



Chapter 8

DESIGN GUIDELINES FOR HISTORIC BUILDINGS

Baltimore has more than thirty local historic districts and many historically significant neighborhoods. Each historic district and neighborhood has its own distinct character based upon its buildings, uses, and historical development. There are many different sizes, types, and periods of buildings within the wide range of Baltimore historic districts and landmarks. The Design Guidelines are by necessity broad, addressing general issues regardless of historic character; however, they will assist property owners and designers identify issues and craft appropriate maintenance and design solutions for their historic buildings. In addition, the Commission will apply these guidelines strictly or leniently based upon the site conditions and visibility of each project. **Meeting CHAP Guidelines does not necessarily mean that you have met the requirements for other agencies. If a project requires additional approvals for tax credits, grants, easements or similar programs, applicants must also obtain approval directly from the appropriate agencies, such as the Maryland Historical Trust or the National Park Service.**

8.1 IDENTIFYING AND PRESERVING HISTORIC BUILDING FABRIC

The following principles will help property owners identify historic fabric and preserve their historic structures:

- Identify and assess character-defining features when considering changes to a historic building. Retain character-defining features, such as roof shape, openings for doors and windows, and unique detailing, when repairing, maintaining, or altering a historic building.
- Repair deteriorated historic fabric rather than replace it whenever possible. Do not modify or alter significant architectural features during the repair process.
- Thoroughly consider all alternatives to replacing deteriorated building features. There are a number of recognized preservation repair techniques.
- Replace architectural materials and features that are deteriorated beyond repair with new materials and features that match the original.
- Replace missing architectural features with new features that match the original. Base the fabrication of the new features on matching identical features from the building. Where identical features are not present, base the fabrication on historic drawings, photographic evidence, or comparable examples found on historic buildings in the neighborhood.
- Many changes to a building over time may be historically significant and should not be removed. Intrusive changes that have resulted in harm to historic building fabric or in the loss of historical significance and integrity may be reversed as part of a rehabilitation project.

- Use craftspeople experienced in restoration of historic buildings.
- **The Commission takes lead-based paint hazards very seriously. For projects that propose the alteration or removal of features contaminated with lead-based paint, the Commission will take into account the significance of the finish or feature in question, what impact that an abatement proposal will have on the historic character of the building, and the requirements of applicable federal, state, and local laws in the project review. CHAP follows**



Park Avenue, ca. 1870s

HABS

HUD's definition of a lead-based paint hazard; for this and more information on lead-based paint hazards, please refer to Section 8.14.

8.2 MASONRY

Brick and stone masonry comprise the majority of Baltimore historic buildings, defining their style, character, and appearance. Most buildings built before the twentieth century have load-bearing masonry walls, making the maintenance of them critical for structural stability. Many commercial and industrial buildings constructed after the twentieth century have only a thin veneer of masonry supported by an interior steel frame. Maintenance of the masonry veneer is important to prevent rusting of embedded steel.

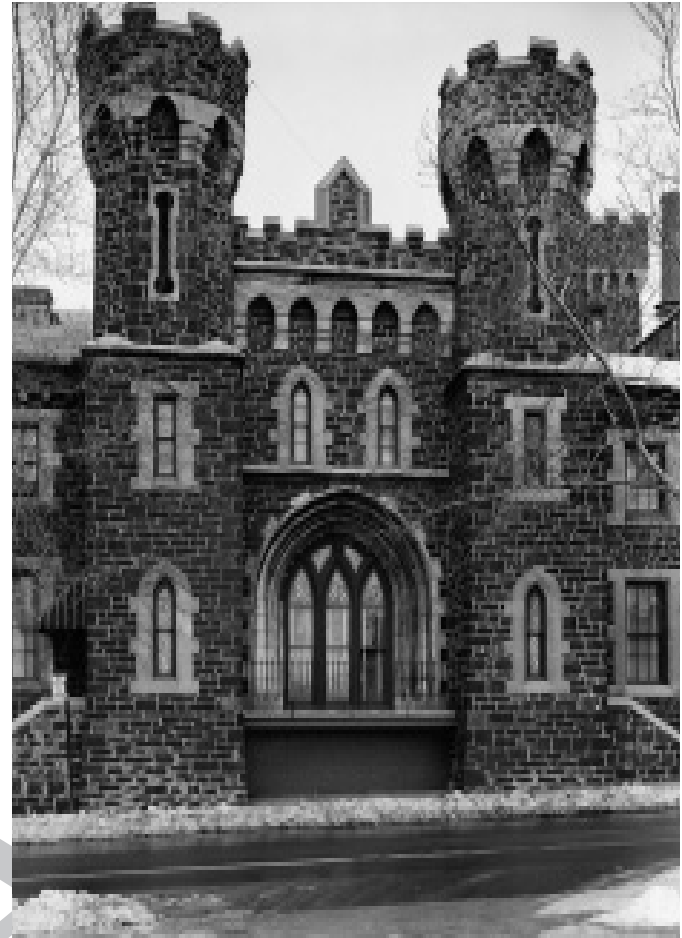
Brick, the most common masonry material in Baltimore, varies considerably in color, texture, and quality, depending upon materials and manufacture. Like a loaf of bread, bricks are baked, creating a hard outer crust that protects a soft interior. Although bricks last a long time, they're still vulnerable to deterioration and will rapidly deteriorate without a hard outer crust.

Baltimore has a variety of stone buildings. The earliest masonry buildings were constructed with a blue-gray gneiss quarried along Jones Falls. Rowhouse steps built with white Cockeysville marble have become a Baltimore icon. Seneca Red sandstone from Frederick became popular for lintels, window sills, and wall caps. Brownstone and granite buildings also became popular in the nineteenth century. In the early twentieth century, Indiana limestone enjoyed popularity for commercial buildings. Natural stone varies in composition and durability. Identifying stone type is essential when considering treatment options. In addition, the twentieth century saw the use of concrete as a prominent building material.

Masonry walls and mortar joints should be carefully inspected for signs of deterioration. Masonry is porous and must be protected from water infiltration by maintaining proper roofing, site drainage, and sound mortar joints. Water infiltration causes damage through cycles of freezing and thawing and by carrying salts into the masonry. Cleaning, repointing, and surface treatments must be undertaken with extreme care to avoid permanent damage.

GENERAL

- Inspect masonry walls for signs of cracking, spalling, open joints, movement, discoloration, and interior dampness. Determine the source of problems.
- Prevent water from entering masonry walls by maintaining roof and site drainage, and sound mortar joints.
- Where serious cracking or deterioration is observed, consult a structural engineer experienced in historic preservation to investigate possible structural issues.



Baltimore City Jail, 1859

- Do not cut new openings or remove substantial portions of masonry walls.
- In most cases, do not apply waterproofing or other surface coatings over historic masonry. Most coatings prevent the masonry materials from breathing and can trap moisture within the wall, which causes cracking, spalling, and movement. See the guidelines for masonry painting below.
- Corroded metal embedded in masonry must be repaired by an experienced contractor in accordance with accepted structural and preservation techniques. When completed, repairs should match the original appearance or the material or surface.

