

# CASE STUDY

## Houwman Federal Building

### SOUTH DAKOTA GOVERNMENT BUILDING REDUCES ENERGY COSTS USING AEROSEAL

The Houwman Federal Building in downtown Sioux Falls, South Dakota is home to the United States District Court for the District of South Dakota. The iconic municipal facility has been witness to a lot of transformations over its 88-year history. In 2015, the building's current owners hired TAB Systems Inc. to do some mechanical maintenance on the three-story structure. The initial work helped improve the performance of the building's two HVAC systems, but TAB knew that air leaks in the ductwork prevented them from maximizing energy efficiency. At the time, sealing the leaks with mastic or tape would have required tearing down and then rebuilding the firewalls that stood between the ductwork and the crew doing the hand sealing. Not only was this an enormously expensive proposition, it also would have an irreversible impact on a structure that has become a part of the city's history.

Since that time, TAB Systems has become a licensed Aroseal contractor. Armed with this aerosol-based computer-controlled duct sealing

technology that seals ducts from the inside, they went back to the building owners and showed them how their ductwork could now be effectively sealed without having to disrupt a single wall. They assured the building owners that in addition to saving energy, sealing the ductwork using Aroseal would improve the overall indoor air quality (IAQ) and comfort of the building as well.

It took TAB Systems only one weekend to effectively seal the ductwork of the two systems. This project had a dramatic impact on overall energy efficiency of the HVAC equipment, slowing down the variable frequency drives and reducing HVAC fan speed requirements. When the tenants returned on Monday, everyone instantly noticed that the building was a lot quieter. Some wondered if the heat was even turned on. Calculations showed that the building owners would now be saving about \$1,290 each year in overall energy cost. #MicDrop

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#### PROJECT OVERVIEW

<b>BUILDING</b> Houwman Federal Building	<b>BEFORE AEROSEAL</b> 2,849 CFM of leakage (total)
<b>LOCATION</b> Sioux Falls, South Dakota	<b>AFTER AEROSEAL</b> 379 CFM of leakage
<b>AEROSEAL CONTRACTORS</b> TAB Systems Inc.	<b>RESULTS</b> Reduced leakage by approximately 87%; which resulted in a 56% reduction in the cost for ventilation and 31% reduction in the cost to heat and cool the building.
<b>GOAL</b> Reduce Energy Costs	



First, it quieted the system – our tenants noticed the difference right away. In addition, it reduced our gas bill with more efficient heating and cooling. More significantly, it reduced the load on the system's two turbo fans, the reheat coil and air chillers, saving us a lot on electricity. To me, aroseal technology is revolutionary for both retrofit projects like this, and for new systems. There's just no way anyone can expect to get a tight seal on a manually constructed duct system. By Arosealing from the start, you'll make sure you are getting the air to go just where it's supposed to go – a critical component of overall operating cost savings. On a scale of 1 to 10, I would give this whole experience a 10.

**Grant Houwman**  
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