

PART I

Process Overview





CHAPTER 1 Overview

Stewardship of the built environment balances the needs of contemporary society and their impact on the built environment with its ultimate effects on the natural environment. Merging historic preservation and environmental conservation can create innumerable opportunities for reuse of the built environment, which fosters a more sustainable environment overall.

Historic preservation is not a recent phenomenon in the United States. The historic preservation of buildings began when the city of Philadelphia purchased Independence Hall to save it from demolition in 1816, and the first notable restoration was completed at the Truro Synagogue in Newport, Rhode Island, in 1828 (Murtagh, 2006, 12). The preservation movement made increasing progress throughout the nineteenth and twentieth centuries, leading to the National Historic Preservation Act (NHPA) of 1966. The NHPA mandates that federally funded projects affecting historic buildings must undergo what is known as a “Section 106 review” to ensure that proposed work follows the *Secretary of the Interior Standards for the Treatment of Historic Properties (Standards)*. When the NHPA first went into effect, federally funded projects included highway construction and urban renewal programs that were ravaging older and historic business districts and residential neighborhoods.

Many historic preservation projects were inspired by the American Bicentennial and other personal motivations during the early part of this period. Later projects were completed to earn tax incentives developed to assist historic property owners rehabilitate their properties. The Historic Preservation Tax Credit program continues to provide financial incentives that encourage the use of historic buildings. Tax credits and other financial incentive programs at the state and national levels have helped make historic preservation a multi-billion-dollar industry.

STEWARDSHIP OF THE BUILT ENVIRONMENT

Historic Preservation in the Late Twentieth Century

Environmental Conservation in the Late Twentieth Century

Since the creation of Yellowstone as the first national park in 1872, conservation has made steady advances and has become prominent in the public eye. Issues and concerns raised by the conservation movement led to the National Environmental Policy Act (NEPA) of 1969 that fostered an array of stewardship-oriented activities. One of these activities is the requirement for an Environmental Impact Statement (EIS) for large projects (e.g., highway construction, mass transit) that, in part, addresses the adverse effects that the project will have on historic resources.

The two energy crises and the revitalization efforts of the 1970s led to the recognition that the construction and operation of buildings consumes large amounts of natural resources and that growing suburban sprawl was contributing significantly to lower environmental quality. Two observations are needed to understand the sustainability aspects of revitalization: (1) “reuse of existing structures has conserved land, raw materials, and energy,” and (2) “cities contain extensive infrastructure of buildings, pipes, reservoirs, conduits, streets, and parks whose reproduction would be formidably expensive” (Jakle and Wilson 1992, 232). Reusing buildings reduces the impact of demand for new land by reusing previously developed land. Reuse recycles a significant number of existing buildings in place and reduces material resource streams (e.g., construction and waste).

The conservation aspects of preserving historic buildings have since become known in much greater detail. Efforts to formalize environmentally sensitive practices have become more coherent with the formation of such programs as the United States Green Buildings Council’s Leadership in Energy and Environmental Design (LEED) program and the United States Environmental Protection Agency’s Energy Star initiatives (see Chapter 22 for further details).

Emergence of Stewardship of the Built Environment

The social, environmental, and economic benefits of preservation and adaptive use enhance sustainability by promoting reuse of buildings, which in turn has brought sustainability and historic preservation together as stewardship of the built environment. As such, preservation has increasingly become viewed as a tool for increasing sustainability (see Figure 1-1).

Figure 1-1 Stewardship of the built environment blends the need for new buildings with the opportunities presented by reusing existing buildings. This is true for areas within the central city (as shown here) as well as in twentieth-century suburbs.



The successful rehabilitation and adaptive use projects of the past forty years have promoted the acceptance of historic preservation. This acceptance has spurred continued interest in older buildings that has created a permanent market segment and has honed historic preservation practice into an industry served by a multitude of trained professionals.

Today, the *Standards* form the basis of the review processes used by federal agencies to confirm that work proposed and later completed using federal funds (e.g., preservation tax credits, grants) does not have an adverse effect on buildings on or eligible for the National Register of Historic Places (NRHP). As a result, state and local governments and many private organizations administer their review process based on the federal process and the *Standards*.

