



Section 2

Changes to the Building Exterior



New architectural products are constantly being introduced and sorting out their appropriateness for historic buildings can be complex. Beyond visual compatibility, the selection and evaluation of alternative materials should include their effect on the underlying historic material, durability, sustainability in terms of material product and associated manufacturing, short term and long term costs, and changes in current technology or availability.

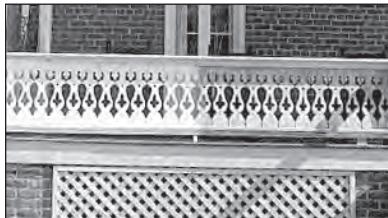
2.1 Wood



Turned spindles and columns, pierced brackets, and a radiating pattern of flush boards in the porch gable of this clapboard house illustrate the versatility of wood for detailing.



The vertical lines of the stained board siding and projecting wood window mullions give this mid-century home a distinctly modern look.



These decorative sawnwork balusters, in the process of being repainted, embellish an Oakwood front porch.

Wood was the most commonly used building material in early Raleigh neighborhoods. Many house exteriors were clad in clapboard, flush siding, board and batten, or textured siding (consisting of patterned wooden shingles). Decorative details such as wooden sawnwork, moldings, brackets, pediments, balustrades, and columns often added further embellishment. Modernist and postwar homes often used wood in more simplified fashions with minimal detailing. Even in commercial or residential buildings constructed or clad in masonry, wooden trim, window sashes, and doors were typical. Porches, fences, and storefronts often were constructed of wood as well.

Things to Consider As You Plan

Wooden features and surfaces on a building should be maintained and repaired in a manner that enhances their inherent qualities and maintains as much as possible of their original character. A regular maintenance program involving caulking and sealing, carpentry, cleaning, and painting will help to keep problems with wooden features and surfaces manageable. Flexible sealants and caulking protect wooden joinery from moisture penetration as the wood shrinks and swells, and a sound paint film protects wooden surfaces from deterioration due to ultraviolet light and moisture. If a wooden feature or surface remains damp for extended periods of time, the possibility of mildew, fungal rot, or insect infestation increases dramatically.

Repair or replacement of deteriorated wooden elements or surfaces may involve selective replacement of portions in kind through splicing or piecing. Although wood is a renewable resource, fast growth new wood is less resistant to decay than the denser old growth wood it is replacing. Specifying decay-resistant wood species and priming the back and ends with oil-based paint prior to installation can extend the lifespan of replacement wood. Borates and other pathogen-killing agents can be used to treat deteriorated wood and the application of an epoxy wood consolidant may help stabilize and replace the deteriorated portion of historic wood features or details in place. For deteriorated wood elements particularly vulnerable to ongoing deterioration—such as window sills and column bases and capitals—replacement with painted synthetic elements that replicate the original shape, texture, dimensions, and details may be a viable and cost-effective solution. The application of wood preservatives or the use of pressure-treated wood can also extend the life of wooden elements and surfaces. However, some pressure-treated wood must weather for six to twelve months before it is primed and painted.

Many substitute siding materials are not as durable or environmentally-friendly as wood. In evaluating a possible substitute material, careful consideration should be given to the sustainability of its manufacturing process and its lifespan as well as its physical characteristics. Resurfacing a wooden building with synthetic siding materials, such as aluminum, vinyl, asbestos, and asphalt, changes the shadow lines of the historic material and their finishes are not permanent; they also require repainting and are usually a short-sighted solution to a maintenance problem. In fact, they may hide signs of damage or deterioration, preventing early detection and repair. Synthetic substitutes differ from wood in their coefficients of expansion and also restrict airflow impacting the breathability of a historic wall. At their best, synthetic sidings conceal the historic fabric of a building, and at their worst, they remove or destroy the historic materials and the craftsmanship that reflect Raleigh's cultural heritage and allow for new rot to go undetected. Because the application of synthetic sidings does grave damage to the character of most historic buildings, it is not appropriate in Raleigh's early historic districts or landmarks.

2.1 Wood: Guidelines

- .1 Retain and preserve wooden features that contribute to the overall historic character of a building and a site, including such functional and decorative elements as siding, shingles, cornices, architraves, brackets, pediments, columns, balustrades, and architectural trim.
- .2 Protect and maintain historic wooden surfaces and features through appropriate methods:
 - Inspect regularly for signs of moisture damage, mildew, and fungal or insect infestation.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces and collecting on decorative elements.
 - Keep wooden joints properly sealed or caulked to prevent moisture infiltration.
 - Treat traditionally unpainted, exposed wooden features with chemical preservatives to prevent or slow their decay and deterioration.
 - Retain protective surface coatings, such as paint, to prevent damage from ultraviolet light and moisture.
 - Clean painted surfaces regularly by the gentlest means possible, and repaint them only when the paint film is damaged or deteriorated.
- .3 Repair historic wooden features using recognized preservation methods for patching, consolidating, splicing, and reinforcing.
- .4 If replacement of a deteriorated detail or element of a historic wooden feature is necessary, replace only the deteriorated detail or element in kind rather than the entire feature. Match the original detail or element in design, dimension, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .5 If replacement of an entire historic wooden feature is necessary, replace it in kind, matching the original in design, dimension, detail, material, and texture. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If a historic wooden feature is completely missing, replace it with a new feature based on accurate documentation of the original feature or a new design compatible in scale, size, material, and color with the historic building and district.
- .7 Repaint wooden surfaces and features in colors that are appropriate to the historic structure and district. See Section 3.4 for further guidance.
- .8 It is not appropriate to clean historic wooden features and surfaces with destructive methods such as gritblasting, power washing, and using propane or butane torches. Clean using gentle methods such as low-pressure washing with detergents and natural bristle brushes. Chemical strippers should only be used if gentler methods are ineffective and they should be pretested on sample areas first.
- .9 It is not appropriate to strip historically painted surfaces down to bare wood and apply clear stains or finishes to create a natural wood appearance.
- .10 It is not appropriate to replace painted historic wooden siding that is sound with new siding to achieve a uniformly smooth wooden surface.
- .11 It is not appropriate to replace or cover historic wooden siding, trim, or window sashes with contemporary substitute materials.
- .12 It is not appropriate to introduce wooden features or details to a historic building in an attempt to create a false historical appearance.



Regular maintenance of exterior wooden columns is critical to prevent the need for expensive repairs or replacement in the future.



A prominent feature of the Mission-style City Market is its distinctive clay tile roof.



The corbelled brick chimneys, patterned slate roof, and brick exterior walls with stone quoins at the corners are all significant masonry features of the Executive Mansion.



A granite foundation with beaded mortar joints adds distinction to this residential foundation.

2.2 Masonry

Site features as well as building elements, surfaces, and details executed in masonry materials contribute to the character of Raleigh's historic districts and some landmarks. A variety of historic masonry materials, such as brick, terracotta, limestone, granite, stucco, slate, concrete, cement block, and clay tile, are employed for a range of features, including sidewalks, steps, walls, roofs, foundations, parapets, and cornices.

A few clay tile roofs and a number of slate roofs, occasionally embellished by patterns created through variations in color and shape, distinguish some early Raleigh buildings. Brick foundations are quite common in the districts; stone foundations are far less typical. Brick or stone exterior walls clad most buildings in the commercial and institutional districts. Original granite curbing and patterned brick sidewalks contribute to the character of some district streets as well.

Things to Consider As You Plan

The preservation of historic masonry walls is a sustainable approach, given their durability, high insulating value, minimal maintenance needs, extended lifespan, and the embodied energy they represent. Masonry surfaces develop a patina over time and should be cleaned only when heavy soiling or stains occur. Usually, gentle cleaning using a low-pressure water wash with detergent and the scrubbing action of a natural bristle brush will accomplish the task. Occasionally, a chemical masonry cleaner may be necessary. In that case it is important to select a chemical cleaner that is appropriate for the specific masonry material and problem, to test the solution on an inconspicuous sample area in advance, to follow recommended application procedures, and to neutralize and rinse the surface thoroughly to prevent any further chemical reaction. The use of abrasive methods such as gritblasting, waterblasting, and power washing is destructive to historic masonry surfaces and not appropriate. The painting of historically unpainted masonry surfaces is not considered appropriate because it conceals the inherent color and texture and initiates a continuing cycle of paint maintenance. However, the repainting of historically unpainted masonry that has previously been painted is appropriate if the owner does not choose to remove the paint films chemically.

