



◀ The new Navien NHB-150 boiler with a Heat-Flo 80-gallon indirect water heater and a Caleffi North America SEP4 magnetic hydraulic separator installed at the residence.

▶ One of Boston Standard's work vans sits in the parking spot at the job site where they were replacing two failing heating systems and two failing tankless systems.

“The heaters were giving them trouble because they had never been maintained; and then they had two other mid-efficient heating systems that also weren't doing so hot.”

*Joseph Wood*



## GETTING TO WORK

The home is technically a two-family home, but it has been occupied by the same family since the 1960s. The mother and daughter lived in the upper level unit, and a son lived on the lower level.

The equipment in the house was in the 10- to 15-year-old range and was due for replacement. Boston Standard plumbing technician Jose Murillo and helper Ben Strolsky responded to the service call and began talking to the homeowners about some of the options that were available. The two then put together a proposal.

“Jose called me and asked what I thought about this and that,” Wood says. “I look at — in the hierarchy of hot water — life span beats efficiency, and we chose indirect tanks as a replacement option for that reason. It's been the same family using it forever, so why bother with two heating systems and two hot water systems? Why not merge it all into one? So, that's what we decided to do.”

The first order of business was to ensure the homeowners had hot water while the replacement boiler was being installed. An electrician with Boston Standard came in to temporarily wire a hot water system into place. The rest of the first day involved removing old equipment and bringing in new equipment.

Crews first had to fabricate a wall to make the new system presentable. Murillo and Strolsky spent five days installing a new Navien NHB-150 boiler with a Heat-Flo 80-gallon indirect water heater for the five-zone baseboard system. The advantage to this system, according to Wood, is that the boiler has a 15-stage burner that will allow it to modulate down as low as 10,000 Btu per hour but still performs when the hot water demand is high.

“A lot of boiler manufacturers out there have modulating burners, but they're only five-stage,” Wood says. “But this particular boiler is a 15-stage burner and allows it to better load match. We've become bigger and bigger fans of the Navien line because we get to send our guys down to the factory in New Jersey for training and they do a really good job of keeping parts available.”

## PAIRING SYSTEMS

The Navien boiler and Heat-Flo 80-gallon water heater were paired with a Caleffi North America SEP4 magnetic hydraulic separator to ensure crews could manage the system flow and any trapped air in the piping, as well as to keep the piping and heating system clean.

“All these boilers that don’t have any actual water content to them or are very low water-content boilers, you have to do hydraulic separation, which is basically done with the way you arrange your piping,” Wood says. “We’ve always done that and we’ve always done air elimination, but the magnetic thing was kind of an afterthought.”

That changed when crews ran into a problem a few years ago with a big boiler they had installed. The unit kept clogging with dirt, which Wood had never seen before. “We didn’t believe it was happening until we cut a pipe open, and at that point, we repiped this system with one of these Caleffi North America SEP4 units, and it’s been trouble-free since that point.”

For flow control, the company used a Taco Comfort Solutions Viridian Delta-P pump, which will automatically respond to changing system pressures as the zone valves open and close. “This system will not only be efficient on the gas usage, but also on the electrical side of things,” Wood says.

Crews were able to unclutter the mechanical room because of the new equipment. Instead of several vents

going out of the house for the old equipment, crews brought it down to just one vent penetration and one gas line.

### LEARNING FROM THE CHALLENGES

One of the biggest challenges the crew faced on this job was the tight space to work in. No more than two technicians could work the job because of the limited space.

“The footprint of the space we had to work in always dictates things, and that Navien boiler is a really compact product,” Wood says. “It’s a tight workspace, and I think that played into the selection. It always does play a factor.”

Wood was pleased with the work Murillo did, saying he learned on the job as well. “I had drawn up the schematic for the job, but I think Jose learned a better way to orient things and a better way to use some of the products on the market,” he says. “I don’t think there is a lot that could have been done better on that job. He learned how to take everything available on the market today.”

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