MASONRY CLEANING

- Clean masonry only when heavy soiling causes deterioration.
- Use the gentlest means possible when cleaning, such as a low-pressure water spray (100-400 psi) and natural-bristle brushes. Under-clean rather than over-clean.
- Only use proper commercial masonry cleaning agents. Follow manufacturer's instructions.

- Test cleaning methods in a small area. When possible, allow the test area to weather for several months.
- Do not blast water at high pressure (over 400 psi). Never Sandblast.
- Repoint first; clean second in order to limit water penetration during the cleaning process.
- Clean masonry when temperatures will remain above fifty degrees Fahrenheit for at least three days after the completion of cleaning.

MORTAR

- Mortar joints deteriorate faster than masonry and must be periodically repointed.
- Repoint deteriorated joints only. The removal of all joints in order to achieve a uniform appearance is discouraged, which often results in damage to historic masonry.
- Remove unsound mortar joints carefully with hand tools that are narrower than the joint. Under special circumstances and careful supervision, use of power tools may be permitted. Require test samples for approval prior to beginning work. Do not damage masonry units.
- Remove unsound mortar to a depth of two-and-one-half times the width of the joint, or to sound mortar, whichever is greater.
- Replacement mortar should be compatible with historic masonry and the original mortar mix. Portland cement mortars are not appropriate for buildings constructed prior to c. 1900. Modern mortar mixtures tend to be harder than historic masonry and mortar, causing cracking of the masonry units. Develop a mortar mixture that uses similar sand and iron-oxide mortar pigments.
- Replacement mortar must match historic mortar joints in color, texture, joint size, profile, and hardness. Do not use synthetic caulking compounds as an alternative to mortar.
- Major repointing projects should be undertaken by a masonry restoration professional. Historic mortar testing can be easily and inexpensively completed by trained material conservators.

BRICK MASONRY

- Repoint open and deteriorated mortar joints in brick masonry to match existing.
- When repairing a section of a brick wall, match the existing brick in color, size, and texture; and the existing wall in pattern and profile. Tooth new brick masonry into existing. Match existing joints in color, texture, joint size, and profile. Require test panels for approval.
- Remove each cracked or spalled brick individually and replace to match existing. Replacement brick must not be stronger than the original brick.

STONE MASONRY

- Inspect for and repair open joints, especially at parapets, cornices, lintels, string courses, and water tables.
- Joints on horizontal surfaces of stone masonry should receive an appropriate sealant. Do not use sealants in joints on vertical surfaces.
- Repair cracked, spalled, and deteriorated stone masonry units through patching, piecing-in, or consolidation methods whenever possible.
- Replace extensive deteriorated or missing features with new stone to match existing stonework in color, size, texture, coursing, and pattern. Require test panels for approval of all types of masonry repairs.
- Only remove or rebuild substantial portions of stone masonry walls for structural integrity reasons.

STUCCO

- Inspect stucco finishes on a regular basis to note cracks, openings, intrusive vegetation, staining, or hollow sounding areas. Inspect for leaking downspouts or gutters.
- Use a stucco mix similar to the original stucco to repair cracks. Do not use sealant to repair cracks in stucco.
- Remove and repair deteriorated areas only.
- Match existing adjacent surfaces in strength, composition, color, texture, and finish. Use an approved test panel to ensure that new work will match existing.
- Install stucco repairs when the temperature will remain above fifty degrees Fahrenheit for a minimum of three days after installation.
- Remove stucco from masonry surfaces where it is historically inappropriate. Before removing stucco, prepare a test panel to make sure that underlying masonry has not been irreversibly damaged.
- Do not paint stucco that has never been painted.
- Do not install modern exterior insulation finish systems (EIFS) as a replacement for stucco.

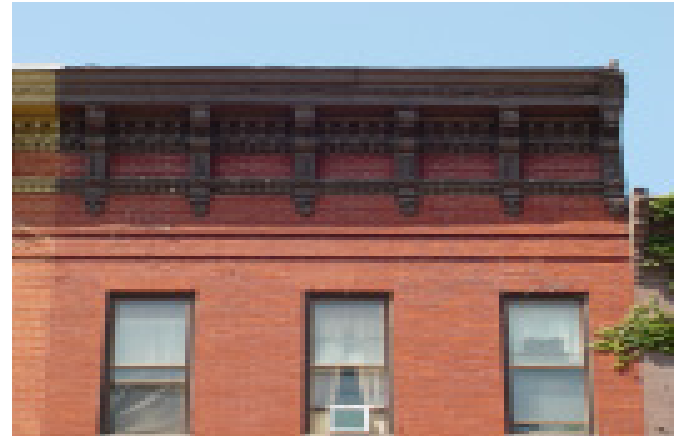
8.3 WOOD

Wood has been used for structural framing, exterior siding, and details such as porches, shutters, steps, handrails, window hoods, cornices, finials, etc. These features are among the most striking and unique aspects of historic buildings. Wood windows and doors will be treated in separate sections.

Wood has always been painted for protection and has always required regular maintenance. Although wood is durable when well-maintained, it quickly deteriorates when exposed to weather. Architectural details are particularly vulnerable

where they project from exterior walls, have complex designs, or are located in hard to access areas such as the cornice. Unfortunately, deteriorated wood details are often removed rather than repaired or replaced.

- Inspect non-structural wood elements for peeling paint, open joints, water penetration, rot, fungus, and signs of insects or animals. Inspect structural wood elements by carefully examining interior elements associated with the walls, particularly floor and roof framing that may be covered with finishes. Early detection and action can avoid extensive and costly repairs later on. **For more information, please see Section 8.14 Lead-Based Paint Hazards.**
- Keep painted coatings in good repair to protect wood surfaces from ultraviolet light, moisture, and the elements. Filling, priming, and painting cracks can remedy many problems.
- Reduce wood deterioration by repairing faulty flashing, leaky gutters, and other sources of water penetration. Remove plant material from wood features.
- Repair wood features using recognized wood preservation techniques, such as patching, piecing-in, and consolidation methods.
- Only replace wood features that are deteriorated beyond repair. **Replace with exterior grade wood species that match the deteriorated features being replaced. The Commission may consider the removal of lead-based paint hazards on wood features that are accessible, impact, or friction surfaces. Applicants must present test results that demonstrate the presence of lead-based paint on the feature. Replace deteriorated wood features or features that have been determined to be lead-based paint hazards with matching new wood features.**
- Photograph architectural features that are slated for replacement prior to their removal.
- Use historic documentation, physical evidence including comparable examples in the neighborhood, or photographs to accurately replicate missing features. If such documentation is not available, use a contemporary design compatible with the size, scale, and material of the historic building.
- When in kind replacement is not possible, a visually and physically compatible synthetic material may be used. Replicate elements in size, form, shape, texture, and appearance. Provide samples and product literature for approval.
- Do not install insulation within the exterior walls of wood frame construction without a proper vapor barrier at the inside surface. Without a vapor barrier, the insulation will absorb water from warmer, interior spaces, trapping moisture within the walls.



