

## STANDARDS FOR REHABILITATION & GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

# Rehabilitation

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



## Standards for Rehabilitation

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive 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. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
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. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
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.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

# GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

## INTRODUCTION

In **Rehabilitation**, historic building materials and character-defining features are protected and maintained as they are in the treatment Preservation. However, greater latitude is given in the **Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings** to replace extensively deteriorated, damaged, or missing features using either the same material or compatible substitute materials. Of the four treatments, only **Rehabilitation** allows alterations and the construction of a new addition, if necessary for a continuing or new use for the historic building.

### Identify, Retain, and Preserve Historic Materials and Features

The guidance for the treatment **Rehabilitation** 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 to preserve that character. Therefore, guidance on *identifying, retaining, and preserving* character-defining features is always given first.

### Protect and Maintain Historic Materials and Features

After identifying those materials and features that are important and must be retained in the process of **Rehabilitation** work, then *protecting and maintaining* them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. Protection includes the maintenance of historic materials and features as well as ensuring that the property is protected before and

during rehabilitation work. A historic building undergoing rehabilitation will often require more extensive work. Thus, an overall evaluation of its physical condition should always begin at this level.

### Repair Historic Materials and Features

Next, when the physical condition of character-defining materials and features warrants additional work, *repairing* is recommended. **Rehabilitation** guidance for the repair of historic materials, such as masonry, again begins with the least degree of intervention possible. In rehabilitation, repairing also includes the limited replacement in kind or with a compatible substitute material of extensively deteriorated or missing components of features when there are surviving prototypes features that can be substantiated by documentary and physical evidence. Although using the same kind of material is always the preferred option, a substitute material may be an acceptable alternative if the form, design, and scale, as well as the substitute material itself, can effectively replicate the appearance of the remaining features.

### Replace Deteriorated Historic Materials and Features

Following repair in the hierarchy, **Rehabilitation** guidance is provided for *replacing* an entire character-defining feature with new material because the level of deterioration or damage of materials precludes repair. If the missing feature is character defining or if it is critical to the survival of the building (e.g., a roof), it should be replaced to match the historic feature based on physical or his-

toric documentation of its form and detailing. As with repair, the preferred option is always replacement of the entire feature in kind (i.e., with the same material, such as wood for wood). However, when this is not feasible, a compatible substitute material that can reproduce the overall appearance of the historic material may be considered.

It should be noted that, while the National Park Service guidelines recommend the replacement of an entire character-defining feature that is extensively deteriorated, the guidelines never recommend removal and replacement with new material of a feature that could reasonably be repaired and, thus, preserved.

### Design for the Replacement of Missing Historic Features

When an entire interior or exterior feature is missing, such as a porch, it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing through the process of carefully documenting the historic appearance. If the feature is not critical to the survival of the building, allowing the building to remain without the feature is one option. But if the missing feature is important to the historic character of the building, its replacement is always recommended in the **Rehabilitation** guidelines as the first, or preferred, course of action. If adequate documentary and physical evidence exists, the feature may be accurately reproduced. A second option in a rehabilitation treatment for replacing a missing feature, particularly when the available information about the feature is inadequate to permit an accurate reconstruction, is to *design* a new feature that is compatible with the overall historic character of the building. The new design should always take into account the size, scale, and material of the building itself and should be clearly differentiated from the authentic historic features. For properties that have changed over time, and where those changes have acquired

significance, reestablishing missing historic features generally should not be undertaken if the missing features did not coexist with the features currently on the building. Juxtaposing historic features that did not exist concurrently will result in a false sense of the building's history.

### Alterations

Some exterior and interior alterations to a historic building are generally needed as part of a **Rehabilitation** project to ensure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include changes to the site or setting, such as the selective removal of buildings or other features of the building site or setting that are intrusive, not character defining, or outside the building's period of significance.

### Code-Required Work: Accessibility and Life Safety

Sensitive solutions to meeting code requirements in a **Rehabilitation** project are an important part of protecting the historic character of the building. Work that must be done to meet accessibility and life-safety requirements must also be assessed for its potential impact on the historic building, its site, and setting.

### Resilience to Natural Hazards

Resilience to natural hazards should be addressed as part of a **Rehabilitation** project. A historic building may have existing characteristics or features that help to address or minimize the impacts of natural hazards. These should always be used to best advantage when considering new adaptive treatments so as to have the least impact on the historic character of the building, its site, and setting.

## Sustainability

Sustainability should be addressed as part of a **Rehabilitation** project. Good preservation practice is often synonymous with sustainability. Existing energy-efficient features should be retained and repaired. Only sustainability treatments should be considered that will have the least impact on the historic character of the building.

The topic of sustainability is addressed in detail in *The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings*.

## New Exterior Additions and Related New Construction

**Rehabilitation** is the only treatment that allows expanding a historic building by enlarging it with an addition. However, the **Rehabilitation** guidelines emphasize that new additions should be considered only after it is determined that meeting specific new needs cannot be achieved by altering non-character-defining interior spaces. If the use cannot be accommodated in this way, then an attached exterior addition may be considered. New additions should be designed and constructed so that the character-defining features of the historic building, its site, and setting are not negatively impacted. Generally, a new addition should be subordinate to the historic building. A new addition should be compatible, but differentiated enough so that it is not confused as historic or original to the building. The same guidance applies to new construction so that it does not negatively impact the historic character of the building or its site.

***Rehabilitation as a Treatment.*** *When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular time is not appropriate, Rehabilitation may be considered as a treatment. Prior to undertaking work, a documentation plan for Rehabilitation should be developed.*

MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

RECOMMENDED

NOT RECOMMENDED

|   |  |
|---|--|
| <p><b>Identifying, retaining and preserving</b> masonry features that are important in defining the overall historic character of the building (such as walls, brackets, railings, cornices, window and door surrounds, steps, and columns) and decorative ornament and other details, such as tooling and bonding patterns, coatings, and color.</p> | <p>Removing or substantially changing masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Replacing or rebuilding a major portion of exterior masonry walls that could be repaired, thereby destroying the historic integrity of the building.</p> <p>Applying paint or other coatings (such as stucco) to masonry that has been historically unpainted or uncoated to create a new appearance.</p> <p>Removing paint from historically-painted masonry.</p> |
| <p><b>Protecting and maintaining</b> masonry by ensuring that historic drainage features and systems that divert rainwater from masonry surfaces (such as roof overhangs, gutters, and downspouts) are intact and functioning properly.</p>   | <p>Failing to identify and treat the causes of masonry deterioration, such as leaking roofs and gutters or rising damp.</p>  |
| <p>Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.</p>  | <p>Cleaning masonry surfaces when they are not heavily soiled to create a “like-new” appearance, thereby needlessly introducing chemicals or moisture into historic materials.</p>   |
| <p>Carrying out masonry cleaning tests when it has been determined that cleaning is appropriate. Test areas should be examined to ensure that no damage has resulted and, ideally, monitored over a sufficient period of time to allow long-range effects to be predicted.</p>  | <p>Cleaning masonry surfaces without testing or without sufficient time for the testing results to be evaluated.</p>   |



[1] An alkaline-based product is appropriate to use to clean historic marble because it will not damage the marble, which is acid sensitive.





[2] Mid-century modern building technology made possible the form of this parabola-shaped structure and its thin concrete shell construction. Built in 1961 as the lobby of the La Concha Motel in Las Vegas, it was designed by Paul Revere Williams, one of the first prominent African-American architects. It was moved to a new location and rehabilitated to serve as the Neon Museum, and is often cited as an example of Google architecture. *Credit: Photographed with permission at The Neon Museum, Las Vegas, Nevada.*

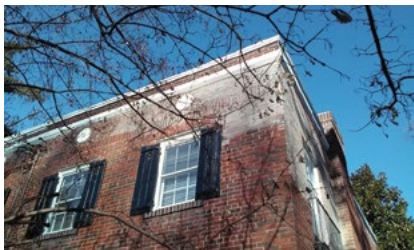
MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

RECOMMENDED

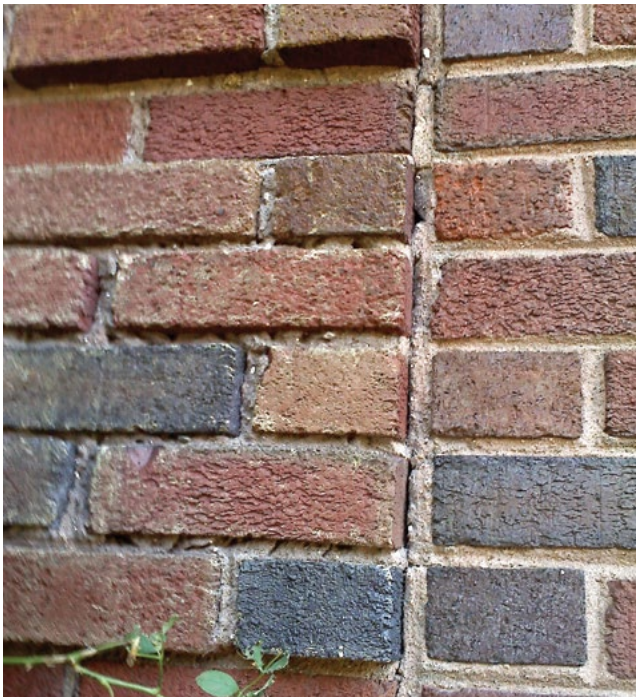
Cleaning soiled masonry surfaces with the gentlest method possible, such as using low-pressure water and detergent and natural bristle or other soft-bristle brushes.

NOT RECOMMENDED

- Cleaning or removing paint from masonry surfaces using most abrasive methods (including sandblasting, other media blasting, or high-pressure water) which can damage the surface of the masonry and mortar joints.
- Using a cleaning or paint-removal method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.
- Cleaning with chemical products that will damage some types of masonry (such as using acid on limestone or marble), or failing to neutralize or rinse off chemical cleaners from masonry surfaces.



[3] **Not Recommended:**  
The white film on the upper corner of this historic brick row house is the result of using a scrub or slurry coating, rather than traditional repointing by hand, which is the recommended method.



[4] **Not Recommended:**  
The quoins on the left side of the photo show that high-pressure abrasive blasting used to remove paint can damage even early 20th-century, hard-baked, textured brick and erode the mortar, whereas the same brick on the right, which was not abrasively cleaned, is undamaged.



## MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Using biodegradable or environmentally-safe cleaning or paint-removal products.   |  |
| Using paint-removal methods that employ a poultice to which paint adheres, when possible, to neatly and safely remove old lead paint.   |  |
| Using coatings that encapsulate lead paint, when possible, where the paint is not required to be removed to meet environmental regulations.   |  |
| Allowing only trained conservators to use abrasive or laser-cleaning methods, when necessary, to clean hard-to-reach, highly-carved, or detailed decorative stone features.   |  |
| Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., hand scraping) prior to repainting.   | Removing paint that is firmly adhered to masonry surfaces, unless the building was unpainted historically and the paint can be removed without damaging the surface.   |
| Applying compatible paint coating systems to historically-painted masonry following proper surface preparation.   | Failing to follow manufacturers' product and application instructions when repainting masonry features.  |
| Repainting historically-painted masonry features with colors that are appropriate to the historic character of the building and district.   | Using paint colors on historically-painted masonry features that are not appropriate to the historic character of the building and district.   |
| Protecting adjacent materials when cleaning or removing paint from masonry features.  | Failing to protect adjacent materials when cleaning or removing paint from masonry features.   |
| Evaluating the overall condition of the masonry to determine whether more than protection and maintenance, such as repairs to masonry features, will be necessary.  | Failing to undertake adequate measures to ensure the protection of masonry features.   |
| <b>Repairing</b> masonry by patching, splicing, consolidating, or otherwise reinforcing the masonry using recognized preservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing parts of masonry features when there are surviving prototypes, such as terra-cotta brackets or stone balusters. | <p>Removing masonry that could be stabilized, repaired, and conserved, or using untested consolidants and unskilled personnel, potentially causing further damage to historic materials.</p> <p>Replacing an entire masonry feature, such as a cornice or balustrade, when repair of the masonry and limited replacement of deteriorated or missing components are feasible.</p> |

## MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| 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, or damaged plaster on the interior.  | Removing non-deteriorated mortar from sound joints and then repointing the entire building to achieve a more uniform appearance.  |
| Removing deteriorated lime mortar carefully by hand raking the joints to avoid damaging the masonry.  |   |
| Using power tools only on horizontal joints on brick masonry in conjunction with hand chiseling to remove hard mortar that is deteriorated or that is a non-historic material which is causing damage to the masonry units. Mechanical tools should be used only by skilled masons in limited circumstances and generally not on short, vertical joints in brick masonry. | Allowing unskilled workers to use masonry saws or mechanical tools to remove deteriorated mortar from joints prior to repointing.   |
| Duplicating historic mortar joints in strength, composition, color, and texture when repointing is necessary. In some cases, a lime-based mortar may also be considered when repointing Portland cement mortar because it is more flexible.   | <p>Repointing masonry units with mortar of high Portland cement content (unless it is the content of the historic mortar).</p> <p>Using “surface grouting” or a “scrub” coating technique, such as a “sack rub” or “mortar washing,” to repoint exterior masonry units instead of traditional repointing methods.</p> <p>Repointing masonry units (other than concrete) with a synthetic caulking compound instead of mortar.</p> |
| Duplicating historic mortar joints in width and joint profile when repointing is necessary.   | Changing the width or joint profile when repointing.  |
| Repairing stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, composition, color, and texture.  | <p>Removing sound stucco or repairing with new stucco that is different in composition from the historic stucco.</p> <p>Patching stucco or concrete without removing the source of deterioration.</p> <p>Replacing deteriorated stucco with synthetic stucco, an exterior finish and insulation system (EFIS), or other non-traditional materials.</p>  |

## MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| Using mud plaster or a compatible lime-plaster adobe render, when appropriate, to repair adobe.   | Applying cement stucco, unless it already exists, to adobe.             |
| Sealing joints in concrete with appropriate flexible sealants and backer rods, when necessary.  |   |
| Cutting damaged concrete back to remove the source of deterioration, such as corrosion on metal reinforcement bars. The new patch must be applied carefully so that it will bond satisfactorily with and match the historic concrete. | Patching damaged concrete without removing the source of deterioration. |



[5] Rebars in the reinforced concrete ceiling have rusted, causing the concrete to spall. The rebars must be cleaned of rust before the concrete can be patched.

