



City of Newton Historic Preservation

GUIDELINES FOR WINDOWS & DOORS



Two-over-two windows are typical of the Victorian Era. The ornate, bracketed window "hoods" above the windows are typical of the Italianate mode of construction.

PURPOSE

These *Guidelines* were prepared to provide property owners with information when considering the repair, alteration or installation of windows and doors. They are not intended to replace consultation with qualified architects, contractors, the Newton Historical Commission (NHC), Local Historic District Commissions (HDC) and their Staff. The City's Preservation Planner and the NHC/HDC will be happy to provide a preliminary consultation addressing design or materials issues to potential applicants free of charge.

These *Guidelines* were developed in conjunction with the City of Newton's Historical Commission (NHC), Local Historic Districts Commissions (HDC), and the Planning and Development Department (PDD). Familiarity with this material can assist owners of designated historic properties to move a project quickly through the City of Newton review and approval process. Information pertaining to all properties with a City of Newton historic preservation review designation is marked with the abbreviation **(ALL)**. Information pertaining specifically to properties in Local Historic Districts **(LHD)**, to Local Landmarks **(LL)**, or to properties with Preservation Restrictions **(PR)** is marked accordingly. Information in the Guidelines that is advisory only is marked with the abbreviation **(AO)**. Please refer to the Introduction section for background information on historic preservation designations and the project review process in the City of Newton.

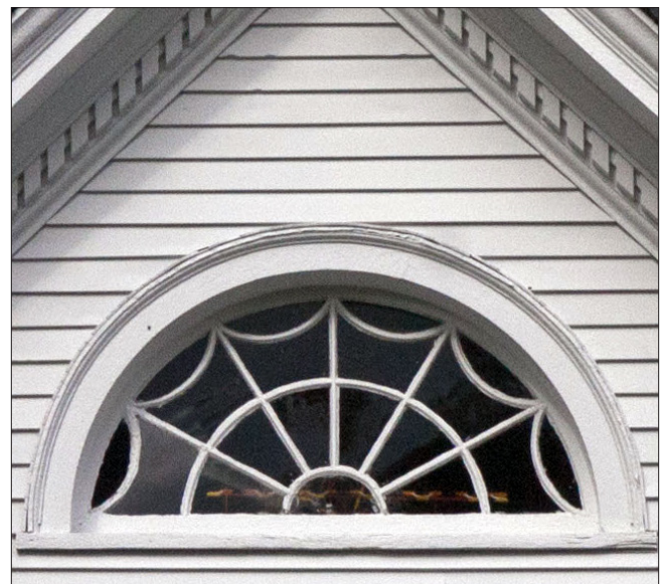
Additional Guidelines addressing other historic preservation topics are available at City Hall and on the City's website at www.newtonma.gov. The NHC, HDC, and PDD are available to provide informational meetings or preliminary consultation with applicants prior to filing. For more information, questions regarding the application process, or to clarify whether a project requires review please contact the PDD at (617) 796-1120.

WINDOWS AND DOORS

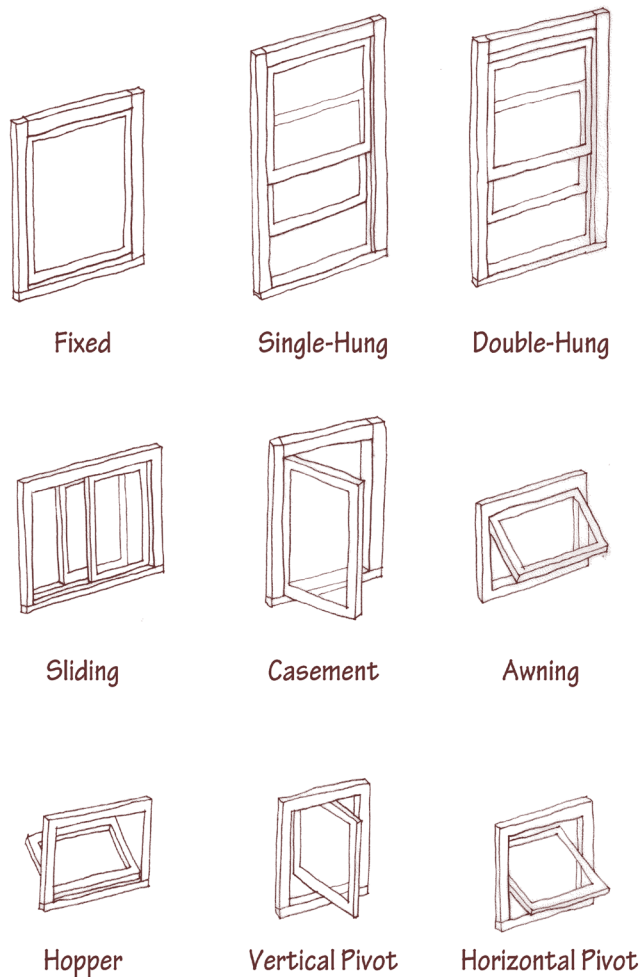
Windows and doors typically comprise at least one quarter of the surface area of exterior walls of most historic buildings. Windows and doors, in addition to their trim, shutters, and associated features, are important elements of historic buildings.

