



MANSION IN RUSHSHELBY ENERGY TERRITORY

The Guffin home in Wayne County includes state-of-the-art energy efficiency features, including foam insulation and geothermal heating and cooling.

BUYING INTO SAVINGS

Movement grows to build energy efficient homes

A winding lane off Pennville Road in Whitewater Valley REMC territory leads to a stunning 10,000-square-foot manor built of brick and stone, larger than most neighboring estates in Wayne County. Step inside the home to an even greater wow factor – a masterpiece of energy efficiency engineering that meets and exceeds the Touchstone Energy Home (TEH) standards established by Hoosier Energy.

As the 10-year-old TEH program gains recognition as a top-of-class model for new home construction, large and small residences across Hoosier Energy's 18 member systems are setting new levels for high efficiency. The homes include effective foundations, proper caulk and seal applications, the correct insulation and appropriate amount, as well as effi-

cient windows and correctly sized heating and cooling systems.

Prospective homeowners and their contractors are buying into savings, realizing that investing in an energy efficient home pays off in lower energy use for years to come.

A dream home with idyllic bills

The builder and owner of this Wayne County home is Greg Guffin, a long-time commercial construction business owner from Shelbyville. He and his wife Pam embarked on ideas for their dream home four years ago, with his crews working on the home as time permits.

Guffin built his first home in 1992 using insulation batts and natural gas for heat. After meeting with Jason Clemmons of RushShelby Energy and

Holly Yensel, TEH expert at Hoosier Energy, Guffin realized he had made some costly energy efficiency mistakes in previous construction projects. Wiser now, he sees the value in energy-saving installations for his new home.

The home is spacious and features more than 60 windows and four fireplaces, yet it's a fortress against the elements – spray foamed in every visible crevice.

"The cost to install foam was about three times more, but I know how air infiltrates my older home. My energy

bill in my older home is nearly double this house. Foam insulation seals it like a cocoon,” Guffin said. The exterior walls are two-by-six construction, which created deep cavities for foam sealant. Crews also installed a foam lid in the ceiling and topped it with 18 inches of cellulose. R-value or the insulation value, on foam, depending on the type, ranges from R-3.5 to R-7 per inch, much greater than batt insulation for blocking out elements. As a result, the ceiling’s R-value is greater than 50.

The majority of the home sits on a crawl space with finished concrete floors and 10-inch concrete walls covered in foam, completely sealed from the elements.

“I’m coming from an inefficient home that I built that is just bleeding,” Guffin said, adding, “If anybody calls and asks me, I would say ‘spray foam is the way to go.’”

The unfinished lowest level of the home is a showcase of energy-efficient mechanicals. A Marathon water heater, known for its watertight outer jacket and high efficiency factor, is in one corner, flanked by a three-unit geothermal system that extracts energy from a pond loop. Guffin said he kept the 10,000 square foot home at a constant 70 degrees during construction last winter. The electric bill never exceeded \$400, he said, even with abnormal, extreme weather conditions.

“The numbers just made such big sense,” Guffin said, in explaining why he chose to install a geothermal system. Government and co-op rebates saved Guffin about 30 percent on each of the three units. “The payback is a no-brainer,” he added.

This home lacks little in the way of



EFFICIENT DECISIONS: Builder and homeowner Greg Guffin, left, and Energy Efficiency Coordinator Kim Anderson discuss energy efficient light sources for use throughout his home.

HE photo

imagination and convenience, from its elevator to the dog wash station in the laundry room. The extras are possible because of the long-term savings the Guffins will enjoy as a result of careful planning.

Aside from large mechanicals, lighting efficiency with maximum illumination was high on their list of priorities. More than 140 light emitting diodes (LEDs) have been strategically placed to brighten up their home of European-style. The couple installed just over 2,500 watts in LED lighting – comparable to 9,500 watts in incandescents. For each LED installed, the couple reduces potential energy consumption by more than 70 percent when compared to a tra-

ditional incandescent.

“I am very, very happy with the Touchstone Energy Home program,” Guffin said as he stood back, looking at the nearly completed mansion on his 450-acre farm. “I’ve spent a lot of money out here, but I’m already seeing payback. I look at it this way; it’s one thing to build this house, it’s another thing to be able to afford it in monthly bills.”

