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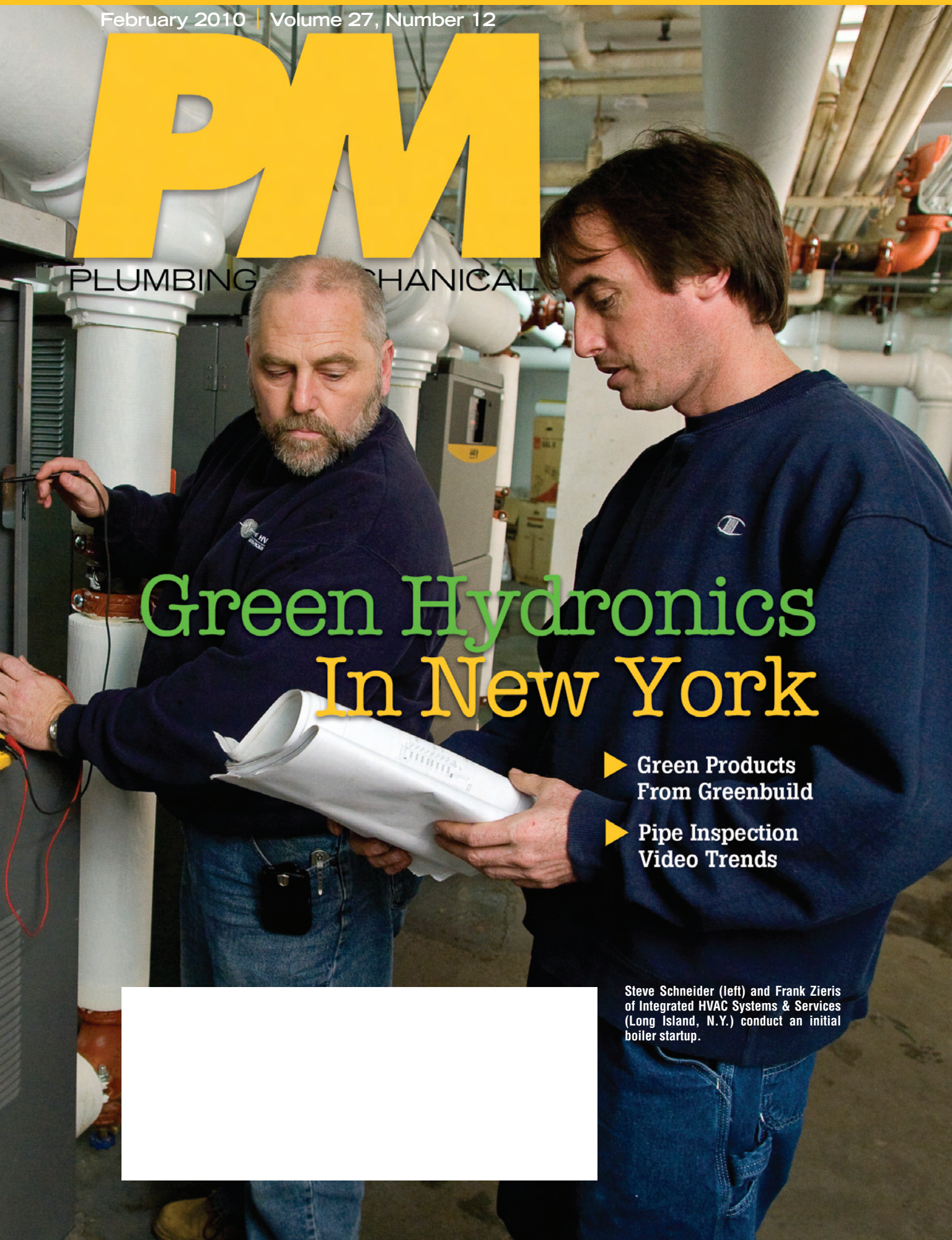
PLUMBING & MECHANICAL

Green Hydronics In New York

- Green Products From Greenbuild
- Pipe Inspection Video Trends



Steve Schneider (left) and Frank Zieris of Integrated HVAC Systems & Services (Long Island, N.Y.) conduct an initial boiler startup.