Thus, typically, when an individual building (or small group of buildings) is subject to a historic preservation review process, an application is made to the agency or organization (e.g., the Landmark Commission or State Historic Preservation Office [SHPO]) that will be administering the review to confirm that any proposed work conforms to their guidelines. This process may involve administrative approval or require a hearing before a review board. Once the design is approved, a building permit can be issued. Upon completion, the work is inspected to verify compliance. Proceeding without an appropriate permit may result in the owner's being fined and required to reverse any changes made.

These reviews are not required for buildings that are not protected by preservation ordinances. When not seeking federal funding or other preservation-related funding incentives, the property owner only has to ensure that the work meets local codes and zoning ordinances.

The Secretary of the Interior recognizes four treatment standards related to historic buildings: preservation, rehabilitation, restoration, and reconstruction. Within these standards are guidelines to determine potential directions for appropriate treatment of historic buildings.

The term "historic preservation" is used broadly to describe the efforts to retain the historic character of a building and the historic context of the place where the building is located. A confusing aspect of historic preservation concerns the differences between preservation, rehabilitation, restoration, and reconstruction.

To reduce confusion, the Secretary of the Interior developed *Standards* (see Appendix A) that broadly define the processes involved in each of these four treatments. Each standard has varying degrees of freedom and restrictions that affect the selection of technologies used in the investigation and construction phases. These treatments are defined in the *Standards* as follows:

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project. (Weeks and Grimmer 1995, 17)

HISTORIC PRESERVATION PROCESS OVERVIEW

SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

Standards

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. (Ibid., 61)

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project. (Ibid., 117)

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. (Ibid., 165)

Guidelines

The treatments are accompanied by guidelines describing the level of historic sensitivity and preservation technology required for compliance. A recommended construction process is described for each treatment and includes these aspects of the building:

- Exterior Materials
 - Masonry
 - Wood
 - Architectural metals
- Exterior Features
 - Roofs
 - Windows
 - Entrances and porches
 - Storefronts
- Interior Features
 - Structural system
 - Spaces/features/finishes
 - Mechanical systems
- Site
- Setting
- Special Requirements
 - Energy efficiency
 - New additions to historic buildings
 - Accessibility
 - Health and safety

While preservation sensitively retains historic features and ensures their retention, restoration allows removal of features not within the historic period being sought. Rehabilitation has the broadest range of treatments affecting an existing building, and reconstruction may have few or no existing historic features available. Treatment guidelines provide an overview on the expected areas of concern, which may include:

- Identification, retention, and preservation of existing historic features
- Stabilization
- Protection and maintenance
- Repair
- Replacement/limited replacement of existing features
- Replacement of missing historic features
- Removal of features from other periods
- Energy efficiency/accessibility/health and safety code requirements
- Alteration/additions for the new use
- Re-creation of missing features from the historic period
- Research and documentation of historic significance
- Investigation of archeological resources
- Reconstruction of nonsurviving buildings and sites

The guidelines should be reviewed to confirm which construction processes are applicable specifically to the treatment being pursued.

The guidelines are intended to ensure retention of character-defining features. A major concern is the reversibility of any chosen method so that the changes made can be reversed at a later date. If the process used proves unsatisfactory, the historic fabric of the building is still available for the later, more sensitive procedure. While the guidelines describe “recommended” and “not recommended” processes, they do not make specific reference to product names or actual products. Examples of selected masonry rehabilitation treatments (shown below) illustrate differences between recommended and not recommended processes:

RECOMMENDED

Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building such as walls, brackets, railings, cornices, window architraves, door pediments, steps, and columns; and details such as tooling and bonding.

Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.

Repairing masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, loose bricks, damp walls or damaged plasterwork.

NOT RECOMMENDED

Removing or radically changing masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Failing to evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, differential settlement of the building, capillary action or extreme weather.

Removing nondeteriorated mortar from sound joints, then repointing the entire building to achieve a uniform appearance.

RECOMMENDED

Replacing in kind an entire masonry feature that is too deteriorated to repair if the overall form and detailing are still evident—using the physical evidence as a model to reproduce the feature. Examples can include large sections of a wall, a cornice, balustrade, column, or stairway.

