BUILDING AMERICA TOP INNOVATIONS HALL OF FAME PROFILE

INNOVATIONS CATEGORY:
2. House-as-a-System Solutions
2.1 New Homes with Whole-House Packages

Zero Net-Energy Homes Production Builder Business Case:

California/Florida Production Builders

Grupe Homes of Sacramento worked with Building America to design California's first production-scale community of solar homes. The homes outsold neighboring developments two to one.

Production builders constructing zero net-energy homes with Building America have sold these homes at paces exceeding 200% faster and prices up to 40% higher than their competitors.

BUILDING AMERICA TOP INNOVATIONS

Recognizing Top Innovations in Building Science – The U.S. Department of Energy's Building America program was started in 1995 to provide research and development to the residential new construction and remodeling industry. As a national center for world-class research, Building America funds integrated research in market-ready technology solutions through collaborative partnerships between building and remodeling industry leaders, nationally recognized building scientists, and the national laboratories. Building America Top Innovation Awards recognize those projects that have had a profound or transforming impact on the new and retrofit housing industries on the road to high-performance homes.

Building America's production builder partners have found that energy efficiency helps them sell more homes and sell them faster than their competitors even at a higher price point. These impressive business case results have helped influence substantial growth in zero net-energy homes.

Four California home builders who worked with Building America to incorporate energy efficiency and solar into their home designs—Shea Homes, Clarum Homes, Premier Homes, and Grupe Homes—all reported selling homes at a faster rate than nearby projects.

Clarum Home's absorption rate (the pace at which they sold homes) was about twice the state average in 2005. In one community, Clarum planned on a three-year schedule, but sold out in the first year, at prices up to 40% higher than expected. This project, Vista Montana, in Watsonville, California, was the largest near zero energy home community in the U.S. when constructed in 2004 (Baechler et al. 2007).

Premier wanted to differentiate themselves in a very competitive market dominated by large corporate production home builders. Premier Homes decided to offer solar photovoltaics as a standard feature along with energy-efficiency measures designed to cut energy use by 50% over California code on 95 homes in Premier Gardens in Rancho Cordova, California. Premier Gardens opened for sales in August 2004 and sold out in 16 months, several months ahead of a similarly sized neighboring development that chose marble countertops over solar panels, high efficiency HVAC, and tankless water heaters. In addition to rapid sales, the builder benefited from valuable media exposure. The project was featured in *Newsweek Magazine* and on national TV news programs including CBS Evening News and Good Morning America.

Grupe worked with the Building America CARB research team to put together a package of solar plus energy-efficiency measures that would save homeowners more than 40% over California's energy code at its Carsten Crossings project. The first 10 of the 144 homes came

"We sold 23 of our first 30 homes in the first three months, even though the market in Sacramento was very slow, the slowest housing market in the country."

Mark Fisher, Vice President of Grupe Homes

up for sale in March 2006 just when Sacramento's new home market took a 45% nose dive. Because of the soft market, Grupe did not charge more for the energy-efficient homes than its competitors who were selling similar sized houses.

Grupe claims they did not lose money when they "gave away" the solar because they got it back through faster sales even in a slow market. Grupe compared its sales rate to that of eight competitors with similar homes selling in 2006 and 2007. Grupe determined that the GrupeGreen features cost an additional $2,642,000 for the 144 homes. The cost to carry that extra expense on the 144 homes at Carsten Crossings was $311,000 per month for every month they weren't sold. Grupe determined a typical rate of sales among competitors was 1.9 homes sold per month. At that rate it would take 76 months to sell all the homes. If they could sell out 8.5 months sooner, i.e., in 67.5 months, they would make up the extra carrying cost. That meant selling at a rate of 2.1 homes per month.

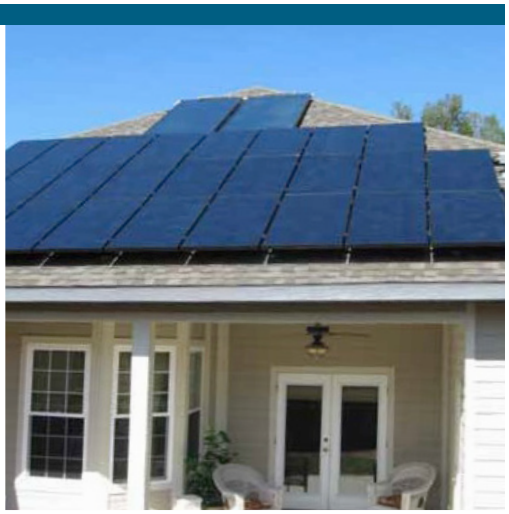
Grupe found they actually sold at a rate of 4.6 homes per month, well above their break-even rate of 2.1 homes per month and more than twice as fast as their competitors. They sold all 144 homes in 31 months, 45 months sooner than the competition, for a savings of $14 million (45 months x $311,000/month).

In Gainesville, Florida, Tommy Williams Homes began working with Building America in 2004. They typically buy land, develop half and sell half the lots to another builder, offering an excellent opportunity to do side-by-side comparisons of sales. The company's homes have repeatedly outsold the competition, with sales increasing year-over-year in spite of the recession.

Tommy Williams Homes recently experimented with zero energy homes, building four ZEH homes in Gainesville between 2010 and 2012. The true net-zero energy homes, which are equipped with photovoltaic panels and solar water heaters, sold shortly after completion, despite their increased cost. Now the company offers a set of net-zero-energy "ready-made" home plans as an option for their homebuyers.

Key Lessons Learned

- Homes with energy-efficient and solar features can outsell similar sized just-to-code houses in terms of both speed of sales and volume of sales if the homes are comparably priced.
- The cost of renewable energy systems can be offset by reduced carrying costs due to faster sales.



Tommy Williams Homes is the first production builder in Florida to build true zero-energy homes. The homes' system engineering was developed with help from the Florida Solar Energy Center® and Florida HERO, both Building America partners. The builder's first four net-zero-energy homes sold shortly after completion.

"The most important innovation we use is taking a whole-house approach. We're putting all these features together to create a much better home. There isn't a person in the country who is not interested in having a lower energy bill. The market has spoken. Energy efficiency sells."

Todd Louis, Vice President,
Tommy Williams Homes

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PNNL-SA-90560 January 2013

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