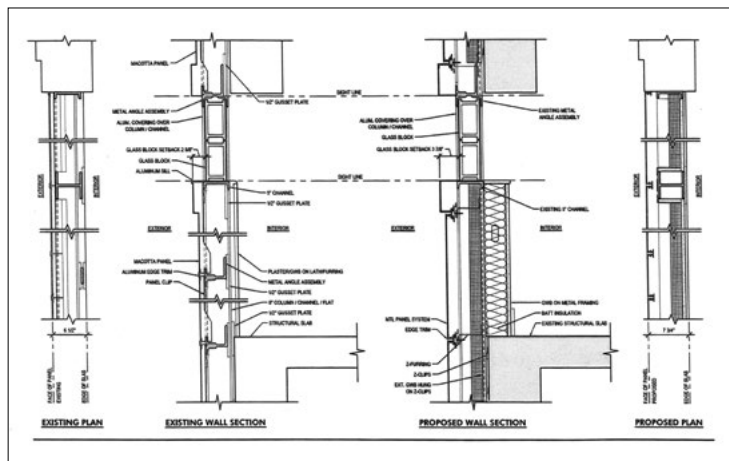
[6] Some areas of the concrete brise soleil screen on this building constructed in 1967 are badly deteriorated. If the screen cannot be repaired, it may be replaced in kind or with a composite substitute material with the same appearance as the concrete.







[7] (a) J.W. Knapp's Department Store, built 1937-38, in Lansing, MI, was constructed with a proprietary material named "Maul Macotta" made of enameled steel and cast-in-place concrete panels. Prior to its rehabilitation, a building inspection revealed that, due to a flaw in the original design and construction, the material was deteriorated beyond repair. The architects for the rehabilitation project devised a replacement system (b) consisting of enameled aluminum panels that matched the original colors (c). Photos and drawing (a-b): Quinn Evans Architects; Photo (c): James Haefner Photography.



## MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| Using a non-corrosive, stainless-steel anchoring system when replacing damaged stone, concrete, or terra-cotta units that have failed.   |   |
| Applying 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.   | Applying waterproof, water-repellent, or non-original historic coatings (such as stucco) to masonry as a substitute for repointing and masonry repairs.   |
| Applying permeable, anti-graffiti coatings to masonry when appropriate.  | Applying water-repellent or anti-graffiti coatings that change the historic appearance of the masonry or that may trap moisture if the coating is not sufficiently permeable.   |
| <b>Replacing</b> in kind an entire masonry feature that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. Examples can include large sections of a wall, a cornice, pier, or parapet. If using the same kind of material is not feasible, then a compatible substitute material may be considered. | Removing a masonry feature that is unrepairable and not replacing it, or replacing it with a new feature that does not match.<br><br>Using substitute material for the replacement that does not convey the same appearance of the surviving components of the masonry feature.   |
| <i>The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.</i>   |   |
| Designing the Replacement for Missing Historic Features  |   |
| Designing and installing a replacement masonry feature, such as a step or door pediment, when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.                   | Creating an inaccurate appearance because the replacement for the missing masonry feature is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.<br><br>Introducing a new masonry feature that is incompatible in size, scale, material, or color. |



## WOOD: CLAPBOARD, WEATHERBOARD, SHINGLES, AND OTHER FUNCTIONAL AND DECORATIVE ELEMENTS

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| <p><b>Identifying, retaining and preserving</b> wood features that are important in defining the overall historic character of the building (such as siding, cornices, brackets, window and door surrounds, and steps) and their paints, finishes, and colors.</p> | <p>Removing or substantially changing wood features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the historic wood from a façade instead of repairing or replacing only the deteriorated wood, then reconstructing the façade with new material to achieve a uniform or “improved” appearance.</p> <p>Changing the type of finish, coating, or historic color of wood features, thereby diminishing the historic character of the exterior.</p> <p>Failing to renew failing paint or other coatings that are historic finishes.</p> <p>Stripping historically-painted surfaces to bare wood and applying a clear finish rather than repainting.</p> <p>Stripping paint or other coatings to reveal bare wood, thereby exposing historically-coated surfaces to the effects of accelerated weathering.</p> <p>Removing wood siding (clapboards) or other covering (such as stucco) from log structures that were covered historically, which changes their historic character and exposes the logs to accelerated deterioration.</p> |
| <p><b>Protecting and maintaining</b> wood features by ensuring that historic drainage features that divert rainwater from wood surfaces (such as roof overhangs, gutters, and downspouts) are intact and functioning properly.</p>                                 | <p>Failing to identify and treat the causes of wood deterioration, such as 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 fungal infestation.</p>   |

## WOOD: CLAPBOARD, WEATHERBOARD, SHINGLES, AND OTHER FUNCTIONAL AND DECORATIVE ELEMENTS

### RECOMMENDED

### NOT RECOMMENDED

|   |  |
|---|--|
| Applying chemical preservatives or paint to wood features that are subject to weathering, such as exposed beam ends, outriggers, or rafter tails.   | Using chemical preservatives (such as creosote) which, unless they were used historically, can change the appearance of wood features. |
| Implementing an integrated pest management plan to identify appropriate preventive measures to guard against insect damage, such as installing termite guards, fumigating, and treating with chemicals.   |  |
| Retaining coatings (such as paint) that protect the wood from moisture and ultraviolet light. Paint removal should be considered only when there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate coatings. | Stripping paint or other coatings from wood features without recoating.  |

[8] Rotted clapboards have been replaced selectively with new wood siding to match the originals.



## WOOD: CLAPBOARD, WEATHERBOARD, SHINGLES, AND OTHER FUNCTIONAL AND DECORATIVE ELEMENTS

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| Removing damaged or deteriorated paint to the next sound layer using the gentlest method possible (e.g., hand scraping and hand sanding) prior to repainting. | Using potentially-damaging paint-removal methods on wood surfaces, such as open-flame torches, orbital sanders, abrasive methods (including sandblasting, other media blasting, or high-pressure water), or caustic paint-removers.<br><br>Removing paint that is firmly adhered to wood surfaces.                            |
| Using chemical strippers primarily to supplement other methods such as hand scraping, hand sanding, and thermal devices.                                      | Failing to neutralize the wood thoroughly after using chemical paint removers so that new paint may not adhere.<br><br>Removing paint from detachable wood features by soaking them in a caustic solution, which may roughen the surface, split the wood, or result in staining from residual acids leaching out of the wood. |
| Using biodegradable or environmentally-safe cleaning or paint-removal products.   |   |
| Using paint-removal methods that employ a poultice to which paint adheres, when possible, to neatly and safely remove old lead paint.                         |   |
| Using thermal devices (such as infrared heaters) carefully to remove paint when it is so deteriorated that total removal is necessary prior to repainting.    | Using a thermal device to remove paint from wood features without first checking for and removing any flammable debris behind them.<br><br>Using thermal devices without limiting the amount of time the wood feature is exposed to heat.   |
| Using coatings that encapsulate lead paint, when possible, where the paint is not required to be removed to meet environmental regulations.                   |   |
| Applying compatible paint coating systems to historically-painted wood following proper surface preparation.  | Failing to follow manufacturers' product and application instructions when repainting wood features.  |
| Repainting historically-painted wood features with colors that are appropriate to the building and district.  | Using paint colors on historically-painted wood features that are not appropriate to the building or district.  |

## WOOD: CLAPBOARD, WEATHERBOARD, SHINGLES, AND OTHER FUNCTIONAL AND DECORATIVE ELEMENTS

### RECOMMENDED

### NOT RECOMMENDED

|  |   |
|--|---|
| Protecting adjacent materials when working on other wood features.   | Failing to protect adjacent materials when working on wood features.              |
| Evaluating the overall condition of the wood to determine whether more than protection and maintenance, such as repairs to wood features, will be necessary. | Failing to undertake adequate measures to ensure the protection of wood features. |



[9] Smooth-surfaced cementitious siding (left) may be used to replace deteriorated wood siding only on secondary elevations that have minimal visibility.

#### [10] Not Recommended:

Cementitious siding with a raised wood-grain texture is not an appropriate material to replace historic wood siding, which has a smooth surface when painted.



## WOOD: CLAPBOARD, WEATHERBOARD, SHINGLES, AND OTHER FUNCTIONAL AND DECORATIVE ELEMENTS

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| <b>Repairing</b> wood by patching, splicing, consolidating, or otherwise reinforcing the wood using recognized conservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing components of wood features when there are surviving prototypes, such as brackets, molding, or sections of siding.   | Removing wood that could be stabilized, repaired, and conserved, or using untested consolidants and unskilled personnel, potentially causing further damage to historic materials.<br><br>Replacing an entire wood feature, such as a cornice or balustrade, when repair of the wood and limited replacement of deteriorated or missing components is feasible.                        |
| <b>Replacing</b> in kind an entire wood feature that is too deteriorated to repair (if the overall form and detailing are still evident) using physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. Examples of such wood features include a cornice, entablature, or a balustrade. If using wood is not feasible, then a compatible substitute material may be considered.       | Removing a wood feature that is unrepairable and not replacing it, or replacing it with a new feature that does not match.<br><br>Using substitute material for the replacement that does not convey the same appearance of the surviving components of the wood feature.  |
| Replacing a deteriorated wood feature or wood siding on a <i>primary</i> or <i>other highly-visible</i> elevation with a new matching wood feature.  | Replacing a deteriorated wood feature or wood siding on a <i>primary</i> or <i>other highly-visible elevation</i> with a composite substitute material.  |
| <i>The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.</i>   |  |
| Designing the Replacement for Missing Historic Features  |  |
| Designing and installing a replacement masonry feature, such as a step or door pediment, when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building. | Creating an inaccurate appearance because the replacement for the missing masonry feature is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.<br><br>Introducing a new wood feature that is incompatible in size, scale, material, or color. |



## METALS: WROUGHT AND CAST IRON, STEEL, PRESSED METAL, TERNEPLATE, COPPER, ALUMINUM, AND ZINC

### RECOMMENDED

### NOT RECOMMENDED

|   |   |
|---|---|
| <p><b>Identifying, retaining, and preserving</b> metal features that are important in defining the overall historic character of the building (such as columns, capitals, pilasters, spandrel panels, or stairways) and their paints, finishes, and colors. The type of metal should be identified prior to work because each metal has its own properties and may require a different treatment.</p> | <p>Removing or substantially changing metal features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the historic metal from a façade instead of repairing or replacing only the deteriorated metal, then reconstructing the façade with new material to achieve a uniform or “improved” appearance.</p> |
| <p><b>Protecting and maintaining</b> metals from corrosion by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.</p>  | <p>Failing to identify and treat the causes of corrosion, such as moisture from leaking roofs or gutters.</p> <p>Placing incompatible metals together without providing an appropriate 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).</p>  |
| <p>Cleaning metals when necessary to remove corrosion prior to repainting or applying appropriate protective coatings.</p>  | <p>Leaving metals that must be protected from corrosion uncoated after cleaning.</p>  |

[11] The stainless steel doors at the entrance to this Art Deco apartment building are important in defining its historic character and should be retained in place.



## METALS: WROUGHT AND CAST IRON, STEEL, PRESSED METAL, TERNEPLATE, COPPER, ALUMINUM, AND ZINC

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Identifying the particular type of metal prior to any cleaning procedure and then testing to ensure that the gentlest cleaning method possible is selected; or, alternatively, determining that cleaning is inappropriate for the particular metal.   | Using cleaning methods which alter or damage the color, texture, or finish of the metal, or cleaning when it is inappropriate for the particular metal.<br><br>Removing the patina from historic metals. The patina may be a protective layer on some metals (such as bronze or copper) as well as a distinctive finish. |
| Using non-corrosive chemical methods to clean soft metals (such as lead, tinplate, terneplate, copper, and zinc) whose finishes can be easily damaged by abrasive methods.  | Cleaning soft metals (such as lead, tinplate, terneplate, copper, and zinc) with abrasive methods (including sandblasting, other abrasive media, or high-pressure water) which will damage the surface of the metal.   |
| Using the least abrasive cleaning method for hard metals (such as cast iron, wrought iron, and steel) to remove paint buildup and corrosion. If hand scraping and wire brushing have proven ineffective, low-pressure abrasive methods may be used as long as they do not abrade or damage the surface. | Using high-pressure abrasive techniques (including sandblasting, other media blasting, or high-pressure water) without first trying gentler cleaning methods prior to cleaning cast iron, wrought iron, or steel.  |
| Applying appropriate paint or other coatings to historically-coated metals after cleaning to protect them from corrosion.   | Applying paint or other coatings to metals (such as copper, bronze or stainless steel) if they were not coated historically, unless a coating is necessary for maintenance.  |
| Repainting historically-painted metal features with colors that are appropriate to the building and district.   | Using paint colors on historically-painted metal features that are not appropriate to the building or district.  |
| Applying an appropriate protective coating (such as lacquer or wax) to a metal feature that was historically unpainted, such as a bronze door, which is subject to heavy use.   |  |

## METALS: WROUGHT AND CAST IRON, STEEL, PRESSED METAL, TERNEPLATE, COPPER, ALUMINUM, AND ZINC

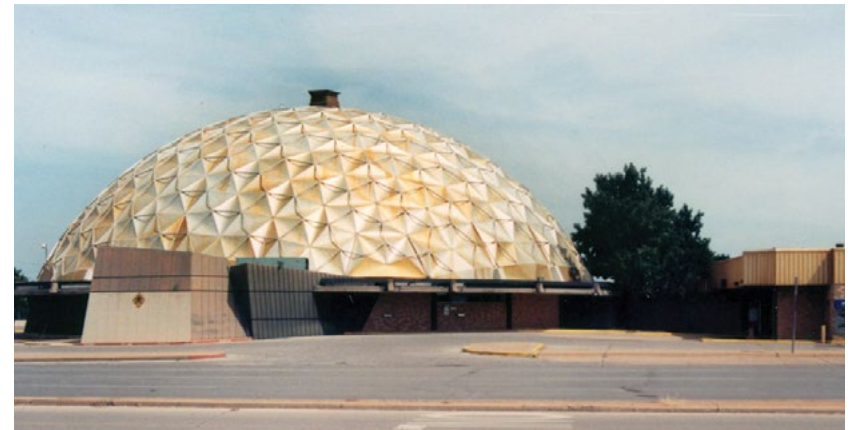
### RECOMMENDED

### NOT RECOMMENDED

|   |  |
|---|--|
| Protecting adjacent materials when cleaning or removing paint from metal features.  | Failing to protect adjacent materials when working on metal features.              |
| Evaluating the overall condition of metals to determine whether more than protection and maintenance, such as repairs to metal features, will be necessary. | Failing to undertake adequate measures to ensure the protection of metal features. |



[12] This historic steel window has been cleaned, repaired, and primed in preparation for painting and reglazing.



[13] The gold-colored, anodized aluminum geodesic dome of the former Citizen's State Bank in Oklahoma City, OK, built in 1958 and designed by Robert Roloff, makes this a distinctive mid-20th century building.



[14] Interior cast-iron columns have been cleaned and repainted as part of the rehabilitation of this historic market building for continuing use.



[15] New enameled-metal panels were replicated to replace the original panels, which were too deteriorated to repair, when the storefront of this early 1950s building was recreated.



