

Building Exterior

Architectural Metals

CAST IRON

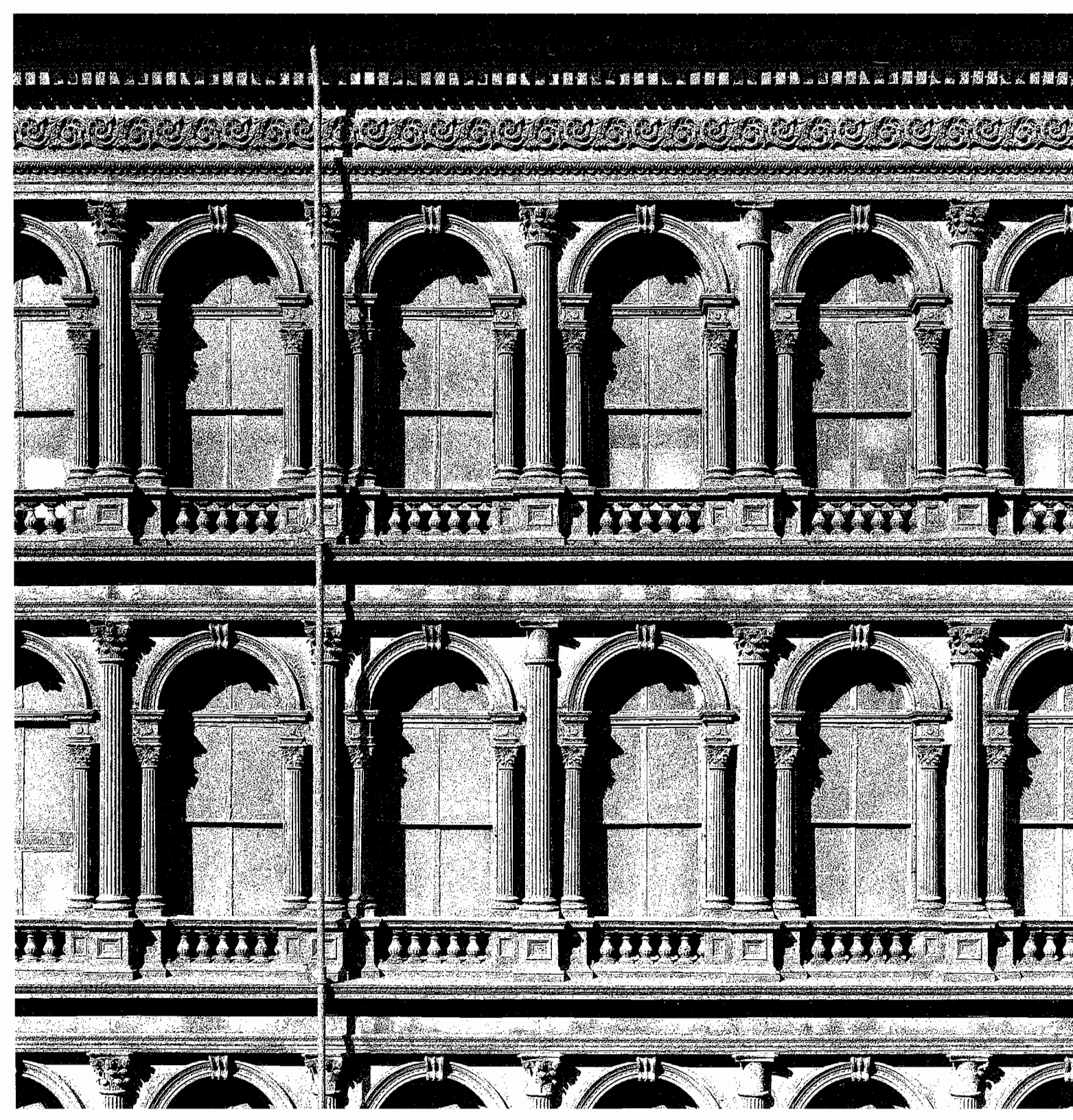
STEEL

PRESSED TIN

COPPER

ALUMINUM

ZINC

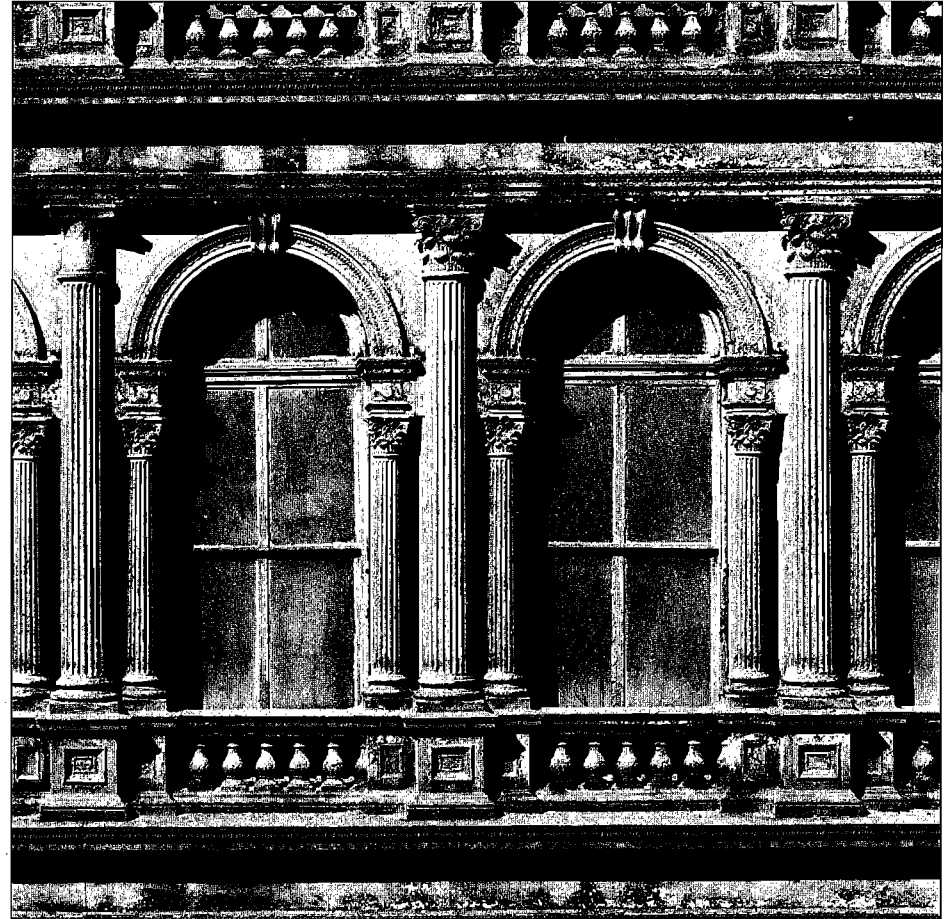


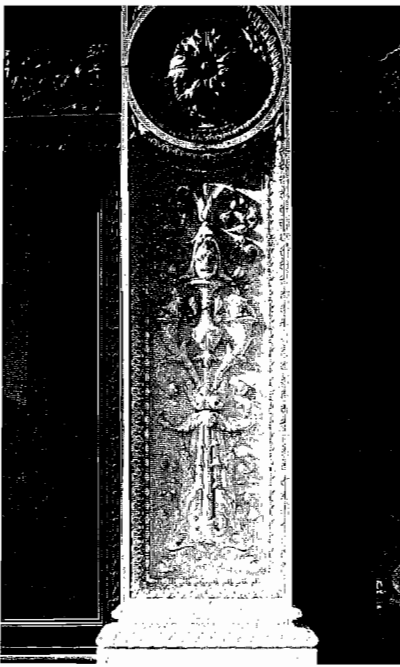
Building Exterior

Architectural Metals

Architectural metal features — such as cast iron facades, porches, and steps; sheet metal cornices, siding, roofs, roof cresting and storefronts; and cast or rolled metal doors, window sash, entablatures, and hardware — are often highly decorative and may be important in defining the overall historic character of the building.