Green

Contractor helps customers find sustainable solutions for their business needs.

Spring Creek Gardens houses about 600 low- to moderate-income families in East Brooklyn, N.Y.

By Bob Miodonski
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Integrated HVAC Systems & Services delivers to customers what President **Ike Beyer** likes to call "HVAC nonfiction": It's not about how a system is supposed to work; it's about how it actually performs.

"Customers are looking for energy-efficient solutions at an affordable price," says **Laurie Courage**, LEED AP, the contracting firm's vice president of business development and sustainability. "Often, new customers come to us for help with their chronic energy problems, which we find contribute to unnecessary energy expense and occupant dissatisfaction. They want their building systems and automation to work well together and deliver occupant comfort affordably. That hasn't changed since the company began."

Founded in 2000, the Long Island-based company serves commercial and residential customers in the New York City metro area and New Jersey. The 25-person firm also has acquired a reputation for its hydronic and solar work, which supports its emphasis on green energy solutions.

"We specialize in all aspects of HVAC through design-and-build as well as plan-and-spec work with emphasis on building automation," Beyer explains. "As the green building industry develops and grows in sophistication, we find ourselves in the midst of it. A huge portion of our work today stems from energy-efficient initiatives and remedies in the commercial sector, and now our higher-end residential work is picking up too.

"Our whole building focus on sustainable design and knowledge of USGBC LEED practices differentiates our results."

The Green Difference: Integrated HVAC's membership in the U.S. Green Building Council signals to customers its commitment to sustainable construction. Beyond its technical industry credentials, Integrated has added LEED AP and National Sustainable Building Advisor Program certified personnel to its core team.

Courage agrees that the contractor's sustainability expertise helps to differentiate it from its competitors.

"Our customers tell us it's helpful to work with someone who understands not only energy-efficient products but how they work together in a building system," Courage says. "We educate our customers on how sustainable design can lead to energy-efficient performance and help them on their path to green."