## METALS: WROUGHT AND CAST IRON, STEEL, PRESSED METAL, TERNEPLATE, COPPER, ALUMINUM, AND ZINC

### RECOMMENDED

### NOT RECOMMENDED

|   |  |
|---|--|
| <p><b>Repairing</b> metal by reinforcing the metal using recognized preservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing components of features when there are surviving prototypes, such as column capitals or bases, store-fronts, railings and steps, or window hoods.</p>   | <p>Removing metals that could be stabilized, repaired, and conserved, or using improper repair techniques, or unskilled personnel, potentially causing further damage to historic materials.</p>   |
| <p><b>Replacing</b> in kind an entire metal feature that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. Examples of such a feature could include cast-iron porch steps or steel-sash windows. If using the same kind of material is not feasible, then a compatible substitute material may be considered.</p> | <p>Replacing an entire metal feature, such as a column or balustrade, when repair of the metal and limited replacement of deteriorated or missing components are feasible.</p> <p>Removing a metal feature that is unrepairable and not replacing it, or replacing it with a new metal feature that does not match.</p> <p>Using a substitute material for the replacement that does not convey the same appearance of the surviving components of the metal feature or that is physically or chemically incompatible.</p> |
| <p><i>The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.</i></p>   |  |
| <p><b>Designing the Replacement for Missing Historic Features</b></p>   |  |
| <p>Designing and installing a replacement metal feature, such as a metal cornice or cast-iron column, when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.</p>                 | <p>Creating an inaccurate appearance because the replacement for the missing metal feature is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.</p> <p>Introducing a new metal feature that is incompatible in size, scale, material, or color.</p>   |



## ROOFS

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| <b>Identifying, retaining, and preserving</b> roofs and their functional and decorative features that are important in defining the overall historic character of the building. The form of the roof (gable, hipped, gambrel, flat, or mansard) is significant, as are its decorative and functional features (such as cupolas, cresting, parapets, monitors, chimneys, weather vanes, dormers, ridge tiles, and snow guards), roofing material (such as slate, wood, clay tile, metal, roll roofing, or asphalt shingles), and size, color, and patterning. | <p>Removing or substantially changing roofs which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the historic roof or roofing material that is repairable, then rebuilding it with new material to achieve a more uniform or “improved” appearance.</p> <p>Changing the configuration or shape of a roof by adding highly visible new features (such as dormer windows, vents, skylights, or a penthouse).</p> <p>Stripping the roof of sound historic material, such as slate, clay tile, wood, or metal.</p> |
| <b>Protecting and maintaining</b> a roof by cleaning gutters and downspouts and replacing deteriorated flashing. Roof sheathing should also be checked for indications of moisture due to leaks or condensation.   | Failing to clean and maintain gutters and downspouts properly so that water and debris collect and cause damage to roof features, sheathing, and the underlying roof structure.  |
| Providing adequate anchorage for roofing material to guard against wind damage and moisture penetration.   | Allowing flashing, caps, and exposed fasteners to corrode, which accelerates deterioration of the roof.  |
| Protecting a leaking roof with a temporary waterproof membrane with a synthetic underlayment, roll roofing, plywood, or a tarpaulin until it can be repaired.  | Leaving a leaking roof unprotected so that accelerated deterioration of historic building materials (such as masonry, wood, plaster, paint, and structural members) occurs.  |
| Repainting a roofing material that requires a protective coating and was painted historically (such as a terneplate metal roof or gutters) as part of regularly-scheduled maintenance.   | Failing to repaint a roofing material that requires a protective coating and was painted historically as part of regularly-scheduled maintenance.  |
| Applying compatible paint coating systems to historically-painted roofing materials following proper surface preparation.  | Applying paint or other coatings to roofing material if they were not coated historically.   |
| Protecting a roof covering when working on other roof features.  | Failing to protect roof coverings when working on other roof features.   |
| Evaluating the overall condition of the roof and roof features to determine whether more than protection and maintenance, such as repairs to roof features, will be necessary.   | Failing to undertake adequate measures to ensure the protection of roof features.  |

ROOFS

RECOMMENDED

**Repairing** a roof by ensuring that the existing historic or compatible non-historic roof covering is sound and waterproof. Repair may include the limited replacement in kind or with a compatible substitute material of missing materials (such as wood shingles, slates, or tiles) on a main roof, as well as those extensively deteriorated or missing components of features when there are surviving prototypes, such as ridge tiles, dormer roofing, or roof monitors.

Using corrosion-resistant roof fasteners (e.g., nails and clips) to repair a roof to help extend its longevity.

NOT RECOMMENDED

Replacing an entire roof feature when repair of the historic roofing materials and limited replacement of deteriorated or missing components are feasible.



[16] The deteriorated asphalt shingles of this porch roof are being replaced in kind with matching shingles.

## ROOFS

## RECOMMENDED

## NOT RECOMMENDED

**Replacing** in kind an entire roof covering or feature that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. Examples of such a feature could include a large section of roofing, a dormer, or a chimney. If using the same kind of material is not feasible, then a compatible substitute material may be considered.

Removing a feature of the roof that is unrepairable and not replacing it, or replacing it with a new roof feature that does not match.

Using a substitute material for the replacement that does not convey the same appearance of the roof covering or the surviving components of the roof feature or that is physically or chemically incompatible.

Replacing only missing or damaged roofing tiles or slates rather than replacing the entire roof covering.

Failing to reuse intact slate or tile in good condition when only the roofing substrate or fasteners need replacement.

Replacing an incompatible roof covering or any deteriorated non-historic roof covering with historically-accurate roofing material, if known, or another material that is compatible with the historic character of the building.

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Designing the Replacement for Missing Historic Features**

Designing and installing a new roof covering for a missing roof or a new feature, such as a dormer or a monitor, when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.

Creating an inaccurate appearance because the replacement for the missing roof feature is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.

Introducing a new roof feature that is incompatible in size, scale, material, or color.

## ROOFS

### RECOMMENDED

### NOT RECOMMENDED

#### Alterations and Additions for a New Use

|  |  |
|--|--|
| Installing mechanical and service equipment on the roof (such as heating and air-conditioning units, elevator housing, or solar panels) when required for a new use so that they are inconspicuous on the site and from the public right-of-way and do not damage or obscure character-defining historic features. | Installing roof-top mechanical or service equipment so that it damages or obscures character-defining roof features or is conspicuous on the site or from the public right-of-way.                                     |
| Designing rooftop additions, elevator or stair towers, decks or terraces, dormers, or skylights when required by a new or continuing use so that they are inconspicuous and minimally visible on the site and from the public right-of-way and do not damage or obscure character-defining historic features.      | Changing a character-defining roof form, or damaging or destroying character-defining roofing material as a result of an incompatible rooftop addition or improperly-installed or highly-visible mechanical equipment. |
| Installing a green roof or other roof landscaping, railings, or furnishings that are not visible on the site or from the public right-of-way and do not damage the roof structure.   | Installing a green roof or other roof landscaping, railings, or furnishings that are visible on the site and from the public right-of-way.   |



[17] New wood elements have been used selectively to replace rotted wood on the underside of the roof in this historic warehouse.

## WINDOWS

## RECOMMENDED

## NOT RECOMMENDED

|  |   |
|--|---|
| <p><b>Identifying, retaining, and preserving</b> windows and their functional and decorative features that are important to the overall character of the building. The window material and how the window operates (e.g., double hung, casement, awning, or hopper) are significant, as are its components (including sash, muntins, ogee lugs, glazing, pane configuration, sills, mullions, casings, or brick molds) and related features, such as shutters.</p> | <p>Removing or substantially changing windows or window features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Changing the appearance of windows that contribute to the historic character of the building by replacing materials, finishes, or colors which noticeably change the sash, depth of the reveal, and muntin configurations; the reflectivity and color of the glazing; or the appearance of the frame.</p> <p>Obscuring historic wood window trim with metal or other material.</p> <p>Replacing windows solely because of peeling paint, broken glass, stuck sash, or high air infiltration. These conditions, in themselves, do not indicate that windows are beyond repair.</p> |
| <p><b>Protecting and maintaining</b> the wood or metal which comprises the window jamb, sash, and trim through appropriate treatments, such as cleaning, paint removal, and reapplication of protective coating systems.</p>   | <p>Failing to protect and maintain window materials on a cyclical basis so that deterioration of the window results.</p>  |
| <p>Protecting windows against vandalism before work begins by covering them and by installing alarm systems that are keyed into local protection agencies.</p>   | <p>Leaving windows unprotected and subject to vandalism before work begins, thereby also allowing the interior to be damaged if it can be accessed through unprotected windows.</p>   |
| <p>Making windows weathertight by recaulking gaps in fixed joints and replacing or installing weatherstripping.</p>  |   |
| <p>Protecting windows from chemical cleaners, paint, or abrasion during work on the exterior of the building.</p>  | <p>Failing to protect historic windows from chemical cleaners, paint, or abrasion when work is being done on the exterior of the building.</p>  |
| <p>Protecting and retaining historic glass when replacing putty or repairing other components of the window.</p>   | <p>Failing to protect the historic glass when making window repairs.</p>  |



## WINDOWS

### RECOMMENDED

Sustaining the historic operability of windows by lubricating friction points and replacing broken components of the operating system (such as hinges, latches, sash chains or cords) and replacing deteriorated gaskets or insulating units.

Adding storm windows with a matching or a one-over-one pane configuration that will not obscure the characteristics of the historic windows. Storm windows improve energy efficiency and are especially beneficial when installed over wood windows because they also protect them from accelerated deterioration.

Adding interior storm windows as an alternative to exterior storm windows when appropriate.

### NOT RECOMMENDED

Failing to maintain windows and window components so that windows are inoperable, or sealing operable sash permanently.

Failing to repair and reuse window hardware such as sash lifts, latches, and locks.



[18] The historic metal storm windows in this 1920s office building were retained and repaired during the rehabilitation project.

[19] Installing a mockup of a proposed replacement window can be helpful to evaluate how well the new windows will match the historic windows that are missing or too deteriorated to repair.







[20 a-d] The original steel windows in this industrial building were successfully repaired as part of the rehabilitation project (left).

## WINDOWS

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| Installing sash locks, window guards, removable storm windows, and other reversible treatments to meet safety, security, or energy conservation requirements.  |  |
| Evaluating the overall condition of the windows to determine whether more than protection and maintenance, such as repairs to windows and window features, will be necessary.  | Failing to undertake adequate measures to ensure the protection of window features.  |
| <b>Repairing</b> window frames and sash by patching, splicing, consolidating, or otherwise reinforcing them using recognized preservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated, broken, or missing components of features when there are surviving prototypes, such as sash, sills, hardware, or shutters. | Removing window features that could be stabilized, repaired, or conserved using untested consolidants, improper repair techniques, or unskilled personnel, potentially causing further damage to the historic materials.<br><br>Replacing an entire window when repair of the window and limited replacement of deteriorated or missing components are feasible. |
| Removing glazing putty that has failed and applying new putty; or, if glass is broken, carefully removing all putty, replacing the glass, and reputtying.  |  |
| Installing new glass to replace broken glass which has the same visual characteristics as the historic glass.  |  |
| <b>Replacing</b> in kind an entire window that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. If using the same kind of material is not feasible, then a compatible substitute material may be considered.                              | Removing a character-defining window that is unrepairable or is not needed for the new use and blocking up the opening, or replacing it with a new window that does not match.<br><br>Using substitute material for the replacement that does not convey the same appearance of the surviving components of the window or that is physically incompatible.       |



[21] The windows on the lower floor, which were too deteriorated to repair, were replaced with new steel windows matching the upper-floor historic windows that were retained.

## WINDOWS

### RECOMMENDED

|  |
|--|
| Modifying a historic single-glazed sash to accommodate insulated glass when it will not jeopardize the soundness of the sash or significantly alter its appearance.  |
| Using low-e glass with the least visible tint in new or replacement windows.   |
| Using window grids rather than true divided lights on windows on the upper floors of high-rise buildings if they will not be noticeable.   |
| Ensuring that spacer bars in between double panes of glass are the same color as the window sash.  |
| Replacing all of the components in a glazing system if they have failed because of faulty design or materials that have deteriorated with new material that will improve the window performance without noticeably changing the historic appearance. |
| Replacing incompatible, non-historic windows with new windows that are compatible with the historic character of the building; or reinstating windows in openings that have been filled in.  |

### NOT RECOMMENDED

|   |
|---|
| Modifying a historic single-glazed sash to accommodate insulated glass when it will jeopardize the soundness of the sash or significantly alter its appearance.   |
| Using low-e glass with a dark tint in new or replacement windows, thereby negatively impacting the historic character of the building.  |
| Using window grids rather than true divided lights on windows in low-rise buildings or on lower floors of high-rise buildings where they will be noticeable, resulting in a change to the historic character of the building. |
| Using spacer bars in between double panes of glass that are not the same color as the window sash.  |
| Replacing all of the components in a glazing system with new material that will noticeably change the historic appearance.  |

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

### Designing the Replacement for Missing Historic Features

|   |  |
|---|--|
| Designing and installing a new window or its components, such as frames, sash, and glazing, when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building. | Creating an inaccurate appearance because the replacement for the missing window is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building. |
|   | Installing replacement windows made from other materials that are not the same as the material of the original windows if they would have a noticeably different appearance from the remaining historic windows.   |





(a)



(b)



(c)

[22] **Not Recommended:** (a-b) The original wood windows in this late-19<sup>th</sup>-century building, which were highly decorative, could likely have been repaired and retained. (c) Instead, they were replaced with new windows that do not match the detailing of the historic windows and, therefore, do not meet the Standards (above).



[23] (a) This deteriorated historic wood window was repaired and retained (b) in this rehabilitation project.



## WINDOWS

### RECOMMENDED

### NOT RECOMMENDED

#### Alterations and Additions for a New Use

Adding new window openings on rear or other secondary, less-visible elevations, if required by a new use. The new openings and the windows in them should be compatible with the overall design of the building but, in most cases, not duplicate the historic fenestration.

Changing the number, location, size, or glazing pattern of windows on primary or highly-visible elevations which will alter the historic character of the building.

Cutting new openings on character-defining elevations or cutting new openings that damage or destroy significant features.

Adding balconies at existing window openings or new window openings on primary or other highly-visible elevations where balconies never existed and, therefore, would be incompatible with the historic character of the building.

Replacing windows that are too deteriorated to repair using the same sash and pane configuration, but with new windows that operate differently, if necessary, to accommodate a new use. Any change must have minimal visual impact. Examples could include replacing hopper or awning windows with casement windows, or adding a realigned and enlarged operable portion of industrial steel windows to meet life-safety codes.

Replacing a window that contributes to the historic character of the building with a new window that is different in design (such as glass divisions or muntin profiles), dimensions, materials (wood, metal, or glass), finish or color, or location that will have a noticeably different appearance from the historic windows, which may negatively impact the character of the building.

Installing impact-resistant glazing, when necessary for security, so that it is compatible with the historic windows and does not damage them or negatively impact their character.

Installing impact-resistant glazing, when necessary for security, that is incompatible with the historic windows and that damages them or negatively impacts their character.

Using compatible window treatments (such as frosted glass, appropriate shades or blinds, or shutters) to retain the historic character of the building when it is necessary to conceal mechanical equipment, for example, that the new use requires be placed in a location behind a window or windows on a primary or highly-visible elevation.

