

ANN ARBOR HISTORIC DISTRICT COMMISSION
GUIDELINES FOR WINDOW EVALUATION, REPAIR AND REPLACEMENT

The history of architecture might be summarized as a quest for light. Thus, windows are one of the most important architectural elements in the design of any building. We take them for granted, look out of them to view our world, open them to let in light and air, and close them to keep out the cold. They seem only utilitarian parts of our homes, but are much more. Windows strongly communicate the character and beauty of our homes, both interior and exterior. Their layout, materials, size, and even type of operation are critical elements of the character and style of our buildings. A Greek Revival style home is in part defined by the six-over-six muntin pattern of its windows, just as tall, narrow windows characterize a Gothic Revival home. In fact, windows are typically considered to be character-defining features of most buildings, from high-style monuments to vernacular homes. Even the details of windows generally resemble and reflect other design details found in the home. Those with old, wavy panes show the heritage of hand-made glass. Because windows are such critical features of buildings, the Historic District Commission generally requires repair and maintenance of windows in historic buildings.

Replacement guidelines

Windows in good condition will remain. Normal maintenance will include cleaning, sash cord replacement, limited paint removal, re-caulking where necessary, and new paint to make windows fully operable. Weather stripping and storm windows may be added.

Windows in somewhat good condition will receive repair, such as new wood or epoxy laid into sills, jamb, or sash. Deteriorated parts, such as sash locks and cords, will be replaced.

Seriously deteriorated components that cannot be repaired will be replaced with a sash of like material and identical layout (muntin size, glass area, rail size and stile size) to the original. Insulated glass is permitted in sash replacement. (Relevant criteria for window replacement apply.)

Windows and components deteriorated beyond repair (deep rot, missing parts, major perimeter gaps) are the only elements that the Historic District Commission will consider for replacement.

Window Replacement Application Procedure

1. Together with an Application for a Certificate of Appropriateness, the applicant will submit one set of Window Specifications outlined on the attached form for each window proposed for replacement. In completing the Specifications form, applicants are encouraged to retain a capable professional who is familiar with the window types and window components shown on the following pages. The Historic District Commission maintains a list of local firms and individuals competent in window repair and sash replacement that can assist with completing the Specifications.
2. The applicant or their consultant must also provide a detailed account of the condition of the windows' deteriorated components and describe how the proposed repairs or replacement windows compare to the existing components.
3. At the Review Committee site visit, the Historic District Commission's representatives will complete a Window Condition Survey for each window where significant repair or for replacement is being proposed. The findings of the Survey(s) will be compared to the detailed account provided by the applicant and will be delivered to the full Historic District Commission for consideration at their regular meeting.

Window Types

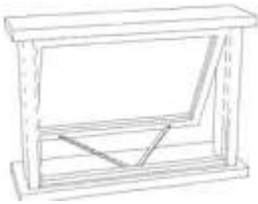


Double-Hung: A window with two sashes, each movable vertically by means a sash cord and weights, or some other mechanism. Double-hung windows are the most common.

Modern versions have a tilt sash for easy cleaning of the outside panes.



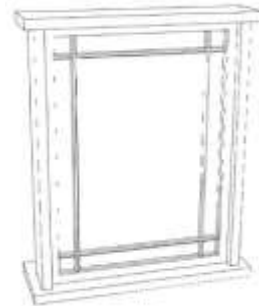
Casement: A single window sash that opens on hinges fixed to its vertical edge. The casement window's full-height opening provides excellent ventilation. Casements, especially wooden ones, can suffer damage if left open to the elements.



Awning: A window that is hinged at the top and swings outward. Awning windows are often used for ventilation under large, fixed-pane windows in contemporary homes. They keep out the elements when open, as long as the wind is not blowing hard.

Oriel window: Similar to a bay window, typically constructed of multiple windows projecting from the face of the building, but supported by brackets or corbels, rather than a foundation.