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Typical wood cornice at Italianate rowhouse

- Install sealant at vertical joints where wood meets a dissimilar material. Do not apply sealant to horizontal wood joints because it will trap moisture and cause deterioration.
- Retain or replace original wood siding in kind. Vinyl, aluminum, or other synthetic siding is not permitted except on elevations that are not visible from a public way.

8.4 METALS

Metal can be cast or shaped into a variety of building elements. Before 1850 wrought- and cast-iron were used to produce handrails, balconies, and gates. Mid-nineteenth-century technological breakthroughs in iron production led to the production of metal cornices, roof cresting and finials, window hoods, columns, piers, and storefronts. Early twentieth-century buildings used bronze, aluminum, chrome, and Monel for decorative detailing. Metals used in doors, windows, lighting, and roofing will be dealt with in separate sections.

Metals, inherently durable if properly maintained, weather, oxidize, and corrode if exposed to water. Historic Metal features are frequently neglected, covered up, or removed, particularly at roofs and cornices that are difficult to access. In many cases, covering these features accelerates the damage, causing condensation and corrosion. Inspections of metal elements should identify the type of metal and signs of deterioration such as loose or missing elements, open joints, rust or rust staining, and failed fasteners or soldered joints.

GENERAL

- Retain and repair existing metal features whenever possible. Repair metal surfaces using methods, materials, and techniques appropriate to the specific type of metal.
- Replace only those portions of metal features that exhibit significant deterioration. Replace materials and features in kind, whenever possible.
- When in kind replacement is not possible, a compatible substitute may be used. Replicate existing features in



Cast iron balconies, Mt. Vernon, ca. 1851

size, form, shape, texture, and appearance. Do not replace deteriorated metal features with materials that do not have the same visual integrity. Proposed synthetic materials must have equal or better durability than the original material. Provide samples and product literature for approval.

- Replace missing metal features with new elements based on historical, pictorial, or physical evidence. If no such evidence is available, replacement features should be of a compatible new design, rather than a conjectural historical reconstruction. New metal features should be compatible in size, scale, material, and color with the historic building.
- Clean and repair metals requiring a painted finish prior to repainting. Use a paint system appropriate to the specific metal surface.
- Do not apply paint coatings to metals that were historically meant to be exposed, such as copper, bronze, or stainless steel.
- Do not leave metal surfaces that require protection from the elements exposed, such as iron or tin.

CLEANING

- Do not damage the historic color, texture, or patina of metal features when cleaning. Clean metals using the gentlest means possible. Prepare a test panel to determine appropriate methods and potential adverse effects from cleaning.
- Do not use blasting methods to clean soft metals, such as tin, lead, copper, and zinc. Clean these soft metals using appropriate cleaning agents for the specific type of existing metal.
- Remove corrosion or paint build-up on hard metals, such as cast iron, wrought iron, and steel, using a wire brush and appropriate paint stripper. Low pressure grit blasting

may be used if the metal elements can be taken to a shop for repairs.

8.5 DOORS

Doors and doorways are among the most visible character-defining features of a historic building. Significant features of doors and doorways include materials, shape, panel arrangement, shutters, moldings, hoods, fanlights, and sidelights. Many original doors are characteristic of a period or regional building style and are examples of exceptional craftsmanship or design. Replacing doors is generally unacceptable.

Doors are most commonly damaged from constant use. Over time, small problems, such as sticking doors, missing fasteners, broken glass, or worn finishes, can lead to more serious deterioration. Wood and metal doors are vulnerable to moisture and de-icing salts which accelerate wood rot and corrosion. Maintenance of entrances includes regular cleaning, rust removal, limited paint removal, glass repairs, and the application of protective coatings.

GENERAL

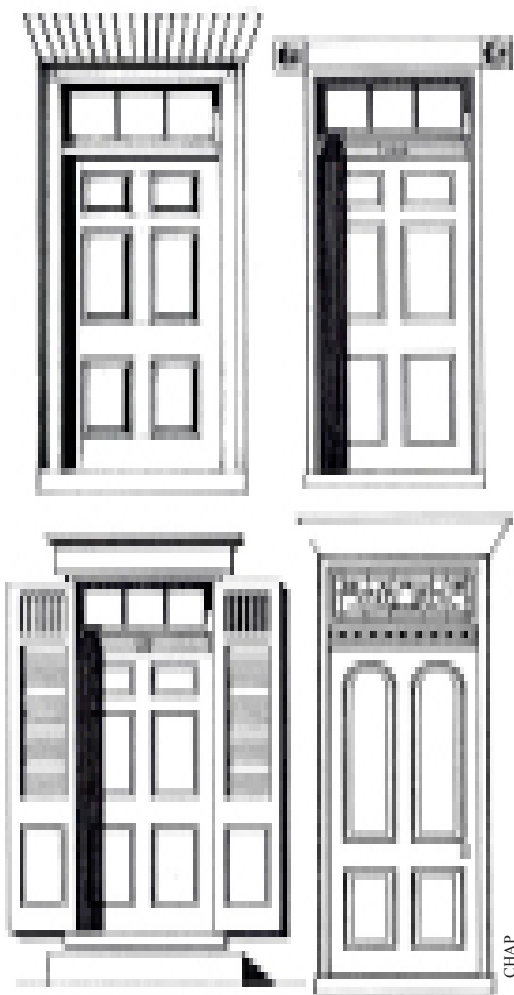
- Preserve, repair, and maintain historic doors and doorway features that contribute to the building's architectural character, such as hardware, fanlights, sidelights, pilasters, entablatures, columns, balustrades, and stairs.
- Do not paint door hardware.
- Storm doors must match the shape of the opening, have a narrow-frame design that enables the inner door to be seen, and have a finish that matches the inner door. Reflective coatings on storm doors are not allowed.
- Do not remove historic doorway elements or add elements, such as at vestibules.
- Do not create new entrances on primary facades. Locate new openings on walls that will result in the minimal loss of historic materials and features. Design new openings to be compatible in size, scale, shape, proportion, material, and massing with the existing building features.
- Use historical documentation when reconstructing a missing door feature. If there is not sufficient evidence available, a new design must be compatible with the architectural character of the building
- Do not fill in historic door openings. This destroys the rhythm and balance of the building, as well as historic materials.

DOOR REPLACEMENT

- Never replace a door if repair and maintenance can improve its performance, **eliminate a lead-based paint hazard on an accessible, friction or impact surface**, and

preserve its physical and historical integrity. For more information, please see Section 8.14 Lead-Based Paint Hazards.

