CRM

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Thematic Issue

Architectural Study Collections

Material Worthy of A Second Life

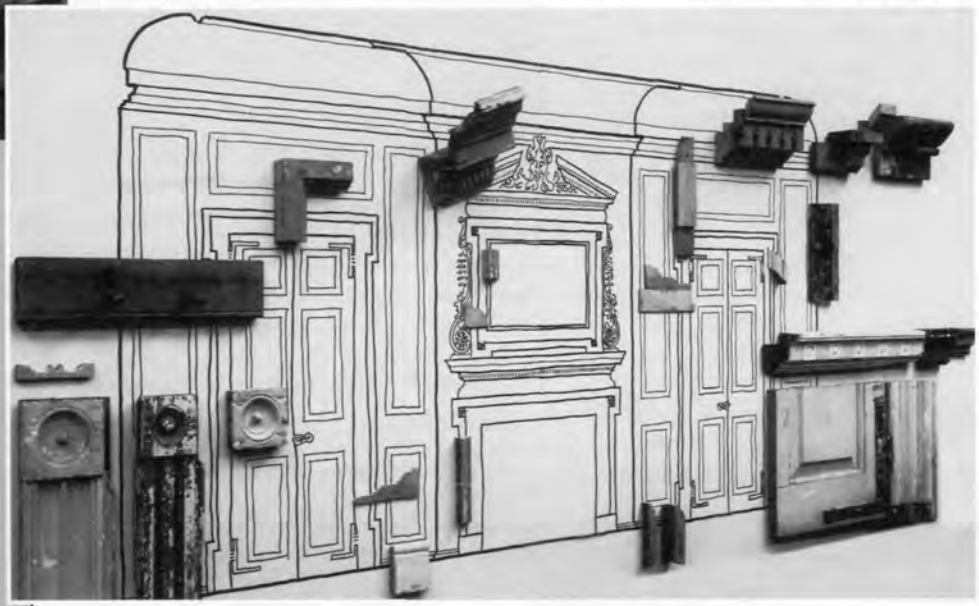
Emogene A. Bevitt

In their **first lives,** structures that are now historic were envisioned, designed, crafted, assembled, and, most importantly, occupied over long periods of time. For a variety of reasons, including inherent design flaws and construction, changes due to owner whim or neglect, natural disasters, or the changing economic needs of a community, features crumble; an entire building is razed.

At the end of the first life, **a second life** may begin based solely on remaining material fragments. Sometimes they are the only surviving pieces from a structure that had stood for several generations. Or, if the effects of time and weather have required the removal of a single feature, it can now be preserved in a less harsh environment. Collectively, these features, materials, and finishes have many stories to tell as they provide a tangible link with the people who designed, crafted, and used them over time.

Study collections offer new life for significant elements that were integral to a structure, but are now only artifacts. These artifacts vary in size from entire facades, large carved columns or cornices, to tiny chips of paint or pieces of the mortar found between bricks. Whether the artifacts are sheltered by museums or private offices and individuals, today anyone who has an interest in historic structures can learn much from them.

*(**Second Life**—continued on page 3)*



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Cover: Capital and lion, *Sheet Metal Craftsmanship*, National Building Museum, Washington, DC, 1988, photos by Lois Brownstein; from collection at Independence National Historical Park (INHP) Philadelphia, PA—mantelpiece photo by Lee H. Nelson, 1988; lath and exhibit panel, *See What they Sawed* exhibit, 1970, photos by George Eisenman, courtesy INHP.

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Material Worthy of a Second Life

(continued from page 1)

The information in this issue of *CRM* is only a small part of what can potentially be learned, discussed, debated, and shared. The potential exists as never before for individuals with backgrounds in science and the humanities to combine efforts to establish and document how a building system performed, why it failed, how an element was crafted and units assembled, what tools were used, how materials were selected and why one was selected instead of another. The answers to these questions can save money, time, and effort in assuring the long-term preservation of a structure.

Some artifacts are assemblages of materials—each reacting differently to humidity, heat, moisture, and each other—that are not easy to handle, move, care for, or store. Because they have varied so much in size and shape, and because buildings and their components are often thought to be more durable than other types of artifacts, architectural study collections have not always received curation and conservation care according to museum standards. Perhaps the most common problem facing these artifacts is the fact that collections were initiated to gain immediate knowledge and preserving them in perpetuity or including them in a museum collection was not considered. Many organizations that have architectural study collections have begun to grapple with the challenges such collections afford.

Fig. 2. The exhibit provides a sampling of architectural details such as cornices, pilasters, wainscotting, architraves, and newelposts from historic structures in the Charleston area. Exhibit from the Frances R. Edmunds Center for Historic Preservation, Charleston, SC. Photo by Lee H. Nelson, FAIA.

Challenges of Collecting

This issue of *CRM* presents information to help the reader to better understand why such collections are important and what kind of information can be learned from artifacts that cannot be learned any other way. If preservationists were to think of architectural study collections, they would likely think of one of the major collections covered in the articles that follow. With the exception of the Smithsonian, each collection represents a distinct region (figure 2) and specific time frame. While these are large collections—with over 200 collections identified in the database of collections in the United States—there are many with collections either equal in size or considerably smaller. Learning, through these articles, that the challenges faced are common to any collection regardless of size could prove encouraging to all. If this issue of *CRM* generates renewed interest and more sharing of information on this topic, then individual successes, if reported in future issues of *CRM*, could well become collective successes on a fairly large scale.

Each of the contributing authors shares information about the strengths of an individual collection and the ways in which this material has proven its usefulness in the past. Each is working to develop databases to be able to retrieve and compare information and objects. Each reflects a growing, collective awareness of the need to provide improved care for these objects despite the significant challenges that exist in storing, documenting, labeling, managing, and caring for them.

In writing about the collection at Colonial Williamsburg, which was initiated in the 1930s with enthusiasm and great hope, Roberta Reid describes the present-day challenges that are being addressed with painstaking effort. Shantia Anderheggen describes the history of the collection of the Society for the Preservation of New England Antiquities (SPNEA), located in Boston, that was founded in 1910 by William Sumner Appleton. Documentation is a hallmark of their collection and has been since its inception. In his description of the architectural study collection at Independence National Historical Park, in Philadelphia, as a source of information "not found in books," John Marks shows a collection begun in 1951 that has been a resource for both exhibits and research ever since.

Catherine Anderson shares some perceptions and observations gathered from visiting several architectural collections to better understand the state-of-the-art in curating and conserving these artifacts. She also presents some tantalizing glimpses of the extensive collection held by the National Museum of American History of the Smithsonian Institution. For both contrast and comparison, Julius Bryant describes English Heritage's architectural study collections which date back to 1903 and announces the recent opening of an Architectural Study Centre in London. After learning more about these specific collections, John Maounis and Liz Banks offer a thoughtful introduction to curatorial concerns.

While in one way or another each author points out the educational benefit of these collections, John Milner, writing as a college professor, demonstrates the way in which

*(**Second Life**—continued on page 4)*

(Second Life—continued from page 3)

he has designed specific courses to investigate and develop architectural study collections as a primary research element. During these courses, he imparts to students the clues to look for, how to interpret them, and how to corroborate deductions with other documentary evidence.

When the preservation of cultural resources is a primary focus, the circumstances that lead to the development of an architectural collection deserve careful scrutiny. Kay Weeks explores some of the ethical implications in starting an architectural study collection and provides a framework well worth considering.

The potential of study collections to excite interest in the public is demonstrated in the multiple showings of the *WINDOWS THROUGH TIME: An Exhibit*. A brief article summarizes the success of this show which has been seen by over 100,000 people since 1986.

Points of View

Featured in this special *CRM* are five richly illustrated points of view that show artifacts and allow a glimpse into the perspective of different professionals in understanding the usefulness of an object. The craftsman, the architectural historian, the historical architect, the engineer, and the interpreter are each able to find value in the study of these objects to benefit their work-related efforts. Their views differ considerably because they reflect the biases and needs implicit in their professions.

David Flaharty shares the enthusiasm and expertise of a craftsman looking at plaster ceiling medallions. Kathleen Catalano Milley represents an architectural historian's perspective as she studies the documentation developed based on an artifact's existence. Lee Nelson discusses sections of structural elements and a hinge and hinge pattern and identifies whole new topics that have received little attention to date. Robert Silman uses the office study collection daily in training newly-hired engineers and makes a convincing case for such a collection being essential for any practicing engineer. Corky Mayo presents several examples of the way in which an architectural element could be used as a focal point in interpreting a historic structure.

Conclusion

Architectural study collections may provide a second life for the architectural artifacts and fragments but they also offer us a second chance to look at, touch, and come to a better understanding of the role played by individual units that were once indistinguishable within a structure. This issue of *CRM* helps us see them as important cultural resources in their own right, objects that are well worth our efforts to preserve and protect; objects that will repay our investment of time and effort with the information only they possess.

Acknowledgements

The impetus for this special issue came out of a lunchtime discussion during the Interiors Conference in February, 1993; my involvement in the topic began in 1986 based on numerous discussions (both then and since) with Lee H. Nelson, FAIA; his interest having been sparked by Charles E. Peterson, FAIA, in 1960.

This issue reflects the efforts of the authors and the support of their supervisors and organizations. Special thanks go to: Tom Taylor, Richard Nylander, Nancy Carlisle, Lorna Condon, David Bohl, Penny Batcheler, Doris Fanelli, Martin Burke, Nikki Horton, Scott Odell, Beth Richwine, Rodris Roth, Catherine Sease, Akua Annis, John Hnedak, Marie Ennis, Paul Franceschi, Michael Lo, Ed Meade, Sandy Weber, Joe Burns, Melissa Cahn, Regina P. Jones Underwood, Marianne Mills, Ann Hitchcock, Tony Knapp, Randy Biallas, Blaine Cliver, Lee Nelson, Chuck Fisher, Ward Jandl, Kay Weeks, and Irene Duff for comments, review, encouragement, and support.

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Emogene Bevitt is a program analyst in the Preservation Assistance Division of the National Park Service, Washington. She coordinated this issue of *CRM* and served as guest editor.

Request for Feedback

While this issue of *CRM* presents information about some large collections, it would be useful to learn from house museums and other collection holders of challenges faced and solutions found or needed. With architectural study collections in virtually every state, there are certain to be some ingenious solutions to problems of storage, labeling, documentation, and information retrieval. *CRM* will be tracking this topic in the future, and the editor would welcome articles detailing different aspects of this topic. Maintenance technicians and maintenance supervisors may well be in the forefront in recognizing the value of architectural artifacts and in taking the steps needed to preserve them. They, and all of the many other people interested in this topic, are invited to share their information.

As mentioned in an earlier article in *CRM* (Vol. 16, No. 5, pages 15-18), a survey is being conducted to gather information on architectural study collections in the United States and to verify and expand existing data on over 200 collections prior to publication. The deadline for receipt of entries has been extended to November 1, 1993.

Colonial Williamsburg's Architectural Fragments

Roberta G. Reid

> "I need you to empty the room by next week," the restaurant manager stated. "It looks like your stuff." Curious, three of us from the Research Division went to the basement storage room he was talking about. There we found shingles, floorboards, flashing, locks, a shutter, bricks, and an old, twisted piece of flax. "The only original sash cord left from Wetherburn's Tavern," said the architectural historian. "The only 18th-century, red-and-white cord I've ever seen," he added. In an instant we had retrieved it. In another instant and to eyes anxious for the much-needed storage space, it may have been perceived as a tieback, kind of rumpled, without its tassels, and destined for the dumpster."

Since the beginning of restoration work in 1928, the Colonial Williamsburg Foundation has collected architectural fragments to use in the reconstruction of its Historic Area buildings and as examples for reproductions. The rest were saved for future study. A written set of 10 standards known as the Decalogue dictated how the restoration would unfold. Two of the standards were directed toward architectural fragments, stating, "In restoration the use of old materials and details of the period and character, properly recorded, is commendable when they can be secured," and "In the securing of old materials there should be no demolition or removal of buildings where there seems a reasonable prospect that they will persist intact on their original sites."

The first component of the collection includes an assortment of hardware, doors, windows, balusters, moldings, pilasters, brick, and roofing taken from buildings in the Tidewater region. The architectural team of Perry, Shaw, and Hepburn, unfamiliar with regional 18th-century building practices when they arrived in Williamsburg, explored the Tidewater region in order to understand design elements, not only for existing Williamsburg buildings, but also where no physical evidence remained. According to Edward Chappell, current director of architectural research, "(the architects and draftsmen) were fascinated with the subtleties of moldings and recorded their observations in drawings, rather than text." They concentrated on the details, like learning a language.