Metals commonly used in historic buildings include lead, tin, zinc, copper, bronze, brass, iron, steel, and to a lesser extent, nickel alloys, stainless steel and aluminum. Historic metal building components were often created by highly skilled, local artisans, and by the late 19th century, many of these components were prefabricated and readily available from catalogs in standardized sizes and designs.





The decorative cast-iron storefront column was sandblasted in order to remove flaking paint and rust prior to repainting. Unlike soft metals such as copper and tin, which are damaged by abrasive cleaning, sandblasting is an appropriate method for cleaning cast iron, a very hard metal.

Recommended

Identify, retain, and preserve

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

Protect and maintain

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

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

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

Not Recommended

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

Removing a major portion of the historic architectural metal from a facade instead of repairing or replacing only the deteriorated metal, then reconstructing the facade with new material in order to create a uniform, or "improved" appearance.

Radically changing the type of finish or its historic color or accent scheme.

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

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

Exposing metals which were intended to be protected from the environment.

Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.

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

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

Recommended

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

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

Not Recommended

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

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

Although these pressed metal storefronts have been well maintained over the years, gaps in the seams between the metal sheets above the door and slight stains along the cornice line indicate a possible roof leak. The roof should be investigated and repaired before the moisture results in rust and more severe metal deterioration.



Recommended

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

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

Not Recommended

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

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

Photo: Jack E. Boucher, HABS.



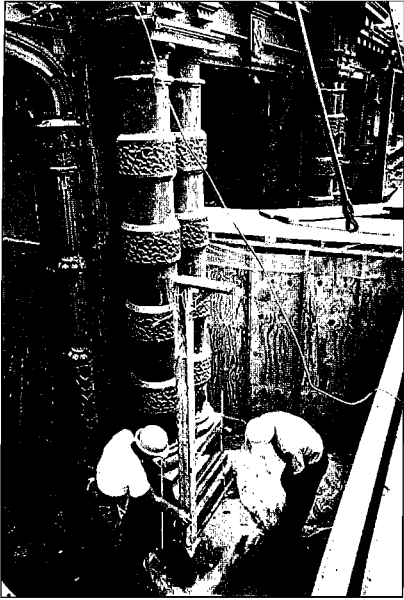
Deteriorated portions of the decorative pressed metal cornice have been inappropriately replaced with non-matching, plain metal sheets, adversely affecting the historic character of this building.

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

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

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

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



The cast-iron columns of this theater are being repaired during rehabilitation. Some of the cast iron elements such as the smaller, non-structural columns missing from the bay on the right will be replaced with a lightweight substitute material such as cast aluminum, an acceptable alternative according to the Standards.

The following work is highlighted to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

Recommended

Repair

Repairing architectural metal features by patching, splicing, or otherwise reinforcing the metal following recognized preservation methods. Repairs may also include the limited replacement in kind—or with a compatible substitute material—of those extensively deteriorated or missing parts of features when there are surviving prototypes such as porch balusters, column capitals or bases; or porch cresting.

Replace

Replacing in kind an entire architectural 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. Examples could include cast iron porch steps or steel sash windows. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Recommended

Design for Missing Historic Features

Designing and installing a new architectural metal feature such as a metal cornice or cast iron capital when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended

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

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the architectural metal feature or is that physically or chemically incompatible.

Removing an architectural metal feature that is unreparable and not replacing it; or replacing it with a new architectural metal feature that does not convey the same visual appearance.

Not Recommended

Creating a false historical appearance because the replaced architectural metal feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new architectural metal feature that is incompatible in size, scale, material and color.

Building
Exterior

Roofs

