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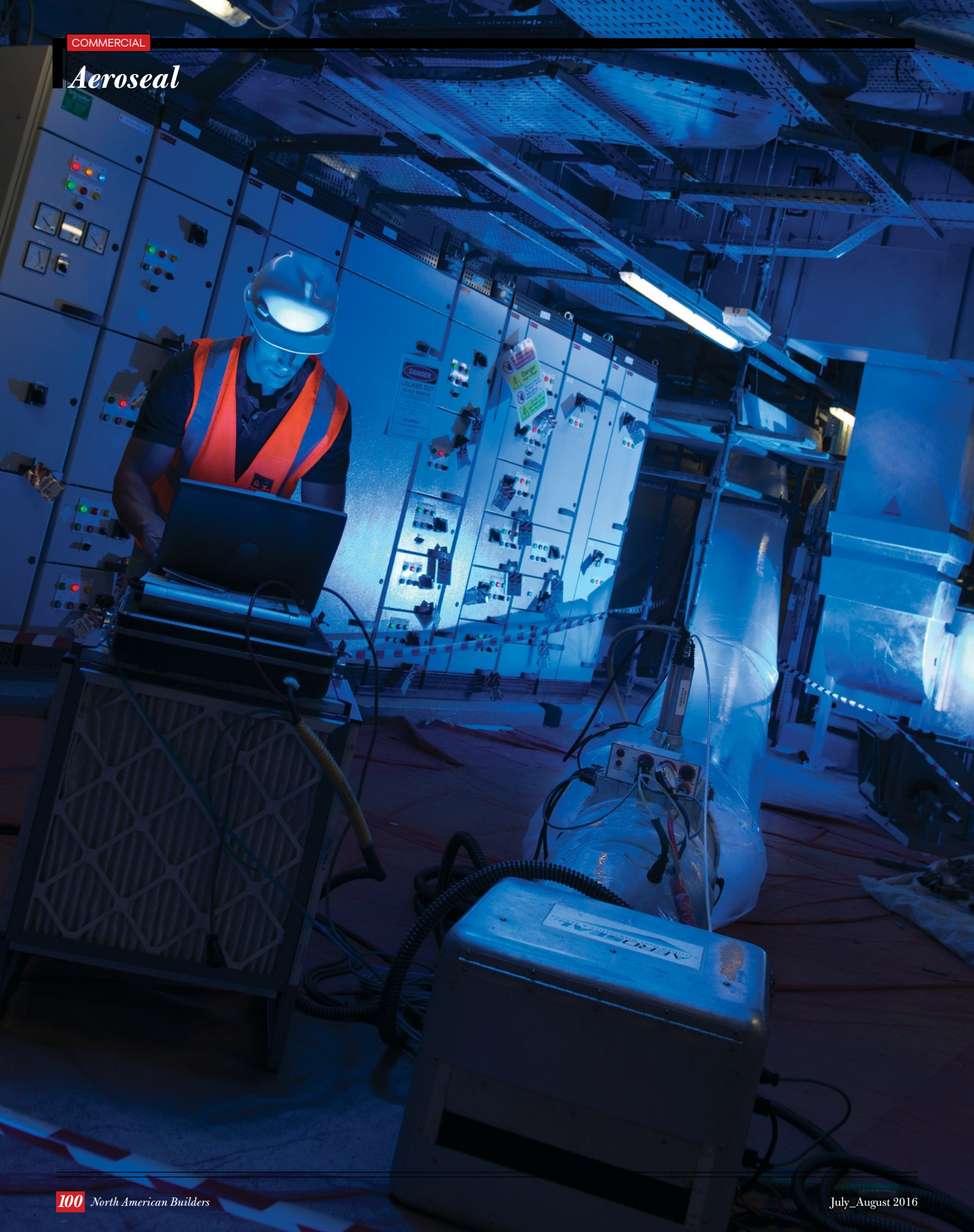
*Naples Reserve features Florida's
distinct southern coastal
architecture in a lakefront setting.*

ISTAR / PG. 18

ISTAR has put together a team of select builders
to create approximately 1,154 lakefront homes in 11 distinct
neighborhoods for its Naples Reserve development.

