-319 (Washington, DC: U.S. Government Printing Office, September, 1986.) p. 153.

6 Michael J. Crosbie. "The Schools: How They're Failing the Profession," *Progressive Architecture.* (Penton Publishing, September, 1995) pp. 47-51, 96, & 97.

7 Michael J. Crosbie. "Why Can't Johnny Size A Beam?" *Progressive Architecture.* (Penton Publishing, June, 1995) p. 94.

8 Pye, David. *The Nature and Art of Workmanship,* (Cambridge University Press, 1968.) p. 1-2.

9 Ibid. p. 4.

10 Hugh C. Miller. "The Education of Historical Architects and a Second Look at the NPS's Skills Development Plan". (APT Bulletin, Vol. XXVIII, No. 1-2, 1996) p. 32-34.

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Richard L. Hayes

Empowering the Craftsperson

Mantra: Inspect/Repair/Replace

In the current fiscal climate there needs to be increased efficiency in the performance of maintenance and repair activities for historic buildings. Progressive historic building maintenance is necessary to extend the useful life of buildings and conserve materials. Currently, the procedures entail a inspect, specify work, issue repair order, verify work. A method to achieve pliable maintenance is by empowering the trades- and craftspeople to perform inspections and immediately repair or maintain component. There are two concepts to the empowerment effort. The concepts can be termed toolbelt and free-range. Numerous other terms could be applied to the concepts. Basic to each approach, regardless of terms, is an underlying philosophy of inspection and concurrent repair. Neither one of these options is currently practiced as outlined below; they are offered as propositions for evaluations of current practices.

The first inspect and repair scenario does not require a truck load of tools and materials—the trust is that while an employee is at a building, they repair minor deficiencies discovered in the performance of other tasks. These repairs are on a scale where a well-equipped toolbelt and judgment to execute suffice. Initially the person(s) could be on site to do a building condition assessment or some other task associated with a building. The notion is that there is a scale of repairs and maintenance items which take small effort to do while at the site—instead of returning at a future date. Frequently, small problems left unattended make for future major headaches. An example would be a team (person) being sent to do a building condition assessment. While on site the trades- and craftsperson would be empowered to repair or maintain minor items as they are found. For instance, in the above example during the course of inspecting gutters, they are found to be loose and full of debris. The inspector would have the latitude to take the extra time to secure and clean the gutters. Another example would be the repairing of a sash cord during a window inspection. This inspect and repair approach saves time by cutting out return trips to a building.

The second approach is a free-range. This concept is that specific disciplines would be allowed to do needed repairs or maintenance work from a set of authorized undertakings. There are two methods to determine items to be authorized. One method is to review work order backlogs. In the backlog instance, are there particular repairs or maintenance tasks which have piled up. The backlog can be grouped by type, severity, or discipline. The most critical tasks, as determined by the trades- and craftsperson, would be taken care of first. An other selection method is cyclical. Certain repairs or maintenance items are seasonal by their nature. To continue the gutter illustration, the fall season would focus on cleaning and the early spring for gutter attachments. The key is for the workers to have input into which tasks should be done cyclical. In either approach—critical or cyclical—the proposal is to let the trades- and craftsperson participate in the assessment process and have a free-range to perform the evaluated tasks.

Obviously there has to be some management guidance to help with time control. Several control methods are feasible. One would be to have a time limit on the spontaneous toolbelt maintenance and repair items. The limit would have to depend on the size and complexity of the building(s). In terms of the work day any repair taking less than an hour would be reasonable for a single minor repair or maintenance task. To avoid time-creep there would additionally be a total time allocation of either toolbelt or free-range repairs per building. The trades- and craftspersons would have the power to determine which repair would be the most valuable to have done.

Minor repair deficiencies, such as vegetation growing out of masonry and leaky roof drainage systems, should be accomplished while in the field; either approach, "toolbelt" or "free-range" could perform the required task and contribute to the preservation of the building. Photo courtesy HPTC.

A set of standard performance-based specifications for repair work of the toolbelt and free-range variety would need to be developed. The size of the organization's physical plant under consideration will warrant different degrees of textual and technical guidance. Currently a typical event sequence is inspect/specify/repair order. The intent of the performance-based specifications is to combine the specification and repair order step. Thus, the event sequence becomes inspect/repair. By combining the two steps, the time-lag between inspect and repair is cut down considerably. The efficiency results not only in time—but that also the repair needed to be done most closely resembles the discovered repair item.