Windows and doors can:

- Define the character of each individual building and provide a visual feature on the streetscape
- Help define the building type, use and architectural style
- Help identify the age of construction



Semicircular windows are often found on Neoclassical and Colonial Revival buildings, particularly at front gable ends. They often feature decorative muntin patterns, which should be maintained and repaired as necessary to preserve the window's historic character.



WINDOW STYLES (ALL)

Window patterns and configurations are intrinsically linked to a building's period of construction and style. Late 19th century buildings, such as those from the Victorian period, often had varied shaped windows and elaborate frames, casings and applied ornament and trim. When the Mission Revival and Colonial Revival styles were popularized beginning in the 20th century, the use of multi-paned windows with simpler frames and casings became more prevalent. Mid-Century Modern buildings typically include larger sheets of glass.

Since all of the components and details of a window are essential to defining a building's style, property owners are encouraged to investigate the essential elements of their windows prior to undertaking any modifications. For guidance on window and building styles, please consult with the PDD Staff or the *Guidelines for Architectural Styles*.



Tudor Revival buildings often have casement windows. It is not uncommon for featured windows to have lead caming (muntins), as in this example, which also includes decorative stained glass motifs.

The NHC/HDC encourage:

- Retaining and maintaining historic windows

COMMON WINDOW TYPES

All of the identified window types can have different muntin patterns or configurations. Muntin patterns are defined in terms of the number of panes or lights. (Refer to *Window Configurations, Page 3*, for additional information.)

- **Fixed:** Non-operable framed glazing
- **Single-hung:** Fixed upper sash above a vertically rising lower sash
- **Double-hung:** Two sashes that can be raised and lowered vertically
- **Sliding:** Either a fixed panel with a horizontally sliding sash or overlapping horizontally sliding sash
- **Casement:** Hinged on one side, swinging in or out
- **Awning:** Hinged at the top and projecting out at an angle
- **Hopper:** Hinged at the bottom and projecting in at an angle
- **Vertical Pivot:** Pivots vertically along its central axis
- **Horizontal Pivot:** Pivots horizontally along its central axis

DEFINITIONS:

Mullion: The vertical element separating two window or door frames.

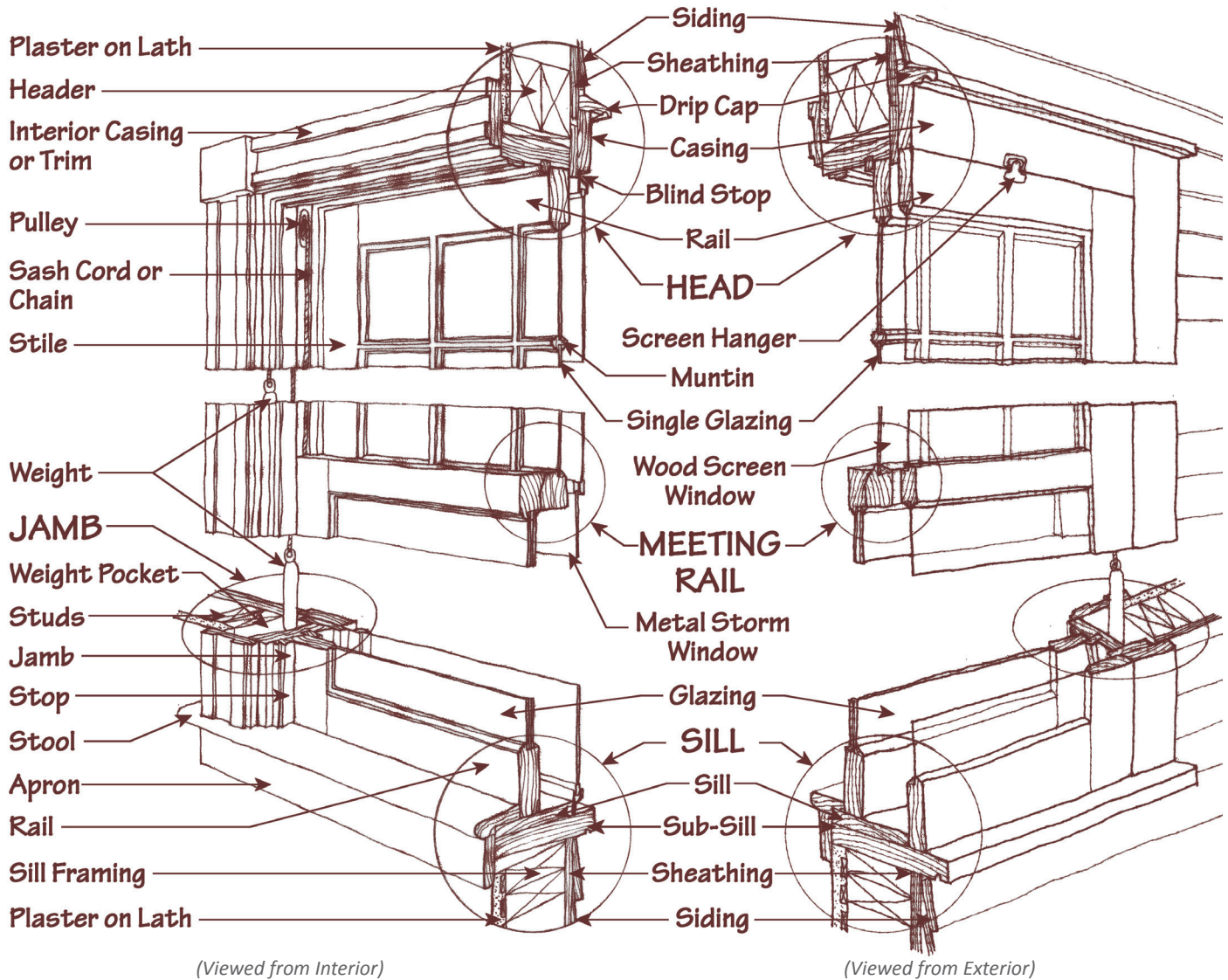
Muntin: The narrow molding separating individual panes of glass in a multi-paned true divided light sash, or applied in a simulated divided light sash.

