Model of efficiency: Home with no furnace or gas lines averages $25 monthly heating bills

By JAMIE KELLY of the Missoulian | Posted: Thursday, October 22, 2009 10:55 pm

Russ Hellem uses a thermal imager Thursday morning to check for drafts into the “I-Pad,” a super-energy-efficient model home built west of Missoula. “This is one of the best houses in the area, from an air-tightness and efficiency standpoint,” Hellem says. Photo by KURT WILSON/Missoulian

Glen Moyer talks like a salesman, and that's because he is.

On Thursday morning, he delivered his pitch:

"It's super quiet, because sound travels through the air and this house is airtight. And it's cleaner. Plus, there are no cold spots in this house - anywhere."

Moyer, owner of the housing development company Kingdom Ventures, might sound like he was trying to close a deal, except this house is not for sale - at least not yet. Instead the developer who also moonlights as a pastor was unveiling the "I-Pad," a model home off Mullan Road, which he claims is likely the most energy-efficient house ever built in Missoula.

How efficient? Think $25 monthly heating bills, on average, over a year.

And almost all of the heat comes from a source that rates a mere 5,000 BTUs, when the average home needs 60,000. It is a small electric-coil heater designed to look like a gas fireplace, that keeps comfortable 1,288 square feet of home.

No furnace. No gas lines. No electric baseboards. No sounds.

The home is nearly 1,300 square feet and will cost an estimated $25 a month average to heat. Photo by KURT WILSON/Missoulian

Moyer's pitch was not all bluster. Confirmation came when Russ Hellem whipped out his thermal imager and took aim at every corner of the kitchen and living room. If there was a draft or leak, it would appear as a blue smear on a screen filled with reds and yellows.

"This is one of the best houses in the area, from an air-tightness and efficiency standpoint," said Hellem, owner of EnergeTechs, which helps design and build energy-efficient buildings and certifies them as Energy Star compliant.

Moyer, along with Mark Noon, owner of the separate company Kingdom Builders, want to build and sell extremely energy-efficient homes while keeping them affordable.

Since 2003, they have been studying and implementing the technologies that make it possible - and improving the process year by year. This year, they were confident in unveiling a model home.

In July, they began building at 5138 Horn Road. One item noticeably absent from the check list? A furnace.

"We've never had the courage to build a house without a gas furnace," Moyer said.

"We've seen this science work firsthand enough that we were confident in taking that next step," Noon added.

They call it a "hybrid" home, because, like hybrid cars, it looks and functions like any other home, but is built using strategies and technologies that dramatically ratchet up energy efficiency.

There are several. First, the house has two layers, separated by more than 3 1/4 inches - an outer "shell" followed by the interior walls.

Mark Noon, owner of Kingdom Builders, stands in the living room area of the home in front of the main heat source, a 5,000-BTU electric fireplace. Photo by KURT WILSON/Missoulian

The attention given to sealing, studding and trimming was great, said Noon, who subcontracted much of the work but personally built the energy-efficient portions.

"Gluing everything," is how he described the sealing process. "Taping everything. Nothing super high-tech, just a lot of care with taking care of that shell."

The home also features high-efficiency double-paned windows, silent ceiling fans in every room to circulate heat and top-rated insulation everywhere.

Perhaps most important, though, is the heat recovery ventilator, a ceiling-attached machine that traps heat - even heat from running hot water - then combines it with fresh outside air, which then flows through ceiling ducts to keep the home and its three bedrooms heated and filled with clean air.

The result is an extremely airtight, energy-efficient house, which comes at a price.

Because of the efficiency requirements, the bedrooms are small and the hallway space approaching cramped.

Plus, Noon calculates that this home cost $18,000 more to build than if he used traditional construction. But, he said, subtract around $12,000 because there is no furnace and no gas lines to install or trenches to dig.

The result is a home that may cost a sliver more than if it were built traditionally. But then again, there will be no dread in opening January's heating bill.

Moyer and Noon are banking that going "green" isn't just a fad, but a growing trend as energy prices soar and more people, because of concern over the environment or their wallets, begin to downsize.

"There are a lot more energy-conscious people out there these days," said Moyer. "Just like we don't need huge gas-guzzling cars, we don't need big, huge houses that eat up energy and space."

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