Removing a character-defining window to conceal mechanical equipment or to provide privacy for a new use of the building by blocking up the opening.



## ENTRANCES AND PORCHES

## RECOMMENDED

## NOT RECOMMENDED



[24] Rotted boards in the beaded-board porch ceiling are being replaced with new matching beaded board.

**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. The materials themselves (including masonry, wood, and metal) are significant, as are their features, such as doors, transoms, pilasters, columns, balustrades, stairs, roofs, and projecting canopies.

Retaining a historic entrance or porch even though it will no longer be used because of a change in the building's function.

**Protecting and maintaining** the masonry, wood, and metals which comprise entrances and porches through appropriate surface treatments, such as cleaning, paint removal, and reapplication of protective coating systems.

Protecting entrances and porches against arson and vandalism before work begins by covering them and by installing alarm systems keyed into local protection agencies.

Protecting entrance and porch features when working on other features of the building.

Evaluating the overall condition of entrances and porches to determine whether more than protection and maintenance, such as repairs to entrance and porch features, will be necessary.

**Repairing** entrances and porches by patching, splicing, consolidating, and otherwise reinforcing them using recognized preservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated features or missing components of features when there are surviving prototypes, such as balustrades, columns, and stairs.

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

Cutting new entrances on a primary façade.

Altering utilitarian or service entrances so they compete visually with the historic primary entrance; increasing their size so that they appear significantly more important; or adding decorative details that cannot be documented to the building or are incompatible with the building's historic character.

Removing a historic entrance or porch that will no longer be required for the building's new use.

Failing to protect and maintain entrance and porch materials on a cyclical basis so that deterioration of entrances and porches results.

Leaving entrances and porches unprotected and subject to vandalism before work begins, thereby also allowing the interior to be damaged if it can be accessed through unprotected entrances.

Failing to protect materials and features when working on other features of the building.

Failing to undertake adequate measures to ensure the protection of entrance and porch features.

Removing entrances and porches that could be stabilized, repaired, and conserved, or using untested consolidants, improper repair techniques, or unskilled personnel, potentially causing further damage to historic materials.

Replacing an entire entrance or porch feature when repair of the feature and limited replacement of deteriorated or missing components are feasible.



## ENTRANCES AND PORCHES

### RECOMMENDED

**Replacing** in kind an entire entrance or porch that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. If using the same kind of material is not feasible, then a compatible substitute material may be considered.

### NOT RECOMMENDED

Removing an entrance or porch that is unrepairable and not replacing it, or replacing it with a new entrance or porch that does not match.

Using a substitute material for the replacement that does not convey the same appearance of the surviving components of entrance or porch features or that is physically incompatible.



[25] The new infill designs for the garage door openings in this commercial building (a) converted for restaurant use and in this mill building (b) rehabilitated for residential use are compatible with the historic character of the buildings.



## ENTRANCES AND PORCHES

## RECOMMENDED

## NOT RECOMMENDED

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Designing the Replacement for Missing Historic Features**

Designing and installing a new entrance or porch when the historic feature is completely missing or has previously been replaced by one that is incompatible. It may be an accurate restoration based on documentary and physical evidence, but only when the historic entrance or porch to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.

Creating an inaccurate appearance because the replacement for the missing entrance or porch is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.

**Alterations and Additions for a New Use**

Enclosing historic porches on secondary elevations only, when required by a new use, in a manner that preserves the historic character of the building (e.g., using large sheets of glass and recessing the enclosure wall behind existing posts and balustrades).

Enclosing porches in a manner that results in a diminution or loss of historic character by using solid materials rather than clear glazing, or by placing the enclosure in front of, rather than behind, the historic features.

Designing and constructing additional entrances or porches on secondary elevations when required for the new use in a manner that preserves the historic character of the building (i.e., ensuring that the new entrance or porch is clearly subordinate to historic primary entrances or porches).

Constructing secondary or service entrances and porches that are incompatible in size and scale or detailing with the historic building or that obscure, damage, or destroy character-defining features.

[26] **Not Recommended:** Installing a screened enclosure is never recommended on a front or otherwise prominent historic porch. In limited instances, it may be possible to add screening on a porch at the rear or on a secondary façade; however, the enclosure should match the color of the porch and be placed behind columns and railings so that it does not obscure these features.



## STOREFRONTS

## RECOMMENDED

**Identifying, retaining, and preserving** storefronts and their functional and decorative features that are important in defining the overall historic character of the building. The storefront materials (including wood, masonry, metals, ceramic tile, clear glass, and pigmented structural glass) and the configuration of the storefront are significant, as are features, such as display windows, base panels, bulkheads, signs, doors, transoms, kick plates, corner posts, piers, and entablatures. The removal of inappropriate, non-historic cladding, false mansard roofs, and other later, non-significant alterations can help reveal the historic character of the storefront.

Retaining later, non-original features that have acquired significance over time.

## NOT RECOMMENDED

Removing or substantially changing 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.

Changing the storefront so that it has a residential rather than commercial appearance.

Introducing features from an earlier period that are not compatible with the historic character of the storefront.

Changing the location of the storefront's historic main entrance.

Replacing or covering a glass transom with solid material or inappropriate signage, or installing an incompatible awning over it.

Removing later features that may have acquired significance.



[28] This new storefront, which replaced one that was missing, is compatible with the historic character of the building.

STOREFRONTS

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| <i>Protecting and maintaining</i> masonry, wood, glass, ceramic tile, and metals which comprise storefronts through appropriate treatments, such as cleaning, paint removal, and reapplication of protective coating systems. | Failing to protect and maintain storefront materials on a cyclical basis so that deterioration of storefront features results.  |
| Protecting storefronts against arson and vandalism before work begins by covering windows and doors and by installing alarm systems keyed into local protection agencies.   | Leaving the storefront unprotected and subject to vandalism before work begins, thereby also allowing the interior to be damaged if it can be accessed through unprotected entrances. |
| Protecting the storefront when working on other features of the building.   | Failing to protect the storefront when working on other features of the building.   |
| Evaluating the overall condition of the storefront to determine whether more than protection and maintenance, such as repairs to storefront features, will be necessary.  | Failing to undertake adequate measures to ensure the protection of storefront features.   |



[27] This original c. 1940s storefront, with its character-defining angled and curved glass display window and recessed entrance with a decorative terrazzo paving, is in good condition and should be retained in a rehabilitation project.



## STOREFRONTS

## RECOMMENDED

## NOT RECOMMENDED

**Repairing** storefronts by patching, splicing, consolidating, or otherwise reinforcing them using recognized preservation methods. Repair may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing components of storefronts when there are surviving prototypes, such as transoms, base panels, kick plates, piers, or signs.

Removing storefronts that could be stabilized, repaired, and conserved, or using untested consolidants, improper repair techniques, or unskilled personnel, potentially causing further damage to historic materials.

**Replacing** in kind an entire storefront that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature or when the replacement can be based on historic documentation. If using the same kind of material is not feasible, then a compatible substitute material may be considered.

Replacing a storefront feature when repair of the feature and limited replacement of deteriorated or missing components are feasible.

Using a substitute material for the replacement that does not convey the same appearance of the surviving components of the storefront or that is physically incompatible.

Removing a storefront that is unrepairable and not replacing it or replacing it with a new storefront that does not match.

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Designing the Replacement for Missing Historic Features**

Designing and installing a new storefront when the historic storefront is completely missing or has previously been replaced by one that is incompatible. It may be an accurate restoration based on documentary and physical evidence, but only when the historic storefront to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.

Creating an inaccurate appearance because the replacement for the missing storefront is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature to be replaced did not coexist with the features currently on the building.

Using new, over-scaled, or internally-lit signs unless there is a historic precedent for them or using other types of signs that obscure, damage, or destroy character-defining features of the storefront and the building.



STOREFRONTS

RECOMMENDED

Replacing missing awnings or canopies that can be historically documented to the building, or adding new signage, awnings, or canopies that are compatible with the historic character of the building.

NOT RECOMMENDED

Adding vinyl awnings, or other awnings that are inappropriately sized or shaped, which are incompatible with the historic character of the building; awnings that do not extend over the entire length of the storefront; or large canopies supported by posts that project out over the sidewalk, unless their existence can be historically documented.

Alterations and Additions for a New Use

Retaining the glazing and the transparency (i.e., which allows the openness of the interior to be experienced from the exterior) that is so important in defining the character of a historic storefront when the building is being converted for residential use. Window treatments (necessary for occupants' privacy) should be installed that are uniform and compatible with the commercial appearance of the building, such as screens or wood blinds. When display cases still exist behind the storefront, the screening should be set at the back of the display case.

Replacing storefront glazing with solid material for occupants' privacy when the building is being converted for residential use.

Installing window treatments in storefront windows that have a residential appearance, which are incompatible with the commercial character of the building.

Installing window treatments that are not uniform in a series of repetitive storefront windows.



[29] The rehabilitation of the 1910 Māālaea General Store (a), which served the workers' camp at the Wailuku Sugar Company on the Hawaiian island of Maui, included the reconstruction of the original parapet (b).



## CURTAIN WALLS

### RECOMMENDED

### NOT RECOMMENDED

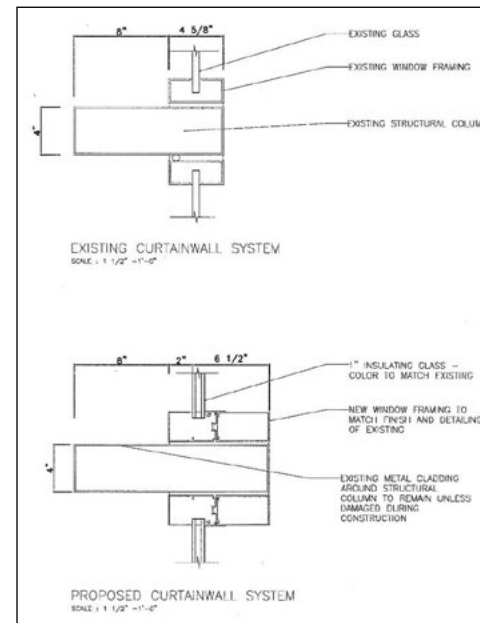
|   |   |
|---|---|
| <p><b>Identifying, retaining, and preserving</b> curtain wall systems and their components (metal framing members and glass or opaque panels) that are important in defining the overall historic character of the building. The design of the curtain wall is significant, as are its component materials (metal stick framing and panel materials, such as clear or spandrel glass, stone, terra cotta, metal, and fiber-reinforced plastic), appearance (e.g., glazing color or tint, transparency, and reflectivity), and whether the glazing is fixed, operable or louvered glass panels. How a curtain wall is engineered and fabricated, and the fact that it expands and contracts at a different rate from the building's structural system, are important to understand when undertaking the rehabilitation of a curtain wall system.</p> | <p>Removing or substantially changing curtain wall components which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Replacing historic curtain wall features instead of repairing or replacing only the deteriorated components.</p> |
| <p><b>Protecting and maintaining</b> curtain walls and their components through appropriate surface treatments, such as cleaning, paint removal, and reapplication of protective coating systems; and by making them watertight and ensuring that sealants and gaskets are in good condition.</p>   | <p>Failing to protect and maintain curtain wall components on a cyclical basis so that deterioration of curtain walls results.</p> <p>Failing to identify, evaluate, and treat various causes of curtain wall failure, such as open gaps between components where sealants have deteriorated or are missing.</p>        |
| <p>Protecting ground-level curtain walls from vandalism before work begins by covering them, while ensuring adequate ventilation, and by installing alarm systems keyed into local protection agencies.</p>   | <p>Leaving ground-level curtain walls unprotected and subject to vandalism before work begins, thereby also allowing the interior to be damaged if it can be accessed through unprotected glazing.</p>  |
| <p>Protecting curtain walls when working on other features of the building.</p>   | <p>Failing to protect curtain walls when working on other features of the building.</p>   |
| <p>Cleaning curtain wall systems only when necessary to halt deterioration or to remove heavy soiling.</p>  | <p>Cleaning curtain wall systems when they are not heavily soiled, thereby needlessly introducing chemicals or moisture into historic materials.</p>  |

## CURTAIN WALLS

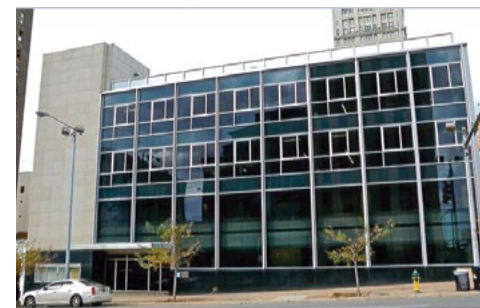
| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| Carrying out cleaning tests, when it has been determined that cleaning is appropriate, using only cleaning materials that will not damage components of the system, including factory-applied finishes. Test areas should be examined to ensure that no damage has resulted.   | Cleaning curtain wall systems without testing or using cleaning materials that may damage components of the system.  |
| Evaluating the overall condition of curtain walls to determine whether more than protection and maintenance, such as repair of curtain wall components, will be necessary.   | Failing to undertake adequate measures to protect curtain wall components.   |
| <b>Repairing</b> curtain walls by ensuring that they are watertight by augmenting existing components or replacing deteriorated or missing sealants or gaskets, where necessary, to seal any gaps between system components. Repair may include the limited replacement of those extensively deteriorated or missing components of curtain walls when there are surviving prototypes.                | Removing curtain wall components that could be repaired or using improper repair techniques.<br><br>Replacing an entire curtain wall system when repair of materials and limited replacement of deteriorated or missing components are feasible. |
| Applying sealants carefully so that they are not readily visible.  |  |
| <b>Replacing</b> in kind a component or components of a curtain wall system that are too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature. If using the same kind of material is not feasible, then a compatible substitute material may be considered as long as it has the same finish and appearance. | Removing a curtain wall component or the entire system, if necessary, that is unrepairable and not replacing it or replacing it with a new component or system that does not convey the same appearance.   |
| Replacing masonry, metal, glass, or other components of a curtain wall system (or the entire system, if necessary) which have failed because of faulty design with substitutes that match the original as closely as possible and which will reestablish the viability and performance of the system.  | Using substitute material for the replacement that does not convey the same appearance of the surviving components of the curtain wall or that is physically incompatible.   |



[30] Rather than replace the original curtain wall system of the 1954 Simms Building in Albuquerque, NM, with a different color tinted glass or coat it with a non-historic reflective film, the HVAC system was updated to improve energy efficiency. Photo: Harvey M. Kaplan.



[31 a-c:] (a) The rehabilitation of the First Federal Savings and Loan Association building in Birmingham, AL, constructed in 1961, required replacing the deteriorated historic curtain wall system because the framing and the fasteners holding the spandrel glass and the windows had failed. (b) Comparative drawings show that the differences between the replacement system, which incorporated new insulated glass to meet wind-load requirements, and the original system are minimal. (c) The replacement system, shown after completion of the project, has not altered the historic character of the building.



