



WINDOWS IN HARD TIMES: DO THE MATH AND SAVE SOME REAL MONEY

by Pieter Nicholson Roos, Executive Director, Newport Restoration Foundation

I want to sell you some windows. Unlike many big companies that are also trying to sell you windows, the ones I want you to buy are the old ones that are already in your house. I can't tell you that my product will cost you nothing, repairs cost money, but I will promise that the price will be less than my competition, the giant window company with the massive marketing budget and a load of hogwash to match.

I recently saw a commercial suggesting that replacement windows would save me a lot of cash on heating over those inefficient old clunkers in my house. It's a nice concept but the logic is so flawed that one wonders why the company doesn't get sued for misrepresentation. The math, if you stop to do it, is so outlandish that it defies reason.

Before we go further, a word from your National Trust for Historic Preservation- the old windows in your house are one of its **primary, character-defining features**, if you get rid of them, your house will lose much of its authenticity and charm, in short your house probably won't look much like your house any more, and once completed you really can't go back- end of argument. Let's get on with the savings part.

One fact which I will readily admit to, is that windows are a major cause of heat loss in a house. What the window companies won't tell you is that *any window, whether it is a brand new argon-filled-triple-glazed-wonder-of-modern-engineering or a two hundred year-old single glazed piece of sash will cause heat loss*. Glass is a marvelous conductor of heat, and no window is ever perfectly sealed, so even the best and newest windows are going to cost you money- if you can't abide that then live in a house without windows.

Now let's do the math on a window project's savings in an average house. Even the best (and most expensive) replacement windows will only save you about \$50 per month on heating in an average size house and even then they only will do that in the coldest five months of the year and will save that much *only* if your current windows are truly dreadful. By dreadful I mean that they have cracks or noticeable drafts around a majority of windows in the house. This is a savings of about \$250 per year for the whole house which is a noticeable percentage of your seasonal heating bill but an insignificant fraction of the total expense of a window replacement project.

Now consider the real cost of the replacement windows. This is the 500 pound gorilla in the room that the window company "forgot" to tell you about: The average two-story historic house has between twenty-four and thirty windows. Decent quality replacement windows are between \$500-1,000 installed which is a total of \$12,000-30,000 to do the whole job for an average home....and you're going to save \$250 a year!???

Unless my calculator is broken, with 24 of the least expensive windows that's about 48 years before you pay off the project and start to see a "savings". (If you go with the most expensive options it takes 120 years to see a return.) Even if you are alive after 48 years, statistics say you

probably will have sold the house long since*, so you are really passing the “savings” on to future owners and if you swallowed the window company’s marketing I think that is not why you undertook the project. This also assumes that your new windows will be of a quality and appearance that is equal to the originals, which may not be, and often isn’t, the case.

Another word from the preservationist. Modern replacement sash is a complex system utilizing a number of materials sandwiched into a small package that experiences the full range of your local weather conditions. Some of these materials are durable and will last for a long time, others are not so durable and many of those materials do not live comfortably with each other over the long term. My friendly local window salesman (who I believe has a very high-quality product) does not believe that his windows will pass the forty-year mark. Your old windows, on the other hand, are a simple and repairable system that may have, if properly cared for, been around for over a hundred years and more. There are some old sash that have been on the job since before the Civil War and even earlier. Your current windows may be ready to give you at least forty more years if you give them some TLC. Even custom made wooden replacement sash can be had for a cheaper price than a whole replacement window and it is very unlikely that every sash in your house is in irreparable condition. It is much greener (environmentally and monetarily) to replace a few sash and repair the rest than to throw away everything and start over new. All of the embedded manufacturing energy that is built into the existing windows is being discarded for a window that is likely to have a much shorter life cycle. Since replacement windows are not likely to last much more than forty years and you don’t start seeing a savings until around 48 years, even if you were still in the house you might need to get all new windows before the others had really realized a savings. Ouch! Reflect too, that you are the one who owns the new windows. The window company is unlikely to give you much attention after the warranty expires.

Now some good news, the fact is that you *can* save money on your heating bill. Any of the following could save you *more* than the \$50 a month that you might save with replacement windows:

1. Lower your thermostat to 68 degrees (cost: free)
2. Buy a programmable thermostat (cost: \$60)
3. Tune your furnace (cost: \$150)
4. Buy a high efficiency burner for your furnace (cost: under \$1,500)
5. Improve your attic insulation (varies a lot, but let’s call it \$4,000)
6. Buy a whole new furnace (cost: \$7,000)

Most people would laugh if I suggested that they buy a new \$7,000 furnace in order to save \$50 a month on their heating bill, yet all too many people nod their heads wisely about the far higher cost of replacement windows and without much further consideration they write an enormous check.

The funny thing about my list is that nothing on it has anything to do with windows. It is a well-recognized fact among building engineers (although window manufacturers won’t necessarily tell you this) that one of the *least* cost effective ways to save on heating is to throw gobs of money at replacing your windows. In fact energy auditors frequently ignore windows as a means of improving performance in their audit because the cost benefit is so deeply flawed. This is not to say that advances in window technology are bad, or that new buildings shouldn’t have new windows. Recent improvements in window technology are many and they are recommended for the appropriate application.

It is also worthwhile to note that the less expensive replacement windows (as well as some pricey ones) generally come in set sizes and require you to change the dimension of your current window openings. This change not only requires expensive carpentry that will further exaggerate the costs, but the new dimensions can have a significant aesthetic impact on the overall appearance of your house, changing the proportions of one of its primary features. This is an impact that you will have little means of previewing before an unalterable change has been made.

So why do we have this strange concept that replacement is better? It's pretty simple- there are a lot of companies out there with very big marketing budgets that, like me, want to sell you some windows and they've put some pretty clever spin on their marketing. They make money on new windows, but with all the old windows out there, and with rising heating costs and a declining economy they have plenty of public anxieties that they can play on. The more windows they sell, the happier they are- it's their job, but don't be fooled. Theirs cost more. It's cheaper to repair or tune-up the ones you've got.

*The average historic homeowner stays in a house for an average of about twelve to fifteen years (owners of modern homes stay for much less time).

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