Sash: The part of the window frame that holds the glazing, especially when movable.

Simulated Divided Light (SDL): A window or door in which muntins are applied to the glass at the exterior, interior and between layers of insulated glass.

True Divided Light: A window or door in which the glass is divided into several small panes.

DOUBLE-HUNG WINDOW COMPONENTS



(Viewed from Interior)

(Viewed from Exterior)

WINDOW CONFIGURATIONS (ALL)

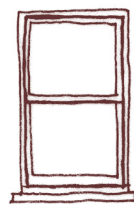
Different window configurations are appropriate for each architectural period or style. Altering the window type, style, shape, material, size, component dimension, muntin pattern or location can dramatically alter the appearance of the building.

If replacement windows are warranted, the NHC/HDC encourage:

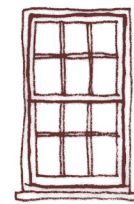
- Utilizing historically appropriate muntin pattern, window configuration exterior profile and size
- Utilizing hardware appropriate for the historic period
- Installing simulated or true divided-light windows rather than snap-in muntin grids for multi-paned appearance

The NHC/HDC discourage:

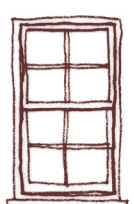
- Using only internal muntins between glazing layers
- Using only interior muntins



1/1 Window



6/6 Window



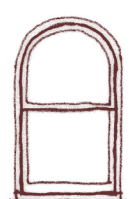
4/4 Window



6/1 Window



2/2 Arch-Top Window



1/1 Arch-Top Window



Typically, the deterioration of wood windows first occurs at the sill. Peeling paint can allow moisture to enter wood and cause rot. Regular repainting is recommended to provide a protective layer against moisture.



One of the advantages of historic wood windows over modern prefabricated units is repairability. This photo demonstrates a dutchman repair at the corner of a historic wood window. Also note the new glazing putty.

HISTORIC WINDOW PROBLEM SOLVING (AO)

Property owners may not pay attention to their windows until a problem occurs. Typical concerns include operation, reducing air infiltration, maintenance and improving appearance. Generally, the appearance of a window that has not been properly maintained can seem significantly worse than its actual condition. Replacement of an entire wood window because of a deteriorated component, typically the sill or bottom rail, is rarely necessary. In many instances, selective repair or replacement of damaged parts and the implementation of a regular maintenance program is all that is required. It is generally possible to repair windows in fair or good condition relatively economically.

To improve operation

- Verify that sash cords, chains and weights are functional
- Remove built-up paint, particularly at jambs
- Repair or replace deteriorated components such as parting beads that separate window sash

To reduce air infiltration

- Install weather-stripping snugly between moving parts (quality metal weather-stripping can last 20 years)
- Replace broken glass (glazing)
- Re-caulk perimeter joints
- Remove and replace missing or cracked glazing putty
- Add sash locks to tighten windows

- Add an interior storm window (a storm window can achieve similar R-values to a new thermal window)
- Insulate weight pockets if no longer in use

To reduce solar heat gain or heat loss

- Utilize operable exterior shutters where historically appropriate
- Install interior blinds or curtains
- Plant deciduous trees at south and west elevations to block summer sun and allow in winter sun, and plant conifer trees at north elevation to reduce effect of winter winds
- Install UV window shades or film

Maintenance

- Regularly review condition and repair and repaint windows

The NHC/HDC encourage:

- Retaining and maintaining serviceable historic windows
- Using storm windows rather than replacement windows as the best means to achieve energy efficiency
- Installing weather stripping, caulk, glazing putty and sash locks to reduce air infiltration (Refer to Page 12)
- Reducing solar heat gain or loss through related activities such as utilizing shutters, blinds or curtains, strategically locating trees and installing UV protection

CRITERIA FOR REVIEW (ALL)

The following guidelines apply when evaluating window repair or approving replacement:

1. **Perform routine maintenance:** Replace broken or missing components such as trim, glazing or sash cords. Verify that caulking, glazing putty and weather-stripping is securely applied and repaint.
2. **Treat or repair deteriorated components:** At the early stages of wood deterioration, it is possible to complete in-place treatments that do not necessitate component replacement. This includes treating wood for insects or fungus, epoxy consolidation, applying putty at holes and cracks and painting. Metal window components, often found on Tudor Revival buildings, require regular maintenance to prevent deterioration such as bowing or rusting. Regular scraping of surface rust and application of a rust-inhibitive paint will allow windows to remain serviceable for a significantly longer period of time.
3. **Replace deteriorated components:** Replace either the deteriorated portion of the component with a “Dutchman” (refer to photograph, *Page 4*) or the entire component if very deteriorated. A “Dutchman” is a repair with a piece of the same material in a sharp-edged recessed cut and can be used for wood or metal components, although metal typically requires a skilled metal worker. The replacement pieces should match the original in design, shape, profile, size, material and texture. New sills are usually easily installed while complete sash replacement might solve problems of broken muntins and deteriorated rails.
4. **Replace window:** If the majority of the window components are deteriorated or missing, replacement of the entire window unit might be warranted.

