



IF THESE WALLS COULD TALK!

The most energy efficient home in Indiana



A few years ago, Deanna and Andy Burdsall, then living in New Albany, decided to build a new home. "We were looking to make the 'final move,'" Andy explained.

Though they are a relatively young family, with two daughters ages 12 and 10, they wanted to build a home they could eventually retire in.

Andy now works in financial services, but he was previously an industrial engineer, so when they started thinking about building a new home, the couple had a lot of things they knew they wanted to do.

"We wanted more open space," Andy said. "So the bedrooms here are actually maybe a little smaller than our old house."

The five bedrooms in their new home are still comfortable and well placed, but the Burdsalls achieved their goal.

The most impressive spaces in the home are the open-concept kitchen with beautiful granite countertops, stainless-steel appliances, and a breakfast nook; the living room with ample seating and a fireplace; and the dining room for more formal occasions with nearly two-story windows and a stunning custom wood ceiling finish; as well as the sweeping lower-level family room, complete with its own kitchenette.

The spaces were definitely designed with entertaining in mind, and the Burdsalls quickly put it to use, hosting a small group Bible study each week for Southeast Christian Church's Indiana campus.

Besides the layout (the couple had already drawn the floor plans before they even started looking for property), the Burdsalls also had some other requirements in mind concerning the location of their new home.

"We wanted trees," Andy said. They also knew they wanted a space that would accommodate a walkout basement.

After looking for nearly five months, they finally found the perfect lot high in the knobs of Floyd County, with ample trees and a sloping landscape perfect for the basement, all tucked into a quaint, quiet, and relatively new subdivision.



The Burdsall family, pictured at left built their energy efficient five-bedroom dream home that includes plenty of space to host guests, and appliances and construction that saves thousands a year in energy costs.

Pictured above is the home's impressive dining room ceiling.



The Environmental Protection Agency estimates that geothermal systems can reduce a home's HVAC related energy consumption up to 70 percent, and the heat pump water heater claims an annual operating cost of less than \$200.

The open kitchen and living area

The Burdsalls built a beautiful home, but among the most impressive aspects is how it uses energy, or rather how efficiently it uses it.

"As a recovering engineer, the energy part was a big deal to me," Andy said. "So we worked a lot on how we use energy."

The home was built by Nick Romeo, who Andy said is "a big fan of efficiency." In most of his new construction, Romeo includes as standard some of the newer technology and building techniques, such as spray-foam insulation, which can drastically increase the energy efficiency of a building.

Romeo and Andy attended a class taught by Bob Geswein, energy advisor for the Harrison County REMC. "So then we started exploring different things we could do," Andy explained. The home features a geothermal HVAC system, which essentially uses the relatively constant temperature of the Earth beyond a certain depth, to heat and cool the home via four wells, each nearly 200 feet deep. It also makes use of a heat pump water heater and features LED or compact fluorescent lighting throughout.

Though technology like this can represent a much more substantial initial investment, the energy savings in the long run can be impressive. The Environmental Protection Agency estimates that geothermal systems can reduce a home's HVAC related en-

energy consumption up to 70 percent, and the heat pump water heater claims an annual operating cost of less than \$200. LED light bulbs not only use a fraction of the electricity of incandescents, but can also last up to 30 years. Additionally, many of the energy saving measures will be significantly subsidized by substantial tax credits as well as credits from the REMC.

Besides all these energy saving measures, however, perhaps the most significant step the Burdsalls took is hidden in the exterior walls — walls that are twice as thick as those of typical new construction.

"We didn't invent the technique," Andy said. "Frankly, it's what they do in Canada or places where it's 60 degrees below zero."

Though they still used 2x4s for framing, rather than placing them in a straight line, they staggered them, alternating between placing them on the outside and inside, creating walls with twice the space for spray-foam insulation.

Built as a part of the Touchstone Energy Cooperative program, the Burdsall's new home was rated on the HERS (home energy rating system) scale, an industry standard that measures the energy efficiency of a home. A score of 100 represents a home built to code, and the lower the score the better. So an older home might score a 130, meaning it is 30 percent less energy efficient than new construction of the same size.

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Strategically placed foam insulation helps keep the Burdsall's home heating and cooling costs low.

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Given the steps they had taken, the Burdsalls certainly expected their home to perform well, but even they were a little surprised when their home was given a HERS rating of 33, meaning, in theory, that it should be nearly 70 percent more efficient than even new construction built to code and up to 100 percent more efficient than older homes of a comparable size. According to officials at REMC, the Burdsall's home has the lowest rating Touchstone has recorded in the state, making it the most energy efficient home in Indiana. REMC estimated

that the home's energy cost should be less than \$2,000 annually. "And more than half of that is accounted for by appliances, which are easily the largest user of energy in the home," Andy noted.

Still, they aren't complaining, as their electric bill for their first month in the nearly 5,000 square-foot home was about a third of what it would have been at their old house.

The Burdsalls didn't set out to build the most energy efficient home in the state. They just wanted to make very wise investments — investments that will not only pay off for them personally, but also on a larger environmental level as well. •



Above: A finished basement gives the home plenty of extra space. Right: The home has five bedrooms and a lot of natural light.



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