## CURTAIN WALLS

## RECOMMENDED

## NOT RECOMMENDED

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Designing the Replacement for Missing Historic Features**

Designing and installing a new curtain wall or its components when the historic feature is completely missing. It may be an accurate restoration based on documentary and physical evidence, but only when the historic feature to be replaced coexisted with the features currently on the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.

Creating an inaccurate appearance because the replacement for the missing curtain wall component is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature did not coexist with the features currently on the building.

Introducing a new curtain wall component that is incompatible in size, scale, material, color, and finish.

**Alterations and Additions for a New Use**

Installing new glazing or an entire new curtain wall system, when necessary to meet safety-code requirements, with dimensions, detailing, materials, colors, and finish as close as possible to the historic curtain wall components.

Installing new glazing or an entire new curtain wall system, when necessary to meet safety-code requirements, with dimensions and detailing that is significantly different from the historic curtain wall components.

Installing impact-resistant glazing, when necessary for security, so that it is compatible with the historic windows and does not damage them or negatively impact their character.

Installing impact-resistant glazing in a curtain wall system, when necessary for security, that is incompatible with the historic curtain walls and damages them or negatively impacts their character.



## STRUCTURAL SYSTEMS

### RECOMMENDED

**Identifying, retaining, and preserving** structural systems and visible features of systems that are important in defining the overall historic character of the building. This includes the materials that comprise the structural system (i.e., wood, metal and masonry), the type of system, and its features, such as posts and beams, trusses, summer beams, vigas, cast-iron or masonry columns, above-grade stone foundation walls, or load-bearing masonry walls.

**Protecting and maintaining** the structural system by keeping gutters and downspouts clear and roofing in good repair; and by ensuring that wood structural members are free from insect infestation.

### NOT RECOMMENDED

Removing or substantially changing 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 load-bearing masonry wall that could be augmented and retained.

Leaving known structural problems untreated, such as deflected beams, cracked and bowed walls, or racked structural members.

Failing to protect and maintain the structural system on a cyclical basis so that deterioration of the structural system results.

Using treatments or products that may retain moisture, which accelerates deterioration of structural members.

[33] Retaining as much as possible of the historic wood sill plate and replacing only the termite-damaged wood is always the preferred and recommended treatment.



STRUCTURAL SYSTEMS

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| Evaluating the overall condition of the structural system to determine whether more than protection and maintenance, such as repairs to structural features, will be necessary.  | Failing to undertake adequate measures to ensure the protection of structural systems.  |
| <b>Repairing</b> the structural system by augmenting individual components, using recognized preservation methods. For example, weakened structural members (such as floor framing) can be paired or sistered with a new member, braced, or otherwise supplemented and reinforced. | Upgrading the building structurally in a manner that diminishes the historic character of the exterior or that damages interior features or spaces. |
|  | Replacing a historic structural feature in its entirety or in part when it could be repaired or augmented and retained.                             |



[32] (a-b) The rehabilitation of the 1892 Carson Block Building in Eureka, CA, for its owner, the Northern California Indian Development Council, included recreating the missing corner turret and sensitively introducing seismic reinforcement (c) shown here (opposite page) in a secondary upper floor office space. Photos: Page & Turnbull.



## STRUCTURAL SYSTEMS

### RECOMMENDED

### NOT RECOMMENDED

|  |   |
|--|---|
| Installing seismic or structural reinforcement, when necessary, in a manner that minimizes its impact on the historic fabric and character of the building.  |   |
| <b>Replacing</b> in kind or with a compatible substitute material large portions or entire features of the structural system that are either extensively damaged or deteriorated or that are missing when there are surviving prototypes, such as cast-iron columns, trusses, or masonry walls. Substitute material must be structurally sufficient, physically compatible with the rest of the system, and, where visible, must have the same form, design, and appearance as the historic feature. | Using substitute material that does not equal the load-bearing capabilities of the historic material; does not convey the same appearance of the historic material, if it is visible; or is physically incompatible.<br><br>Installing a visible or exposed structural replacement feature that does not match. |
| Replacing to match any interior features or finishes that may have to be removed to gain access to make structural repairs, and reusing salvageable material.  |   |



## STRUCTURAL SYSTEMS

## RECOMMENDED

## NOT RECOMMENDED

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Alterations and Additions for a New Use**

|  |   |
|--|---|
| Limiting any new excavations next to historic foundations to avoid undermining the structural stability of the building or adjacent historic buildings. The area next to the building foundation should be investigated first to ascertain potential damage to site features or archeological resources. | Carrying out excavations or regrading land adjacent to a historic building which could cause the historic foundation to settle, shift, or fail, or which could destroy significant archeological resources. |
| Correcting structural deficiencies needed to accommodate a new use in a manner that preserves the structural system and individual character-defining features.  | Making substantial changes to significant interior spaces or damaging or destroying features or finishes that are character defining to correct structural deficiencies.                                    |
| Designing and installing new mechanical or electrical equipment, when necessary, in a manner that minimizes the number and size of cuts or holes in structural members.  | Installing new mechanical or electrical equipment in a manner which reduces the load-bearing capacity of historic structural members.   |
| Inserting a new floor when required for the new use if it does not negatively impact the historic character of the interior space; and if it does not damage the structural system, does not abut window glazing, and is not visible from the exterior of the building.                                  | Inserting a new floor that damages or destroys the structural system or abuts window glazing and is visible from the exterior of the building and, thus, negatively impacts its historic character.         |
| Creating an atrium, light court, or lightwell to provide natural light when required for a new use only when it can be done in a manner that preserves the structural system and the historic character of the building.   | Removing structural features to create an atrium, light court, or lightwell if it negatively impacts the historic character of the building.  |



## MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, AND PLUMBING

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| <b>Identifying, retaining, and preserving</b> visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, grilles, and plumbing and lighting fixtures.  | Removing or substantially changing 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. |
| <b>Protecting and maintaining</b> mechanical, plumbing, and electrical systems and their features through cyclical maintenance.   | Failing to protect and maintain a functioning mechanical system, plumbing, and electrical systems and their visible features on a cyclical basis so that their deterioration results.                      |
| Improving the energy efficiency of existing mechanical systems to help reduce the need for a new system by installing storm windows, insulating attics and crawl spaces, or adding awnings, if appropriate.   |  |
| Evaluating the overall condition of mechanical systems to determine whether more than protection and maintenance, such as repairs to mechanical system components, will be necessary.   | Failing to undertake adequate measures to ensure the protection of mechanical system components.   |
| <b>Repairing</b> mechanical systems by augmenting or upgrading system components (such as installing new pipes and ducts), rewiring, or adding new compressors or boilers.  | Replacing a mechanical system when its components could be upgraded and retained.  |
| <b>Replacing</b> in kind or with a compatible substitute material those extensively deteriorated or missing visible features of mechanical systems when there are surviving prototypes, such as ceiling fans, radiators, grilles, or plumbing fixtures. | Installing a visible replacement feature of a mechanical system, if it is important in defining the historic character of the building, that does not convey the same appearance.                          |

## MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, AND PLUMBING

### RECOMMENDED

### NOT RECOMMENDED

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

#### Alterations and Additions for a New Use

|  |  |
|--|--|
| Installing a new mechanical system, if required, so that it results in the least alteration possible to the historic building and its character-defining features.   | Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.  |
| Providing adequate structural support for the new mechanical equipment.  | 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 new mechanical and electrical systems and ducts, pipes, and cables in closets, service areas, and wall cavities to preserve the historic character of the interior space.   | Installing systems and ducts, pipes, and cables in walls or ceilings in a manner that results in extensive loss or damage or otherwise obscures historic building materials and character-defining features.   |
| Concealing HVAC ductwork in finished interior spaces, when possible, by installing it in secondary spaces (such as closets, attics, basements, or crawl spaces) or in appropriately-located, furred-down soffits.  | Leaving HVAC ductwork exposed in most finished spaces or installing soffits in a location that will negatively impact the historic character of the interior or exterior of the building.  |
| Installing exposed ductwork in a finished space when necessary to protect and preserve decorative or other features (such as column capitals, pressed-metal or ornamental plaster ceilings, coffers, or beams) that is painted, and appropriately located so that it will have minimal impact on the historic character of the space.  | Installing exposed ductwork in a finished space when necessary to protect and preserve decorative or other features that is not painted, or is located where it will negatively impact the historic character of the space.  |
| Lowering ceilings, installing a dropped ceiling, or constructing soffits to conceal ductwork in a finished space when this will not result in extensive loss or damage to historic materials or decorative and other features, and will not change the overall character of the space or the exterior appearance of the building (i.e., lowered ceilings or soffits visible through window glazing). | Lowering ceilings, installing a dropped ceiling, or constructing soffits to conceal ductwork in a finished space in a manner that results in extensive loss or damage to historic materials or decorative and other features, and will change the overall character of the space or the exterior appearance of the building. |

## MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, AND PLUMBING

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| Installing appropriately located, exposed ductwork in historically-unfinished interior spaces in industrial or utilitarian buildings.   |   |
| Installing a split system mechanical unit in a manner that will have minimal impact on the historic character of the interior and result in minimal loss of historic building material. | Installing a split system mechanical unit without considering its impact on the historic character of the interior or the potential loss of historic building material. |
| Installing heating or air conditioning window units only when the installation of any other system would result in significant damage or loss of historic materials or features.        |   |
| Installing mechanical equipment on the roof, when necessary, so that it is minimally visible to preserve the building's historic character and setting.                                 | Installing mechanical equipment on the roof that is overly large or highly visible and negatively impacts the historic character of the building or setting.            |
| Placing air conditioning compressors in a location on a secondary elevation of the historic building that is not highly visible.  | Placing air conditioning compressors where they are highly visible and negatively impact the historic character of the building or setting.                             |

[34] The new ceiling ducts installed during the conversion of this historic office building into apartments are minimal in design and discretely placed above the windows.



## INTERIOR SPACES, FEATURES, AND FINISHES

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| <p><b><i>Identifying, retaining, and preserving</i></b> a floor plan or interior spaces, features, and finishes that are important in defining the overall historic character of the building. Significant spatial characteristics include the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves, such as lobbies, lodge halls, entrance halls, parlors, theaters, auditoriums, gymnasiums, and industrial and commercial interiors. Color, texture, and pattern are important characteristics of features and finishes, which can include such elements as columns, plaster walls and ceilings, flooring, trim, fireplaces and mantels, paneling, light fixtures, hardware, decorative radiators, ornamental grilles and registers, windows, doors, and transoms; plaster, paint, wallpaper and wall coverings, and special finishes, such as marbleizing and graining; and utilitarian (painted or unpainted) features, including wood, metal, or concrete exposed columns, beams, and trusses and exposed load-bearing brick, concrete, and wood walls.</p> | <p>Altering a floor plan, or interior spaces (including individual rooms), features, and finishes, which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Altering the floor plan by demolishing principal walls and partitions for a new use.</p> <p>Altering or destroying significant interior spaces by inserting additional floors or lofts; cutting through floors to create lightwells, light courts, or atriums; lowering ceilings; or adding new walls or removing historic walls.</p> <p>Relocating an interior feature, such as a staircase, so that the circulation pattern and the historic relationship between features and spaces are altered.</p> <p>Installing new material that obscures or damages character-defining interior features or finishes.</p> <p>Removing paint, plaster, or other finishes from historically-finished interior surfaces to create a new appearance (e.g., removing plaster to expose brick walls or a brick chimney breast, stripping paint from wood to stain or varnish it, or removing a plaster ceiling to expose unfinished beams).</p> <p>Applying paint, plaster, or other coatings to surfaces that have been unfinished historically, thereby changing their character.</p> <p>Changing the type of finish or its color, such as painting a historically-varnished wood feature, or removing paint from a historically-painted feature.</p> |



## INTERIOR SPACES, FEATURES, AND FINISHES

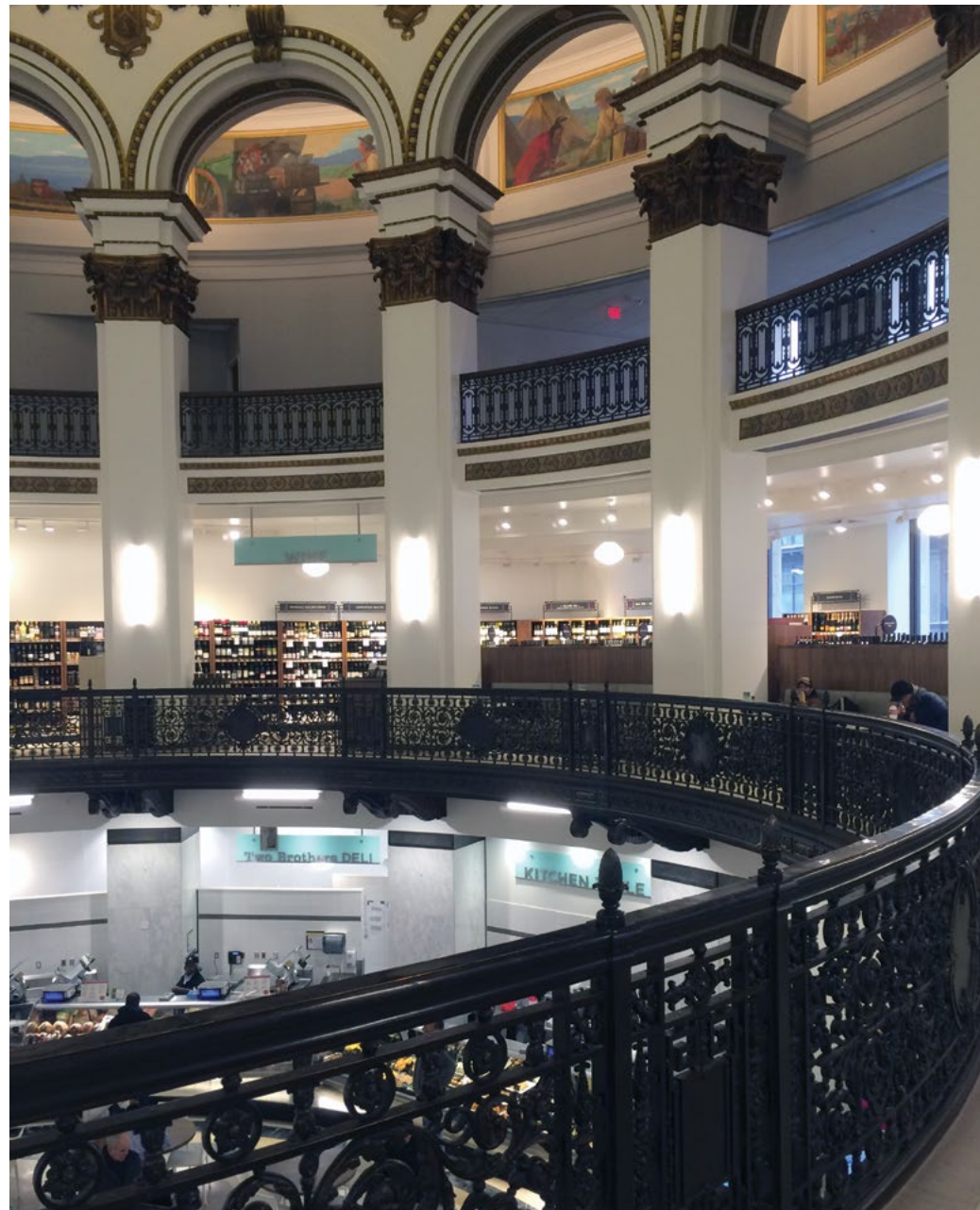
### RECOMMENDED

### NOT RECOMMENDED

|  |   |
|--|---|
| Retaining decorative or other character-defining features or finishes that typify the showroom or interior of a historic store, such as a pressed-metal ceiling, a beaded-board ceiling, or wainscoting.   | Removing decorative or other character-defining features or finishes that typify the showroom or interior of a historic store, such as a pressed-metal ceiling, a beaded-board ceiling, or wainscoting. |
| <b>Protecting and maintaining</b> historic materials (including plaster, masonry, wood, and metals) which comprise interior spaces through appropriate surface treatments, such as cleaning, paint removal, and reapplication of protective coating systems.                               | Failing to protect and maintain interior materials and finishes on a cyclical basis so that deterioration of interior features results.   |
| Protecting interior features and finishes against arson and vandalism before project work begins by erecting temporary fencing or by covering broken windows and open doorways, while ensuring adequate ventilation, and by installing alarm systems keyed into local protection agencies. | Leaving the building unprotected and subject to vandalism before work begins, thereby allowing the interior to be damaged if it can be accessed through unprotected entrances.                          |
| Protecting interior features (such as a staircase, mantel, flooring, or decorative finishes) from damage during project work by covering them with plywood, heavy canvas, or plastic sheeting.   | Failing to protect interior features and finishes when working on the interior.   |

[35] (a) Although deteriorated, the historic school corridor, shown on the left, with its character-defining features, including doors and transoms, was retained and repaired as part of the rehabilitation project (b).