Moisture penetration, with subsequent damage to a masonry wall, is often the result of open or deteriorated mortar joints that require skillful repointing with new mortar. Before repointing, any loose or deteriorated mortar must be removed with hand tools, taking care not to chip or damage the historic masonry. In a proper repointing, the new mortar will match the visual and physical properties of the original mortar, including its strength, color, and texture. Prior to the 1930s, lime mortars were used with brick. Contemporary mortar high in portland cement content exceeds the strength of historic brickwork and will deteriorate it. New mortar joints should match the original in width and profile. Masonry sealers and coatings are no substitute for repointing and may even cause more damage. Moisture damage may also cause a stucco coating to separate from its masonry backing. To repair it, remove loose or deteriorated stucco and patch with new stucco to match the original in composition, texture, color, and strength.

If masonry units themselves are damaged or missing, replacement units should match the original as closely as possible in design, material, dimension, color, texture, and detail. Beyond the individual units, any bond pattern or detailing of the original feature should be duplicated. Given the selection of brick and stone units available today, replacement in kind is generally not an issue. Consequently, substitutions of materials or masonry systems, such as concrete units for brick or exterior insulation systems for traditional stucco, are not appropriate.

2.2 Masonry: Guidelines

- .1 Retain and preserve masonry features that contribute to the overall historic character of a building and a site, including walls, foundations, roofing materials, chimneys, cornices, quoins, steps, buttresses, piers, columns, lintels, arches, and sills.
- .2 Protect and maintain historic masonry materials, such as brick, terra-cotta, limestone, granite, stucco, slate, concrete, cement block, and clay tile, and their distinctive construction features, including bond patterns, corbels, water tables, and historically painted or unpainted surfaces.
- .3 Protect and maintain historic masonry surfaces and features through appropriate methods:
 - Inspect surfaces and features regularly for signs of moisture damage, vegetation, structural cracks or settlement, deteriorated mortar, and loose or missing masonry units.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces, collecting on decorative elements or along foundations and piers, and rising through capillary action.
 - Clean masonry only when necessary to remove heavy soiling or prevent deterioration. Use the gentlest means possible.
 - Repaint historically painted masonry surfaces when needed.
- .4 Repair historic masonry surfaces and features using recognized preservation methods for piecing-in, consolidating, or patching damaged or deteriorated masonry. It is not appropriate to apply a waterproof coating to exposed masonry rather than repair it.
- .5 Repoint masonry mortar joints if the mortar is cracked, crumbling, or missing or if damp walls or damaged plaster indicate moisture penetration. Before repointing, carefully remove deteriorated mortar using hand tools. Replace the mortar with new mortar that duplicates the original in strength, color, texture, and composition. Match the original mortar joints in width and profile.
- .6 If replacement of a deteriorated detail, module, or element of a historic masonry surface or feature is necessary, replace only the deteriorated portion in kind rather than the entire surface or feature. Consider compatible substitute materials only if using the original material is not technically feasible.
- .7 If replacement of a large historic masonry surface or entire feature is necessary, replace it in kind, matching the original in design, detail, dimension, color, pattern, texture, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .8 If a historic masonry feature is completely missing, replace it with a new feature based on accurate documentation of the original feature or a new design compatible with the scale, size, material, and color of the historic building and district.
- .9 Test any cleaning technique, including chemical solutions, on an inconspicuous sample area well in advance of the proposed cleaning to evaluate its effects. It is not appropriate to clean masonry features and surfaces with destructive methods, including gritblasting and high-pressure power washing.
- .10 Repaint historically painted masonry surfaces in colors that are appropriate to the historic material, building, and district. It is not appropriate to paint unpainted masonry surfaces that were not painted historically.



The Oakwood Cemetery gate.



Standing-seam terneplate roofs are quite common in the residential districts.



The paint film on this cast-iron fence is failing because of corrosion. All rust must be removed before repainting.



The architectural significance of the decorative metal work on the front entrances to the Justice Building warranted automating this pair of steel doors rather than replacing them to meet accessibility requirements.

2.3 Architectural Metals

In historic districts and landmarks, a variety of architectural metals are employed in the detailing and the surfacing of buildings, street elements, and site features. Architectural metals are commonly used for numerous roofing and guttering applications, including standing-seam roofs, flashing, gutters, downspouts, finials, cornices, copings, and crestings. Beyond those building features, other architectural elements often crafted or detailed in metal include storm doors and windows, vents and grates, casement windows and industrial sash, railings, storefronts, hardware, and trimwork. Architectural metals also appear throughout the districts and landmarks in the form of fences, gates, streetlights, signs, mailboxes, signposts, site lighting, statuary, fountains, and tree guards and grates.

Traditional architectural metals, such as copper, tin, terneplate, cast iron, wrought iron, lead, and brass, and more contemporary metals, such as stainless steel and aluminum, are all found within the historic districts. The shapes, textures, and detailing of these metals reflect the nature of their manufacture, whether wrought, cast, pressed, rolled, or extruded.

Things to Consider As You Plan

The preservation of architectural metal surfaces, features, and details requires regular inspection and routine maintenance to prevent their deterioration due to corrosion, structural fatigue, or water damage. Corrosion, or oxidation, of metal surfaces is a chemical reaction usually resulting from exposure to air and the moisture it contains, but corrosion can also result from galvanic action between two dissimilar metals. With all ferrous metal surfaces, maintaining a sound paint film is critical in protecting the surfaces from corrosion. If a paint film fails, leaving a ferrous metal unprotected, corrosion begins. The subsequent removal of all rust and immediate priming with a zinc-based primer or other rust-inhibiting primer is critical to halt the deterioration and prevent future corrosion. For fragile corroded metals, coating with a rust converter may be the best solution to halting further corrosion. Copper and bronze surfaces develop a distinctive patina and should not be painted.

The cleaning of architectural metals varies, depending on how soft, or malleable, the metals are. Soft metals, such as lead, tin, terneplate, and copper, are best cleaned with chemical cleaners that will not abrade their soft surface texture. However, any chemical cleaner should always be tested on an inconspicuous sample area in advance to determine if it will discolor or alter the metal itself. Abrasive cleaning techniques such as grit blasting are too harsh for soft metals and should never be used on them. Once cleaned, unpainted soft metal elements like brass or bronze hardware may be protected from corrosion with a clear lacquer.

Cleaning hard metals, such as cast or wrought iron and steel, is best accomplished by hand scraping or wire brushing to remove any corrosion before repainting. In extreme cases a low-pressure (80–100 lbs. per square inch) glass bead abrasive cleaning may be necessary if wire brushing has proven ineffective. Patching or replacing deteriorated metal in kind is always preferable to using substitute materials. Corrosion due to galvanic reaction between dissimilar metals limits the options of patching one metal with another. If a detail of a painted metal feature such as a decorative cornice is missing or deteriorated, replacement in kind may not be feasible, and the replication of the detail in fiberglass, wood, or aluminum may be appropriate. Asphalt products such as roofing tar corrode metals and should never be used to patch flashing or other metal surfaces.