WINDOW REPAIR VERSUS REPLACEMENT (ALL)

When considering repair and retention of existing windows versus installation of replacement windows, applicants are encouraged to retain existing historic windows. However, replacement of window components or units may be necessary due to extensive deterioration; in such a case, documentary evidence should be provided with an application.

The NHC/HDC discourage:

- Replacing a window component or unit, if repair and maintenance will improve its performance and preserve historic elements

It is important to remember that just because a portion of the window or door is deteriorated, replacement of the entire component or unit might not be necessary, particularly for wood windows. A simple means of testing wood window deterioration is to probe the element with an awl or ice pick. Pierce the element perpendicularly and measure the penetration depth and damp wood at an angle for the type of splintering. (Refer to the *Guidelines for Exterior Woodwork* for wood rot information and repair techniques, *Pages 3-5*.)

IF REPLACEMENT WINDOWS ARE NECESSARY (ALL)

Because of the importance of windows in the appreciation of architectural character, the NHC/HDC and PDD strongly encourage window repair or replacement of only those components of windows that are deteriorated beyond repair. If a property owner wishes to pursue window replacement, they might need to demonstrate that the existing windows are beyond repair and replacements are warranted by providing detailed photographs for review.

If replacement windows are warranted, the NHC/HDC encourage:

- Relocating repaired historic windows to publicly visible elevations and installing replacement windows only at less visible areas
- Matching the original size, shape, material, configuration, operation, dimensions, profiles and detailing to the greatest extent possible
- Matching muntin patterns, profiles and dimensions
- Selecting wood- or aluminum-clad wood replacement windows (aluminum windows for Tudor-Style buildings) for street elevations
- Reusing serviceable trim, hardware or components

The NHC/HDC discourage:

- Decreasing window size or shape with in-fill to allow for installation of stock unit size
- Increasing window sizes or altering the shape to allow for picture or bay windows
- Replacement window types or configurations that are architecturally or historically inappropriate
- New openings at publicly visible elevations



The 9-over-6 vinyl replacement windows have applied muntins, are mounted flush against the outside wall and lack the depth of traditional windows. They do not have trim or casings. They are not appropriate for historic buildings.

WINDOW MATERIALS: PAST & PRESENT (AO)

Wood windows were historically manufactured from durable, close, straight-grain hardwood of a quality uncommon in today's market. The quality of the historic materials and relative ease of repairs allows many well-maintained old windows to survive from the 19th century or earlier.

Replacement windows and their components tend to have significantly shorter life spans than historic wood windows. Selecting replacement windows is further complicated by manufacturers who tend to offer various grades of windows, with varying types and qualities of materials and warranties. Today, lower cost wood windows are typically made from new growth timber, which is much softer and more susceptible to deterioration than hardwoods of the past. Vinyl and PVC materials, now common for replacement windows, break down in ultraviolet light, and generally have a life expectancy of less than 20 years. Because of the great variety of finishes for aluminum windows, they continue to be tested to determine projected life spans.

Other areas of concern with replacement windows, beyond the construction materials used in the frame and sash, are the types and quality of the glazing, seals, fabrication and installation. Double glazing or insulated glass, used in most new window systems, is made up of an inner and outer pane of glass sandwiching a sealed air space. The air space is typically filled with argon gas with a perimeter seal. This perimeter seal can fail in as few as 10 years, resulting in condensation between the glass layers, necessitating replacement to allow for clear visibility. Many of the gaskets and seals that hold the glass in place also have a limited life span and deteriorate in ultraviolet light.

Significant problems with replacement windows also result from poor manufacturing or installation. Twisted or crooked frames can make windows difficult to operate. Open joints allow air and water infiltration into the wall cavity or building interior.

If replacement windows are warranted, the NHC/HDC encourage:

- Reviewing grades of windows offered by manufacturers
- Utilizing quality materials in the installation process
- Understanding the limits of the warranties for all components and associated labor for replacement
- Selecting reputable manufacturers and installers who are likely to remain in business and honor warranties

REPLACEMENT WINDOW QUALITY

Reputable vendors typically provide a better selection and higher quality replacement window options than companies that advertise with bulk mailings or flyers. Each manufacturer also provides various grades of replacement window options. Manufacturer's information can generally be found on their web sites or in catalogues.

WINDOW OPTIONS (AO)

Repair or replacement of existing components: Deteriorated sills, sash and muntins are repairable by craftsmen with wood consolidant or replacement parts, retaining original fabric and function. (Refer to *Guidelines for Exterior Woodwork, Pages 3-5.*) In-kind replacement sash and sills can be custom-made to replace deteriorated sections if necessary. Property owners are strongly encouraged to explore repair and selective replacement parts options prior to considering sash or frame replacement.

Benefits of repair and selective component replacement:

- Original building fabric and historic character remain
- Repairs can be completed by local carpenters
- Timber, used in historic windows, can remain serviceable substantially longer than replacement units

Sash replacement package: Some manufacturers offer replacement jamb liners and sash for installation within existing window frames. The system allows installation of new sash of various muntin patterns within existing frames. Because of the loss of the historic sash, this option is discouraged.

Benefits of the sash replacement package:

- Original muntin pattern can be duplicated
- Maintains the historic opening, surround and trim

Negatives of the sash replacement package:

- Historic sash are removed and become landfill debris
- Replacement sash have a limited warranty, likely needing replacement again in 10 to 25 years as seals and joints open
- Modification of the jambs is necessary
- The jamb liners do not always work well in existing window openings and might need more frequent replacement
- Out-of-plumb openings can be difficult to fit making window sash hard to operate
- Perimeter seals might not be tight

Frame and sash replacement unit: Manufacturers also offer a complete frame with pre-installed sash of various muntin patterns for installation within an existing window frame opening. Because of the total loss of both the frame and the sash, this is strongly discouraged.

Benefits of the frame and sash replacement unit:

- Manufactured as a unit to be weather tight
- Original muntin pattern can be duplicated

Negatives of the frame and sash replacement unit:

- Historic sash are removed and become landfill debris, the historic character of the building is diminished
- The surrounding frame is modified, alteration of built-in surrounds might be required and two frames and sills are typically visible at the exterior
- The size of the window sash and glass openings are reduced due to the new frame within the old frame
- In-fill might be required for non-standard sizes



The highly ornate trim surrounding this paired, round-headed, Italianate window is a significant feature that should be maintained. The installation of replacement windows often requires the installation of a new frame that can damage or visually alter the relationship between a window and its historic surround. Care should be taken if window replacement is considered.

MAINTAINING REPLACEMENT WINDOWS (AO)

One of the selling points of replacement windows is that they do not require maintenance. With the relatively short life expectancy of many of the materials and components, this is usually a very optimistic viewpoint.

As joints or seals in replacement windows deteriorate, openings can be formed that allow air and water to enter into the window frame, wall cavity and/or building interior, causing additional damage. Repair of these openings typically requires replacement of the deteriorated parts. This can present a problem if the manufacturer has modified their designs or is no longer in business, necessitating custom fabrication of deteriorated elements or replacement of the window.

As previously described, the double-glazing has similar problems over time with the deterioration of the perimeter seal. In addition, if the glazing unit is cracked or broken, it will require full replacement. This is further complicated when the double-glazing includes an internal muntin grid.

By contrast, a good carpenter can generally repair a historic wood window with single pane glazing and install an interior or exterior storm window to improve thermal performance.

REPLACEMENT WINDOW COSTS (AO)

The costs that should be anticipated if considering the installation of replacement windows include:

- Labor to remove old windows
- Environmental costs of disposal including transportation and landfill fees
- Purchase price and delivery of new windows
- Environmental costs of manufacturing and transporting new windows from the factory
- Labor and materials to modify existing frames for new windows
- Labor to install new windows
- Life-cycle costs associated with more frequent replacement of new windows as they deteriorate

WINDOW REPLACEMENT GUIDE (ALL)

The NHC/HDC encourage:

- Maintaining historic windows and trim
- Matching the original material, size, shape, configuration, type, operation, materials, muntin pattern, dimensions, exterior profiles and detailing to the greatest extent possible with a salvaged or new replacement window
- Installing clear glass at all openings unless replacing historic colored, beveled or frosted glass in-kind

If replacement windows are warranted, the NHC/HDC encourage:

- Installing replacement windows in less visible areas
- Installing quality replacement windows to match the historic materials; wood windows with an exterior painted wood finish are generally an acceptable option for historic wood windows
- Simulated divided light windows with profiled exterior muntins, interior muntins and black internal muntins between insulated glass layers
- Maintaining serviceable trim, hardware and components or use salvaged materials

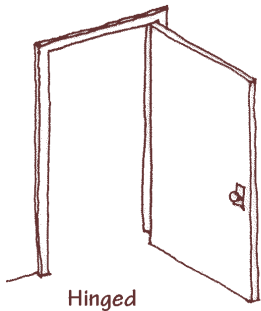
The NHC/HDC discourage:

- Replacing a window component or unit if repair and maintenance will improve its performance and preserve historic elements
- Decreasing window size or shape with in-fill to allow for installation of stock unit size
- Installing vinyl or vinyl-clad windows
- Installing an inappropriate window type, such as a casement in a former double-hung window location
- Increasing window sizes or altering the shape to allow for picture or bay windows
- Installing glass block or jalousie windows where they were not found historically

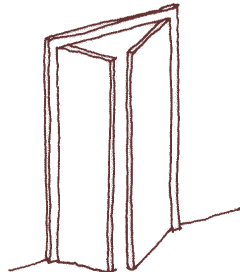
DOORS

Entrance doors serve an important role in regulating the passage of people, light and air into a building, as well as providing a threshold separating the exterior and interior. Historically, most doors were wood and varied stylistically based upon the building design, providing either a grand formal appearance or one that is more informal and welcoming. Traditionally, a door's hardware and trim complemented the overall building style. When selecting hardware for a door it is important to complement its historic style.

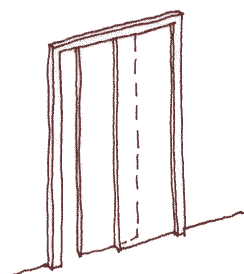
Doors are typically constructed of numerous parts. By the middle of the 18th century, elaborate paneled doors became more common, and now represent the most common door type in American residences. Paneled doors can be constructed in a variety of configurations that can reflect the style of the building. Later 19th century doors often included glazed panels. In the 20th century new door types, including flush doors and metal doors, had periods of popularity.



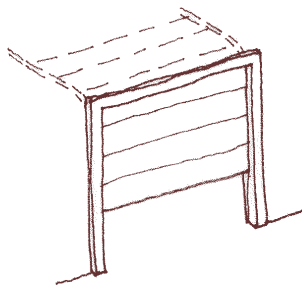
Hinged



Double or Paired



Sliding



Overhead

COMMON DOOR TYPES

- **Hinged:** Swings to close at opposite jamb – almost always mounted at interior thickness of wall swinging inward
- **Double or Paired:** A pair of swinging doors that close an opening by meeting in the middle – includes French doors
- **Sliding:** Either a fixed panel with a horizontally sliding door or overlapping horizontally sliding doors – includes patio doors
- **Overhead:** Horizontal sections that slide on tracks opening upward – most often found at garages

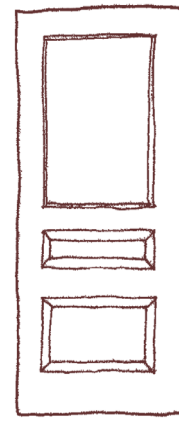
WOOD DOOR TYPES

All door types can have glazing installed in different configurations.

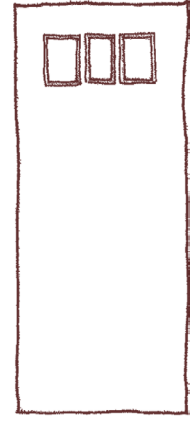
- **Batten:** Full height boards attached edge to edge with horizontal boards nailed to the verticals
- **Paneled:** A frame of solid wood parts with either glass or wood panels
- **Flush:** A single plain surface on its face, typically wood veneer



a. Batten



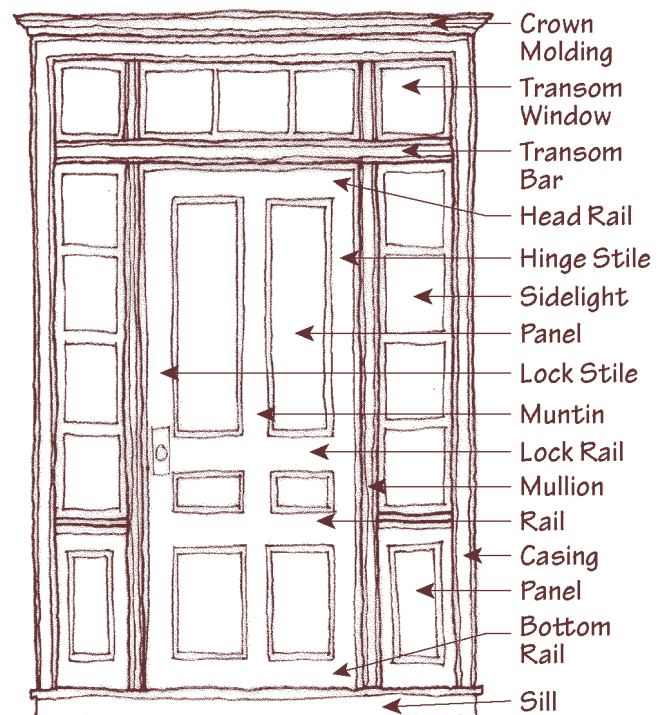
b. Paneled



c. Flush

PANELED WOOD DOOR COMPONENTS

In Newton, paneled wood doors are the most common for historic residences. The diagram below identifies common wood paneled door components. Door configurations vary with a building's architectural style.





This single-light wood-paneled door has a highly detailed and decorative transom and sidelight.

DOOR STYLES

Door styles tend to correspond to the architectural style of the building, with some examples being more “high-style” while others are simpler interpretations. As a result, doors are considered an important feature and the retention, maintenance and repair of historic doors is recommended.

If door replacement is warranted, the door should be appropriate for the architectural style and character of the building. Refer to the *Guidelines for Architectural Styles* or contact the PDD Staff for additional information.



Paired wood doors, which often include glass lights, are typical of Victorian period buildings.



Wood checking and peeling paint is visible. Minor repair and maintenance can prolong the serviceable life of this door.

HISTORIC DOOR PROBLEM SOLVING (AO)

Since doors tend to be one of the most operated elements on the exterior of a building, they are more likely to deteriorate from wear or damage and generally require more regular maintenance, such as painting. If deterioration occurs, selective repair or replacement of damaged parts and the implementation of a regular maintenance program is often all that is required to retain a historic door.

