BY MARK EVANS

FOSTERING INNOVATION

In the past, tankless water heaters were often called instantaneous water heaters. You could define a tankless unit as one that has no storage capacity intended to meet drawdown demand. Further, it would be a unit that does not maintain any temperature set point in whatever residual water that remains in the unit during non-load periods.

Tankless water heaters were once strictly niche products intended for use in buildings that would have intermittent occupancy and require a limited supply of hot water, or in places where space was at a real premium. Today tankless heaters have come into their own and are used in all types of construction. Tankless units are used in systems employing natural gas, propane, or electricity as a fuel source.

OFFER FLEXIBILITY

Installation of tankless units can be categorized as point-of-use or central supply. Service station washrooms, warehouse washrooms and school portables are typical point-of-use applications.

"In some cases, the flexibility these units offer allows new building occupants to get used to their warehouse or production area before finalizing the layout of the space. This is possible because more often than not, less infrastructure and planning are required when using these tankless units," said Peter Austen of MPH Supplies in Coquitlam, BC.

Single family homes, townhouses and small commercial, industrial applications, are typical central supply applications. Central supply can be further defined in terms of service. Is it strictly for domestic hot water production, or is it a dual rated appliance that is installed in a combo application? Subject to regulation, combo applications are permitted in many jurisdictions. This is also addressed in CSA B214 Installation Code for Hydronic Heating Systems.

CHALLENGING APPLICATION

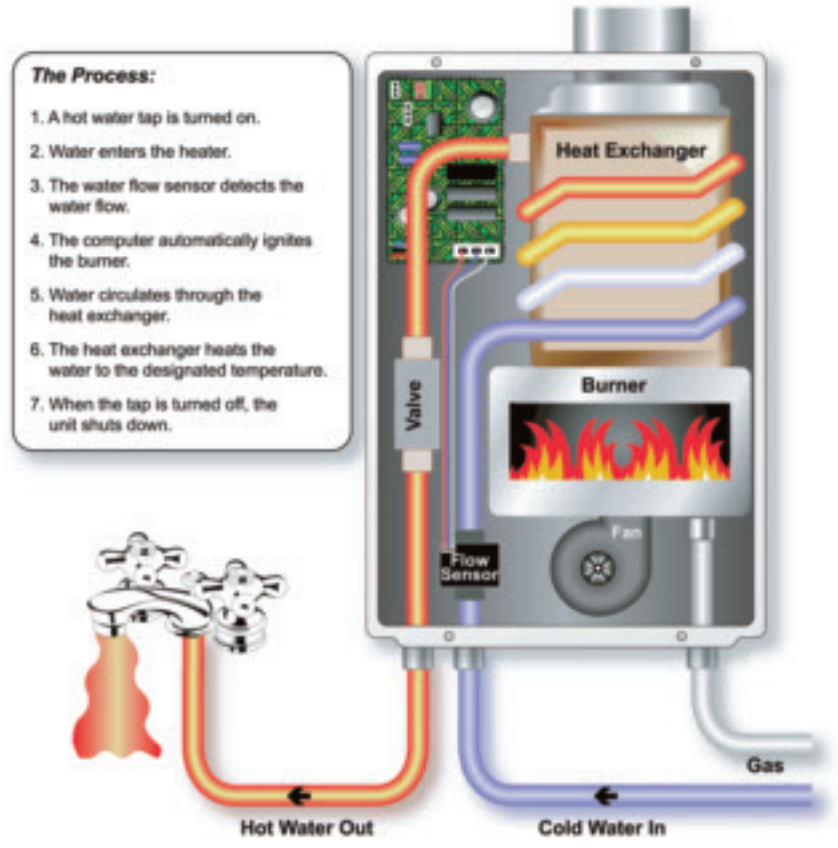
Many of the newer tankless units are dual rated and are being used as such. A case in point is the 2003 Pacific National Exhibition (PNE) Prize Home project. Britco Structures built the home in sections at its factory in Aggasiz, BC. Following initial construction, it was reassembled on the site of the PNE in Vancouver, BC, where it was open to the public for the duration of the event.

It was relocated a second time and final assembly took place on Bowen Island, just outside Vancouver. Bowen Island does not have natural gas service, and the decision from the owners was that propane was not the fuel source of choice. This meant it had to be electric.

The home was designed with a full radiant floor heating system, which also needed a heat source. Barely enough electrical capacity was available to supply both the domestic hot water and the space heating requirements, and space was at a premium in the modular home. All of the major mechanical equipment was to be located in a closet space near the main electrical panel.

Scott Miller from Integrity Mechanical of Bowen Island was working with Britco as part of the construction team. He suggested an 11-kW fully modulating electric tankless heater, from

HOW DOES A TANKLESS WATER HEATER WORK?



Schematic Tokagi

which he would run a recirculation line to a stubby 20-gallon electric storage tank remotely located in the home. The radiant system enabled priority on the domestic hot water side, and monitored the supply temperature leaving the 20-gallon tank to ensure that the recirculation line from the tankless unit ramped up temperature and flow as needed.

Verlyn Busch from Wolseley Mechanical in Victoria, BC, faced a different challenge. His customer, West Bay Mechanical won a contract to install the plumbing and heating systems in a float home project under construction in the inner harbour. Part of the market appeal and design intent of the project was energy efficiency. The home features radiant floor heating (RFH) throughout and has a very open plan. Barry Duch, Westbay's site superintendent, and the owner both liked the idea of combining RFH and domestic hot water into one efficient gas unit.

Photo Scott Miller, Integrity Mechanical

Closet space housing the mechanical system was 10" deep by 30" wide in PNE home.

STORAGE UNITS HERE TO STAY

The storage type water heater is worthy of its place in the market and is here to stay. Alone or in combination service, there are times when you need more than the approximately eight gallons per minute of recovery available from the largest (single) tankless unit. That combined with more than 70 years of cost-effective, reliable service has made storage type units an industry standard.

Recent market entrants with tankless offerings come from Europe, Asia and the USA. As we move forward, these new players will bring forth even more products and drive stiffer competition. This will foster innovation in both tankless and storage type water heater design. HPAC

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