

WINDOWS THAT WORK HARDER

By Bob Feeman

Today's windows do more than just let in the light, or provide homeowners with nice views into the backyard. More and more, they're designed to make homes more energy efficient, reducing the amount of energy required for heating and cooling. In addition, new, more durable windows are starting to show up on the market, as are windows that can make your home quieter and easier to maintain. Here are several examples of windows that work harder.

Mass Appeal

A newly built home in rural Massachusetts is expected to use up to 72 percent less energy than a typical residence, thanks in part to its Heat Mirror insulating glass windows. The Heat Mirror windows feature a thin, low-emissivity (low-e), solar-reflective film coating inside the insulating glass units. Developed by Southwall Technologies of Palo Alto, Calif., the thin film coating reflects heat energy back to its source, so at night or in the winter, the clear, colorless glass in the windows helps keep heat inside, while in the summer it keeps heat out of the home while letting in natural daylight.

In addition, inert gases such as argon or krypton added to the low-e windows provide insulation during the winter. This combination results in windows that are more energy efficient than generic low-e coated or uncoated windows, and helps keep the homeowners comfortable year round.

Constructed for less than \$200,000 using funds provided by the Department of Energy's Building America initiative, the house will serve as a living laboratory, with ongoing monitoring of its windows and energy-saving systems. In addition to its Heat Mirror windows, the home has generic low-e windows installed to enable on-site comparisons of the windows' efficiency. The house also includes a rooftop solar photovoltaic energy system that will provide up to 74 percent of the home's electricity needs, and a solar water-heating (thermal) system that will supply hot water for space and domestic water use. For more information: Southwall Technologies: 800-365-8794 or www.southwall.com.

Austin Green

Another "green laboratory" home is the five-year-old residence of Peter Pfeiffer, a green-oriented architect and principal of Barley & Pfeiffer Architects, based in Austin, Texas. Among other green and energy-efficient features, the home has windows with dual-insulating glass, which Pfeiffer selected from the Heritage Series manufactured by Kolbe & Kolbe Millwork of Wausau, Wis.

The Energy Star-rated windows have a solar coating known as LoE2-270, as well as argon gas between the panes of glass to provide both reflective and insulating qualities. The solar reflective qualities are particularly important in southern regions to help control heat gain inside the home.

In addition, Pfeiffer selected and installed the windows so they provide natural ventilation throughout the home. For instance, upper-level windows on the top floor act as "thermal siphons," drawing warm air up and out of the house, while cooler air is drawn into the house through windows on the lower level. The windows work in conjunction with such features as awnings and roof overhangs to help reduce the cooling load in the warm summer months.

Pfeiffer specified a mixture of standard and custom double hung, single hung, transom and casement units for his residence. The windows, as well as the home's passive solar design and its other energy-saving features, have helped keep utility bills for the five-bedroom home manageable. Pfeiffer notes that he spends, on average, about

\$225 a month for electricity and gas, which “is roughly equivalent to homes that are one-third” the size of his house, he notes. For more information: Kolbe & Kolbe Millwork: 888-831-5589 or www.kolbe-kolbe.com.

Built for Durability

Modern windows are not only becoming more energy efficient but more durable as well. For instance, Renewal by Andersen, a division of Andersen Windows and Doors, recently introduced a new line of replacement windows made with Fibrex, a composite material that will not rot or need maintenance of any kind. Comprised of 40 percent wood fiber mixed with a thermoplastic polymer, Fibrex is a good insulator, preventing heat or cold transfer into or out of the home. In addition, it’s resistant to changes in temperature, has a traditional wood appearance and can be painted. It’s eco-friendly as well, since all of the wood fibers, as well as some of the thermoplastic polymer used to manufacture the windows are reclaimed from Andersen’s manufacturing plant in Bayport, Minn.

Because of the efficiency of the composite material, Fibrex replacement windows have sleeker profiles with larger glass areas. They are available in 22 colors or stainable wood interiors. For more information: 800-426-4261 or www.andersenwindows.com.

Quiet Living

Serenity Series windows from Salt Lake City-based AMSCO work hard to keep homes quieter, as well as more comfortable. The sound-control windows are engineered with various glass widths and a triple glazing design to achieve high Sound Transmission Class (STC) ratings. A typical window with a single pane of glass has an STC rating of about 27, while Serenity Series windows offer STC ratings from 40 to 47. The higher the rating number, the better the window is at reducing the penetration of outside noise and keeping the home quieter.

Most homeowners will notice a change by increasing the STC of their windows by about five points, while increasing the STC by 10 points will reduce the penetration of noise by about half.

Serenity Series windows are a good choice for homeowners who live near busy highways or freeways, rail lines or airports, or those who just want to reduce the intrusion of typical noises from the surrounding neighborhood. For more information: 888-822-6726 or www.amscowindows.com.

Pressure Tested

Finally, many window manufacturers now offer impact-resistant windows that can prevent the intrusion of wind-borne debris during a hurricane or high-wind storm. Simonton StormBreaker Plus windows, for instance, feature impact-resistant laminated glass, which consists of a tough interlayer sandwiched between two pieces of glass, along with an outer layer of tempered glass. Even if the outer layer of glass is shattered by debris, the tough interlayer won’t give way, preventing intrusion and ensuring the interior of the home remains free of damage.

When shopping for storm-resistant windows, keep an eye out for the DP (design pressure) rating, which is an indication of a window’s strength when it is closed and locked. Integrity Wood-Ultrex windows from Marvin Windows and Doors, for example, recently received DP 50 certification, which indicates the windows can withstand winds and horizontal rain blowing at speeds of up to 173 miles per hour without water or air leakage. The windows are made of a non-wood material called Ultrex, which expands and contracts at the same rate as glass, eliminating stress cracks and seal failures.

Windows from a number of other manufacturers, including Jeld-Wen, Gorell and Andersen, among others, have

received DP 50 ratings. It's a true indication that these windows, like many others available on the market today, truly work harder to make your home safe, comfortable and efficient.

For more information: Simonton StormBreaker Plus: 800-746-6686 or www.simonton.com; Integrity Wood-Ultrex: 888-419-0076 or [www.integrity windows.com](http://www.integritywindows.com); Jeld-Wen Windows & Doors: 800-535-3936 or www.jeld-wen.com; Gorell Windows & Doors: 724-465-1800 or www.gorell.com.

This article is compliments of Smart HomeOwner Magazine, the Presenting Sponsor of our 2008 Smart Home Owner Seminar Series taking place throughout the weekend. Bob Feeman is the editor of Smart HomeOwner Magazine. He can be reached at bfeeman@smarthomeownermag.com.