2.3 Architectural Metals: Guidelines

- .1 Retain and preserve architectural metal features that contribute to the overall historic character of a building and a site, including such functional and decorative elements as roofing, flashing, storefronts, cornices, railings, hardware, casement windows, and fences.
- .2 Retain and preserve architectural metals, such as copper, tin, brass, cast iron, wrought iron, lead, and terneplate, that contribute to the overall historic character of the district or landmark.
- .3 Protect and maintain historic architectural metal surfaces and features through appropriate methods:
 - Inspect regularly for signs of moisture damage, corrosion, structural failure or fatigue, galvanic action, and paint film failure.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces and collecting on decorative elements.
 - Clear metal roofs and gutters of leaves and debris.
 - Retain protective surface coatings, such as paint and lacquers, to prevent corrosion.
 - Clean when necessary to remove corrosion or to prepare for recoating. Use the gentlest effective method.
 - Repaint promptly when paint film deteriorates.
- .4 Repair deteriorated historic architectural metal features and surfaces using recognized preservation methods for splicing, patching, reinforcing, and rust converters.
- .5 If replacement of a deteriorated detail or element of a historic architectural metal feature is necessary, replace only the deteriorated portion in kind rather than the entire feature. Match the original detail or element in design, dimension, texture, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If replacement of an entire historic architectural feature is necessary, replace it in kind, matching the original feature in design, dimension, detail, texture, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .7 If a historic architectural metal feature is completely missing, replace it with a new feature based on accurate documentation of the original design or a new design compatible in scale, size, material, and color with the historic building and district.
- .8 Repaint architectural metal surfaces and features in colors that are appropriate to the historic building and district. See Section 3.4 for guidance.
- .9 Clean soft metals, including lead, tin, terneplate, and copper, with chemical solutions after pretesting them to ensure that they do not damage the color and the texture of the metal surface. It is not appropriate to clean soft metal surfaces with destructive methods like grit blasting.
- .10 Clean hard metals such as cast iron, wrought iron, and steel using the gentlest means possible. Consider low-pressure glass bead blasting only if hand scraping and wire brushing have been ineffective.
- .11 It is not appropriate to introduce architectural metal features or details to a historic building in an attempt to create a false historical appearance or if it will damage its architectural character.
- .12 It is not appropriate to patch metal roofs or flashing with tar or asphalt products.



Metal is a durable choice for decorative fences.



When multiple layers of paint begin to check and alligator, as this column's surface has, they must be scraped and sanded down to the first sound paint film layer before repainting.



In selecting new paint colors for this residence, test areas of proposed colors were applied to the facade for viewing.



Layers of paint were successfully chemically stripped from the Labor Building's facades during a major rehabilitation.

2.4 Paint and Paint Color

A well-executed exterior color combination can dramatically alter the appearance of a building. Likewise, the application of garish colors on a building can overpower its architectural character and compromise its integrity. Although an exterior paint job is not an irreversible change to a building, it is a highly visible and relatively expensive one, so a careful study of the style of the building, the surrounding streetscape, and the region's climatic conditions makes sense.

Historically, house colors were affected by technology, cultural attitudes, and social conditions. Individuals interested in reproducing a building's original color scheme can undertake a paint analysis to identify its color history. Architectural conservators and professional preservationists, such as those on the staff of the North Carolina State Historic Preservation Office, can assist in this process. If a building's original color scheme is unknown or not pleasing to its owner, then it is appropriate to consider other color schemes. Property owners should take advantage of the many excellent resources available that describe other historic color palettes and appropriate combinations, including paint manufacturer websites. The commission has many of these in its library for reference.

Things to Consider As You Plan

Routine cleaning of painted surfaces is an important maintenance step. Often, washing of a previously painted exterior with a garden hose will reveal that the paint film is intact under the surface dirt or mildew. However, high pressure power washing can damage intact paint layers and force water into the wall itself.

The success and longevity of any paint job depend primarily on the quality of the surface preparation and the paint. Proper preparation includes removing all loose or peeling paint down to the first sound paint layer. Stripping intact paint layers is unnecessary and undesirable from both a historical and a practical standpoint. Often, only hand scraping and hand sanding are necessary for removing loose paint. Destructive paint-removal methods, such as gritblasting, waterblasting, or using propane or butane torches, are not appropriate for historic buildings because they irreversibly damage historic woodwork, soft metals, and masonry, and they are potential fire hazards. However, if paint is severely deteriorated and gentler methods are not successful in paint removal, thermal devices such as electric hot-air guns may be used with care on decorative wooden features, and electric heat plates and infrared paint removal systems may be used with care on flat wooden surfaces. Chemical strippers should only be used with caution on wood surfaces. The surface must then be neutralized for a new paint film to bond. Once wooden surfaces have been cleaned, scraped, and sanded, any exposed surfaces should be primed with a high-quality exterior primer, and all open joints should be recaulked (but not the horizontal lap seam of clapboard siding) before repainting with a compatible paint.

Although the color is more uniform and less translucent than the early, less homogeneous oil paints, today's high-quality latex and acrylic semi-gloss paints provide a similar appearance. Early historic buildings were designed with air permeability in mind. For this reason, careful evaluation of the breathability of any new paint product is needed to ensure it does not seal in moisture. Preparation for painting stucco and previously painted brick or stone is similar to that for painting wooden surfaces. The guidelines for architectural metals address the painting of metals.

Lead-based oil paints were used well into the 20th century. Building elements and surfaces with exposed lead-based paint are a health risk. Children and pregnant women are especially at risk. It is essential to follow proper procedures to mitigate or eliminate lead-based paint. See the Appendix for sources for lead-based paint information.

2.4 Paint and Paint Color: Guidelines

- .1 Preserve and protect original exterior building surfaces and site features that were historically painted, by maintaining a sound paint film on them.
- .2 Protect and maintain historically painted exterior surfaces in appropriate ways:
 - Inspect painted surfaces regularly for signs of discoloration, moisture damage, mildew, and dirt buildup.
 - Clean painted surfaces regularly to avoid unnecessary repainting. Use the gentlest means possible.
 - Remove deteriorated, peeling or alligatorized paint films down to the first sound paint layer before repainting. Use the gentlest means possible, such as hand scraping and hand sanding. Use electric heat guns and plates and infrared paint removal systems with caution and only if gentler methods are ineffective.
 - Ensure that surfaces to be repainted are clean and dry, and that any exposed wood or metal surface has been primed and caulked so that new paint will bond properly.
 - Repaint previously painted surfaces with compatible paint.
- .3 When repainting, select paint colors appropriate to the historic building and district. Enhance the features of a building through appropriate selection and placement of paint color consistent with its architectural style. In particular, the foundation color is usually darker than the body of the building in order to visually anchor it to the ground.
- .4 When repainting, follow best practices for removing or mitigating lead-based paint.
- .5 It is not appropriate to paint brick, stone, copper, bronze, concrete, or cement block surfaces that were historically unpainted.
- .6 It is not appropriate to strip wooden surfaces that were historically painted down to bare wood and apply clear stains or sealers to create a natural wood appearance.
- .7 It is not appropriate to replace painted wooden siding that is sound with new siding to achieve a uniformly smooth wooden surface.
- .8 It is not appropriate to remove paint films before repainting through destructive methods such as gritblasting, high-pressure power washing, or the use of propane or butane torches.



More elaborate paint schemes can be appropriate for highly ornamented architectural styles like this Queen Anne-style dwelling.

2.5 Roofs



This well-maintained slate roof includes valleys and crestings that have a sound paint film protecting them from corrosion.



Standing-seam metal roofs must be kept painted, or they will begin to corrode.



A missing downspout from the main gable and a large collection of fallen leaves will accelerate the deterioration of the shingles on the rear gable of this roof.

The roof form and pitch are among the major distinguishing characteristics of historic buildings. Roofs can be flat, sloped, hipped, curved, or arranged in various combinations of these forms. Certain architectural styles are clearly distinguished by roof types: Second Empire-style buildings always display some form of a mansard or curved roof; and many Gothic Revival buildings display steep-pitched, complex arrangements of roofs and gables. Roofs of mid-century modern homes combine low profiles and deep overhangs. Commercial buildings often exhibit decorative copings along the facade parapet. Roofing materials also contribute to the character of historic buildings. Depending on the age and the style of the building, the original roofing may have been any of a variety of materials, including wood or metal shingles, slates, clay tiles, and standing-seam metal. Asphalt and asbestos shingles became popular roofing materials in the 20th century both for new construction and for reroofing of earlier buildings. Historic roofing materials were usually dark in color.

Things to Consider As You Plan

It is important to retain and preserve historic roofs that create distinctive effects through shapes or color, because to alter or remove them would result in loss of a significant architectural feature. If a roofing material must be replaced and is not readily available, a property owner should select a compatible substitute material that closely resembles the original. If a roofing material is clearly distinctive to a building's architectural style, retaining or replacing it in kind is important. For example, a Mission-style building that features a clay tile roof should not be reroofed with fiberglass shingles. This principle applies to shingle patterns as well; if a mansard roof is decorated with polychromatic slates, their removal would compromise the building's architectural character.

