introduction

Choosing an Appropriate Treatment for the Historic Building

The Standards are neither technical nor prescriptive, but are intended to promote responsible preservation practices that help protect our Nation's irreplaceable cultural resources. For example, they cannot, in and of themselves, be used to make essential decisions about which features of the historic building should be saved and which can be changed. But once a treatment is selected, the Standards provide philosophical consistency to the work.

The four treatment approaches are Preservation, Rehabilitation, Restoration, and Reconstruction, outlined below in hierarchical order and explained:

The first treatment, **Preservation**, places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made.

Rehabilitation, the second treatment, emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is assumed the property is more deteriorated prior to work. (Both Preservation and Rehabilitation standards focus attention on the preservation of those materials, features, finishes, spaces, and spatial relationships that, together, give a property its historic character.)

Restoration, the third treatment, focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods.

Reconstruction, the fourth treatment, establishes limited opportunities to re-create a non-surviving site, landscape, building, structure, or object in all new materials.

Choosing the most appropriate treatment for a building requires careful decision-making about a building's historical significance, as well taking into account a number of other considerations:

Relative importance in history. Is the building a nationally significant resource--a rare survivor or the work of a master architect or craftsman? Did an important event take place in it? National Historic Landmarks, designated for their "exceptional significance in American history," or many buildings individually listed in the National Register often warrant Preservation or Restoration. Buildings that contribute to the significance of a historic district but are not individually listed in the National Register more frequently undergo Rehabilitation for a compatible new use.

Physical condition. What is the existing condition--or degree of material integrity--of the building prior to work? Has the original form survived largely intact or has it been altered over time? Are the alterations an important part of the building's history? Preservation may be appropriate if distinctive materials, features, and spaces are essentially intact and convey the building's historical significance. If the building requires more extensive repair and replacement, or if alterations or additions are necessary for a new use, then Rehabilitation is probably the most appropriate treatment. These key questions play major roles in determining what treatment is selected.

Proposed use. An essential, practical question to ask is: Will the building be used as it was historically or will it be given a new use? Many historic buildings can be adapted for new

uses without seriously damaging their historic character; special-use properties such as grain silos, forts, ice houses, or windmills may be extremely difficult to adapt to new uses without major intervention and a resulting loss of historic character and even integrity.

Mandated code requirements. Regardless of the treatment, code requirements will need to be taken into consideration. But if hastily or poorly designed, a series of code-required actions may jeopardize a building's materials as well as its historic character. Thus, if a building needs to be seismically upgraded, modifications to the historic appearance should be minimal. Abatement of lead paint and asbestos within historic buildings requires particular care if important historic finishes are not to be adversely affected. Finally, alterations and new construction needed to meet accessibility requirements under the Americans with Disabilities Act of 1990 should be designed to minimize material loss and visual change to a historic building.

GUIDELINES

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preserving

NATIONAL PARK SERVICE

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.

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standards for preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Guidelines for Preservation-->

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the approach

When the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations, Preservation may be considered as a treatment. Prior to undertaking work, a documentation plan for Preservation should be developed.

Choosing Preservation as a Treatment

In Preservation, the options for replacement are less extensive than in the treatment, Rehabilitation. This is because it is assumed at the outset that building materials and character-defining features are essentially intact, i.e, that more historic fabric has survived, unchanged over time. The expressed goal of the **Standards for Preservation and Guidelines for Preserving Historic Buildings** is retention of the building's existing form, features and detailing. This may be as simple as basic maintenance of existing materials and features or may involve preparing a historic structure report, undertaking laboratory testing such as paint and mortar analysis, and hiring conservators to perform sensitive work such as reconstituting interior finishes. Protection, maintenance, and repair are emphasized while replacement is minimized.

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Identify, Retain, and Preserve Historic Materials and Features

The guidance for the treatment **Preservation** begins with recommendations to identify the form and detailing of those architectural materials and features that are important in defining the building's historic character and which must be retained in order to preserve that character. Therefore, guidance on ***identifying, retaining, and preserving*** character-defining features is always given first. The character of a historic building may be defined by the form and detailing of exterior materials, such as masonry, wood, and metal; exterior features, such as roofs, porches, and windows; interior materials, such as plaster and paint; and interior features, such as moldings and stairways, room configuration and spatial relationships, as well as structural and mechanical systems; and the building's site and setting.

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Stabilize Deteriorated Historic Materials and Features as a Preliminary Measure

Deteriorated portions of a historic building may need to be protected thorough preliminary stabilization measures until additional work can be undertaken. ***Stabilizing*** may include structural reinforcement, weatherization, or correcting unsafe conditions. Temporary stabilization should always be carried out in such a manner that it detracts as little as possible from the historic building's appearance. Although it may not be necessary in every preservation project, stabilization is nonetheless an integral part of the treatment Preservation; it is equally applicable, if circumstances warrant, for the other treatments.

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Protect and Maintain Historic Materials and Features

Preservation of the exterior of the Hale House, Los Angeles, California, involved repainting the exterior walls and decorative features in historically appropriate colors. In excellent example of the Preservation treatment focused upon the ongoing maintenance of historic materials and features. Photo: Before, NPS files; After: Bruce Boehner.

After identifying those materials and features that are important and must be retained in the process of **Preservation** work, then ***protecting and maintaining*** them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes the maintenance of historic materials through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems; or installation of fencing, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

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Repair (Stabilize, Consolidate, and Conserve) Historic Materials and Features

Next, when the physical condition of character-defining materials and features requires additional work, ***repairing*** by ***stabilizing, consolidating, and conserving*** is recommended. **Preservation** strives to retain existing materials and features while employing as little new material as possible. Consequently, guidance for repairing a historic material, such as masonry, again begins with the least degree of intervention possible such as strengthening fragile materials through consolidation, when appropriate, and repointing with mortar of an appropriate strength. Repairing masonry as well as wood and architectural metal features may also include patching, splicing, or otherwise reinforcing them using recognized preservation methods. Similarly, within the treatment **Preservation**, portions of a historic structural system could be reinforced using contemporary materials such as steel rods. All work should be physically and visually compatible, identifiable upon close inspection and documented for future research.

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Limited Replacement In Kind of Extensively Deteriorated Portions of Historic Features

If repair by stabilization, consolidation, and conservation proves inadequate, the next level of intervention involves the ***limited replacement in kind*** of extensively deteriorated or missing

parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of slate or tile roofing). The replacement material needs to match the old both physically and visually, i.e., wood with wood, etc. Thus, with the exception of hidden structural reinforcement and new mechanical system components, substitute materials are not appropriate in the treatment **Preservation**. Again, it is important that all new material be identified and properly documented for future research. If prominent features are missing, such as an interior staircase, exterior cornice, or a roof dormer, then a Rehabilitation or Restoration treatment may be more appropriate.

