

Old house goes green with geothermal retrofit

SPECIAL TO CONTRACTOR

LANCASTER COUNTY, PA. — Maintaining the historical aesthetics of an old stone home while reaping the benefits of the newest geothermal technology can be a challenge. Especially if no central HVAC system preceded the arrival of new systems. Fortunately for the Proud family that's the type of work Pennsylvania-based Vertex Mechanical specializes in.

The Prouds purchased the property and the old stone homestead in 2001. Built in 1851, their 4,700-sq.-ft., seven bedroom home required a lot of TLC before it became the historical showcase it is today. When they decided to restore the home, the Prouds wanted

to maintain its old-world charm, and Vertex Mechanical rose to the challenge.

The task would require installing mechanical systems in a house that had no previous ductwork, all without ruining the historical feel and appearance of the home. Great diligence was required to hide ducts, and they had to deal

with a fat fieldstone foundation and walls, in some places 3-ft. thick.

"The old home had its own bag of tricks for us to deal with, complicating the mission at every turn, but we eventually found a solution to all of the challenges," said Vincent Youndt, president of Vertex Mechanical.



The home has the newest geothermal technology.



Vince Youndt checks the air handler section of the system.

Council LEED accredited recycled rubber floors, they are both familiar with sustainable products and technology, and they are passionate about the environment too.

"I've always had a desire to do what's right for the environment," said Susan.

And so, she spent time researching mechanical systems on the web, spoke with several manufacturers and mechanical contracting firms, and visited regional home shows to learn about the variety of systems available. Her search led her to explore the possibility of geothermal heating and cooling. She knew that the installation she was looking for would be an important investment. Susan was adamant that the equipment, and the workmanship, be the best she could buy. After all, their new (old) home is one they plan to raise their family in (Susan
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Vince Youndt does a routine service check of the system.

"I was very impressed with Vince's eagerness to keep the integrity of our historic home intact," said Susan Proud.

Before deciding on what system to install and what contractor to go with, Susan Proud spent months researching new mechanical system possibilities for the home. Since Susan and her husband, Spencer own Abacus Sports Installations, a firm that installs green and U.S. Green Building

Manufacturing companies enter joint venture, business alliance

SPECIAL TO CONTRACTOR

MILWAUKEE & CITY OF INDUSTRY, CALIF. — Manufacturing companies are joining forces: A. O. Smith Corp., Milwaukee, and Takagi Industrial Co. Ltd., Fuji-city, Shizuoka, Japan, recently announced that they are establishing a joint venture to market and manufacture tankless water heaters in North America; and Acorn Engineering Co., City of Industry, Calif., and Smith Industries Inc., Montgomery, Ala., announced a new business alliance and a jointly owned company.

As part of the joint venture, A. O. Smith will take over the

management of Takagi's existing North American sales and distribution organization, maintaining Takagi's North American headquarters in Irvine, Calif. A. O. Smith and Takagi expect the transaction to close in the third quarter.

"This venture is an important investment by A. O. Smith that will further expand our offering of high-efficiency water heating products," said Ajita G. Rajendra, president of A. O. Smith Water Products Co. "It represents a rare opportunity to combine Takagi's well-known brand and world class tankless technology with the strong brands, customer relationships and extensive

distribution of A. O. Smith."

Through the joint venture, A. O. Smith will offer a full line of tankless gas water heaters under its own brands in association with the Takagi brand and will assume responsibility for the Takagi brand in the U.S. and Canada.

Takagi, a privately held manufacturer of tankless water heating products, was the first to begin marketing tankless water heaters in the U.S. in 1994 and currently manufactures a full line of gas tankless water heater models in Japan for residential and commercial applications, including the recently released "second generation" 92% efficient T-H2

model designed for residential or light commercial applications. Upon achieving an appropriate volume threshold, the joint venture will bring manufacturing jobs to the U.S. and establish a production operation to support the growing needs of the business.

Two other companies joining a new business alliance and jointly owned company are Acorn Engineering Co. and Smith Industries Inc. Effective June 15, 2010, Jay R. Smith Mfg. Co., a division of Smith Industries, joined the Acorn Engineering family of companies, and Acorn Engineering will be a 50% owner of Smith
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■ **The Environmental Protection Agency** has delayed enforcement of its lead paint certification rules until Oct. 1 because there isn't enough training available for plumbers, HVAC contractors and remodelers. Any contractor who disturbs walls — such as drilling holes for pipe — in a pre-1978 structure must be trained and certified. EPA will not enforce against individual renovation workers if the person has applied to, or has enrolled in, a certified renovator class by Sept. 30, 2010.

■ Annual revenues for **J.F. Ahern Co.**, Fond du Lac, Wis., were incorrectly reported in our May Book of Giants issue. J.F. Ahern booked 2009 revenues of \$196.9 million and is the 28th largest mechanical contractor in the country. The corrected listing can be found at: <http://contractormag.com/mag/giants-what-bad-1234/>.

■ **Danze** has been named a sponsor of The House Designers' first-ever Energy Star approved house plans. This collection of house plans promotes the building of eco-friendly, energy-efficient homes. The plans include the necessary tools to build a green home, including information on green building products and practices. Danze will serve as the official faucet and plumbing fixture partner of the initiative.

■ **Shure Mfg.** has announced the launch of its new website, www.shureusa.com. The site features new products and updates, as well as all of the company's catalogs and cut sheets available for quick download. Also coming soon to shureusa.com is the Shure Store that will feature over-stock items, returned items and products that were featured in trade shows.