Fragments were collected in the field from demolished, abandoned, or restored buildings and also purchased from agents. As Andrew Hepburn once reminisced, "the enthusiasm of the architectural crew and draftsmen who packed up on the weekends and scattered throughout the country finding examples of 18th-century design was **extraordinary**." While the approach to the rules of the Decalogue may seem somewhat cavalier today, one can appreciate the pressure that the team worked under to restore and reconstruct an entire community.

Later, Paul Buchanan, director of architectural research from 1949 to 1980, studied minute details about the fragments he collected while restoring buildings. For example, at the Booker Tenement he described a badly deteriorated yellow poplar weatherboard by writing on a paper label: "This weatherboard was made by a 19th-century beading plane that was badly sharpened." To add to his description, Paul then carefully sketched the differences between a typical 18th-century profile, a 19th-century profile, and the fragment in question. Today, the Foundation's architectural historians continue to selectively collect fragments that have little hope of otherwise surviving.

The second assemblage includes English and other European architectural fragments, such as the Lenygon Collection, a group of carved moldings, doors, brackets, pilasters, and panels taken in the early 20th century from English manor houses. These fragments belonged to Francis H. Lenygon a prominent British interior designer and antiques dealer whose firm, Lenygon and Morant, decorated English and American buildings in the early-20th century (figure 1). Although frowned upon today, Lenygon stripped "period" rooms and installed them in fashionable American homes (figures 2 and 3). Our current research shows that most of the English manor houses were demolished.

Fig. 1. Roberta Reid (left) with interns Barry Rakes (center) and Fay Peterson (right) accessioning architectural fragments from the Lenygon collection. Photo courtesy The Colonial Williamsburg Foundation, July 1992, Architectural Collections Management.

(Williamsburg—continued on page 6)

*(**Williamsburg**—continued from page 5)*

Fig. 2. Fragments once considered worthless when piled in a warehouse begin to take on new meaning as research progresses. Here, the door from the Canary Lacquer Room (see below) has been placed in context: an exquisite 18th-century paneled room stripped from its manor house and available in the 1920s through the firm of Lenygon and Morant for $5,500. The unlabeled door meant little until the cardboard cutouts in the photograph were discovered in a long-forgotten box of folders donated along with the fragments in 1972. Interns continue to search for the name of the manor house. Photo courtesy The Colonial Williamsburg Foundation, July 1992, Architectural Collections Management.

Fig. 3. A photographic record is made for each fragment accessioned into the Colonial Williamsburg Collection. Here, a 6' 8" 6-panel Chinese-flowered door from the Canary Lacquer Room is recorded using a 35mm camera set on a tripod against a paper backdrop. The door has been assigned an easily discernible accession number; the scale marked with 1" blocks provides an impression of size. Photo courtesy The Colonial Williamsburg Foundation, July 1992, Architectural Collections Management.

Over time, Colonial Williamsburg's architectural fragments have rested forlornly in warehouses, attics, and basements (all without climate control) and hung as office decorations. As years passed, many fragments suffered damage, became separated from their matching parts or identifying tags, and worse, ended up missing altogether. Only recently have we begun to identify and accession our heaps of mantels, doors, windows, moldings, and hardware.

The first step in giving appropriate recognition to the architectural fragments was to include them as a component of the Foundation's collections along with the buildings, objects, and furnishings. First, we defined our collection as "architectural fragments," those portions of a building detached from their original location, such as a chair rail removed from its wall or a door removed from its frame. The architectural fragments are considered above-ground features; archeologists lay claim to anything found below the ground. Fragments can be as small as a paint chip or as large as a fully-paneled wall. A procedures and practices statement, written by Thomas H. Taylor, Jr., architectural collections manager, was incorporated into the operating policies for the Office of Architectural Collections Management. This effort formally validated the significance of the architectural fragments as a collection.

Our most recent Foundation architect, Nicholas A. Pappas, had secured funding for the beginning of a survey and identification project for the architectural fragments, a project that took place in 1990 shortly before his retirement. Tom Taylor and I continued Nick's efforts by establishing a process of relocating and accessioning the fragments.

First, the most endangered portion of the collection was moved from its graveyard in an old bus garage and sorted by type in an unrestored building in the Historic Area. Then, using a laptop computer, we entered data into a database called "Notebook" while physically examining each piece. With a very disorganized group of fragments, the software streamlined our work by allowing unlimited text along with the ability to search and reorganize data. Over the course of a summer and with the assistance of two interns, more than 800 fragments were accessioned. We devised a system of numbering each fragment using a base coat of acrylic polymer emulsion varnish, then acrylic artists' color for drawing letters and numbers on each piece. When low light warehouse conditions prevailed, we switched from paint in a tube to a fine line, oil base, opaque paint marker for numbering. We then photographed each piece against a backdrop using black and white film and a 35mm camera mounted on a tripod.

Colonial Williamsburg is only just beginning to conduct the research necessary to understand our fragments and their value as a study collection.

Colonial Williamsburg is only just beginning to conduct the research necessary to understand our fragments and their value as a study collection. As the transition to better storage conditions takes place, we will be looking at the fragments individually, as a group, and comparing the collection to similar groups of fragments elsewhere. Getting to know the discrete components of the collection has given us great appreciation for their craftsmanship and helped us to better understand 18th-century building technology. Historians have previously observed that the early restoration architects were rather selective in their observations of Tidewater buildings, focusing on well-resolved design aspects. Further study of our architectural fragments will assist in a better understanding of the architects' priorities.

*(**Williamsburg**—continued on page 27)*

SPNEA'S Architectural Elements Collection

Shantia Anderheggen

Founded in 1910 by William Sumner Appleton, the Society for the Preservation of New England Antiquities (SPNEA), located in Boston, MA, is the country's largest regional preservation organization, with 44 museum and study houses throughout five New England states. Through architecture and material culture, Appleton sought to preserve New England's history. The objects in SPNEA's artifactual collections number over 120,000 and include furniture, costumes and textiles, ceramics, painting, and prints. There are nearly 3,000 items in the architectural study collection. In addition, supporting the properties and collections is the archives (figure 1), with over a million photographs, manuscripts, and architectural drawings.

The collection of architectural elements began immediately upon the founding of the organization. Preservation of an entire building on its original site was always Appleton's preference, as was preserving architectural material *in situ*. However, in the event that a building could not be saved, Appleton's last resort was to rescue parts of the building, thereby preserving the important details. If a building could not be saved, pieces of it could. In some cases, replacement of failed original fabric was unavoidable during a building's restoration, in which case Appleton would preserve the original material, as evidence of sorts, for the collection.

The Benaiah Titcomb House (c.1695) offers a good early example of SPNEA's commitment to both preserving architectural fabric and documenting the process of its removal. Originally located in Newburyport, MA, the property on which this house stood was taken by the town, necessitating the removal or demolition of the house. Well-known Rhode Island architect Norman Isham was solicited to execute measured drawings of the structure before the removal of the most important portions of the interior, much of which was then donated to SPNEA and preserved in the society's collection. Fortunately, the house was ultimately saved and moved to Essex, MA.

BOSTONIANS!

SAVE THE

OLD JOHN HANCOCK MANSION

THERE IS TIME YET, ALTHOUGH THE WORK OF

DEMOLITION HAS COMMENCED

It is a question of some perplexity to decide how far it is wise or proper for the city government or for individuals to interfere to prevent the act of modern vandalism which demands the destruction of this precious relic; for that it is destroyed, in effect, if removed, we conceive admits of no question. Will it, or will it not, be a mitigation of the public disgrace to establish the house itself elsewhere as a perpetual monument of the proceeding.

Without wishing in the least degree to discourage the public spirit and the patriotism of those gentlemen in the City Council who are seeking at this moment to do the best thing they can for the preservation of the house, we still think it right that one preliminary appeal should be made to the present owners. They are gentlemen of wealth, they have made an honest purchase, and of course may plead that they have a right to do what they will with their own. It is with full recognition of their rights in this respect, and withal in the utmost kindness to them, that we would admonish those how deeply is purchased any good thing which costs the sacrifice of public associations as dear and as noble as those that cluster around the Hancock House.

These purchasers must at any rate be prepared to hear, during the whole of their lives and that of their remotest posterity, so long as any of them may live in the elegant modern palaces which shall supplant the ancient structure, the frequent expression of public discontent. Argument may show them blameless, but sentiment will ever condemn the proceeding in which theirs will be perhaps the most innocent, but nevertheless the most permanent part. It is not often that an opportunity is given to men of wealth to earn a title to public gratitude by an act of simple self-denial. Such an opportunity falls to the [illegible] of the purchasers of this estate.

Published by [illegible] Boston, June 16, 1860.

Fig. 1. Hancock House broadside, 1860. Broadsides calling for the preservation of the house as well as advertising the auction of the building's important architectural features are preserved in the SPNEA archives. Other material contained in the archives relating to the Hancock House includes engravings and sketches, interior and exterior photographs, and John Hubbard Sturgis' measured drawings, the earliest known in the United States.[1] This material provides both excellent documentation and context for the surviving architectural elements. Courtesy the Society for the Preservation of New England Antiquities.

Crucial information about the fate of many New England buildings can be traced through the columns of *Old-Time New England*, a quarterly journal published by SPNEA from 1910-1981. Included in its annals is the saga of the Benaiah Titcomb house. In addition, acquisitions to SPNEA's collections are often detailed throughout the publication, offering invaluable provenance to many of the objects. (SPNEA plans to restart publication of this journal in 1994.)

Appleton extensively photographed and corresponded about his travels around New England, adding further documentation to the collections. His early solicitation of photographic documentation of New England life eventually grew to include postcards, clippings, architectural plans and sketches, as well as other material which formed the basis of the archives. Appleton's association with prominent antiquarians and architects, including Norman Isham, J. Frederick Kelly, Joseph Everett Chandler, and Frank Chouteau Brown only served to strengthen the credibility of SPNEA's pursuits.

At present, the architectural elements collection at SPNEA is predominately made up of domestic artifacts, most of which are associated with well-known buildings, particular makers (architects or carvers, for example), specific forms of design drawn from known architectural sources, or typical (or atypical) features of New England architecture. Although examples from many of SPNEA's properties are found in the collection, hundreds of other buildings throughout New England are also represented.

SPNEA's collection dates from the mid-17th century to the present, although the bulk of the collection dates to before the mid-19th century. Although Appleton's emphasis was primarily on domestic material culture, a small number of architectural elements from religious, civic and commercial structures are represented in the artifact collection. A great variety of building fabric is preserved in the SPNEA collection, with staircases and mantels especially well-represented. For example, the framing members, a sash window and later samples of wallpaper from a demolished late-17th-century brick dwelling in Boston, the Clough-Vernon House, is

(SPNEA—continued on page 8)

(SPNEA—continued from page 7)

Fig. 2. The Hancock House, Beacon Street, Boston, MA, c. 1863. One of the preservation movement's earliest battles was waged in 1863 against the demolition of the Hancock House (built c. 1737). Although the house was ultimately torn down, many of its architectural features were salvaged and auctioned off. Among those architectural elements saved and later donated to SPNEA are numerous balusters, dado, and paneling. Photo by Edward Lamson Henry, courtesy the Society for the Preservation of New England Antiquities.

just one example of numerous elements from one structure. In addition, the collection of hardware contains nearly every variety of shutter hook and lock imaginable.

During his tenure at SPNEA, Abbott Lowell Cummings concentrated much of his efforts on collecting evidence of First Period (1625-1725) building fabric and construction. The policy of requiring good provenance and documentation with accessions, established under Appleton, continued under Cummings' direction.

Thus, nearly every architectural element in SPNEA's collection is supported by some form of documentation. Whether there are *in situ* photographs (figure 2) or measured drawings, correspondence or notes made upon acquisition, or details published in *Old-Time New England*, the context for the object is explained through this documentation. Information on historic associations, such as maker, architect, former owners, or historic events, all combine to form an understanding of the architectural element beyond its physical or design aspects.

One obvious advantage of a collection of architectural elements which have been removed from their original locations is that it affords both technological, geographical, and temporal comparative possibilities. The technology used in wood carving, turning, and assembly can be examined through balusters and various ornamental features. Endless fragments of plaster and over 100 bricks might be examined for the nature of their constituent materials over a broad geographical range.

