

≡ **CASE STUDY** ≡

**DUCT SEALING CRITICAL TO HALTING THE SPREAD OF  
AIRBORNE INFECTIONS AT NEMOURS CHILDREN'S CLINIC**

**AeroSeal Used To Seal Exhaust Ventilation System And Ultimately  
Gain Control of Airflow In Older 11-story Medical Facilities**

There had been so many retrofits and extensions added to the ventilation system at Nemours Children's Clinic in Jacksonville, Florida that engineers weren't sure where their airflow problems were coming from. What they did know was that negative pressure and inadequate ventilation throughout the 30+-year-old building could support the spread of nosocomial infections. Their first steps in taking control of the situation was to seal the leaks in the exhaust shafts located on each floor and then seal the main shaft running down the length of the 11-story building.

**In Brief**

**HVAC Contractors:** Carrier Corporation  
**AeroSeal Contractors:** AeroSeal Southeast  
**Property Name:** Nemours Children's Clinic  
**Type:** 11-story outpatient medical facilities  
**Goal:** Improve airflow; reduce the risk of nosocomial infections  
**Before AeroSeal:** Total system leakage: 4,912 CFM\*  
**After AeroSeal:** Total system leakage: 723 CFM  
**Results:** 85% reduction in leakage.

*\*Cubic feet per minute*



AeroSealing the entire children's clinic took less than 30 days to complete. The difference it made to the efficiency of the exhaust system was immediate and obvious. With the ductwork effectively sealed from the inside, engineers were able to accurately analyze the system and upgrade it with regulating dampers and other flow-adjusting technologies. Now the building's exhaust system is optimized at all times. The bottom floors are as well ventilated as those on the top. Most importantly, the air being exhausted is coming from the rooms and common areas that need it; contaminated air is being removed from the building. As an added bonus, the clinic is able to run its exhaust fan at a fraction of the power that was previously needed, saving the clinic substantially on its energy costs.

## Quotes

“In order for a hospital to be clean, you have to manage the building’s airflow. By aroesealing the exhaust shafts we ensured that the right amount of stale and potentially infectious air is being adequately and continually removed from the building.”

*Derrick Rhodes, president, Aero seal Southeast*

“Exhausting air from a leaky ventilation shaft is like using a straw with holes in it. No amount of force is adequate to effectively ventilate the bottom floors of the building. Now, after sealing the leaks with Aero seal, all floors are getting the ventilation they need. As a side benefit, we were able to dramatically reduce the speed of the exhaust fan, which has resulted in substantial energy savings for the clinic. With the ductwork effectively sealed, we are now able to take additional steps to optimize the entire exhaust system.”

*Chuck Boynton, areas project manager, Carrier Corporation*

## Aero seal – The Technology

- Developed at Lawrence Berkeley National Laboratory in 1994.
- Research for Aero seal was partially funded by the EPA and the U.S. Department of Energy.
- Aero seal 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.
- Aero seal has proven to be 95% effective at sealing air duct leaks.

## Aero seal – The Company

- Aero seal LLC is a subsidiary of JMD Corporation. The company is dedicated solely to the support of its dealers and the expansion of Aero seal technology as a primary means of residential and commercial energy conservation.
- Aero seal is the sole owner and licensee of Aero seal technology.
- Aero seal technology was bought by Carrier Corporation in the late 1990s. In 2010, Mark Modera, the inventor of Aero seal, with the support of private equity investors, bought the company from Carrier to realize the full potential and benefits of the technology. This led to the launch of Aero seal LLC in 2011.

For more information, contact:

