

Technical Preservation Services

National Park Service
U.S. Department of the Interior



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Evaluating Historic Windows for Repair or Replacement

Determinations concerning the treatment of historic windows begin with Standard 6 of the [Secretary of the Interior's Standards for Rehabilitation](#): "Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence."

Repair should be the first option considered. Repair can include renewal of finishes, material repair using epoxies, replacement of component parts and additions such as weather stripping. While it may be possible to repair even severely deteriorated windows, repair of deterioration beyond a certain level is not practical or reasonable and replacement becomes the appropriate treatment.

The Standards also require, "The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided." While most windows are significant to the character of a property, every window on all properties is not, and it is in these cases that considerations beyond deterioration as described below are appropriate.

Documentation of deterioration

Determination as to when deterioration is sufficiently severe to justify replacement must be based on documentation of the condition of the windows. What constitutes effective documentation may vary with the circumstances of the project, but at minimum must include enough good quality photographs to clearly depict the full range of conditions. When a project involves a great many deteriorated windows, general quantification of the specific aspects of the deterioration may substitute for photographs and descriptions of every window. A full window survey should only be needed in limited instances.

Questions about the feasibility of repair or the quality of the repaired window can usually be best answered by doing a sample repair. The appearance, the cost of the repair, and other factors may be considered. Where particular performance levels are critical, testing of the repaired window may provide information useful in evaluating the viability of repair.

Considerations beyond deterioration

While condition is the primary determinant in decisions regarding the treatment of historic windows, the importance of the windows to the historic character of the building can also be taken into account. The design and location of windows and their relationship to the design of the building can affect their role in the character of a building. Windows that are distinctive features or exemplify fine craftsmanship are more critical to retain and repair than those that play a lesser supporting role in the design of the building or are simple manufactured units. The more important the elevation, feature or space of which the windows are a part, the more important it is to retain the historic windows.

While factors including occupant operation, presence of hazardous materials, code requirements, or energy performance, if taken individually, are not reasons to replace windows, they may be issues to consider in conjunction with deterioration in establishing a need for window replacement. In many cases these requirements can be met without losing the historic windows. For example, studies have shown that the energy performance of historic windows can be significantly improved by adding storm windows and weatherstripping or by replacing the glazing or the sash.

The number of windows being replaced is a consideration that may allow for window replacement that does not depend on deterioration. It may be possible that the replacement of a few windows may have only an inconsequential effect on the character of an elevation with many windows. Thus, where a need such as egress can be achieved with little change to the appearance of the building, a few windows may be replaced irrespective of their condition.

Some areas have code requirements in response to severe weather conditions. Mandates such as impact resistance may make it impossible for a building to have any compliant occupancy with the historic windows in place, particularly on taller buildings. In these cases, replacement of the historic windows will not be dependent on documentation of deterioration.

