

# SECTION 4: CHANGES TO EXISTING BUILDINGS

The City of Houston has established historic districts as a way to preserve the character of neighborhoods which possess cultural, historical, and architectural significance. Good stewardship involves the responsible use and management of historic properties, protecting them for future generations. This is best practiced by maintaining the features that define the character of individual historic buildings, structures, sites, and objects of historic significance. When individual historic resources are appropriately maintained, the historic district — the collection of those resources — will be preserved as well. By taking the time to learn about character-defining features and how to treat them sensitively, we can serve as good stewards for properties in historic districts while they are in our care.

Since noncontributing buildings already do not support the historic qualities of the district, the criteria for making changes to them are less strict than those for contributing structures. However, the visual qualities of noncontributing structures still impact the character of the historic district, so many changes to them must be managed. *Note: If a historic building, which was classified as noncontributing due to alterations, is restored, it may be reclassified as contributing, making the owner eligible for tax incentives and other benefits.*

This section includes qualitative design guidelines — that is, those rules that are not numerically based and may require interpretation — for exterior alterations. It also includes useful information about preservation and maintenance. This information will also be useful for property owners or design professionals who are planning additions or new construction.

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## PLEASE NOTE:

Check with the Preservation Office staff to determine if your proposed work requires a COA, may be approved administratively, or is exempted. (See Section 1.)

**PLEASE NOTE:**

See the National Park Service's Preservation Briefs for technical advice on best practices for maintaining and repairing historic building elements, at <https://www.nps.gov/tps/how-to-preserve/briefs.htm>

## ARCHITECTURAL ELEMENTS

Identify those features which are character-defining, located in a prominent or visible location, and/or examples of skilled craftsmanship. Maintain and preserve those features in good repair.

### 4.1 Use care when cleaning or repairing an architectural element.

- Patch, piece-in, splice, consolidate, or otherwise address deteriorated elements using recognized preservation methods.
- Minimize damage to historic architectural elements when repairs are necessary.
- Use the gentlest means possible when cleaning or repairing an architectural feature.
- If an architectural element must be removed for repair, use methods that minimize damage to surrounding materials and that will make the item easy to reinstall.
- Before removing the architectural element, document its location with photographs and sketches so it can be reinstalled correctly.

### 4.2 If repair is impossible, replicate an architectural element accurately.

- When an architectural element is too deteriorated to repair, it may be replaced with an accurate replica of that element or an identical one.
- If exact replication is not possible, due to the lack of a source element, use a design that is substantiated by physical or pictorial evidence to avoid creating a misrepresentation of the building's history. Use the same kind of material as the original detail, when feasible. A substitute material may be acceptable if the size, shape, texture, and finish conveys the visual appearance of the original. Alternative materials are usually more acceptable in locations that are less visible or where they are unlikely to receive direct physical contact, such as a cornice at the top of a wall.
- Avoid adding architectural details such as decorative millwork or other ornaments that were not part of the original structure; doing so can create a false sense of history.



*Distinctive stylistic features and other examples of skilled craftsmanship are character-defining features of a historic building and should be preserved. Examples include decorative glazing, shingles, dormers, brackets, and parapets.*

# HISTORIC BUILDING MATERIALS

These design guidelines apply to all materials that are original to the building, including wood, stone, brick, metal, stucco, plaster, and concrete. Historic building materials should be preserved in place, as much as possible, and repaired when necessary. If the material is damaged beyond repair, only then should you consider replacing it. Only replace material that is damaged, and use replacement material that matches the original.

If historic materials have been covered, consider removing the covering; do this carefully so that the underlying original building material is not damaged, and repair the original material as needed once it is exposed.

## 4.3 Keep historic building materials clean.

- If building materials become dirty or mildewed, use gentle cleaning products and methods rather than harsh chemicals or abrasive treatments.
- A low-pressure water wash is preferred; avoid high-pressure or abrasive methods, which can damage historic building material.
- Mild chemicals should be tested in an inconspicuous location before using on larger areas.

## 4.4 Preserve historic building materials.

- Do not remove original material that is in good condition.
- Do not cover or obscure historic building materials.
- Consider removing later covering materials that are inappropriate.
- Repair historic building materials.
- Use storm drains, flashing, coping, gutters, etc. to provide proper drainage away from historic materials and minimize damage to them.



Brick showing damage from inappropriate cleaning (photo courtesy of Heritage Ohio)

### PLEASE NOTE:

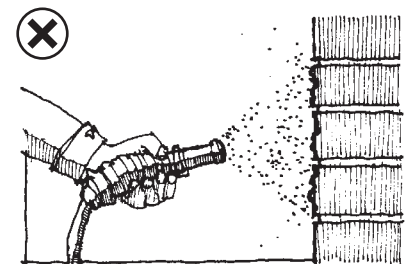
For more information about appropriate maintenance methods, please see the National Park Service's Preservation Brief No. 47: *Maintaining the Exterior of Small and Medium Size Historic Buildings*.



A house with original building materials



Inappropriate siding being removed from a historic brick Italianate building



Harsh cleaning methods, such as sandblasting, can damage historic materials, changing their appearance.

