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New High Efficiency Condensing Boilers Revitalize First Residential Conversion in Calgary

A construction project in Calgary, Canada, called Cube, features several firsts. It's the city's first office-to-residential space conversion and real estate developer Strategic Group's first re-purposing project. It's also the first building in Canada to feature the latest advancement in condensing boiler heating technology from Weil-McLain.

The Cube – a 52,000 square-foot, seven-story building in Calgary's Beltline neighborhood – features 65 one and two bedroom residential rental units and is just a short walk from the city's downtown area. Once the aging Stephenson office building, the 38-year-old building was converted to new residential and rental units in 2019.

The building's developer, Ash Mahmoud, Managing Director of Calgary-based Strategic Builders Inc (SBI), the construction arm of Strategic Group, which owns, manages and develops office, retail and apartment properties across Canada, oversaw the conversion project.

"Cities like Calgary have seen office building vacancy rates as high as 27% in the past few years," said Mahmoud. "Rather than let downtown buildings go unused, it has been one of our core missions to convert them into residential."

In addition to incorporating contemporary designs and styling finishes, Mahmoud also sought the latest in boiler technology to heat the new development.

Next Gen Heat

To conduct the HVAC overhaul, Mahmoud turned to Nu-Mun Contracting, a Calgary-based HVAC company offering commercial and residential plumbing, heating, and air-conditioning services.

Working with SBI and the project engineer, David Muncaster, owner of Nu-Mun Contracting, devised a strategy to convert the building to a high efficiency boiler system and recommended specification of the latest advancement in condensing boiler technology: the [Stainless Vertical Firetube \(SVF\)](#) from Weil-McLain.

Eric Cameron, project manager with Nu-Mun Contracting, oversaw the boiler installation at the building.

"We have a long standing relationship with Weil-McLain, and we trust the quality of their boilers," said Cameron. "The SVF boilers were the perfect match for the space."

To meet the building's heating style and load, the team installed two SVF 1100 MBH high-efficiency condensing gas boilers in the building. The SVF boilers features industry-leading thermal efficiencies up to 97.1%, a clover-shaped stainless steel fire tube heat exchanger for corrosion resistance, and the intuitive and user-friendly Unity™ control system to simplify installation and operation.

“With superior thermal efficiencies, the SVF line offers cost savings and energy efficiencies that could allow owners to qualify for local utility rebates, if available,” said Craig Demaray, National Sales Manager with Weil-McLain Canada. “The SVF also meets all market-driven bid specifications, and is designed for most heating needs including applications in schools and other educational facilities, public institutions, healthcare buildings, offices, hotels, multi-family, churches and more.”

The high-water content design of SVF heat exchanger means a low loss header is not required providing cost savings so the boilers can simply be piped in a primary-secondary design.

The on-board Unity™ control system allowed the boilers to communicate with each other in a Multiple Boiler System (MBS). In this configuration, a master boiler controls the modulation and sequencing of the boilers on the network to achieve the desired system supply temperature.

“With the automatic sequencing feature, the boilers communicate directly with one another so they sequence themselves and rotate as needed,” said Cameron. “They operate to optimize energy use and efficiencies. When heat is required, the boilers will stage on as needed.”

Cube Completion

The Cube conversion project was completed in 12 months and more than two-thirds of the building is already leased to residents. Mahmoud praised the experience with Nu-Mun Contracting.

“Working together with Nu-Mun was a seamless operation,” said Mahmoud. “It was a really great relationship and, as a result, the job was a complete success.”

“The start-up and installation progressed smoothly in part due to the way these boilers are designed,” said Cameron. “The [SVF](#) boilers offers time-saving installation features that include heavy-duty roller casters for improved maneuverability in confined spaces, industrial-grade leveling legs, and an end-shot burner design requiring only 18 inches overhead space.”

Mahmoud appreciates the ease of maintenance that the boilers offer for the building staff

“The boilers are really user friendly,” said Mahmoud. “We can even conduct the annual maintenance on the units ourselves to keep them in tip-top shape.”

In addition to offering class leading serviceability, the new boilers also offer low operating costs and are expected to bring energy savings and a reduction in gas usage to the facility.

But most important, Mahmoud reported that tenants are extremely pleased with the climate and comfort of the building.

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