



## PRESERVATION MATTERS

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#### The TRUTH About - WINDOWS and Storm Windows too!

**MYTH 1: NO MAINTENANCE** A principal myth is that replacement windows will eliminate maintenance. Don't you believe it! The public has been sold on the myth of no maintenance, but there will always be maintenance. For appearance sake alone, you certainly will be painting those windows at some point, just as it is common to see aluminum siding, once touted as "maintenance-free," now being painted. And to paint vinyl, you must use an expensive epoxy-base product.

When wood is continually painted, its life expectancy can be about 200 years. On the other hand, according to studies, vinyl has a life expectancy of about 20 years. The plasticizers in vinyl will evaporate over time, making the vinyl brittle and subject to cracking. And what cost are you imposing on future owners when your venture doesn't last? Go with time-tested materials: paint on wood.

How are you going to replace a double-glazed pane of glass when it breaks? Manufacturers occasionally modify their product line. You may therefore need to replace the entire sash and frame. Many other components of replacement windows deteriorate relatively quickly. The seal around double glazing can fail within ten years resulting in condensation between the panes of glass which will then require replacement. Many of the plastic and neoprene seals, which hold the glass in place in vinyl and aluminum windows also degrade in ultraviolet light. These seals have a life expectancy of 10 years or less. Try to imagine locating replacement vinyl gasketing 10 years from now, or the problem of replacing a bent aluminum channel.

**MYTH 2: LESS EXPENSIVE** The cost of replacing an original window is usually NOT justified. Your initial cost will be high. The City of Bridgeton Commu-

nity Development Agency found that to REPAIR the existing window sashes for one house cost \$700. To REPLACE the same windows would have cost \$3,000. That cannot be justified in the light of the unknowns about the longevity of the materials and the inevitable costs of maintenance.

Repair is easier than you think. Old windows were made to be repaired. They can be taken apart to insert new rails or muntins (cross pieces separating the panes). Broken parts can be remade or whole sashes duplicated fairly cheaply. Rotted wood can be repaired to look like new with easy-to-use epoxy fillers. In many cases, these windows have been in service for over a hundred years with much of their deterioration resulting directly from a lack of maintenance. With repairs and regular maintenance, the life of these windows can potentially be extended for an additional 50 or 100 years.

The quality of the wood your old windows are made of will not be seen again. That virgin forest wood is close-grained and resinous. Today's young lumber cannot match the longevity of the historic wood. To trash your old windows is to trash a superior material that can no longer be bought. A replacement window will need replacement before the old one would have needed simple maintenance.

**MYTH 3: HIGHER R-VALUE** A common and often exaggerated reason for replacement windows is that new windows will significantly reduce heating costs. Studies have indicated that in most cases approximately 20% of the heating loss of a building is through windows. The remaining 80% is through roofs, walls, floors and chimneys, with roofs being the greatest culprit. Following this model, reducing the heat loss through windows by 50% will only result in a 10% decrease in the overall heat loss in the building.

Even with this in mind, keeping the heat in and the cold out are still prime wintertime goals. Both goals can be met with

your existing windows. Keeping the heat in means insulation, measured in R-value. The R-value of windows is a function of the air space between window panes, because air does not conduct heat very well. An old window coupled with a storm window will give you a higher R-value than a double-glazed replacement. This is because there is more air space between the storm and the inside window than between the two panes of a replacement window.

Let's look at this another way. One measure of heat transfer is the U-value, the number of Btu's per hour transferred through a square foot of material. When comparing thermal performance, the LOWER the U-value the BETTER the performance. According to ASHRAE (American Society of Heating, Refrigeration and Air-conditioning Engineers, 1977 & 1997 Chapter 26), the U-value for single glazed wooden windows range from 0.80 to 0.89. The addition of a storm window proudly reduces these figures to a range of 0.44 to 0.49. A double-glazed metal window has a U-value of about 0.60 and a double-glazed wood with vinyl was 0.51 to 0.55. Therefore, if you do not have storm windows, install them instead of replacing your windows. You will spend less money and get more insulation.

For those more technical folks, the organization NCPTT (National Center for Preservation Technology and Training) (<http://www.ncptt.nps.gov/>) performed a Window Study. This organization "advances the use of science and technology in historic preservation. Working in the fields of archeology, architecture, landscape architecture and materials conservation, the Center accomplishes its mission through training, education, research, technology transfer and partnerships." The following link (a PDF document) will show you all you how they came about proving that new replacement windows are NOT as energy efficient as original windows. [www.ncptt.nps.gov/PDFfiles/1996-08.pdf](http://www.ncptt.nps.gov/PDFfiles/1996-08.pdf)