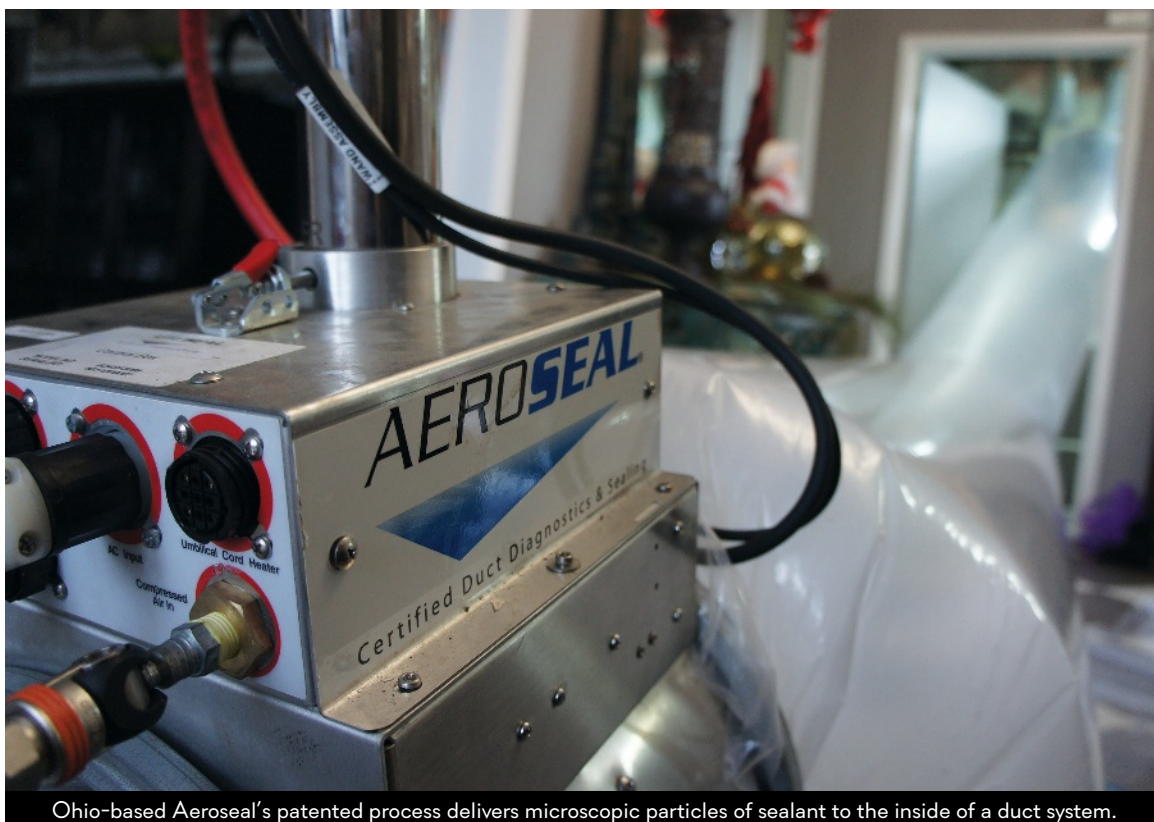
COMMERCIAL

Aeroseal



'Groundbreaking Solution'

Ohio-based Aeroseal's award-winning duct-sealing technology gains attention as industry professionals become increasingly aware of the detrimental and wasteful effects of leakage in existing buildings.



Ohio-based Aeroseal's patented process delivers microscopic particles of sealant to the inside of a duct system.

It's no secret that leaky ducts are a problem. ¶ But it's the magnitude of the hole it punches in energy efficiency and air quality efforts that may have been underestimated, according to Neal Walsh, senior vice president of Center-ville, Ohio-based Aeroseal. ¶ "The problem is enormous," he says. "All of the research that's been done over the last couple years points to the same thing: the No. 1 cause of energy waste in existing buildings today is air duct leakage."

That's where Aeroseal's patented technology process to seal cracks and holes in air duct systems in new or existing structures offers a solution.

Though the aerosol-based solution – material that

works inside ventilation shafts to "seek" and bond-seal leaks rather than coating the entire interior of the shaft – was developed more than 20 years ago by Lawrence Berkeley National Laboratory with federal funding, Aeroseal has made it widely available over the past five years.

by *Kecia Bal*

"IN THE PROCESS, WE ARE DRAMATICALLY IMPROVING THE BUILDING'S ENERGY EFFICIENCY AND INDOOR AIR QUALITY."

— Neal Walsh, senior vice president

And the industry, it seems, is ready.

Walsh says the leakage problem isn't new, but until the last five years, there was no real solution readily available in the market.

"Now, for the first time, we can go into an older occupied building and repair the previously inaccessible duct system or ventilation shafts – easily sealing up all the leaks and ensuring the air gets to where it's suppose to go," he says. "In the process, we are dramatically improving the building's energy efficiency and indoor air quality."

Crunching the Numbers

It's also an issue that's gaining more visibility.

"What the new data is pointing to, very clearly, is the fact that it's leaks in the air ducts themselves that are a primary cause of poor indoor

air quality and energy waste," Walsh says.

A December 2015 Building Commission Association survey of 236 members highlighted the growing concern.

Results showed:

- 73.73 percent of responding engineers and other building professionals believe most U.S. buildings today have significant duct leakage;
- 75 percent of respondents believe leaky ducts contribute substantially to energy loss in commercial buildings;
- 72.46 percent have found significant duct leakage most prevalent in existing buildings; and
- 25 percent have found significant duct leakage prevalent even in new buildings.

