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OCTOBER 2022

AND THE WINNERS ARE ...

TOP PROJECTS FROM
THE 2022 SWEET
HEAT CONTEST.

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DUAL FUEL SOLUTIONS**



SWEET HEAT 2022

The second annual *HPAC Magazine Sweet Heat Awards* celebrate excellence in residential and commercial hydronics installations. **BY LOGAN CASWELL & DOUG PICKLYK**



This award-winning residential hydronic system install by Family Tradition Propane Services in Nova Scotia was “simple, serviceable and repeatable,” according to the contest judge.



The “before” photo of the residential project located in the middle of the basement in a century home in Nova Scotia.

In the early Spring of 2022 *HPAC Magazine* placed the first call for hydronics industry contractors across Canada to enter the second annual Sweet Heat Installation contest, a competition for contractors to share photos, explain the challenges they encountered and the creative solutions they used on projects completed in the previous year.

In total the competition received 30 entries this year, and like the first edition of Sweet Heat held in 2021, the entries were divided into two categories: commercial and residential.

Unlike last year, this year the competition was generously sponsored by EMCO, with the winning entry in each category receiving \$3,000 vouchers at their local EMCO branch.

The final evaluations were performed by hydronics expert John Siegenthaler, who also revealed the winning entries live during the final session of the 2022 Modern Hydronics Summit, held at the Universal EventSpace in Vaughan, Ont. on September 15.

FAMILY TRADITION

First place in the residential category this year wasn't handed to a multi-boiler installation in a large new custom home, instead the winning project was a boiler replacement on a dirt floor in the basement of a century home under renovations in Digby, Nova Scotia.

Congratulations to Family Tradition Propane Services of Oakhill, Nova Scotia, a small family-owned company formed in 2019 and specializing in high-quality systems for residential and commercial applications.

As company president Shawn Nolan explains, “We had three main challenges in this installation: space, remote clients and water quality. The original system in the basement was located in the centre of the room, and we were working with a stone foundation, low ceilings and dirt floors.”

The Family Tradition team removed an old oil-burning system from the middle of the basement and framed a wall moving the new system away from the centre. They installed a propane-burning Navien fire tube boiler along with a Viessmann indirect hot water tank for DHW. The majority of the system was pre-fabricated on black stained plywood in the company's shop and transported to the site.

The property owners were in Ontario, so the Family Tradition crew was working with the clients remotely. Nolan notes that they added the NaviLink feature to the system for remote management of the boiler.

Nolan also explains how the new set-up uses a system feeder to ensure no contaminated water gets into the closed-loop system. “We also plumbed this system so the clients have the ability to add additional zones if required to facilitate any fu-

PHOTOS COURTESY FAMILY TRADITION PROPANE SERVICES

ture changes and renovations.”

Contest judge, Seigenthaler, gave the Family Tradition Propane Services project his vote for the top spot because of its simple yet repeatable design.

“I’m not as dazzled by super expensive mechanical rooms, even though I greatly respect good craftsmanship and the good use of available space,” says Seigenthaler. “I prefer to see simple, serviceable and repeatable concepts. These are necessary for the hydronics market to expand beyond just affluent clients.”

Seigenthaler also mentioned how Family Tradition was the only entry that showed well-done documentation of the system, a simple nine-page custom boiler manual that allows both the owner and future service technicians to understand the set up and expedite servicing.

SOUTH ISLAND MECHANICAL

The winner of the commercial category was South Island Mechanical, located in Langford, B.C., part of Greater Victoria within the Capital Region District on Vancouver Island.

Company owner Adam Violini founded South Island in January 2018 and the company has grown to 18 people. “We have an amazing team, right from the office to the technicians,” says Violini. The company specializes in mostly service focusing on commer-



A cascading system of eight boilers provides back-up heating for a geothermal district energy plant in Langford, B.C., installed by South Island Mechanical.

cial along with residential and marine. All the techs hold refrigeration and gas tickets, and they have a residential install team with a niche in geothermal.

Their award-winning project was the replacement of a back-up boiler system for a local geothermal district energy plant. The client, Sustainable Services Ltd. (SSL), operates the district energy system that runs a loop and supplies heating/cooling for over 400 homes of the Westhills master-planned community in Langford.

Home owners rent geothermal heat pump units in their homes and pay for the energy consumed from the district heating loop. South Island has a contract to maintain and service the units installed in the community homes.

The Sweet Heat project entry included the removal of a single 5 MM



The original single boiler back-up system in the district energy plant was removed for a more efficient and resilient solution.

Btu/h boiler and installing a new system in the central plant. “It didn’t make sense to refurbish when a new technology solution would be more effective,” says Violini.

“We contacted Jeremy [Young] from Pro West and worked with him to select the right boilers, and he worked with the engineer on system design.”

