Case Study

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GREEN HOME IN GREEN HILLS

People are embracing green or environmentally low-impact practices at an encouraging rate, and energy-saving features have become a growing factor in house design. According to the National Association of Home Builders, more than half of its members, who are responsible for more than 80 percent of home construction in this country, will be incorporating green practices into the development, design and construction of new homes by the end of 2007.

When planning to build in the upscale Nashville, Tenn., borough of Green Hills, Mark Fenelon, a general contractor with Mossy Ridge Construction, knew the green approach was the path to pursue for a true high-performance home. Mossy Ridge Construction is currently in the process of gaining LEED® (Leadership in Energy and Environmental Design) certification, the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings. Primarily undertaken by commercial builders, LEED certification provides third-party verification that building projects meet the highest environmentally responsible standards.

"Energy, materials, water and land are all consumed in the construction and operation of buildings, impacting the environment in ways we may never notice," said Fenelon. "Mossy Ridge focuses on building energy-efficient homes, and this project was the perfect marquee for our green construction efforts."

From the industry's highest rated windows for energy conservation to a computer modeled HVAC system with a sealed and insulated duct system, the home at 904 Estes was truly on its way to becoming a marvel of energy efficiency. When the time came to choose a water heater, Fenelon turned to plumber Frank Sullivan of Joe B. Sullivan & Sons and asked him to install what Fenelon had heard was the choice for green building, a tankless unit.

Tankless, or on-demand, water heaters heat water directly without storage tanks, avoiding standby heat losses associated with traditional units. Tankless technology is a viable option for small space applications and low-use applications—apartments for singles or couples and vacation homes where usage is periodic. "This house, at almost 5,000 square feet with five-and-a-half bathrooms, was meant for a family that may use numerous hot water applications at once, like back-to-back showers while dishwashing or doing

Case Notes

Project:
A True High-Performance Home

Location:
Nashville, Tennessee

Product:
Vertex™ Water Heater

Product Highlights:
- *76,000 BTU power-vent gas water heater*
- *90% thermal efficiency*
- *127-gallon first hour delivery*
- *92 gallon recovery @ 90°F rise*
- *Continuous hot water, always delivers "one more hot shower"*
- *Recirculating side taps for combination systems*

Installation:
Joe B. Sullivan & Sons

A. O. Smith Water Products Company

500 Tennessee Waltz Parkway
Ashland City, TN 37015

www.hotwater.com

laundry," said Sullivan. "A tankless system would have had trouble keeping up with demand."

Sullivan, whose family plumbing business spans four generations, recommended that Fenelon use the Vertex™ water heater from A. O. Smith. The Vertex provides high-volume hot water delivery using an advanced coiled heat exchanger inspired by A. O. Smith's time-tested Cyclone® commercial design. Having installed several Vertex units, Sullivan knew this high-efficiency workhorse would be a good fit for Mossy Ridge's green home in Green Hills.

"Today's homes demand more hot water than ever, a load of laundry and a ten-minute shower each require 20 gallons of water," Sullivan observed. "The Vertex delivers at 90 percent thermal efficiency with consistent temperature, compared to 80 percent in tankless models with temperature fluctuations. The hot water output of the Vertex is in the same class as larger, less efficient 75-gallon heater units."

According to U.S. Department of Energy tests, the average home in the United States uses 64 gallons of hot water per day. The Vertex delivers 127 gallons of hot water in the first hour of use with a recovery rate of 92 gallons per hour at a 90°F rise. The high-volume flow of hot water provided by the Vertex meets peak demand periods that modern lifestyles of homeowners and their families require.

"We are thrilled with the unmatched performance of the Vertex," said Fenelon, "and the net benefits in energy efficiency and environmental impact help both the homeowner and the health of the community. You just get more bang for your buck."

Sullivan adds that the Vertex is also a great option for water heater upgrades or remodeling projects. Unlike a tankless unit, the Vertex requires no special piping or expensive plumbing retrofits.

"The installation ease of the Vertex is truly incredible, about the same effort as a normal power-vented heater, and it also has a similar 22-inch footprint and the standard 1/2-inch gas line. The Vertex features through-the-wall power-venting using PVC pipe, providing tremendous flexibility and virtually eliminating the effort and expense of metal venting required with some water heaters. This water heater is a wonderful product, a plumber's dream."

To learn more about the Vertex, visit www.hotwater.com/green.