An energy efficiency program for big, medium or small homes

Near the southern border of Indiana in Harrison REMC territory, another builder is earning an expert reputation for commitment to excellence in



HE photo

EFFICIENT WATER HEATING: Residential Energy Consultant Holly Yensel and Nick Romeo of Nick Romeo Builders discuss the benefits of using a heat pump water heater.

energy efficiency construction. Nick Romeo of Nick Romeo Builders, LLC is a Touchstone Energy Home building convert. In 2014, one of his homes in the Lanesville area gained regional recognition in the Home Energy Rating System (HERS) test, a nationally recognized energy analysis score, the lowest score in the state of Indiana to date.

On a crisp, fall day in September, Romeo showed two of his latest construction projects, a 2,200 square-foot home with a full-finished basement in Woodbridge Farm subdivision and a 1,300 square-foot home with a partial basement on a family farm. Both have at least one major thing in common.

“Even the smaller house is a Touchstone Energy Home on steroids,” Romeo said.

Like Guffin, Romeo says his knowledge of the science of energy efficient home construction has grown exponentially through the years. “I don’t even like to think about the houses I built 15

years ago. I know too much today.”

Romeo said he first heard of the TEH program through Harrison REMC, which he touted as “by far the best utility company to work with” also praising the co-op’s Bob Geswein for his role in teaching energy efficiency strategy.

In 2010, Romeo started building to TEH standards and strategies, including a preference for an all-electric home, ideally a geothermal system paired with a heat-pump water heater.

Romeo said the added costs to build correctly are worth it. He quantified some of the costs for an average build. “Instead of conventional equipment, you add about \$4,000 or so on HVAC equipment for a two-speed heat-pump unit and mechanical ventilation.” Add to that

about 7 percent more for foam insulation and offset studs, he said. Also known as staggered studs, the wood supports are commonly offset for soundproofing and have found their way into modern-day construction to mitigate thermal bridging with insulation.

“It costs pennies more to do this,” Romeo said. “Yes, it’s a little extra labor, but two, two-by-fours don’t cost much more than a two-by-six. He estimates the upcharge to be about \$1,500 on the Woodbridge home and no added labor. “I don’t charge extra labor to go with foam. This job is harder to do when I do a lesser job,” he said.

The Woodbridge homeowner understands the value. “He works with me and gets the mechanics of it,” Romeo said, meaning he understands that spending a little more results in a better return.

Among the many features in the Woodbridge home that stand out are the 85 recessed lights. Romeo was never

a fan. “Now, with LEDs or CFLs with foam ceilings, my arguments against recessed lighting are gone.”

About 15 minutes away on the back roadways of a farm is another of Romeo’s project – a charming house, built for one or two. The exterior is sided and the interior is clad with wood floors throughout and an open staircase to a partially finished walkout basement. Like the larger home, this rural gem is built with offset studs, all foam insulation and conditioned with a 17-SEER heat pump.

The happy homeowner, Susie Foreman, anxious to move in, peeked through the window to see the newly finished floors. She explained how this new home came to be. Energy conservation was the motivator. She and her now-late husband had been living in a home next door, of which the first two rooms are log construction, built in 1798. “One day I proposed we sell our farmland and build an energy efficient home,” she said.

“It will be very comfortable, inexpensive to operate and a very nice home,” Romeo said.

Contractors, co-ops and their members continue to embrace the TEH program. Since inception, 286 homes have been built to TEH standards among Hoosier Energy’s member systems. In 2014, 44 homes were registered to be built to TEH standards, meaning the homeowner’s builder had been through the training and agreed to comply with requirements. [EL](#)



HE photos

TOP: Residential Energy Consultant Holly Yensel shows cavities of spray foam used to seal and insulate the Touchstone Energy home.

MIDDLE, BOTTOM: Touchstone Energy homes vary in size from mansions to these 2,200 and 1,300 square-foot homes. These homes achieve exceptional home energy rating system scores due to the construction techniques and energy efficient equipment installed.