Recent use of the architectural elements at SPNEA has included the examination by North Bennet Street School's preservation carpentry students of portions of the Jaffrey House (c. 1724, demolished in 1924). Once one of the grandest early Georgian houses in Portsmouth, NH, the Jaffrey House's woodwork, doors, sash windows, and other fabric are now preserved in SPNEA's architectural elements collection. The students were able to examine the craftsmanship of the original material and then replicate the Jaffrey House parlor for SPNEA's recent furniture show, *Portsmouth Furniture: Masterworks from the New Hampshire Seacoast*.

The collection has also been used by graduate students engaged in research, such as an inspection of the workmanship of carved objects by Boston's Skillins family or the design of colonial wrought iron hinges. Further, those engaged in restoration have also found SPNEA's architectural elements collection invaluable. Information on such diverse topics as early exterior stucco, or rough-cast, and late-18th-century window sash profiles from rural Vermont have been sought.

... nearly every architectural element in SPNEA's collection is supported by some form of documentation.

Intent on displaying the artifactual evidence collected from New England buildings, Appleton installed some of the larger architectural elements, such as porticos and staircases, in a small barn on an SPNEA property. Less formal a display than the subsequent ones, this barn represents the first display of SPNEA's architectural elements, a well-articulated desire of William Sumner Appleton from the beginning.

In 1960, in celebration of SPNEA's 50th anniversary, the first formal exhibit of architectural artifacts was installed by Abbott Lowell Cummings at the Otis House (c. 1796), the free-standing federal house that serves as SPNEA's headquarters in Boston. The exhibit was on view for 15 years and formed the basis for a second installation, mounted in 1981. Until 1986, this second exhibit strongly influenced visitors to the Otis House. Whether stumbling upon the museum while waiting for a tour or attending a meeting in the museum, this installation of structural, functional, and ornamental building material proved to be enjoyable and instructive.

A prime user of the second architectural exhibit was SPNEA's Education Department. The department's program "Classic Times" used the architectural exhibit to begin teaching elementary school children the vocabulary of neoclassical design through finding, observing and illustrating certain attributes. Placed in the context of the c. 1796 Otis House, the exhibit enabled children to see and understand the continuity of neoclassical design in art, furniture, and architecture. Other regular users of the architectural exhibit included Boston University's Preservation Studies Program, through which graduate students were introduced to the range of artifacts and issues available for further study. For most of this century, SPNEA's architectural elements were stored in a large barn (which has since been dismantled). Currently, the

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The Collection at Independence NHP

Source of Information "Not Found in Books"[1]

John Marks

The Independence National Historical Park architectural study collection preserves examples of Delaware Valley building technology from the mid-18th to mid-19th centuries. National Park Service (NPS) architects Charles Peterson, Donald Benson, George Willman, and others, initiated the study collection in 1951 when they were seeking information about 18th-century construction techniques for the restoration of Independence Hall and other park historic structures. At that time there were few written or illustrated sources for early flashing, joinery, and hardware; the only real documents were local examples of period architecture.

Material for the collection was obtained in a variety of ways. Development and urban renewal provided the mixed blessing of salvaging study elements from condemned buildings. For example, one NPS work crew saved an entire upper-story corner section of a wooden house (c. 1790) at 33 1/2 Catherine Street in the Southwark district, thus capturing framing, flooring, plastering, and roofing methods in one primary document. (For a similar example, see figure 2.)

Structures in Independence Park have also given up their secrets to the architectural study collection. The interior of Independence Hall was renovated throughout the 19th century and some rooms have been restored to their "original" appearance several times. For the NPS restoration, the architects combined documentary research and physical evidence found within the building. Structural hardware and decorative elements preserved behind walls and beneath floor boards provided clues to construction, paint colors, and treatment of walls and cornices. A small painted dentil recovered from beneath the Assembly Room floor corroborated the trim color and the proportions of the room's cornice. Similar evidence was collected from other historic structures in the park. Staff have also archived examples of reproduction materials used in recent restorations, adding to the buildings' histories.

At present the collection contains some 3,000 artifacts that represent structures within the park and contemporary buildings in the area. The objects reflect changes in technology and taste through materials, techniques, and styles. Exhibits, training programs, and tours have been developed using the collection, and a collections management project is increasing accessibility for research and interpretation.

Documentation and security have ensured the collection's usefulness and longevity. Former Independence National Historical Park historic architect Penelope Hartshorne Batcheler was a driving force in seeing that objects were accessioned and secured. Her premise, "anything that doesn't look important is in danger of being thrown away," is a sound maxim for architectural fragments. The architectural artifacts are accessioned in the park museum collection and approximately 30% have been cataloged in the Automated National Catalog System (ANCS) thus far. Approximately 80% of the objects have provenance, and the architects often sketched or photographed the components *in situ* before removal. Field sketches and notes comprise much of the information, along with approximately 200 photographs, 35 measured drawings, and 20 HABS records. Historic structures reports interpret the evidence found in eight park buildings. There are also 45 linear feet of interior and exterior photographs, dating from the 1900s to the present, of structures within and around the Park; they document details and overviews, preservation and demolition. All these resources are held in the First Bank, but are separated into several smaller collections with no comprehensive index.

The bulk of the collection is stored in the basement of the First Bank of the United States, where it was organized and inventoried in 1974. Artifacts under 30" in length were stored in baked enamel specimen cabinets; doors and shutters were grouped in loose piles against each other; and large elements were stacked in vertical bins. *Built By Hand*, installed in 1983, introduces visitors to the collection. It illustrates the scope of the collection and the various 18th-century construction skills such as joinery, turning, and plastering. The First Bank storage has been open occasionally for academic and training groups since the early 1980s, ensuring a minimum level of housekeeping and care. It is now on a routine cleaning

*(**Independence**—continued on page 10)*

Fig. 1. Young visitors view a staircase from a new perspective at *See What They Sawed* in the First Bank, 1970-1973. The North Water Street window lintel is to the right of the staircase. In addition to architectural fragments, the exhibit included tools, carpentry books, a ten-plate stove, and a cast iron water closet. Photo by George Eisenman, courtesy Independence National Historical Park.

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cycle maintained by the Museum Operations technical staff.

There are two approaches to the storage of architectural fragments: they may be removed to a separate facility, or kept at their original site. The park employs both strategies by storing related artifacts in the Independence Hall tower and in the Deshler-Morris House in Germantown. These portions of the collection are not available to compare to the other objects, but can be studied in their original locations.

In September 1992, chief curator Doris Fanelli assigned the author, whose internship is funded by the Friends of Independence National Historical Park, to reorganize and inventory the study collection in the First Bank. Storage had been limited to two rooms; cabinets were overcrowded and large objects were inaccessible. The curatorial staff freed an additional room for storage, allowing the collection to be spread out for better care and visibility, and ordered more cabinets, thus doubling the capacity. According to the intern's design, a wooden rack was constructed for doors and shutters, storing each one in a separate padded slot. Shelves installed in existing bins made better use of vertical space. All units were marked in a sequential order and the rationale behind the numbering was included with the inventory.

Time constraints have limited the inventory to a basic survey of objects independent of ANCS; it is maintained on dBase IIIPlus. The file structure consists of location by room, cabinet, and drawer numbers; accession and catalogue numbers; object name, based on period sources when possible; description; date; provenance; and association, if a family name is connected to the original building. The primary goal is to produce a descriptive record of object locations; additional benefits are an account of how many objects need to be catalogued, and a database that can be searched by any combination of the fields. Artifacts are stored by form, such as locks, cornices, and baseboards, for comparative purposes, but all the objects from one structure can be located by a provenance search.

Fig. 2. This c. 1750 building at 115 North Water Street in Philadelphia was demolished in May 1963. A National Park Service work crew saved the window lintel and a portion of the belt course from the second story. Skilled workers were able to remove and preserve unusual artifacts such as this during the urban "renewal" of the 1960s and 1970s. Photo by James L. Dillon and Company, courtesy Independence National Historical Park.

The architectural study collection has maintained a steady, if subtle, profile over the last three decades. A major exhibit, entitled *See What They Sawed,* was on display in the First Bank from 1970 to 1973 while the building was the temporary visitor center (figure 1). Doors, shutters, and hardware were mounted on colorful geometric pedestals—vibrant red, yellow, and purple—thereby forcing a comparison to standard exhibit techniques for works of art. Potted plants on a salvaged staircase assembly and the title itself conveyed that this was a popular exhibit with a sense of humor. The premise for the show was "that there is little new under the sun, that the problems of keeping dry, keeping warm, and keeping up with the Joneses are ageless"[2]; architecture is a stylish solution to all these problems.

Other institutions have used the collection in exhibits since 1973. A large portion of *See What They Sawed* was loaned to the Philadelphia Museum of Art's "Touch-It" display, designed to teach school groups about historic houses. Architectural fragments were the focus of a mobile exhibit, *Pennsylvania Lost, Pennsylvania Found,* by the Pennsylvania Historical and Museum Commission. And specific building components have received their own shows: *Sheet Metal Craftsmanship* at the National Building Museum, and *Windows Through Time* which has appeared in Philadelphia, New York, and Albany. [Note article on back page.]

Architectural historians have explored the collection's rich potential as a database. There are numerous architects who honed their preservation skills retrieving artifacts as part of their park duties, including John Milner, William Murtagh, and James Massey. Lee Nelson developed his nail chronology while working at the Independence National Historical Park in the 1950s and 1960s.[3] Paint analyst Frank Welsh has reassessed paint samples from Independence Hall using new technology.

Academic programs in architecture, historic preservation, and museum studies tour the collection regularly, and these visits have resulted in several projects. [Note Milner article on page 24.] University of Pennsylvania historic preservation graduate students have done a dozen measured drawings and written several term papers[4] and a thesis[5] using the collection as a primary resource; copies of these works are kept with the study collection documentary resources. American civilization students have also relied on the objects for research—testimony to the artifacts' interdisciplinary appeal. And University of Delaware museum studies students selected objects for inclusion in their 1989 exhibit *Building in the Delaware Valley 1750-1850.*

The collection has proven useful for other audiences as well. Park interpretive rangers receive occasional architectural training, as do historic house guides from other institutions. An understanding of interior details is as important to good interpretation as knowledge of furnishings. Children have learned about architecture as well; fifth grade groups have visited the collection, and Penny Batcheler conducted a traveling presentation entitled "Parts of the House That Jack Built."

The recent collection management project has enhanced the collection's research value. Comparative analysis is more feasible, as the database can group records by date and provenance, and objects are easier to locate and examine with the new storage units. While essential information has been included in the inventory data base, approximately two-thirds of the collection

remains to be entered in ANCS. Resource management records, such as field notes, photographs, and sketches, need to be cataloged according to archival standards being incorporated into ANCS.[6] Adapting ANCS to allow cross-referencing of artifacts and resource management records would permit ready access to all the rich architectural resources the park has to offer.

Continued research and development of the collection, as outlined above, is hampered by financial constraints. But these projects can provide valuable training for students of historic preservation, museum studies, and related fields. There are opportunities for cooperation between professional organizations or academic programs and the park. Preparing, preserving, and promoting the artifacts as an object archive, and encouraging outside research and programming, may be park's best course of action on a limited budget.

The Independence National Historical Park Architectural Study Collection is available, by appointment, to professionals and students in architectural and historical fields. Call 215-597-7085 for further information.

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1 Charles E. Peterson, "The Wide World of Windows: Notes Issued for a Visit to the Independence Architectural Study Collection" (Philadelphia, November 17, 1989, photocopy), 13 pp. Mr. Peterson often uses this phrase to sum up the importance of architectural study collections.

2 Lee H. Nelson and Penelope Hartshorne Batcheler, "A Proclamation" (INDE, August 24, 1970, Typescript).

3 Lee H. Nelson, "Nail Chronology as an Aid to Dating Old Buildings," *History News 24*, (November 1968): *Technical Leaflet 48*.

4 Natica Schmeder, "Evolution of the Mechanical Systems of 315 South American Street, Philadelphia," term paper, University of Pennsylvania, May 1991; Elise Vider, "Early American Locks," term paper, University of Pennsylvania, December 1989.

5 Carl Nittinger, "A Primary Resource for the Restoration, Reconstruction and/or Replication of 18th & Early 19th Century Architectural Elements: The Architectural Study Collection of Independence National Historical Park," Master's thesis, Graduate Program in Historic Preservation, University of Pennsylvania, 1991.

6 National Park Service, *Museum Handbook, Part II* (April 29, 1993, Draft), Appendix D:1-6.

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Webster, Richard. *Philadelphia Preserved: Catalog of the Historic American Buildings Survey*. 2nd ed. Philadelphia: Temple University Press, 1981. Synopses of Philadelphia HABS reports; indicates when, and what, artifacts from a property are in the park study collection. Seventeen entries are listed in the index. Copies of all entries are on file at the park.