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Energy Efficiency/Accessibility Considerations/Health and Safety Code Considerations

These sections of the **Preservation** guidance address work done to meet accessibility requirements and health and safety code requirements; or limited retrofitting measures to improve energy efficiency. Although this work is quite often an important aspect of preservation projects, it is usually not part of the overall process of protecting, stabilizing, conserving, or repairing character-defining features; rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, damage, or destroy character-defining materials or features in the process of undertaking work to meet code and energy requirements.

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EXTERIOR MATERIALS

masonry

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

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 patterns, coatings, and color.

The stucco finish on Arlington House, Arlington, Virginia, was marbleized in the 1850s, approximately 30 years after it was built, but because it is a character-defining finish that has gained significance over time, it should be retained and preserved. Photo: NPS files.

NOT RECOMMENDED

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

Replacing historic masonry features instead of repairing or replacing only the deteriorated masonry.

Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated.

Removing paint from historically painted masonry.

Changing the type of paint or coating or its color.

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Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged masonry as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

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NOT RECOMMENDED

Failing to stabilize deteriorated or damaged masonry until additional work is undertaken, thus allowing further damage to occur to the historic building.

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Protect and Maintain

RECOMMENDED

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

Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.

Carrying out masonry surface cleaning tests after it has been determined that such cleaning is appropriate. Tests should be observed over a sufficient period of time so that both the immediate and the long range effects are known to enable selection of the gentlest method possible.

Cleaning masonry surfaces with the gentlest method possible, such as low pressure water and detergents, using natural bristle brushes.

Inspecting painted masonry surfaces to determine whether repainting is necessary.

Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., handscraping) prior to repainting.

Applying compatible paint coating systems following proper surface preparation.

Repainting with colors that are historically appropriate to the building and district.

Evaluating the existing condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to masonry features will be necessary.

NOT RECOMMENDED

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 exposure.

The caulking shown here is not an appropriate method for repairing cracks in historic stucco. Photo: NPS files.

Cleaning masonry surfaces when they are not heavily soiled, thus needlessly introducing chemicals or moisture into historic materials.

Cleaning masonry surfaces without testing or without sufficient time for the testing results to be of value.

Sandblasting brick or stone surfaces using dry or wet grit or other abrasives. These methods of cleaning permanently erode the surface of the material and accelerate deterioration.

Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.

Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.

Applying high pressure water cleaning methods that will damage historic masonry and the mortar joints.

Removing paint that is firmly adhering to, and thus protecting, masonry surfaces.

Using methods of removing paint which are destructive to masonry, such as sandblasting, application of caustic solutions, or high pressure waterblasting.

Failing to follow manufacturers' product and application instructions when repainting masonry.

Using new paint colors that are inappropriate to the historic building and district.

Failing to undertake adequate measures to assure the protection of masonry features.

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Repair

RECOMMENDED

Repairing, stabilizing, and conserving fragile masonry by using well-tested consolidants, when appropriate. Repairs should be physically and visually compatible and identifiable upon close inspection for future research.

Adequate protection and maintenance of a historic building is an ongoing commitment. Here, two workers are priming and repainting exterior stone and wood trim. If surface treatments are neglected, more extensive repair and replacement will be required. Each loss further undermines a building's historic integrity. Photo: NPS files.

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.

emoving deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.

Duplicating old mortar in strength, composition, color, and texture.

Duplicating old mortar joints in width and in joint profile.

Traditionally, adobe surface coatings that protected the fragile adobe building fabric were renewed every few years. Women are seen here recoating an adobe wall with mud plaster mixed with straw at Chamisal, New Mexico. Photo: Russell Lee, Farm Security Administration Collection, Library of Congress.

Repairing stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, composition, color, and texture.

Using mud plaster as a surface coating over unfired, unstabilized adobe because the mud plaster will bond to the adobe.

Cutting damaged concrete back to remove the source of deterioration (often corrosion on metal reinforcement bars). The new patch must be applied carefully so it will bond satisfactorily with, and match, the historic concrete.

Repairing masonry features by patching, piecing-in, or otherwise reinforcing the masonry using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

Applying new or non-historic surface treatments such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problems.

NOT RECOMMENDED

Removing masonry that could be stabilized, repaired and conserved; or using untested consolidants and untrained personnel, thus causing further damage to fragile materials.

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

Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.

Repointing with mortar of high portland cement content (unless it is the content of the historic mortar). This can often create a bond that is stronger than the historic material and can cause damage as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.

Repointing with a synthetic caulking compound.

Using a "scrub" coating technique to repoint instead of traditional repointing methods.Changing the width or joint profile when repointing.

Removing sound stucco; or repairing with new stucco that is stronger than the historic material or does not convey the same visual appearance.

Applying cement stucco to unfired, unstabilized adobe. Because the cement stucco will not bond properly, moisture can become entrapped between materials, resulting in accelerated deterioration of the adobe.

Patching concrete without removing the source of deterioration.

Removing masonry that could be repaired, using improper repair techniques, or failing to document the new work.

Applying waterproof, water repellent, or non-historic coatings such as stucco to masonry as a substitute for repointing and masonry repairs. Coatings are frequently unnecessary, expensive, and may change the appearance of historic masonry as well as accelerate its deterioration.

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The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of masonry features when there are surviving prototypes such as terra-cotta brackets or stone balusters. The new work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire masonry feature such as a column or stairway when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic masonry feature; or failing to properly document the new work.

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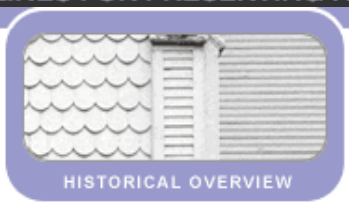
NATIONAL PARK SERVICE

STANDARDS FOR PRESERVATION AND GUIDELINES FOR PRESERVING HISTORIC BUILDINGS

EXTERIOR MATERIALS

wood



Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors.

Whether it is used for exterior cladding, roofing, interior finishes, decorative features, or structural members, wood is frequently an essential component of historic and older buildings which should be retained and preserved. Photo: NPS files.

NOT RECOMMENDED

Altering wood features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic wood features instead of repairing or replacing only the deteriorated wood.

Changing the type of paint or finish and its color.

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Stabilize

RECOMMENDED

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Stabilizing deteriorated or damaged wood as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize deteriorated or damaged wood until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

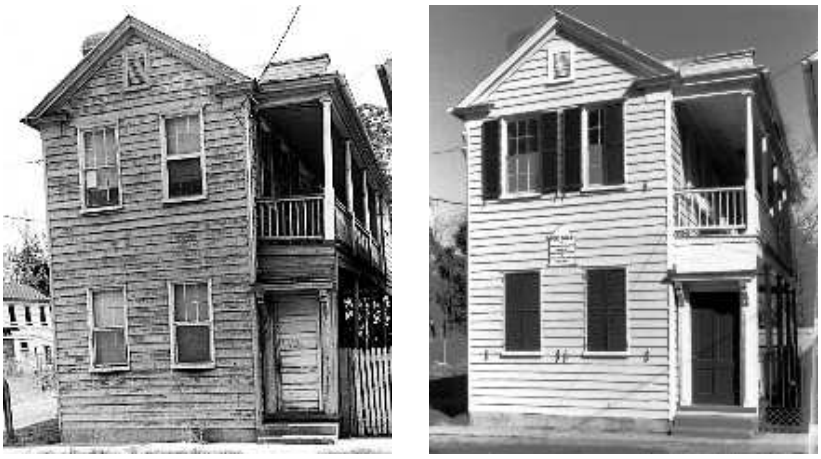
RECOMMENDED

Protecting and maintaining wood features by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative features.