Please keep in mind that the scale of tasks addressed with this initiative is not major construction. The focus is on materials and systems that are in place and serviceable condition. The specifications mentioned above need to be developed with the participation of the trades- and craftspeople. Vocabulary and personal intuition information are key to the success of these guidance documents. Thus, not only do the trades- and craftspersons have a foreknowledge of the performance level expected, they have a vested interest in the process where their efforts are key.

It should be pointed out that the toolbelt and free-range approach is a natural situation to have a junior person shadow the lead person performing the work. By starting a person on the path to using judgment as to when to take the initiative to go beyond the blinders of a work order, a next generation is being prepared to steward our historic properties.

The inspect and repair concepts of toolbelt and free-range can be tailored for a specific organization's building(s). Personnel performance standards for tradespersons doing the types of work need to be tailored concurrently. These standards establish a minimum set of criteria for a person performing the work. Additionally, this allows for credit to be given upon successful execution of the inspect and repair duties. In the spirit of paper work reduction, the inspect and repair tasks should be reported in a simple way. A reporting method on the scale of a small card, for example, would need to be developed. This would assist in the initiation of inspect and repair efforts by tracking the small problems. The information on the card should be simple—what, where, and how long. One reason for tracking is to enable the workforce to document their accomplishments; a second reason is for use in predicting trends.

Any effort to change status quo operations are likely to be met with resistance in the form of hard-to-break habits, fear of change, failure to fully anticipate stumbling points or a multitude of other control factors which have to be modified. Below is a suggested strategy to initiate trades and crafts empowerment in property management.

The processes to introduce new aspects of property management needs to be planned, nor can it be done without some effort. For individuals wishing to initiate toolbelt and free-range inspect

and repair methods, the following steps are offered as a starting point.

Assign responsibility for initiating the efforts. A senior staff member in the facilities management chain may be the first choice. Consider appointing an individual who has familiarity with the day-to-day maintenance and repair activity. An individual from the side of the organization who actually performs the work may actually be best—they are the ones who will be evaluated for performing the work.

Assemble information on how tasks are currently assigned. This step should take into account the total process, from the call to inspect to the signing off on repairs.

Consult with those parties interested in your holdings. Let organizations know that alternative methods are being considered. The State Historic Preservation Officer may have to legally be consulted with. Additionally, be on the lookout for hidden agendas. Some individuals may have an interest in maintaining the systems as is for reasons which are not in the best interest of historic buildings—don't let yourself be told "it is not broken."

Clearly identify those properties and attributes you will be addressing. Answer the question—how many and what kind. There is a danger when you are familiar with a situation. You might leap over an item because you are familiar with it.

Assess hazards. Are there materials and/or situations which might cause injury or harm if the workforce is not notified of the existence?

Express concisely system modifications. Which standard operating procedures are you changing and what is the envisioned end result?

