Evanston Preservation Commission

Windows: Repair, Restoration, or Replacement

Historic wood windows are designed to be repeatedly maintained or restored to working order. Replacement windows are designed to be replaced. Windows significantly contribute to a historic property in terms of character and craftsmanship. The integrity of a historic structure is reliant on its many original, and high quality components and materials, such as windows. As these are removed, the structure begins to lose its architectural integrity and historic value. Windows, especially those installed prior to 1940 were expertly designed and constructed from old growth, irreplaceable lumber – representing significant embodied energy. Preserving these historic windows through restoration rather than replacement, keeps these materials on the property and out of the landfill. The loss of original windows negatively impact the appearance of a historic structure, losing proportionality and depth as modern, mass produced replacements are introduced. The City of Evanston recommends the retention and repair of original windows whenever possible. Wood windows which are repaired and properly maintained have a greatly extended service life than their replacement counterparts.

Unfortunately, many owners of historic properties in Evanston are given bad advice regarding their historic wood windows and are sold inferior products through the guise of upgrading their aging properties. As such, this preservation brief intends to dispel some common myths and misconceptions and provide property owners options for more sustainable and sensitive solutions.

I was told my wood windows need to be replaced and cannot be restored

Energy reduction and efficiency is at the forefront of a homeowners mind and windows are often blamed as the leading cause of heat gain/loss. This criminalization of old windows is nothing new. Window manufacturers have long pointed out the faults of old windows while promoting attractive solutions – their products.

The truth is heat gain/loss occurs evenly throughout a structure, with windows accounting for only about 25% of waste. Poor insulation in walls and attics are greater problems and ones which can be addressed without impacting the integrity of a structure. Trying to solve energy problems by only addressing windows is a fallacy.

What are some practical solutions

Heat gain/loss through windows occurs in three ways: air infiltration, heat transfer, and solar gain. Rather than replace your windows, there are a number of low cost, reversible and sensitive interventions which can reduce heat gain/loss. In fact, implementing a combination of any of the below techniques can be as effective in arresting heat gain/loss as a new replacement window.

1. **Storm windows:** can be used to provide an additional barrier between outside and inside the structure. storm windows create an insulating air pocket which reduces heat transfer. Storms can be installed on the interior, or exterior. Interior options can be clipped or wedged into place. Exterior storms are appropriate provided they have a thin profile which align with, and don't obscure the architectural features of the window. Wood storms are preferred, although flush mounted aluminum storms may also be appropriate. Historic wood windows with a high quality storm outperform double-glazed metal windows without thermal breaks due to the insulating value of old-growth wood as compared to composites or metals.
2. **Shades and Shutters:** can be used to prevent solar gain during summer months. Interior shades can have insulating properties that reduce heat transfer. Solar screens are also popular, but are only appropriate when installed on secondary elevations of the structure.
3. **Window Films:** can be applied to reduce the impact of solar gain. A wide variety of affordable products are available. Avoid films which are deeply tinted or reflective unless located on secondary elevations of the structure.

Are my windows beyond repair?

In most cases, window repair is the more affordable solution and offers a greater return on investment than replacement. Historic wood windows were made to be repaired, with any single piece able to be repaired or replaced. Through education, these repairs are something a homeowner can tackle themselves, one window at a time. Or, the Evanston Preservation Planner can help you locate a qualified window repair/restoration professional.

Repairable Windows:

1. Missing or broken glass
2. Windows out of alignment, meeting rails not aligning
3. Cords or chains missing or broken
4. Rotted sill or frames
5. Partially rotted rails and stiles requiring patching
6. Windows which are difficult to open
7. Drafty
8. Cracking or missing glazing

Consider Replacement:

1. Extreme wood rot
2. When over 50% of a window's components must be reconstructed

I was told I needed to replace my windows because of lead paint

Most historic homes contain lead paint. The use of lead paint on doors and windows present unique challenges because these are areas of recurring friction which may release dust. However, removal of chipping lead paint, encapsulation, and introduction of copper or other metal weather stripping on restored wood windows can significantly reduce the risk of lead exposure. If you suspect lead paint was used on your windows, do not attempt abatement yourself without proper knowledge and protective equipment (mask and gloves), proper ventilation, and a plan for dust control and collection. Many professional painters are certified by the EPA to remove or encapsulate lead paint. Some window repair professionals will remove your wood window and take it back to their shop where the paint is removed by steam and the window re-painted and re-installed.

Many easy to use testing kits can be purchased at your local hardware store. Lead paint which is properly encapsulated does not pose an immediate risk. If you have questions about lead paint abatement or identification, do not hesitate to contact the Evanston Preservation Planner.

What if I can't restore my windows? What are appropriate replacements?

Replacement windows are appropriate when original windows are deteriorated beyond repair. Replacement windows should match the historic or existing windows in size, type, configuration, material, form, general appearance, and detail. In general, wood or aluminum clad (exterior) wood windows are considered appropriate. Fiberglass windows may be appropriate when located on secondary elevations of the structure.

Common issues to avoid:

1. Use of vinyl or other composite products which have a short lifecycle
2. Sash components which do not feature traditional dimensions and profile
3. Insert or pocket windows which alter transparency and profile
4. Changes in meeting rail dimension not consistent with original
5. Window trim details not consistent with original
6. Low-e or reflective coatings which alter hue and reflectivity
7. Use of interior snap-in grilles or grilles between the glass rather than simulated or true divided lites.