

## INDUSTRY NEWS

**Turning disaster into a green building showcase**

BY STEVEN SPAULDING  
Of CONTRACTOR's staff

INDIALANTIC, FLA.—Mark Baker and his contracting business had been doing home construction on Florida's Atlantic coast for more than 30 years, and in that time he had seen the worst that nature could inflict. But it still came as a heavy blow when the devastation that he'd so often been called in to help repair struck his own family.

In 2004, hurricanes Frances and Jeanne both made landfall near Indialantic, a town that sits on the barrier islands just off Palm Bay, and home to Betty Baker-Farley, Mark's mother. Her house suffered severe wind and water damage, and was soon carpeted in a thick, black mold. It was a total loss.

Baker was determined to rebuild, but equally determined that the new home would be able to withstand another round of catastrophic weather. As Baker and his wife (and vice president of Mark Baker LLC) Nonnie Crystal began researching disaster mitigation, they found it cross-connected to an entire range of building issues: energy efficiency, water conservation, indoor air quality, and sustainability, just to name a few.

Their rebuilding project blossomed into what Baker and Crystal are touting as the world's greenest home, Florida's Showcase Green Envirohome.

The ultimate goal is to collect the best green technologies from more than 40 companies, use the best green building techniques, and take advantage of every single incentive and tax break currently available in constructing the 3,500 sq. ft., six-bedroom, five-bathroom home.

When complete, it will be a showcase allowing builders to pick and choose those green building solutions that will work best for them. Once the five-member family moves in, the home will become a living laboratory for a sustainable, eco-friendly lifestyle. To date, the couple has put more than \$200,000 of their own money towards the project.

"The project has consumed our every waking hour," Crystal said. "We're hoping the payoff is in the attention we're going to draw."

The technologies in use in the home are almost too numerous to list. They include spray-foam insulated walls, a DC solar-powered air conditioning system, recycled pavement made from used tires, and a state-of-the-art wind generator. Just following the circulation of water through the home



will give some idea of how comprehensive Baker's green strategy is.

First, the solar panels recently installed on the roof are not part of a photovoltaic system for generating electricity, but for a solar-powered water heater from AET/ Thermofin. The system is able to generate 78,000 Btuh with its collectors – more than enough to meet the demands of a five-person family.

It is engineered to a high enough standard that it is able to use a drain-back system with a fin-tube heat exchanger. The advantage of the drain-back system? The only moving part is the water pump, meaning less maintenance hassles.

And to cap it all, the solar panels are rated at wind speeds of 195 mph. "Anything that goes on the roof we want to make heavy-duty secure," Crystal said.

At point-of-use, the Envirohome is planning to use the FloWise line of highefficiency products from American Standard. They include 1.5 gpm showerheads, 1.28 gallon-per-flush toilets, and lowflow aerators. Already installed are the company's whirlpool bathtubs with mold mitigation coatings.

But the system isn't finished wringing all the use it can get out of the water it takes in.

"We've coined the term 'zero run-off home'," Crystal said. "Everybody's talking about being carbon-neutral, what about being water-neutral?"

A graywater reclamation system from BRAC Systems links all the plumbing from the bathtubs, sinks and clothes washer to a sump pump that delivers it to an 85-gal. reservoir. A jet-pump in the reservoir (which also contains an ozonator to help with purification) then delivers the graywater to the toilets for flushing.

Any runoff from the 85-gal. reservoir goes to a 5,000-gal. cistern. The cistern also collects rainwater, and has an attached irrigation pump. That pump then directs water to one of the Envirohome's "living roofs." The green roofs have 3-in. of soil media that will eventually be a home to approximately 60 native species. Green roofs — popular in Germany where they are used by almost 13% of homeowners — help insulate the home, and are able to expand and contract with changing temperatures.

Right now Crystal estimates the work to be about 75% complete. "Every single thing that's gone into the house we have a story about. It's just taken an enormous amount of research."

The ribbon-cutting for the is projected at Jan. 7, 2008, with a backup date of March 11. Invitees to the ceremony include the Mayor of Indialantic, the Governors of Florida and California, and the Secretary General of the United Nations.

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