Designing and installing a new masonry feature such as steps or a door pediment when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Source: Weeks and Grimmer, 1995, 67–70.

NOT RECOMMENDED

Removing a masonry feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

Creating a false historical appearance because the replaced masonry feature is based on insufficient historical, pictorial, and physical documentation. Introducing a new masonry feature that is incompatible in size, scale, material and color.

Violation of specific limitations, such as sandblasting to remove paint, can jeopardize compliance with the guidelines. Project participants who are new to historic preservation practices may inadvertently violate these limitations. Therefore, selection of appropriate preservation technology for all project phases is critical in meeting the guidelines.

Application of Standards and Guidelines

Buildings are considered historic when they are listed on, or are eligible for, the NRHP or are listed on a state or local historic register. A building may also be listed on both the NRHP and a state or local historic register. The *Standards* and their guidelines apply to historic buildings affected by federal funds (e.g., tax credits, highway construction, grants, and revitalization programs). In jurisdictions that have adopted the International Existing Building Code, buildings on the NRHP are eligible for exemptions from the International Building Code.

Buildings on state or local historic registers are also considered historically significant and may be controlled by local or state design review agencies and their own guidelines. These guidelines may have been adapted from the federal *Standards* or may be more restrictive. These buildings come under the control of state and local historic preservation ordinances that may make them eligible for specific protections against demolition and inappropriate alterations; state and local preservation financial incentives; and building code exceptions allowed for historic buildings. These buildings may be listed concurrently on the NRHP and become eligible for federal tax credits and preservation incentives. Review agencies overseeing the state or local register where the property is located should be consulted directly for their guidelines. When attempting to use a modern process or product, check with those agencies to obtain clarification and a “certificate of appropriateness” (written approval of the proposed work). Local, state, and federal reviewing groups annually evaluate numerous products and processes to determine if they are, regardless of the manufacturer’s claims, compatible with the intent of the *Standards*.

Property owners are free to choose the treatment that suits their budget and goals for those buildings not on any recognized state or local historic register or those buildings that are on the NRHP but are not covered by provisions of state or local preservation ordinances. The choices made can lead to three outcomes with varying levels of historic sensitivity. The first outcome develops from the lack of sensitivity toward historic character-defining features that is a common occurrence in “modernization” projects and has led to insensitive alterations and removals (e.g., window replacement) that are the exact opposite of any aspect of preservation. The second outcome stems from the lack of appropriate preservation technology awareness of the property owner, architect, contractor, or code official in the use of incompatible modern products and processes and has led to the same unfortunate result, despite all their good preservation intentions. For these types of projects, the materials and processes (e.g., cleaning and resurfacing) used often can also cause irreversible harm to the remaining building fabric. A third outcome is created when the *Standards* or other formal guidelines are voluntarily used as a model and often produces a more historically sensitive result than the previous two outcomes.

Historic preservation technology combines investigation methods, materials, and construction methods used to preserve, rehabilitate, restore, or reconstruct a building. Historic preservation technology plays an important role from initial project investigations through final construction. Therefore, understanding how preservation technology choices made in a project can affect the success of the project outcome is critically important. These choices not only include the early identification of character-defining features of a historic building at the earliest stages but also their retention, protection, remediation, and maintenance needs at subsequent stages of the project. Inadequate investigations or improper remediation techniques that endanger the retention of historic building fabric can jeopardize efforts to meet the expected guidelines.

Whether the building is of the highest significance or is simply an older building, the most successful preservation-oriented projects have often included these aspects:

- Preservation Planning
 - Protection and stabilization of the property
 - Code and regulation verification
 - On-site investigation
 - Off-site archival research
 - Condition assessments/historic structures reports
- Design Development
 - Select treatment
 - Project programming
 - Design review and approval
 - Construction drawings and specifications
- Construction
 - Construction monitoring for compliance with project goals
 - Final approval by local building officials
 - Commissioning

HISTORIC PRESERVATION PLANNING, DESIGN DEVELOPMENT, AND CONSTRUCTION

With the evolution of design and construction systems, this outline should be adapted to the particular system being used. Innovations of emerging systems involve the timing of when the design team is formed, the use of project definition and collaborative practices, and the integration of building information management into the design and construction industry.