Applying chemical preservatives to wood features such as beam ends or outriggers that are exposed to decay hazards and are traditionally unpainted.

Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.

Inspecting painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.



Maximizing retention of historic materials and features is the primary goal of Preservation, as demonstrated here in these "before" and "after" photographs. Aside from some minor repairs and limited replacement of deteriorated material, work on this house consisted primarily of repainting the wood exterior. Photos: Historic Charleston Foundation.

Removing damaged or deteriorated paint to the next sound layer using the gentlest method possible (handscraping and handsanding), then repainting.

Using with care electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when paint is so deteriorated that total removal is necessary prior to repainting.

Using chemical strippers primarily to supplement other methods such as handscraping, handsanding and the above-recommended thermal devices. Detachable wooden elements such as shutters, doors, and columns may--with the

proper safeguards--be chemically dip-stripped.

Applying compatible paint coating systems following proper surface preparation.

Repainting with colors that are appropriate to the historic building and district.

Evaluating the existing condition of the wood to determine whether more than protection and maintenance are required, that is, if repairs to wood features will be necessary.

NOT RECOMMENDED

Failing to identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks and holes in siding, deteriorated caulking in joints and seams, plant material growing too close to wood surfaces, or insect or fungus infestation.

Using chemical preservatives such as creosote which, unless they were used historically, can change the appearance of wood features.

As shown, the paint on this house is failing in isolated spots, while most of it is in good condition. On older buildings heavy paint buildup is common. The thick paint film traps moisture in the wood. As the moisture escapes from the wood it pushes the paint off the wall, leaving spots of bare wood. Photo: © John Leeke.

Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.

Removing paint that is firmly adhering to, and thus, protecting wood surfaces.

Using destructive paint removal methods such as propane or butane torches, sandblasting or waterblasting. These methods can irreversibly damage historic woodwork.

Using thermal devices improperly so that the historic woodwork is scorched.

Failing to neutralize the wood thoroughly after using chemicals so that new paint does not adhere.

Allowing detachable wood features to soak too long in a caustic solution so that the wood grain is raised and the surface roughened.

Failing to follow manufacturers' product and application instructions when repainting exterior woodwork.Using new colors that are inappropriate to the historic building or district.

Failing to undertake adequate measures to assure the protection of wood features.

top

Repair

RECOMMENDED

Repairing, stabilizing, and conserving fragile wood using well-tested consolidants,

when appropriate. Repairs should be physically and visually compatible and identifiable upon close inspection for future research.

Repairing wood features by patching, piecing-in, or otherwise reinforcing the wood using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing wood that could be stabilized and conserved; or using untested consolidants and untrained personnel, thus causing further damage to fragile historic materials.

Removing wood that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of wood features when there are surviving prototypes such as brackets, molding, or sections of siding. New work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

An example of "limited replacement in kind" points out an appropriate scope of work within the treatment, Preservation. Targeted repairs to deteriorated wood cornice elements (fascia board and modillions) meant that most of the historic materials were retained in the work. Photo: NPS files.

NOT RECOMMENDED

Replacing an entire wood feature such as a column or stairway when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic wood feature; or failing to properly document the new work.

EXTERIOR MATERIALS

architectural metals

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Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving architectural metal features such as columns, capitals, window hoods, or stairways that are important in defining the overall historic character of the building; and their finishes and colors. Identification is also critical to differentiate between metals prior to work. Each metal has unique properties and thus requires different treatments.

The ongoing maintenance and repair of historic architectural metals is emphasized in the treatment, Preservation. This shows a detail of a well-maintained polychromed cast-iron facade in Petaluma, California, 1886 (O'Connell and Lewis, Architectural Iron Works, San Francisco). Photo: Don Meacham.

NOT RECOMMENDED

Altering architectural metal features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic metal features instead of repairing or replacing only the deteriorated metal.

Changing the type of finish or its historic color or `accent scheme.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged architectural metals as a preliminary measure,

when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize deteriorated or damaged architectural metals until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

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

Cleaning architectural metals, when appropriate, to remove corrosion prior to repainting or applying other appropriate protective coatings.

Where chemical paint stripping is involved, careful planning of the sequence of work and inspection by an architect or conservator to ensure strict compliance with the contract documents is important to minimize the risk of problems. Photo: Raymond M. Pepi, Building Conservation Associates.

Identifying the particular type of metal prior to any cleaning procedure and then testing to assure that the gentlest cleaning method possible is selected or determining that cleaning is inappropriate for the particular metal.

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with appropriate chemical methods because their finishes can be easily abraded by blasting methods.

Using the gentlest cleaning methods for cast iron, wrought iron, and steel--hard metals--in order to remove paint buildup and corrosion. If handscraping and wire brushing have proven ineffective, low pressure grit blasting may be used as long as it does not abrade or damage the surface.

Applying appropriate paint or other coating systems after cleaning in order to decrease the corrosion rate of metals or alloys.

Repainting with colors that are appropriate to the historic building or district.

Applying an appropriate protective coating such as lacquer to an architectural metal feature such as a bronze door which is subject to heavy pedestrian use.

Evaluating the existing condition of the architectural metals to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

NOT RECOMMENDED

Failing to identify, evaluate, and treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Placing incompatible metals together without providing a reliable separation material. Such incompatibility can result in galvanic corrosion of the less noble metal, e.g., copper will corrode cast iron, steel, tin, and aluminum.

Exposing metals which were intended to be protected from the environment.Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.

Using cleaning methods which alter or damage the historic color, texture, and finish of the metal; or cleaning when it is inappropriate for the metal.

Removing the patina of historic metal. The patina may be a protective coating on some metals, such as bronze or copper, as well as a significant historic finish.

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with grit blasting which will abrade the surface of the metal.

Failing to employ gentler methods prior to abrasively cleaning cast iron, wrought iron or steel; or using high pressure grit blasting.

Failing to re-apply protective coating systems to metals or alloys that require them after cleaning so that accelerated corrosion occurs.

Using new colors that are inappropriate to the historic building or district.

Failing to assess pedestrian use or new access patterns so that architectural metal features are subject to damage by use or inappropriate maintenance such as salting adjacent sidewalks.

Failing to undertake adequate measures to assure the protection of architectural metal features.

top

Repair

RECOMMENDED

Repairing, stabilizing, and conserving fragile architectural metals using well-tested consolidants, when appropriate. Repairs should be physically and visually compatible and identifiable upon close inspection for future research.

