

## Secure Stack<sup>®</sup> Pro

**Location:** Emily Carr University of Art & Design, Vancouver, BC, Canada

**Engineer:** Rocky Point Engineering

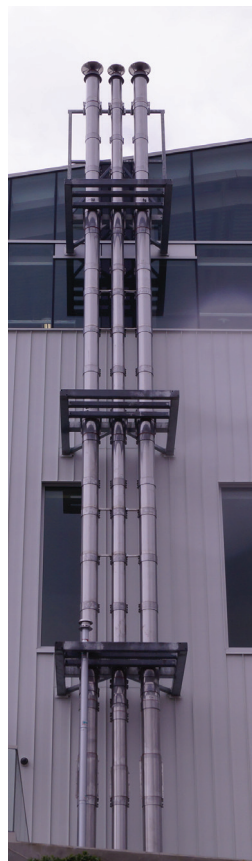
**Mechanical Contractor:** Pitt Meadows Plumbing & Mechanical Services

**Security Chimney Representative:** Bennett Lee from Raven Hydronics Supply

**Product:** Secure Stack Pro

It is a building that commands attention, even against the stunning backdrop of the North Shore Mountains of Vancouver in British Columbia, Canada.

The new Emily Carr University of Art + Design is a brand new and colorful addition to the Great Northern Way Campus in Vancouver. With an exterior palette of 15 colors, two different types of metal cladding, and plenty of glass to invite in outdoor lighting, the nearly 290,000 sq. ft. building is vibrant and modern in appearance. One would scarcely notice the five-story columns of stainless-steel exhaust stack that run up the north side of the building. If anything, the exhaust vent looks like an architectural embellishment. But make no mistake, each 61-foot column is there to serve a very important purpose.



Two 8-inch and one 10-inch vertical runs of Secure Stack Pro Series vent piping were selected to provide exhaust service for three new Blauw gas-fired kilns, prized additions to the University's ceramics department. The exterior applied, double wall Secure Stack Pro Series vent is made of 304 stainless steel, with refractory alkaline-earth silicate fiber (AES) insulation. An additional 67 feet of 304/Galvalume double wall insulated vent was selected for the horizontal runs of vent pipe inside the Ceramics Department's kiln room.

"The kiln manufacturer required that the exhaust vent material be rated for temperatures up to 700°C (1292°F)," explained Bennett Lee of Raven Hydronic Supply, the Security Chimney representative in British Columbia.

Frequently chosen for high temperature applications, Secure Stack Pro chimney exhaust vent is UL tested and listed in the United States and Canada for use in applications with temperatures up to 1400°F (760°C) under continuous firing.

Raven Supply worked closely with the multi-tiered construction team on the Emily Carr project, which was a Public-Private Partnership (P3) project. P3 projects are an increasingly utilized approach to procuring public infrastructure like educational institutions. Within a P3 framework, the private sector assumes a major share of the financial and construction risks of a project, while leveraging its expertise to assure the best possible outcome in terms of building performance.

## Dealing with the Unexpected

According to Lee, P3 projects can sometimes be logistically challenging. Timing and coordination of construction teams can sometimes get slightly out of sync, which means that suppliers and service providers must be nimble enough to respond to unexpected situations.

The exterior installation of the exhaust vent at Emily Carr is a good example. In anticipation of the installation, the structural engineering team specified and installed three steel supports at 15 foot intervals to hold the vertical vent in place. The required supports were built with space for three separate rows of vent and other vertical piping material. Unfortunately, the supports did not leave enough space for the largest diameter vent pipe. 12 ¼ inches of space was needed for the double-wall 10-inch duct to pass through the support, but only 11 ½ inches of space was available.

Some quick thinking on the part of Raven Hydronic Supply helped keep the project on schedule despite this unexpected glitch. "Raven Hydronic Supply came up with the solution to use small sections of single wall vent at each of these points so it would fit through the existing supports," explained Noel Robin, project manager for Northwest Sheet Metal, the sheet metal contractor for the Emily Carr project.



Robin instructed fabricators at Northwest Sheet Metal's shop in Surrey, British Columbia, to make stainless steel sleeves to fit around the single wall vent. Workers were able to install, as approved by Security Chimney engineers, the 2-piece half-circle sleeve sections and insulation around the single wall sections after all the exhaust vent was installed. In addition, Security Chimney custom fabricated several anchor plates to accommodate the existing structural steel supports.

## Better than Field Welding

Even though this was the first time Northwest Sheet Metal had worked with Security Chimney factory-made vent, installations went smoothly and rapidly. "It's way better than field welding exhaust pipe, especially when you are trying to get a welder set up at those elevations. It's a one-man job using Secure Stack Pro versus a two or even three-man field-welded job."



Robin was impressed with Secure Stack Pros unique self-centering design and coupling configuration that requires only one locking band and a standard, high-temperature silicon sealant for secure connection.

"The fabrication of each section is very precise, so when you are putting two pieces together, the flanges align perfectly and are held together with a V-band that keeps everything secure and in place. There's really no opportunity for error. Plus, the stainless-steel materials and the high temp sealant are topnotch," added Robin.

For more information and literature please visit: [www.securitychimneys.com](http://www.securitychimneys.com)