Historic Preservation Planning

Three aspects drive the planning phase: verifying code compliance and preservation regulations; assessing existing conditions; and collecting historical data. The condition assessment based on the on-site and archival research should provide the basis for the preservation treatment selection. Subsequently, these planning materials should be used to convey the overall appropriateness of the proposed methods and products. Contractors and consultants can then be selected based on their ability to work within the selected guidelines. Selecting contractors and consultants who understand the guidelines is important in minimizing problems related to the loss of historic character-defining features.

Protection and Stabilization of the Property

The property should be protected from unwanted trespassers. An unsecured building attracts vandals, transients, and illegal salvagers (see Figure 1-2). Inappropriate methods of stabilizing and investigating the property may result in the unnecessary destruction of historically significant building fabric. As a precaution, the early part of the investigation is done cautiously until the owner and the architect select the treatment to be used throughout the project.

Code and Regulation Verification

In this procedure, compliance with current building codes, especially those related to seismic, fire and life safety, and the Americans with Disabilities Act, is evaluated. This is especially true for buildings being considered for a change of use. When the

Figure 1-2 Unsecured and vacant buildings invite vandalism and unwanted trespassers, as the damage to this building demonstrates.





Figure 1-3 Various visual and physical clues indicate several changes in this entranceway: a porch roof and decking have been removed; windows have been added or modified; and drainage/moisture problems have occurred. These clues are given by changes in the brick, window sills, and lintel construction materials, as well as missing or peeling paint.

use will remain the same, the extent of the work proposed may determine whether the entire building will need to be brought up to current codes or whether just the portion of the building or building service system being affected may need to meet current codes. Code issues are further explored in Chapter 2.

All concurrent local and state preservation ordinances that pertain to the building must be identified. This process includes determining if the building is listed on the NRHP or other state and local historic registers and what is required to meet any applicable design guidelines.

On-Site Investigation

Using technology appropriately allows for data collection that is obtained by minimizing the destruction or removal of historic fabric of the building. Many visual inspection and simple probing methods can assess surface conditions (see Figure 1-3). In some instances, the damage and its sources lie beneath the surface. When sub-surface damage is suspected or discovered, procedures and methods are available to perform either nondestructive testing where the fabric is analyzed *in situ* with minimal removal or the opposite case, where invasive measures include removing large sections of the surface materials and finishes to gain direct access to the internal portions of the construction. On-site investigation methods are further explored in Chapter 3.

Off-Site Archival Research

Data collection about the existing conditions on-site tells only part of the story of a building. Off-site research in state and local archives can provide information that gives additional clues as to when or why certain modifications were made. Identifying the original architect or builder can lead to identifying when the building was built, whether original drawings or other construction documents are available, and how the building has changed. Information obtained on the original and subsequent

Figure 1-4 Research can reveal historic photographs of a building that can be used to confirm materials or details that have changed through time. This photograph shows the appearance of a Federal period house prior to addition of a later porch that changed the original entrance.



owners and uses of the building, earlier tax photographs and data, and historic photographs (see Figure 1-4) can assist in project planning. This work is usually performed by a preservation consultant who specializes in architectural research. The SHPO will typically have a directory of preservation consultants.

Conditional Assessments and Historic Structures Reports

The ultimate goal of the planning phase is to gather all relevant information on the building so that a condition assessment can be made. The key to selecting the treatment is to obtain written information that allows for informed decisions. The assessment of what is an appropriate treatment arises from the findings of on-site and archival investigations, as well as consultations with local building code officials and any applicable review board(s).

A brief written report, in its simplest form, outlines recommended treatments on a single aspect of a project that may be acceptable. This format is often used when the owner's short-term budget or goals warrant it. When a building needs simple repairs, an estimate of their cost is sought directly from a contractor. If the owner agrees to the findings, the contractor may be hired to do the repairs. This method may lead to a piecemeal approach to preservation that may also be the most expensive over the long term, as well as shortsighted in terms of how one set of repairs may interact with the other building repair needs.