This detail of a repaired historic cornice shows the zinc modillion and the leaf and egg and dart

moldings after Preservation work, including repainting of the elements, has been completed. Photo: Michael Devonshire.

Repairing architectural metal features by patching, piecing-in, or otherwise reinforcing the metal using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing architectural metals that could be stabilized and conserved; or using untested consolidants and untrained personnel, thus causing further damage to fragile historic materials.

Removing architectural metals that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of architectural metal features when there are surviving prototypes such as porch balusters, column capitals or bases, or porch cresting. The new work should match the old in material, design, and texture; and be unobtrusively dated to guide future research and treatment.

Another example shows one metal modillion (left side of cornice) that has sustained damage from a faulty gutter. The damaged modillion will be

replaced in kind during the Preservation work, while the intact elements of the historic cornice will be maintained and preserved.

NOT RECOMMENDED

Replacing an entire architectural metal feature such as a column or balustrade when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic metal feature; or failing to properly document the new work.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

NATIONAL PARK SERVICE

STANDARDS FOR PRESERVATION AND GUIDELINES FOR PRESERVING HISTORIC BUILDINGS

EXTERIOR FEATURES

roofs

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

-GUIDELINES-

The Approach

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THE STANDARDS

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving roofs--and their functional and decorative features--that are important in defining the overall historic character of the building. This includes the roof's shape, such as hipped, gambrel, and mansard; decorative features such as cupolas, cresting, chimneys, and weathervanes; and roofing material such as slate, wood, clay tile, and metal, as well as its size, color, and patterning.

The steepness of this standing seam metal roof, along with its multiple dormers and double chimneys, characterizes this historic building. In Preservation, materials and features are carefully retained during a work project. Photo: NPS files.

NOT RECOMMENDED

Altering the roof and roofing materials which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic roofing material instead of repairing or replacing only the deteriorated material.

Changing the type or color of roofing materials.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged roofs as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged roof until additional work is undertaken, thus

allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining a roof by cleaning the gutters and downspouts and replacing deteriorated flashing. Roof sheathing should also be checked for proper venting to prevent moisture condensation and water penetration; and to insure that materials are free from insect infestation.

Providing adequate anchorage for roofing material to guard against wind damage and moisture penetration.

Protecting a leaking roof with plywood and building paper until it can be properly repaired.

Pressed metal shingles, whose surfaces created interesting patterns, were popular throughout the country in the late 19th century. Tin roofs were kept well-painted, usually red; or, as shown here, in a color that imitates the green patina of copper. Photo: NPS files.

NOT RECOMMENDED

Failing to clean and maintain gutters and downspouts properly so that water and debris collect and cause damage to roof fasteners, sheathing, and the underlying structure.

Allowing roof fasteners, such as nails and clips to corrode so that roofing material is subject to accelerated deterioration.

Permitting a leaking roof to remain unprotected so that accelerated deterioration of historic building materials--masonry, wood, plaster, paint and structural members--occurs.

top

Repair

RECOMMENDED

Repairing a roof by reinforcing the historic materials which comprise roof features using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

It is particularly important to preserve materials that contribute to a building's historic character, such as this highly visible slate roof. In the event that repair and limited replacement are necessary, all new slate would need to match the old exactly. Photo: Jeffrey S. Levine.

NOT RECOMMENDED

Removing materials that could be repaired, using improper repair techniques, or failing to document the new work.

Failing to reuse intact slate or tile when only the roofing substrate needs replacement.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of roof features or roof coverings when there are surviving prototypes such as cupola louvers, dentils, dormer roofing; or slates, tiles, or wood shingles on a main roof. The new work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

Repairs on this pantile roof were made with new tiles held in place with metal hangers. Photo: NPS files.

NOT RECOMMENDED

Replacing an entire roof feature such as a cupola or dormer when limited replacement of deteriorated and missing parts is appropriate.	
Using material for the replacement material that does not match the historic roof feature; or failing to properly document the new work.	

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

NATIONAL PARK SERVICE

STANDARDS FOR PRESERVATION AND GUIDELINES FOR PRESERVING HISTORIC BUILDINGS

EXTERIOR FEATURES

windows

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

-GUIDELINES-

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THE STANDARDS

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving windows--and their functional and decorative features--that are important in defining the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, panelled or decorated jambs and moldings, and interior and exterior shutters and blinds.

A condition assessment of the frame supporting the stained glass window is as important as evaluating the stained glass itself. Photo: Neal A. Vogel.

Conducting an indepth survey of the condition of existing windows early in preservation planning so that repair and upgrading methods and possible replacement options can be fully explored.

NOT RECOMMENDED

Altering windows or window features which are important in defining the historic character of the building so that, as a result, the character is diminished.

Changing the historic appearance of windows by replacing materials, finishes, or colors which noticeably change the sash, depth of reveal, and muntin configuration; the reflectivity and color of the glazing; or the appearance of the frame.

Obscuring historic window trim with metal or other material.

Replacing windows solely because of peeling paint, broken glass, stuck sash, and high air infiltration. These conditions, in themselves, are no indication that windows are beyond repair.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged windows as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged window until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining the wood and architectural metals which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Making windows weathertight by re-caulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.

Evaluating the existing condition of materials to determine whether more than protection and maintenance are required, i.e. if repairs to windows and window features will be required.

NOT RECOMMENDED

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of the window results.

Retrofitting or replacing windows rather than maintaining the sash, frame, and glazing.

Failing to undertake adequate measures to assure the protection of historic windows.

top

Repair

RECOMMENDED

Repairing window frames and sash by patching, piecing-in, consolidating or otherwise reinforcing them using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

These workmen are performing exterior window maintenance after the protective glazing--which had prevented maintenance--was removed. Photo: Neal A. Vogel.

NOT RECOMMENDED

Failing to protect the historic glazing when repairing windows.

Removing material that could be repaired, using improper repair techniques, or failing to document the new work.

Failing to reuse serviceable window hardware such as brass sash lifts and sash locks.

top

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Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of windows when there are surviving prototypes such as frames, sash, sills, glazing, and hoodmolds. The new work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire window when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic window; or failing to properly document the new work.

EXTERIOR FEATURES

entrances + porches

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving entrances and porches--and their functional and decorative features--that are important in defining the overall historic character of the building such as doors, fanlights, sidelights, pilasters, entablatures, columns, balustrades, and stairs.

As significant features in the Cape May Historic District, New Jersey, these decorative exterior porches have been carefully maintained and preserved. Photo: HABS Collection, NPS.

NOT RECOMMENDED

Altering entrances and porches which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic entrance and porch features instead of repairing or replacing only the deteriorated material.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged entrances and porches as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

-GUIDELINES-

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THE STANDARDS

Failing to stabilize a deteriorated or damaged entrance or porch until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining the masonry, wood, and architectural metals that comprise entrances and porches through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

One of the major principles of the treatment, "Preservation," is the ongoing maintenance of existing historic materials and features. The entrance of this historic house is receiving a protective coat of paint, which will help preserve wood from long-term effects of weathering. Photo: © John Leeke.