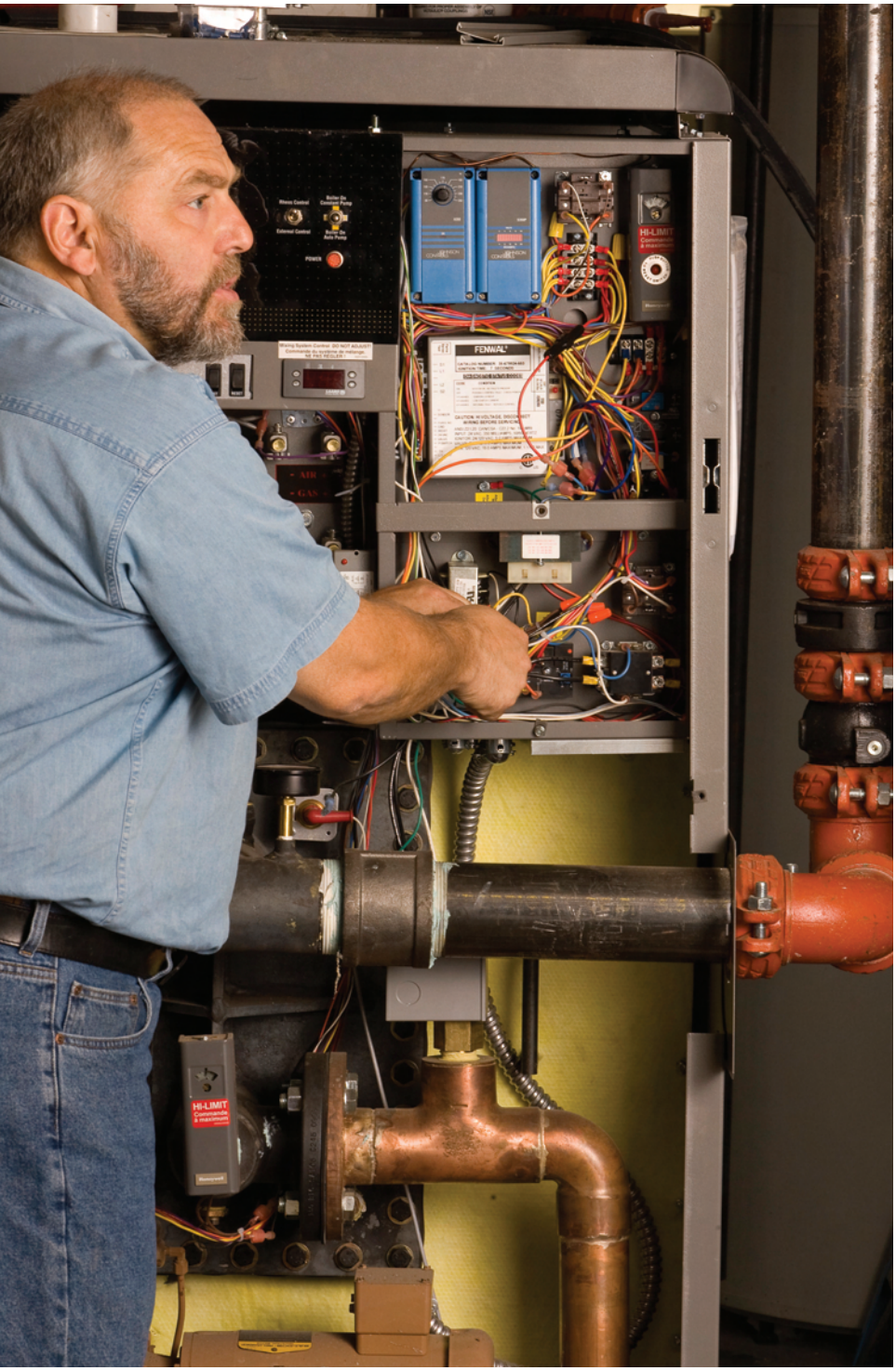
About 70 percent of the contractor's work comes from commercial projects with the remaining 30 percent being residential.

"Certainly green has become much more topical," Courage says. "Our customers' interest has always been about energy performance and indoor air quality, but now it also includes sustainability, renewables and measuring performance through Energy Star and LEED certification."

The contractor's marketing efforts make the business case for sustainable systems. For example, its Web site (www.integratedhvac.com), states: "We don't just treat one part of a building's mechanical system; we

Photo credit: Ken Jones of Fulton Studio.

Nonfiction



look at the building as a whole and integrate the right mix of technology and know-how to maximize energy efficiency and save money for our clients."

Courage adds: "We've started to highlight how we're contributing to sustainability. It's not meant to be brochure-ware. It's what we do. We install energy-efficient, integrated mechanical and automation systems, and we take into account all our customers' sustainability goals. We do what makes sense for their business needs."

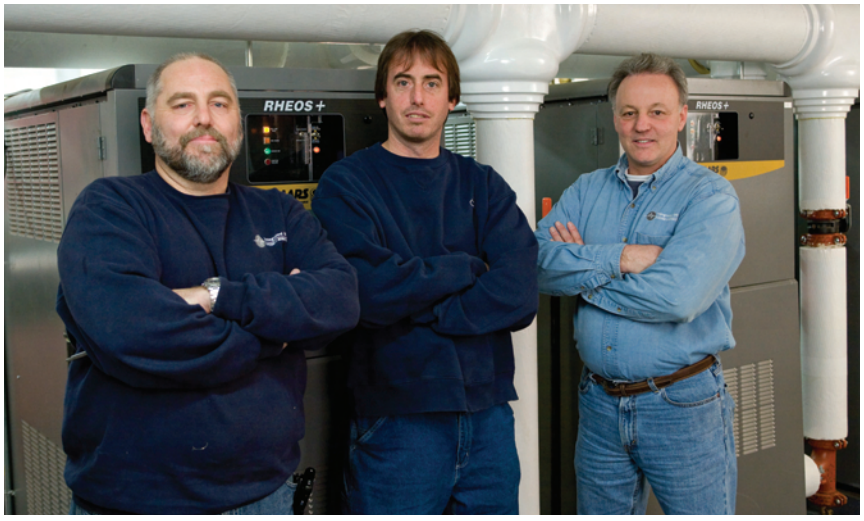
Closer to home, the contractor has installed geothermal equipment, solar panels and dual-flush toilets in its own facility. That sends another signal to customers as well as increases the company's own expertise.

