



Case Study

Outpatient Surgery Center

Outpatient Surgery Center Solves HVAC Issues with Aeroseal

The Rosemont Pavilion outpatient surgery center at the Maisonneuve-Rosemont Hospital in Quebec was experiencing HVAC issues centered around difficulty in maintaining the required pressure differentials between operating rooms and adjacent spaces and contaminants in the air stream.

Maintaining the required positive pressure differential between the operating rooms and adjacent spaces is critical to maintain operating room air quality but was not possible due to pressure losses across the length of the ductwork. Negative pressure had to be created in the adjacent spaces, needlessly exhausting heated and cooled air out of the building and wasting energy.

Air quality was also being reduced due to contaminants from ceiling plenums getting into the ductwork and then being distributed into interior spaces. Additional filtration units were installed at supply vents to achieve the necessary indoor air quality.

A consulting engineering firm's study confirmed these issues and discovered the cause – significant leakage in the system's ductwork. Manual sealing and repair of the ductwork was recommended. Unfortunately, that would involve disrupting the surgery ward for up to 6 months at a cost of \$4 million CAD.

Aeroseal's proven technology of sealing ductwork without needing physical access was chosen to solve these issues to minimize both the time required to seal the ductwork and the disruption to outpatient surgery operations. Work began by inspecting the facility to create a plan to complete the duct sealing in the minimum amount of time and with the least disruption to the outpatient surgery center's operations.

The ductwork for each of several air handling units was sealed, with the existing leakage confirmed for each segment of ductwork as work began. Aeroseal's automated system runs a continuous duct pressurization test, reporting air leakage every 60 seconds so that the system



PROJECT OVERVIEW

Maisonneuve-Rosemont Hospital – Rosemont Pavilion

LOCATION

Montreal, Quebec, Canada

AEROSEAL CONTRACTOR

Aeroseal Global

GOAL

Solve operating room issues with positive pressurization and contaminants in air stream

BEFORE AEROSEAL

10,316.8 CFM total leakage

AFTER AEROSEAL

1065.6 CFM total leakage

RESULTS

89.7% leakage reduction

Operating rooms meet positive pressure differential requirement with no contaminants in supply air



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Guaranteed Results

technician can track progress and achieve the lowest duct leakage possible.

The ductwork was sealed over 4 days, from Friday through Monday, substantially shorter than the 6 months proposed for manual duct sealing. Air scrubbers were used in some spaces to ensure that sealant would not cause any issues where sealing was being done.

Upon completion of the Aeroseal duct sealing, all operating rooms are able to achieve their required positive pressure differential to adjacent spaces, and the air filtration units that were being used at supply vents to remove contaminants in the air stream were no longer needed and were removed.



Filtration Unit Installed Below Supply Air Vent



Aeroseal Equipment Sealing Ductwork



Aeroseal duct sealing solved the critical HVAC problems at the operating rooms in the Rosemont Pavilion, enabling them to meet air pressurization and air quality requirements, and in 4 days vs. the 6 months estimated for manual sealing.

Patrick Rouleau - CEO
Aeroseal Global



Reduce Energy and Consumption Cost

Duct sealing addresses multiple sources of energy waste. For example, by reducing leaks 15%, fan requirements drop by 40% or more. This saves thousands of dollars every month.

Aeroseal increases HVAC fan efficiency and eliminates excess ventilation load to reduce energy costs. The duct sealing is verified on site, is guaranteed, and provides energy savings with a typical payback in 3-5 years.



Improve Indoor Air Quality

Leaks in the return air ductwork allow dust and other contaminants to be sucked into the ducts and spread throughout the building. Sealing these leaks eliminates contaminants from the air stream, improving indoor air quality.



Improve Building Ventilation

Leaky ductwork is the primary cause of ineffective building exhaust. In addition to causing problems with uneven and uncomfortable temperatures, this can lead to higher energy costs, and added maintenance costs.



Meet Code and Spec

As duct leakage requirements get tighter and tighter, Aeroseal is specified as a routine component of commercial projects. Our consistent results will take you from hoping to knowing that you'll meet code requirements – the first time.



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