Jalousie: Window made up of horizontally mounted glass louvers or slats that abut each other tightly when closed and rotate outward when cranked open.



Fixed: A fixed frame window (or part thereof) that does not open. Fixed windows have sash that are permanently fixed to the frame. They are often flanked by double-hungs or casements, or set above or below an awning or hopper. They come in a variety of shapes, including round, half-round, diamond, and trapezoid (to echo gable-end rafter pitches).

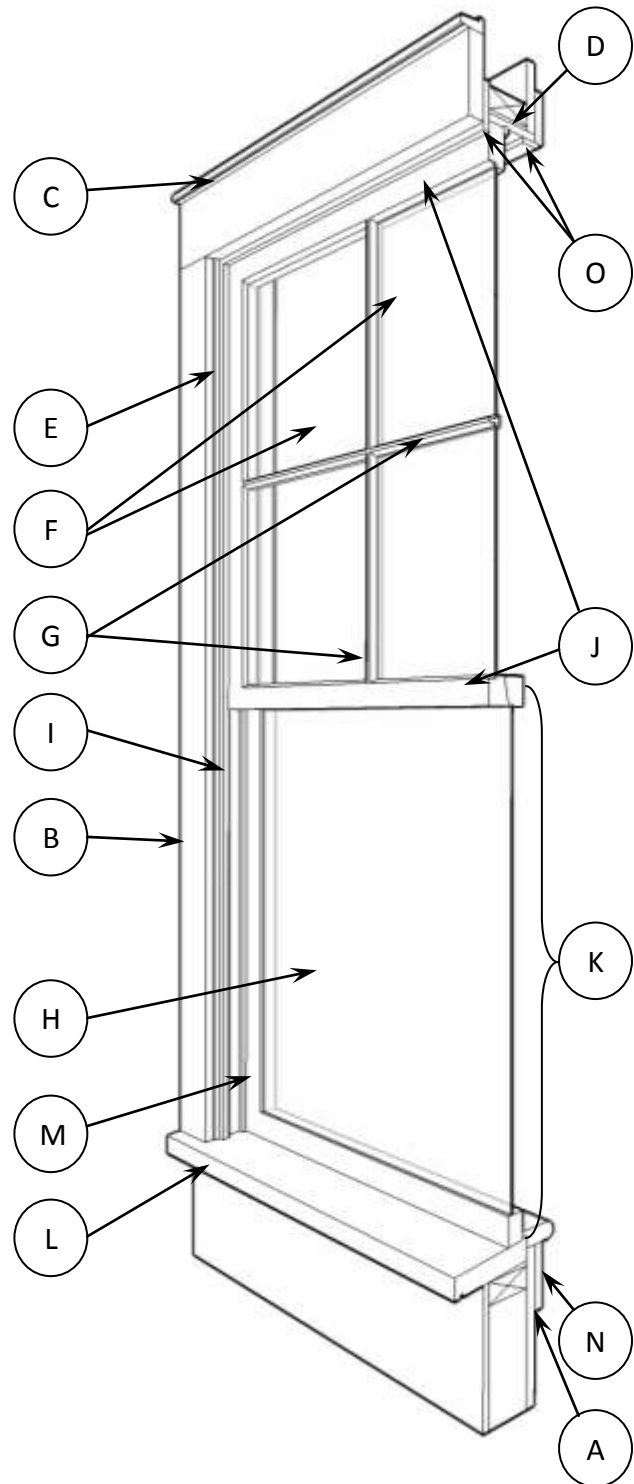
Bay window: A composite of three windows, constructed on a foundation and usually made up of one large fixed, center window and two angled, flanking units.

Hopper: Similar to an awning window, but the hinges are located at the bottom of the window and the unit tilts inward.

Window Components

The graphic below highlights a window's numerous components, shown in a section through a 4/1 double hung window, viewed from the exterior.