[36] The elaborate features and finishes of this historic banking hall in the Union Trust Company Building, in Cleveland, OH, were retained and repaired as part of its conversion into a food market.

## INTERIOR SPACES, FEATURES, AND FINISHES

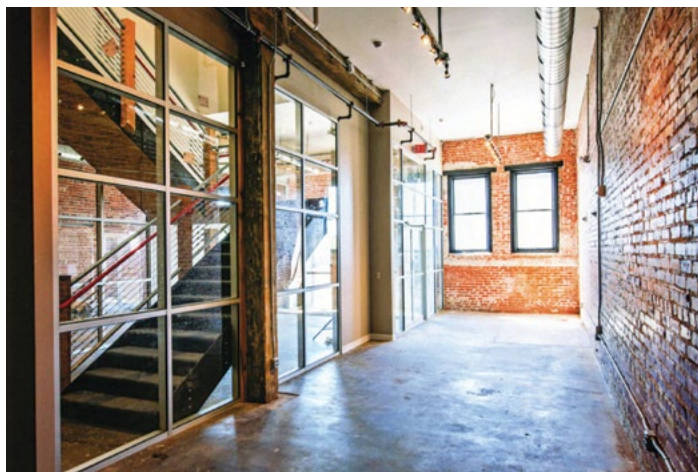
| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| Removing damaged or deteriorated paint and finishes only to the next sound layer using the gentlest method possible prior to repainting or refinishing using compatible paint or other coating systems.  | Using potentially damaging methods, such as open-flame torches or abrasive techniques, to remove paint or other coatings.<br><br>Removing paint that is firmly adhered to interior surfaces.  |
| Using abrasive cleaning methods only on the interior of industrial or warehouse buildings with utilitarian, unplastered masonry walls and where wood features are not finished, molded, beaded, or worked by hand. Low-pressure abrasive cleaning (e.g., sand-blasting or other media blasting) should only be considered if test patches show no surface damage and after gentler methods have proven ineffective.  | Using abrasive methods anywhere but utilitarian and industrial interior spaces or when there are other methods that are less likely to damage the surface of the material.  |
| Evaluating the overall condition of the interior materials, features, and finishes to determine whether more than protection and maintenance, such as repairs to features and finishes, will be necessary.   | Failing to undertake adequate measures to ensure the protection of interior materials, features, and finishes.  |
| <b>Repairing</b> interior features and finishes by patching, splicing, consolidating, or otherwise reinforcing the materials using recognized preservation methods. Repairs may include the limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing parts of interior features when there are surviving prototypes, such as stairs, balustrades, wood paneling, columns, decorative wall finishes, and ornamental pressed-metal or plaster ceilings. Repairs should be physically and visually compatible. | Removing materials that could be repaired or using improper repair techniques.<br><br>Replacing an entire interior feature (such as a staircase, mantel, or door surround) or a finish (such as a plaster) when repair of materials and limited replacement of deteriorated or missing components are feasible. |





[37] Exposed and painted ducts were appropriately installed here in a retail space in Denver's historic Union Station after considering other options that would have impacted the ceiling height, or damaged or obscured the ornamental plaster crown molding. *Photo: Heritage Consulting Group.*

[38] The rehabilitation project retained the industrial character of this historic factory building, which included installation of a fire-rated, clear glass enclosure that allows the stairway, an important interior feature, to remain visible.



[39] Leaving the ceiling structure exposed and installing exposed ductwork where it does not impact the windows, are appropriate treatments when rehabilitating an industrial building for another use.



## INTERIOR SPACES, FEATURES, AND FINISHES

### RECOMMENDED

### NOT RECOMMENDED

**Replacing** in kind an entire interior feature that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature. Examples could include wainscoting, window and door surrounds, or stairs. If using the same kind of material is not feasible, then a compatible substitute material may be considered.

Removing a character-defining interior feature that is unrepairable and not replacing it, or replacing it with a new feature or finish that does not match the historic feature.

Using a substitute material for the replacement that does not convey the same appearance of the interior feature or that is physically incompatible.

Using a substitute material for the replacement that does not convey the same appearance of the interior feature or that is physically incompatible.

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

### Designing the Replacement for Missing Historic Features

Designing and installing a new interior feature or finish when the historic feature or finish is completely missing. This could include missing walls, stairs, mantels, wood trim, and plaster, or even entire rooms if the historic spaces, features, and finishes are missing or have been destroyed by inappropriate alterations. The design may be an accurate restoration based on documentary and physical evidence, but only when the feature or finish to be replaced coexisted with the features currently in the building. Or, it may be a new design that is compatible with the size, scale, material, and color of the historic building.

Creating an inaccurate appearance because the replacement for the missing feature is based upon insufficient physical or historic documentation; is not a compatible design; or because the feature did not coexist with the feature currently on the building.

Introducing a new interior feature or finish that is incompatible in size, scale, material, color, and finish.

### Alterations and Additions for a New Use

Installing new or additional systems required for a new use for the building, such as bathrooms and mechanical equipment, in secondary spaces to preserve the historic character of the most significant interior spaces.

Subdividing primary spaces, lowering ceilings, or damaging or obscuring character-defining features (such as fireplaces, windows, or stairways) to accommodate a new use for the building.

## INTERIOR SPACES, FEATURES, AND FINISHES

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Installing new mechanical and electrical systems and ducts, pipes, and cables in closets, service areas, and wall cavities to preserve the historic character of interior spaces, features, and finishes.   | Installing ducts, pipes, and cables where they will obscure character-defining features or negatively impact the historic character of the interior.   |
| Creating open work areas, when required by the new use, by selectively removing walls only in secondary spaces, less significant upper floors, or other less-visible locations to preserve primary public spaces and circulation systems.   |  |
| Retaining the configuration of corridors, particularly in buildings with multiple floors with repetitive plans (such as office and apartment buildings or hotels), where not only the floor plan is character defining, but also the width and the length of the corridor, doorways, transoms, trim, and other features, such as wainscoting and glazing. | Making extensive changes to the character of significant historic corridors by narrowing or radically shortening them, or removing their character-defining features.                          |
| Reusing decorative material or features that had to be removed as part of the rehabilitation work (including baseboards, door casing, paneled doors, and wainscoting) and reusing them in areas where these features are missing or are too deteriorated to repair.   | Discarding historic material when it can be reused to replace missing or damaged features elsewhere in the building, or reusing material in a manner that may convey a false sense of history. |
| Installing permanent partitions in secondary, rather than primary, spaces whenever feasible. Removable partitions or partial-height walls that do not destroy the sense of space often may be installed in large character-defining spaces when required by a new use.  | Installing partitions that abut windows and glazing or that damage or obscure character-defining spaces, features, or finishes.  |
| Enclosing a character-defining interior stairway, when required by code, with fire-rated glass walls or large, hold-open doors so that the stairway remains visible and its historic character is retained.   | Enclosing a character-defining interior stairway for safety or functional reasons in a manner that conceals it or destroys its character.  |
| Locating new, code-required stairways or elevators in secondary and service areas of the historic building.   | Making incompatible changes or damaging or destroying character-defining spaces, features, or finishes when adding new code-required stairways and elevators.                                  |



[41] **Not Recommended:** Leaving fragments of deteriorated or “sculpted” plaster is not a compatible treatment for either finished or unfinished interior spaces.

[40] **Not Recommended:** Removing a finished ceiling and leaving the structure exposed in a historic retail space does not meet the Standards for Rehabilitation.



## INTERIOR SPACES, FEATURES, AND FINISHES

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| Creating an atrium, light court, or lightwell to provide natural light when required for a new use only when it can be done in a manner that preserves significant interior spaces, features, and finishes or important exterior elevations.   | Destroying or damaging character-defining interior spaces, features, or finishes, or damaging the structural system to create an atrium, light court, or lightwell.  |
| Inserting a new floor, mezzanine, or loft when required for a new use if it does not damage or destroy significant interior features and finishes and is not visible from the exterior of the building.  | Inserting a new floor, mezzanine, or loft that damages or destroys significant interior features or abuts window glazing and is visible from the exterior of the building, and, thus, negatively impacts its historic character.   |
| Inserting a new floor, when necessary for a new use, only in large assembly spaces that are secondary to another assembly space in the building; in a space that has been greatly altered; or where character-defining features have been lost or are too deteriorated to repair.  | Inserting a new floor in significant, large assembly spaces with distinctive features and finishes, which negatively impacts their historic character.   |
| Installing exposed ductwork in a finished space when necessary to protect and preserve decorative or other features (such as column capitals, ornamental plaster or pressed-metal ceilings, coffers, or beams) that is designed, painted, and appropriately located so that it will have minimal impact on the historic character of the space.  | Installing exposed ductwork in a finished space when necessary to protect and preserve decorative or other features that is not painted, or is located where it will negatively impact the historic character of the space.  |
| Lowering ceilings, installing a dropped ceiling, or constructing soffits to conceal ductwork in a finished space when they will not result in extensive loss or damage to historic materials or decorative and other features, and will not change the overall character of the space or the exterior appearance of the building (i.e., lowered ceilings or soffits visible through window glazing). | Lowering ceilings, installing a dropped ceiling, or constructing soffits to conceal ductwork in a finished space in a manner that results in extensive loss or damage to historic materials or decorative and other features, and will change the overall character of the space or the exterior appearance of the building. |
| Installing a split system mechanical unit in a manner that will have minimal impact on the historic character of the interior and will result in minimal loss of historic building material.   | Installing a split system mechanical unit without considering its impact on the historic character of the interior or the potential loss of historic building material.  |



## BUILDING SITE

## RECOMMENDED

**Identifying, retaining, and preserving** features of the building site that are important in defining its overall historic character. Site features may include walls, fences, or steps; circulation systems, such as walks, paths or roads; vegetation, such as trees, shrubs, grass, orchards, hedges, windbreaks, or gardens; landforms, such as hills, terracing, or berms; furnishings and fixtures, such as light posts or benches; decorative elements, such as sculpture, statuary, or monuments; water features, including fountains, streams, pools, lakes, or irrigation ditches; and subsurface archeological resources, other cultural or religious features, or burial grounds which are also important to the site.

## NOT RECOMMENDED

Removing or substantially changing 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.



[42] This garden is an important character-defining landscape feature on this college campus.

## BUILDING SITE

| RECOMMENDED   | NOT RECOMMENDED   |
|---|---|
| Retaining the historic relationship between buildings and the landscape.  | <p>Removing or relocating buildings or landscape features, thereby destroying the historic relationship between buildings and the landscape.</p> <p>Removing or relocating buildings on a site or in a complex of related historic structures (such as a mill complex or farm), thereby diminishing the historic character of the site or complex.</p> <p>Moving buildings onto the site, thereby creating an inaccurate historic appearance.</p> <p>Changing the grade level of the site if it diminishes its historic character. For example, lowering the grade adjacent to a building to maximize use of a basement, which would change the historic appearance of the building and its relation to the site.</p> |
| <b><i>Protecting and maintaining</i></b> buildings and site features by providing proper drainage to ensure that water does not erode foundation walls, drain toward the building, or damage or erode the landscape.  | Failing to ensure that site drainage is adequate so that buildings and site features are damaged or destroyed; or, alternatively, changing the site grading so that water does not drain properly.  |
| Correcting any existing irrigation that may be wetting the building excessively.  | Neglecting to correct any existing irrigation that may be wetting the building excessively.   |
| Minimizing disturbance of the terrain around buildings or elsewhere on the site, thereby reducing the possibility of destroying or damaging important landscape features, archeological resources, other cultural or religious features, or burial grounds. | Using heavy machinery or equipment in areas where it may disturb or damage important landscape features, archeological resources, other cultural or religious features, or burial grounds.  |
| Surveying and documenting areas where the terrain will be altered to determine the potential impact to important landscape features, archeological resources, other cultural or religious features, or burial grounds.                                      | Failing to survey the building site prior to beginning work, which may result in damage or loss of important landscape features, archeological resources, other cultural or religious features, or burial grounds.  |

## BUILDING SITE

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Protecting (e.g., preserving in place) important site features, archeological resources, other cultural or religious features, or burial grounds.   | Leaving known site features or archeological material unprotected so that it is damaged during rehabilitation work.  |
| Planning and carrying out any necessary investigation before rehabilitation begins, using professional archeologists and methods, when preservation in place is not feasible.   | Allowing unqualified personnel to perform data recovery on archeological resources, which can result in damage or loss of important archeological material   |
| Preserving important landscape features through regularly-scheduled maintenance of historic plant material.   | Allowing important landscape features or archeological resources to be lost, damaged, or to deteriorate due to inadequate protection or lack of maintenance  |
| Protecting the building site and landscape features against arson and vandalism before rehabilitation work begins by erecting temporary fencing and by installing alarm systems keyed into local protection agencies. | Leaving the property unprotected and subject to vandalism before work begins so that the building site and landscape features, archeological resources, other cultural or religious features, or burial grounds can be damaged or destroyed.<br><br>Removing or destroying features from the site, such as fencing, paths or walkways, masonry balustrades, or plant material. |
| Installing protective fencing, bollards, and stanchions on a building site, when necessary for security, that are as unobtrusive as possible.   | Installing protective fencing, bollards, and stanchions on a building site, when necessary for security, without taking into consideration their location and visibility so that they negatively impact the historic character of the site.  |
| Providing continued protection and maintenance of buildings and landscape features on the site through appropriate grounds and landscape management.  | Failing to protect and maintain materials and features from the restoration period on a cyclical basis so that deterioration of the site results.  |
| Protecting buildings and landscape features when working on the site.   | Failing to protect building and landscape features during work on the site or failing to repair damaged or deteriorated site features.   |

BUILDING SITE

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| Evaluating the overall condition of materials and features to determine whether more than protection and maintenance, such as repairs to site features, will be necessary.   | Failing to undertake adequate measures to ensure the protection of the site.   |
| <b>Repairing</b> historic site features which have been damaged, are deteriorated, or have missing components order reestablish the whole feature and to ensure retention of the integrity of the historic materials. Repairs may include limited replacement in kind or with a compatible substitute material of those extensively deteriorated or missing parts of site features when there are surviving prototypes, such as paving, railings, or individual plants within a group (e.g., a hedge). Repairs should be physically and visually compatible. | Removing materials and features that could be repaired or using improper repair techniques.<br><br>Replacing an entire feature of the site (such as a fence, walkway, or drive) when repair of materials and limited replacement of deteriorated or missing components are feasible. |



[43] The industrial character of the site was retained when this brewery complex was rehabilitated for residential use.



