

## contractor spotlight

# Mile-high service and replacement contracting firm in for the long haul

LANCASTER, PA. — One of Denver's leading commercial and industrial hydronics service and replacement contracting firms has, for decades, built its success on a winning formula. Its key parts are these:

- A willingness to take on challenging jobs;
- Embracing new technology; and
- A philosophy that rigorous training for installers at all skill levels is of bedrock importance.

"Denver's tripled in size around us," said Bill Mutch, one of five account managers with ACA Denver Boiler Company. "We're the only firm in the

boiler service and replacement business that's routinely seen equipment lifecycles from start to finish. It's not uncommon for our crews to replace mechanical systems that have weathered the decades, to be swapped-out by sleek, new technology."

ACA Denver Boiler, founded in 1972, is a union shop with 30 employees and 25 trucks. Its principals include founder, president and accounts manager John Sweeney (with 43 years of industry experience, retired), his business partner Jim Smith (33 years), service/accounts manager Kelly Hessel (24 years),



At the Sherman Street Apartment complex, an apprentice solders a 2<sup>1</sup>/<sub>2</sub>" check valve for installation of one Pennant hot water heating boiler.

sales/account manager Bill Mutch (29 years) and sales/account manager Mark Rawlings (16 years). From the top, that's more than 140 years of

combined experience in all facets of the boiler business.

About 50% of the firm's business is tied to hydronics — both hot water and steam heat, along with fan coil systems. "We're proud that we've remained one of the few companies in Denver that continues to service and install steam heat systems," said Sweeney. "Because of the complexity of steam heat systems, most firms have simply given up on the work. The other, very substantial portion of our business is tied to commercial and industrial HVAC and chilled water air conditioning systems."

Hessel added, "Through the years, we've dealt with a lot of emergencies. They're par for the course. With a heating season that's seven months long, we sometimes feel like it's crisis management 24-7 as we deal with urgent, no-heat calls. So we've grown accustomed to the pace and stress of it, and that's probably why we've outlasted so many other service and replacement firms."

Being tempered by the rigors of work-related stress is a tough way to earn your stripes, but someone's gotta do it. At ACA Denver Boiler, it's a way of life.

At the core of the firm's work are small and medium size service and replacement jobs. Yet, tough economic conditions have increased competition noticeably. Larger mechanical firms have shifted some of their focus off of new construction and onto replacement work, and fly-by-nighters are prowling, too.

"It's been very disruptive in many ways," explained Sweeney. "Several of our smaller and medium sized competitors — established firms — have gone out of business."

In the wake of all this change, Mutch says he expects that when the economy picks up again consistently, *(Turn to Contractor... page 58.)*

## contractor spotlight

## Contractor takes on tough boiler jobs

(Continued from page 56.)

these larger firms will go back to their core business — where they most want to be, after all.

“Our affiliation with the union — Pipefitters Local 208 — helps a lot by providing high quality personnel,” noted Smith. “Denver Boiler and the ‘local’ are very active in educating

journeymen. There are substantial incentives for the technicians that tie to the labor standards at the union which improve both training and education. And it all translates to better trained, more knowledgeable and much more efficient labor on tap for the customer.”

Another key advantage is the relationship ACA Denver Boiler has with its key manufacturer’s rep firm, tm Sales, which has facilities in Colorado and Montana. At their new 20,000-square-foot facility in Denver, TM Sales represents Grundfos Pumps and stocks a large inventory, readily available to its wholesaler customers, including multiples of every boiler manufactured by Laars Heating Systems,

from 50,000 to 2 million Btu in size. They also stock Swan plumbing products and Danfoss controls and valves, among other lines.

“In addition to our inventory, we also provide jobsite support on a regular basis, and it also helps that we have a master plumber on staff,” said Rick Meek, vice president of TM Sales.

One of ACA Denver Boiler’s recent jobs stemmed from a competitive bid situation. An LDS church sent the request for bid out to four firms, including the incumbent hvac contractor. According to Hessel, aca Denver Boiler was on the list as one of the church’s service and replacement firms.

The design engineer had, at first, specified a standard, high-mass cast iron sectional boiler for the project. “But the combustion air and related relief air issues were a concern from

the outset,” explained Hessel. “As contractors, we questioned this, offered a new and better solution, and won the attention of church management.”

The \$84,000, three-week job entailed the removal of a large, low-pressure, atmospheric-fired, 20-section cast iron steam boiler with a huge, hanging “shell-and-tube” heat exchanger at least 7 feet long, and a smaller unit to supply hot water to baseboard and fan coils.

The new, high-efficiency Pennant systems by Laars — each 1 million Btu in size and with efficiencies of 85% — were stacked one on top of the other, a perfect fit for the tight mechanical room.

“The new copper fin-tube, sealed combustion boilers are fan-assisted,” said Hessel. “This permitted us to bring in outside combustion air at a greater running distance than may have been possible otherwise, and that helped to tip the scales in our direction for the job. We’re very fond



A check valve is installed on the boiler loop piping at the Sherman Street Apartments.

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of the new Pennant boiler line. We’ve run into problems before with fan-assisted systems. Usually, it’s an air switch or hot surface igniter problems, especially with frequent on-off cycling, and this leads to a lot of callbacks — but not with these boilers.”