Routine care and maintenance of a roof are critical. A leaky roof allows water damage to the structure and elements of a building. It is wise to keep a roof free of leaves and debris and inspect it regularly for leaks, checking for loose or damaged shingles, slates, or tiles and repairing them immediately. Slate and clay tiles are extremely durable but brittle. They can last more than a century, but their fasteners, flashing, and sheathing may not. However, if they are carefully reset, they may last another lifetime. Metal roofs, another sustainable choice if kept painted, can also last 100 years. By contrast, a good-quality fiberglass shingle roof will last twenty to thirty years. Applying an elastomeric coating to a deteriorated metal roof can greatly extend its lifespan but coating valleys or roofing materials with roofing tar can accelerate their deterioration. Because modern prefab metal roofs have large ridge and hip caps, they are not appropriate substitutes for true standing seam metal roofs. The metal flashing around chimneys and at the juncture of roof planes must be maintained and replaced as necessary. Using terne-coated metal (which requires paint), copper, or rolled aluminum with a factory-applied finish to construct valleys is far more authentic in appearance and longer lasting than weaving asphalt shingles. Gutters, scuppers, and downspouts must be cleaned out often and kept in good repair to successfully carry water off the roof. Distinctive built-in gutters that are incorporated into the roof and concealed from view within a boxed cornice are important to retain. However, they must be kept properly functioning to avoid undetected damage to the structure. The distinctive shape of half-round gutters is typical for exposed gutters and preserves cornice crown molding.

Adding solar collectors that optimize panel angle and orientation yet are sensitively placed on historic roofs can be a challenge. It is best to look for roof planes not visible from the street and in areas where historic roof features will not be damaged and the historic character of the building is not diminished. (The Appendix includes a link to solar charts for Raleigh.)

2.5 Roofs: Guidelines

- .1 Retain and preserve roofs and roof forms that contribute to the overall historic character of a building, including their functional and decorative features, such as roofing materials, cresting, dormers, chimneys, cupolas, and cornices.
- .2 Protect and maintain the metal, wooden, and masonry elements of historic roofs through appropriate methods:
 - Inspect regularly for signs of deterioration and moisture penetration.
 - Clean gutters and downspouts to ensure proper drainage.
 - Replace deteriorated flashing as necessary.
 - Reapply appropriate protective coatings to metal roofs as necessary.
 - Maintain adequate ventilation of roof sheathing to prevent moisture damage.
 - Ensure that roofing materials are adequately anchored to resist wind and water.
- .3 Repair historic roofs and their distinctive features through recognized preservation methods for resetting or reinforcing.
- .4 If replacement of a partially deteriorated historic roof feature is necessary, replace only the deteriorated portion in kind to match the original feature in design, dimension, detail, color, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .5 If full replacement of a deteriorated historic roofing material or feature is necessary, replace it in kind, matching the original in scale, detail, pattern, design, material, color, and details such as ridge and hip caps. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If a historic roof feature is completely missing, replace it with a new feature based on accurate documentation of the original feature or a new design compatible in scale, size, material, and color with the historic building and district.
- .7 It is not appropriate to remove a roof feature that is important in defining the overall historic character of a building, rather than repair or replace it.
- .8 If new gutters and downspouts are needed, install them so that no architectural features are lost or damaged. Select new gutters and downspouts that match trim color, unless they are copper. For modest postwar roofs, galvanized metal may be an appropriate choice. Retain the shape of traditional half-round gutters and downspouts if replacing them.
- .9 It is not appropriate to replace concealed, built-in gutter systems with exposed gutters.
- .10 It is not appropriate to introduce new roof features such as skylights, dormers, or vents if they will compromise the historic roof design, or damage character-defining roof materials or the character of the historic district or landmark.
- .11 Install ventilators, solar collectors, antennas, skylights, or mechanical equipment in locations that do not compromise character-defining roofs or on roof slopes not visible from the street.
- .12 It is not appropriate to install exposed tarpaper rolls as a finished roofing material or roofing tar as a replacement for valley flashing.
- .13 It is not appropriate to patch any roofing or flashing with tar or asphalt products.



A finial adds a distinctive accent to the top of this conical roof while protecting the peak from water penetration.



The projecting bay and tower of this asymmetrical facade are characteristic of Queen Anne-style architecture.



The large expanses of glass framed in wood in this landmark early modernist house create a strong connection between the interior and the backyard patio. The massive brick chimney wall visually anchors the glazed exterior walls on either side.



During rehabilitation, replacement siding to match the original siding was carefully incorporated on this rear facade before repainting.

2.6 Exterior Walls

Through their shape, features, materials, details, and finishes, exterior walls contribute to the form and the character of historic buildings. They also provide opportunities for stylistic detailing and ornamentation. Features such as projecting bays, chimneys, towers, and pediments boldly manipulate the shapes of exterior walls. In addition, quoins, corner boards, cornices, brackets, entablatures, and skirt boards all embellish the connections between wall planes or from exterior walls to other building elements. Variations in exterior wall materials contribute further to the pattern, texture, scale, color, and finish of the building exterior.

Within Raleigh's pre-1945 residential historic districts, exterior walls clad in horizontal, lapped wooden siding are most typical, although walls surfaced with wooden shingles, brick, stone, or stucco are found as well. Combinations of materials, including brick with stone details or lapped siding with wooden shingles, are also found. Cantilevered walls, and an emphasis on strong horizontal lines are characteristic of some mid-century modern homes. Aluminum siding and asphalt shingles emerge as post-1945 claddings as do bricks in new textures and sizes. Exterior walls of brick or stone are more typical of commercial or public buildings in the districts than they are of residences.

The foundations of early Raleigh buildings are generally differentiated from the rest of the wall by a change in material, plane, and/or color. Brick foundations are the most common for residential structures, but foundations of stone or masonry coated with stucco are not unusual. Some masonry pier foundations with infill panels of recessed brick or lattice remain in the districts as well.

Things to Consider As You Plan

Routine inspection, maintenance, and repair of exterior walls should follow the guidelines for the specific wall materials. The guidelines for paint and paint colors apply to wooden exterior walls and trim and some masonry walls.

Replacement of deteriorated exterior wall materials and details requires careful attention to the scale, texture, pattern, and detail of the original material. The three-dimensionality of wood moldings and trim, the distinctive texture of weatherboards, and the bonding pattern of masonry walls are all important to duplicate when replacement is necessary. Generally, replacement or concealment of exterior wall materials with substitute materials is not appropriate. For example, the application of synthetic sidings or contemporary stucco-like coatings in place of the original materials results in a loss of original fabric, texture, and detail. In addition, such surfaces may conceal moisture damage or other causes of structural deterioration from view.

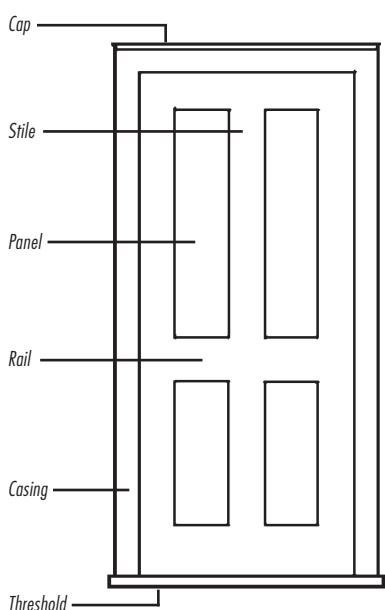
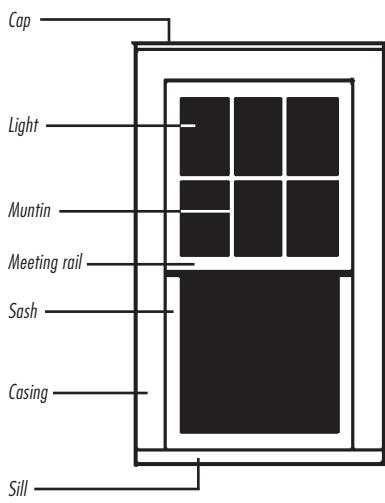
The loss of a distinctive exterior wall feature such as a projecting chimney or window bay would compromise the character of a historic building. Similarly, the introduction of a new feature, such as a window or door opening, can also compromise the integrity of the original wall. Alterations such as these require a clear understanding of the significant characteristics of the original wall and also the wall's role in creating the building's significance. Using that knowledge, a compatible change that will not diminish the building's architectural character may be developed.

