

A TMB Publication

Phc News

plumbing & hydronic contractor news



***The beauty
is in the
hydronic
system***

Story on page 38

**K/BIS
ALL-ACCESS
ATLANTA**

K/BIS '09: What's hot? . . .Pgs. 28, 48

**MULLING
FRANCHISE
OPTIONS?**

Going the franchise route . . .Pgs. 42, 44

*Hydronic paradise found***Foley Mechanical dreams big at Virginia estate**

If you could monitor the dreams of a plumbing and mechanical pro, one of the sleepy pathways would inevitably lead to a lusciously green garden of hydronic perfection, a place where copper merges artfully with radiant tubing and state-of-the-art components and systems. Ahh — warmth, idyl-

lic flow, mechanical perfection and an adoring, appreciative customer.

Such a place actually exists here on Earth, but its location is a well kept secret.

Yet Dan Foley knows it well. In fact, he and his crews helped to create it.

in the craft of modern hydronics and HVAC would want a crack at this job. In this idyllic, hydronic setting are 300 acres of rolling meadowland bordering the gorgeous Potomac River. The entire property rolls luxuriously into the water, yet there are gentle bluffs just perfect for a view of the river, and that's



GREEN TEAM
the
Radiant Panel Association
presents

RPA GREEN TEAM SEMINAR SERIES

9 DVD's

GREEN HEAT TO THE RESCUE
Siegenthaler and Bean

SIMPLY GREEN
John Siegenthaler

GROUND UP GEOTHERMAL
Jeff Persons

MOD/CON SHADES OF GREEN
David Yates

AVOIDING THE BAD GUYS
Mark Eatherton

ELECTRIC GREEN
George Royce

MAKING IT RIGHT
Bob "Hot Rod" Rohr

KEEPING IT SIMPLE
Robert Bean

SUNSHINE AND RADIANT
Peter Biondo

\$30 ea. plus shipping
\$250/set
(all 9 DVD's)

ask about the RPA Member Discount

online at
www.RadiantPanelAssociation.org
800•660•7187



Gary "Skipper" Joyce (l), owner of manufacturers rep, the Joyce Agency, reviews mechanical room plans with Dan Foley.

"There are a few jobs that I enjoy returning to frequently," said Foley, president of Alexandria, Va.-based Foley Mechanical, Inc., a 16-person mechanical contracting firm that specializes in large, higher-end hydronic and HVAC systems. "This job would be at the top of that list."

It would be a pretty good bet that anyone involved

where a few new homes now exist.

According to Foley, a brilliant entrepreneur sold his company and bought the property in Loudon County, Va. There was still plenty of money to go around, so he invited members of his extended family to join him there. And then he told them to design the home of their dreams; he'd provide the necessary funding.

Their desires quickly became a reality for Foley because he was chosen to fulfill those dreams. Today, some of the homes in the Virginia estate are still under construction, and Foley's installation teams are busily crafting hydronic masterpieces.

The young entrepreneur and his family now live in a 30,000-sq.-ft. Tudor-style home that looks out over a lazy bend in the river. Its lower level includes a full-sized racquetball court, generously equipped exercise room, steam sauna, swimming pool, hot tubs, a billiard room, library, several guest bedrooms and bathrooms and two bowling lanes. Tucked in next to the racquetball court is a 600-sq.-ft. mechanical room where Foley's crews installed systems and components that power the home's substantial radiant heat, hydro-air and HVAC systems.

Foley chose two 285 MBH gas boilers and two Argo cast iron electric boilers (20 kW/each) as the heat sources. There are fifteen air handlers to provide cooling and 100 percent redundant second stage heat. They also incorporated HEPA filtration systems, Honeywell UV lamps and Nortec steam humidifiers to provide top shelf comfort and indoor air quality. A 120-gallon dual-coil stainless steel indirect provides

(Turn to Beautiful Home... Page 40.)

Kitchen and bath — cocoons of comfort

Every square foot of living space within the Virginia estate is radiantly heated. And Foley Mechanical also applied hydro-air as back-up heat and for quick recovery. The large, 450-square-foot master bath is unusual, and ideally suited to radiant heat because — as a bump-out above a screened-in porch — it's surrounded on most sides, and below, by ambient temperatures.

"The floor would be ice cold if not for the ample radiant heat and lots of insulation," said Dan Foley. The use of radiant heat was especially useful because the homeowners chose tile for the floor. To enhance operation of the radiant and to reduce the effect of low outdoor temps surrounding the bathroom, the builder used icynene spray foam as a sealer and insulation.

The home's kitchen, toward the rear of the large first floor with views of a cobbled courtyard and driveway, and the river beyond these, is a contemporary, 700-square-foot masterpiece. Well-insulated radiant heat warms the kitchen's stone floor.

Beautiful home calls for beautiful hydronic system

(Continued from page 38.)

plenty of heat for domestic hot water.

Foley explained that Tekmar staging, reset and mixing controls operate the system. Belimo floating action motorized mixing valves control the

through Uponor's super-insulated Ecoflex tubing. We used two, 300-foot, 2-inch supply and return runs to move a lot of Btus quickly and reliably," said Foley. He explained that the twin, fully-insulated, two-inch PEX runs are housed

product for its ability to move a lot of Btus effortlessly."

For summer comfort, Foley installed three 10-ton Multi-Aqua chillers behind a detached garage on the other side of a stone courtyard.