The solution included a cascade system of eight Navien fire-tube mod/con boilers installed in two back-to-back banks of four.

“Everything is totally uniform, and the way we have it set up we have the pumps on the bottom and the low-water cutoffs were set up at the top, and we have common venting for each group of four,” says Violini.

Each boiler has a 10:1 turndown ratio leading to an 80:1 boiler plant turndown ratio. And the system uses a BACnet interface to connect to the plant’s Delta management system.

The installation was led by South Island Mechanical, and Violini gives a shout out to Anchor Mechanical who also assisted with the project.

For added resilience, each set of four boilers has its own gas valve, and each boiler has its own gas valve. “So if there is a problem we still have four boilers on line, or if one goes down we

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2022 Sweet Heat Entries

Thank you to all of the contractors who entered the second annual Sweet Heat contest:

Archie Johnstone Plumbing & Heating, Nanaimo, B.C.; All Pro Plumbing & Heating, Niagara Falls, Ont.; ATEL Air, Williamsburg, Ont.; Caledon Creek Mechanical, Orangeville, Ont.; Canuck Mechanical, Prince George, B.C.; Chenier Mechanical, Finch, Ont.; Consumers Energy Management, Maple, Ont.; DenRite Mechanical, Sturgeon County, Alta.; Donaldson Plumbing & Heating, Inverary, Ont.; Express Plumbing & Heating, Red Deer, Alta.; Family Tradition Propane Services, Oakhill, Nova Scotia; Farr Mechanical, Markham, Ont.; G2J Custom Mechanical, Stoney Creek, Ont.; Impetus Plumbing & Heating, Richmond, B.C.; John Sadler Plumbing & Heating, Surrey, B.C.; Johnson’s Total HVAC, Caledonia, Ont.; Klimatrol, Brampton, Ont.; MAK Mechanical, Barrie, Ont.; MiLo Group, Red Deer, Alta.; New Era Plumbing & Heating, Squamish, B.C.; POC Plumbing & Heating, Coldwater, Ont.; Riverdale Plumbing, Toronto, Ont.; R.T. Heating & Air Conditioning, Red Deer, Alta.; Shuswap Water Services, Salmon Arm, B.C.; Smart Elements Heating & Cooling, Huntsville, Ont.; South Island Mechanical, Langford, B.C.; Timber Plumbing & Heating, Aldergrove, B.C.; Triple Tech Heating, Air Conditioning & Refrigeration, Midland, Ont.; TT Plumbing & Heating, Caledon, Ont.; and Whistler Mechanical, Whistler, B.C.

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< SWEET HEAT

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still have seven other boilers to work with,” adds Violini.

The boilers are strictly a back-up and are available so the district heating plant never loses the set temperature of main distribution loop. “Last year they ran the boilers to see how the system would perform, and they were just blown away,” says Violini, adding, “and you can’t even hear them running, it’s so quiet.”

The project ran about 120 man-hours, including ripping the old boiler out, installing the new system and commissioning. The operators have noted a savings in energy consumption with the increased turndown ratio of the boiler plant leading to less short cycling while it accurately load matches the loop.

RUNNERS UP

This year’s runners-up were Impetus Plumbing and Heating from Richmond, B.C. (residential) and Triple Tech Heating, Air Conditioning and Refrigeration of Midland, Ont. (commercial).

The Impetus project required relocating a system 40 feet away from its original spot and re-working the set-up.

“Given the mess they had to start with I think they made a good decision to do a major overhaul rather than put “band-aids” on the existing system,” said Seigenthaler.

The commercial runner up was in a multi-storey office building, moving from a single two-stage 85% efficient boiler to four high-efficiency condensing boilers, each with a 10:1 turndown, improving efficiency and reducing short cycling.

Overall, Seigenthaler was impressed with the quality of all the entries, but said there was a theme when it came to picking the winner: avoiding the unnecessary extras, while maintaining a well-built hydronic solution.

“The residential winner added value to the system while ultimately providing better comfort to the occupants,” said Seigenthaler. “They didn’t spend a lot of money on purely aesthetic embellishments, but rather provided a solid and serviceable design.

“Many systems showed excellent craftsmanship, but also added considerable cost. While this looks impressive to the owner of a high-end house who has the budget, it can also look discouraging to the “average Joe” whose is more interested in a reliable and reasonably affordable hydronic solution.” He also noted that several systems had many feet of uninsulated piping in the mechanical room—all losing heat to a space that really doesn’t need it.

“Again, the workmanship looks great, but is all the “flash” adding value to the system and ultimately providing better comfort to the occupants? Is it reducing energy use, increasing efficiency, etc.?”

“I prefer to see simple, serviceable, and repeatable concepts. These are necessary for the hydronics market to expand beyond just affluent clients.” <>