- Use only doors that duplicate the design, proportion, arrangement of paneling, and glazing of the original.
- Replace non-original, non-historic doors with new doors that are appropriate to the period and style of the building.
- Do not use steel-covered hollow core doors in historic doorways. Steel doors have a poor finished appearance and often do not come in sizes and styles that are appropriate for historic buildings.
- Maintain the original shape and size of the historic doorway. Do not decrease the size of the doorway opening by partially filling it in to allow for stock replacements.
- Do not replace historic double-leaf doors with a single door.



Typical rowhouse door styles

8.6 WINDOWS

Like doors, windows are one of the most noticeable features of a building, contributing to a building's sense of massing, proportion, and rhythm. Details, such as size and shape of window panes, depth and width of frames, and color and type of glazing, dramatically affect a building's appearance. There are a wide variety of historic window types including double-hung, fixed, awning, and casement windows.

Historically, windows have been the sole means for providing air and light into living spaces. For centuries, builders and glass makers worked to increase the size of window panes (sometimes called lights). Expense and technology necessitated that most windows were built with multiple panes supported by wood or metal dividers called muntins. These muntins were mounted into sashes and hung on multiple tracks to allow the windows to be opened. Today, the existence of electric lights and air conditioning makes it difficult to imagine the importance of windows in earlier centuries. Until the mid-twentieth century, the need for light and air strongly influenced building forms and window placement.

Historic windows should not be replaced unless they are deteriorated beyond repair or are a lead-based paint hazard on an accessible, friction or impact surface. Replacement windows must meet CHAP Window Replacement Guidelines. For more information, please see Section 8.14 Lead-Based Paint Hazards. When properly maintained, windows can last indefinitely. Historic windows are designed with component parts that can be disassembled and individually repaired unlike contemporary replacement windows, which are a single unit. Historic windows are usually better constructed than contemporary windows which have a limited lifespan.

The replacement of historic windows is often advocated to improve energy efficiency or to fulfill sustainability goals. Most heat loss occurs around a leaky window frame or sash rather than through the glazing. This can be addressed through simple weatherization techniques, such as installing weatherstripping or exterior or interior storm windows, which greatly increase energy efficiency at a substantially lower cost than wholesale window replacement.

Historic buildings typically display a high quality of design and materials which should be retained. Special windows that are custom designed or crafted, or that represent a high degree of styling or detailing warrant special care and all reasonable efforts should be made to preserve them. Elements that were mass-produced, do not have distinguishing characteristics or that are easily replicable may be considered for replacement if they are a lead-based paint hazard. Replacement windows must follow the existing CHAP Guidelines for Window Replacement. (Adapted from D.C. Historic Preservation Review Board's Window Repair and Replacement Preservation and Design Guidelines, 2011 (p.1).)



Redwood Street, ca. 1904

Some examples of special windows include stained glass windows, curved glass, arched windows, and windows of unusual configurations.

Every effort should be made to repair and eliminate lead-based paint hazards on special windows. If a special window is deteriorated beyond repair or a lead-based paint hazard cannot be eliminated without removal, a special window must be replicated to match the historic window exactly. For special windows, there are other methods of risk reduction, aside from replacement, that will allow property owners to meet federal, state, and local laws while retaining the historic window.

GENERAL

- Do not alter the size, location or shape of historic windows or window openings.
- In most cases, do not create new window openings or permanently block existing window openings on principal elevations.
- When required, locate new window openings on a secondary elevation that cannot be seen from a public right-of-way. Design newly installed windows to be compatible

with historic windows and the overall character of the building.

- Do not install new interior floors or suspended ceilings that block the glazed area of historic windows. If such an approach is required, design new floors and ceilings with setbacks that do not directly obstruct the window.
- Do not cover historic window frames, sills or trim with metal or vinyl siding materials.
- Do not cover or paint the glass in windows, transoms, or sidelights.
- Do not alter the window sash or frame to accommodate an air conditioning unit.
- Use physical, photographic or historical evidence to reconstruct missing window elements, such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds. Reconstruct elements with materials to match the original or, if that is not possible, with a compatible substitute material.
- **Lead paint is an extremely hazardous material. Applicants must follow Maryland Department of Environment's Lead Poisoning Prevention Program and all federal, state, and local laws pertaining to the safe removal of lead paint. Contractors must be certified by the Maryland Department of the Environment and accredited by the U.S. Environmental Protection Agency.**
- **When hiring a window repair or replacement contractor, it is recommended that they have experience working in historic districts.**

WINDOW REPAIR

- Repair deteriorated window components whenever possible. Do not replace historic windows unless they are deteriorated beyond repair or are a lead-based paint hazard on a friction or impact surface. Replacement windows must meet CHAP Window Replacement Guidelines.
- Every effort should be made to maintain and repair "special" windows.
- Perform routine window maintenance, including repainting (interior and exterior), installing new glazing putty, weather-stripping, and repairing sash, frame, and hardware.
- Repair wood windows by patching, splicing, consolidating, and reinforcing existing materials. Deteriorated wood sills can be repaired using epoxy consolidants and wood fillers. Repairs may include in kind replacement of parts that are extensively deteriorated or are missing. Damage to one component of a historic window does not require the removal of the entire window. Most millwork firms can duplicate parts for window repairs. Consult a window repair specialist prior to commencing a repair project.

- Repair metal windows by removing light rust with the gentlest mechanical or chemical methods possible. Do not attempt to burn off rust with a propane torch or similar method, which can distort the metal and result in broken glass. Bent or bowed metal sections should be taken to a professional metal fabricator's shop for repairs.
- If the window sash or frame must be disassembled for repair, consult an experienced window specialist to avoid damaging the window.
- **Windows that appear to be in poor condition may be repairable.** Removal of excessive layers of paint can improve window operation and restore original detailing. **Safe and effective methods for removing paint from windows include chemical stripping and scraping. Heat-producing tools may cause serious damage and should only be used by experienced professionals.**
- Substitute materials or parts must match the visual appearance of the existing window and must not be physically or chemically incompatible.

WINDOW REPLACEMENT

- **If window replacement is thought to be necessary, obtain the input of a professional experienced in historic preservation. Windows that appear to be in poor condition may be repairable.**
- **Where windows are deteriorated beyond repair,** Replacement windows shall match the historic windows in size, type, configuration, material, form, appearance, and detail. Do not reduce the size or change the shape of historic window openings. Insulated glass and undetectable Low-E coatings may generally be incorporated into the window design.
- **Windows that were mass-produced, do not have distinguishing characteristics or that are easily replicable may be considered for replacement if they are deteriorated beyond repair or present a lead-based paint hazard on accessible, friction or impact surfaces.**
- Where sash are deteriorated beyond repair, repair the frames and install new sash within them. **Eliminate any friction or impact surfaces that have tested positive for lead. Visibly match the amount of glazing area of the original window.**
- Where both window sash and frames are being replaced, pre-manufactured windows of the required size and configuration may be permitted. Match size, type, configuration, material, form, and overall appearance of original windows including frames, sash, and muntins. While simulated divided light (SDL) muntins (also known as grilles) are allowed, Snap-on muntins in lieu of true divided lights are not acceptable.
- CHAP may apply strict or lenient standards based upon site conditions.



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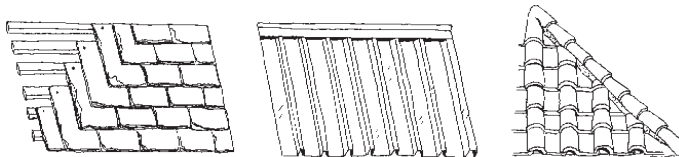
Roofs define architectural style

8.7 ROOFING AND ROOF DRAINAGE SYSTEMS

The roof is among the most critical elements of a building. The roof, composed of framing, sheathing, flashing, and roofing materials, and the roof drainage elements, including drains, downspouts, gutters, and boots, must be considered as one system. Providing a weather-tight roof and properly functioning drainage system should be addressed before any other concern. In many cases a roof's shape, height, configuration, materials, and decorative elements help define the architectural style of a building.

Baltimore buildings display many different roof types. Many rowhouses and commercial buildings have shed or slanted-flat roofs, typically covered with inexpensive, asphalt-saturated roofing. Late-nineteenth-century buildings have elaborate features such as mansards, cupolas, dormers, finials, cresting, and decorated cornices, with complicated valleys and flashings. Slate, terracotta, and metal roofing, including sheet and corrugated iron, galvanized metal, tinplate, copper, lead, and zinc, were all popular.

If roofing is not properly maintained, damage that occurs to concealed roof and wall structures may go unnoticed for



Typical traditional roofing materials: slate, metal, terracotta

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years. As a result of water infiltration, wood members will rot (especially at bearing points), metal elements will rust and expand, and masonry will deteriorate and crack. By the time these conditions become apparent, the required repairs will be much more costly than proper maintenance would have been.

Whenever possible, traditional materials should be used for historic roof repairs. Introducing contemporary materials may trigger new problems and alter the building's character. Traditional roofing materials have a long life that makes them more economical over the long term. For instance, a slate roof may last more than a hundred years and a metal roof for sixty years. The average asphalt shingle roof, by contrast, lasts about twenty years.

GENERAL GUIDELINES

- Preserve roofs and roof elements that are significant to a building's historic character, including form, shape, materials, and decorative features such as gables, finials, towers, turrets, dormers, and chimneys.
- Only remove roof elements that are not historic.
- Severely deteriorated roof features should be replaced to match existing features in size, form, shape, color, and materials identical to the originals.
- Leave historically-exposed rafter ends and eaves open and uncovered.

ROOF REPLACEMENT

- Replace historic roofing materials with materials that match the existing roofing whenever possible.
- When replacing roofing, remove all existing roofing material and inspect and repair roofing substrates, such as wood and felt.
- During roof replacement, protect adjacent historic features such as parapets, cornices, windows, trim, and chimneys from damage during construction.
- Replace historic metal roofs in kind. Paint terne metal roofing to prevent corrosion. Copper roofs may be left unpainted.
- Replacement metal roofing must match the original layout, configuration, and appearance of the seams and trim.
- When in kind replacement is not feasible, install substitute materials that are visually, physically, and chemically compatible with the historic roof materials. New materials must match historic materials in color, texture, size, shape, profile, and general appearance.
- Flat or gently sloping roofs not visible from the ground may be replaced with appropriate contemporary roofing systems.



Example of chimney deterioration

ROOF MAINTENANCE AND REPAIR

- Inspect roofs on an annual basis to ensure all roof surfaces, flashing, gutters, and downspouts are watertight and draining properly. Clean gutters, flashing, and downspouts every spring and fall at minimum to remove leaves and debris. Check that flashing is intact at parapets, chimneys, dormers, and projections as well as along valleys created by intersecting slopes.
- Selectively repair deteriorated sections of historic roofing material rather than completely replacing the roof, whenever possible.
- Repair leaking roofs as soon as possible. Install temporary repairs until permanent repairs can be made. If repairs are not made quickly, adjacent building materials will rapidly deteriorate.



Gutters full of leaves and debris

ROOF RECONSTRUCTION

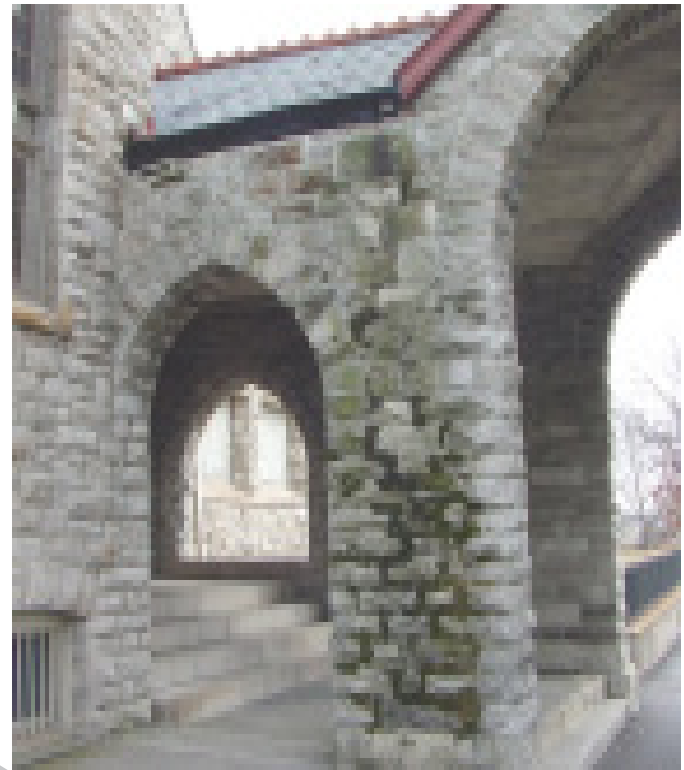
- Reconstruct missing roof features using physical and/or historical documentation. Without sufficient evidence, design new roofs to be compatible with the architectural character of the building.
- Document any existing historic roof feature that is slated for replacement or reconstruction with photographs prior to the removal of any historic fabric.

CHIMNEYS

- Hire a professional experienced in historic masonry and chimney structures when undertaking chimney repair or replacement.
- Retain ornamental brickwork, corbelling, and other decorative features during chimney repair (see the masonry section in this document).
- Cap unused historic chimneys with an appropriate material, such as flagstone or terracotta, to keep water out. The capping material should not be visible from the ground.
- Immediately address any signs of chimney movement, cracking, or leaning as it can lead to serious structural and life safety problems. If a chimney appears unstable, consult a structural engineer to determine an appropriate treatment. Replace chimneys that are unstable and cannot be repaired.
- If chimney replacement is required, document the chimney with photographs before dismantling it. Dismantle and salvage existing materials if possible. Reconstruct the chimney to match the original.
- Where chimney caps are a visible design detail, replace the historic materials to match existing.