[44] **Not Recommended:** (a-b) The historic character of this plantation house (marked in blue on plan on opposite page) and its site was diminished and adversely impacted when multiple new buildings like this (#3 on plan) were constructed on the property (c).



## BUILDING SITE

### RECOMMENDED

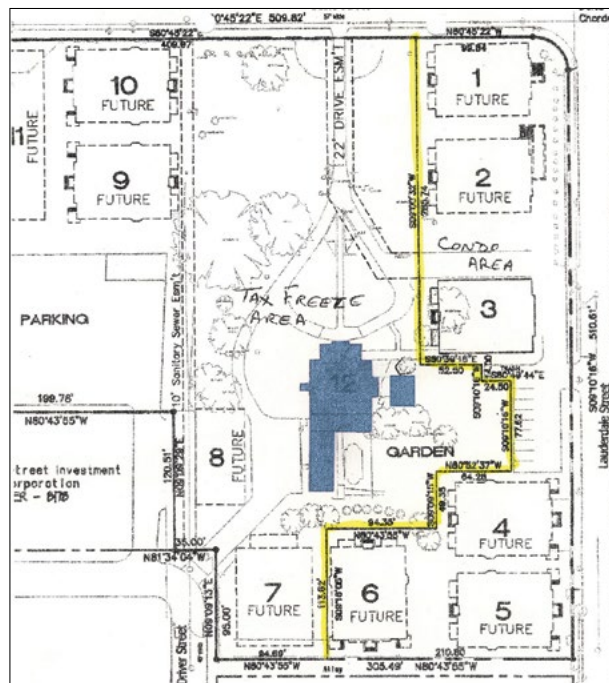
**Replacing** in kind an entire feature of the site that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature. Examples could include a walkway or a fountain, a land form, or plant material. If using the same kind of material is not feasible, then a compatible substitute material may be considered.

### NOT RECOMMENDED

Removing a character-defining feature of the site that is unrepairable and not replacing it, or replacing it with a new feature that does not match.

Using a substitute material for the replacement that does not convey the same appearance of the surviving site feature or that is physically or ecologically incompatible.

Adding conjectural landscape features to the site (such as period reproduction light fixtures, fences, fountains, or vegetation) that are historically inappropriate, thereby creating an inaccurate appearance of the site.



## BUILDING SITE

## RECOMMENDED

## NOT RECOMMENDED

*The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.*

**Designing the Replacement for Missing Historic Features**

Designing and installing a new feature on a site when the historic feature is completely missing. This could include missing outbuildings, terraces, drives, foundation plantings, specimen trees, and gardens. The design may be an accurate restoration based on documentary and physical evidence, but only when the feature to be replaced coexisted with the features currently on the site. Or, it may be a new design that is compatible with the historic character of the building and site.

Creating an inaccurate appearance because the replacement for the missing feature is based upon insufficient physical or historic documentation, is not a compatible design, or because the feature did not coexist with the features currently on the site.

Introducing a new feature, including plant material, that is visually incompatible with the site or that alters or destroys the historic site patterns or use.

**Alterations and Additions for a New Use**

Designing new onsite features (such as parking areas, access ramps, or lighting), when required by a new use, so that they are as unobtrusive as possible, retain the historic relationship between the building or buildings and the landscape, and are compatible with the historic character of the property.

Locating parking areas directly adjacent to historic buildings where vehicles may cause damage to buildings or landscape features or when they negatively impact the historic character of the building site if landscape features and plant materials are removed.

Designing new exterior additions to historic buildings or adjacent new construction that are compatible with the historic character of the site and preserves the historic relationship between the building or buildings and the landscape.

Introducing new construction on the building site which is visually incompatible in terms of size, scale, design, material, or color, which destroys historic relationships on the site, or which damages or destroys important landscape features, such as replacing a lawn with paved parking areas or removing mature trees to widen a driveway.

Removing non-significant buildings, additions, or site features which detract from the historic character of the site.

Removing a historic building in a complex of buildings or removing a building feature or a landscape feature which is important in defining the historic character of the site.

Locating an irrigation system needed for a new or continuing use of the site where it will not cause damage to historic buildings.

Locating an irrigation system needed for a new or continuing use of the site where it will damage historic buildings.



[45] Undertaking a survey to document archeological resources may be considered in some rehabilitation projects when a new exterior addition is planned.

## SETTING (DISTRICT / NEIGHBORHOOD)

### RECOMMENDED

**Identifying, retaining, and preserving** building and landscape features that are important in defining the overall historic character of the setting. Such features can include circulation systems, such as roads and streets; furnishings and fixtures, such as light posts or benches; vegetation, gardens and yards; adjacent open space, such as fields, parks, commons, or woodlands; and important views or visual relationships.

### NOT RECOMMENDED

Removing or substantially changing those building and landscape features in the setting which are important in defining the historic character so that, as a result, the character is diminished.



[46] The varied size, shapes, and architectural styles of these historic buildings are unique to this street in Christiansted, St. Croix, USVI, and should be retained in a rehabilitation project.

[47] Original paving stones contribute to the character of the historic setting and distinguish this block from other streets in the district.







[48] Old police and fire call boxes, which are distinctive features in this historic district, have been retained, and now showcase work by local artists.

[49] Low stone walls are character-defining features in this hilly, early-20th-century residential neighborhood.



## SETTING (DISTRICT / NEIGHBORHOOD)

### RECOMMENDED

Retaining the historic relationship between buildings and landscape features in the setting. For example, preserving the relationship between a town common or urban plaza and the adjacent houses, municipal buildings, roads, and landscape and streetscape features.

### NOT RECOMMENDED

Altering the relationship between the buildings and landscape features in the setting by widening existing streets, changing landscape materials, or locating new streets or parking areas where they may negatively impact the historic character of the setting.

Removing or relocating buildings or landscape features, thereby destroying the historic relationship between buildings and the landscape in the setting.





## SETTING (DISTRICT / NEIGHBORHOOD)

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| <b>Protecting and maintaining</b> historic features in the setting through regularly-scheduled maintenance and grounds and landscape management.  | Failing to protect and maintain materials in the setting on a cyclical basis so that deterioration of buildings and landscape features results.<br><br>Stripping or removing historic features from buildings or the setting, such as a porch, fencing, walkways, or plant material.   |
| Installing protective fencing, bollards, and stanchions in the setting, when necessary for security, that are as unobtrusive as possible.   | Installing protective fencing, bollards, and stanchions in the setting, when necessary for security, without taking into consideration their location and visibility so that they negatively impact the historic character of the setting.   |
| Protecting buildings and landscape features when undertaking work in the setting.   | Failing to protect buildings and landscape features during work in the setting.  |
| Evaluating the overall condition of materials and features to determine whether more than protection and maintenance, such as repairs to materials and features in the setting, will be necessary.  | Failing to undertake adequate measures to ensure the protection of materials and features in the setting.  |
| <b>Repairing</b> features in the setting by reinforcing the historic materials. Repairs may include the replacement in kind or with a compatible substitute material of those extensively deteriorated or missing parts of setting features when there are surviving prototypes, such as fencing, paving materials, trees, and hedgerows. Repairs should be physically and visually compatible. | Failing to repair and reinforce damaged or deteriorated historic materials and features in the setting.<br><br>Removing material that could be repaired or using improper repair techniques.<br><br>Replacing an entire feature of the building or landscape in the setting when repair of materials and limited replacement of deteriorated or missing components are feasible. |

## SETTING (DISTRICT / NEIGHBORHOOD)

| RECOMMENDED  | NOT RECOMMENDED  |
|--|--|
| <p><b>Replacing</b> in kind an entire building or landscape feature in the setting that is too deteriorated to repair (if the overall form and detailing are still evident) using the physical evidence as a model to reproduce the feature. If using the same kind of material is not feasible, then a compatible substitute material may be considered.</p>  | <p>Removing a character-defining feature of the building or landscape from the setting that is unrepairable and not replacing it or replacing it with a new feature that does not match.</p> <p>Using a substitute material for the replacement that does not convey the same appearance of the surviving building or landscape feature in the setting or that is physically or ecologically incompatible.</p>   |
| <p><i>The following work is highlighted to indicate that it is specific to Rehabilitation projects and should only be considered after the preservation concerns have been addressed.</i></p>  |  |
| Designing the Replacement for Missing Historic Features  |  |
| <p>Designing and installing a new feature of the building or landscape in the setting when the historic feature is completely missing. This could include missing steps, streetlights, terraces, trees, and fences. The design may be an accurate restoration based on documentary and physical evidence, but only when the feature to be replaced coexisted with the features currently in the setting. Or, it may be a new design that is compatible with the historic character of the setting.</p> | <p>Creating an inaccurate appearance because the replacement for the missing feature is based upon insufficient physical or historic documentation; is not a compatible design, or because the feature did not coexist with the features currently in the setting.</p> <p>Introducing a new building or landscape feature that is visually or otherwise incompatible with the setting's historic character (e.g., replacing low metal fencing with a high wood fence).</p> |
| Alterations and Additions for a New Use  |  |
| <p>Designing new features (such as parking areas, access ramps, or lighting), when required by a new use, so that they are as unobtrusive as possible, retain the historic relationships between buildings and the landscape in the setting, and are compatible with the historic character of the setting.</p>  | <p>Locating parking areas directly adjacent to historic buildings where vehicles may cause damage to buildings or landscape features or when they negatively impact the historic character of the setting if landscape features and plant materials are removed.</p>   |
| <p>Designing new exterior additions to historic buildings or adjacent new construction that are compatible with the historic character of the setting that preserve the historic relationship between the buildings and the landscape.</p>   | <p>Introducing new construction into historic districts which is visually incompatible or that destroys historic relationships within the setting, or which damages or destroys important landscape features.</p>  |
| <p>Removing non-significant buildings, additions, or landscape features which detract from the historic character of the setting.</p>  | <p>Removing a historic building, a building feature, or landscape feature which is important in defining the historic character of the setting.</p>  |

## CODE-REQUIRED WORK

### RECOMMENDED

### NOT RECOMMENDED

*Sensitive solutions to meeting accessibility and life-safety code requirements are an important part of protecting the historic character of the building and site. Thus, work that must be done to meet use-specific code requirements should be considered early in planning a **Rehabilitation** of a historic building for a new use. Because code mandates are directly related to occupancy, some uses require less change than others and, thus, may be more appropriate for a historic building. Early coordination with code enforcement authorities can reduce the impact of alterations necessary to comply with current codes.*

### ACCESSIBILITY

Identifying the historic building's character-defining exterior features, interior spaces, features, and finishes, and features of the site and setting which may be affected by accessibility code-required work.

Undertaking accessibility code-required alterations before identifying those exterior features, interior spaces, features, and finishes, and features of the site and setting which are character defining and, therefore, must be preserved.

Complying with barrier-free access requirements in such a manner that the historic building's character-defining exterior features, interior spaces, features, and finishes, and features of the site and setting are preserved or impacted as little as possible.

Altering, damaging, or destroying character-defining exterior features, interior spaces, features, and finishes, or features of the site and setting while making modifications to a building, its site, or setting to comply with accessibility requirements.

[50] This kitchen in a historic apartment complex was rehabilitated to meet accessibility requirements.

[51] A new interior access ramp with a simple metal railing is compatible with the character of this mid-century-modern building.



CODE-REQUIRED WORK

RECOMMENDED

NOT RECOMMENDED

|  |   |
|--|---|
| Working with specialists in accessibility and historic preservation to determine the most sensitive solutions to comply with access requirements in a historic building, its site, or setting.         | Making changes to historic buildings, their sites, or setting without first consulting with specialists in accessibility and historic preservation to determine the most appropriate solutions to comply with accessibility requirements. |
| Providing barrier-free access that promotes independence for the user while preserving significant historic features.  | Making modifications for accessibility that do not provide independent, safe access while preserving historic features.   |
| Finding solutions to meet accessibility requirements that minimize the impact of any necessary alteration on the historic building, its site, and setting, such as compatible ramps, paths, and lifts. | Making modifications for accessibility without considering the impact on the historic building, its site, and setting.  |

[52] The access ramp blends in with the stone façade of the First National Bank in Stephenville, TX, and is appropriately located on the side where it is does not impact the historic character of the building. Photo: Nancy McCoy, QuimbyMcCoy Preservation Architecture, LLP.



[53] This entrance ramp (right) is compatible with the historic character of this commercial building.

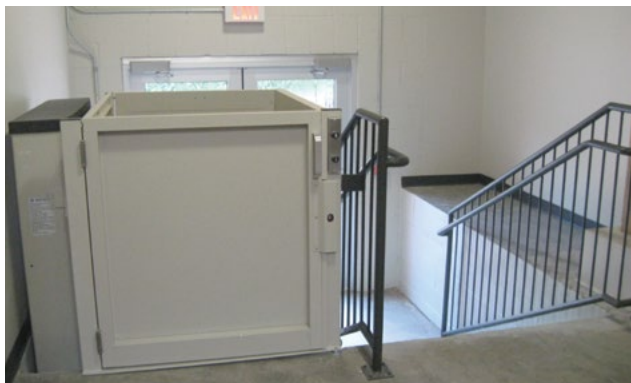


[54] The gently-sloped path in a historic park in Kansas City, MO, which accesses the memorial below, includes a rest area part way up the hill. Photo: STRATA Architecture + Preservation.



