Windows: Reasons to Repair Instead of Replace

Replacement windows do not live up to their "lifetime guarantee."

- Approximately 30% of windows being replaced each year are less than 10 years old[1]
- Window manufacturers falsely advocate their "lifetime guarantee." These guarantees are usually non-transferable and cannot pass from owner to owner.
- Replacement windows pale in comparison to the performance life exhibited by historic windows, which can last up to 100 years or more with little maintenance.[2]
- According to the fine print of these guarantees, the maximum refund you will receive (if you don't save 40% in energy costs) is $500, a meager return on an expensive investment.[3]

Windows are responsible for very little lost heat and energy.

- "Adding just 3 ½ inches of fiberglass insulation in the attic has three times the R factor impact as replacing a single pane window with no storm window with the most energy efficient window.[4]"
- Most buildings lose more heat through the roof and un-insulated walls than through windows.[5]
- Infiltration of outside air (rather than heat lost through the glass) can account for as much as 50 percent of the total heat loss of a building.[6]

Wood windows constructed before 1940 contain high quality wood unmatched by newer windows.

- Old windows are created of high quality old, dense wood. Disposing of them destroys this rare natural resource.[7]
- Old wood windows are made of denser and higher quality wood that is generally more rot- and warp-resistant than modern wood.[8]
- The performance of traditional joinery is unmatched.[9]

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[1] Donovan D. Rypkema. "Economics, Sustainability, and Historic Preservation." Paper presented at the National Trust Annual Conference, Portland, OR (October 1, 2005)
[2] Walter Sedovic and Jill H. Gotthelf, "What Replacement Windows Can't Replace: The Real Cost of Removing Historic Windows" APT Bulletin: Journal of Preservation Technology Vol. 36 No. 4 (2005)
[3] National Trust for Historic Preservation, "Windows – Preservation Leadership Forum" (2013) available at the National Trust website
[4] Rypkema, 2005
[5] "Historic Wood Windows: A Tip Sheet from the National Trust for Historic Preservation" National Trust for Historic Preservation (2009)
[6] Sedovic and Gotthelf, 2005
[7] Rypkema, 2005
[8] "Historic Windows," National Trust, 2009
[9] Sedovic and Gotthelf, 2005

With proper care and maintenance, historic wood windows can be just as energy efficient as a new window.

- The energy efficiency of retrofitted historic windows can meet and even exceed the efficiency of replacement units.[10]
- An old wood window combined with a storm window is about 15% more energy efficient than a new replacement window.[11]

Unnecessary window replacements contribute to the United States' landfill problems.

- Reusing historic windows reduces environmental costs by eliminating the need for removal and disposal of existing units[12]
- It is far greener to retain and repair an existing window than to replace it.[13]
- A poorly performing window that requires quick replacement means additional debris in landfills, resources extracted for production, and energy for manufacturing and transport, none of which are sustainable.[14]

Replacement windows are not nearly as cost effective or energy efficient as marketed.

- It is far less expensive to restore rather than replace.
- According to studies, it can take 240 years to recoup enough money in energy savings to pay back the cost of installing replacement windows.[15]
- Replacing original windows wastes their embodied energy (the total expenditure of energy involved in the creation of a building and its constituent materials)[16]
- Preserving historic windows conserves their embodied energy and also eliminates the need to spend energy on replacement windows[17]
- Aluminum, vinyl, and wood composite replacement windows will not last as long as the original.[18]
- Parts of modern windows cannot be individually replaced.
- Replacement windows incorporate insulated glass (IG) units, which are unreliable. When IG units fail they are difficult and time consuming to replace.[19]

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[10] Sedovic and Gotthelf, 2005
[11] Calculations completed by professional engineer Keith Heberern available at http://www.historichomeworks/hhw/education/WindowsHandouts/WindowEnergyAnalysis.pdf
[12] Sedovic and Gotthelf, 2005
[13] "Windows – Preservation Leadership Forum," National Trust, 2013
[14] Walter Sedovic and Hill H. Gotthelf, "The Right Thing." Traditional Building Magazine Product Report (2008) http://www.traditional-building.com/Previous-Product-Reports/3-windowsJune2008.htm
[15] "Historic Windows" National Trust, 2009. Calculations done by Keith Heberern, a professional engineer, explain this concept in greater detail.
[16] Rypkema, 2005
[17] Sedovic and Gotthelf, 2005
[18] "Historic Windows" National Trust, 2009
[19] Sedovic and Gotthelf, 2005

- New replacement windows rarely fit historic openings, resulting in a poor fit that does little to mitigate the drafts and heat loss that prompted the replacement in the first place.[20]
- Window manufacturers skew the "facts" about replacement windows' low U-value; they quote the U-value through the center of the glass, not that of the sash or the entire unit.[21]

Replacement windows are not as maintenance-free as manufacturing companies advertise.

- Materials such as vinyl, fiberglass, sealants, and coating systems all degrade.[22] Additionally, individual parts of new windows cannot be replaced.

Replacement windows contain "non-green" and toxic products.

- Manufactured windows contain materials such as vinyl and PVC, whose production is known to produce toxic by-products[23]

Replacement windows do not possess the aesthetics of original windows and do not contribute to the character of the house, which are often defined by their windows.

- Maintaining historic windows helps preserve a building's integrity and authenticity.

Maintaining and caring for original windows is relatively inexpensive and easy.

- Historic windows are not hard to clean; as most are outfitted with interior sash stops which allow access to the interior and exterior of the windows, and they have a pulley system that can be easily adjusted and replaced when needed..[24]

Hiring a local specialist to repair your original windows contributes to the local economy and creates jobs.

- Repairing and rebuilding historic windows ensures that dollars are spent locally.
- Restoration products are more labor intensive; therefore more money goes to local people than materials[25]

[20] National Trust for Historic Preservation, "Windows – Preservation Leadership Forum", available at the National Trust website
[21] Sedovic and Gotthelf, 2005
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] Ibid.

Energy-Saving Via Retrofitting.

- Low-e glazing can be applied to single-glazed windows to help reduce heat gain and loss[26]
- Historic glass may be laminated, offering energy and noise benefits while maintaining authenticity.[27]
- Historic sash may be outfitted with laminated glass without modifying or replacing frame elements.[28]
- Installation of an interior or exterior storm window will result in a much quicker payback in energy savings than replacement of the whole window unit (4.25 versus 41.5 years.)[29]

[26] Ibid.
[27] Ibid.
[28] Ibid.
[29] Heberern