2.6 Exterior Walls: Guidelines

- .1 Retain and preserve exterior walls that contribute to the overall historic form and character of a building, including their functional and decorative features, such as cornices, foundations, bays, quoins, arches, water tables, brackets, entablatures, and storefronts.
- .2 Retain and preserve exterior wall materials that contribute to the overall historic character of a building, including brickwork, stucco, stone, wooden shingles, wooden siding, asbestos siding, and metal, wooden, or masonry trimwork.
- .3 Protect and maintain the material surfaces, details, and features of historic exterior walls through appropriate methods:
 - Inspect regularly for signs of moisture damage, vegetation, fungal or insect infestation, corrosion, and structural damage or settlement.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces and collecting on decorative elements or along foundations.
 - Clean exterior walls as necessary to remove heavy soiling or to prepare for repainting. Use the gentlest methods possible.
 - Retain protective surface coatings, such as paint or stain, to prevent deterioration.
 - Reapply protective surface coatings, such as paint or stain, when they are damaged or deteriorated.
- .4 Repair historic exterior wall surfaces, details, and features using recognized preservation repair methods for the surface material or coating.
- .5 If replacement of a deteriorated detail or element of a historic exterior wall is necessary, replace only the deteriorated portion in kind rather than the entire feature. Match the original in design, dimension, detail, texture, pattern, color, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If replacement of an entire historic exterior wall or feature is necessary because of deterioration, replace it in kind, matching the original in design, dimension, detail, texture, color, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .7 If a historic exterior wall or feature is completely missing, replace it with a new wall or feature based on accurate documentation of the original or a new design compatible with the historic character of the building and the district.
- .8 It is not appropriate to introduce new features such as window or door openings, bays, vents, balconies, or chimneys to character-defining exterior walls if they will compromise the architectural integrity of the building.
- .9 It is not appropriate to remove or cover any material detail associated with historic exterior walls, including decorative shingles, panels, brackets, bargeboards, and corner boards, unless an accurate restoration requires it.
- .10 It is not appropriate to cover historic wall material, including wooden siding, wooden shingles, stucco, brick, and stonework, with coatings or contemporary substitute materials.
- .11 It is not appropriate to introduce features or details to an exterior wall in an attempt to create a false historical appearance.



The exterior wall shape of the central tower helps to define this building as French Second Empire-style.



Rolled steel casement windows are hinged vertically and are distinctive features found on many buildings from the 1920s and 30s.

2.7 Windows and Doors

The various arrangements of windows and doors, the sizes and the proportion of openings, and the decorative elements associated with them are used to achieve architectural stylistic effects on buildings. Although many types of windows are found in early Raleigh buildings, a majority of those found in early houses are wooden double-hung windows. Each sash, depending on the style and the age of the house, may be divided, usually by muntins that hold individual lights (panes) in place. Doors with various panel configurations as well as a combination of solid panels and glazing are found throughout the historic districts. Decorative stained, beveled, and etched glass is sometimes found, often in entry sidelights and transoms or individually fixed sashes. The introduction of mass-produced metal windows and doors contribute to the variety of configurations, like picture windows and clerestories found in postwar architecture.

More so than houses, commercial and institutional buildings often established a hierarchy through the placement, size, and scale of windows and doors. The front facade, particularly its first floor, was usually distinguished from the less significant facades with larger, more decorative windows and doors.

Things to Consider As You Plan

Improper or insensitive treatment of the windows and doors of a historic building can seriously detract from its architectural character. Repairing the original windows in an older building is more appropriate, sustainable, and cost-effective than replacing them with new ones. Life-cycle cost analyses indicate replacement windows do not pay for themselves with energy savings. Replacement windows have a finite life and, once historic sashes are replaced, the owner will need to replace them cyclically. Wood windows also have a lower carbon footprint than their vinyl counterparts. Routine maintenance and repair of historic wood windows is essential to keep them weathertight and operable. Peeling paint, high air infiltration, sticking sash, or broken panes are all repairable conditions and do not necessitate replacement. Wood windows are generally easy and inexpensive to repair. For example, changing a sash cord is relatively simple, and lightly coating a window track with paste wax may allow the sash to slide smoothly. The inherent imperfections in historic glass give it a visual quality not replicated by contemporary glass manufacturing and such glazing should be retained.

If the details of a window or door, such as casing or muntins are deteriorated and must be replaced, the original character of the building and the window or the door should be a guide. Replacement of an entire unit should be considered only if repair is not feasible. Replacement units should match the original in dimension, material, configuration, and detail. A compatible substitute material should be considered only if replacement in kind is not technically feasible. Because the replacement unit must fill the original opening, it may have to be custom-made; today's open-stock windows and doors may not match the dimensions of the existing opening. Fortunately, custom-made wood window sashes to match many original windows can be ordered at most lumber yards. Although steel windows and doors can often be repaired, some metal windows and doors are not repairable and identical units are no longer available but new replacement units can generally be found that are similar in configuration and dimension. Changing existing window and door openings, closing existing openings, or adding new openings on a historic building should be carefully considered and undertaken only for compelling reasons. Changes to original openings in a character-defining facade should never be considered. For less significant facades, the pattern of proposed openings should be characteristic of and complementary to the historic building and the historic district context.

Continued on page 52

2.7 Windows and Doors: Guidelines

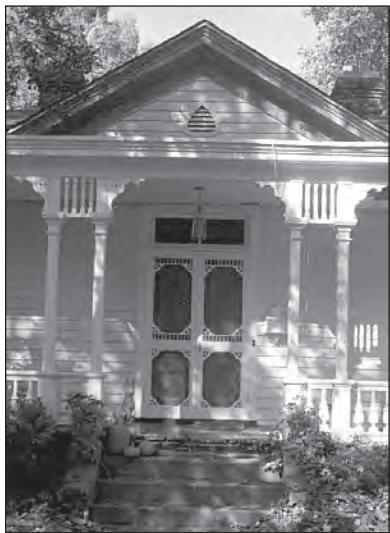
- .1 Retain and preserve windows that contribute to the overall historic character of a building, including their functional and decorative features, such as frames, sashes, muntins, sills, heads, moldings, surrounds, hardware, shutters, and blinds.
- .2 Retain and preserve doors that contribute to the overall historic character of a building, including their functional and decorative features, such as frames, glazing, panels, sidelights, fanlights, surrounds, thresholds, and hardware.
- .3 Protect and maintain the wood and metal elements of historic windows and doors through appropriate methods:
 - Inspect regularly for deterioration, moisture damage, air infiltration, paint failure, and corrosion.
 - Provide adequate drainage to prevent water from standing on nearly flat, horizontal surfaces such as window and door sills.
 - Clean the surface using the gentlest means possible.
 - Limit paint removal and reapply protective coatings as necessary. Remove heavy paint buildup on windows and doors to facilitate their operation
 - Reglaze sash as necessary to prevent moisture infiltration.
 - Weatherstrip windows and doors to reduce air infiltration and increase energy efficiency.
- .4 Repair historic windows and doors and their distinctive features through recognized preservation methods for patching, consolidating, splicing, and reinforcing.
- .5 If replacement of a deteriorated historic window or door feature or detail is necessary, replace only the deteriorated feature in kind rather than the entire unit. Match the original in design, dimension, material, and quality of material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If a historic window or door unit is deteriorated beyond repair, replace the unit in kind, matching the design and the dimension of the original sash or panels, pane configuration, architectural trim, detailing, and materials. Consider compatible substitute materials only if using the original material is not technically feasible.
- .7 If a historic window or a door is completely missing, replace it with a new unit based on accurate documentation of the original or a new design compatible with the original opening and the historic character of the building.
- .8 Replace deteriorated or missing wooden shutters with wooden shutters sized to fit the opening and mounted so that they can be operated. It is not appropriate to introduce shutters on a historic building if no evidence of earlier shutters exists.
- .9 If additional windows or doors are necessary for a new use, install them on a rear or non-character-defining facade of the building, but only if they do not compromise the architectural integrity of the building. Design such units to be compatible with the overall design of the building, but not to duplicate the original.
- .10 If desired and where historically appropriate, install fabric awnings over window, door, storefront, or porch openings with care to ensure that historic features are not damaged or obscured.
- .11 It is not appropriate to remove original doors, windows, shutters, blinds, hardware, and trim from a character-defining facade.



