

## Homebuilding: The New Green

Written by Emily Heninger  
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In March, the Quad Cities Homebuilders & Remodelers Association began construction of a demonstration "green" home. Scheduled to be completed by September, the house is intended to illustrate that environmentally friendly homebuilding does not have to be costly or showy.

Homes represent 22 percent of our country's energy use -- only 6 percentage points fewer than the transportation industry, according to the Energy Information Administration. In recent years, green builders have emerged to reduce residential energy usage.

Green building isn't necessarily about solar panels, green roofs, wind turbines, and other expensive features. Double-paned windows, recycled cabinet materials, better insulation, erosion control, and efficient appliances might not be as glamorous, but they constitute green building, too.

"Green is a wave of the future," said Dave Burrows, executive vice president of the Quad Cities Homebuilders. "Our industry has to adapt."

A 2006 study by McGraw-Hill Construction predicted that green homes will make up about 10 percent of new-home construction by 2010, up from 2 percent in 2005.

"It's coming," said Burrows.

### What is Green?

A 2007 study by the World Business Council for Sustainable Development found that the cost of green building is overestimated by nearly 300 percent by real-estate managers and builders.

But "you can build a house to green standards without a lot of additional cost," said builder Ryan Windmiller, who is serving as the project's general contractor. "It's just a matter of how green you make it."

The home, located in Bettendorf on the corner of Devils Glen Road and Field Sike Drive, is a 1,940-square-foot ranch that looks much like any other house in the neighborhood, because its green features are largely hidden.

"We were amazed at what people thought 'green' had to be," said Burrows.

For the demo home, "green" essentially means using common sense. Energy efficiency is a focus, with:

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blown-in cellulose insulation made of recycled newspaper product;

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sealed duct work;

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a 95-percent efficient furnace;

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double-paned windows;

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low-flow plumbing fixtures;

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expansive windows and overhanging eaves to moderate temperature; and

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an energy recovery ventilator/air-to-air exchanger.

Other green features include:

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recycled-wood cabinet, floor, and foundation materials;

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erosion control on the construction work site;

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invasive-plant control on the work site; and

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recycling of construction-waste materials (cardboard, plastic, and extra shingles, for example).

"Green building is pretty dynamic," said Windmiller. "It covers all kinds of different things. It's not just cabinets that are green; it's not just recycled cardboard. It's how you build the house on the lot, the plants that you plant, mitigating water runoff."

The size of the house plays an important role in its green factor, as well. The demo home is smaller than most of the other homes in the area -- and is only one story. As Alex Wilson of BuildingGreen said in an interview with *Fine Homebuilding* magazine, "You can build a pretty mediocre house from an energy standpoint at 1,200 square feet, and it will probably use a lot less energy than a state-of-art green home that is 3,500 square feet."

This demonstration home will meet the "silver" standard for the National Association of Home Builders green-building program. Silver-rated buildings use approximately 35 percent less energy than the 2006 International Energy Conservation Code, which establishes minimum design and construction guidelines for energy efficiency. An average home uses \$1,900 in energy per year, so annual energy savings in a similarly sized silver home would be roughly \$665.

With toxin-free materials and better air circulation than standard homes, green homes also create healthier living space for residents. A 2006 study funded by the Green Building Council found that green schools saved \$3 per square foot in costs associated with asthma and \$5 per square foot on costs associated with colds and the flu.

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In the new demo green home, an air-to-air exchanger creates cleaner, freshly circulated air more conducive to healthy living. "It's like having your windows open year-round," said Windmiller.

After being open for tours until at least the spring of 2010, the local demo home will be put on the market for about \$350,000, according to Burrows. That price is typical for the area - the prices of 10 nearby homes ranged from \$289,000 to \$450,000 -- but the demonstration home is relatively small.

According to a study by Good Energies, green buildings cost an average of 1.6 percent more to build than standard buildings. The World Business Council for Sustainable Development puts that number at 5 percent, however, and the estimates vary from source to source, generally staying within the 2-to-5-percent range.

Green features might cost \$4,000 on a home, but with average savings on energy consumption (and bills), they would pay for themselves in a little more than six years.

Aside from the monthly energy savings, there are several tax credits and government incentives now being offered for green features in homes. For instance, according to the Alliance to Save Energy, you can get an income-tax credit of up to \$1,500 for environmentally friendly features installed in new or existing homes, such as energy-efficient windows, insulation, doors, roofs, boilers, and air conditioners.

### **Alternatives to Building: Retrofitting**

Retrofitting -- or green remodeling -- essentially means installing green features in an existing home.

The cost and energy savings vary from home to home, depending on the age, size, and condition of the house, but retrofitting undoubtedly costs less than a new home.

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Installing energy-saving compact florescent light bulbs is a common retrofit, but it can also include things such as putting in new windows to reduce cooling and heating loss.

"You wouldn't have the tear-down and gutting out as you might with new construction or major renovation," said Marie Coleman, communications coordinator of the U.S. Green Building Council. "It's things including installing a new HVAC system in the home and ... putting in different types of green technologies and designs that will make the house run more efficiently."

The Green Building Council now has a program with the American Society of Interior Designers called REGREEN, designed specifically for people wishing to retrofit their houses, either on their own or with a certified professional consultant. "It's definitely very feasible and very practical to retrofit an existing home," Coleman said.

Locally, the MidAmerican EnergyAdvantage HomeCheck program offers free energy audits. Energy-saving improvements such as different light bulbs and shower fixtures are also available at the time of the inspection.

Project Now, a local community-action agency, offers energy audits and weatherization to low-income homes.

Not only is retrofitting easier and less expensive than building an entirely new house, it eliminates the environmental damages that typically arise from new construction; for instance, a new green home disrupts ecosystems on the building site and furthers suburban sprawl.

However, there are some benefits of green building that simply cannot be implemented in an existing house, such as sealing the ductwork and better insulating the house in general. "New construction's got all the benefits," said Windmiller. "You can do everything from scratch; you can start with a clean slate."