"This data really supports the fact that the problem is a lot bigger



Aeroseal is an aerosol-based sealant that works from the inside of the duct system to locate and seal duct leaks.

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— *Neal Walsh, senior vice president*

and wider in scope than we thought it was just 10 years ago," Walsh says. "As an industry, we've known that duct leakage is a prevalent issue, but with no viable solution, we've had little choice but to simply ignore the problem and look elsewhere for energy savings and air quality improvements.

"With this new approach to duct sealing, we finally have something we can do to effectively and economically solve the problem and make buildings healthy again," Walsh adds.

Landing Accolades

Industry leaders recently recognized the value of Aeroseal's offering, naming its duct sealing technology the 2016 Air-Conditioning, Heating, Refrigerating Expo Innovation Award's "product of the year."

"We are the poster child for good ventilation," Walsh says.

Clay Stevens, president of the International Exposition Co., called Aeroseal a "groundbreaking solution to an industry-wide problem" in a statement to announce the designation.

The technology also won the top slot in the expo awards' ventilation category.

Those awards are part of more than 10 industry recognitions for the technology in recent years, including Green Building Council honors for a building renovation project, and it also was rated as one of the 23 most beneficial technologies available to American consumers by the U.S. Department of Energy.

Part of the reason Aeroseal is gaining so much recognition, Walsh says, is that it's in the unique position of offering an established solu-

tion, but one that is newly available to a wider base of customers.

"The technology has been developed and in the marketplace for almost 20 years," he says. "In the last five years, as we became a private company, we've really seen market transformation.

"With each new success story, the word about this game-changing approach to duct sealing is spreading throughout the professional building industry."

Available for residential and commercial clients, Aeroseal now offers its product through a network of commercial service providers and residential dealers across the country.

It's ideal for new construction, but also for existing buildings, especially because it can be applied without significant disruption to tenants or other occupants.

Documented Success

The company's case studies show positive results, with solutions spanning across a variety of sectors in new construction and renovation projects.

Just one example is Hyundai's new U.S. corporate headquarters in Fountain Valley, California, where implementing Aeroseal technology reduced air leakage in the new building's four smoke evacuation shafts and a large outside air shaft from 14,861 to 808 cubic feet per minute – a 95 percent reduction.

Aeroseal helped the 500,000-square-foot project meet building code requirements and saved it from missing its highly anticipated finish date, Walsh says.

"The engineers tried using traditional sealing methods to meet specifications for the new building but failed after several long, expensive attempts," Walsh says. "The project came to a virtual standstill as they tried to figure out a solution. They were actually looking at the possibility of having to postpone the opening ribbon-cutting ceremony. Then, using the Aeroseal technology, sealers came in and sealed all five shafts in a matter of days.

"The building easily passed code requirements and opened on time," he adds.

The Aeroseal Process

Aeroseal is an aerosol-based sealant that works from the inside of the duct system to locate and seal duct leaks. The process begins by blocking the wall registers so that air can only escape through the leaks in the ductwork. The duct system is slightly pressurized and the sealant is then heated up and blown into the shaft through an existing access point or through a temporary entranceway cut into the system. The dry, microscopic-sized adhesive particles remain suspended in air as they travel throughout the ductwork until they reach a leak. Here they begin to accumulate around the leak, bonding to other sealant particles until the entire hole is permanently filled. At the end of the process, the computerized sealing system generates an accurate report, highlighting before and after results.

Though Aeroseal's solution works well with new construction, it's also ideal for existing buildings because it can be applied without significant disruption to occupants.



"THEN, USING THE AEROSEAL TECHNOLOGY, SEALERS CAME IN AND SEALED ALL FIVE SHAFTS IN A MATTER OF DAYS."

— *Neal Walsh, senior vice president*

Another Win

Aeroseal also saved the day at Ohio State University, where a new 6-story hall complex expansion opened in fall 2012. Nearing completion of the project, though, contractors discovered that all ventilation shafts failed pressure tests to achieve fire code and LEED Silver certification.


The anticipated delay was around six months, with estimates for fixing the problem coming in at hundreds of thousands of dollars, according to Aeroseal's case study.

Instead, the Aeroseal process was able to locate and seal 98 percent of the leaks – in less than two weeks. The structure met code and LEED Silver specifications.

"We're getting great results and with each new success, adoption of

this innovative new approach to duct sealing continues to spread across industries," Walsh says.

From medical facilities like the Mayo Clinic and Nemour's Children's Hospital to educational facilities including renovation projects at Princeton University and the Los Angeles Unified School District, the results are speaking for the company's unique solution to air leakage, Walsh says.

"Engineers and facility managers are finding this new approach to duct sealing changing the rules on achieving energy savings and improving indoor air quality, not to mention meeting ever-tightening building code requirements," he says. "When they see institutions like these using this technology to solve previously unsolvable problems, they are more apt to take a closer look themselves." 



The Aeroseal process is applied to a 19-story apartment building, a job completed without interfering with tenants' daily lives.