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Boiler SWAT Teams

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Boiler SWAT Teams

Midwinter conditions challenged
urgent boiler replacements

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SUPPLY



Last fall, when DRF Trusted Property Solutions won the Chatham Park Village Cooperative mechanical systems retrofit bid – weeks after they thought notification might be announced – they had no choice but to pull the trigger. To complete the installations on schedule, it was “game on” for their best hydronics SWAT team effort. The heating season was bearing down on Chicago.

Fortunately, the Plainfield, Ill.-based plumbing and mechanical contracting firm had considered the possibility of a late start with mid-winter boiler replacements. As one DRF technician said, “It was a worst-case scenario for multiple boiler replacements,” with little room for error.



The 63 buildings with 552 units in Chicago's South Side are WWII-era brick structures, only a few blocks from the Lake Michigan shoreline. Midwinter temps easily slip into the subzero range, and Windy City gusts were a certainty.

DRF managers ran the numbers. They knew that tenants could be cut from their heat sources for only five or six hours, mid-winter. To complicate matters, there was no room on campus to stage the "SWAT" plan's most crucial component – the prefabrication station.

DRF's plan called for off-site production of prefabricated, near-boiler piping with all key hydronic parts and pieces. They settled on warehouse space at their main hydronics shop 45 miles from Chatham. There, with production line precision, many of the boilers were fitted with all near-boiler piping, pumps and valves two to four boilers at a time. As soon as a van could be loaded with three or four assembled "rigs," they were bound for Chatham where deliveries were made to separate installation teams.

Out with the old

Life at Chatham with the old, gas-fired cast iron boilers was not one of comfort. Poorly sized and literally falling apart at the seams, the old boilers were constantly short cycling, some days at a rate of seven to ten times per hour. Operational efficiency had fallen to less than 50 percent. Naturally, the systems were consuming inordinate amounts of fuel.

The idea was to allow the old systems to provide what heat they could, even while their replacements were being prepared for active duty.

The boilers of choice to be installed were modulating-condensing Laars NeoTherms, exceeding a thermal efficiency of 95 percent. Eighty-four of them were paired with 60-gallon Laars-Stor indirects to meet domestic water heating needs. Compact in size, the new boilers were easily maneuvered into tight spaces within the many mechanical rooms. They were rigged for operation, even while the old boilers groaned and heaved through their last living moments.

As DRF teams became increasingly proficient at the replacement work, the actual down time – when fuel, supply and return lines were severed to the old boilers, and

the new systems could be activated – was between four to eight hours. During those critical daylight hours, the buildings were able to retain their heat so that temperature drops were never an issue.

Because of the urgency of meeting heat needs at Chatham, DRF turned to Romeoville, Ill.-based manufacturer's rep firm and custom manufacturer, Metropolitan Industries Inc. "We prepared 19, fully-assembled, split-skid boiler packages to further reduce down-time at the apartments," says Matt Brickey, commercial sales associate.

Pinched schedule

Apartment owners were notified 72 hours before the workers were sent in to prepare the mechanical room. And because they were on a pinched schedule, weather was not a consideration: cold, wind or mountains of snow – DRF crews didn't miss a step.

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The only exception was an unexpected emergency. One day, the bottom of an old boiler disintegrated and fell out. The rusty swamp it created, and then the quickly noticed lack of heat and put that building to the top of the list for replacement.

Working in tandem, a prefab team would prep the preassembled mechanical arrangements – with any needed modifications for specific boiler rooms – the day before a system was scheduled for installation.

On install days, a demo team arrived at a building by 8 a.m. and immediately cut out and removed the old boiler and components. While they were cleaning up, they often heard another crew shuffling toward them with the new equipment. By 2 p.m. or 3 p.m. in the afternoon – with no variation – the install was complete and heat restored.

"No one ever said, 'We're tired,' 'We're cold,' or 'We don't have a part.' We promised to get the job done by the end




of the day, so that's what we did," says Scott Schnurr, DRF's CEO.

In the assembly area, once the near-boiler piping was fabricated for each boiler, including air and dirt separators and Taco pumps, all of the preassembled arrangements were moved aside and labeled for installation crews.

§ At Chatham, 42 of the apartment buildings received a total of 84 boilers – all 150 MBH systems, each served by two 1/8HP Taco 0011, in line, wet rotor circulators.

§ Nineteen of the buildings received 38 Laars NeoTherms – each of the 285 MBH size. Those larger boilers are each served by two 1/6HP Taco 0013 circulators.

§ The remaining two apartment buildings at Chatham were equipped with four larger, 500 MBH Laars NeoTherms. Circulation for each of these systems is handled with the use of two 1/6HP high-capacity Taco Model 2400 pumps per boiler.



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"We work with Taco a lot," Schnurr says. "The pumps and circs are reliable and have never been the source of call-backs for us. Also, Laars chose Taco as the OEM pumps for their boilers."

Putting the plan in place

Chatham Park Village acts as a cooperative. There's no landowner making decisions for tenants. While this has advantages for the families living there, there were challenges. Though each family gets a vote for all important decisions made, the "rule by committee" arrangement posed a few issues for DRF.

"We had to look at all of the mechanical rooms and factor in pleas from the different cooperative members as to why their mechanical room should be serviced first," Schnurr says. "With winter moving in fast, we had to decide which of the apartments were most in need of boiler replacements; we had to create the schedule and stick with it."

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DRF calculated that 16 men were required for the demolition and replacement process. Split into three-man teams, crews were deployed to Chatham to clear and clean up the mechanical rooms and prep for the installation of the new gear, while preinstall teams were offsite at DRF building the systems.

All venting was precut and ready to go. Piping, shut off valves and all other components were preassembled as well. With just enough space in the mechanical rooms for a two-man install crew, the guys arrived on-site with all of the pre-fitted gear. They quickly made the necessary connections for venting, system loops, gas and electric, pushing with the efficiency of well-oiled teams to complete installations for each building.



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— Scott Schnurr, CEO, DRF

Whatever it takes . . .

DRF crew members learned to carry hand warmers with them at all times, and have several thermoses of hot coffee and tea readily available. They even had several space heaters for mechanical rooms, and for the owners, serving as supplemental heat for the day while the install was taking place. Another factor DRF had to work against was snow removal. For the 63 buildings, four members of the co-op served as maintenance men. They couldn't always get to where they needed to be in time to remove snow for the DRF crews. Knowing that it was either a setback waiting for the area to be cleared of snow, most times they just did it themselves to stay on schedule. There were several shovels and bags of salt in each truck.

“The low NOx NeoTherms also meet Energy Star's 'most efficient' specs, exceeding current government requirements,” Schnurr says. “They qualify for rebate and tax credit programs – something that was a major benefit for the owners of the Chatham cooperative.”

And, with the boiler's on-board outdoor reset, the new boilers respond immediately to changes in Chicago weather. It was at DRF's 20,000-square foot headquarters where the boiler assemblies took place. Depending on traffic, from the time they were dispatched, it took techs between 45 minutes and three hours (in snow) to arrive at Chatham Park Village.

In April 2014, The Chatham Park Village Cooperative received a check for a total of \$590,620 – all from rebates. While some of the money came from roof installation rebates, \$527,857 alone came from the rebates relating to the Laars NeoTherm boilers.

That's smart project management. And, next winter, Chatham residents will warmly recall last winter's Polar Vortex. **CCR**

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