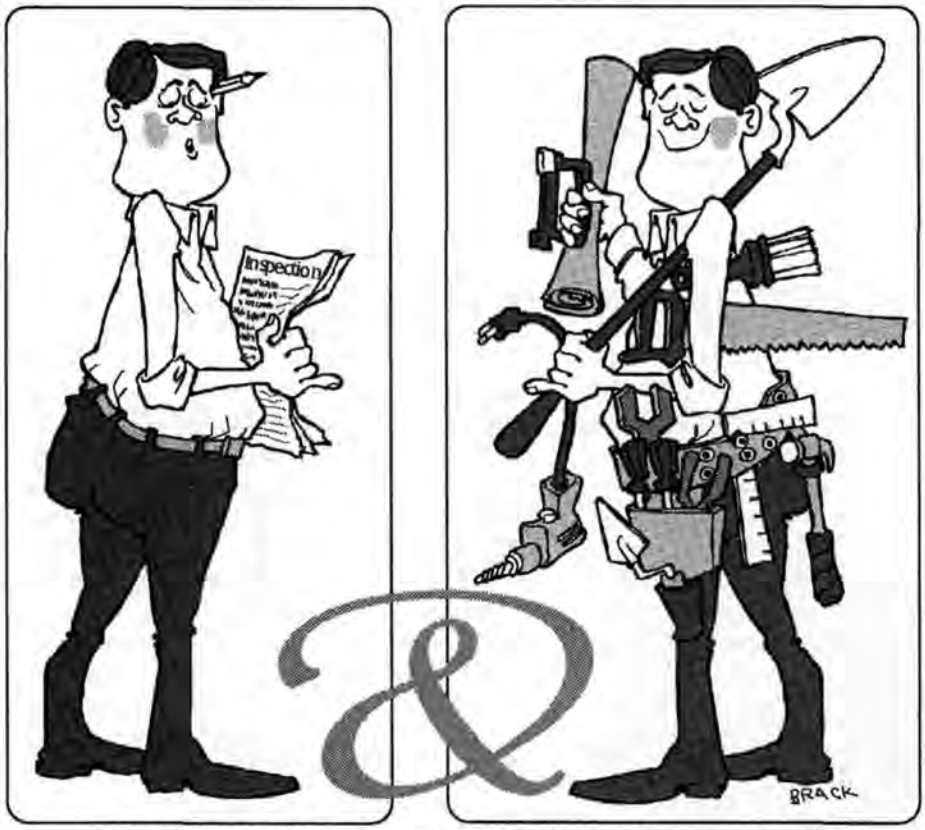
Establish management oversight. This is not to take away from the empowerment effort, but how are these efforts going to be managed and evaluated?

Print and distribute the plan. This is not meant to be prescriptive, but rather a simple and flexible expression of the changes and procurement methods.

Educate the trades- and craftspersons. How are the changes to be made, what flexibility is offered, what are the sources of support, and how will inspect and repair tasks be evaluated?

Assess the changes. Analyze and evaluate how well the care and maintenance has been improved. Above all keep the process current. Tweak and modify as needed—keep the door open to approved time management and response to building users concerns of maintenance and repair issues.

For these inspect and repair approaches—toolbelt and free-range—to become initiated there needs to be support. Management and the labor force need to buy-off on the concept of building custodians versus narrow focus work order dredges. The trades- and craftspersons who work on historic buildings warrant the respect and flexibility the system outlined above offers. For better and through ill, let the reputations and efforts of an empowered trades and crafts workforce deliver an improved set of maintained and repaired buildings.



"Basic to each approach is an underlying philosophy of concurrent inspection and repair"

Dr. Richard L. Hayes, RA, is a Historical Architect at Headquarters, Naval Facilities Engineering Command, Department of the Navy, on IPA assignment from the Center for Public Buildings at Georgia Tech.

Nora J. Mitchell and Charles Pepper

Tools of the Trade

Cultivating Preservation Skills for Cultural Landscape Maintenance

I am very pleased with the training... Everything I have learned so far is something that I can use in my park. I look at trees totally differently now.

—James Gardner, Gardener Leader, Boston NHP and participant in the Olmsted Center's Arborist Training Program, 1997

Jim Gardner's participation in the Arborist Training Program has given him a new perspective on trees—one which is based on an understanding of a tree's biology and knowledge of scientific management techniques, and on seeing trees as important historic features of cultural landscapes. This integration of landscape maintenance skills with historic preservation is the foundation for a variety of training programs developed by the NPS's Olmsted Center for Landscape Preservation over the past five years. The Olmsted Center, based at the Frederick Law Olmsted NHS, was founded in 1992, specifically to provide technical assistance to park managers and their staff on the stewardship of cultural landscapes. As part of this mission, a number of training programs have been initiated in response to the recognition of landscapes as cultural resources and the many questions which were being asked about preservation maintenance of these resources.

It has only been in the last decade that we have begun looking at landscapes "totally differently," seeing them as a record of the past and as an expression of our culture. Today we identify a wide diversity of landscapes as cultural resources. Designed landscapes such as public parks, cemeteries, and private estates and vernacular landscapes such as farms, battlefields, and industrial sites are all cultural landscapes. Most national parks and other historic properties have important cultural landscapes; many are central to the site's mission and its significance.

Gardener Intake Program graduates. Gardener Intake Program Coordinators Charles Pepper (Olmsted Center) and Gene Gabriel (Adams NHS) with graduates, 1996. Courtesy of the Olmsted Center for Landscape Preservation.