**PLEASE NOTE:**

For technical information about the causes of damage and suggestions for appropriately repairing historic materials, please see the National Park Service's Preservation Briefs, available online at <https://www.nps.gov/tps/how-to-preserve/briefs.htm>.

**4.5 Regularly inspect materials, so that damage can be caught and repaired early.**

- Repair deteriorated historic building materials by patching, consolidating, or otherwise reinforcing the material.

**4.6 Replace historic materials in kind.**

- Remove and replace only the material which is deteriorated or damaged beyond reasonable repair. For example, if a few pieces of siding are damaged beyond repair, replace only those boards, not the entire wall.
- Use replacement material that matches the original in profile, shape, finish, and size.
- Consider relocating historic material from a less visible area to replace damaged building material in a key location.
- An alternative material may be considered for a location that is not critical to the integrity of the property, such as a rear wall. (See "Prioritizing Character-Defining Features by Location" on page 2-7 for more information.)

## Wood

Early woodwork includes siding, wall corner boards, window sashes and frames, doors, trim around window and door openings, foundation skirting, and soffits. When properly maintained, original wood building elements can last for many years.

### 4.7 Maintain a coat of paint on wood surfaces; repaint only as needed to prevent deterioration.

Paint is used to protect wood surfaces, but because it weathers over time, paint must be reapplied; the National Park Service recommends re-painting every 5–8 years, after properly preparing the painted surface.

- Avoid repainting for cosmetic reasons only.
- Do not use paints or sealants that are described as being water-repellent or water-proof; these can trap moisture within the wood and cause damage.
- Prime and coat all sides and edges of new wood, including cut ends, to block moisture and extend service life.

### 4.8 Repair, rather than replace, damaged wood whenever possible.

No matter how well wood building materials are maintained, sometimes exposure to moisture results in small areas of rot or other damage.

- Small areas of damage can often be easily repaired using an epoxy wood consolidant. These consolidants are available as liquids or putties, and are also formulated to be flexible, so that they do not crack as wood shrinks or swells with changes in humidity. Unlike wood fillers, epoxy can be shaped, carved, sanded, and painted just like wood.
- If a patch or Dutchman repair is appropriate, remove the least amount of material needed to properly execute the repair. Use wood as close to the original material as possible (same species, grain pattern, and color) for a less visible result.
- Identify the source of the moisture or damage and take steps to prevent further damage.
- Consider replacing rotten wood with a putty consolidant, or leave the damaged wood in place and consolidate it with the liquid version.
- When the repair is complete and the wood has been appropriately shaped and sanded, paint it to protect the rest of the original wood, as well as the repair.
- Regularly inspect for and address any ongoing problems.

#### PLEASE NOTE:

See the National Park Service's Preservation Brief No. 10, *Exterior Paint Problems on Historic Woodwork*, for information about appropriately dealing with painted wood. <https://www.nps.gov/tps/how-to-preserve/briefs/10-paint-problems.htm>



*Maintain protective coatings to retard deterioration and ultraviolet damage.*

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**4.9 If repair is not possible, replace only the damaged wood.**

- Do not replace undamaged wood or a larger area than necessary.
- Use hand tools and take care to avoid damaging adjacent wood during removal.
- Replace the damaged boards with siding of the same species, texture, size, and profile.
- Use stainless steel nails to prevent corrosion and staining from rust.

**4.10 Do not replace or cover undamaged wood.**



*Before: A historic house with inappropriate synthetic siding*



*After: The same house, after the historic siding was uncovered*

## Historic Masonry

Masonry is a type of construction that uses individual building units, such as bricks or stones, and binds them together with a *mortar*, a stiff paste that hardens as it dries. Mortar is usually made by mixing sand, water, and a binder; historically, lime was used as a binder, but it was replaced by Portland cement, which began to be manufactured in the United States in 1875 and became widely used by the early 1900s. The spaces between masonry units, which are filled with mortar, are called *mortar joints*. These joints can be *struck* or *tooled* (shaped) to give a variety of appearances and to channel water away from the surface of the masonry wall.

Brick is probably the most common masonry material used in Houston's historic districts. Natural stone, cast stone, structural clay tiles, and various types of concrete tiles and blocks are less commonly found in historic buildings here. Decorative tiles, which are set in mortar, and stucco, a plaster coating sometimes used over a masonry structure, are also common.

Masonry construction is designed to allow moisture to move from the inside of a wall or building to the outside, through evaporation or weep holes. **If moisture is a problem, address the source of the leak or infiltration directly;** avoid paint, coatings, or sealers which can trap moisture inside a building or masonry wall and cause damage and deterioration.

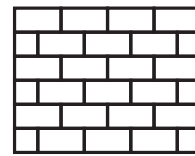
### 4.11 Preserve original masonry materials.