## CODE-REQUIRED WORK

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Using relevant sections of existing codes regarding accessibility for historic buildings that provide alternative means of code compliance when code-required work would otherwise negatively impact the historic character of the property.  |  |
| Minimizing the impact of accessibility ramps by installing them on secondary elevations when it does not compromise accessibility or by screening them with plantings.  | Installing elevators, lifts, or incompatible ramps at a primary entrance, or relocating primary entrances to secondary locations to provide access without investigating other options or locations. |
| Adding a gradual slope or grade to the sidewalk, if appropriate, to access the entrance rather than installing a ramp that would be more intrusive to the historic character of the building and the district.  |  |
| Adding an exterior stair or elevator tower that is compatible with the historic character of the building in a minimally-visible location only when it is not possible to accommodate it on the interior without resulting in the loss of significant historic spaces, features, or finishes. |  |
| Installing a lift as inconspicuously as possible when it is necessary to locate it on a primary elevation of the historic building.   |  |
| Installing lifts or elevators on the interior in secondary or less significant spaces where feasible.   | Installing lifts or elevators on the interior in primary spaces which will negatively impact the historic character of the space.  |



[55] The lift is compatible with the industrial character of this former warehouse.

## CODE-REQUIRED WORK

## RECOMMENDED

## NOT RECOMMENDED

## LIFE SAFETY

Identifying the historic building's character-defining exterior features, interior spaces, features, and finishes, and features of the site and setting which may be affected by life-safety code-required work.

Complying with life-safety codes (including requirements for impact-resistant glazing, security, and seismic retrofit) in such a manner that the historic building's character-defining exterior features, interior spaces, features, and finishes, and features of the site and setting are preserved or impacted as little as possible.

Removing building materials only after testing has been conducted to identify hazardous materials, and using only the least damaging abatement methods.

Providing workers with appropriate personal equipment for protection from hazards on the worksite.

Working with code officials and historic preservation specialists to investigate systems, methods, or devices to make the building compliant with life-safety codes to ensure that necessary alterations will be compatible with the historic character of the building.

Using relevant sections of existing codes regarding life safety for historic buildings that provide alternative means of code compliance when code-required work would otherwise negatively impact the historic character of the building.

Undertaking life-safety code-required alterations before identifying those exterior features, interior spaces, features, and finishes, and features of the site and setting which are character defining and, therefore, must be preserved.

Altering, damaging, or destroying character-defining exterior features, interior spaces, features, and finishes, or features of the site and setting while making modifications to a building, its site, or setting to comply with life-safety code requirements.

Removing building materials without testing first to identify the hazardous materials, or using potentially damaging methods of abatement.

Removing hazardous or toxic materials without regard for workers' health and safety or environmentally-sensitive disposal of the materials.

Making life-safety code-required changes to the building without consulting code officials and historic preservation specialists, with the result that alterations negatively impact the historic character of the building.

[56 a-b] In order to continue in its historic use, the door openings of this 1916 Colonial Revival-style fire station had to be widened to accommodate the larger size of modern fire trucks. Although this resulted in some change to the arched door surrounds, it is minimal and does not negatively impact the historic character of the building. (a) Above, before; Photo: Fire and Emergency Medical Services Department (FEMS), Washington, D.C.; below, after.







[57] Workers wear protective clothing while removing lead paint from metal features.



[59] (a-b) The decorative concrete balcony railings on this 1960s building did not meet life-safety code requirements. They were replaced with new glass railings with a fritted glass pattern matching the original design—a creative solution that satisfies codes, while preserving the historic appearance of the building when viewed from the street (c-d). Photos: (a, b, d) ERA Architects, Inc.; (c) Nathan Cyprys, photographer.



## CODE-REQUIRED WORK

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| Upgrading historic stairways and elevators to meet life-safety codes so that they are not damaged or otherwise negatively impacted.  | Damaging or making inappropriate alterations to historic stairways and elevators or to adjacent features, spaces, or finishes in the process of doing work to meet code requirements.   |
| Installing sensitively-designed fire-suppression systems, such as sprinklers, so that historic features and finishes are preserved.  | Covering character-defining wood features with fire-retardant sheathing, which results in altering their appearance.  |
| Applying fire-retardant coatings when appropriate, such as intumescent paint, to protect steel structural systems.   | Using fire-retardant coatings if they will damage or obscure character-defining features.   |
| Adding a new stairway or elevator to meet life-safety code requirements in a manner that preserves adjacent character-defining features and spaces.  | Altering, damaging, or destroying character-defining spaces, features, or finishes when adding a new code-required stairway or elevator.  |
| Using existing openings on secondary or less-visible elevations or, if necessary, creating new openings on secondary or less-visible elevations to accommodate second egress requirements. | Using a primary or other highly-visible elevation to accommodate second egress requirements without investigating other options or locations.   |
| Placing a code-required stairway or elevator that cannot be accommodated within the historic building in a new exterior addition located on a secondary or minimally-visible elevation.    | Constructing a new addition to accommodate code-required stairs or an elevator on character-defining elevations or where it will obscure, damage, or destroy character-defining features of the building, its site, or setting. |
| Designing a new exterior stairway or elevator tower addition that is compatible with the historic character of the building.   |   |



[58] Fire doors that retract into the walls have been installed here (not visible in photo) preserve the historic character of this corridor.



## RESILIENCE TO NATURAL HAZARDS

### RECOMMENDED

### NOT RECOMMENDED

*Resilience to natural hazards should be addressed as part of the treatment Rehabilitation. A historic building may have existing characteristics or features that help address or minimize the impacts of natural hazards. These should be used to best advantage and should be taken into consideration early in the planning stages of a rehabilitation project before proposing any new treatments. When new adaptive treatments are needed they should be carried out in a manner that will have the least impact on the historic character of the building, its site, and setting. .*

|  |  |
|--|--|
| Identifying the vulnerabilities of the historic property to the impacts of natural hazards (such as wildfires, hurricanes, or tornadoes) using the most current climate information and data available.  | Failing to identify and periodically reevaluate the potential vulnerability of the building, its site, and setting to the impacts of natural hazards.  |
| Assessing the potential impacts of known vulnerabilities on character-defining features of the building, its site, and setting; and reevaluating and reassessing potential impacts on a regular basis.   |  |
| Documenting the property and character-defining features as a record and guide for future repair work, should it be necessary, and storing the documentation in a weatherproof location.   | Failing to document the historic property and its character-defining features with the result that such information is not available in the future to guide repair or reconstruction work, should it be necessary.                                     |
| Ensuring that historic resources inventories and maps are accurate, up to date, and accessible in times of emergency.  |  |
| Maintaining the building, its site, and setting in good repair, and regularly monitoring character-defining features.  | Failing to regularly monitor and maintain the property and the building systems in good repair.  |
| Using and maintaining existing characteristics and features of the historic building, its site, setting, and larger environment (such as shutters for storm protection or a site wall that keeps out flood waters) that may help to avoid or minimize the impacts of natural hazards | Allowing loss, damage, or destruction to occur to the historic building, its site, or setting by failing to evaluate potential future impacts of natural hazards or to plan and implement adaptive measures, if necessary to address possible threats. |
| Undertaking work to prevent or minimize the loss, damage, or destruction of the historic property while retaining and preserving significant features and the overall historic character of the building, its site, and setting.   | Carrying out adaptive measures intended to address the impacts of natural hazards that are unnecessarily invasive or will otherwise adversely impact the historic character of the building, its site, or setting.                                     |



[60] In some instances, it may be necessary to elevate a historic building located in a floodplain to protect it. But this treatment is appropriate only if elevating the building will retain its historic character, including its relationship to the site, and its new height will be compatible with surrounding buildings if in a historic district. The house on the right, which has been raised only slightly, has retained its historic character. The house on the left has been raised several feet higher, resulting in a greater impact on the historic character of the house and the district.

## RESILIENCE TO NATURAL HAZARDS

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| Ensuring that, when planning work to adapt for natural hazards, all feasible alternatives are considered, and that the options requiring the least alteration are considered first.  |   |
| Implementing local and regional traditions (such as elevating residential buildings at risk of flooding or reducing flammable vegetation around structures in fire-prone areas) for adapting buildings and sites in response to specific natural hazards, when appropriate. Such traditional methods may be appropriate if they are compatible with the historic character of the building, its site, and setting. | Implementing a treatment traditionally used in another region or one typically used for a different property type or architectural style which is not compatible with the historic character of the property. |
| Using special exemptions and variances when adaptive treatments to protect buildings from known hazards would otherwise negatively impact the historic character of the building, its site, and setting.   |   |
| Considering adaptive options, whenever possible, that would protect multiple historic resources, if the treatment can be implemented without negatively impacting the historic character of the district, or archeological resources, other cultural or religious features, or burial grounds.   |   |

### Sustainability

Sustainability is usually a very important and integral part of the treatment **Rehabilitation**. Existing energy-efficient features should be taken into consideration early in the planning stages of a rehabilitation project before proposing any energy improvements. There are numerous treatments that may be used to upgrade a historic building to help it operate more efficiently while retaining its character.

The topic of sustainability is addressed in detail in **The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings**.

## NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND RELATED NEW CONSTRUCTION

| RECOMMENDED  | NOT RECOMMENDED   |
|--|---|
| New Additions  |   |
| Placing functions and services required for a new use (including elevators and stairways) in secondary or non-character-defining interior spaces of the historic building rather than constructing a new addition. | Expanding the size of the historic building by constructing a new addition when requirements for the new use could be met by altering non-character-defining interior spaces.           |
| Constructing a new addition on a secondary or non-character-defining elevation and limiting its size and scale in relationship to the historic building.   | Constructing a new addition on or adjacent to a primary elevation of the building which negatively impacts the building's historic character.   |
| Constructing a new addition that results in the least possible loss of historic materials so that character-defining features are not obscured, damaged, or destroyed.   | Attaching a new addition in a manner that obscures, damages, or destroys character-defining features of the historic building.  |
| Designing a new addition that is compatible with the historic building.  | Designing a new addition that is significantly different and, thus, incompatible with the historic building.  |
| Ensuring that the addition is subordinate and secondary to the historic building and is compatible in massing, scale, materials, relationship of solids to voids, and color.                                       | Constructing a new addition that is as large as or larger than the historic building, which visually overwhelms it (i.e., results in the diminution or loss of its historic character). |



## NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND RELATED NEW CONSTRUCTION

### RECOMMENDED

### NOT RECOMMENDED

|  |  |
|--|--|
| Using the same forms, materials, and color range of the historic building in a manner that does not duplicate it, but distinguishes the addition from the original building. | Duplicating the exact form, material, style, and detailing of the historic building in a new addition so that the new work appears to be historic. |
| Basing the alignment, rhythm, and size of the window and door openings of the new addition on those of the historic building.  |  |
| Incorporating a simple, recessed, small-scale hyphen, or connection, to physically and visually separate the addition from the historic building.                            |  |
| Distinguishing the addition from the original building by setting it back from the wall plane of the historic building.  |  |

[61 a-b] The materials, design, and location at the back of the historic house are important factors in making this a compatible new addition. Photos: © Maxwell MacKenzie.



NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND  
RELATED NEW CONSTRUCTION

| RECOMMENDED  | NOT RECOMMENDED |
|--|-----------------|
| Ensuring that the addition is stylistically appropriate for the historic building type (e.g., whether it is residential or institutional).                   |                 |
| Considering the design for a new addition in terms of its relationship to the historic building as well as the historic district, neighborhood, and setting. |                 |



[62] The stair tower at the rear of this commercial building is a compatible new addition.



## NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND RELATED NEW CONSTRUCTION

### RECOMMENDED

### NOT RECOMMENDED

#### Rooftop Additions

Designing a compatible rooftop addition for a multi-story building, when required for a new use, that is set back at least one full bay from the primary and other highly-visible elevations and that is inconspicuous when viewed from surrounding streets.

Constructing a rooftop addition that is highly visible, which negatively impacts the character of the historic building, its site, setting, or district.

[ 63] (a) A mockup should be erected to demonstrate the visibility of a proposed rooftop addition and its potential impact on the historic building. Based on review of this mockup (orange marker), it was determined that the rooftop addition would meet the Standards (b). The addition is unobtrusive and blends in with the building behind it.



NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND  
RELATED NEW CONSTRUCTION

RECOMMENDED

Limiting a rooftop addition to one story in height to minimize its visibility and its impact on the historic character of the building.

NOT RECOMMENDED

- Constructing a highly-visible, multi-story rooftop addition that alters the building's historic character.
- Constructing a rooftop addition on low-rise, one- to three-story historic buildings that is highly visible, overwhelms the building, and negatively impacts the historic district.
- Constructing a rooftop addition with amenities (such as a raised pool deck with plantings, HVAC equipment, or screening) that is highly visible and negatively impacts the historic character of the building.



[64] **Not Recommended:**  
It is generally not appropriate to construct a rooftop addition on a low-rise, two- to three-story building such as this, because it negatively affects its historic character.



## NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND RELATED NEW CONSTRUCTION

### RECOMMENDED

### NOT RECOMMENDED

#### Related New Construction

Adding a new building to a historic site or property only if the requirements for a new or continuing use cannot be accommodated within the existing structure or structures.

Locating new construction far enough away from the historic building, when possible, where it will be minimally visible and will not negatively affect the building's character, the site, or setting.

Adding a new building to a historic site or property when the project requirements could be accommodated within the existing structure or structures.

Placing new construction too close to the historic building so that it negatively impacts the building's character, the site, or setting.

[65] (a) This (far left) is a compatible new outbuilding constructed on the site of a historic plantation house (b). Although traditional in design, it is built of wood to differentiate it from the historic house (which is scored stucco) located at the back of the site so as not to impact the historic house, and minimally visible from the public right-of-way (c).



new  
addition

## NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS AND RELATED NEW CONSTRUCTION

| RECOMMENDED   | NOT RECOMMENDED  |
|---|--|
| Designing new construction on a historic site or in a historic setting that it is compatible but differentiated from the historic building or buildings.  | Replicating the features of the historic building when designing a new building, with the result that it may be confused as historic or original to the site or setting.   |
| Considering the design for related new construction in terms of its relationship to the historic building as well as the historic district and setting.   |  |
| Ensuring that new construction is secondary to the historic building and does not detract from its significance.  | <p>Adding new construction that results in the diminution or loss of the historic character of the building, including its design, materials, location, or setting.</p> <p>Constructing a new building on a historic property or on an adjacent site that is much larger than the historic building.</p> <p>Designing new buildings or groups of buildings to meet a new use that are not compatible in scale or design with the character of the historic building and the site, such as apartments on a historic school property that are too residential in appearance.</p> |
| Using site features or land formations, such as trees or sloping terrain, to help minimize the new construction and its impact on the historic building and property.   |  |
| Designing an addition to a historic building in a densely-built location (such as a downtown commercial district) to appear as a separate building or infill, rather than as an addition. In such a setting, the addition or the infill structure must be compatible with the size and scale of the historic building and surrounding buildings—usually the front elevation of the new building should be in the same plane (i.e., not set back from the historic building). This approach may also provide the opportunity for a larger addition or infill when the façade can be broken up into smaller elements that are consistent with the scale of the historic building and surrounding buildings. |  |