A distinctive entry with paired single-panel doors and transom above.

2.7 Windows and Doors

Continued from page 50



These decorative wooden screen doors, as well as the paneled double doors that they screen, contribute significantly to the architectural character of this Victorian-era cottage.

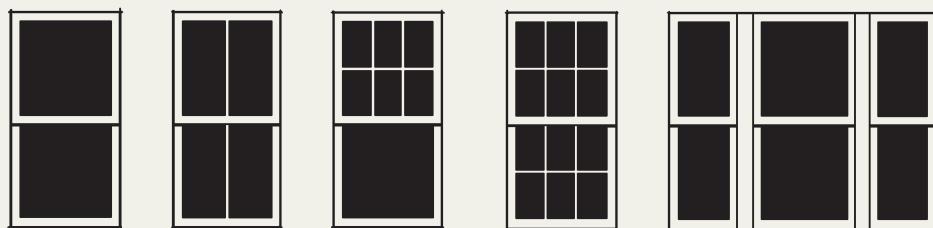


The curtain wall facade of this Raleigh landmark is characteristic of many mid-century modern office buildings which embraced large spans of non-loadbearing glass walls.

Exterior shutters on early Raleigh buildings were functional features sized to fit the openings and hinged to close for security or solar control. Louvered shutters provided for some ventilation and light when closed. Beyond function, they embellished the building exterior and contributed to its architectural character. Existing historic shutters should be maintained and repaired or replaced in kind as necessary. It is also appropriate to reintroduce shutters on an early Raleigh building when there is clear evidence of earlier shutters. The new shutters should be operable, as were the earlier shutters. However, introducing shutters on a building that did not have them historically would compromise the building's architectural character and is not appropriate in the historic districts.

Historically, fabric awnings were energy-conservation features that also provided opportunities to introduce color and signage. Aluminum awnings were not widely available until the 1950s and are not appropriate for earlier historic buildings but fabric awnings that are compatible in scale, form, and color may be appropriate.

Information on storm windows and doors is provided in 3.10 Sustainability and Energy Retrofit.



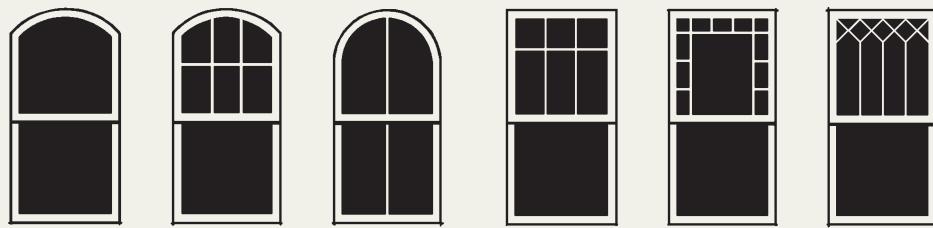
1 over 1

2 over 2

6 over 1

6 over 6

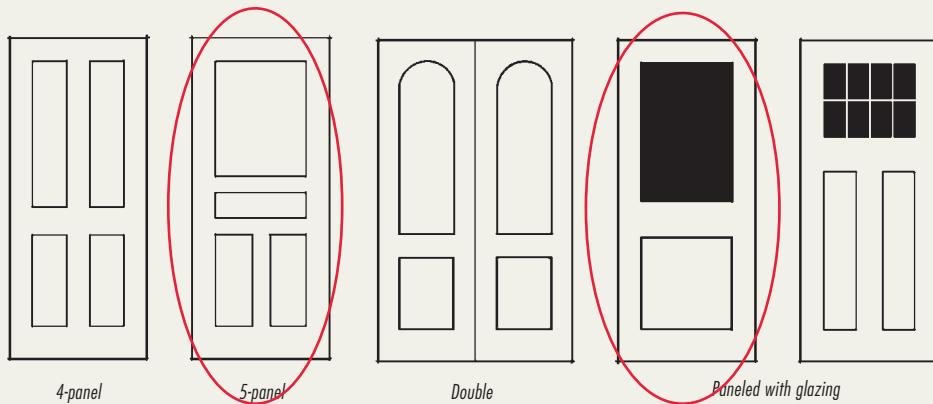
Composite window



Arched upper sashes

Sashes with geometric tracery

In the early districts, vertically proportioned wooden windows with operable double-hung sashes are quite common. The sashes are often subdivided into smaller panes, or lights.



4-panel

5-panel

Double

Panted with glazing

Wooden doors in a variety of panel and glazing combinations can be found throughout the districts. They are sometimes paired for front entrances.

2.7 Windows and Doors: Guidelines

Continued from page 51

- .12 It is not appropriate to remove any detail material associated with windows and doors, such as stained glass, beveled glass, textured glass, or tracery, unless an accurate restoration requires it.
- .13 It is not appropriate to use snap-in muntins to create a false divided-light appearance.
- .14 It is not appropriate to replace clear glazing with tinted or opaque glazing.

For guidelines on storm windows and storm doors, see 3.10 Sustainability and Energy Retrofit.



Commercial entries are often recessed.



Ornate Eastlake-style porches and balconies wrap the facades of the Executive Mansion.



This front porch of a newly constructed residence in the Oakwood district creates a traditional porch form, but introduces compatible, contemporary detailing.



The raised front entrance to this modernist home continues across the front of the house as a narrow cantilevered deck partially sheltered by the roof overhang.

2.8 Entrances, Porches, and Balconies

Entrances and front porches often distinguish the street facades of historic buildings and provide highly visible opportunities for stylistic embellishments. Sleeping porches, balconies, side porches, mudrooms, back porches, and rear entries offer additional outdoor access and living space. In Raleigh, most porches are constructed and detailed in wood and include a variety of functional yet decorative features such as columns, pilasters, rails, latticework, balustrades, soffits, steps, brackets, beaded board ceilings, and tongue-and-groove flooring. Entrances themselves draw attention to a front doorway with such features as sidelights, transoms, pilasters, architraves, and pediments. Entrances to post-World War II buildings are often less embellished and visually prominent than earlier entrances.

One-story front porches that extend across the full facade supported on masonry piers are common on Raleigh's early residences. Some front porches wrap around side facades as well offering shade from the summer sun. Recessed entries within a street-level storefront are typical for historic commercial buildings, whereas elaborate porticos or two-story porches often grace historic institutional structures. The prominent, character-defining role of front entrances, porches, and balconies for most historic buildings makes their preservation of primary importance.

Things to Consider As You Plan

Entrances, porches, and balconies often weather rapidly from exposure to the elements and require regular inspection for signs of deterioration due to moisture damage, fungal or insect infestation, or structural settlement. Keeping gutters and downspouts maintained and ensuring that all flooring slopes away from the building for proper drainage will help protect entrances and porches from moisture damage. Routine maintenance of wooden features includes caulking joints to prevent water or air penetration and repainting as necessary to maintain a sound, protective paint film. The repair of traditional entrance and porch materials, such as wood, masonry, and architectural metals, is addressed in the pertinent guidelines.

The removal or improper replacement of entrance or porch elements can compromise the architectural integrity of a historic building. Introducing architectural trim or stylistic details to an entrance or a porch in an attempt to create a false historical appearance is not considered appropriate. Original features, elements, and details should always be preserved unless they are damaged or deteriorated beyond repair. When entrance, porch, or balcony features and details are deteriorated and require replacement, it is important to match the original features and details in design, dimension, detail, texture, material, and color. Similarly, should an entire entrance or porch be deteriorated or damaged beyond repair, the property owner should match the original entrance or porch. The design of a new entrance, porch, or balcony for one that is lost should be an accurate reproduction of the original or a design that is compatible with the historic character of the building and its site. Compatibility of a new design should be reviewed in terms of proportion, height, roof shape, material, scale, texture, detail, and color.

The introduction of a new entrance, porch, or balcony on a secondary facade may be appropriate if it does not diminish the building's architectural character and the design is compatible with the building and the site.