“We also use, as a standard, Grundfos pumps on new installations,” added Hessel. “On this job, we have two single-phase, 1-horsepower, variable speed circulators. A Tekmar pump control is used to operate them on lead-lag staging and warm weather shutdown, and there’s also a Spirotherm air separator — all high-quality, efficient equipment.”

#### Circa-50s apartment, modernized

Another job in center city Denver was happening at the same time, 16 miles away and with a larger crew. The Sherman Street Apartments bask in the grandeur of the state’s Capitol complex, just two blocks away. Here, aca Denver Boiler installers were hard at work connecting a new Pennant boiler to the heating system that served all three of the connected apartment buildings, which have 83 apartments on three levels. They’re circa-1950s, Midwestern-style buildings with total living space of 42,000



## contractor spotlight



While doing a boiler replacement for a local LDS church, an HVAC apprentice prepares piping for installation of two Pennant hot water heating boilers. Meanwhile, an electrician prepares the wiring for the boilers.

square feet.

Down in the mechanical room — a basement space that sits below two of the apartment buildings — the new hydronic system had already taken its place as remnants of the original, multi-section cast iron boiler were being laboriously hauled out.

“We also had to remove an old 1,000-gallon storage tank covered with asbestos. That was removed by an abatement company. It stood over there,” said Mutch, pointing to a large area, now vacant. Clearly, the mechanical room was configured initially to accommodate much larger equipment.

“We install a lot of these gas boilers,” continued Mutch. “Their compact size and efficiency are a big advantage. The Pennants are also a four-stage system. Their proportional firing works perfectly as different stages respond to outdoor reset conditions. We use outdoor reset controls on most of the jobs that we do.”



ACA Denver Boiler installed Grundfos 3-speed pumps at a LDS church project.

Helping to complete the boiler's piping was a third-year apprentice. “These guys go to school two nights a

week in addition to full-time work,” said Mutch. “They're training even before they get to the job. We encourage this a whole lot; it's especially tough for the first few years, but the results are dramatic.”

The new boiler for the apartment complex, at just 1,100 pounds and with a footprint of 30"x96", would soon provide 2 million BTU with no need for water storage. It would occupy a fraction of the space needed by the earlier equipment and provide much higher fuel efficiency.

“Naturally, the new equipment offers a higher efficiency rating than the old system, but that's only part of the overall solution to improving fuel efficiency at this location, and many of the job sites we install equipment at,” explained Sweeney. “The way we look at it, the efficiency of a boiler and efficient operation are two different issues. Efficiency of operation is increased by controls like outdoor reset, changing heating system water

temperatures in relationship to outside temperatures. This permits fuel conservation and, because of it, savings.

“Outside air lockout also paves the way for major savings, as the system is turned off when it's not needed. This is a common control, but we're always surprised at how infrequently it's used. So many systems rely on a manager or maintenance person to turn the heating system off. You know they aren't going to turn it off every day as soon as outdoor temperatures reach 64°, then back on at 62°!”

According to Smith, typical retrofit installations require up to 30 Btu of heat per square foot of living space, with a design temperature of -5°. And at Denver's 5,000-foot elevation, there's substantial efficiency loss (4% for each 1,000 feet above the 2,000-foot level). “Altitude is a key factor,” Smith said. “So we have to derate appliance sea level ratings for our altitude.”

Sweeney added, “Our customers (Turn to *Difficult...* page 60.)

## contractor spotlight

### Difficult boiler jobs are contractor's forté

*(Continued from page 59.)*  
want reliable, efficiently operating systems to reduce their overall energy and operating costs.”

A boiler installation of, say, \$60,000, isn't all that daunting when a building owner is paying \$30,000 a

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year for fuel prior to installation of a new system.

“Recently, a customer told us that installation of a separate hot water boiler with a storage tank paid for itself through cost savings in a little over two years,” said Sweeney. “We removed two 5-million-Btu steel-tube boilers that were running all year because they were using a heat exchanger for domestic hot water. We installed a 2-million-Btu copper fin tube boiler with a storage tank for the domestic water. Clearly, it saved them a bundle.”

However, Sweeney is quick to point out that, “The big unknown, year to year, is the weather. Temperature and weather fluctuations here in the Rockies are erratic, and certainly make it a challenge to predict equip-

ment cost payback with any sense of accuracy. When we remove old systems and install high-efficiency replacement hvac, chiller or hydronic equipment, the payback is typically in the three- to five-year range.”

On another job, about a year ago, aca Denver Boilers installed a high-efficiency Rheos boiler to replace an old steel tube boiler. They preserved the existing heat exchanger system but, to enhance system efficiency, they used outdoor reset with heat exchanger priority.

“This permitted us to maintain minimal temperature requirements,” said Hessel. “The new boiler has full modulation, instead of staging, which is more efficient. In this case, the manager of a six-story HOA building told us recently that the heating bills

are the same and sometimes a little less, even though the natural gas prices increased 86% almost immediately after installation of the new boiler. The manager also said, ‘We also have more hot water than before. Before the new system we jokingly had a policy of shower with a neighbor to save hot water; otherwise, we'd run out of it.’

“We estimate that the company that owns the Sherman Street Apartment complex could see a savings of \$12,000 a year,” Hessel continued. “If that's the case, the boiler more than pays for itself in three years. This is the type of scenario we're seeing now with some frequency, especially with the ever-increasing cost of fuel.”

With rising fuel costs, “You can't afford not to upgrade,” concluded Sweeney. “What'll tomorrow bring? Not lower fuel costs, that's for sure.” ■