

== CASE STUDY ==

**NEW APPROACH TO DUCT SEALING SPARKS TREND
IN NEW YORK AREA HIGH-RISE RETROFITTING**

**Sealing From The Inside Allows Engineers To Fix Ventilation In Older Buildings
Where Access Is Limited – Results Include Lower Energy Costs & Improved IAQ**

Like most older buildings throughout the United States, the Carlyle Towers in Caldwell, New Jersey suffered from poor ventilation. Leaks in the ductwork prevented the huge rooftop fans from effectively drawing air out of the many bathrooms, hallways and living spaces within the 55-year-old multi-family apartment building. Limited access to the ductwork made manual duct sealing methods impossible without severe demolition to the building's walls and ceilings.

Several years ago, the engineers at Steven Winters Associates decided to tackle the problem using a new technology developed by the U.S. Department of Energy that seals leaks from the inside of the ductwork. The success of that project has resulted in the technology's use to solve similar ventilation issues in thousands of apartments throughout the New York City area alone.

In Brief

Building: Carlyle Towers apartment building
Location: West Caldwell, New Jersey
Property Owners: Legow Management
Engineering Contractor: Steven Winters Assoc.
Goal: Improve ventilation, lower energy costs, improve indoor air quality and HVAC comfort
Before Aeroseal: 250 CFM average leakage/shaft
After Aeroseal: 15 CFM average leakage/shaft
Results: 90% reduction in leakage; \$26,000/year energy savings; even room-to-room comfort.



It took engineers just 4 weeks to aeroseal all 25 of the building's individual ventilation shafts. With the leaks sealed and the pressure within the shafts balanced, contractors were able to replace the 25 300-watt roof exhaust fans with 140-watt units. The fan optimization alone resulted in an annual energy savings of \$7,000. In addition, the improved HVAC efficiency afforded by the leak-free ductwork decreased gas use by approximately 30% - from an average of 57,000 therms (EC)/year to 41,000 therms (EC)/year for an additional savings of approximately \$19,000 annually.

Since the completion of the Carlyle Towers retrofit project, hundreds of similar New York-area multi-family apartments with central ventilation have been similarly retrofitted for higher energy performance.

“Soon after the retrofit was completed, we heard from tenants who thanked the building manager for fixing the heat. While we didn’t touch the heating system per se, by sealing the shaft leaks and automating the damper adjustments, the furnace was noticeably more efficient and effective.”

David Legow, president
Legow Management

“Aeroseal sealed on average 90% of the duct leakage, and that had a significant impact on the ability to properly balance ventilation and reduced the use of both gas and electricity.

Marc Zuluaga, vice president
Steven Winters Associates



Aeroseal– The Technology

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

For more information on this sealing project or about Aeroseal in general, contact Aeroseal at (937) 428-9300. You can also visit the Aeroseal website at www.aeroseal.com.

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