To improve operation

- Verify that doors fit properly in their frames and that joints are tight
- Verify that hardware is operational, particularly that hinges are tight and that hinge pins are not worn
- Remove built-up paint at door and jambs
- Repair or replace deteriorated components such as trim and stops

To reduce air infiltration

- Install weather stripping between door and frame
- Replace broken glass (glazing) and remove and replace missing glazing putty
- Re-caulk perimeter joints around frame
- Install a storm door

Maintenance

- Regularly review condition and repair doors
- Re-paint wood doors

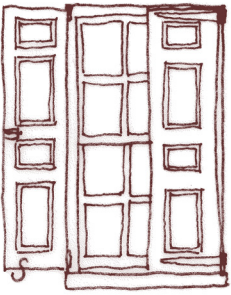
HISTORIC DOOR REVIEW (ALL)

The NHC/HDC encourage:

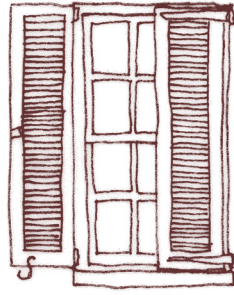
- Retaining historic doors and surrounding trim
- If the originals do not survive, matching replacement doors as closely as possible to original doors or use doors appropriate to the period and style of the building
- Using wood replacement doors for historic wood doors

The NHC/HDC discourage:

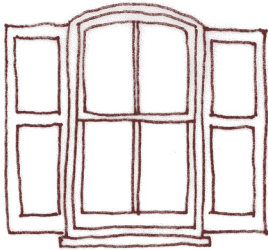
- Removing or encapsulating historic wood trim
- Replacing original doors unless seriously deteriorated



Six-over-six double-hung window with paneled shutters

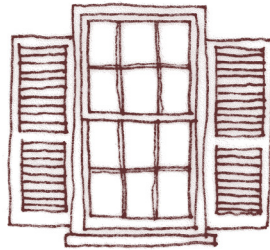


Six-over-six double-hung window with louvered shutters



The 2-panel shutters do not fit the arched opening of the window

Not Recommended



The louvered shutters are too short and narrow for the window

Not Recommended

SHUTTERS (ALL)

Historically, exterior shutters were used as shielding devices. Paneled shutters were installed to provide a solid barrier when closed and louvered shutters to regulate light and air. Shutters were not used on all historic buildings or in all locations. Some building styles, such as Tudor Revival and Mid-Century Modern, typically did not include shutters. It is often possible to determine if shutters previously existed by looking for hardware such as hinges or tie-backs or evidence of their attachment such as former screw holes in the window casing.

The NHC/HDC encourage:

- Maintaining historic shutters
- Installing new shutters where they existed historically
- Operable shutters made of wood or other materials with a paintable finish
- Period-appropriate hardware
- Shutters of the appropriate style for the building and location
- Appropriately sized and shaped shutters for the window opening, fitted to cover the window when closed
- Refurbished historic shutter hardware appropriate to the building style

The NHC/HDC discourage:

- Shutters where they did not exist historically
- Shutters screwed or nailed to the face of the building
- Vinyl or aluminum shutters



The louvered wood shutters on the projecting bay are appropriately sized for the window openings with the narrower shutters on the side of the bay and wider on the front. Also note the wood exterior storm windows with the vertical and horizontal muntins aligning with each window configuration.

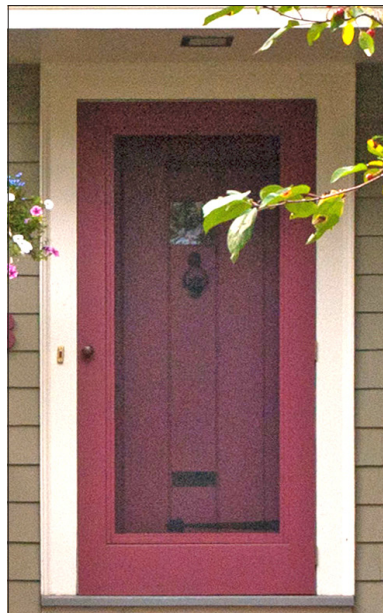


Bare metal finished doors, such as this aluminum example, are generally not appropriate for most historic buildings. This example includes a thick horizontal division that spans across the center of the lower windows and decorative grillework that makes the door visually more prominent.

SCREEN / STORM WINDOWS & DOORS (LL, PR)

Screens and storms should conceal as little of the historic window or door as possible and should be selected to complement each window or door type. This generally means selecting a screen or storm window or door that has rails that coincide with the rails and glazing pattern and overall configuration of the associated window or door.

The most recommended option for a screen or storm door is a simple wood framed opening with a large screen and minimal ornament. If more elaborate detailing is desired, the style and level of detailing should complement the building style; for example, a screen or storm door with Victorian gingerbread would not be appropriate for a Colonial Revival house.



The painted wood screen door matches the color of the door beyond, decreasing its visual prominence. The large screen does not obstruct the details of the paneled wood door.



The horizontal rail of the storm windows aligns with the raised meeting rail of the window in this Arts and Crafts house. The clear glass allows the diamond panes in the upper sash to remain visible.