Occasionally, the enclosure of a side or rear porch will be considered to accommodate a change in use or a need for space. Although the enclosure of a front entrance, porch, or balcony is not considered appropriate given their prominence, the sensitively designed enclosure of a side or rear porch may be appropriate if the building's architectural integrity is not compromised and the character of the porch is retained.

2.8 Entrances, Porches, and Balconies: Guidelines

- .1 Retain and preserve entrances, porches, and balconies that contribute to the overall historic character of a building, including such functional and decorative elements as columns, pilasters, piers, entablatures, balustrades, sidelights, fanlights, transoms, steps, railings, floors, and ceilings.
- .2 Protect and maintain the historic wood, masonry, and metal elements of entrances, porches, and balconies through appropriate surface treatment:
 - Inspect regularly for signs of moisture damage, rust, structural damage or settlement, and fungal or insect infestation.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces and collecting on decorative elements or along foundations.
 - Clean soiled surfaces using the gentlest means possible.
 - Recaulk wooden joints properly to prevent moisture penetration and air infiltration.
 - Retain protective surface coatings, such as paint or stain, to prevent damage from ultraviolet light or moisture.
 - Reapply protective coatings, such as paint or stain, when they are damaged or deteriorated.
- .3 Repair historic entrances, porches, and balconies and their distinctive features and materials using recognized preservation methods for patching, consolidating, splicing, and reinforcing.
- .4 If replacement of a deteriorated historic detail or element of an entrance, porch, or balcony feature is necessary, replace only the deteriorated detail or element in kind rather than the entire feature. Match the original in design, dimension, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .5 If replacement of an entire historic entrance, porch, or balcony feature is necessary because of deterioration, replace it in kind, matching the original in design, dimension, detail, texture, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If a historic feature or an entire entrance, porch, or balcony is missing, replace it with a new feature based on accurate documentation of the original or a new design compatible with the historic character of the building and the district.
- .7 Consider the enclosure of a historic porch to accommodate a new use only if the enclosure can be designed to preserve the historic character of the porch and the building. It is not appropriate to enclose a front porch or a front balcony.
- .8 It is not appropriate to remove any detail material associated with entrances and porches, such as graining, spindlework, beveled glass, or beaded board, unless an accurate restoration requires it.
- .9 It is not appropriate to remove an original entrance or porch or to add a new entrance or porch on character-defining facades.
- .10 It is not appropriate to introduce features or details to a historic entrance, porch, or balcony in an attempt to create a false historical appearance.



Porches are often a character-defining element for a building.



A unifying facade rhythm is created by the pattern of recessed entries, display windows, and projecting awnings of these sensitively rehabilitated storefronts.



The storefront bays with their decorative mid-cornices and bands of glazed transom panels contribute to the architectural character of this Hargett Street commercial building.



The cast-iron grille recessed within this storefront bulkhead panel is both decorative and functional.

Post-1945 storefronts embraced more modern materials and streamlined styles but usually retained the large display street level windows of earlier storefronts.

2.9 Storefronts

For many historic commercial buildings the storefront is the most prominent architectural feature. Although a storefront is often stylistically and visually tied to the street facade, it is usually differentiated from the upper facade by large display windows flanking the main entry and by a change in materials. Typical decorative and functional features of a storefront include display windows, doors, transoms, signs, shade providing awnings, columns, pilasters, entablatures, and bulkhead panels. Storefronts with recessed entrances also incorporate an exterior ceiling area and an extension of the sidewalk often surfaced by decorative floor tiles.

Most historic commercial buildings in downtown Raleigh are two to four stories in height, and their street facades are vertical in proportion. Typically, storefront display windows rest on low wooden recessed panels or on bulkheads constructed of masonry or faced in ceramic tile. Some storefronts use recessed entries to draw the pedestrian into the store and maximize the display window area. In the Moore Square district, street-level storefronts punctuate the brick facades and create a streetscape rhythm of inset openings and projecting awnings. Glazed transoms provide opportunities to pull diffused daylight deep into the building.

Things to Consider As You Plan

Storefronts require the same sort of regular inspections and routine maintenance that other window and door components do. Repair or replacement of deteriorated storefront features and materials requires careful attention to retaining or matching the original design in detail, dimension, material, and color. The loss of distinctive storefront features can seriously compromise the architectural integrity of the entire historic building. Similarly, the substitution of inappropriate contemporary materials, such as vinyl or aluminum panels, for traditional storefront materials, such as wood or tile, diminishes the storefront's contribution to the building's architectural character.

Because the storefront is such a prominent feature for most commercial buildings, it was frequently modified or altered by business owners in an effort to make a new or more modern visual statement. When later modifications conceal original storefront features, such as transoms, bulkheads, or display windows, their removal should be considered. For example, the removal of later signage may reveal the original textured glass transom still intact. Any changes that have reduced the size of an original storefront opening in the building facade or filled in the opening completely are inappropriate, and their removal should also be considered.

If an inappropriate storefront has completely replaced the original storefront, a new storefront based on accurate documentation of the original is preferred. If accurate documentation is not available, then a new design compatible with the building in scale, size, material, and color is appropriate. Compatible, contemporary signage can often be successfully incorporated on a new or existing storefront, in traditional signage locations, including the mid-cornice, the awning, the display windows, or the tiles of the recessed entry.

2.9 Storefronts: Guidelines

- .1 Retain and preserve storefronts that contribute to the overall historic character of a building, including such functional and decorative features as transoms, display windows, doors, entablatures, pilasters, recessed entries, and signs.
- .2 Protect and maintain historic storefront features and materials through appropriate methods:
 - Inspect regularly for signs of moisture damage, rust, fungal or insect infestation, cracked glass, and structural damage or settlement.
 - Provide adequate drainage to prevent water from standing on flat, horizontal surfaces and collecting on decorative elements.
 - Clean painted surfaces regularly using the gentlest means possible, and repaint only when the paint film is damaged or deteriorated.
 - Retain protective surface coatings, such as paint or stain, to prevent damage to storefront materials from moisture or ultraviolet light.
- .3 Repair historic storefront features using recognized preservation methods for patching, consolidating, splicing, and reinforcing.
- .4 If replacement of a deteriorated detail or element of a historic storefront feature is necessary, replace only the deteriorated detail or element in kind rather than the entire feature. Match the original detail or element in design, dimension, color, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .5 If replacement of an entire historic storefront feature is necessary, replace it in kind, matching the original feature in design, dimension, detail, texture, color, and material. Consider compatible substitute materials only if using the original material is not technically feasible.
- .6 If a historic storefront feature or an entire storefront is missing, replace it with a new feature or storefront based on accurate documentation. If accurate documentation is not available, then utilize a new design compatible with the building in scale, size, material, and color.
- .7 Repaint storefront features in colors that are appropriate to the building and the district. See also 3.4 Paint and Paint Color.
- .8 If desired, introduce new signage that is compatible with the storefront in material, scale, and color. It is not appropriate to install signage that damages, obscures, or diminishes the character-defining features of the storefront.
- .9 If desired and historically appropriate, introduce fabric awnings that are compatible with the storefront in scale, form, and color. It is not appropriate to install awnings that damage or compromise the storefront's character-defining features.
- .10 It is not appropriate to clean storefronts with destructive methods such as sand blasting, power washing, and using propane or butane torches. Clean using gentle methods such as low-pressure washing with detergents and natural bristle brushes. Chemical strippers can be used only if gentler methods are ineffective.
- .11 It is not appropriate to strip wooden storefront surfaces that were historically painted down to bare wood and apply clear stains or sealers to create a natural wood appearance.
- .12 It is not appropriate to replace or cover wooden storefront and entry elements with contemporary substitute materials such as aluminum or vinyl.
- .13 It is not appropriate to introduce storefront features or details to a historic building in an attempt to create a false historical appearance.



This replacement storefront design is compatible with the building in its scale, size, materials, and colors.



During the summer, dormers with operable windows and louvered gable vents can help cool a house by allowing rising hot air to escape.



These solar collector panels are located on the roof of an inconspicuous accessory building at the rear of the property.



This mechanical unit was installed on a rear side facade and further screened from view by a low, wooden picket fence and foundation plantings.

