



VALUE ENGINEERING LEADS TO PIPING INNOVATIONS AT NEW FAU FOOTBALL STADIUM

PROJECT:

Florida Atlantic University,
Domestic & Chilled Water

PRODUCTS:

aquatherm green pipe®

aquatherm blue pipe®

LOCATION/DATE:

Boca Raton, FL
Summer 2011

AQUATHERM ADVANTAGES:

- A 10-year warranty eased longevity concerns
- PP-R's lighter weight allowed for quicker and easier installation
- PP-R negated concerns about jobsite theft of metal

PP-R piping helps construction team beat tight timeline while saving roughly \$120,000 on larger sized water piping materials and halving installation time on water mains and branch piping.

Florida Atlantic University's new football stadium is expected to open for the 2011 football season, bringing excitement and revenue to the campus and surrounding community. For the last decade the Owls and their fans had to travel miles to one of the two stadiums they rented for games, but beginning this fall, FAU's Boca Raton campus will be home to a sparkling new 30,000 seat facility.

The project already contributed to the creation of 2,000 jobs since the official planning stages began in 2008, and school officials were intent on creating a stadium that would last for decades and serve as a source of pride. It was designed by HKS Architects and Schenkel Shultz and is being constructed by Balfour Beatty Construction and James A. Cummings, Inc.

The stadium is designed and will be used as a mixed purpose facility for everything from intramural sports and campus center activities to convocations and graduations. It consists of a press level, a suite level with 25 luxury suites, a club level with 1,000 club seats, a catering kitchen, locker rooms for two teams, numerous common areas, and 15 concession booths.

CALLING A PIPING AUDIBLE

Yet, as modern and luxurious as the school wanted the stadium to be, it also had to



be extremely cost effective. One of the unique construction aspects of the project emerged from the value engineering of the mechanical and plumbing systems after the local plumbing and HVAC distributor recommended polypropylene-random piping for the domestic hot and cold water and chilled water for the stadium.

Copper and CPVC pipe systems would



typically have been used for the 2- through 6-in. pipe, but since neither of those mediums excels in larger sizes, and due to the volatility of copper pricing applications, they were dismissed. Schedule 40 stainless steel was also considered, but the fittings would have put the project over budget.

Aquatherm's polypropylene-random (PP-R) was an ideal piping option for this project. Aquatherm's PP-R pipe, which is corrosion-proof, chemically inert, and extremely durable, has been used in more than 70 countries for nearly four decades, but is relatively new to North America.

The heat fusion process used to connect the

pipe and fittings is virtually leak-proof, and the pipe carries a 10-year, multi-million-dollar warranty covering product liability, personal injury, and property damage when installed by Aquatherm-trained technicians.

Rightway Plumbing was selected to handle the domestic water plumbing, while Hill York worked on the chilled water installation.

According to Daniel Rourke, Vice President of Right Way Plumbing Company, which served as the mechanical subcontractor on the project, "One of the reasons we chose to use Aquatherm was to stay on the cutting edge in order to make our business even more competitive."

STUDYING THE PLAYBOOK

The entire MEP team spent a fair amount of time researching Aquatherm to establish a level of comfort with the product. In fact, Rourke traveled to a large Aquatherm installation at a liquor distillery to see the product up close and in action.

"Aquatherm's extensive warranty and the fact that the piping system is much lighter – which facilitates pre-fabbing large sections of the piping system on the ground where it is safer and more efficient to work with – were some of the biggest benefits Aquatherm offered on this job," Rourke explained.

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Both the Hill York and Right Way Plumbing teams were fully trained on both socket and butt fusion systems over a two-day period, giving them ample time to become comfortable with the product and tools. Rightway purchased both the large and small fusion welding machines necessary to handle connections ranging from 1/2-in. to 4-in., and rented from the distributor the butt fusion welding machines required for the 6-in. welds. Hill York, working in 2-in. and smaller pipe diameters with Aquatherm Blue Pipe, bought the fusion welding equipment.

Mark Sullivan, Project Manager with Hill York, explained that his company's team was trained both at the Hill York office (a controlled environment), and also at the project site for real world conditions. "We felt this would train our personnel in a comfortable setting in using this product for the first time," Sullivan explained.

Climatherm was used on all chilled water piping 2-inches and under, Sullivan said, "because we felt the cost savings would benefit us and the client due to the volatility of copper pricing and actual loss by theft we all have dealt with at one time or another on project sites." Climatherm was used for the floor mains and branch lines that run to the multiple McQuay air handling units (AHUs) and fan coils throughout the facility. Hill York installed





approximately 3,000 linear feet of Climatherm piping, including roughly 855 feet of 2-inch, 330 feet of 1 ½-inch, 470 feet of 1 ¼-inch, 920 feet of 1-inch and 420 feet of ¾-inch.

Sullivan said the installation went “extremely well for a new application for our crews and our company.” “Our challenge was getting to know the product with hands on and overcoming the thought process of ‘this is how we always do it’ philosophy,” he said, adding that the labor savings in making offsets and ease of coordination with other trades as changes were made on the pipe design were huge.

According to Rourke, engineering material savings for the larger sized water piping systems was approximately \$120,000. He added that Aquatherm’s heat fusion process slashed the installation time for the water mains and branch piping by 50%, saving time and labor. “That

helped us to not only meet the fast schedule, but to beat it,” he said. Further, a credit of \$30,000 was given back to the owner as a value engineering item during negotiations.

“Aquatherm eliminated wasted pipe and it eliminated our concerns of theft that have been a problem on numerous other projects,” Rourke concluded. ☺



The German-manufactured pipe has been one of the world’s most durable and greenest piping systems for four decades and proven successful in 70-plus countries. Aquatherm piping systems offer many performance and environmental benefits, such as:

- Eliminating toxic materials, glues and resins, and open flames from the piping installation equation
- An R-value of 1 or more per inch or greater depending on pipe size and SDR
- The fusion welding process, which creates seamless connections that last a lifetime without leaking or failing
- An optional fiber-composite layer in the pipe reduces linear expansion of the pipe by up to 75% compared to plastic piping



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