John Marks, a museum intern hired by the Friends of Independence National Historical Park (INHP) to inventory the architectural study collection at the park, is a 1992 graduate of the Cooperstown Graduate Program in History Museum Studies with an emphasis on the management and interpretation of collections.

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*(**SPNEA**—continued from page 8)*

collection is divided among two other barns and a warehouse. SPNEA's central storage warehouse offers a secure, fireproof, and climate-controlled environment for all the society's collections, including many of the architectural elements. Here, as well as in the two barns, objects are arranged primarily by type and size.

Presently, architectural elements are acquired almost exclusively through donations, many of the objects coming from buildings undergoing demolition or restoration. SPNEA's current collecting and cataloging policies regarding all collections are applicable to the architectural elements collection as well. That is, the artifact must contribute to our further understanding of the material culture of New England.

All of the architectural elements in the collection have been catalogued, detailing location, description (material, size, shape, condition, etc) and historic associations (structure from which the element came, maker, donor, etc). The cataloging information on each object is then entered into the Collection Department's computer database. Accessibility to the collection through the database is impressive. All objects, architectural elements included, can be tracked using almost any attribute or factor, including location, material, donor, type and building. In the near future, images including those from the archival collection, will also be integrated into the database. Through this integration on the computer of the architectural elements collection with other SPNEA collections and archival information, an even larger contextual picture for all the collections, including the architectural elements, can be drawn.

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1 Floyd, Margaret Henderson. "Measured Drawings of the Hancock House by John Hubbard Sturgis: A Legacy to the Colonial Revival." in *Architecture in Colonial Massachusetts*. Boston: Colonial Society of Massachusetts, 1979, page 88.

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The Care of Architectural Collections

A Research Project at the Smithsonian

Catherine Anderson

During 1990 and 1991, through a post-graduate fellowship sponsored by the Smithsonian Institution's Conservation Analytical Laboratory, conservation research was carried out to determine appropriate storage and exhibition methods for the National Museum of American History's (NMAH) collection of architectural elements. The fellowship involved examining methods used by NMAH for documentation and labeling, care and handling, and storage. It also involved visiting other architectural collections to document current state-of-the-art practices. Mr. Martin Burke, then Deputy Head of Conservation at NMAH, supervised the project; it was through him that Ms. Emogene Bevitt at the National Park Service came to be involved with the project. Ms. Bevitt was an invaluable resource to the project; she had long been interested in this topic and had compiled an extensive listing of architectural collections throughout the United States.

The National Museum of American History has one of the largest and most diverse collections of architectural elements in the United States. The architectural collection includes entire buildings, partial structures, rooms, and elements. Most, if not all, have been collected for their historical or technological importance, rather than architectural significance. The majority of these objects were acquired between 1965 and 1980 when the museum, then called the National Museum of History and Technology, was undergoing tremendous growth. These objects and elements were collected by 13 different curatorial divisions for exhibition and research. Some of these objects were acquired to be preserved as a historical record, while others were altered for exhibition purposes.

The architectural collection occupies over 12,000 square feet and is stored in three separate locations. One storage warehouse is close to ideal; the space is clean, well maintained, monitored, and organized, and the objects are easily accessible. However, other storage warehouses date from World War II and are deteriorating. At the same site, asbestos-contaminated architectural collections (mostly wood) have been isolated for safety reasons but have received less routine care and have deteriorated accordingly from insect and mold damage. Documentation relating to the contaminated material varies; for example, many objects have lost their tags that identify the related structure or location within the structure. These factors make the removal of these collections from isolation to proper storage within one of the warehouses prohibitive. To face some of these problems, NMAH started in 1983 to renovate its storage warehouses to create more suitable storage environments for museum objects and to eliminate asbestos contamination either through enclosure or removal.

The extremes in storage and documentation at NMAH were not unusual. Often quality of storage is relative to the quality of documentation and the rationale for acquisition. Undocumented material usually receives less attention, as do objects acquired as exhibition props. It is understandable that architectural objects are often less likely to receive attention and proper care; they are generally large, heavy, and composed of multiple parts and multiple materials. For most architectural collections, the key difficulty lies in developing effective storage techniques.

Here, in one NMAH warehouse, objects are well organized and stored—boards from each building or structure are grouped together in padded bundles, easily accessible with a fork lift, and clearly marked with identification numbers. Photo by the author.

As part of the research project, I visited a large number of architectural collections in the Northeast and Midwest in order to document state-of-the-art practices. Each collection visited was unique, and offered insights into proper storage and documentation for architectural collections.

The types of institutions or organizations that I visited with architectural collections included historic villages, *in situ* or assembled, such as Deerfield, Sturbridge, Shelburne, and Greenfield; historic house muse-

ums, which often amass site-related elements; rooms and structures found in numerous art and history museums; decorative architectural elements, also found in art exhibits and art museums; and study collections, which are elements grouped together by type, and may range from mantels to mortar samples, usually found in historical societies and regional centers.

The rationale for initiating these collections also varies. Historic villages and house museums often collected objects as replacement parts for the building(s) on site. Art museums frequently collected historic rooms and structures as backdrops for displaying decorative art objects and furniture. Study collections are generally used for educational and research purposes, while decorative fragments are used primarily for exhibition purposes.

As one might expect, storage for such a variety of collections and institutions ranged from poor to very good. Storage areas for architectural collections often occupy attics, basements, or out buildings. Although these are not ideal storage locations, they often happen to be the only space available and large enough for storage. Occasionally separate buildings are designated for storing architectural collections, but this is rare.

Adequate storage of architectural collections is often difficult to organize effectively because of the variety of physical sizes and materials involved. One approach would be to divide the collections into three groups: "units"—such as rooms or structures that need assembly for exhibition; larger objects such as doors, mantels, windows, which are generally stored whole and need no assembly for exhibition; and smaller objects which include decorative fragments, hardware and so forth. While some objects may overlap or fall between groups, this type of clustering seems to be the most logical and practical way to separate architectural collections into more manageable groups.

It is understandable that architectural objects are often less likely to receive attention and proper care; they are generally large, heavy, and composed of multiple parts and multiple materials.

By grouping material, artifacts can be stored by type and/or size. For instance, doors and mantels can be stored together in padded vertical racks; hardware can be compartmentalized in acid-free boxes. Rooms, facades, or whole buildings should be stored together as a group in padded bundles on shelves, pallets and vertical racks—a practical way of keeping related elements both large and small together.[1]

Ideally, objects should be stored away from air vents, radiators, windows, exposed water pipes, and exterior walls. The goal here is to avoid extreme fluctuation in light, temperature and humidity levels. Temperature and humidity levels in storage areas should be recorded at all times with a recording hygrothermograph. Storage areas should be kept as clean as possible. Objects should be raised off of the floor by at least several inches on padded pallets and shelves; large and/or heavy objects should be stored on lower shelves for easier access and safer handling. In addition, shelves may be protected with transparent polyethylene, which is loosely draped over objects or tacked around shelves; this allows for better visibility of objects for monitoring purposes, as well as acting as a dust and a moisture barrier. The objects themselves should never be wrapped in polyethylene as they need to be stored in a manner which allows free air circulation.

Labeling artifacts is an additional challenge. Architectural collections are often poorly labeled, making identification of related elements very difficult. How and where to label architectural material may often be related to the type of architectural collection.

All architectural objects should be marked with an applied accession/identification number over an isolation layer. Larger objects that are difficult to move and padded bundles of related material should also be tagged. The shelves storing the objects should be labeled as well, with size of the accession numbers large enough to be easy to read from 4 or 5 feet away. This additional labeling is useful for several reasons: it reduces the handling of objects; makes it easier to find or to reshelve them.

Finally, documentation is a very important part of architectural collections. For architectural elements both large and small, working within an established framework such as a **checklist** saves time and effort. The checklist would outline the existing written and visual documentation, and physical information available for each object. It also provides an organized system that can be easily expanded upon as more information becomes available.

For documenting whole or partial structures in a collection, the most useful system can be found in the guidelines used by the National Park Service. The Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) have consistent standards concerning the documentation of historic structures with measured drawings, photographs, and written reports. To date, these guidelines are the most efficient and expedient method available to systematically document historic structures.

At the end of my fellowship at NMAH, I wrote a report with suggested guidelines for the proper care, handling, and storage of architectural collections along with recommended documentation methods. Overall, the fellowship was a wonderful opportunity to see many diverse architectural collections as well as the extraordinary challenges involved in their care and preservation.

Architectural collections have often received less attention than most historical, technological, or art collections; these are just a few methods which could upgrade their long-term storage and documentation.

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[1] While this article offers some easy to understand observations regarding the storage, labeling, etc. of architectural objects, the misapplication or use of non-approved conservation materials can hasten the deterioration of a collection, thus it is essential to contact a trained conservator before proceeding.

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English Heritage's New Study Centre

Julius J.V. Bryant

English Heritage (The Historic Buildings and Monuments Commission) is the British Government's official adviser on the historic manmade environment. It has in its care some 400 properties ranging from castles and forts to abbeys and country houses. Nearly all aspects of historic building processes can be seen in these properties.

A number of properties provide interpretive displays focussing on the construction and architectural development of the building. In our unroofed sites the structural elements of the building can be seen in a way not revealed elsewhere. In addition, there are two major displays of architectural details— Great Yarmouth, Norfolk, and Ranger's House, London.

The Merchant's House and Row III are typical examples of houses in Great Yarmouth. Built on narrow leases or rows running at right angles to the River York, they have foundations of at least the 18th century. Most were destroyed in World War II, but a selection of the architectural details and fittings were preserved and now form a permanent display. Visitors are shown around by guided tours.

The Architectural Study Centre of English Heritage was opened to the public on 13 March 1993. It is located at Ranger's House on the western edge of Greenwich Park in South East London. It illustrates the development of London building practice from 1660-1914, and is primarily concerned with the decoration and structural elements of domestic housing. The collection dates back to 1903 and owes its origins to the needs of architects in the London County Council for a selection of reference material. Most of it has been salvaged from buildings in course of demolition during the 20th century.

The Centre is housed in the former 19th-century coach house of Ranger's House, which has been specifically adapted re-using items of architectural interest. Ranger's House dates from around 1700 with later 18th- and 19th-century additions and contains examples of features which visitors to the museum can recognize *in situ*.

Fig. 1. Appuldurcombe House built by the Palladian architect John James c. 1701-13 and still within its ornamental grounds landscaped by 'Capability' Brown, on the Isle of Wight. Photo courtesy English Heritage.

English Heritage has developed a number of publications on the various buildings in its stewardship. For more information about the leaflets (available at no cost) and individual guidebooks (which cost up to 3 pounds), write to:

English Heritage
Postal Field
P.O. Box 229
Northamptonshire NN6 9RY England

The exhibition consists of architectural details and fittings such as plasterwork, joinery, metalwork and ceramics, displayed by material in chronological order. Visitors can see the stylistic development of elements (such as plaster cornice decoration) and the methods of construction are explained. The social history aspect of the objects in the museum are also stressed (such as the heavy atmospheric pollution over London caused by the burning of coal in inefficient fires).

Advice is given by the curator of the collection, Treve Rosoman, where it relates to the collections. Demonstration days are held for students in the building trade. In line with many English Heritage properties there is a strong educational aspect to the Centre; teaching aids are available and school parties specially catered for.

Exhibitions are held on the upper floor of the Ranger's House itself, the first of which is devoted to London Wallpapers (1690-1840), and is accompanied by a substantial catalogue. The second in this series of exhibitions and studies will be devoted to English plasterwork.

These two collections are really only part of English Heritage's larger responsibilities, which include some six million objects, many of which are architectural material. The Museums Division was formed in January 1990 to care for the collections, and priority was given to the recruitment of curators, establishment of a nationwide network of stores, and development of a national inventory. Hitherto, most architectural material had remained on site, partly in order that it might be studied in context by archaeologists. The increasing damage by weathering, vandalism, and straight-forward theft, justified the acceleration of archaeological recording and removal to secure storage of many excellent examples of carved masonry.

Once in store, the "disassembled site" is recorded on the inventory, bar-coded, and readily accessible to study groups by appointment. English Heritage aims to have the illustrated national inventory accessible on site at terminals in visitor centres, with a capacity for drawing up comparable examples from the collections nationwide.

Some of our finest "architectural study collections" are those which remain intact and *in situ*. It takes only a slight change in attitude when visiting a "ruin" to recognize not what is lost, but the opportunity to see the naked carcass of a great house, revealing all its structural details. In addition to great castles, forts, abbeys, and prehistoric sites, English Heritage manages several houses that have only relatively recently lost their internal surface finishes, either through fire or deliberate stripping

*(**Centre**—continued on page 17)*

Curatorial Concerns with Architectural Collections

John Maounis
Elizabeth Banks

The museum collections at most parks in the North Atlantic Region include architectural elements. Many more historic architectural materials are found outside of the museum collections, however. Generally, these other "collections" are accumulations of fabric removed from historic structures within the park. In some cases, materials have been collected from historic structures no longer extant, both inside and outside the park boundaries, for the purpose of preserving significant or typical elements of the structures or as symbols of the structures. Quite often material is collected with the thought that it can be reused.

Architectural fragments are primary cultural resource artifacts with many perceived values, just as is the case for other types of objects in museum collections.

While we acknowledge these realities for collections, the focus of this article is those artifacts that have been collected and documented that should be permanently retained and added to the museum collection. (The whole subject of collecting architectural elements for reuse, the criteria for selecting such elements, the ethical considerations and standards for collecting or maintaining are points for discussion and debate in future articles.)

Unfortunately, given the large sizes of pieces and often large volume of materials, these accumulations, including salvage, historically significant materials, and typical materials are stored in basements, attics or barns. These "make-do" storage areas have poor conditions which are not suitable to the long-term preservation of these artifacts. Too often materials have not been documented for their context and significance.

Architectural fragments are primary cultural resource artifacts with many perceived values, just as is the case for other types of objects in museum collections. The documentation prepared by historical architects, craftsmen and others during preservation work on a structure is comparable to the records created during an archeological excavation or the descriptive notes on an archival collection written while processing the records. The principle is the same: the individual items do not stand alone; their value and history are enhanced when they can be understood and documented in context within their original environment.

The following issues are critical to consider:

- criteria for collecting
- documentation
- storage and long-term preservation
- permanent collection vs. salvage and reuse

The most difficult, it seems, is the first: what criteria should be used for selecting historic architectural materials for permanent retention in a museum collection? Typical criteria might include the following:

- Is it a character-defining feature, e.g., a fireplace mantel, door, decorative element, window, etc.?
- Is it unique?
- Is it typical, e.g., a representative sample of architectural material or features?
- Is it documented?
- If it is not documented, is there sufficient information extant to document the material?
- What is its condition? Can it reasonably be preserved or is its condition so deteriorated that it cannot?
- Is documentation of the object sufficient if retention is not recommended or feasible, especially if it is in poor condition or common?

To address these needs and foster more awareness of the value of architectural fragments, it may be helpful to start at the beginning of the curatorial process. The scope of collection statement, or collecting policy, for a museum serves to guide the selection of materials to be acquired for permanent care. The statement defines objectives for the types of materials, reasons for collecting, and circumstances in which artifacts will be acquired. Inclusion in the institution's scope of collection statement formally recognizes architectural fragments as a valuable component of the museum collection. This becomes a foundation for the institution's commitment to collect, care for, and share information about these unique artifacts.

In preparing a new scope of collection statement or rewriting an existing one, the curatorial staff need to include information about the significance of historic structures within the institution or park. For planned preservation projects, the statement should also address the need for documentation of fragments to be an integral component of the preservation work. Examples of items to be selected for the museum collection may be given in the statement such as, "some materials, too weakened to be reused themselves, should be saved as models for replacement pieces." The assessment process should involve the historical architect, curator, craftsman, and other staff, as appropriate, to gather different "perceptions of value" and determine priority items to include in the collection. Depending on the situation, another approach for some items may be to document, but not retain the original material. The collecting policy must clearly distinguish between those materials that will be retained in the museum collection and those that are being retained for reuse. All materials should fit into one of these two categories. Grey areas or indeterminate

Just as with archeological, archival and historic furnishings collections, the documentation accompanying these materials is an inseparable part of their value.

(***Curatorial***—*continued on page 16*)

*(**Curatorial**—continued from page 15)*

accumulations of material should be strongly discouraged.

The collecting criteria stated in the scope of collection statement should be conveyed to contractors and others who conduct work on historic structures to ensure the smooth transition of architectural fragments which will be considered for inclusion in the museum collections. Documentation must accompany historic building materials when they are conveyed to the curator. The documentation is the basis for cataloging, caring for, providing research access and sharing information about these unique materials. Just as with archeological, archival and historic furnishings collections, the documentation accompanying these materials is an inseparable part of their value. Their significance may be diminished to the extent that there may be little point in saving such materials. Materials set aside as salvage for re-use should be documented and labeled as well, to facilitate current and future preservation work.

A primary curatorial value for architectural collections is that, like other primary cultural resources, they can be re-evaluated from many viewpoints by many researchers.

The National Park Service has benefited in recent years from focused re-evaluations of archeological collections and archives by curators and those in these related professions. These reassessments have produced some new guidelines which direct staff to the interdisciplinary network of professional relationships necessary to facilitate their work. Just as NPS archeological projects are now required to cover the initial costs to "catalog, stabilize and store a collection" (Special Directive #87-3 Conservation of Archeological Resources), architectural projects should do the same. Field notes, photographs, measured drawings, and all related documentation must

How To Read More About It

While this issue of CRM *is focused on architectural artifacts and architectural study collections, curatorial information targeted to this specific resource type has yet to be developed. However, the National Park Service has a significant body of technical information about the overall care of collections as well as specific conservation techniques that have application to architectural collections. Information about two publications series is provided here.*

National Park Service Museum Handbook

The *NPS Museum Handbook, Part I*, "Museum Collections" (Revised 9/90) provides guidance on scope of collections; environmental monitoring and control; pest management; museum collections storage; handling, packing and shipping objects; conservation treatment; security and fire protection; emergency planning; curatorial health and safety; planning and programming for museum collections management; and museum ethics. This part of the handbook also addresses preventive conservation for various classes of objects, including archeological collections, paintings, cellulose nitrate negatives, paper objects, textiles and wooden objects, metal objects, and objects made from ceramic, glass, and stone. Part I of the handbook is available for purchase through the Superintendent of Public Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. The following information is pertinent to order this publication: GPO Stock Number: 024-005-01078-5; Price: $36.00 (Price includes regular postage and handling. International customers need to add an additional 25% to the price.)

The *NPS Museum Handbook, Part II*, "Museum Records" provides guidance on documentation and accountability for cultural collections (e.g., archeology, ethnography, history, and archives) and natural history collections (e.g., biology, geology, and paleontology). The topics addressed include: accessioning, cataloging, inventorying, marking, record photography, incoming and outgoing loans, and deaccessioning procedures. Part II is currently being updated. The revised edition will be available through the U.S. Government Printing Office in 1994.

The *NPS Museum Handbook, Part III* is currently being written. This part will provide guidance on the use of museum collections in exhibits, interpretive and educational activities, and research; unrelated activities in spaces housing collections; motion pictures and photography; reproduction of original materials; office art; publications; and use of collections by Native American and other ethnic groups. Part III is expected to be available through the U.S. Government Printing Office in 1996.

To place your name and address on a mailing list to receive announcements on the availability of Parts II and III, and future updates, write to the Curatorial Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

National Park Service Conserve O Gram Series

The *NPS Conserve O Gram* series consists of brief, technical leaflets distributed periodically to provide park and museum staff with a wide variety of timely collection care information and techniques.

Conserve O Gram leaflets provide specific procedures, techniques and materials for storage and exhibit of objects and ongoing preventive conservation, including housekeeping; information concerning the characteristics and deterioration of object/specimen materials; health and safety updates and procedures; new practices in the museum field that apply to museum collections; and sources of assistance, including bibliographies.

Conserve O Gram leaflets are intended for both experienced and inexperienced staff responsible for the care and use of museum collections. They appear in loose-leaf format, with new topics added as needed and out-of-date issues revised or deleted. Comments on the program may be sent to the address below.

The *Conserve O Gram* series is currently under revision for re-issue in fall 1993. The revised series will be available to interested organizations and individuals by subscription through the Superintendent of Public Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. To place your name and address on a mailing list to receive announcements on the availability of the revised series, write to: National Park Service, *Conserve O Gram* Series, Curatorial Services Division, Harpers Ferry, West Virginia 25425, U.S.A.

be accessioned with the artifacts into the museum collection. This promotes a smoother transition and a relatively short time frame from the excavation to the cataloging work, lessening loss of critical information which occurs when years elapse between these two activities. The

Cultural landscapes, archives, archeological collections, historic furnishings, and historic structures each enhance the significance of the others, forming a complex tapestry of interwoven cultural and natural resources.

investment in time and advance planning may challenge a cultural resource manager faced with additional, pressing responsibilities and extremely limited funds, but the park benefits from the long-term preservation of the broad spectrum of cultural resources.

Storage and long-term preservation are always difficult issues for museum collections: they are considerably more difficult for architectural collections because of their bulk and size. Museum quality storage is expensive and, in most institutions and parks, in short supply, making the rationale and criteria for collecting all the more important. Any storage facility should be envisioned as providing active care, not just warehouse space. A storage facility must have curatorial staff to provide preservation and security of artifacts and their documentation, cataloging, monitoring of storage conditions, and access for researchers.

When a team, representing a variety of professions, is involved during the early planning stages of a preservation project, the quality of the overall project is improved. Each team member (and profession) can remind the others of the factors to be considered in conceptualizing the entire project and can lay the groundwork so that each of the various cultural resources can receive a fair evaluation. To try to reconstruct the provenance of an undocumented architectural fragment could be tremendously time consuming (e.g., requiring oral history interviews), but may be warranted in some cases. Setting up standards to be followed for documentation and treatment of fragments prior to the preservation project supports a thorough preservation project.

A primary curatorial value for architectural collections is that, like other primary cultural resources, they can be re-evaluated from many viewpoints by many researchers. New bits of information are revealed and may support future preservation efforts. Architectural elements can also enhance the evidential value of other museum collections. Cultural landscapes, archives, archeological collections, historic furnishings, and historic structures each enhance the significance of the others, forming a complex tapestry of interwoven cultural and natural resources.

For example, an 1844 signed, penciled inscription found on the underside of a wooden board during preservation work on the Longfellow Barn was quickly matched by the preservation carpenters and curatorial staff to original bills in the manuscript collections of the Longfellow National Historic Site in Cambridge, MA. In another instance, prior to preservation work in the mid-1970s, a large bullseye window was found in the barn with no labels as to its history. In processing the historic photograph collection, images were discovered of the window in place documenting its original location. Other manuscripts helped to place the date of structural changes in that area of the Longfellow House at c. 1910, which in turn helped to date historic plant materials also shown in the pre-1910 photograph. Architectural elements selected for museum collections will be there to supply answers for questions yet unasked.

John Maounis is regional curator and chief of the Branch of Museum Services for the North Atlantic Region of the National Park Service.

Elizabeth Banks is the curator for the Frederick Law Olmsted National Historic Site, Brookline, MA.

*(**Centre**—continued from page 14)*

out to serve the trade. Particularly striking, for example, are Sutton Scarsdale Hall (the dramatic shell of an early 18th-century baroque mansion in Derbyshire), Appuldurcombe House (figure 1) and Witley Court (figure 2). Such properties are managed by English Heritage on behalf of the British government because they are of

Fig. 2. Witley Court is a spectacular ruins of an Italianate Victorian mansion near Worcester. Photo courtesy English Heritage.

great importance but beyond the means of private individuals, societies or local authorities. Seen as part of a nationwide portfolio, including a network of modern warehouse stores, they effectively constitute England's greatest architectural study collection.

Julius Bryant has been head of the Museums Division of English Heritage since 1990.

Artifacts in Architectural Study Collections as Seen from Different Points of View

A Craftsman

While most of us assume that architectural study collections contain only old objects from historic buildings, there is a good case to be made for including new objects such as patterns, molds, etc., that were used in the restoration of a historic building so that they can be available for future repair and replication.

The Old Merchant's House Ceiling Medallions

David Flaharty

The Old Merchant's House, c.1832, at 29 East Fourth Street in New York City, has been described as "transitional" to the extent that its unrestrained federal woodwork coexists handsomely with its robust Greek revival plaster ornamentation. Indeed, the matching ceiling medallions in the double parlors (see figure 1) are unquestionably the finest designs to survive into the late-20th century and are superior to any composed during the American classical revival.