GUTTERS AND DOWNSPOUTS

- Trim overhanging tree branches where they touch roofs and gutters.
- Replace missing downspouts as quickly as possible to avoid damage to walls, trim, foundations, and interiors.
- New gutters and downspouts, when required, must match existing historic gutters and downspouts in profile, color, and finish.
- Preserve and retain historic building details when installing replacement gutters.
- In most cases do not install new gutters and downspouts on buildings that have retained internal drainage systems. Repair and maintain the internal drainage systems.
- New gutters and downspouts may be installed on existing buildings where they have not existed historically when the gutters and downspouts will prevent damage to other historic building features such as masonry walls and trim.



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Damage caused by missing downspouts

Select gutter and downspout styles, materials, and layouts that are appropriate to the character of the roof edge, cornice, or trim and minimize the visual change. Half-round gutters and downspouts are generally preferred. K gutters may be used in appropriate residential applications.

- If built-in box gutters are to be replaced by hanging gutters, the box gutters must be roofed over and the hanging gutters attached to the fascia board at the eaves of the roof.
- Never install vinyl gutters and downspouts, which have a short life expectancy.
- Install a sufficient number of hangers to attach the gutters and downspouts securely to the roof and wall. Gutter or downspout guards may reduce the collection of organic matter in gutters and downspouts.
- Install underground drainage systems, grading, splash blocks, diverters, and/or French drains under downspouts to carry water away from the building foundation and limit soil erosion.

ROOFTOP ADDITIONS, DECKS, AND ACCESSORIES

- In most cases, rooftop additions, decks, and terraces easily seen by the public at the front of the building are not permitted in a historic district. Rooftop additions, decks, and terraces visible from a rear secondary street or alley may be approved.

- Where permitted, rooftop additions must be appropriate to the scale and character of the historic building, using matching or complementary materials, forms, and detailing. New work must not damage or visually obscure historic building fabric.
- Install skylights that are flush with the roof plane (not the “bubble” type) with frames that match the color of the roof material. Avoid locating skylights on primary roof elevations.
- Do not install new dormers on primary elevations. If installed on secondary elevations, design new dormers to a scale that preserves the dominant form of the original roof.
- Modern rooftop elements, such as mechanical units, ducts, solar panels, antennae, satellite dishes, and vents should not be easily seen by the public.
- Paint roof vents to match the color of the historic roofing material.
- Do not paint any building element if historical evidence shows that it was never painted.
- Prepare all building substrates properly and apply a compatible paint coating system following manufacturers’ application instructions. Generally, a primer coat and two finish coats are recommended.
- Paint will fail if applied to building surfaces that are wet, dirty, have flaking paint, or are improperly prepared.

PAINT REMOVAL AND CLEANING

- Lead paint is a common hazard associated with historic buildings. Applicants must follow Maryland Department of Environment’s Lead Poisoning Prevention Program and all federal, state, and local laws pertaining to the safe removal of lead paint. Contractors must be certified by the Maryland Department of the Environment and accredited by the U.S. Environmental Protection Agency.
- CHAP follows HUD’s definition of a lead-based paint hazard, being “any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency.” (HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing [2012 Edition]). For more information, please see Section 8.14 Lead-Based Paint Hazards.
- Remove deteriorated paint down to the next sound layer before applying new paint.
- Do not remove sound, well-adhered paint. Gently clean dirty surfaces and lightly sand, if required, prior to repainting.
- Before exposing painted masonry surfaces, make sure that the underlying masonry is not deteriorated and does not require a painted coating.
- Use the gentlest means possible to strip paint. Hand scraping and hand sanding in conjunction with chemical strippers is recommended. A number of commercial paint stripping agents are available of varying strengths and purposes. Select the agent most appropriate to the materials and conditions in the building. Follow manufacturer’s instructions.
- Evaluate paint stripping methods and potential adverse effects by completing small test areas prior to stripping paint. Test panels will be required for large scale and special paint removal projects.
- Use of heat producing tools is not recommended and should only be used by experienced professionals.
- Do not use propane or butane torches, sandblasting, wa-

8.8 PAINT AND COLOR

Paint protects buildings from the elements and adds color and character. A good coat of paint, well bonded to the substrate, preserves wood, iron, and similar materials. Soft brick was sometimes painted to improve its appearance and durability, and to provide space for advertising. Painted signs were a common sight on the sides of brick buildings in commercial areas during the late nineteenth and early twentieth centuries.

Historically, most wooden surfaces were painted to protect them from weathering. Stain and clear coats were used only sparingly, primarily for interior surfaces. Until the Arts and Crafts movement of the early twentieth century, the grain of soft woods such as pine was not considered to be aesthetically pleasing.

In the past, buildings were painted with a limited palette of colors because natural pigments were expensive. Public taste also dictated that buildings be painted in a manner that complemented the streetscape. Even during the Victorian period, when decoration became bold and complex, building exteriors were generally painted in a few muted tones.

GENERAL

- Hardware should not be painted.
- When appropriate, paint gutters, downspouts, metal frames for doors, storm windows and windows, roof-vent assemblies, and fire escapes to match the wall, trim, or roof color of a building as appropriate. Paint non-historic items with the least conspicuous color to reduce their visibility.

terblasting, or mechanical sanders to remove deteriorated paint from historic buildings. These methods can significantly damage historic building surfaces.

- ~~Lead paint is a common hazard associated with historic buildings. The removal, handling, and disposal of any lead paint must comply with all local, state, and federal laws. [This was moved to top of section and updated.]~~
- Reapply an appropriate paint or other coating system to previously painted surfaces after cleaning. Failure to do so will result in deterioration. Confirm compatibility of paint to substrate.

MASONRY PAINTING

Masonry that has never historically been painted should not be painted. Repaint previously painted masonry to match the existing color or choose a new, historically appropriate color. Where appropriate, coat soft and damaged (sandblasted) brick with a masonry paint to prevent deterioration. Use masonry paints specifically designed for such conditions.

When undertaking a masonry painting project, use a paint that is specifically developed for masonry surfaces. This will help to ensure it will form a strong bond. Follow manufacturer's instructions for preparation and application.

WOOD PAINTING

- Paint wood surfaces on the exteriors of historic buildings unless there is clear evidence that the wood was not painted.
- Do not strip historically-painted architectural features to bare wood leaving it in an unfinished state.
- Clear finishes and stains are not appropriate for wood surfaces that were historically painted.
- Coat all surfaces of wood repairs, including those that will be concealed, with primer. Painting surfaces to be concealed is called "back-priming" and helps combat deterioration caused by moisture absorption and warping over time.

PAINT COLORS

- Use stylistically and historically appropriate paint colors whenever possible. Use historic photographs, books, and the color palettes of paint manufacturers to help guide paint color selection.
- When possible, undertake professional paint color analysis to determine historic paint colors. Paint analysis will be required for major projects and for complete paint removal projects in order to preserve the documentary record.
- Choose one or two paint colors for most buildings, particularly residential structures. Three or more colors

may be appropriate for buildings with more complicated details, such as Queen Anne style buildings.

