

# CASE STUDY

## Chicago Hilton Hotel

### Hilton Chicago Hotel Improves New HVAC Equipment Install Using Aeroseal

#### Mechanical Contractors Upgrade Old Ductwork to Deliver New HVAC Equipment Performance

In 1927, the Chicago Hilton Hotel (formerly known as the Stevens Hotel) opened its doors to the public and was crowned the largest hotel in the world. Part of the building includes Salon C, a 29,000+ sqft convention facility that underwent major renovation. The scope of work for the renovation included upgrading its 80-year-old constant flow air handling unit (AHU) to a variable air volume (VAV) system.

The renovation plan included adding new ductwork that would connect to thousands of feet of existing ductwork located in a sub-basement space just below the convention room floor.

Unfortunately, the old air ducts were leaking air, and the engineers working on the project knew the leaky ductwork would not accommodate the added pressure created by the new VAV (HVAC) system. They also knew that replacing the ductwork or sealing it using conventional hand sealing methods

(e.g. mastic, tape) would add months to the project schedule and tens of thousands of dollars to the budget.

Fortunately, Grumman/Butkus Associates, the engineering firm in charge of the renovation, was familiar with a new duct sealing technology called Aeroseal that works from the inside of the ducts to simultaneously find and seal leaks. A call was placed to local duct sealing experts Black Diamond Plumbing and Mechanical, Inc., who explained to hotel management how the aerosol-based Aeroseal technology could quickly and easily seal the old duct system with minimal disruption to the existing building structure or to the day-to-day operations of the hotel.

With approval to proceed, the Aeroseal crew began the sealing process. The patented aerosol sealant was blown into the duct interior via a temporary injection point near the AHU. Using foam blocks, the team sectioned off and sealed six sections that made up the entire duct system. It took only three days to effectively seal the entire network of underground air ducts.

Watching a computer monitor during the process, engineers knew in real-time what the final report would confirm: total duct leakage was reduced by 95%, and the new VAV system was ready for operation.

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### PROJECT OVERVIEW

<b>BUILDING</b> Hilton Chicago Hotel	system to improve new HVAC equipment install performance
<b>LOCATION</b> Chicago, Illinois	<b>BEFORE AEROSEAL</b> 12,414 CFM of total leakage
<b>AEROSEAL CONTRACTORS</b> Black Diamond Plumbing and Mechanical, Inc.	<b>AFTER AEROSEAL</b> 613 CFM of total leakage
<b>CONTRACT ENGINEER</b> Grumman/Butkus Associates	<b>RESULTS</b> Sealed ductwork with a 95% reduction of leakage in only three days; Fixed air duct system to comply with new HVAC system requirements
<b>GOAL</b> Repair leaks in the hotel's air duct	



The result was pretty impressive. If this new technology didn't exist, we would have had to rethink the entire project – perhaps replace the entire duct system. The Aeroseal approach not only saved the hotel an unimaginable amount of money in material and labor costs, but it averted the enormous disruption associated with having to tear out and replace the existing ductwork.

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