Builder-architects of typical lower Manhattan row houses generally specified flat plaster ceiling fields as three-coat work against sawn wooden lath and, with the client's approval, bought enrichments from the corner plaster shop

Fig. 1. Ceiling medallion repaired and reinstalled in the Old Merchant's House, New York, NY. Photo by the author.

Fig. 2. These cast ornaments from a ceiling medallion in the Old Merchant's House, New York, NY, were removed to replicate missing originals. Historic plaster enrichments and the rubber molds that create them are a part of Mr. Flaharty's personal architectural study collection. Photo by the author.

often following period stylebooks such as Minard Lafever's *The Beauties of Modern Architecture* of 1835.

The Merchant's House medallions, however, appear with recessed alternating acanthus foliate center clusters. To achieve this dramatic result, framing and lathing of the central ceiling joists was necessarily more elaborate than simply running joists level from party wall to party wall into masonry pockets.

With the flat plastering complete, the artisans turned plain-run, reeded surround mouldings on the ceilings by troweling a mixture of gypsum and lime ahead of revolving sheet metal template blade sections nailed to stocks and slippers. Off-site cast plaster enrichments, such as the illustrated center cluster, guilloche/rosette and surround acanthus foliage (see figure 2), were then set within and around the runs using plaster as an adhesive.

Like all early houses in New York City, the Merchant's House has been subjected to masonry settling, nearby blasting, water intrusion and heavy vehicular traffic—all factors which cause plaster ceilings to fail, particularly on center with oversized ornamentation. But the unusually substantial framing allowed these medallions to withstand the forces of gravity regardless of the increased weight.

Running and Enriching a Ceiling Medallion. The method of running and enriching a ceiling medallion remains the same today.

Fig. A. First, a plain-run surround is spun from a pivot point centered in the ceiling field. Photo by Peter Sanders.

Fig. B. Ornament layout is determined using plane geometric principles; segmented locations are deeply scratched to provide a rough surface for adequate bonding using plaster as an adhesive. Photo by Peter Sanders.

Students of Greek revival plaster medallions who could see the plaster models in the author's personal study collection or the restored medallion on-site, would understand why it is appropriate to say that the medallion form has never been designed and executed more brilliantly than in the double parlors of the Merchant's House. Peering through windows of Greenwich Village townhouses, one observes centerpieces composed with varying degrees of success. But at the Old Merchant's House, there can be no question that this unidentified craftsman was the reigning genius of American classical revival plasterwork.

For a more detailed description of running and enriching a ceiling medallion, please refer to Preservation Briefs 23.

David Flaharty has 25 years experience as an ornamental plasterer and is also a sculptor and educator. He is the author of *Preservation Briefs 23: Preserving Historic Ornamental Plaster.*

An Architectural Historian

Through the existence of architectural elements in architectural study collections it is possible to develop drawings to explain the methods of construction and to highlight individual features. Architectural study collections can also be sources for replicating or reproducing lost or severely deteriorated features or elements. Many manufacturers will study the historic original and develop a new product or a reproduction product for use in other buildings. This viewpoint contrasts two drawings of windows—one from an early historic window, and one from a now historic window.

Residential Casement Windows

Kathleen Catalano Milley

The wood casement sash depicted in the detailed drawing in figure 1 dates from c. 1641, and comes from the Newport, RI, home of Governor William Coddington. Now in the study collection of the Rhode Island Historical Society, Providence, the sash was the only feature salvaged when the Coddington house was demolished in 1835. Its survival, complete with glazing, affords a rare opportunity to examine the construction and design of a mid-17th- century architectural artifact.

The sash echoes the windows seen in the European towns and villages from which the colonists migrated. The simple mortise and tenon construction and the casement method of operation (side-hung sash that swing outward on hinges) are typical of the period, although stationary sash were also popular. The small size of the Coddington sash (27 1/2" H. x 20 1/2" W. x 1" D.) is characteristic of 17th-century American windows and reflects the scarcity and high cost of window glass, as well as the need for protection against harsh North American winters.

Glazing consists of small, hand-blown panes, set into the sash with lead strips termed "cames" or "calmes," reinforced with thin wooden bars. Although a rectangular pane is used here, diamond-shaped glazing was also common. Despite attempts at window glass manufacture at Jamestown, VA, most early glazing had to be imported from Europe. So difficult and costly was it to obtain that the colonists frequently urged friends back home to bring their own. In 1634, William Wood advised prospective immigrants

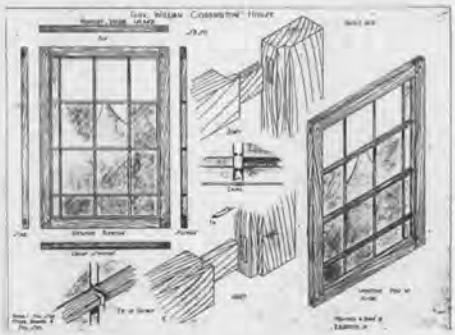

Fig. 1. Drawing made in 1929 of a c. 1641 wood casement window from the Governor William Coddington House, Newport, RI. The Rhode Island Historical Society's unsuccessful attempt to save the house from demolition in 1835 was one of the first concerted preservation efforts in the state. Both the sash and the drawing are now part of the study collection of the Rhode Island Historical Society, Providence, RI. Drawing courtesy Rhode Island Historical Society.

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(*Architectural Historian—continued from page 19*)

in his *New England Prospect* that "glasse ought not to be forgotten of any that desire to benefit themselves, or the Countrey: if it be well leaded, and carefully pak't up, I know of no other commodity better for portage or sayle."

The existence of architectural features like the Coddington sash in study collections can often provide the physical documentation needed to reproduce missing elements in historic house restorations. Such was the case in 1929 when architect R. Kinnicutt used the Coddington sash as a model in one of his Rhode Island projects. The study drawing shown here is one that he produced on this occasion.

The wood casement window illustrated in the advertisement in figure 2 was manufactured in the 1930s by the Andersen Corporation. The company retains both the advertisement and the actual window in a collection at its headquarters in Bayport, MN. Examination of these materials provides an opportunity to study technological advances in the window industry. Following the introduction of vertically sliding sash in the 18th century, residential casements declined in popularity. In the early-20th century, however, they were revived by manufacturers like Andersen, who updated the old design and produced wood casements, which, unlike the 17th-century ones, were shipped as complete units and came with modern conveniences like interior screens, weatherstripping, removable double glazing, and extension hinges to permit cleaning the outer side of the sash from inside the sash. In addition, under screen sash operators permitted opening and closing of the window just by turning the handle. Anyone viewing this window and accompanying advertising materials can appreciate the technology involved in "modernizing" a centuries-old design.

Fig. 2. Both a sample casement and the original product information are kept in the collection held by the Andersen Corporation. Courtesy, Andersen Corporation.

Now in the Mid-Atlantic Region of the National Park Service, Kathleen Catalano Milley has served during her NPS career as a museum curator, architectural historian, and interpreter.

A Historical Architect

The individual object in a collection often represents a distinct reference point—about the building, carpentry techniques, craft practices of prefabrication and assembly, manufacturing practices, and the way in which the design incorporated performance or stylistic concerns. The information is there but it can only be interpreted if supported by documentation and research, and corroborated by the tangible evidence in existing buildings of the time or by objects found in architectural study collections.

Salvaged Artifacts: The Lessons They Offer

Lee H. Nelson

These six cut-off joists (figure 1) are from the Greater Meeting House in Philadelphia, which was first built in 1755 on Second Street near the waterfront, then was moved to a new location on Twelfth Street in 1812, and then was dismantled and reconstructed at the George School in Bucks County, PA, in 1972. In the last move, the ceiling framing was discarded in favor of an "open" ceiling, and these joist fragments from the 1755 building were rescued and accessioned into the Independence National Historical Park Architectural Study Collection (INHP Acc. No. 2630-25).

It is useful to salvage structural parts of buildings into study collections especially when their context is recorded, as in this instance, with HABS drawings. With such specimens we can learn about the methods used by the carpenters for framing the mortise and tenon joints with different depth joists, some with wooden pins, some without pins, some with double tenons or with single tenons (as seen here), and some (seen here nearest to camera) have a haunch below the tenon. This latter aspect shows that the carpenter understood the possibility that this shallow joist might fail in vertical shear at the tenon, and the haunch provides extra bearing to compensate for the thin tenon.

Very evident in this photo are the Roman numerals used by the carpenters because the entire ceiling framing, together with the roof trusses, was prefabricated on the ground by a group of carpenters, each using their own joint details, and thus the Roman numerals were necessary so that when the prefabricated system was taken apart for reassembly in the ceiling, every one of the pieces would go back into the correct location.

There is a long history of mortise and tenon construction from the earliest buildings in America; this type of construction continued to be used, for example in barns, until well into the 20th century, even though balloon framing had been in use for decades. There are

Fig. 1. Structural specimens from a 1755 Quaker Meeting House. Photo by the author.

many differences in structural joinery depending upon the time and place where they were used. Such construction details help us understand building practises, and they also help us understand their structural performance, especially when they have become overloaded or damaged with the intrusion of modern utilities or insects or fungus.

This butt hinge (figure 2) is from the Bishop White House built 1787 in Philadelphia. The Bishop White House hardware is interesting as an example of the "hierarchical quality" approach often used in early buildings. As applied to the Bishop's house, this approach meant that the best rooms on the first and second floors had dovetail hinges that were set into a mortise in the back edge of the door and held in place with wooden wedges, so that only the knuckles could be seen and thus were "semi-secret," as opposed to earlier face mounted H and HL hinges. The third floor doors had the then new cast-iron butt hinges and the attic doors had the "old fashioned" HL hinges.

The butt hinge seen here is known to be original to a closet door on the third floor (by virtue of the screw holes), though the door itself had been moved to another location. The hinge was broken and could not be used when the door was to be relocated to its original location. Thus, the wooden pattern (seen here on the right) was made for casting a new hinge to replace this broken original.

Little research has been done on butt hinges, as perhaps they have never captured the interest or imagination of preservation historians. At the time of building the Bishop White House, butt hinges were relatively new, and it is likely that they were part of a hardware order that the Bishop placed with a London merchant. Both the dovetail hinges and the "Cast Butts" were illustrated in an untitled English hardware catalog thought to have been printed in the 1780s. One such catalog reputedly was owned by Benjamin Franklin and which Franklin may have used when his own house was being built on lower Market Street in the late 1780s.

Fig. 2. Cast-iron "PATENT" butt hinge (INHP Acc. No. 2375, no. 2). Photo by the author.

The hinge seen here has the word "PATENT" cast into one of the leaves. We assume that this refers to an English patent, but more research needs to be done on this subject. In fact, many such items of hardware used in early buildings need to have more research done before we will really understand their invention, development, and use in American buildings. Items in architectural study collections are good candidates for research by graduate students in historic preservation. Recommended starting points would be an article by Donald Streeter on the subject of hinges in the *APT Bulletin*, Vol. V, No.1, 1973, pp. 22-49, and a brief essay on early hardware catalogs written by this writer as an introduction to the *Russell and Erwin Hardware Catalog of 1865*, reprinted by the APT in 1980.

Lee H. Nelson, FAIA, who retired from the National Park Service in 1990, is currently completing a project to document stone repair at the White House. He has also been hard at work on a study of early trusses.

An Engineer

Engineers examine, evaluate, and determine the structural integrity of historic structures. Their role is essential and yet they are frequently underrepresented in the preservation community. Objects from architectural study collections provide invaluable information to their ongoing work and, as is true for all people interested in historic structures, offer much from which to learn.

Uses of Structural Artifacts in an Engineering Office

Robert Silman

The standard engineering school curriculum in our colleges does not teach the history and development of structural systems. Engineering schools prefer to concentrate on the current state of the art and what the future will hold. Very few engineers enroll in historic preservation programs or courses. Therefore, the only way in which engineers can learn how to restore and rehabilitate older buildings with a proper sensitivity and respect for the original fabric of the structure is to gain experience on the job.

There is no substitute for going out on a site and observing conditions first-hand. However, we often would like to prepare an untrained engineer for what he or she might expect to encounter at the site. For these purposes, an office archive of photographs and artifacts is invaluable. If the inexperienced engineer can be shown visually what to anticipate, or better yet can touch it, the site visit will be infinitely more meaningful.

Our office has collected structural artifacts from many buildings. These are useful for several reasons:

- They illustrate structural systems no longer in use;
- They demonstrate potential modes of failure;
- They indicate how a repair may be effectively executed.