2.10 Sustainability and Energy Retrofit

Sustainability, energy conservation, replacement or upgrading of inadequate utility service, and introduction or upgrading of mechanical systems are typical concerns of property owners today. In the historic districts and for landmark buildings, it is important to ensure that such concerns are addressed in ways that do not damage or diminish the historic character of the building, the site, or the district. These guidelines advocate maintaining and maximizing existing sustainable features of historic buildings and neighborhoods. They also advise enhancing sustainability through landscape decisions and energy conservation strategies and promote the sensitive introduction of sustainable technology. Consult the RHDC staff to discuss best practices.

In Raleigh's early historic districts a variety of energy-conserving site and building features illustrate the sensibility of an earlier era regarding climate. Thoughtfully located shade trees buffer residences and sidewalks from the hot summer sun. Projecting porches provide shaded outdoor space and lessen the impact of harsh sunlight on the building's interior. Operable windows, shutters, and awnings allow occupants to control the introduction of sunlight and breezes within the building. Commercial buildings often capture daylight through storefront transoms, lightwells, and skylights. An understanding of how such historic features enhance energy efficiency is critical to maximizing the energy efficiency of historic buildings.

Things to Consider As You Plan

In considering energy retrofit options, property owners should first be sure that the inherent energy-conserving features of the building are being used and maintained. Consideration should also be given to the replacement of lost shade trees or the introduction of other carefully located new shade trees. Beyond those steps, typical retrofit measures include introducing storm windows and doors, adding weatherstripping, caulking, insulation, and more efficient mechanical systems. All retrofit measures must be reviewed with their impact on the historic character of the building and district in mind. For example, adding insulation in the attic and basement or crawl space reduces energy costs more than adding it to exterior walls and is far less intrusive.

After any necessary repair of windows to ensure their weathertightness, significant additional energy efficiency (comparable to the introduction of double-glazed windows) can be achieved with the addition of storm windows—without the loss of historic features and for far less investment. Non-reflective energy films can also be applied to the interior window face. Narrow-profile exterior storm windows that do not obscure the window itself, carefully installed to prevent damage to the sill or the frame, and finished in a color compatible with the sash color are fairly common in the districts. To retain the opportunity to open windows, the property owner should select operable storm units that align with the meeting rails of the window. If interior storm windows are preferred, they should be tension-mounted with airtight gaskets. Storm window ventilating holes must be kept open to prevent condensation from damaging the window or the sill. Selection of new screen or storm doors should follow the guidelines for exterior storm windows. New mechanical systems, with outside units, ventilators, and solar collectors should be located and installed so that they do not damage or diminish the historic character of the building or site. Inconspicuously located units can be further screened by plantings or fences. Adding solar panels can be a challenge to optimize panel angle and orientation with sensitive placement. See the Appendix for a link to Raleigh solar charts.

Utility lines and poles have long been a part of the districts, consolidating old and new utility and communication lines where possible will avoid overpowering the landscape with additional overhead wires. If new or upgraded power will necessitate an additional pole or overhead wires, underground cables may provide less visual intrusion.

2.10 Sustainability and Energy Retrofit: Guidelines

- .1 Retain and preserve the inherent energy-conserving features of historic buildings and their sites, including shade trees, porches, awnings, and operable windows, transoms, shutters, and blinds.
- .2 Increase the thermal efficiency of historic buildings by observing appropriate traditional practices, such as weatherstripping and caulking, and by introducing energy-efficient features, such as awnings, operable shutters, and storm windows and doors, where appropriate.
- .3 If a new mechanical system is needed, install it so that it causes the least amount of alteration to the building's exterior facades, historic building fabric, and site features.
- .4 If desired, introduce narrow-profile exterior or interior storm windows so that they do not obscure or damage the existing sash and frame. Select exterior storm windows with a painted or baked-enamel finish color that is compatible with the sash color. Bare aluminum storm windows may be appropriate for post-1945 buildings. For double-hung windows, operable storm window dividers should align with the existing meeting rails.
- .5 If desired, introduce full-light storm doors constructed of wood or aluminum that do not obscure or damage the existing door and frame. Select storm doors with a painted, stained, or baked-enamel finish color that is compatible with the color of the existing door. Bare aluminum storm doors may be appropriate for post-1945 buildings.
- .6 Replace deteriorated or missing wooden blinds and shutters with matching new units sized to fit the opening and mounted so that they can be operated.
- .7 If desired and where historically appropriate, install fabric awnings over window, door, storefront, or porch openings with care to ensure that historic features are not damaged or obscured.
- .8 Locate new mechanical equipment and utilities, including heating and air conditioning units, meters, exposed pipes, and fuel tanks, in the most inconspicuous area, usually along a building's rear facade. Screen them from view.
- .9 In general, the introduction of underground utility lines to reduce the intrusion of additional overhead lines and poles is encouraged. However, in trenching, take care to avoid archaeological resources and the critical root zone of trees.
- .10 Where possible, locate portable window air conditioning units on rear facades or inconspicuous side facades.
- .11 Install low-profile ridge vents, if desired, only if they will not destroy historic roofing materials and details.
- .12 Install ventilators, solar collectors, vehicle charging stations, and mechanical equipment in locations that do not compromise character-defining building features or in locations that are not prominently visible from the street.
- .13 Minimize the visual impact of electric vehicle charging stations.



Louvered shutters provide a traditional means of shading the sun's heat from the interior of a structure while providing ventilation.



A mechanical lift provides access to the entrance of the Executive Mansion from the right side of the front porch. The lift itself is partially screened by the foundation plantings.



A universal design residence in the Oakwood district provides access to the front porch both by steps and by ramp.



Both the use of traditional materials and details and the addition of landscape screening successfully integrate this ramp with the building and its site.



Only the metal railings of the ramp added in this church courtyard are visible above the low stone wall that edges the landscaping.

2.11 Accessibility, Health, and Safety Considerations

A need for public access to, a change in use of, or a substantial rehabilitation of a historic building may necessitate compliance with current standards for life safety and accessibility. The North Carolina State Building Code, the North Carolina Rehabilitation Code, and the federal Americans with Disabilities Act of 1990 as amended all include some flexibility in compliance when a historic building is involved.

Things to Consider As You Plan

When changes to a building are necessary, the property owner must give careful consideration to how the changes can be incorporated without compromising the integrity of the historic building, its character-defining features, or its site. The commission staff should be consulted early in the planning stages for assistance on such projects.

Because of the characteristic raised foundation of many early Raleigh buildings, accessibility for persons with disabilities often requires the introduction of a ramp or a lift to the first-floor level. Commercial or institutional buildings without raised foundations may present challenges as well. Recessed entries may be deep enough to provide needed access; however, key features, such as entries with historic ceramic tiles should be retained and preserved.

Safety codes may also dictate additional exits and/or a fire stair. The introduction or modification of railings, handrails, or other safety features may be needed as well. Complying with such requirements in ways that are sensitive to the historic character of the building and the site demands creative design solutions developed with input from local code officials, representatives of local disability groups, and historic preservation specialists. Whether the modifications are large or small, however, with respect to the long-term preservation of the historic building, temporary or reversible alternatives are preferable to permanent or irreversible ones.

2.11 Accessibility, Health, and Safety Considerations: Guidelines

- .1 In considering changes to a historic building, review accessibility and life-safety code implications to determine if the proposed change is compatible with the building's historic character and setting or will compromise them.
- .2 Meet accessibility and life-safety building code requirements in such a way that the historic site and its character-defining features are preserved.
- .3 Meet accessibility and life-safety building code requirements in such a way that the historic building's character-defining facades, features, and finishes are preserved.
- .4 Determine appropriate solutions to accessibility with input from historic preservation specialists and local disability groups.
- .5 If needed, introduce new or additional means of access that are reversible and that do not compromise the original design of a historic entrance or porch.
- .6 Consult with local advocacy groups to find ways to reasonably accommodate access.
- .7 Work with code officials in exploring alternative methods of equal or superior effectiveness in meeting safety code requirements while preserving significant historic features.
- .8 Locate fire doors, exterior fire stairs, or elevator additions on rear or non-character defining facades. Design such elements to be compatible in character, materials, scale, proportion, and finish with the historic building.



This discrete black handrail provides a safe edge for a steep entry stair.