"Our ability to deliver innovative solutions continues to expand," Beyer says. "As new technologies and systems enhance performance, we bring them into the fold."

Spring Creek Gardens: A case in point is a low-rise, high-density housing development that is home to about 600 low- to moderate-income families in East Brooklyn, N.Y. Built in 1986, managers of Spring Creek Gardens recently finished a renovation that replaced all original heating equipment. The new heating system, completed a little more than a year ago at a total cost of $2.5 million, has resulted in a 20 to 30 percent savings of the natural gas consumed by residents.

Integrated HVAC also renovated the plumbing and electrical systems as well as provided value-engineered design.

Integrated HVAC's Steve Schneider commissions a Laars Rheos+ boiler.



(Top, left to right) Steve Schneider, Frank Zieris and Ike Beyer inside one of Spring Creek Gardens' six boiler rooms. (Above) Integrated HVAC installed a total of 18 Laars Rheos+ boilers ranging in size from 1.2 million to 2.4 million Btu.

"The apartment complex changed ownership," Beyer explains. "The new owners quickly refurbished many of the interior and exterior spaces, but the last remaining task was to demolish and overhaul the old heating systems."

Each of the three buildings that make up Spring Creek Gardens has two boiler rooms. Integrated HVAC installed a total of 18 Laars Rheos+ boilers, ranging in size from 1.2 million to 2.4 million Btu. The equipment replaced old atmospheric boilers that were operating at 55 to 60 percent overall efficiency during their final years of service, Beyer says.

A building automation system (BAS) from Automated Logic was installed to control the heating equipment through a variable firing rate signal that is fed to each boiler as needed for both heating and domestic hot water. The boilers are responsive to indoor/outdoor temperature reset for heating, and they maintain constant water discharge temperature when needed for domestic hot water production.

In lieu of operating each boiler independently, the contractor implemented an integrated heating system that accepts remote signals to control multiple boilers. This ensures optimal staging and rotation of the entire boiler plant.

"We stage and modulate operation of all boilers with automated logic," Beyer says. "We also monitor and control system operation remotely. Complete plant operation including boiler staging and modulation as well as remote monitoring and control capabilities are performed by the Automated Logic BAS.

"We wrote the programs for this job not only to sequence all system operations, but also to send alarms to the customer, and to us, if there would be a need."

The heating loop has its own high-efficiency secondary distribution pumps from Armstrong Pumps. The contractor installed Mitsubishi variable frequency drives to modulate pump output based on demand.

To dispose of potentially harmful acidic condensate from the condensing boilers, Integrated fitted each boiler with a neutralizer kit. The condensate is run through a marble chip bath that neutralizes it and then disposes of it down a conventional sanitary drain.

The Laars boilers have dedicated integral recirculating pumps with side-stream circulation. The pumps take water from the heating loop, warm it and inject it in the primary loop.

Domestic hot water for residents in all the buildings is sourced through TurboMax indirect water heaters, which heat water instantaneously only when needed and keeps energy consumption to a minimum.

"The boilers' ability to maintain discharge temperatures ranging from domestic hot water to peak heating requirements provided the best demand-to-output capacity match at the most efficient energy level," Beyer says. "Maintaining the highest efficiency level provides an additional way of controlling emission levels, because the more efficiently we operate, the less gas we burn and the fewer oxides we emit, reducing our carbon footprint." **PM**