Evaluating the existing condition of materials to determine whether more than protection and maintenance are required, that is, repairs to entrance and porch features will be necessary.

NOT RECOMMENDED

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of entrances and porches results.

Failing to undertake adequate measures to assure the protection of historic entrances and porches.

top

Repair

RECOMMENDED

Repairing entrances and porches by reinforcing the historic materials using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing material that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of repeated entrance and porch features when there are surviving prototypes such as balustrades, cornices, entablatures, columns, sidelights, and stairs. The new work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire entrance or porch feature when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic entrance or porch feature; or failing to properly document the new work.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

NATIONAL PARK SERVICE

STANDARDS FOR PRESERVATION AND GUIDELINES FOR PRESERVING HISTORIC BUILDINGS

EXTERIOR FEATURES

storefronts

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving storefronts--and their functional and decorative features--that are important in defining the overall historic character of the building such as display windows, signs, doors, transoms, kick plates, corner posts, and entablatures.

The original form and features of this 1920s storefront have been retained through Preservation. Photo: David W. Look, AIA.

NOT RECOMMENDED

Altering storefronts--and their features--which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic storefront features instead of repairing or replacing only the deteriorated material.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged storefronts as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

-GUIDELINES-

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THE STANDARDS

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged storefront until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining masonry, wood, and architectural metals which comprise storefronts through appropriate treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems.

Protecting storefronts against arson and vandalism before work begins by boarding up windows and doors and installing alarm systems that are keyed into local protection agencies.

This cast iron storefront from the late 19th century has been well maintained over the years. Photo: NPS files.

Evaluating the existing condition of storefront materials to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

NOT RECOMMENDED

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of storefront features results.

Permitting entry into the building through unsecured or broken windows and doors so that interior features and finishes are damaged by exposure to weather or vandalism.

Stripping storefronts of historic material such as wood, cast iron, terra cotta, carrara glass, and brick.

Failing to undertake adequate measures to assure the preservation of the historic storefront.

top

Repair

RECOMMENDED

Repairing storefronts by reinforcing the historic materials using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing material that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of storefronts where there are surviving prototypes such as transoms, kick plates, pilasters, or signs. The new work should match the old in materials, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire storefront when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the historic storefront feature; or failing to properly document the new work.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

INTERIOR
structural systems

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving structural systems--and individual features of systems--that are important in defining the overall historic character of the building, such as post and beam systems, trusses, summer beams, vigas, cast iron columns, above-grade stone foundation walls, or loadbearing brick or stone walls.

The interior of this barn in Shelburne, Vermont, is a magnificent space that included an overhead hay loft with tracks that allowed workers to drop hay to the floor below. Photo: NPS files.

NOT RECOMMENDED

Altering visible features of historic structural systems which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Overloading the existing structural system; or installing equipment or mechanical systems which could damage the structure.

Replacing a loadbearing masonry wall that could be augmented and retained.

Leaving known structural problems untreated such as deflection of beams, cracking and bowing of walls, or racking of structural members.

Utilizing treatments or products that accelerate the deterioration of structural material such as introducing urea-formaldehyde foam insulation into frame walls.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged structural systems as a preliminary measure,

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when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged structural system until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining the structural system by cleaning the roof gutters and downspouts; replacing roof flashing; keeping masonry, wood, and architectural metals in a sound condition; and ensuring that structural members are free from insect infestation.

Non-destructive evaluation techniques can be of significant value in historic preservation projects. Impulse radar is being used to evaluate both the orientation and depth of the cracks visible on the surface of the column shaft. Photo: Edmund P. Meade, P.E.

Examining and evaluating the existing condition of the structural system and its individual features using non-destructive techniques such as X-ray photography.

NOT RECOMMENDED

Failing to provide proper building maintenance so that deterioration of the structural system results. Causes of deterioration include subsurface ground movement, vegetation growing too close to foundation walls, improper grading, fungal rot, and poor interior ventilation that results in condensation.

Utilizing destructive probing techniques that will damage or destroy structural material.

top

Repair

RECOMMENDED

Repairing the structural system by augmenting or upgrading individual parts or features using recognized preservation methods. For example, weakened structural members such as floor framing can be paired with a new member, braced, or otherwise supplemented and reinforced.

The new base isolator allows the structural support member at the foundation to move horizontally as it absorbs the earthquake forces. Photo: ©Jonathan Farrer.

NOT RECOMMENDED

Upgrading the building structurally in a manner that diminishes the historic character of the exterior, such as installing strapping channels or removing a decorative cornice; or damages interior features or spaces.

Replacing a structural member or other feature of the structural system when it could be augmented and retained.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind those visible portions or features of the structural system that are either extensively deteriorated or missing when there are surviving prototypes such as cast iron columns and sections of loadbearing walls. The new work should match the old in materials, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

Considering the use of substitute material for unexposed structural replacements, such as roof rafters or trusses. Substitute material should, at a minimum, have equal loadbearing capabilities, and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire visible feature of the structural system when limited replacement of deteriorated and missing portions is appropriate.

Using material for a portion of an exposed structural feature that does not match the historic feature; or failing to properly document the new work.

Using substitute material that does not equal the loadbearing capabilities of the historic material or design or is otherwise physically or chemically incompatible.

INTERIOR
spaces, features, + finishes

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

-INTERIOR SPACES-

RECOMMENDED

Identifying, retaining, and preserving a floor plan or interior spaces that are important in defining the overall historic character of the building. This includes the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves such as lobbies, reception halls, entrance halls, double parlors, theaters, auditoriums, and important industrial or commercial spaces.

In assessing the interior visual character of any historic building, it is necessary to ask whether there are spaces that are important to the character of this particular building, whether the building is architecturally rich or modest. A simple or utilitarian structure canhave just as much--or more--character as a grand space.

NOT RECOMMENDED

Altering a floor plan or interior spaces--including individual rooms--which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

-INTERIOR FEATURES AND FINISHES-

RECOMMENDED

Identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantels, panelling, light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stencilling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.

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THE STANDARDS

This Minton encaustic floor tile was installed in the U.S. Capitol in the 1850s. Before undertaking any work more complicated than regular maintenance or a very simple repair on a significant historic ceramic tile floor, it is recommended that a professional conservator of ceramics, an historical architect, an architectural historian, or a chemist with particular knowledge and experience in this field be consulted. Photo: NPS files.

NOT RECOMMENDED

Altering features and finishes which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic interior features and finishes instead of repairing or replacing only the deteriorated masonry.Installing new decorative material that obscures or damages character-defining interior features or finishes.

Removing historic finishes, such as paint and plaster, or historic wall coverings, such as wallpaper.

Applying paint, plaster, or other finishes to surfaces that have been historically unfinished.

