

GREEN HOUSE

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46 If Completed

TNAH promises to be highly energy efficient

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SUSTAINABLE DESIGN, CONSTRUCTION, PRODUCTS & SALES ■ EDITED BY RICH BINSACCA



MODEL OF EFFICIENCY: The model home at The Enclave at Lake Pointe boasts HVAC equipment that's half the capacity of like-sized competitors, one of several by-products of building science.

HIGH-LEVEL GREEN

Green is Standard

ZK Homes redefines luxury with a commitment to building science.

UNTIL LAST YEAR, HOUSTON BUILDER-DEVELOPERS Lee Zieben and John Kirksey Jr., partners in ZK Homes, didn't know they were green. As a start-up in 2005, the business had doubled its closings every year through 2008 thanks first to the overall economy and later, the relatively mild effect of the recession in Texas.

But as traffic slowed considerably toward the end of last year, Zieben and Kirksey turned to green as a possible competitive advantage. They compared their specs, plans, and practices to several green building programs and found that without changing much they could achieve the lower levels of certification.

But instead of simply boosting their insulation

levels a little and plastering "green" on their advertising, they got serious. "Once we made the commitment to build to the highest levels of green, we got educated and applied building science to understand how everything works together," says Zieben.

Not only is that an enlightened approach, but it also is proving successful. At The Enclave at Lake Pointe, a new, 100-unit project on a 12-acre infill parcel in Sugar Land, Texas, sales are averaging one per month for luxury homes priced from the \$400s to the low \$700s, thanks in large part to a model home that earned NAHBGreen Gold certification.

The model serves as a real-world opportunity to show and tell the building science behind (see page 46)

Green Growth

More than one in five U.S. cities with populations greater than 50,000 report having a policy to promote green buildings, according to the AIA's "Green Building Policy in a Changing Economic Environment" report (www.aia.org/advocacy/local). Since 2007, the first year of the survey, 46 cities have added green building programs, a 50 percent increase over the 92 municipalities initially identified by AIA. The six-state Western region reported the most programs, with 56 of the 138 total programs found. Meanwhile, the NAHB is tracking 125 state and local HBAs affiliated with its NAHBGreen program. As of mid-November, 625 homes were certified under the NAHBGreen rating system with another 4,500 projects in the pipeline.

Core Value

The new EnergyCore window line from Mikron Industries (www.mikronwvnyl.com) features a patent-pending, fusion-insulated frame that employs an air-cell insulating core designed to ▶

create a more effective thermal barrier. The frame is made using a tri-extrusion process that ensures full insulation and the frame material is 100 percent recyclable. Mikron claims that the EnergyCore



frame delivers superior thermal performance compared to fiberglass, rigid PVC, and wood frame materials, and when combined with triple glazing systems, will exceed current Energy Star window requirements by 50 percent.

Green Expo

GreenExpo85.com is an online resource center and virtual hub for green-minded housing professionals. Open Feb. 1-4, 2010, the online event features a virtual trade show, Web-based seminars, keynote speakers, and a community arena that includes blogs, forums, and social media feeds. The online nature of the show enables multiple visits.



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its product and serves to educate the builder's sales staff. "You can spend all the money in the world [to achieve a high-performance standard], but if you can't articulate its value, it's wasted money," says Zieben.

To help get its message across (and hold buyers' attention), ZK Homes has devised an in-house program that focuses on three areas they've found resonate most with consumers: indoor air quality, energy efficiency, and sustainability.

For instance, the spray-foam insulation ZK Homes uses to create semi-conditioned attic space and air-seal the house from thermal transfer helps the builder reduce the capacity of its HVAC equipment by half. That value is then translated into lower

energy bills for the buyer and also portrayed as an example of better-built housing that will last longer and hold its value better than the competition.

It helps, too, that buyers at The Enclave and the builder's two other communities are typically a demographic that's more educated and interested in technology and can follow the logic stream from a can of foam insulation to sustainable housing value.

ZK's methods and results have given the builder some negotiating leverage to secure construction financing. "[Lenders] may not give much credit to a green-certified house, but they understand the value of one built to a higher level of overall quality," says Zieben.—R.B.

GREEN PRODUCTS

New American Green

The 2010 show house boasts an impressive spec list that promises a variety of efficiencies.

WHILE IT APPEARS THAT The New American Home 2010 will not be completed and available for tours during the International Builders' Show in Las Vegas this month due to construction financing problems (see related story, page 148), the house was primed to achieve a high level of energy performance and resource efficiencies.

According to a report conducted by IBACOS, a Pittsburgh-based consultant, the two-level, 6,100-square-foot show house—when finished—will likely achieve a minimum 49 percent whole-house energy savings compared to the 2006 national energy code (IECC) for a house of the same size.

A number of products and a commitment to building science contributed to that assumption—and gave builder Domanico Custom Homes a

real-world education about applying green building practices and products to its homes. "We really learned how to seal up a house," says Domanico's general manager Adam Knecht.

Specifically, the builder employed a 10-inch-thick insulated concrete form system from APEX, an R-23 perimeter wall by itself that was enhanced with R-20 framed wall assemblies in some sections and an insulated exterior stucco cladding from Dryvit that added another R-7 of value. Aluminum-clad wood windows from Sierra Pacific help keep the shell tight and thermally efficient with U-factors of 0.34 and 0.25 solar heat gain coefficients.

Meanwhile, a combination of spray-in-place cellulose wall cavity insulation from Nu-Wood and closed-cell expanding foam from Icynene applied to the underside of the roof (pictured

here) boosted the home's thermal performance. A zoned, high-efficiency HVAC system from Trane, including a heat recovery ventilator, is distributed through sealed ducts that leak 3 percent or less of their airflow.

Bifacial photovoltaic roof panels from Sanyo deliver up to 10.53 kW of off-grid electricity, while CFL and LED lighting and both solar thermal and



tankless water heating add to the energy-saving mix. "The biggest thing we'll take from this experience is how to build for better energy performance," says Knecht.—R.B.

GOT GREEN PROJECTS, PRODUCTS, OR DESIGNS?

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