

**Fact Sheet**

# Maintaining, Repairing, Retrofitting and Replacing Windows

In most historic buildings, the windows and the architectural detail surrounding them were carefully designed as integral components of the style, scale, and character of the building. Windows have always played an important role in the performance of the building in terms of providing and managing light and air, and that role has expanded to include or improve occupant comfort, accessible operation, energy-efficiency, noise control, safety, and security. With that in mind, the Commission's Rules and resources are intended to accommodate a range of approaches to maintaining, repairing, retrofitting, and replacing windows, one of the most common work types reviewed by the Commission.

This guide is intended to identify facts and key considerations for repairing, retrofitting, and replacing windows at all facades and building types, including individual landmarks and buildings within historic districts.

## Key Considerations for Windows in Historic Buildings

- Building owners have a variety of options to improve the appearance, energy-efficiency, and functionality of windows.
- Existing historic windows that are in fair or good condition can be repaired and retrofitted, and doing so conserves material resources and preserves authenticity.
  - No LPC permit is required to perform most repairs and undertake many energy-efficiency upgrades.
- Existing windows that are deteriorated and in poor condition, or are functionally deficient, can be replaced.
  - An LPC permit is required to replace windows in designated landmark buildings
  - To qualify for staff level approval, new windows must match the historic windows to varying degrees depending on the primary or secondary nature of the façade(s), building type, size, etc.
- LPC staff can assist owners in exploring options for window repair, retrofit or replacement.
  - Repair and/or retrofit
    - Simple window repairs and retrofits (replacement of clear glazing, weatherstripping, air sealing, insulating, etc.) can be accomplished at the same time, saving time and labor costs while improving energy- efficiency and comfort of the home.
    - “Special windows” in particular (such as those with stained glass) may be difficult to replicate, so repair or retrofit may be the best option.
  - Replacement
    - Window replacement options vary, ranging from sash-only replacements, to insert windows in the original frames, to full removal and new window installation.
    - Consider hiring architects, suppliers, and/or contractors with experience working on historic windows to come up with the best approach when replacing windows.

## LPC Regulation

- No LPC permit is required for most repairs, retrofits, and routine maintenance of existing windows
  - This includes but is not limited to clear glass replacement, repainting the same color, caulking, and the installation of weatherstripping. See Section 2-14 of Title 63 of the Rules of the City of New York and refer to appended guidelines in Appendix A.
- LPC regulates the replacement of windows on Individual Landmarks and buildings in historic districts.
  - The majority of window replacement proposals reviewed by LPC meet the requirements for staff level approval.
- Window replacement proposals that do not meet the criteria for staff level approval must be reviewed by the full Commission at a public hearing.
  - The public hearing is an opportunity for applicants to present proposals to the panel of 11 Commissioners and explain why they believe a proposed window replacement is appropriate to the building or historic district. The hearing is also an opportunity for public testimony and discussion about the application.
  - Your assigned staff preservationist will guide you through the public hearing process.
  - More information on the public hearing process can be found here: <https://www.nyc.gov/site/lpc/hearings/for-applicants.page>

## LPC Review

Applications for window replacements or modifications are submitted through [Portico, LPC's new web-based application portal](#), and should include typical LPC submission materials, such as:

- High quality color photographs of the building façade and exterior windows, with close-ups of typical and unique details including brickmolds and jamb details; streetscape photos documenting similar buildings; and historic photographs, such as tax photos found at the [Municipal Archives](#), and other sources such as New York Public Library, Museum of the City of New York, and Library of Congress, many of which can be accessed online.
- Fully-dimensioned and labeled drawings of existing, if historic, and proposed windows, including floor plans identifying the location of the windows on the building, elevations, through-wall horizontal and vertical sections.
- Proposed paint color. See the LPC Permit Guidebook for appropriate colors.
- Accurate dimensions: For window replacement at all building types, it is important to provide fully-dimensioned drawings of the existing windows in elevation and section details if they are historic windows.
  - Important dimensions to include are the depth within the window opening from the plane of the facade, and individual components, such as rails and stiles, meeting rail, brickmolds, blind stop, and framing components.
  - Glazing diminution calculations may be requested by staff based on a review of the submitted material.