- Preserve significant masonry features, including cornices, pediments, steps, and foundations.
- Avoid dismantling and rebuilding a masonry wall (or a portion of it) if the wall can be repaired or repointed instead. Consult a qualified mason.
- Do not paint previously unpainted masonry without first obtaining a Certificate of Appropriateness.
- Clean masonry materials using gentle products designed for that specific material or type of stone. Graffiti may be removed with a poultice (see Preservation Brief No. 1 by the National Park Service).
- Do not use high-pressure methods, including power washers, sandblasting or abrasive material of any kind; do not scrub with a wire brush. Abrasion from any of these sources can damage the face of masonry units (particularly bricks) and strip mortar from joints.

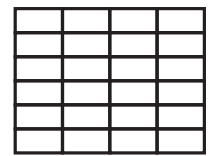
### PLEASE NOTE:

For more information about appropriate maintenance methods, please see the National Park Service's Preservation Brief No. 1: *Assessing, Cleaning, and Water-Repellent Treatments for Historic Masonry Buildings*. <https://www.nps.gov/tps/how-to-preserve/briefs/1-cleaning-water-repellent.htm>

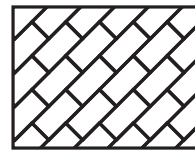
### COMMON MASONRY PATTERNS



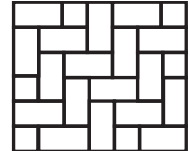
Running Bond



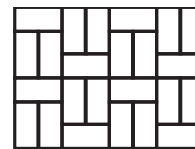
Stacked Bond



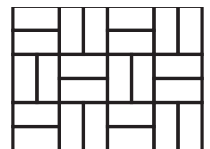
45 Degree Running Bond



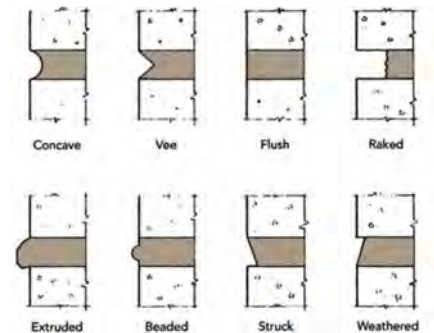
90 Degree Herringbone



Single Basketweave



Double Basketweave



Typical mortar joint profiles



*Re-point mortar joints where there is evidence of deterioration.*

#### **4.12 Repoint a deteriorated mortar joint.**

- Duplicate the original mortar in strength, composition, color, and texture. Mortar color-matching and composition analysis can be provided by a qualified laboratory for a relatively small fee.
- Avoid using mortar with a high Portland cement content if a softer mortar was used originally. Mortar is supposed to be the “sacrificial” element of a masonry wall system; that is, mortar must be softer than the masonry units, so that any cracks that occur will spread through the mortar, rather than the bricks.
- Match the original mortar joint in depth, width, and profile. A qualified mason can appropriately clean, repoint, and strike mortar joints.

#### **4.13 Replace damaged masonry units only as a last resort.**

- Match a replacement masonry unit to the rest of the historic masonry in the building. For example, salvaged, reclaimed, or color-matched historical bricks are available from suppliers.
- If a large masonry feature, such as a cornice or column, is too damaged to repair, replicate it in either the same kind of material or a compatible alternative material. Consult with the Historic Preservation Office staff for technical assistance.



## Historic Metals

Historically, metals were used for a variety of applications. Cast iron columns, railings, and skylights; copper or zinc roofs, gutters, and downspouts; wrought iron balcony and stair railings; and other structural and decorative features were common and can still be found on many historic buildings. More recent historic buildings have incorporated steel and aluminum components. In some cases, a building component may be constructed from one type of metal and then plated (coated) with a different metal.

Like other materials, metal must be appropriately maintained. Damage can be caused by moisture, weathering, corrosion, impact damage, and failure of the material or its connections. For example, galvanic corrosion is an electrochemical reaction caused when two different metals, such as aluminum and steel, come into direct contact with one another and an electrolyte.

### 4.14 Preserve historically significant architectural metals.

- Identify the type of metal used and how it is expected to perform over time; regularly inspect the condition of metal components.
- Maintain protective coatings (including paint) on exposed metals, to prevent corrosion.
- If necessary, identify and consult with building restoration or conservation professionals who have expertise in specific types of metal (such as steel windows or cast iron).

### 4.15 Repair a metal feature, rather than replace it.

- Some metal building components may appear to be decorative, but may actually be structural. If you are not sure, consult with a qualified engineer or architect before beginning repair work.
- If the repair involves “hot” techniques such as welding, brazing, or soldering, be sure to use materials appropriate for the specific type of metal being repaired. Consult a qualified welder.
- For patching, splicing, reinforcing, and other “cold” repairs, use stainless steel parts and fasteners.

### 4.16 Replace a metal feature in kind only when it is beyond repair.

- Match the replacement to the original feature in design, character, and finish.
- Ensure that the new metal is compatible with the original. Avoid combining metals that would result in galvanic corrosion.
- If a connector fails between two pieces of metal, replace it with another appropriate connector, rather than using caulk or other adhesive to join the pieces of metal together.



*Historically, metals were used for a variety of applications, including columns, roofs, balcony railings, and other decorative features.*