Stripping paint to bare wood rather than repairing or re-applying grained or marbled finishes to features such as doors and paneling.

Changing the type of finish or its color, such as painting a previously varnished wood feature.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged interior features and finishes as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged interior feature or finish until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining masonry, wood, and architectural metals that comprise interior features through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coatings systems.

Protecting interior features and finishes against arson and vandalism before project work begins, boarding-up windows, and installing fire alarm systems that are keyed to local protection agencies.

Protecting interior features such as a staircase, mantel, or decorative finishes and

wall coverings against damage during project work by covering them with heavy canvas or plastic sheets.

Careful documentation of a building's physical condition is the critical first step in determining an appropriate level of intervention. This may include documenting a particular problem, such as this cracked ceiling (left); or relating the historical research to existing materials and features (right). Photos: NPS files.

Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as wall coverings, parquet flooring and panelling.

Removing damaged or deteriorated paints and finishes to the next sound layer using the gentlest method possible, then repainting or refinishing using compatible paint or other coating systems.

Repainting with colors that are appropriate to the historic building.

Limiting abrasive cleaning methods to certain industrial warehouse buildings where the interior masonry or plaster features do not have distinguishing design, detailing, tooling, or finishes; and where wood features are not finished, molded, beaded, or worked by hand. Abrasive cleaning should only be considered after other, gentler methods have been proven ineffective.

Evaluating the existing condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to interior features and finishes will be necessary.

NOT RECOMMENDED

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of interior features results.

Permitting entry into historic buildings through unsecured or broken windows and doors so that the interior features and finishes are damaged by exposure to weather or vandalism.

Stripping interiors of features such as woodwork, doors, windows, light fixtures, copper piping, radiators; or of decorative materials.

Failing to provide proper protection of interior features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.

Failing to take new use patterns into consideration so that interior features and finishes are damaged.

Using destructive methods such as propane or butane torches or sandblasting to remove paint or other coatings. These methods can irreversibly damage the historic materials that comprise interior features.

Using new paint colors that are inappropriate to the historic building.

Changing the texture and patina of character-defining features through sandblasting or use of abrasive methods to remove paint, discoloration or plaster. This includes both exposed wood (including structural members) and masonry.

Failing to undertake adequate measures to assure the protection of interior features and finishes.

top

Repair

RECOMMENDED

Repairing historic interior features and finishes by reinforcing the materials using recognized preservation methods. The new work should match the old in material, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

In Preservation, an appropriate level of intervention is established prior to work in order to maximize retention of historic materials. (a) A conservator is applying adhesive to 19th century composition ornament that has delaminated from its wood substrate. (b) The compo fragment is carefully held in place until the quick-setting adhesive takes hold. Photos: Jonathan Thornton.

NOT RECOMMENDED

Removing materials that could be repaired, using improper techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of repeated interior features when there are surviving prototypes such as stairs, balustrades, wood panelling, columns; or decorative wall coverings or ornamental tin or plaster ceilings. New work should match the old in material, design, color, and texture; and

be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire interior feature when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the interior feature; or failing to properly document the new work.

INTERIOR
mechanical systems

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, grilles, plumbing fixtures, switchplates, and lights.

Modern heating or cooling devices usually add little to the interior character of a building; but historically, radiators, for instance, may have contributed to the interior character by virtue of their size or shape, or because of their specially designed bases, piping, and decorative grillage or enclosures.

NOT RECOMMENDED

Removing or altering visible features of mechanical systems that are important in defining the overall historic character of the building so that, as a result, the character is diminished.

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged mechanical systems as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged mechanical system until additional work is undertaken, thus allowing further damage to occur to the historic building.

top

Protect and Maintain

-GUIDELINES-

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THE STANDARDS

RECOMMENDED

Protecting and maintaining mechanical, plumbing, and electrical systems and their features through cyclical cleaning and other appropriate measures.

Preventing accelerated deterioration of mechanical systems by providing adequate ventilation of attics, crawlspaces, and cellars so that moisture problems are avoided.

Improving the energy efficiency of existing mechanical systems to help reduce the need for elaborate new equipment.

NOT RECOMMENDED

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of mechanical systems and their visible features results.

Enclosing mechanical systems in areas that are not adequately ventilated so that deterioration of the systems results.

Installing unnecessary climate control systems which can add excessive moisture to the building. This additional moisture can either condense inside, damaging interior surfaces, or pass through interior walls to the exterior, potentially damaging adjacent materials as it migrates.

top

Repair

RECOMMENDED

Repairing mechanical systems by augmenting or upgrading system parts, such as installing new pipes and ducts; rewiring; or adding new compressors or boilers.

NOT RECOMMENDED

Replacing a mechanical system or its functional parts when it could be upgraded and retained.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind those visible features of mechanical systems that are either extensively deteriorated or are prototypes such as ceiling fans, switchplates, radiators, grilles, or plumbing fixtures.

A systematic approach, involving preservation planning, preservation design, and a follow-up program of monitoring and maintenance, can ensure that new systems are successfully added--or

existing systems are suitably upgraded--while preserving the historic integrity of the building. Here, a return grille is successfully screened behind the arch.

Installing a new mechanical system if required, so that it causes the least alteration possible to the building.

Providing adequate structural support for new mechanical equipment.

Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.

Installing air conditioning in such a manner that historic features are not damaged or obscured and excessive moisture is not generated that will accelerate deterioration of historic materials.

NOT RECOMMENDED

Installing a visible replacement feature that does not convey the same visual appearance.

Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.

Failing to consider the weight and design of new mechanical equipment so that, as a result, historic structural members or finished surfaces are weakened or cracked.

Installing vertical runs of ducts, pipes, and cables in places where they will obscure character-defining features.

Concealing mechanical equipment in walls or ceilings in a manner that requires excessive removal of historic building material.

Cutting through features such as masonry walls in order to install air conditioning units.

site

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying, retaining, and preserving buildings and their features as well as features of the site that are important in defining its overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; furnishings such as lights, fences, or benches; decorative elements such as sculpture, statuary or monuments; water features including fountains, streams, pools, or lakes; and subsurface archeological features which are important in defining the history of the site.

Retaining the historic relationship between buildings and the landscape.

Drayton Hall, near Charleston, South Carolina, is an excellent example of an evolved 18th century plantation. Of particular note in this photograph are the landscape features added in the late 19th century--a reflecting pond and rose mound. With an overall Preservation treatment plan, these later features have been retained and protected. If a Restoration treatment had been selected, later features of the landscape as well as changes to the house would have been removed. Photo: Courtesy, National Trust for Historic Preservation.

NOT RECOMMENDED

Altering buildings and their features or site features which are important in defining the overall historic character of the property so that, as a result, the character is diminished.

