

≡ CASE STUDY ≡

SURGERY UNIT RETROFIT AT JOHN MUIR HOSPITAL INCLUDES USE OF AEROSEAL TO MEET MECHANICAL SPECIFICATIONS

Aerosol-based Duct Sealing Proves Highly Effective At Sealing Hidden Ductwork And Safe For Use In Highly Sensitive Unit Of One Of The Nation's Top Medical Centers

Ranked as one of the top hospitals in the country, John Muir Medical Center is a showcase for excellence in everything they do – from medical care to building design and construction best practices. When they decided to turn existing space of the building's 2nd floor into a new endoscopy surgery unit they decided to repurpose the existing mechanical system serving the space. Pretesting, however, indicated inadequate airflow, resulting in unacceptably low levels of exhaust throughout the unit.

In Brief

Building: John Muir Medical Center
Location: Walnut Creek, California
Engineer of Record: Mazetti Inc.
General Contractor: Swinerton Builders
Aeroseal Provider: Air Seal Solutions
Goal: Improve airflow through leak reduction
Before Aeroseal: 1,583.4 CFM of leakage
After Aeroseal: 222.1 CFM of leakage
Results: Aeroseal eliminated 1,361.3 CFM of leakage – an 86% reduction.



When further investigation indicated that the limited airflow was due to duct leakage, the mechanical contractor on the project suggested they use aeroseal duct sealing to shore up the leaks with minimal disruption. Hospital concern that the aerosol-based sealant could damage sensitive equipment was eliminated when the aeroseal pros used their clean-room mitigation expertise to monitor the air quality of the space during the duct sealing process.

A mechanical team taped the leaks around the easy-to-access portions of the ductwork – where the ducts connected to the registers. Shortening portions of the ductwork also helped alleviate some of the airflow problems caused by poor design. To eliminate the majority of leakage, located in the hard to access sections of the ductwork including the exhaust riser and lateral connections, Aeroseal proved to be the only viable option available.

It took Air Seal Solutions just a single weekend to aeroseal the two designated sections of highly inaccessible ductwork. In the end, 1,583.4 CFM of leakage in these sections was reduced to just 222.1 CFM – a 86% reduction. During the entire process, testing showed airborne particles of sealant remained well below ISO 9001 levels.

Quotes

“The technology worked. If you have an existing mechanical system that is ten or twenty years old, you can make it like new again – give it new life – by using aerosol technology.”

“We are planning to convert a number of buildings into doctor suites and I can see aerosol technology being a viable solution when it comes time to rehabilitate the existing ductwork. In new construction, it can be used to seal the entire duct system once it’s been installed.”

Peter Spadia

Project Manager

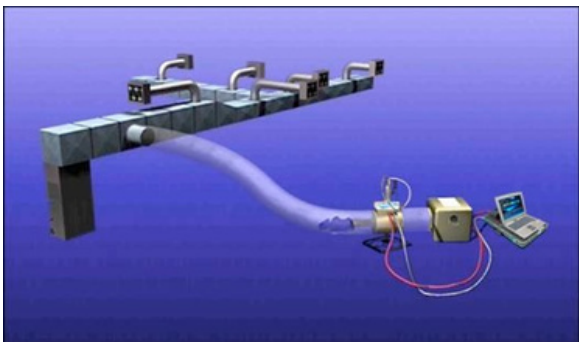
John Muir Medical Center

“Aerosol duct sealing allows us to easily seal leaks in existing ductwork. It is particularly valuable when leaks are otherwise hard to reach– behind walls or other obstructions. I recommended that it be used on this project and would recommend its use for most retrofit projects where existing ductwork is being repurposed.”

Patrick Grubb

General Contractor

Swinerton Builders



Aerosol – The Technology

- Developed at Lawrence Berkeley National Laboratory in 1994.
- Research for Aerosol was partially funded by the U.S. Department of Energy.
- Aerosol is the only duct sealant technology that is applied from the inside of the duct system. It is delivered as a non-toxic aerosol mist that seeks out and plugs leaks.
- Aerosol has proven to be 95% effective at sealing air duct leaks.