■ **Lenox Tools** has announced the opening of its new Lenox Institute of Technology located within the company headquarters, East Longmeadow, Mass. The grand opening ribbon cutting took place last month. The 1,500-sq. ft. LIT training center is designed to provide hands-on training and includes a large training room, conference room, café and e-lounge. Lenox-run training programs will be available for domestic and global distributors, sales and technical teams.

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and Spencer have four boys). She even asked several local well drillers who they thought was best qualified to do geothermal installations. More than any other company, Vertex was recommended.

"We specialize in mechanical systems for historical homes and buildings," explained Youndt. "We practice what we preach [the firm's shop is an old, brick, five-story tobacco warehouse, renovated and outfitted with a ClimateMaster geothermal system]. Geothermal systems are so flexible. You can do almost anything with the variety of systems manufacturers offer today: forced air, hydronics, radiant heat, dehumidification, integration with solar and so much more."

One 'proud' system

The Proud's home has two ClimateMaster Tranquility geothermal water-to-air systems. A three-ton TTVO38 packaged system located in the basement takes care of the first floor while a three-ton TTS038 split system han-

dles the upstairs. The gables are vented with a fan to evacuate warm air in the summer.

"We especially like using split systems," said Youndt. "These enable us to place a condensing unit in the basement where it should be, and from there run refrigerant lines to an attic air handler which, as it turned out, worked perfectly at the Proud's home."

Both systems share a six-ton (total of 600 lineal feet) bore hole. What sets this apart from most geothermal applications is the way the systems are used.

According to Youndt, the Proud's geo systems are not typically run simultaneously at full capacity. In the winter, the downstairs packaged system runs primarily in first stage cycling into second stage as temps go down. Using the entire six-ton capacity of the bore hole for the three-ton unit raises its maximum performance.

In the summer, the roles are reversed. The upstairs split-system runs full time in first stage, cycling into second stage as needed, utilizing the

first floor mostly in first stage. In both cases, the opposing system is not running very hard, thus increasing entire system efficiency.

To run ducts, all floorboards were removed and the flexible duct was run against the floor joists. Blown insulation was used to fill the joist bays, and the flooring was laid back down.

"We use high quality flex duct," said Youndt. "We can't afford to use a duct that's going to give out in 10 years."

The walls remain stone on both sides, which was a key consideration when calculating the unusually high heat load of the old home. Compared to a modern stick built house, Proud's home is shedding as much thermal energy as a building twice its size.


Going green

In the few years prior to the retrofit, the Prouds were paying between \$8,000 and \$10,000 a year for all electric and fuel oil. The number dropped to \$4,400 for the first year after the system was installed.

"It's sure nice to have central air conditioning as well as being environmentally friendly and saving money," said Susan. "We also have family overseas, and when they come to visit, they stay for a long time. We didn't like the idea of running out of hot water."

Domestic hot water is provided by a desuperheater and two 50-gal. Bradford White water heaters.

"The first water heater in line acts as the buffer tank for the geo, with no electrical power to it," explained Youndt. "The second tank maintains the top end of the water heating temp, and is also there for shoulder season back-up heat when geo systems aren't running steadily."

"It's been my dream to have a self-sustaining, off-the-grid house, some day complete with a power-generating wind turbine and photovoltaic panels, too," said Susan. "The geothermal system is the first step in our plan for making renewable energy a bigger reality here. I guess that means we're going green, all the way." 

Manufacturing companies enter joint venture, alliance


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Industries. The name of the company will remain Jay R. Smith Mfg. Co., a Division of Smith Industries Inc.

Jay R. Smith (Smith Industries) and Earl L. Morris (Elmco Sales Inc. and Acorn Engineering) were both modern-day pioneers in the industry and founders of their individual companies. They each developed strong companies and were partners and friends from 1954 (when Elmco became a Jay R. Smith Mfg. Co. representative) until they passed away. The instant relationship and personal bond transcends three generations and continues with the Smith and Morris families.

Jay L. Smith, Don Morris and Don's brother, Dennis Morris, second generation sons of Jay R. Smith and Earl Morris, have

continued their business and personal relationships for more than 50 years. The next generation of the two families (Jay L. Smith's daughters, Holly L. Roth and Debbie Smith, and Don Morris' children, Kristin Kahle, Randall Morris and Barrett Morris) pledges to continue what their grandfathers started. The Smith and Morris families will be represented on the new Board of Directors.

For the realigned Smith Industries, Don Morris will assume the role of chief executive officer of Smith Industries, Jay R. Smith Mfg. Co. Division and the Canadian subsidiary. Jay L. Smith will continue as president and chairman of the Board of Directors. The management teams of both Acorn Engineering and Jay R. Smith Mfg. Co. will remain the same. 

ICC, rainwater group sign MOU

WASHINGTON — The International Code Council has signed a Memorandum of Understanding with the American Rainwater Catchment Systems Association, building on its emphasis on green construction in the Public Version 1.0 of the International Green Construction Code. The MOU calls for both organizations to use their knowledge and expertise to advance and pro-

mote the safe and effective design and implementation of rainwater catchment systems.

Both organizations will work to advance rainwater catchment systems in an effort to use alternative water sources to preserve freshwater supplies.

Additional information is available at: www.arcsa.org. 

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