Papa Duric (l), FMI's lead mechanic on the project, and Dan Foley, discuss completion of one of several elaborate mechanical systems at the estate.

radiant water temperature and Caleffi zone valves control the flow provided by Grundfos UPS15-58FC and UPS26-99FC pumps. Isolation flanges provide for easy repair and maintenance without having to drain the entire system.

"The owners, their children and many pets love the radiant heat," said Foley with a grin. He was standing near the billiard table, overlooking the racquetball court, 20 feet below. "We have about 40,000 lineal feet of 1/2-inch Uponor PEX tubing on this job feeding 28 zones, and plenty of their zone control valves, all geared toward making this a comfortable, year-round experience for the homeowners.

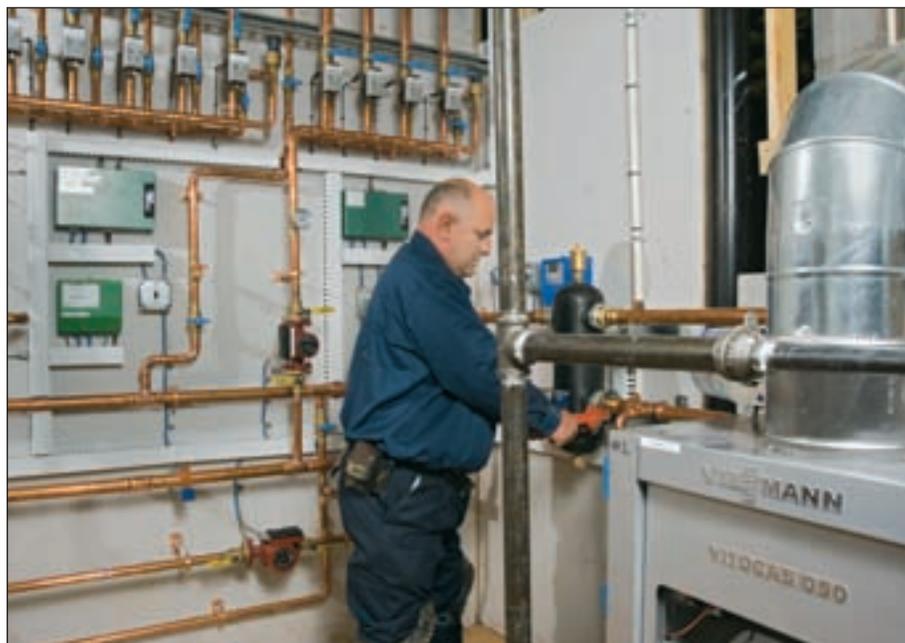
"There simply are no compromises," added Foley, "at least any that have occurred to us yet." Foley went on to say that there are six sophisticated ERVs (energy recovery ventilators) permitting comfortable fresh air ventilation year 'round. Two were installed in the basement mechanical room and four more were planted in a third floor mechanical space.

"The house is so long that we needed to deliver radiant energy to some loops

within a rugged, corrugated outer shell. The supply and return runs of that size dictate an outer dimension that's 7.9-inches wide. "That was one big mass of tubing to un-coil, but we managed it," he said. "The Ecoflex enables us to move a freight train of heat to remote radiant loops with ease. We love the

There, too, the Ecoflex was employed to carry chilled fluids to and from the house.

A sister and her family are building an 8,000 s.f. ranch-style home along the river, complete with six bedrooms and great room with a wall of glass looking out upon the Potomac, all



Mechanic Papa Duric completes a connection for the system's Caleffi hydro-separator.

heated by two cast iron, atmospheric, LP gas-fired 140 MBH Viessmann Vitogas 50 boilers with outdoor reset control and staging based on load and ambient conditions.

The Viessmann systems feed an extensive, nine-zone radiant system designed to be the primary source of heat, though Foley included four additional hydro-air zones as the system's second-stage for quick recovery from set-back temperatures.

A brother is building a 7,000-sq.-ft., five-bedroom home with two master suites a few hundred yards away. The house is also radiantly heated, though with solar-thermal assist, warmth Foley will store in multiple Viessmann Vitocell SS storage tanks. The solar thermal arrays will also be the primary source of heat for domestic water. In warmer months, excess solar production will be dumped into a hot tub and outdoor pool.

Not far from the brother's home is a 60,000-sq.-ft. horse barn, home to several horses. The barn is a new masterpiece in a traditional design. It has a grand walkway between spacious stalls on both sides, and includes an enclosed, 150-foot, circular riding arena with bleachers at one end. Foley Mechanical crews put radiant heat in the high, central hallway and common areas, tack room, vet room, and an office. They placed several flat, higher-temp, wall-mounted Euro panels in the mechanical/feed room, storage room, powder room and laundry room.

The red "Party Barn" is a completely remodeled late 1800s bank barn. It, too, received an overhaul by Foley Mechanical including 8,000 lineal feet of 3/8-inch Uponor PEX attached below the 1-inch recycled oak floor boards using the manufacturer's Joist-Trak extruded aluminum plates. The PEX runs feed into Uponor Tru-Flow manifolds and a Pro-Mix 101 mixing control station.

Foley also used Grundfos pumps to provide system flow. "A recessed convective runs the length of the west glass wall to provide a convective flow of heat up the glass curtain wall and prevent cold air from cascading down on the occupants," said Foley. He added that the architect was convinced that radiant would not heat this space and specified the installation of two gas furnaces to supplement the radiant. "They've yet to run in two years," he added.

"This was a very discerning client who was willing to pay for the best but also demanded the best," concluded Foley. "Papa Duric, FMI's lead mechanic on the project, oversaw every last detail to ensure the client received what he paid for — the ultimate in comfort and efficiency." ■