Our collection includes anchors, fasteners, ties, hangers, connectors, inserts, reinforcing bars, brick, tile, stone, concrete plaster, lath, wood, engineered wood products, adhesives, structural fabric, corroded beams, and columns.

Two examples of the use of the collection will be cited. During the restoration of Carnegie Hall (New York City, 1987) it was determined that much of the structural steel framing (beams and columns) was located too close to the exterior face of the brick facade to provide for proper weather protection. Because the brick had not been pointed for many years and because the joints were open, water had been driven in and caused the steel to corrode. At many locations the outer half of one flange and the entire web was severely corroded while the inner half of the flange was totally intact. In subsequent projects when evidence is present which indicates a similar condition, we use the fragment of beam shown in figure 1 to alert the engineer to a condition which might be encountered. Since most of these conditions are initially concealed and since extensive physical probes destroy too much original fabric, being able to anticipate the condition of corrosion is extremely useful.

A second example which is often encountered deals with buildings constructed of timber floors and brick bearing walls, usually more than 75 years old. We are often asked to evaluate the stability of the brick walls, particularly if the original mortar (often a soft lime mortar) is deteriorated.

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(*Engineering—continued from page 21*)

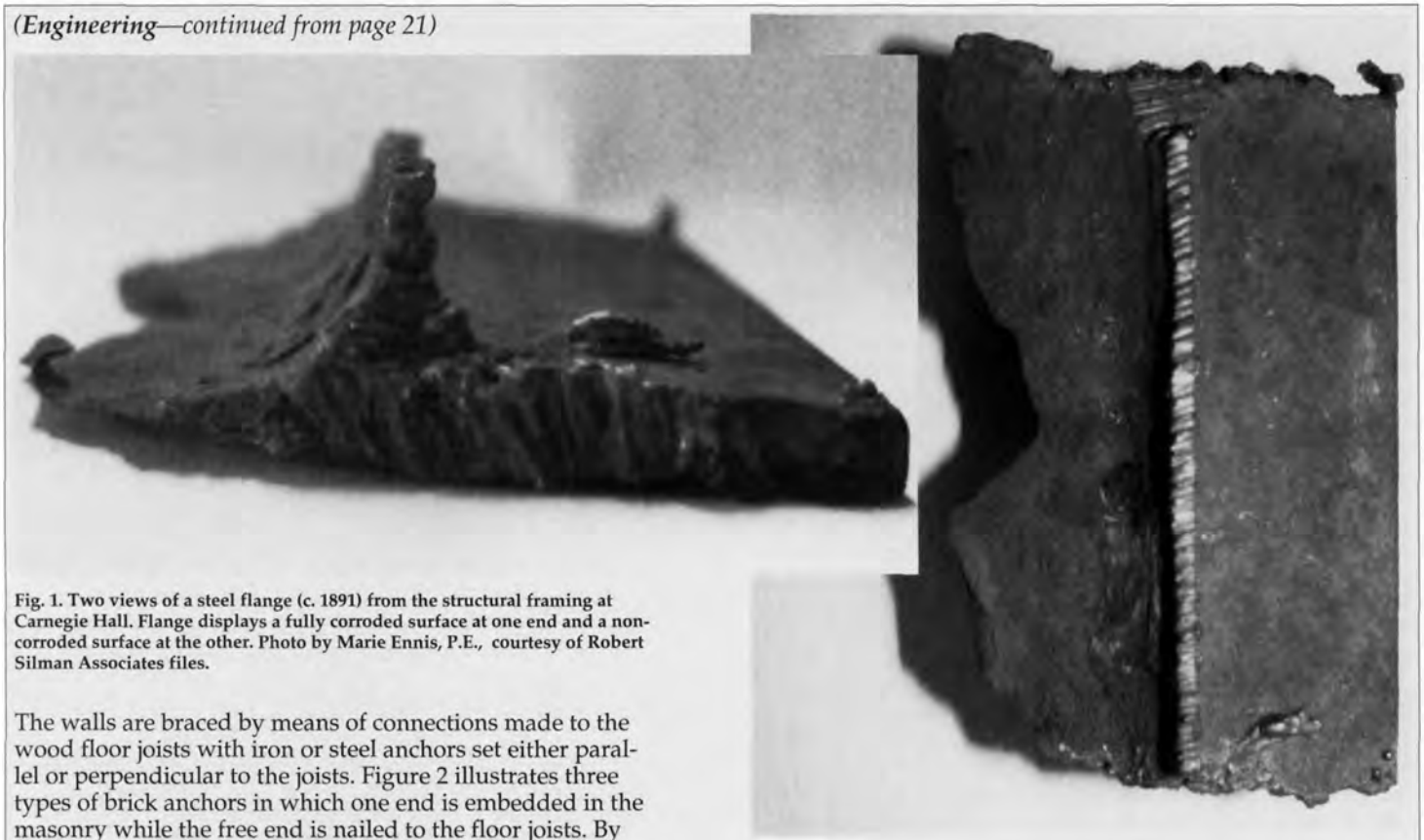

Fig. 1. Two views of a steel flange (c. 1891) from the structural framing at Carnegie Hall. Flange displays a fully corroded surface at one end and a non-corroded surface at the other. Photo by Marie Ennis, P.E., courtesy of Robert Silman Associates files.

The walls are braced by means of connections made to the wood floor joists with iron or steel anchors set either parallel or perpendicular to the joists. Figure 2 illustrates three types of brick anchors in which one end is embedded in the masonry while the free end is nailed to the floor joists. By seeing these anchors in advance, the engineer is better prepared to conduct a field survey and may be able to minimize probes. For instance, a fiber optic borescope may be inserted into a small hole in the plaster ceiling and the observed image of a wall anchor compared with our collection of samples; the field of vision being limited with fiber optics, sometimes the images are difficult to identify.

Fig. 2. Brick anchors made of iron, from left to right:
1. c. 1879, from 105 Greene St., New York, NY (Soho). Cast-iron facade from a light manufacturing building designed by Henry Fernbach.
2. c. 1880, from 7th Regiment Armory, Park Avenue between 66th and 67th, designed by Charles W. Clinton.
3. c. 1927, from Brooklyn General Post Office, 271 Cadman Plaza, Brooklyn, NY. Post Office built c. 1885-1891, designed by Mifflin. New addition built 1927, designed by James Wetmore. Photo by Marie Ennis, P.E., courtesy of Robert Silman Associates files.

Some other useful collection artifacts include:

- Reinforcing bars and mesh from early patented reinforced concrete systems;
- Terra cotta castings, both new and old, both intact and failed, including the attachment hangers and hardware;
- Timber beam and girder hangers including heavy duty bridle irons and skewed beam saddles;
- Types of clay and terra cotta tiles.

The convenience of an in-house collection is unquestionable. Although collections at other locations are of course excellent resources, office professionals are always striving to build up the office's assemblage of structural artifacts.

Robert Silman, P.C., is president of Robert Silman Associates, P.C., a consulting engineering firm in New York City that is extensively engaged in the restoration, rehabilitation and adaptive re-use of older buildings. Mr. Silman is an adjunct professor at the Graduate School of Architecture, Planning and Preservation, Columbia University.

An Interpreter

Interpreters play a key role in preserving important cultural resources by communicating the value of these resources to visitors. Objects from architectural study collections can tangibly speak to visitors through their authenticity and can fire the imagination especially when the stories told are founded in the historic structures reports and other supporting documentation that provide the context by which we understand the overall structure and the role this individual element played in it.

Building the Story

Corky Mayo

Reconstructed forts, tarnished hinges, adobe ruins, elegant courthouses, dismantled mantels, truncated Doric columns, crumbling timber fragments and massive lock gates are only a few of the many objects, buildings and structures available to the park interpreter; the storyteller, the conveyer of meaning. These architectural elements and features are often the essential raw materials which the interpreter uses to construct his or her story in an effort to help the visitor understand the value, complexities and nuances of human activity and achievement. Only through understanding and appreciating what these elements represent can the visitor develop a true preservation ethic, a genuine commitment toward protection of these unique and irreplaceable resources.

When restoration craftsmen began stabilizing the Clara Barton National Historic Site in Glen Echo, MD, they discovered that rather than plastering her walls or hanging wallpaper as most Victorians did, Clara Barton had devised a wall treatment peculiarly her own in which she tacked unbleached muslin to the studs and then painted the fabric with a stiff sizing. By studying portions of the original muslin which had survived under later layers of wallpaper, restoration craftsmen were able to reinvent the lost art of muslin-hanging, and restore Barton's Red Cross offices to their former appearance. Interpreting this makeshift wall treatment to visitors reveals far more about the frugal, inventive nature of Clara Barton in a single glance than a dozen biographies ever could.

A historic artifact made it possible for the re-creation of this craft practice. Photo courtesy Clara Barton National Historic Site files.

Around the Pioneer Square neighborhood of Klondike Gold Rush National Historical Park in Seattle, WA, there remains a wealth of buildings and architectural features, legacies of the 1889-1902 Gold Rush period. Impacted and influenced by the Great Seattle Fire of 1889, the Panic of 1893 which virtually stopped new construction, and the boom of the 1897-1898 Gold Rush, these structures provide the background for a lively 90-minute walking tour.

Of great interest is the Interurban Building (built in 1890, Seattle, WA) which abounds in Pacific Northwestern environmental motifs such as the Green Man, the salmon, and Tlinkit designs. These designs reflect an early concern for integrating the natural environment with the built environment. The gradual lightening of the brick as it rises to a white cornice symbolizes the North Cascades and Olympic Mountains, and the Green Man over the entranceway looks down on all who enter to ensure honesty and fairness in the business dealings of the day.

While this example underscores the importance of preserving and retaining original historic material and features in place—how wonderful to be able to walk down the street, down 90 minutes worth of streets and structures, to see buildings, doorways and features as others have seen them in previous generations—decorative elements are often found in architectural study collections. Photo by Marianne Mills.

In the basement of the Edgar Allan Poe National Historic Site in Philadelphia, PA, there is a false fireplace. Was it perhaps the inspiration for the dark fictional story The Black Cat which tells of a husband's intent to kill and then to conceal the murder behind the false fireplace? What is a false fireplace? Why would someone build one? What function did it serve? Was this a unique instance or was this built in response to a fad or fashion? The interpreter has the opportunity to use the fireplace as a catalyst to help visitors to better understand the singular nature of Poe's genius and to see him as a person who was also a part of his time.

While this fireplace is a feature that is still within its historic context, elements like this fireplace could be found in an architectural study collection—there are fireplace mantels in the study collections of at least four national park units. The opportunity to discover the stories they have to tell is possible only because we have access to these resources. Photo by Regina P. Jones Underwood.

These are but three examples of the many interpretive stories and insights that are inspired by architectural features or fragments. Building perceptive and provocative programs from the fabric at hand in order to instill a higher level of understanding regarding the built environment is clearly part of the business of interpretation.

Corky Mayo is chief of interpretation for the National Park Service. He is a founding member of the National Association for Interpretation and has an M.A. in History.

Useful Teaching Aids

John D. Milner

Architectural study collections have significant value for academic programs which focus on the history of building technology and for interpretive programs which are designed to promote an understanding of the construction chronology and restoration process for historic buildings. The use of architectural components, both *in situ* and as objects in a collection, was a critical factor in developing the two courses which I teach in the University of Pennsylvania's Graduate Program in Historic Preservation, "Early American Building Technology" and "Documentation and Site Analysis."

In my experience, it is important that a student learn about architectural elements and their methods of fabrication and assembly through firsthand examination of those elements in the context of a building. However, detailed information about the nature of specific materials and their interface with other materials and systems is often concealed. An architectural study collection, such as the one at Independence National Historical Park in Philadelphia, affords the opportunity to closely examine these materials as distinct objects and to understand their particular characteristics, the tools and processes used in shaping them, the techniques employed in connecting their component parts, and the methods by which they were linked to other materials in the overall building system.

As an example, the general configuration of a wooden window unit may be readily apparent when that unit is in place in the exterior wall of a masonry building. What is probably not apparent, however, is the cross sectional dimensions of the head, sill and jambs, the details of the weight pockets and of the weights themselves, the species of wood, the composition of the moldings (i.e., cut from single block or applied), the type of nails used in assembling moldings, and the method of anchoring the frame to the wall. Examining the window as an independent object, rather than in context with other building components, will provide answers to these and other questions. In addition, comparison of this window to windows from buildings of different time periods will yield important information on stylistic, structural and functional changes which occurred in window frame and sash design over time.

It is important that a student learn about architectural elements and their methods of fabrication and assembly through firsthand examination of those elements in the context of a building. However, detailed information... is often concealed...

