



LAW *and* ODOR

SEALANT HELPS FIX SMELLY DUCTWORK AT HISTORIC OKLAHOMA COURTHOUSE

Oklahoma County's courthouse is an imposing art deco structure that tells the story of Oklahoma in its records, the messages of wisdom carved into its Indiana limestone, and a huge carved mural depicting scenes from the state's past.

The Oklahoma City building is itself a historical treasure, conceived by architect Solomon Layton, designer of more than 100 public buildings — including the state capitol — in the Oklahoma City area over the course of his career.

Built in 1937, the facility is a striking example of the streamlined, futuristic designs of America's first age of modernity. It was originally planned as part of a Depression-era job-creation program as the centerpiece of a plan to beautify and revitalize the county. It would serve, along with a new city hall and auditorium, as the town's focal point.

By 2010, however, the building was facing a critical — and stinky — problem: while its exterior appeared as beautiful as ever, its interior was plagued by a musty smell from years of unrepaired ductwork.

Unfortunately, the historic facility's airflow problems were the result of a failed pneumatic duct system that had been installed sometime in the 1950s. Subsequently, the old units were wired completely shut, leaving no supply of fresh air to the facility. The recirculation of indoor air through the old ductwork resulted in an unpleasant smell that overwhelmed occupants.

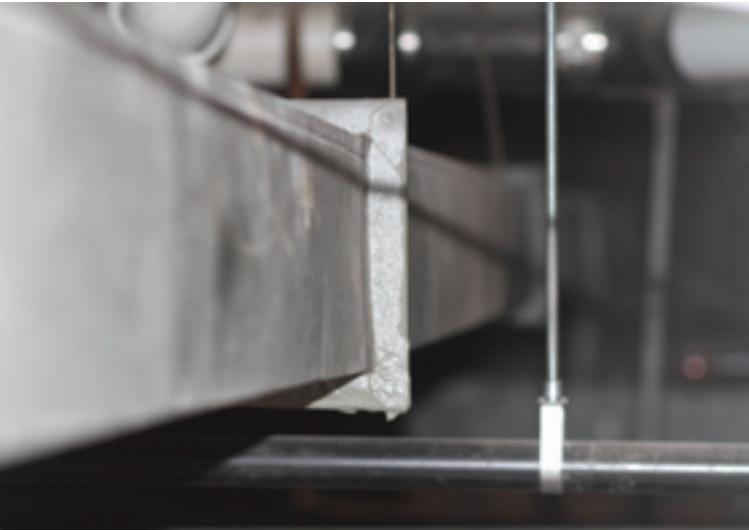
Air rescue

To repair the issue, Oklahoma County turned to the ACP Sheet Metal Co., a well-known local metal fabricator and installer. Over the past several decades, ACP has grown from a small one-man operation to one of the area's most established sheet metal fabricators and installers, with more than 40 employees and handling projects across five states. Dale Lorenzen, an ACP employee for 18 years and sheet metal worker for 32 years, was tasked with tackling the facility's problem head-on as the project foreman. He and a small crew would install seven energy-recovery vents, and then once the existing ducts were cleaned, would repair



An example of intricate carved pictures on the building's façade.

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An example of some of the Oklahoma courthouse's ductwork that ACP Sheet Metal worked on to fix the court's odor problem.

and seal them in an effort to restore the courthouse to its onetime glory.

Installing the 1,500 feet of new ductwork to filter in outside air was not especially problematic, but when it

came to sealing the existing ducts, something other than the typical bucket-and-brush method would be necessary. The sheer amount of ductwork that had to be sealed throughout the 14-story facility was staggering, officials said.

Because the facility was occupied throughout the day, sealing would take place only at night.

"We started the job with a bucket and brush, but the project manager had mentioned that ACP was looking at a spray machine," Lorenzen said.

Nathan Dills, president of ACP, recalled a product he had seen at the annual Sheet Metal and Air Conditioning Contractors' National Association conference that might make a difference: Hardcast's Spray-Seal and its sealant-delivery system. It uses a specially designed sealant spray unit to achieve increased coverage and labor savings while contributing toward credits under the U.S. Green Building Council's Leadership in Energy and Environmental Design requirements. The work on this existing facility would serve as a new testing ground for the system.

New product

Hardcast says its Spray-Seal system is the only product on the market that uses a controlled-spray technology that allows for more effective sealing while using far less solution than other sealing methods. The uniquely engineered sealant is capable of being sprayed through a 0.011-inch tip, allowing accurate and strategic sealing of joints and seams. The Mobile Duct Sealant Delivery System provides a steady application pressure resulting in less fatigue for operators, and its speedy delivery of sealant offers huge labor-saving potential, according to Hardcast.

The Spray-Seal itself is an all-purpose, low-volatile organic compound sealant for use on all types of ducts, duct board and duct fabric. Its superior elastomeric properties after curing eliminate the cracking that often occurs with traditional sealants, and it is resistant to both mold and mildew, Hardcast says.

No one from ACP had any experience working with the unit, so when it finally arrived, they reviewed the literature.



This 75-year-old county courthouse in Oklahoma City was known for producing an unpleasant odor through the building's HVAC system.

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The Oklahoma courthouse's ductwork was sealed with Spray-Seal from Hardcast.

"They tried it out back at the shop and then brought it in for us to try," said Lorenzen. "Then we started practicing with the machine to get a feel for how much spray was necessary."

Lorenzen and his workers found that the product was not only easy to work with, but that it allowed for a quicker and more consistent application of the duct sealant. And thanks to Spray-Seal's ability to seal the type of hard-to-reach places prevalent throughout the courthouse, sealant was able to be applied easily to crawl spaces and out-of-range ductwork that would have been nearly impossible to seal with the traditional bucket-and-brush method.

By the time the job was finished, ACP reported up to 80 percent labor savings on the project over traditional sealant application.

"For a big project like this, the Spray-Seal was perfect," Lorenzen said, adding, "and it sure smells a lot better in here than it used to smell."

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