Removing or relocating buildings or landscape features, thus destroying the historic relationship between buildings and the landscape.

top

Stabilize

-GUIDELINES-

The Approach

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Setting

Special Requirements
Energy Efficiency
Accessibility
Health + Safety

THE STANDARDS

RECOMMENDED

Stabilizing deteriorated or damaged building and site features as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged building or site feature until additional work is undertaken, thus allowing further damage to occur to the building site.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining buildings and sites by providing proper drainage to assure that water does not erode foundation walls; drain toward the building; or damage or erode the landscape.

Minimizing disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying or damaging important landscape features or archeological resources.

The Slatter Family Tomb in Mobile, Alabama, consisting of a cast-iron mausoleum and fence, exhibits the wide range of uses of the material in the 19th century. These historic materials should be carefully maintained and repaired.Photo: Jack E. Boucher, HABS Collection.

Surveying and documenting areas where the terrain will be altered to determine the potential impact to important landscape features or archeological resources.

Protecting, e.g., preserving in place, important archeological resources.

Planning and carrying out any necessary investigation using professional archeologists and modern archeological methods when preservation in place is not feasible.

Preserving important landscape features, including ongoing maintenance of historic plant material.

Protecting building and landscape features against arson and vandalism before preservation work begins, i.e., erecting protective fencing and installing alarm systems that are keyed into local protection agencies.

Providing continued protection of historic building materials and plant features through appropriate cleaning, rust removal, limited paint removal, and re-application of protective coating systems; and pruning and vegetation management.

Evaluating the existing condition of materials and features to determine whether more than protection and maintenance are required, that is, if repairs to building and site features will be necessary.

NOT RECOMMENDED

Failing to maintain adequate site drainage so that buildings and site features are damaged or destroyed; or alternatively, changing the site grading so that water no longer drains properly.

Introducing heavy machinery into areas where it may disturb or damage important landscape features or archeological resources.

Failing to survey the building site prior to beginning work which results in damage to, or destruction of, important landscape features or archeological resources.

Leaving known archeological material unprotected so that it is damaged during preservation work.

Permitting unqualified personnel to perform data recovery on archeological resources so that improper methodology results in the loss of important archeological material.

Allowing important landscape features to be lost or damaged due to a lack of maintenance.

Permitting the property to remain unprotected so that the building and landscape features or archeological resources are damaged or destroyed.

Removing or destroying features from the buildings or site such as wood siding, iron fencing, masonry balustrades, or plant material.

Failing to provide adequate protection of materials on cyclical basis so that deterioration of building and site feature results.

Failing to undertake adequate measures to assure the protection of building and site features.

top

Repair

RECOMMENDED

Repairing features of the building and site by reinforcing historic materials using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing materials that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of the building or site where there are surviving prototypes such as part of a fountain, or portions of a walkway. New work should match the old in materials, design, color, and texture; and be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Replacing an entire feature of the building or site when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the building site feature; or failing to properly document the new work.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

setting
(District/Neighborhood)

HISTORICAL OVERVIEW

Identify Stabilize Protect Repair Replace in Kind

Identify, Retain and Preserve

RECOMMENDED

Identifying retaining, and preserving building and landscape features which are important in defining the historic character of the setting. Such features can include roads and streets, furnishings such as lights or benches, vegetation, gardens and yards, adjacent open space such as fields, parks, commons or woodlands, and important views or visual relationships.

Retaining the historic relationship between buildings and landscape features of the setting. For example, preserving the relationship between a town common and its adjacent historic houses, municipal buildings, historic roads, and landscape features.

The goal of Preservation is to retain the historic form, materials, and features of the building and its setting as they have changed--or evolved--over time. This bank barn was built in the 1820s, then enlarged in 1898 and again in 1914. Today, it continues its role as a working farm structure as a result of sensitive preservation work. This included foundation re-grading; a new gutter system; structural strengthening; and replacement of a severely deteriorated metal roof. Photo: Jack E. Boucher, HABS.

NOT RECOMMENDED

Altering those features of the setting which are important in defining the historic character.

Altering the relationship between the buildings and landscape features within the setting by widening existing streets, changing landscape materials, or constructing inappropriately located new streets or parking.

Removing or relocating historic buildings or landscape features, thus destroying their historic relationship within the setting.

-GUIDELINES-

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Energy Efficiency
Accessibility
Health + Safety

THE STANDARDS

top

Stabilize

RECOMMENDED

Stabilizing deteriorated or damaged building and landscape features of the setting as a preliminary measure, when necessary, prior to undertaking appropriate preservation work.

NOT RECOMMENDED

Failing to stabilize a deteriorated or damaged building or landscape feature of the setting until additional work is undertaken, thus allowing further damage to the setting to occur.

top

Protect and Maintain

RECOMMENDED

Protecting and maintaining historic building materials and plant features through appropriate cleaning, rust removal, limited paint removal, and reapplication of protective coating systems; and pruning and vegetation management.

Patterns on the land have been preserved through the continuation of traditional uses, such as the grape fields at the Sterling Vineyards in Calistoga, California. Photo: NPS files.

Protecting building and landscape features against arson and vandalism before preservation work begins by erecting protective fencing and installing alarm systems that are keyed into local preservation agencies.

Evaluating the existing condition of the building and landscape features to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

NOT RECOMMENDED

Failing to provide adequate protection of materials on a cyclical basis which results in the deterioration of building and landscape features.

Permitting the building and setting to remain unprotected so that interior or exterior features are damaged.

Stripping or removing features from buildings or the setting such as wood siding, iron fencing, terra cotta balusters, or plant material.

Failing to undertake adequate measures to assure the protection of building and landscape features.

top

Repair

RECOMMENDED

Repairing features of the building and landscape using recognized preservation methods. The new work should be unobtrusively dated to guide future research and treatment.

NOT RECOMMENDED

Removing material that could be repaired, using improper repair techniques, or failing to document the new work.

top

The following work is highlighted to indicate that it represents the greatest degree of intervention generally recommended within the treatment Preservation, and should only be considered after protection, stabilization, and repair concerns have been addressed.

Limited Replacement in Kind

RECOMMENDED

Replacing in kind extensively deteriorated or missing parts of building and landscape features where there are surviving prototypes such as porch balustrades or paving materials.

NOT RECOMMENDED

Replacing an entire feature of the building or landscape when limited replacement of deteriorated and missing parts is appropriate.

Using replacement material that does not match the building or landscape feature; or failing to properly document the new work.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

SPECIAL REQUIREMENTS

energy efficiency

HISTORICAL OVERVIEW

Although the work in the following sections is quite often an important aspect of preservation projects, it is usually not part of the overall process of preserving character-defining features (maintenance, repair, and limited replacement); rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, alter, or damage character-defining features in the process of preservation work.

Masonry/Wood/Architectural Metals

RECOMMENDED

Installing thermal insulation in attics and in unheated cellars and crawlspaces to increase the efficiency of the existing mechanical systems.

Installing insulating material on the inside of masonry walls to increase energy efficiency where there is no character-defining interior molding around the windows or other interior architectural detailing.

NOT RECOMMENDED

Applying thermal insulation with a high moisture content in wall cavities which may damage historic fabric.

