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### Stapleton to get house so low-energy it's Near-Zero

By John Rebchook, Rocky Mountain News  
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Denver home builder John Keith wants to do the right thing.

That's the reason Keith, principal of Harvard Communities, will start building in Stapleton next month what he calls the Near-Zero Energy Home, designed to use about 75 percent less energy than a new house built to current code.

Keith is the first to admit, however, that a lot of what he does to make homes green isn't sexy.

"The frustrating thing is that we can say this house is the most energy-efficient of any production home built in the metro area, but it doesn't look any different than a normal house when it is completed," he said.

"It's not like it is made of straw. A lot of our stuff is very subtle.

"You take a high-performance home - which is our moniker for what we do - and we like to walk through a home with the buyers while it is under construction so we can point out how we save energy and make the home better built and more comfortable."

John Powers, president of the nonprofit Alliance for Sustainable Colorado, said Keith is doing something for current buyers and future generations, as well.

Current buyers, Powers said, will use fewer natural resources, thus "lowering their heating and cooling bills." They also can get "green mortgages," he said, which will allow them "to buy a bigger home because of lower utility bills."

"Quite frankly," he said, "this is a service to their children, grandchildren and great-grandchildren."

Keith already participates in a number of energy-efficiency home-building programs: Built Green Colorado, the Environmental Protection Agency's Energy Star program, Environments for Living, and the U.S. Green Building Council's Leadership in Energy and Environmental Design certification program.

He believes his Near-Zero Energy Home will represent the next generation of green building.

And the green-building bar already is high in Colorado.



Home builder John Keith stands in a window of one of the homes he's building in Denver's Stapleton area. Keith has plans to build an ultra-efficient "Near-Zero Energy House."

More than 160 builders in Colorado are members of the Home Builders Association of Metro Denver's Built Green program.

McStain Neighborhoods, based in Louisville, is a longtime leader in energy-efficient homes, building "green" houses back when the adjective only referred to color.

Since it was founded in 1966, McStain has focused on sustainable building. At first, that meant locating homes near bus stops and employment centers so homeowners wouldn't need to commute far. In the past 15 or 20 years, as technology improved, McStain focused heavily on energy efficiency.

It will offer solar heating as a standard feature for some of its homes in Bradburn Village in Westminster.

"We're getting a little bit away from saying *green* because that is getting a bit washed down," said Eric Wittenberg, CEO of McStain. "We're now talking more about the byproducts of green building. Homes are more comfortable and more durable. Energy-saving appliances, for example, last longer than other appliances."

For Harvard Communities' Keith, building green also has changed the way he approaches construction.

"I grew up thinking that the more wood in a house, the more stout it is," said Keith, 50.

But he discovered that wood provides less insulation than he originally thought. So these days, the wall insulation he uses is made of recycled newspapers.

"And you want to know something bizarre?" he asked. "We can't find a furnace small enough to heat our homes."

Builders in the United States are notorious for using furnaces that are too big, which wastes energy, he said.

He admits that people's eyes sometimes glaze over when he shows them how his company uses fewer studs in the wall so it can add more insulation, or when he explains that his furnaces lose only 3 percent to 5 percent of energy through the duct system, while a typical furnace loses 40 percent.

Chetter Latcham, head of Shea Properties, developer of Highlands Ranch and Reunion in Commerce City, said people who buy \$600,000 houses don't blink at paying more for green features.

But first-time buyers whose budgets already are stretched, can't pay a premium to be green.

"It's not even a question of whether they want to. In some cases, they don't have the money," Latcham said.

Keith said he doesn't want to saddle buyers with energy-efficient methods so pioneering that "you have to call Germany if you need to fix it."

The Near-Zero Energy Home has about 2,800 square feet of space and will be priced in the mid-\$600,000s. It will be built in consultation with the Department of Energy's Building America Program.

Keith plans to incorporate features of this house - such as photovoltaic solar collectors - as standard or optional features in all of his production houses.

If energy prices don't increase and a buyer pays an additional \$20,000 for energy features on a future home, Keith estimates the energy savings would be paid back in eight years.

For another \$100 a month, or \$1,200 a year, he said, the buyer could finance the \$20,000 as part of the mortgage and see a savings of about \$2,500 a year.

"You are saving \$1,300 a year; you're helping to reduce global warming; and you can tell all your friends about the cool features in your house," Keith said. "It's a no-brainer."

In the U.S., residential and commercial buildings consume about 65 percent of all electricity, 40 percent of all raw materials and 12 percent of freshwater supplies. They contribute about one-third of all greenhouse gas emissions, according to the Montreal-based Commission for Environmental Cooperation.

Keith has been in the home-building business for the past 25 years, with the exception of time he spent at Harvard University getting his master's degree in landscape architecture. He also spend three years in a failed attempt to be a screenwriter in Boston

He started in Colorado by building custom homes on a golf course in Castle Rock. He said he was growing jaded about his business before his passion was rekindled by more environmentally friendly construction. Now, Harvard Communities only builds energy-efficient houses in places such as Stapleton and Lowry and soon will be building houses in Belmar in Lakewood.

"It represents a sea change for us," Keith said. "We're not like McStain that has been building green for 40 years."

Theron Hoppe and her husband, Evan Rothstein, both 28-year-old lawyers, recently were looking at homes in Stapleton because they want to start a family.

"We wouldn't even consider a home that wasn't built green," Hoppe said. "It is very important to us."

Ironically, it often is the giant, expensive homes that have the latest and greatest energy-efficient features. But by virtue of their size, they are using a lot of natural resources.

"If you really want to be green, don't build a 12,000-square-foot house," Keith said.

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