

## Supplier 2014 Profile



### Efficiency is Immune to the Law of Gravity

Despite the harsh winter in the Northeast, one Massachusetts family was the coziest they've ever been following a much-needed mechanical overhaul. And, what's best, said the homeowner: they watched in satisfaction as their energy bills fell to levels they've never seen. Their home — a 4,500 square-foot, 1850s farmhouse on Boston's South Shore — came with its own piece of history.

"It's known locally as the 'Anchor Homestead.' For the seven generations, the original homeowners — the Beal family — used it as the clan's anchor," said Christian Frattasio, with manufacturer's rep firm, Emerson Swan.

The property is not only rich with New England heritage, but also hydronic history. Originally equipped with a big gravity hot water system, then later retrofitted into a forced hot water behemoth some 40 years ago, the old 220 MBH cast iron machine was ready for replacement.

Also, under-powered circulators struggled to move water through a network of old pipes. According to the homeowners, some rooms were suitable for slow-roasting a Thanksgiving turkey, while others were better suited for storing frozen birds.

When Rich Swatton, president of Westford, MA-based ModCon Service and Support, Inc, first laid eyes on the home, he called it like he saw it. "It was a flow problem. And a big one, at that," he said.

#### Divide and conquer

As Swatton saw it, the 29 radiators needed to be isolated, each with their own flow rates. With a mix of large, vertical radiators, convection radiators, and cast-iron baseboard, there was no one-size-fits-all flow rate. The heat emitters were broken into 6 zones, each guarded with a one-inch Taco Zone Sentry zone valve.

In the mechanical room, two variable-speed, ECM, Taco BumbleBee circulators were installed; each one provides flow for one level of the home. The Delta-T pumps supply the perfect amount of water, re-

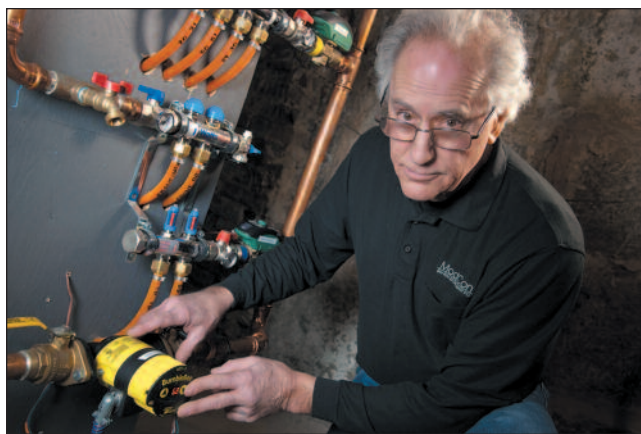
gardless of how many or which zones are calling.

"Using the BumbleBee in its Delta-T mode helped simplify the system by guaranteeing my actual design delta across the zones," explained Swatton. "It matches flow output with heat loss, providing the high level of comfort and energy efficiency; the pump will search for a 30°F Delta-T. We always specified Taco pumps, not only because the Delta-T design fits well, but because they're American made and Taco stands behind their product," said Swatton.

Swatton's crew replaced the big ol' boiler with a 160 MBH mod-con. The unit's 5:1 turndown and outdoor reset make sure firing rate and temperatures are ideal year-round. "This is a classic New England retrofit, using products manufactured in America," added Swatton. "We created a template for anyone who wants energy efficiency and the aesthetics of old cast iron radiators."

#### Proof is in the energy bill

"After buying the home, we were uncomfortable and had very high utility bills," said Seth, the homeowner. "Monthly gas bills of \$1,100 or so weren't un-



Rich Swatton, owner of ModCon Service and Support, Inc., checks the supply temperature to one of the six stainless steel, variable manifolds.

common. Needless to say, we added blankets at night, hoping to trim costs."

"Now, after the retrofit, our average winter gas bill is in the \$500's," continued Seth. "Our savings are in the 50 percent range, and the comfort is amazing." 🌐



The hydronic retrofit at a historic Massachusetts homestead was designed and specified by Christian Frattasio, at manufacturer's rep firm, Emerson Swan and Rich Swatton, owner of ModCon Service and Support, Inc. With a new condensing boiler and state-of-the-art circulation, the homeowner has seen a 50% drop in energy use throughout the heating season.



Two Delta-T, ECM Taco BumbleBee circulators work symbiotically with variable-flow manifolds. The benefit of each component multiplies that of the other.



Swatton watches the supply temperature rise on one of the manifolds immediately after a zone valve opens.