## Maintaining, Repairing, and Retrofitting Windows

The Commission encourages efforts to maintain, repair, and retrofit historic windows. Maintenance and repairs to historic windows do not require a permit as long as certain criteria are met. Windows that have been well maintained and have minor deterioration can often be repaired and retrofitted rather than replaced, which – when done properly – improves functionality and efficiency. The following best practices for maintaining and repairing historic windows do not require a permit, except as noted.

### Best Practices for Maintaining, Repairing, and Retrofitting Historic Windows

- Operation:
  - Poor window operation is frequently a result of overpainting, which seals the window sash to the window jambs and sills, making them difficult to open. Cutting the paint seal at all contact points usually resolves this issue.
  - Other steps which can improve the functionality of the windows include replacing window hardware, pulley chains or ropes, hinges and sash locks, and scraping, sanding, and repainting the window jambs.
- Deterioration:
  - If a window shows sign of deterioration, it is often the result of moisture penetration, which can be prevented by regular painting and maintenance and prompt repairs.
  - If rot has already occurred, it is best to remove the deteriorated sections of wood to a solid material and install a dutchman that matches the original window details. For wood windows, consider using a compatible rot-resistant hardwood.
  - Broken glass and glazing putty failure also contribute to the deterioration of windows. It is important to replace broken glass and failing glazing putty with new glass and glazing putty as soon as possible, and then prime and paint the affected area to maintain a waterproof seal.
- General Maintenance:
  - To prevent deterioration, it is important to caulk around the frames and sill, scrape peeling paint, sand the surface to a smooth finish, apply an oil-based primer, and repaint the window sash and/or frames with two coats of exterior grade paint.
  - To increase window longevity, routinely inspect windows every five to seven years and make necessary minor repairs.
  - A permit is only required when painting a window and frame a different color.
- Retrofitting: Making repairs presents a good opportunity to retrofit or upgrade the historic windows to improve the performance and energy efficiency. All types of historic windows can be retrofit with appropriate frame insulation, air sealing, and weather stripping with minimal impact on the functionality and aesthetics of the window.
- Storm Windows: Installing interior or exterior storm windows in conjunction with repairs or retrofits to existing historic windows can improve energy efficiency and occupant comfort as effectively as modern replacement windows.
  - LPC permits are not required for interior storm windows with clear glazing that do not require mullions, muntins, or wide frames that are visible from the exterior of the building.
  - LPC permits are required for exterior storm windows with clear glazing. These must have tightly-fit framing within the window openings without the need for a sub frame or panning around the perimeter, with meeting rails used only in conjunction with double-hung windows, and a finish that matches the windows.

## Replacing Windows

The Commission regularly approves replacing windows due to deteriorated conditions and other factors related to functionality. Replacement may also be necessary to meet various standards or satisfy code requirements. A permit is required to replace existing windows, but the vast majority of such proposals are handled at staff level.

Definitions of terms and rule criteria that must be met in order to qualify for staff level review and approval are described below.

### Window Attributes – Rule Criteria Used for Window Replacement

- **Material:** the substances used to fabricate windows (e.g., wood, aluminum, steel, fiberglass, and vinyl).
- **Operation:** the manner in which a window unit opens, closes, locks, or functions (casement, double-hung, etc.). If non-operable, a window unit (such as a side light) is identified as “fixed.”
- **Configuration:** the number, shape, organization, and relationship of panes (lights) of glass, sash, frame, muntins, or tracery.
- **Details:** the dimensions and contours of both the stationary and moveable portions of a window or door, including moldings.
- **Finish:** the visual characteristics including color, texture, and reflectivity of all exterior materials.

### “Special Windows”

- “Special windows”: window or door that possesses rare or distinctive traits reflective of its style and age.
  - For all building types and façades (both visible and non-visible), the material, operation, configuration, details, and finish must match the historic special windows being replaced.
  - A condition assessment is required for staff review of all replacement special windows.