- Building style, period of construction, materials, and setting contribute to the appropriate choice of paint colors. Select paint colors that are appropriate for the time period in which the building was constructed.

Federal & Greek Revival (ca. 1780-c. 1850):

Neutral, muted body colors to imitate stone, such as white, cream, straw, or pale gray. Similar muted, non-contrasting colors on wood trim. Green on window shutters. Stucco surfaces were often painted with joints or scored to mimic masonry.

Gothic Revival, Italianate & Second Empire (ca. 1840-1870):

Pale earth tones for body, such as pale gray, pale brown, and light red-brown. Similar muted colors on wood trim, typically painted several shades darker than the body. Window shutters typically dark green.

High Victorian Gothic & Queen Anne (ca. 1870-1890):

Vibrant colors for the body, including greens, oranges, and tertiary colors, such as russet, citrine, and olive. Trim colors were a greater contrast, typically painted darker than the body. Deeper colors emphasized mass and variety for the body. Two- and three-toned trim colors created depth and relief.

Shingle (ca. 1880-1900):

Deep natural red, brown, and green tones for body and trim. Wood siding and shingles may have been stained rather than painted.

Colonial Revival (ca. 1890-1960):

Light pastel colors for the body, including white, and light blue, gray, and yellow, typically with white trim and green shutters.

Craftsman (ca. 1900-1950):

Dark, natural red, brown, and green shades for body with contrasting dark trim.

8.9 LIGHTING

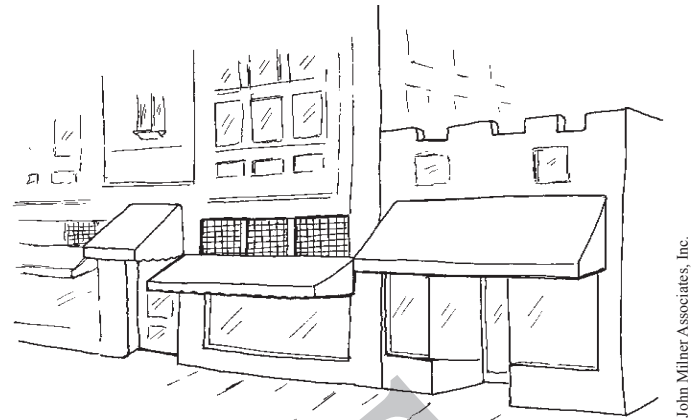
Gas lighting was common in Baltimore from the early nineteenth-century until the advent of electrical systems in the early twentieth century. Historically, exterior light fixtures were more common on more elaborate residences and public buildings. Today, homeowners in historic buildings require enhanced lighting. Improving light levels requires selection and placement of appropriate light fixtures fitted with suitable light sources.

- Preserve, protect, and retain historic light fixtures. Original light fixtures can be upgraded, rewired, and refinished for continued use.
- In most cases do not install light fixtures on historic buildings where fixtures were not historically present. Where exceptions are made, select locations that will provide light to the needed area while not negatively impacting the façade of the building.
- Select fixtures that are compatible with the period and design of the building and will not rust and stain the building. Select fixtures that are appropriately scaled to the specific mounting location.
- Do not damage historic building fabric when installing new light fixtures. Install light fixtures in a manner that allows them to be removed with little or no damage to the building.
- Accent lighting should be appropriate to the character of the historic building and should be designed to highlight architectural features in an understated manner. Accent lighting must be the minimum size possible and placed in non-visible locations.
- Where improved light levels are required, lighting shall be designed to evenly illuminate the façade without creating distorting shadows, spilling onto adjacent property, or shining directly outwards. Do not use colored light sources which alter the color of the building. Minimize the size of new light fixtures and place in non-visible locations wherever possible.
- For energy conservation, install the lowest light levels required and use energy efficient light sources.

8.10 SIGNAGE AND AWNINGS

The quality of signage and awnings can have a great impact on the character of a historic neighborhood. Poorly designed signs and awnings can detract from the character of a commercial area. Conversely, well-designed signage and awnings can dramatically improve a historic business area with only a small investment. Property owners in historic neighborhoods must follow existing Baltimore City sign and awning codes within the zoning ordinance and any pertinent urban renewal plan as well as the following guidelines:

- Signs on commercial buildings should respect the existing architectural features and be compatible in scale, color, material, and design with the building. Generally, neon and flashing signs are discouraged.
- Preserve historic signs and awnings that remain on historic buildings, including signs painted on the walls in commercial areas. Historic signs are a legacy of the past and provide interest to the streetscape.



Locations of awnings along historic main street

John Milner Associates, Inc.

- The design, size, materials, and placement of new signs and awnings should respect the architectural style and original fabric of the historic building. The scale, color, material, ornamentation, and lettering styles of signs and awnings should complement the building. Place signs on areas of the building that were historically intended to receive signage, such as large plate glass windows, transoms, awnings, broad plain fascias in a storefront cornice, blank wall areas above a storefront cornice, spandrels, and other flat, unadorned surfaces of the façade. Signs flush with the building's façade are preferred.
- Do not install signs or awnings in a style pre-dating the construction period of the façade. For example, Victorian storefronts should not be adorned with "colonialized" signs.
- Do not cover, or obscure, architectural details when installing new signage and awnings.
- Keep signage simple and easy to read. Orient storefront signage and awnings to the pedestrian. Avoid logos. Signs and awnings should not generally project more than three to four feet from the façade.
- Concealed, indirect lighting is preferred for signage in the historic areas. Internally lit signs are generally inappropriate in an historic context. Signs that flash, move, or have inappropriately scaled graphics should not be permitted.
- New signs painted on existing brick surfaces may be permitted. Painted signage is more appropriate on buildings with minimal architectural detailing. Select locations that do not obscure or detract from the historic architecture of the building. The blank sidewalls of buildings are particularly good locations for painted signage.
- Do not install roof-top signs, billboards, and large projecting signs at upper story levels of historic buildings.
- Temporary signs will be approved with time limits.



Murphy & Diddemhafer, Architect

Peabody Bookstore/Cafe, 1845

8.11 MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS

Modern mechanical, electrical, and plumbing systems make modern life extremely comfortable. Upgrading mechanical, electrical, and plumbing systems makes historic buildings safe, livable, and attractive to tenants or clients. Sensitive systems upgrades retain important elements of earlier systems and preserve historic fabric, while providing modern comforts.

- Provide adequate ventilation in attics, crawlspaces, and basements to avoid deterioration of systems from excessive moisture.
- Install new mechanical, electrical, and plumbing systems that minimally alter exterior elevations and that do not destroy or obscure historic fabric. Provide adequate structural support for new systems.
- Do not cut through existing masonry walls to install new systems or system upgrades.
- If required, install air conditioning units where they will not obscure or damage historic features through excessive moisture.
- Install new systems at window openings in a manner that protects existing sash and frames. Only install systems

through existing window openings when all other viable options would result in damage to historic fabric.

- Do not install suspended acoustical ceilings when this obscures the upper portions of windows.

