StrionAir
engineering cleaner air™

Protecting Patients at Vancouver General Hospital

"We have been pleased with the performance of the StrionAir System. Comparisons of outdoor and indoor air quality show a definite improvement, which we can attribute to the StrionAir system."

Con Buzunis
Executive Director
of Facility Planning
Vancouver General Hospital

Introduction

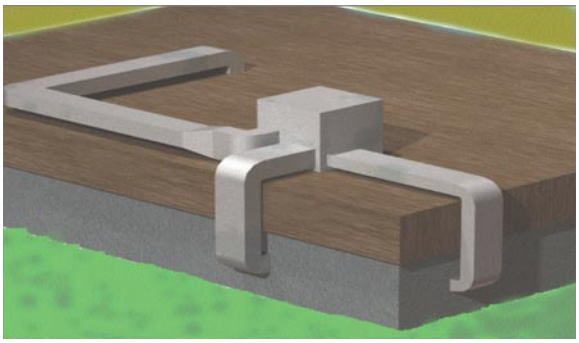
When it opened in 1886, Vancouver Hospital was just a nine-bed tent used to treat injured railway workers. Now, Vancouver General Hospital (VGH) is one of two acute care facilities that are part of Vancouver Hospital & Health Sciences Centre. It is the major patient care, teaching and research hospital in British Columbia, Canada. VGH is a 950-bed facility offering a full spectrum of medical and surgical services, ranging from community outreach programs for the citizens of Vancouver to specialized tertiary services for the people of British Columbia.

Challenge

The proposed demolition of two buildings adjacent to the Hospital's Surgical Day Care Centre concerned Hospital officials. The Centre performs minor surgeries on many patients. The scale and duration of the adjacent demolition and construction had the potential of significantly increasing airborne particulate counts including mold and other organisms. "We identified the need to improve existing filtration to insure air quality was maintained inside the SDC building independent of outside air conditions," said Con Buzunis, VGH Executive Director of Facility Planning.

Solution

Stantec Consulting, a Vancouver, BC engineering services firm, manufacturer's representative Olympic International, also of Vancouver, and StrionAir collaborated on a solution that included the installation of a custom-fabricated fresh air supply bank to provide a superior level of filtration and protection for the center's personnel and patients. This bank contains 18 StrionAir filtration units, and provides fresh-air to three Markhot airhandling units, of 5250 CFM, 8100 CFM and 3000 CFM, respectively.



A single fresh-air supply and filter bank was placed on the single story surgery center's rooftop. This bank is ducted to supply makeup air to each of the building's three airhandling units.

"As the largest and most prestigious hospital in British Columbia, VGH is particularly demanding of its mechanical equipment," said Pattrick. "We performed a thorough and comprehensive analysis of the StrionAir System and its capabilities before recommending this solution." According to Olympic's Howard Porritt, "the most challenging part of this project was the aggressive timeline. Fabricating the bank to support the StrionAir filtration units, placing it on the rooftop and connecting that bank to the building's three airhandlers was not problematic, but completing the project in 3 1/2 weeks before demolition activities began was challenging."

"We searched extensively for a solution and couldn't find one that balanced our static pressure limitations with high filtration efficiency," said Desmond Pattrick, project manager for Stantec Consulting. "When I saw the StrionAir System, I immediately knew we had found our solution."

Result

Stantec contracted Theodor Sterling Associates, a Vancouver-based environmental consultancy with a specialty in indoor air quality (IAQ) to carry out proactive air-quality monitoring during various construction activities throughout the facilities on 12th Avenue in Vancouver. The purpose of this testing was to document the levels of various air-quality parameters in selected sensitive locations while construction and demolition activities occurred nearby.

Theodor Sterling Associates conducted analyses that included monitoring of respirable suspended particulate (RSP) – a measure of airborne particulate that is of a size capable of reaching the lungs when inhaled. Optical particle counters were used to measure the quantity of airborne respirable particles. Readings outdoors, on the facility's rooftop, measured RSP to be 17 µg/m3, while within the filtration chamber, measured RSP was only 2 µg/m3. These measurements indicated that the StrionAir filtration system was reducing RSP concentrations by approximately 8.5 times.

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