STORM / SCREEN WINDOW & DOOR GUIDE (LL, PR)

The NHC/HDC encourage:

- Simple storm / screen windows and doors with large screened openings that reveal as much of the historic window or door as possible and fit historic openings
- Removable storm / screen windows to facilitate maintenance of historic windows
- Storms / screens that minimize the change to the exterior appearance
- Painting the wood storm / screen window or door frame to match the adjacent window or door trim

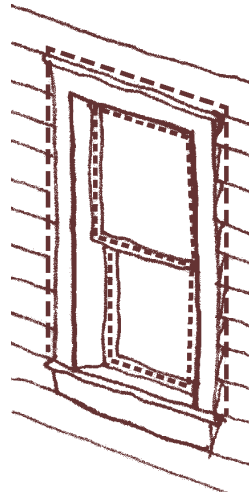
The NHC/HDC discourage:

- Vinyl, aluminum, metal or other synthetic material for storm / screen frames – Wood frames can be custom made to fit any size or shape opening
- Visually opaque screen material
- Plexiglas, or similar material, fastened to window or door frames, screens or shutters
- Storms / screens adhered or fastened directly to window or door trim, shutters or blinds
- Half or stock storm / screen windows that are too small or a different shape than the window opening and require in-fill trim or panels

DEFINITIONS:

Weather Stripping: A narrow compressible band used between the edge of a window or door and the jambs, sill, head and meeting rail to seal against air and water infiltration; of various materials including spring metal, felt, plastic foam and wood with rubber edging.

Caulk: Flexible sealant material used to close joints between materials; of various materials including tar, oakum, lead, putty, and modern elastomers such as silicone and polyurethane.



Recommended weather-stripping locations:

- Behind window sash track
- Between window meeting rails
- At perimeter of doors/windows

Recommended caulk locations:

- Between door/window frame and adjacent wall
- Between abutting materials such as corner boards and siding, porch and wall surface
- Between dissimilar materials such as masonry and wood, flashing and wall surface

WEATHER STRIPPING & CAULK FOR WINDOWS & DOORS (AO)

Proper application of weather stripping and caulk around windows and doors can greatly reduce air infiltration and drafts. When selecting weather stripping or caulk it is important to choose the material appropriate for each location and follow manufacturer's installation recommendations for the best results.

Because weather stripping is used between the moving parts of windows and doors, it is highly susceptible to damage and can become loose, bent or torn. It is important to inspect weather stripping on a regular basis, preferably every fall, and replace it as needed. For high use installations such as entrance doors, it may be beneficial to install more durable weather stripping such as spring metal or felt.

Recommended locations for weather stripping:

- Behind window sash track
- Between window meeting rails
- At perimeter of doors and windows

The installation of caulk or other sealants should occur throughout the exterior of the building. Locations include where two dissimilar materials meet; where expansion and contraction occur; or where materials are joined together. In some instances caulks and sealants can be sanded and/or painted to minimize their visual appearance. It is important to select the appropriate type for each location and exercise care when removing old caulk that might contain lead.

Recommended locations for caulk:

- Between window or door frame and adjacent wall
- Between abutting materials such as corner boards and siding, porch and wall surface
- Between dissimilar materials such as masonry and wood, flashing and wall surface

GARAGE DOORS (ALL)

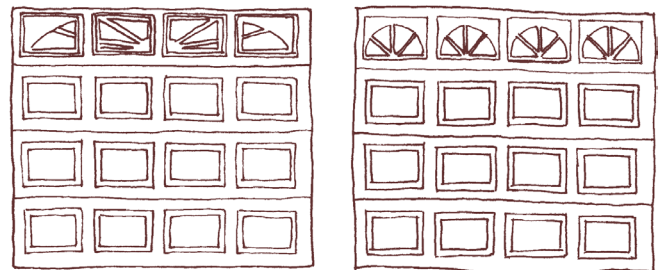
Occasionally, modern functions require openings not found in historic architecture such as garage doors. The goal of the *NHC/HDC* is to integrate these types of openings into buildings in such a way as to maintain the historic character of the building and the neighborhood, which generally means minimizing their visibility from the public way. It should also be understood that in some cases, it may be impossible to make certain desired changes simply because the style or type of building does not lend itself to such modification.

The *NHC/HDC* encourage:

- Retaining historic garage doors
- Stylistically appropriate replacement garage doors
- Replacement paneled doors with a paintable exterior finish
- Single bay openings that do not require removal of decorative features or modification of opening

The *NHC/HDC* discourage:

- Garage doors that are visually prominent



Garage doors with arched or round window openings are generally not appropriate at historic buildings.

The Guidelines project has been financed in part with Federal funds from the National Park Service, U.S. Department of the Interior, through the Massachusetts Historical Commission, Secretary of the Commonwealth William Francis Galvin, Chairman. However, the contents and opinions do not necessarily reflect the views or policies of the Department of the Interior, or the Massachusetts Historical Commission, nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior, or the Massachusetts Historical Commission. This program receives Federal financial assistance for identification and protection of historic properties. Under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, as amended, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, disability or age in its federally assisted programs. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire further information, please write to: Office for Equal Opportunity, National Park Service, 1849 C Street NW, Washington, DC 20240.

© Prepared by Preservation Design Partnership, LLC in Philadelphia, PA; Principal-in-Charge: Dominique M. Hawkins, AIA, LEED AP