Cultural landscapes have been officially recognized by the NPS since the late 1980s. Since then, the National Park Service has developed a variety of programs and publications that provide guidance on identification and preservation of cultural landscapes. Several National Register bulletins have been developed specifically to provide advice on identifying and evaluating a variety of cultural landscapes.[1] As with historic structures, management of historically important landscapes is guided by a series of preservation standards and guidelines. The *Secretary of the Interior's Standards for Historic Preservation Projects* provides the basic principles for preservation practice.[2] These standards, revised in 1992, now specifically include cultural landscapes. Just this year, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* was published based on the model established by the guidelines for historic structures.[3] These guidelines provide technical advice to managers on a preservation approach for the cultural landscapes under their care.

These principles provide the framework for landscape preservation and have guided many important preservation planning projects. However, to date, much less attention has been paid to the field of preservation maintenance, yet it is essential to landscape stewardship. Similar to preservation crafts for historic structures, the care of cultural landscapes requires specialized knowledge of skills, techniques and materials. In 1872, Frederick Law Olmsted, preeminent 19th-century park maker, noted the importance of landscape maintenance:

> The character of the park...is to be far more affected by the work...done upon it than by all that is to be done upon accurate draw-

Arborist trainees learn techniques of tree climbing, 1997. Courtesy of the Olmsted Center for Landscape Preservation.

> ings.... For example, the...seeding, mowing, rolling and weeding of turf; the spading, forking, raking...the constant repairs, ordinary and extraordinary, and...the thinning and pruning of trees and shrubs....

As Olmsted pointed out, it is the day-to-day decisions and skills of landscape maintenance staff that can protect the integrity of the historic resource, or can diminish it.

Cultural landscapes usually include important historic structures and other built features, but the vegetation is often an equally important, though often unrecognized contributor, to a landscape's character. The use of plants in the landscape reflects social, cultural, and economic history just as clearly as structures or any other feature. The fact that vegetation grows, changes, and eventually dies does not alter the fact that it is part of the historic record of a place. Recognizing that vegetation is part of the historic fabric of landscapes does, however, have a number of implications for preservation of this type of resource.

While the importance of preservation crafts for building preservation has been recognized and taught for many years, a similar tradition does not exist for landscape preservation maintenance. For example, while many parks have maintenance crews to care for landscapes, very few parks have staff trained in horticulture or arboriculture. There are also many parks with significant landscapes that do not have maintenance staff assigned to their care. In addition, until the mid-1980s, the priority of most park grounds maintenance operations was on improving landscape aesthetics and did not consider the landscape as a historic resource.

In response to a growing interest in cultural landscape maintenance skills, the Olmsted Center for Landscape Preservation began to develop training in landscape preservation principles and practices. Collaboration with other national parks (Adams NHS, Boston NHP, Hampton NHS, Roosevelt-Vanderbilt NHS, and Weir Farm NHS), the NPS Cultural Landscape Program in Washington, DC, and the Denver Service Center, universities (Arnold Arboretum of Harvard University and University of Massachusetts), and nonprofit organizations (such as American Association of Botanic Gardens and Arboreta) has been critical in development of a variety of training programs in three main areas:

Upward Mobility and Career Development Programs

These programs offer participants an opportunity to broaden their understanding of landscape preservation practice through formal training in combination with field project experience. In addition to the Gardener Intake Program and the Arborist Training Program (described below), a variety of internships and training details have been individually designed.

Gardener Intake Program. This intensive two-year training program was established in 1991 to correct shortfalls in skilled landscape maintenance staff and to enhance staff retention. The program provides a career ladder while assisting parks with meeting critical staffing needs with qualified, well-trained and highly motivated employees. The program combines traditional classroom education with hands-on, field experience, usually on multi-park crews accomplishing landscape projects. The curriculum may include adult education courses at local institutions, correspondence courses, recommended conferences, selected reading, and participation in short-term details and on field projects. In two programs, eleven graduates have completed the programs formal and field training requirements and are now working as professional gardeners in parks in the Northeast Region.

Arborist Training Program. This 18-month program was initiated in response to a tremendous backlog in historic tree management and the need to develop specialized skills in the principles and practices of tree care. The training is designed to be self-

paced; however, participation in certain sessions are required. Modeled after the Gardener Intake Program, the training is a combination of formal coursework and study with participation in field projects. Successful completion of the program will qualify graduates for professional certification through the International Society of Arboriculture.

