

City of Newport, Kentucky

Historic Preservation Office Articles

WHAT'S WRONG WITH VINYL WINDOWS?

(Emily Jarzen, Historic Preservation Officer)

Vinyl windows have always been viewed as an inexpensive solution to replacing deteriorating, drafty-old wood windows. Property owners need to be aware that if you ask a vinyl window salesman if he thinks your windows are in bad shape and should be replaced, he of course, will tell you that they do. *He sells vinyl windows for a living.* He probably doesn't know how to repair wood windows, therefore, in his mind, they must be replaced.

Original wood windows are important architectural features in any historic building. They are the "eyes" of the structure. They convey a sense of hand-craftsmanship and detail that cannot be achieved with substitute materials. Usually windows are replaced if they begin having operational problems: they stick or rattle, latches break, glass is broken, sash cords break and the windows have to be held open with a stick, they let in too much outside air, or my personal favorite, they need to be painted. (Remember, there is no such thing as a "maintenance-free" building). These problems are the simplest, most cost-effective to fix. More often than not, windows can be pragmatically repaired, or just fine-tuned to operate correctly and last another hundred years. The following paragraphs will outline why vinyl windows are problematic.

The inherent problems with vinyl windows are many and varied; but by far the most insidious is this: once this "rip out and replace" cycle begins, it continues for the remainder of the building's life, especially when the original wood windows end up in the landfill. Here are just a few of the problems associated with vinyl windows, and why they're not "maintenance-free."

1. While it's true that they don't require painting (I don't think you could paint them if you wanted to), they are not a rigid material like wood, thus they shrink in cold weather, and expand in hot weather. What does this mean? For example, vinyl begins to soften and distort at 165 degrees Fahrenheit, which is a temperature that's easily reached in the space between a window and drapes on a sunny day (winter or summer). And though all windows expand and contract with temperature changes, vinyl expands more than twice that of wood. It expands seven times farther than glass with each degree of temperature. This can cause the seal between the vinyl framework and the glass to fail. The problem increases with the size of the window; the bigger the sash, the sooner it fails. Can a vinyl window be repaired? No.
2. Vinyl windows have only been around about 20 years. Will they survive for a hundred? No one knows, but studies prove that many of these windows installed since the early 1980s are failing at an alarming rate. In 1996 there were fewer than ten major window manufacturers in the U.S.; but there were more than 3,000 different companies producing windows. Roughly half of the replacement windows sold in the United States are vinyl.

Some come with a 10, 20 or 30 year, or even a lifetime warranty. Sometimes that warranty is not transferable to a new property owner. And, with so many manufacturers, when warranty time comes, will they still be around ?

3. A big selling point of vinyl windows is double or triple glazed (insulating) sash (two or three panes of glass). These units are manufactured with desiccant filled spacers between the glass panes and sealed on the outside with butyl rubber or silicone. All insulated glass units will eventually fail because no sealant stops all moisture penetration. Eventually the desiccant absorbs all it can, and the window becomes cloudy, forever. Conventional wisdom indicates that only marginal heat loss is recovered using insulated glass. As much as 85% of air infiltration (or heat loss) is *around* the edges of the sash, not through the glass. Energy savings realized by replacing single-glazed windows with insulated windows seldom justifies the replacement cost. Another study indicates it would take more than 50 years to recover the expense; and with an average expected life of 25 years or less, insulated glass units hardly make economic sense.
4. Two other small but significant points. The first is environmental: wood is a renewable resource, unlike vinyl, which is a petroleum product. The second is economics: do you need to spend the money on replacement windows when you or someone else can repair them ? (Look for a wood window repair workshop in the near future, here in Newport).

With the aforementioned inherent problems associated with vinyl windows, it's clear that vinyl replacement windows shouldn't be a viable option. In my mind, two options exist: 1) repair the existing wood sash, or 2) replace the historic sash in-kind with wood, matching the existing exactly, i.e., size, light configuration (one-over-one, two-over-two, etc.), rail and stile profile, muntin profile (if any), etc. I usually use the 50% rule, i.e., if a window sash is less than 50% deteriorated, it probably is cost effective to save it. If more than 50% deteriorated, I would consider replacement with new wood sash.

Here are some key things to think about when proposing to repair or upgrade historic wood windows. Complete a survey of each window in the building. Start a notebook, identifying problems and potential remedies for each window. Do one elevation of the building at a time, floor by floor. Evaluate the outside of the window unit as well, including exterior trim. You should be able to do this in a couple of hours on a Saturday afternoon. This will become a permanent record for each window. You may find only a few need any wood repair at all, while others need to be scraped, primed and painted, others need to be weather-stripped, or have sash cords replaced, some may need new glazing putty, and most importantly, consider storm windows for the entire building. Not only do they protect the sash from weather, thus requiring less maintenance, they do offer some insulating characteristics as they seal off potential air infiltration problems.

One final thought: from personal experience, I grew up in a 1920s Colonial Revival with beautiful six-over-six wood sash. When I was old enough, my father taught me how to re-glaze and keep the exterior sash and window trim well painted. This house, like many of yours, had more than thirty windows. He taught me that I only needed to do one elevation a summer. It was an excellent way to break down a huge task into a manageable summer project. Consider it on your building.

I would be glad to guide you through the process. Don't be intimidated by the sheer number of windows in your house. Break it down into bitesize chunks, and it won't seem so overwhelming. Contact me if you are interested in a wood window rehabilitation workshop, and we'll do one sooner rather than later.

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