In a more comprehensive format, the condition assessment report provides a broad view of overall conditions. The condition assessments for separate subcomponents are developed by a team of consultants who specialize in the construction assemblies found in the building, and their findings are then assembled in a condition assessment report detailing the conditions and recommended treatments that views the entire building as an integrated whole. The report may include an assessment of the historic significance of an item and list alternative treatments. A condition assessment report can reveal long-term remediation needs and provide an opportunity for the

owner, architect, and contractor to determine the budget, scope, and phases of the project. The report is then used to generate construction drawings and specifications.

The most integrated form of report is commonly referred to as a “historic structures report” (HSR), which integrates the historic research with the condition assessments of a variety of consultants. Originally developed by the National Park Service to document work on its historic buildings, the HSR is a combination of archival research, on-site architectural research identifying character-defining features, a condition analysis and assessment, a list of recommended treatments, and a prioritized action plan.

The design development phase takes the collected data and the intentions and goals of the owner and translates them into a set of construction documents that illustrate and specify the expected scope of construction work and the expected final construction result.

Architectural Design Development

Select Treatment

Even without the need to adhere to the *Standards*, an often confusing aspect of historic preservation practice concerns what is expected in the project. The treatment defines the types of recommended practices that will be acceptable to meet the goals of the project. Identifying the selected treatment is important when communicating between the different parties involved in the project so that the context of the work is known. This decision will minimize the inadvertent or accidental loss of historic character-defining features through the actions of those who may be unfamiliar with the differences, for example, between a restoration and a reconstruction.

Understanding what is considered an appropriate historic preservation technology within the selected project treatment is important in determining the actual construction practices that are to be employed. In this regard, the identification of appropriate technologies to be used is equally imperative in ensuring the retention of important historic features during the investigation phase *and* the construction phase of the project.

The project treatment selected should be based on a combination of historical significance, on-site conditions, budget, proposed use, any upgrades required by code, and the requirements of any federal, state, or local review board. Since much of what is considered appropriate is outlined in the *Standards*, these treatments must be carefully considered in determining the historic preservation technology to use throughout the project.

Project Programming

Project programming enables the architect and the owner to determine parameters (e.g., space requirements, types of spaces) of the expected design. At this point, assessing the effect that the project will have on the existing building is critical. If the project includes an adaptive use or significant alterations to the existing building, multiple and sometime conflicting requirements of the building codes and the guidelines will need to be resolved. If the scope of work defined by the program cannot be adapted to the building, then alternative programming requirements or a different building may be needed.

Design Review

Preliminary plans are submitted for review by local code officials for compliance with local building codes. When applicable, the plans are also reviewed by the

Figure 1-5 This addition (left-center) underwent a design review by the local Landmarks Commission to ensure that it was compatible with the design guidelines for the historic district where it was located.



local Landmarks Commission, the SHPO, and any other review board with an interest in the project (see Figure 1-5). These reviews may involve revisions and repeat reviews to gain approval. Consultation with the reviewers before submitting the plans for the formal review can often streamline this process.

Construction Drawings and Specifications

The final step in this phase is the development of the final construction drawings and specifications that will be used by contractors to bid for the work. The preliminary drawings are updated to reflect the comments and revisions provided during the various reviews. These documents are submitted for final approval and are subsequently used to solicit bids from contractors.

Construction is usually the longest portion of the project. All historic character-defining features must be protected from harm for the duration of the project. Most large projects are done in several simultaneous operations and in phases coordinated by a general contractor.

Construction

Construction Monitoring

An important part of the construction process is monitoring compliance with project goals. Contract administration will include updating progress and completion status reports. Likewise, change orders (e.g., changes to the original scope or terms of the contract) will need to be evaluated in terms of how they affect the historic character-defining features. Materials and methods that do not comply with the treatment guidelines should not be allowed. Construction inspections must be accommodated throughout this phase, and any deficiencies will need to be corrected.

Final Approval

As the project nears completion, final inspections of the various construction processes will be made before the building is approved for occupancy. One emerging sustainable design practice during this phase is known as “commissioning.” Commissioning is a process that verifies that all building systems work properly and educates the owner on how to operate and maintain them. Commissioning varies from providing a simple collection of operators’ guides for the equipment and recommended maintenance activities to a formal training period for building operations and maintenance personnel. Here again, ensuring the use of methods and materials that enhance the retention of historic character-defining features is advised. Upon final approvals and completion of any commissioning activities, the building is ready for occupancy.

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