Preservation Maintenance Field School

Specialized technical courses on conserving and maintaining historic landscape features have been developed such as: Historic Orchard Preservation; Maintaining Historic Trees; Rejuvenating Historic Hedges; Pruning Historic Trees and Shrubs.

Instruction in these courses is usually provided through on-the-job training as part of accomplishing a landscape preservation project. For the last five years, the Olmsted Center has been conducting 10-15 historic landscape projects per year by assembling maintenance staff from several parks into a multi-park crew. This provides a critical mass for the crew and an opportunity for training in landscape skills.

Historic Orchard Management Field School in historic orchard management, Morristown NHP. Courtesy of the Olmsted Center for Landscape Preservation.

Conferences and Workshops

A variety of classroom training sessions and national conferences have focused on current landscape preservation topics and have also encouraged an active exchange of experience and information among landscape maintenance professionals. These events range from a national forum on Vegetation Management for Historic Sites conducted in cooperation with the Arnold Arboretum of Harvard University, to a two-day Historic Landscape Maintenance Workshop at the Presidio and Golden Gate National Recreation Area.

Each of these training programs are directed at enhancing the capacity of park staff to care for cultural landscapes. This is accomplished through a variety of ways, often combining training and work projects conducted with multi-park crews. Dan McCarthy, Gardener at Boston NHP and a trainee in the Arborist Training Program this year, recently described the dual accomplishment of many of these programs:

> Through training programs such as the GIP [Gardener Intake Program] and Arborist Training Program, the Olmsted Center has not only provided participating parks with skilled landscape maintenance personnel, but it had also developed multi-park skills teams to assist area parks in their backlog of landscape maintenance work through Olmsted Center work projects.

This combination has proven very successful; there is a tremendous learning experience, people teaching each other on the job, and a real and satisfying sense of accomplishment and teamwork.

Sharing the Tools of the Trade

Olmsted's insight on the critical importance of landscape maintenance holds true. To preserve landscapes, we must recognize the important role of the staff providing stewardship and invest in their professional development. As part of the NPS training community, the Olmsted Center plans to continue to develop new programs, expand the partnership network, and through new approaches, make training available to a wider audience.

For additional information on the Olmsted Center and training opportunities in landscape preservation maintenance, contact Nora Mitchell or Charlie Pepper at (617) 566-1689.

Notes

1 National Register Bulletins have been published on designed historic landscapes (Number 18), rural historic landscapes (Number 30), traditional cultural properties (Number 38), historic battlefields (Number 40), cemeteries (Number 41), and mining properties (Number 42).

U.S. Department of the Interior, National Park Service, *National Register Bulletin 18: How to Evaluate and Nominate Designed Historic Landscapes*, by J. Timothy Keller and Genevieve P. Keller, (Washington, D.C., 1987); *National Register Bulletin 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes*, by Linda Flint McClelland, J. Timothy Keller, Genevieve P. Keller, and Robert Z. Melnick, (Washington, D.C., 1990); *National Register Bulletin 38: Guidelines for*

Evaluating and Documenting Traditional Cultural Properties, by Patricia L. Parker and Thomas F. King, (Washington, D.C., 1990); *National Register Bulletin 40: Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*, by Patrick W. Andrus, (Washington, D.C., 1992); *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Places*, by Elisabeth Walton Potter and Beth Boland, (Washington, D.C., 1992); and *National Register Bulletin 42: Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties*, by Bruce J. Noble, Jr., and Robert Spude, (Washington, D.C., 1992).

2 The *Secretary of the Interior's Standards for Historic Preservation Projects*, revised in 1992, were codified as 36 CFR Part 68 in the 12 July 1995 *Federal Register* (Vol. 60, No. 133). A brochure on the standards is also published by the National Park Service.

3 U.S. Department of the Interior, National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*, by Kay D. Weeks and Anne Grimmer, (Washington, D.C., 1996); and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, by Charles Birnbaum with Christine Capella Peters, (Washington, D.C., 1996).

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John Richardson

Preserving the Baha'i House of Worship

Unusual Mandate, Material, and Method

The Baha'i House of Worship is located in Wilmette, Illinois. It is owned and maintained by the National Spiritual Assembly of the Baha'i of the United States. Expressly free of religious service or pageantry, the building and its grounds are dedicated to all mankind as a quiet place for prayer and meditation. The owner intends that the House of Worship fulfill this function for 1,000 years.

