Spotlight On...

Taco®

Every story has an origin. According to Manheim, PA homeowner Tim Slusser, the story of his "New" home's massive makeover started with a puddle in the mechanical room. The puddle led to an investigation of the wall, then the attic and ultimately the roof.

Within several months, the water was fixed by replacing the entire roof. New carpets, doors, windows, paint, and even the home's siding were all replaced as well.

Throughout the remodeling process, the Slussers wanted to boost the home's energy efficiency. The attic had only four inches of fiberglass insulation. An additional 30 inches of blown-in fiberglass made an immediate improvement.

"At every turn," added Slusser, "we heard cha-ching, cha-ching."

The last remaining project — a job Slusser knew he'd hire a professional to handle — was to replace the home's mechanical system. Although in decent shape, the 180 MBH oil boiler with internal DHW coil was designed for a larger, less efficient home. After a heat load analysis, it was clear that the boiler was originally 30 percent larger than it needed to be. But it was grossly oversized after the retrofit.

"We just couldn't do the work we'd done on the house to see the last remaining task un-done. Clearly, the boiler was a lot bigger than it needed to be," recalled Slusser.

Honey, I shrunk the boiler!

The new boiler — sized by using Taco's FloPro Designer software, was a 64,000 Btuh system coupled to a 75-gallon indirect water heater.

One of the first, new-generation ECM circulators from Taco — the yellow and black, variable speed Bumble Bee — was ordered. The ECM circulator now provides ideal flow to the upstairs and downstairs zones of the house. At each loop, the system uses a one-watt Taco Zone Sentry zone valve.

Also, a Taco hydraulic separator, mounted directly above the boiler, was chosen to help the home's two heat zones and the indirect "play well together." A 007 circulator is used as the main boiler pump, providing steady circulation within the short loop. A Taco 4900 air and dirt separator keeps the fluid pure.

"The Bumble Bee is a Delta-T circulator," explained the installer. "So it ramps up to full speed momentarily until it finds the difference in supply and return temperature, then backs down to the perfect flow rate for one or both of the zones." A digital readout on the face of the circulator flicks between readouts for GPM and electric consumption.

"On this job, it usually coasts along at six-and-a-half GPM, consuming only 9 watts," he said, "That's one tenth of the energy that a comparable standard pump would use. Couple that with the two, one-watt Zone Sentry valves and we're using just 11 watts instead of 174 watts for two circulators! In fact, the ECV (Energy Conservation Value) is $58.73 in the first year, but when we look at a 20-year ECV with an annual increase in cost for electricity, it shows a savings of $1,947.87."

"I fully expect their home to use half, or less, of the heating-oil previously consumed while maintaining optimal comfort," added the installer. "And: reduced power-consumption."

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Clean sweep, but keep the oil

The Best Mechanical Systems for the Job

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The home is expected to use half, or less, of the heating oil previously consumed while maintaining optimal comfort and reduced power consumption.