8.12 ACCESSIBILITY

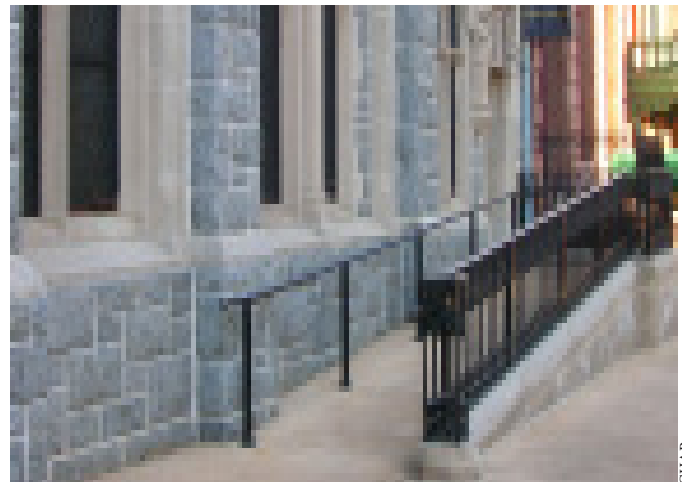
Making buildings and sites accessible to individuals with physical disabilities is important and can be a challenge in some historic contexts. Most building codes provide allowance for addressing accessibility in creative ways.

- Provide barrier-free access at historic buildings and sites to the highest degree possible while preserving historic features and fabric.
- Design barrier-free access as required by the Americans with Disabilities Act and state and local codes.
- Design barrier-free access to be compatible with the historic character of the building in materials, proportions, and detailing.
- Do not damage or remove historic fabric when designing and installing new barrier-free solutions.
- Appropriate landscaping may be used to screen ramps, elevators, or other elements related to barrier-free access.

8.13 SUSTAINABILITY

Rehabilitation of historic structures is a sustainable building practice that reduces consumption of building resources and production of construction waste. Rehabilitation can also be highly energy efficient, reducing the use of non-renewable energy. Sustainable building practices in historic rehabilitation projects and in new construction are encouraged provided that the guidelines are followed in addition to the following:

- Preserve important historic materials and features of both the building and its associated landscape.

*Access Ramp*

CHAP

- Retain elements of the original energy efficient design, including porches, recessed entryways, operable windows, and louvered blinds.
- Compare the building's energy performance to itself, not to a new facility.
- Consider the life-cycle value of historic materials compared to new materials. Historic materials are often easily repaired, while many new materials and components must be replaced in entirety.
- Selectively replace non-historic building elements with new energy efficient, water saving, or recycled/recyclable materials that are compatible with the remaining historic fabric.
- Integrate renewable energy sources, such as wind or solar power, where possible.
- Evaluate life-cycle costs against gains in building performance.
- See the appendices for more information on sustainability and historic resources.

8.14 LEAD-BASED PAINT HAZARDS

The Commission may consider the replacement of architectural features because they are a lead-based paint hazard on an accessible, friction or impact surface. CHAP may require the retention of historic features and the use of other lead-based paint hazard reduction techniques that will meet the federal, state, and local requirements. For more information on current lead-based paint laws and requirements, please contact the Maryland Department of the Environment.

CHAP follows HUD's definition of a lead-based paint hazard, being "any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency." (HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing [2012 Edition])

- The term "accessible surface" means an interior or exterior surface painted with lead-based paint that is accessible for a young child to mouth or chew. "Friction surface" means an interior or exterior surface that is subject to abrasion or friction, including certain window, floor, and stair surfaces. "Impact surface" means an interior or exterior surface that is subject to damage by repeated impacts, for example, certain parts of door frames.
- Lead paint is a common hazard associated with historic buildings. Applicants must follow Maryland Department of Environment's Lead Poisoning Prevention Program

and all federal, state and local laws pertaining to the safe removal of lead paint. Contractors must be certified by the Maryland Department of the Environment and accredited by the U.S. Environmental Protection Agency.

- Painted surfaces should be carefully maintained to reduce the risk of lead exposure from flaking or chipping paint or lead paint dust.
- Historic buildings typically display a high quality of design and materials which should be retained. Special features that are custom designed or crafted, or that represent a high degree of styling or detailing, or that are composed of more unusual building materials warrant particular care and all reasonable efforts should be made to preserve them. Elements that were mass-produced, do not have distinguishing characteristics or that are easily replicable may be considered for replacement if they are a lead-based paint hazard. Replacement features must follow the existing CHAP Guidelines for replacement. (Adapted from D.C. Historic Preservation Review Board's: Window Repair and Replacement Preservation and Design Guidelines, 2011 (p.1).)
- Every effort should be made to repair and eliminate lead-based paint hazards on special features. If a special feature is deteriorated beyond repair or a lead-based paint hazard cannot be eliminated without removal, a special feature must be replicated to match the historic feature exactly. For special features, there are other methods of risk reduction, aside from replacement, that will allow property owners to meet federal, state, and local laws while retaining the historic window feature. CHAP may require the use of these alternative methods rather than removal. For more information, please contact the Maryland Department of the Environment and the U.S. Environmental Protection Agency.
- When an applicant requests the replacement of a historic feature because it presents a lead-based paint hazard, the applicant must present the following:
 - 1) A test result that demonstrates that a feature has tested positive for lead.
 - 2) Documentation of the existing original feature, including profiles, dimensions, configuration, etc. This documentation should include drawings, photographs and any other relevant materials.
 - 3) A detailed proposal for a replacement feature, that includes a cut sheet or shop drawing of the proposed replacement feature, and a detailed description of the profile, dimensions, configuration, material, color, finish, etc. A sample may be requested.

All proposed replacement materials must meet the CHAP Guidelines for replacement features.

8.15 ALTERATIONS AND ADDITIONS

As owners, occupants, and uses change, buildings must accommodate new needs. Adaptive reuse is important for historic neighborhoods undergoing growth or revitalization. Adaptive reuse may include major alterations or new additions to meet changing needs. Inappropriate alterations and additions can diminish the integrity of a historic building; however, carefully designed alterations and additions that are sensitive to historic character and building fabric are encouraged. Please consult the Design Guidelines for New Construction, located in a subsequent section of this document, in addition to the following:

- Retain historic character defining features when planning alterations and additions to a historic building.
- Design alterations and additions to be compatible and sympathetic to the character of the historic building.
- Design additions to be compatible with the existing historic structure in massing, height, form, and scale. Place additions on a secondary elevation.
- An addition may be contemporary in design, or it may replicate the historic character of the main building. Where an addition replicates the historic character of the main building, create subtle differences to clearly distinguish it as a later structure.

- Avoid incompatible architectural features in new additions, such as bay windows, when they are inconsistent with the character of the historic building.
- Document existing historic conditions in drawings and photographs before beginning any alterations and additions.



Murphy & Diddenhater, Architect, John Allen, Photographer

Addition to the Peabody Elderhostel, 1840