When one considers the shear number of individually-produced architectural components which could be the subjects of similar analysis and documentation, the importance of architectural study collections becomes abundantly clear. Our knowledge of the regional chronology for design and construction of features such as timber framing connections, stairways, wood paneling, doors, wood moldings, decorative plaster, and roofing could be greatly expanded as a result of study collections.

As a case in point, an architectural study collection is currently being assembled by the Historical Society of Trappe as a part of the organization's project to restore the Henry Melchior Muhlenberg House located in the Borough of Trappe, Montgomery County, PA (figure 1). When restoration is completed, the building will incorporate a museum to interpret the life and contributions of the Muhlenberg family and to inform the visitor, through the architectural study collection, about the process of analyzing, documenting and restoring a historic building.

Fig. 1. Muhlenberg House, Principal Facade, c. 1755. The Muhlenberg House is 31'-0" x 39'-0" in plan. The red sandstone is laid in a coursed ashlar pattern on the front facade above the water table. All other facades are laid in a rubble pattern. Drawing by Christina Henry, John Milner Architects, Inc.

Fig. 2. This photo is of one corner of the exhibit which occupied the second floor galleries of the museum. In addition to the architectural collection, the exhibit included manuscripts, paintings, furniture, and personal objects of Reverend Muhlenberg and his family. The wood architectural artifacts shown in the photograph include original shingles, sections of wood window trim, the stairway newel post (long object on the left) and a cast iron stove plate. Each object was keyed to floor plans to indicate its original position in the house. Photo courtesy Berman Museum of Art

Built c. 1755, the building served as the residence of Reverend Henry Melchior Muhlenberg who was the patriarch of the Lutheran Church in America and of a family of many prominent clergymen, statesmen and scientists. Apparently designed to accommodate multiple living units, it represents a rare building type in the history of Pennsylvania architecture. Following the Muhlenberg family's residency from 1776 to 1802, the house underwent a series of alterations which disguised its 18th-century origins. The most significant of these changes occurred c. 1860 when the roof was raised by one-half story, the windows and doors were replaced, the stone exterior walls were stuccoed, and the interior floor plan was modified.

In order to determine the building's original appearance and assess the impact of the subsequent alterations, archival research, archeological excavations, and architectural investigations were commenced in 1989. Reverend Muhlenberg kept detailed journals of his daily activities and these contain many entries which pertain to his use and care of the house. The ongoing archeology, which is being coordinated by Walter Payne, is yielding important information about the evolution of the house and site.

The extensive architectural investigations, carried out in part by my "Documentation and Site Analysis" classes from the University of Pennsylvania, have revealed an extraordinary amount of data and artifacts on which to base a clear construction chronology for the house. An unexpected benefit of these investigations is that during the major alterations of c. 1860, the workmen salvaged and reused a great number of original c. 1755 architectural components including framing members, window frame sections, doors, window and door casings, cabinetry sections, stairway features, clothes peg rails, plaster lath, shingle lath and hearth bricks.

These varied components have become an architectural study collection with two basic functions. First, each item has been carefully studied to establish its previous location and purpose within the context of the original building, and provide evidence of original finishes to inform the restoration. Second, the collection will become the nucleus of an interpretive exhibit to illustrate the materials, technology, and procedures employed by the craftsmen who built the original c. 1755 building as well as those who made the later modifications. In addition, it will be used to explain the process by which historic buildings are analyzed, documented, and restored. Since many of the components are fragments of what were originally larger features, it was decided to incorporate them in an educational exhibit rather than to incorporate them in their original context as part of the building restoration.[1]

One of the components of the Muhlenberg collection is a 3" x 3" x 8'-0" long piece of oak which served as the newel post for the original stair connecting the second floor and attic. That stair was removed in c. 1860 and the newel post was reused as a stud in new attic partitioning. The post contained much valuable information including paint lines establishing the dimensions and juxtaposition of treads and risers, incised scribe lines depicting the carpenter's procedure for laying out the stair, marks indicating type and location of door hardware and original painted surfaces.

The discovery, identification, and analysis of this single artifact was one of many extremely valuable educational experiences for the students who participated in the project. The interpretive exhibit being planned for the Muhlenberg House study collection will ensure that these educational experiences will continue. In fact, the collection was featured in a recent exhibition, *Henry Melchior Muhlenberg—250th Anniversary* at the Berman Museum of Art at Ursinus College in Collegeville, PA (figure 2).

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[1] The most significant pieces from the collection will be on permanent exhibit in the Muhlenberg House. The entire collection is owned by the Historical Society of Trappe whose offices, museum, and library are housed in the Dewees Tavern (located a few doors down from the Muhlenberg House).

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The Ethical Implications of Starting a Collection

Kay Weeks

By definition, historic preservation is devoted to protecting the tangible evidence of people, places, and events from the past in context (figure 1). How, then, do the principles embodied in *The Secretary of the Interior's Standards for Archeology and Historic Preservation* jibe with the idea of removing portions of properties from their contextual settings and placing them in architectural study collections?

Many historic preservationists have an immediate negative reaction to proposals that would purposefully dislocate or fragment significant historic properties. For example, moving an entire historic structure from its original location is discouraged unless there is a compelling need for the move. (Integrity of location is one of the factors considered by National Register staff in evaluating the quality of significance of a property.)

Fig. 1. Woodrow Wilson lived at this Washington, DC, residence during the last three years of his life, from 1921-1924 (*left*). During that time, he and his wife installed a billiard room, rearranged interior partitions, and built stacks for Wilson's library of 8,000 volumes. Aptly illustrating the goals and ideals of historic preservation itself, Mrs. Wilson continued to live in the house until her death in 1961, making few changes during the 40 years and protecting room after room of original furnishings and personal items (below). The house, owned by the National Trust for Historic Preservation, is open to the public to interpret the Wilson years. Exterior photo by Edmund Barrett. Interior photo by Oscar Keller. Both courtesy of the National Trust for Historic Preservation.

As another example, re-using non-significant parts of historic buildings within the same building may be appropriate in a rehabilitation project, but re-locating distinctive architectural features such as mantels, paneling, and balusters within a building or permanently removing intact parts for re-use at another site have long been discouraged by the National Park Service. The principle of *in situ* preservation is underscored by *The Secretary of the Interior's Standards for the Treatment of Historic Properties* whether the treatment is preservation, rehabilitation, restoration, or reconstruction. Thus, a repeated theme of the Standards is the warning against creating "a false sense of history by adding conjectural features or elements from other historic properties."

In a discussion of historic preservation and architectural study collections, this would seem to be the critical juncture: Although the Standards emphasize retention of historic materials and features, they also accept the fact that most materials and features deteriorate and will need to be repaired and replaced. Acknowledging the eventual loss of a property's historic fabric over time provides a basic understanding of the need for architectural study collections as well as the efficacy of initiating collections.

Thus, a property's contributing features may legitimately become parts of collections at some point, although the Standards do not address such collections *per se*. Within the treatments preservation, rehabilitation, and restoration, distinctive features are always maintained and repaired (figure 2). But if a wooden porch, for example, could not be preserved in its entirety, the remaining historic balusters could be used as models for reproducing new, replacement balusters. The extensively deteriorated balusters could then become part of a study collection within the framework of the Standards.

Fig. 2. This deteriorated baluster was removed for careful conservation and reinstalled during the 1970s restoration of the Morse-Libby Mansion, Portland, ME. Photo by Morgan Phillips.

Also, because the treatment restoration focuses on one significant time in a property's history—eliminating the evidence of other periods—features from other periods that were removed from a building or landscape could also reasonably become part of an architectural study collection; storing removed features together and on the same property is always the preferred approach.

Finally, if a building were slated for partial or total demolition, salvaged features might be available for use in developing a study collection (figure 3).

Fig. 3. Particularly in urban settings, historic buildings must be able to survive economically. In this case, the back bays of the Keith Albee Theater in Washington, DC, were demolished in the early 1980s to make way for a new office addition. When partial or total demolition of a historic structure is inevitable even after everything possible has been done to save it, both interior and exterior features could reasonably become part of architectural study collections. Photo: NPS files.

The architectural study collection can play an important role in providing primary data to future researchers. But it should be remembered that however architectural features are acquired, the opportunity to learn from a property in its entirety naturally diminishes as features are separated and moved from their historic context (figure 4). Thus, acquiring any feature that conveys a property's history carries with it the responsibility to document, to care for, and to share the information it embodies with others. If collections are not initiated and developed within an ethical framework, they might well be fairly criticized as still another form of pillaging the past.

Kay Weeks is an author of *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings;* and *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (1992). Also active in heritage education (*The Great American Landmarks Adventure*), she serves as a technical writer and editor in the Preservation Assistance Division.

Fig. 4. At Woodward Hill cemetery in Lancaster, PA, dozens of stone burial markers have been toppled in multiple acts of vandalism. The severity of the problem raises the provocative question as to whether to stabilize the broken markers in place or to document and remove them to a more protective, but less contextual, "collection environment." Photo by Patricia O'Donnell, ASLA/Charles A. Birnbaum, ASLA.

*(**Williamsburg**—continued from page 6)*

In addition, we hope to use the knowledge gained from these fragments to comprehend how people in the 18th century interacted socially in different interior spaces, a concept that the early architects were not trained to focus on. Fragments should provide us with clues about how social ideas and conditions changed over time. Rather than a running list of molding types such as egg and dart; egg and leaf; egg and tongue; egg, rose and dart; shell, rose, and dart; etc., we may end up with a better understanding of why certain choices were made to use a particular molding in terms of social and economic standing in the community.

Other museums seem to grapple with the same issues as Colonial Williamsburg when managing an architectural fragments collection. How does a museum give formal recognition to a fragments collection? What can we learn from architectural fragments? Do we need a national architectural fragments collection? Should standards be established for the care of architectural fragments? Are architectural fragments more or less threatened today? How are architectural fragments misused? The panel session on architectural fragments at the 1992 APT conference in Philadelphia generated a number of questions and comments about such collections. The Interiors Conference and Exposition for Historic Buildings II in February of 1993 then provided a convenient opportunity to follow up on the APT meeting. Twelve preservationists used a conference lunch break to talk about their interests regarding the status, use, and even misuse of architectural fragments.

A network of information, ideas, and questions regarding architectural fragments has proven highly useful to Colonial Williamsburg. The discussion will most likely continue in forum style at future meetings that bring preservationists together, such as the September APT conference in Ottawa.

Roberta Reid is assistant architectural collections manager and associate conservator at The Colonial Williamsburg Foundation. She manages the Colonial Williamsburg Foundation's collection of architectural fragments and models. She chaired the panel session on architectural fragments at the 1992 APT conference in Philadelphia. Roberta inspects 600 buildings in the Historic Area and at Carter's Grove to insure their preservation and appropriate presentation to the visitor. She documents major maintenance projects and coordinates annual closings for repair work at primary exhibition buildings. Roberta conducts research and maintains a reference library of data related to architectural conservation. She also designs research projects for interns and supervises their work. If readers have an interest in architectural fragments or any questions about the ongoing discussions on this topic, Roberta will be happy to take your calls at 804-220-7740.

"Colonial Williamsburg's Architectural Fragments: The Forgotten Collection" presented at the Annual APT Conference, "Forward to the Past" in Philadelphia, Pennsylvania, September 26, 1992, provided much of the material for this article.

WINDOWS THROUGH TIME

An Exhibit of American Windows from 1630s to 1930s

One impressive example of the way in which architectural artifacts can be studied and compared has been demonstrated in the travelling exhibit *Windows Through Time.* Featuring windows from over 12 different collections, this exhibit was originally developed in conjunction with The Window Conference for Historic Buildings held in Boston in 1986. Since then, it has been on display for extended periods of time in Boston, Washington, DC, Philadelphia, and New York City. It was most recently on display at the New York State Museum in Albany, closing in May 1993. The fold-out brochure, developed to accompany the exhibit, enables a comparison between window types by presenting photographs and histories of 16 windows selected from the exhibit together with drawings that match muntin profiles with datable windows.

More than 75 volunteers have assisted with the planning and display of the 4,000 square foot exhibit as it has traveled to different cities. To date nearly 100,000 people have toured the exhibit.

The exhibit was sponsored by the Historic Preservation Education Foundation and the National Park Service.

Using industrial piping and clamps, the modular exhibit was designed to be set up in variously sized exhibit spaces. The historic windows, together with photographs, drawings, and descriptive text were suspended on panels at viewer eye level to facilitate a careful examination. Photo by Richard Pieper.

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