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High Energy Costs: Rising Concerns to New Home Buyers

- Wisconsin ENERGY STAR® Homes Program helps ensure homes are energy efficient -

MADISON, Wis. — Rising energy costs and concerns over energy security are not only having an affect on homeowners’ finances, but they are increasingly affecting the way homes are being built and how homeowner buying decisions are being made in Wisconsin. The interest in energy efficiency by homeowners is causing builders to focus more on building performance details that affect a home’s performance, as well as look at offering renewable energy options. The Wisconsin ENERGY STAR Homes Program works with builders to meet the homeowners’ demands for energy efficiency and provides effective results to protect today’s new homebuyers from future energy hikes.

Large Homes Require Attention to Detail

The last ten to 15 years have seen a trend toward larger homes. With mortgage rates at all-time lows, people opted for big, spacious homes. This trend is especially evident in suburban areas near Milwaukee, Madison and the Twin Cities, but it can be seen in nearly all corners of the state. A large house, however, may mean big bills in the face of today’s rising energy costs.

The fact that larger homes are more expensive to heat and cool should not surprise anyone. Higher ceilings and greater square footage take more effort to keep comfortable. But the problem is more complicated than that, according to Marvin Hafenbreadl of Central Wisconsin Energy Service in Stevens Point, Wis. “The bigger the house, the more opportunities for air to leak,” said Hafenbreadl, a consultant who partners with the Wisconsin ENERGY STAR Homes Program. “The more surface area a home has, the more possibilities there are for unintentional air holes and heat loss.”

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In addition to the size, the architectural intricacy of the house can affect its energy performance, said Tom Bawolek of Five Star Energy Corporation, a consultant partner in Hubertus, Wis. “As houses get bigger, they tend to get more complex,” he said, adding that details like dormers, skylights, varying ceiling heights and rooms above garages create opportunities for air leaks. “They tend to result in air bypasses and areas that are difficult to insulate.”

As a result of these construction issues, large homes are more likely to experience problems like uncomfortable drafty rooms, ice dams, moisture problems and high utility costs.

To address these details, Bawolek and Hafenbreadl agree it’s important for builders to be aware of potential problems early in the construction process. “It starts with framing,” said Bawolek, adding that some builders rely too heavily on the insulation contractor. “Good quality framing will allow the insulation to work the way it should,” he said.

Hafenbreadl notes that air sealing is also important. “Builders should look at sealing anywhere air can get through,” he said. “Anywhere that two boards come together, air can get through.” He added that using products like caulk and expansion foam to seal these areas helps tighten the home.

Jones Builders in Racine, Wis., a builder partnering with the Wisconsin ENERGY STAR Homes Program, makes sure their homes are well sealed. The custom home builder uses a closed cell urethane foam in all of its wall cavities and on skylight shafts, dormers and other problem areas. This not only insulates the house, but also provides an airtight seal, according to Ken Hartman, project manager for Jones Builders. “That allows us to seal the wall cavities and eliminate all the small holes,” he said.

Hartman believes that whether builders use foam insulation or more conventional air sealing and insulation materials, they need to take the initiative to build homes airtight. “You can build a very tight house with a variety of products, but you have to pay attention to details like vapor retarders and caulking,” he said. “When you eliminate air movement, you make a much more comfortable house.”

Solar Provides Options Now and for the Future

In addition to looking closely at construction details to make homes more energy efficient, builders and homeowners may soon be looking to the sun. Renewable energy, specifically solar energy, is an option that is gaining more attention. Using the sun’s energy to heat the home and provide hot water and electricity holds a great deal of promise for residents concerned about the rising cost of energy.

A simple way to take advantage of the sun's heat is through passive solar design (the orientation and layout of the home to take advantage of the elements). Orienting a home with more window area on the south-facing wall can make the home more comfortable, allowing the home to be naturally heated by the sun. Also, choosing interior materials that retain heat, like ceramic floor tile, provides additional heating assistance. To keep a home cool in the summer, overhangs shade windows from the high summer sun.

Another option homeowners could have in the near future is to build their homes to be renewable ready. According to Dick Stone, a regional coordinator for the Wisconsin ENERGY STAR Homes Program, builders can easily build a home with the provisions for a solar hot water or photovoltaic (PV) system to be added later. "We're seeing an increased interest in renewable energy," said Stone. "Making the homes solar-ready makes retrofitting the systems later much easier and less expensive."

Making a home solar-ready just requires a little planning, according to Stone. "In its simplest form, it's providing an area to run the necessary plumbing or wiring from the roof to the mechanical systems," he said. "It makes installing these systems an easy addition and allows homeowners to save more money." A solar hot water system can provide up to 50 percent of a home's hot water needs, while a typical PV system can add one kilowatt of electricity, offsetting a home's total utility costs.

There are also financial incentives for homeowners to install renewable energy systems. Focus on Energy's Renewable Energy Program currently offers Cash-Back Rewards and grants on a first-come, first-serve basis to Wisconsin residents for a variety of renewable energy systems, including solar hot water and PV systems. In addition to these incentives, on January 1, 2006, new federal tax credits were made available, making renewable energy systems more attainable than ever. Wisconsin homeowners can take advantage of the new 30 percent federal tax credit (up to \$2,000) between January 1, 2006 and December 31, 2007 when they install a qualifying solar domestic hot water or solar electric system.

Stone believes interest in renewable energy systems and building solar-ready homes will continue to increase. "As the cost of energy increases and renewable energy systems become more affordable," he said, "more people will recognize the value."

To find out more about the Wisconsin ENERGY STAR Homes Program, visit focusonenergy.com or call 800.762.7077.

About Wisconsin ENERGY STAR Homes

Wisconsin ENERGY STAR Homes is one of the Focus on Energy Residential Programs. New homes are constructed to meet program standards and are estimated to be more than 25 percent more energy efficient than homes built to Wisconsin's Uniform Dwelling Code. To date, the more than 350 builders who have partnered with the Wisconsin ENERGY STAR Homes Program have constructed over 6,000 new homes. For information about the program, call 800.762.7077 or visit focusonenergy.com.

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