

≡ **CASE STUDY** ≡

**PRINCETON UNIVERSITY GIVES AEROSEAL AN A GRADE
FOR SAVING HVAC RENOVATION PROJECT AT JADWIN HALL**

**Duct Sealing Technology Proved Effective Even On Old Unlined Masonry Shafts Where
Leaks Were Responsible For Exhaust Issues And High Energy Bills**

A five year, \$70 million dollar renovation of the University's Department of Physics building focused primarily on upgrading the 6-story structure's 50-year-old HVAC system. While most of the ductwork was replaced, this was not an option for two of the main exhaust shafts, which were part of the building's structure itself. Significant leaks in these shafts were making proper air system balancing impossible. That, in turn, caused exhaust issues and added substantially to the building's energy consumption. University engineers knew that Aroseal was highly effective at sealing metal ductwork, but could it actually seal leaks in old brick masonry shafts?

In Brief

Building: Princeton University, Jadwin Hall
Contract Engineers: Irwin Leighton Inc.
TAB Company: RCC Engineering
Aeroseal Company: Aeroseal of Philadelphia
Goal: Reduce leakage in two exhaust shafts
Before Aeroseal: 533 CFM of leakage
After Aeroseal: 8 CFM of leakage
Results: A 98% reduction of leakage.

**Cubic feet per minute*



The only other option would be to take out sections of the masonry to access the leaks and then rebuild the structure – a process that would have been extremely expensive and disruptive to the daily operation of the institution's department of physics. Classes were in session and the labs were filled daily with students and University personnel engaged in activities.

University engineers did some initial prep work for the sealing project and Aeroseal of Philadelphia arrived on a Wednesday morning to begin sealing.

The entire project took two and a half days to complete; setup, sealing two shafts and pack up. The results were immediate. Aeroseal reduced the masonry shaft leakage by 98% - from 533 cubic feet per minute (CFM) to 8 CFM. As a result, exhaust issues were resolved, energy usage was reduced and system balancing was accomplished - all without interruption to the building's day-to-day function.

Quotes

“As we looked at options for Jadwin Hall we decided the building was still viable and worth investing in rather than going to the expense of constructing a completely new facilities. Aero seal technology helped make this possible. It worked quickly and effectively to solve a potentially project-derailing obstacle. I imagine there are other campus projects that could use this technology as well.”

Aric Duvalla
Assistant Facilities Supervisor
Princeton University.

“I took a special trip to the project site to see this new technology at work for myself. It was exactly as described in our research reports. It worked well. No glitches. No Issues. I would definitely consider using this in future projects where we can’t get access to the ductwork.”

Dan Sabatino
Contract Manager
Irwin Leighton Inc.

“It worked! My 30 years of experience as a forensic engineer and a test and balance technician has shown me that once you have a system that goes in and has leakage, you can’t go back in and practically correct it any other way. Aero seal really did the job.”

Russ Campbell
Project’s TAB experts
RCC Engineering

Aero seal – The Technology

- Developed at Lawrence Berkeley National Laboratory in 1994.
- Research for Aero seal was partially funded by 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.

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

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