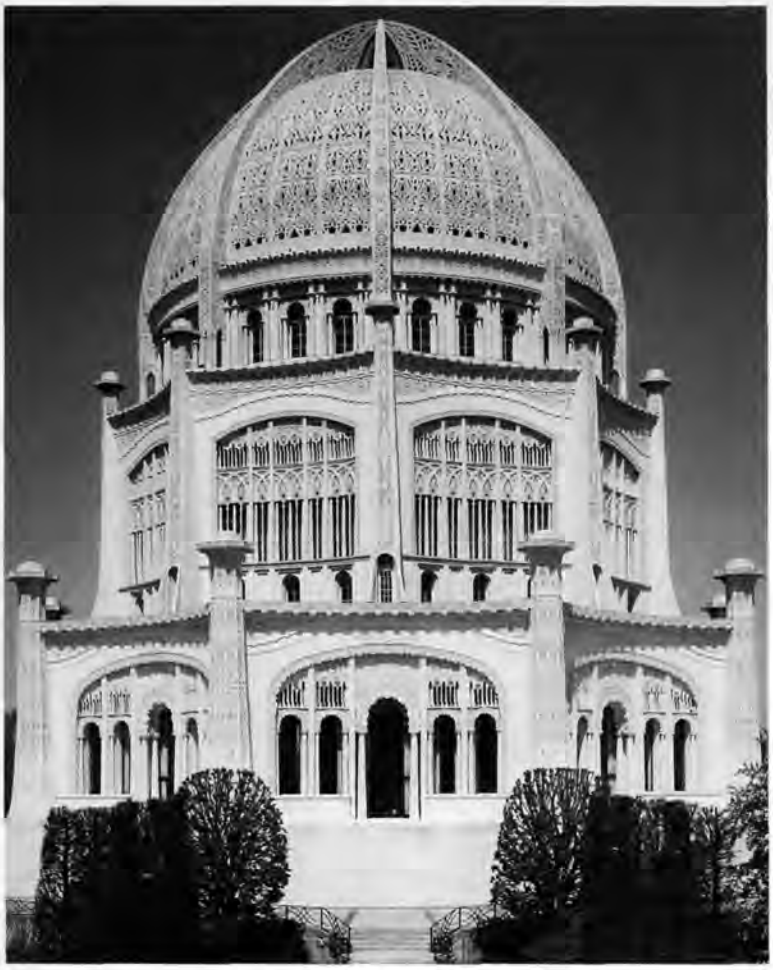
The temple's construction began in 1920 and was finished in 1953. In 1978, the House of Worship was entered in the National Register of Historic Places. A building investigation in 1983 initiated a 10-year restoration program. Upon completion of the restoration, the owner created an in-house group to design and carry out a long-term program of conservation.

This conservation group has assembled and codified all historic and recent records pertaining to the building. It now approves, specifies, and documents the details of any in-house or contracted work undertaken. Utilizing a rigorous inspection regime, it regularly monitors the condition of the building. In workshops on site, the group's members carry out specialized maintenance, materials research, and restoration of the historic concrete.

Crystal Concrete

Ornate architectural concrete covers the exterior and interior surfaces of the building. This cladding is pierced by tens of thousands of openings and is accented with innumerable highly sculpted bas-reliefs. The surface finish on the concrete is known as "exposed aggregate," a subtle texturing that leaves the facets of sub-surface aggregate and sand visible. Made entirely from crushed white and clear quartz crystals, the concrete is brilliant white in color and glistens.

The adaptation of concrete into an aesthetically beautiful material was revolutionary when construction began. The process was invented and perfected by John Early, an architectural sculptor in Washington, DC, whose firm designed, fabricated, and installed the cladding. The House of Worship was the most ambitious of Early's many



Baha'i House of Worship. Photo by Bill Lemke.

projects and remains a marvelous example of his rare and original detailing technology.

Development of Artisans

Over a decade of investigation, refinement and execution by expert practitioners has yielded the procedures necessary to conserve this unprecedented historic fabric. These practices combine skills from several disciplines. *In situ* restoration, a delicate and exacting process, requires sculptural finesse.

Wholesale replacement, a heavy industrial art, involves replicating, casting, and installing exact reproductions. Access to the facade for monitoring and cleaning requires steeple-jack prowess.

The owner is ready to institutionalize the capacity to perpetuate this care. Men and women recruited and trained in these skills will constitute a very specialized work force. As the conservation ethic and sciences become a routine aspect of the building's maintenance, preservation of the structure is assured.

In the milieu of architectural traditions, artistic exposed aggregate concrete is a sub-specialty with a very recent history. Within this class, the House of Worship is peerless. It is curious, yet fitting, that the temple itself should foster and house the resources to complete its own unique mission.

John Richardson is a heritage mason and stone sculptor with the Baha'i House of Worship Conservation Group, Wilmette, Illinois.

Larry E. Stearns

Sheet Metal Craftsmanship – Pass It On

Sheet metal roofing is the most challenging discipline of the sheet metal trades. Heights, weather, and an infinite variety of architectural conditions quickly weed out the faint of heart. For those remaining, the rewards are substantial. Certainly the money is good, but more important for me is the opportunity to work on monumental buildings and see my work in place, knowing it will last long beyond my lifetime.

Good sheet metal craftsmanship requires seven basic tools: hammer, measuring tape, scratch awl, dividers, straight edge, snips, and hand seamers. Each of these can be expanded and added to as much as budget or a penchant for gadgets allows. And, each one can be improvised in a pinch. In addition to the tools, a copy of *Copper and Common Sense*, published by Revere Copper, is indispensable. Although somewhat limited and generic, the drawings and photographs demonstrate all the basic roof details and layout. Additionally, there are excellent reference materials and tables outlining mechanical properties and specifications. Missing is any description of how to form and join the materials. Some text books introduce common fabrication techniques, but there is no substitute for hands-on training.

The International Preservation Trades Workshop sponsored by the National Park Service is an excellent place to begin the hands-on experience. Those interested in sheet metal need this type of venue to learn traditional skills, that for years, have been considered "trade secrets." Europeans are willing to invest years in training apprentice sheet metal roofers and yet here, in the United States, an individual is considered a master roofer with a mere 90 hours of sheet metal; 50

Larry Stearns works on site soldering columns for a historic replication of a tower belvedere. The original structure was struck by lightening and destroyed by the ensuing fire. Photo courtesy the author.

hours shingle, slate, and tile; and 4,000 hours of built up and single-ply experience!

Often I have observed mechanics taking more time to do a job wrong than it would take to do it correctly. Rife in the industry is an attitude of "that's good enough" or "just get it done." The missing ingredient is craftsmanship. For me this term carries all the important attributes of quality work—attention to detail, clean properly installed materials, and a positive work ethic.

A major portion of what I've learned is from watching experienced roofers perform their trade. In my early twenties, I had the good fortune to meet a generous man who had trained in the French roofers guild. He taught me to solder with a gas iron and, in turn, I have taught scores of people the technique. Holding back information and "trade secrets" is against our collective best interest. My experience has been—the more I share, the more I learn.

The preservation field needs sheet metal craftsmen. Snap-on metal roofing systems are appropriate on new commercial buildings, but historic structures require someone willing to use dividers to scribe a flashing for a good fit against a wall that has twisted or settled over time. Custom flashings, often fabricated on the spot, are the rule in restoration work. A reverence for the "old timers" and a desire to match or exceed their craftsmanship is requisite.

"They don't build them like they used to." Fortunately for future generations we are learning from the mistakes of the legendary "they." A near-total disregard for the expansion and contraction of metals, the use of iron fasteners in non-ferrous materials, poor seam design and layout, under-built substrates, and bad detailing at the interface between metal and stone, masonry or wood are all typical of the problems encountered on restoration projects. There is as much to be learned from poorly installed sheet metal as there is from a masterpiece. Today's professionals have the failures of the past to point them in the right direction.

Learn mechanical skills, be precise in measuring and layout, and understand the properties of the sheet metal you are using. Read anything you can find relevant to the trade and be a keen observer of the work in place around you. Work with the architect and general contractor to produce the best possible installation. Above all, share the knowledge.

Larry E. Stearns, coppersmith, has 20 years in the historic restoration field and works from his shop, Vulcan Supply Corp., in Westford, Vermont.

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