- A. **Apron:** Non-moving, interior portion of the window below the sill.
- B. **Casing:** The finished, visible framework around a door or window.
- C. **Drip cap:** A usually small, horizontal molding strip located above a door or window casing; designed to shed water, causing it to drip beyond the outside of the frame.
- D. **Frame:** The fixed, outer portion of the window that holds the sash.
- E. **Jamb:** The vertical member at each side of the window frame.
- F. **Lights:** The glass within the window; can refer to the number of divided areas of glass.
Mullion (not pictured): A vertical member between window units set in a series.
- G. **Muntins:** Secondary framing members that hold the panes of glass within a window or window wall.
- H. **Pane:** A single piece of window glass.
- I. **Parting Bead:** The vertical strip on each jamb that separates the sashes of a double-hung window.
- J. **Rail:** Horizontal members of the sash.
- K. **Sash:** The framework into which panes are set.
Sash lock: (not pictured): mechanism that, in the locked position, pulls the upper and lower sash together. Also called a Cam lock
- L. **Sill:** The exterior horizontal portion at the bottom of a window. The sill keeps the jamb boards lined up properly and is angled to drain water off the surface. The sill should be watched for moisture damage and rot.
- M. **Stile:** Any vertical member of a sash.
- N. **Stool:** The interior casing or molded piece running along the base of a window and contacting the bottom rail on the inside of a building. Also known as the interior sill.
- O. **Stop:** The removable vertical strip against which a window sash rest
Brick mould (not pictured): external trim that frames windows and doors in masonry walls.



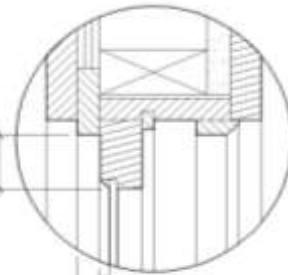
Window Specifications

Refer to the criteria below for proper measurements. For cases of necessary replacement, the Historic District Commission requires that a new window meet *all* of the following criteria:

The viewable profile dimensions of the exterior rails and stiles are within 1/4" of the original.

Sash Face	Existing	Proposed
Distance	_____	_____

Head Detail



The window unit type matches the original (double-hung, casement, etc.)

Window Type
Do the proposed windows' types match the existing types?
Yes _____ No _____

The distance from sash face to back of casing is within 1/8" of the original dimensions, but not less than 3/8" total.

Profiles	Existing	Proposed
Distance	_____	_____

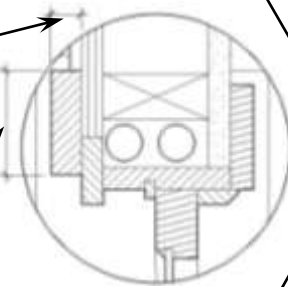
The number and location of muntins matches the original.

Muntins
Does the count and arrangement of muntins match the original?
Yes _____ No _____

The casing width and thickness (including drip cap, if applicable) are within 1/8" of the original.

Casing Thickness	Existing	Proposed
Distance	_____	_____

Jamb Detail



The distance from glass surface to exterior surface of muntin, rail and stile is at least 3/8"; AND the exterior surface of the unit's glass insets in the sash is within 1/8" of the original.

Glass Inset	Existing	Proposed
Distance	_____	_____

Casing Width	Existing	Proposed
Distance	_____	_____

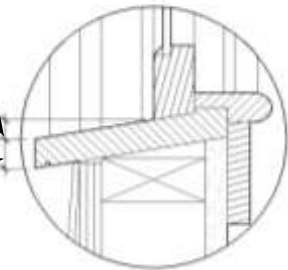
The sill is similar in pitch to the original, extends to the outer edge of casing, and has a thickness within 1/8" of the original.

Sill Pitch	Existing	Proposed
Distance	_____	_____

The glass size remains within 90% of the original in both directions.

Glass Size	Existing	Proposed
Height	_____	_____
Width	_____	_____

Sill Thickness	Existing	Proposed
Distance	_____	_____



Sill Detail

Refer to Window Resource List for those individuals and companies who may be equipped to aid in the window evaluation/repair.