### Window Replacement- Rules Based on Façade Types, Building Types and Visibility

- **Primary Façade:** Most commonly this is a façade fronting a street or public thoroughfare that is not a street (e.g., a mews or court), or a facade with a primary entrance to the building. A primary facade can also be a visible façade that possesses a level of design or significant architectural features that is equal to the building’s street-fronting façade(s), that either faces the street, such as a setback façade, or is part of a dominant architectural massing such as a tower.
  - For all building types, the configuration, details, and finish must match the historic windows. Operation must also match, with some exceptions, including double-hung windows may be replaced with single-hung (fixed upper sash); casements may be in or out-swing; pivot at buildings in historic districts may be replaced with hopper or awning operation; and the lower sash of a double-hung window in a historic district may be changed to a hinge operation to meet energy efficiency or accessibility goals when all windows are being replaced at the facade.
  - Material must always match the historic window material for Individual Landmarks, and for small buildings, with one exception: windows at small buildings (six stories or less in height and with a street frontage of less than forty (40) feet) that one-over-one double-hung wood windows historically, may be replaced with a different material, such as metal or fiberglass, but not including vinyl.

- Windows at large buildings (seven or more stories in height or with a street frontage of more than forty (40) feet) may be replaced with a different material.
- Variations in details will be permitted if such variations do not significantly affect the visual characteristics of the window, including the shadow effect of muntins and sash on the glazing. In evaluating "significant" effect, factors considered include the age of the building and its architectural quality, as well as the extent of diminution in the total glazed area of sash. Diminution is limited to 6% for wood windows, and 10% for metal windows, with some exceptions.
- Secondary Façade: a façade that does not face a public thoroughfare, mews, or court.
  - Visible Windows
    - Windows must match the historic windows in terms of configuration and finish. (e.g., the configuration of a 4-lite tilt-and-turn window matches that of a two-over-two, double-hung window).
    - Windows can be installed in the existing window opening, or window openings that are to be modified that still retain the general shape and pattern of the existing windows on the same façade, or that form a regular and consistent new pattern.
  - Non-Visible Windows
    - Windows do not need to match the historic windows, and can be installed in the existing window opening, or window openings that are to be modified.
    - Windows on the top floor of the rear façade of a rowhouse are not to be enlarged or reduced, with the exception of lowering the sill of one opening to provide access to a rear yard addition or deck.

## Window Replacement Matrix (within existing openings)

Type	Location of Façade	Material	Operation	Configuration	Details	Finish
<b>Large Buildings</b>	Primary	○	●	●	●	●
	Visible Secondary	○	○	●	○	●
	Non-visible Secondary	○	○	○	○	○
<b>Small Buildings</b>	Primary	◐	●	●	●	●
	Visible Secondary	○	○	●	○	●
	Non-visible Secondary	○	○	○	○	○
<b>Individual Landmarks</b>	Primary	●	●	●	●	●
	Visible Secondary	○	○	●	○	●
	Non-visible Secondary	○	○	○	○	○
<b>Special Windows</b>	All Façades	●	●	●	●	●

  

<b>Key</b>	Match Required	●
	Match NOT Required	○
	Match with Exceptions	◐



## Appendix A: Repairing Windows

Examples of window repairs that do not require an LPC permit.



**Operation:** Cutting the paint seal while replacing the sash cords/chains will increase the functionality of your windows. Before and after example below.





**Glazing Putty:** When you see signs of glazing putty failure, it is important to remove deteriorated sections and install new glazing putty and paint accordingly.



**Dutchman's:** Where signs of rot occur, it is important to remove the deteriorated section and install a dutchman. This can be done with wood or alternative materials such as epoxy.



## Appendix B: Replacing Windows

Examples of replacement windows approved at staff level:



**Criteria:** Replacement windows on primary facades that match historic configuration, operation, details, material, and finish can be approved at staff level.

## Appendix C: Storm Windows

Examples of storm windows approved at staff level.



**Criteria:** Exterior storm windows should have tightly-fit framing within the window openings without the need for a sub frame or panning around the perimeter, with meeting rails used only in conjunction with double-hung windows.