Installing wall insulation without considering its effect on interior molding or other architectural detailing.

top

Windows

RECOMMENDED

Utilizing the inherent energy conserving features of a building by maintaining windows and louvered blinds in good operable condition for natural ventilation.

Early builders and architects dealt with the poor thermal properties of windows in two ways. First, the number of windows in a building was kept to only those necessary to provide adequate light and ventilation. Second, to minimize the heat gain or loss from windows, historic buildings often included

interior or exterior shutters, interior venetian blinds, curtains and drapes, or exterior awnings. Photo: NPS files.

Improving thermal efficiency with weatherstripping, storm windows, caulking, interior shades, and if historically appropriate, blinds and awnings.

Installing interior storm windows with air-tight gaskets, ventilating holes, and/or removable clips to insure proper maintenance and to avoid condensation damage to historic windows.

Installing exterior storm windows which do not damage or obscure the windows and frames.

NOT RECOMMENDED

Removing historic shading devices rather than keeping them in an operable condition.

Replacing historic multi-paned sash with new thermal sash utilizing false muntins.Installing interior storm windows that allow moisture to accumulate and damage the window.

Installing new exterior storm windows which are inappropriate in size or color.

Replacing windows or transoms with fixed thermal glazing or permitting windows and transoms to remain inoperable rather than utilizing them for their energy conserving potential.

top

Entrances and Porches

RECOMMENDED

Maintaining porches and double vestibule entrances so that they can retain heat or block the sun and provide natural ventilation.

This 19th c. building in Massachusetts employed several energy-conserving features in its historic design, including shade trees, roof overhangs, awnings and

shutters. Photo: HABS collection, NPS.

NOT RECOMMENDED

Changing the historic appearance of the building by enclosing porches.

top

Interior Features

RECOMMENDED

Retaining historic interior shutters and transoms for their inherent energy conserving features.

NOT RECOMMENDED

Removing historic interior features which play an energy conserving role.

top

Mechanical Systems

RECOMMENDED

Improving energy efficiency of existing mechanical systems by installing insulation in attics and basements.

NOT RECOMMENDED

Replacing existing mechanical systems that could be repaired for continued use.

top

Building Site

RECOMMENDED

Retaining plant materials, trees, and landscape features which perform passive solar energy functions such as sun shading and wind breaks.

NOT RECOMMENDED

Removing plant materials, trees, and landscape features that perform passive solar energy functions.

top

Setting(District/Neighborhood)

RECOMMENDED

Maintaining those existing landscape features which moderate the effects of the climate on the setting such as deciduous trees, evergreen wind-blocks, and lakes or ponds.

NOT RECOMMENDED

Stripping the setting of landscape features and landforms so that the effects of wind, rain, and sun result in accelerated deterioration of the historic building.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

SPECIAL REQUIREMENTS

accessibility considerations

HISTORICAL OVERVIEW

Although the work in the following sections is quite often an important aspect of preservation projects, it is usually not part of the overall process of preserving character-defining features (maintenance, repair, and limited replacement); rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, alter, or damage character-defining features in the process of preservation work.

RECOMMENDED

Identifying the historic building's character-defining spaces, features, and finishes so that accessibility code-required work will not result in their damage or loss.

Complying with barrier-free access requirements, in such a manner that character-defining spaces, features, and finishes are preserved.

Working with local disability groups, access specialists, and historic preservation specialists to determine the most appropriate solution to access problems.

Providing barrier-free access that promotes independence for the disabled person to the highest degree practicable, while preserving significant historic features.

A significant entrance may be difficult to modify. Although a special challenge, sensitive changes can almost always be made to provide access while preserving the unique historic character. Photo: NPS files.

Finding solutions to meet accessibility requirements that minimize the impact on the historic building and its site, such as compatible ramps, paths, and lifts.

NOT RECOMMENDED

Undertaking code-required alterations before identifying those spaces, features, or finishes which are character-defining and must therefore be preserved.

Altering, damaging, or destroying character-defining features in attempting to comply with accessibility requirements.

Making changes to buildings without first seeking expert advice from access specialists and historic preservationists to determine solutions.

-GUIDELINES-

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Accessibility
Health + Safety

THE STANDARDS

Making access modifications that do not provide a reasonable balance between independent, safe access and preservation of historic features.

Making modifications for accessibility without considering the impact on the historic building and its site.

HISTORICAL OVERVIEW - **preserving** - REHABILITATING - RESTORING - RECONSTRUCTING main - credits - email

NATIONAL PARK SERVICE

STANDARDS FOR PRESERVATION AND GUIDELINES FOR PRESERVING HISTORIC BUILDINGS

SPECIAL REQUIREMENTS

health + safety considerations

HISTORICAL OVERVIEW

Although the work in the following sections is quite often an important aspect of preservation projects, it is usually not part of the overall process of preserving character-defining features (maintenance, repair, and limited replacement); rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, alter, or damage character-defining features in the process of preservation work.

RECOMMENDED

Identifying the historic building's character-defining spaces, features, and finishes so that code-required work will not result in their damage or loss.

Complying with health and safety codes, including seismic code requirements, in such a manner that character-defining spaces, features, and finishes are preserved.

Removing toxic building materials only after thorough testing has been conducted and only after less invasive abatement methods have been shown to be inadequate.

Deteriorating operable windows often contribute to lead dust in a house. In homes with small children, floors and other surfaces should be kept as clean as possible to avoid lead contamination.

Providing workers with appropriate personal protective equipment for hazards found in the worksite.

Working with local code officials to investigate systems, methods, or devices of equivalent or superior effectiveness and safety to those prescribed by code so that unnecessary alterations can be avoided.

Upgrading historic stairways and elevators to meet health and safety codes in a manner that assures their preservation, i.e., so that they are not damaged or obscured.

Installing sensitively designed fire suppression systems, such as sprinkler systems that result in retention of historic features and finishes.

-GUIDELINES-

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THE STANDARDS

Applying fire-retardant coatings, such as intumescent paints, which expand during fire to add thermal protection to steel.

Adding a new stairway or elevator to meet health and safety codes in a manner that preserves adjacent character-defining features and spaces.

NOT RECOMMENDED

Undertaking code-required alterations to a building or site before identifying those spaces, features, or finishes which are character-defining and must therefore be preserved.

Altering, damaging, or destroying character-defining spaces, features, and finishes while making modifications to a building or site to comply with safety codes.

Destroying historic interior features and finishes without careful testing and without considering less invasive abatement methods.

Removing unhealthful building materials without regard to personal and environmental safety.

Making changes to historic buildings without first exploring equivalent health and safety systems, methods, or devices that may be less damaging to historic spaces, features, and finishes.

Damaging or obscuring historic stairways and elevators or altering adjacent spaces in the process of doing work to meet code requirements.

Covering character-defining wood features with fire-resistant sheathing which results in altering their visual appearance.

Using fire-retardant coatings if they damage or obscure character-defining features.

Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding a new code-required stairway or elevator.