



PP-R PIPE PLAYS KEY ROLE IN COMMUNITY HOSPITAL'S HURRICANE KATRINA RESTORATION PROJECT

PROJECT:

Hancock Medical Center,
potable water and HVAC

PRODUCTS:

aquatherm green pipe[®]
aquatherm blue pipe[®]

LOCATION/DATE:

Bay St. Louis, MS 2011-2014
[multi-phase]

AQUATHERM ADVANTAGES:

- Flame-free installation offered ease and safety in tight spaces
- Branch connections via fusion outlets will allow for simple expansion if needed later
- Leak-free connections will ensure a high-performance system without risk of failure or delaying operations

Polypropylene-random piping system featured in Phase I of \$24 million renovation

Damage and destruction, search and rescue, catastrophic disaster: These chilling phrases became integral to the American lexicon following the aftermath of Hurricane Katrina, which devastated the Gulf Coast in August 2005. Labeled the costliest U.S. natural disaster, the deadly storm caused an estimated \$81 billion in property damage.

In many areas, no one — and no structure — was completely immune to the repercussions of the hurricane, not even a local community medical facility like the Hancock Medical Center in Bay St. Louis, MS. Completely ravaged, the county-owned hospital suffered approximately \$26 million in damages.

In February 2011 — following a long planning and negotiation period, the hospital finally embarked upon a \$24 million Federal Emergency Management Agency- (FEMA-) approved renovation and mitigation project. Severely damaged, the 80,000-sq-ft medical had to be completely renovated. The project was divided into five phases in order to keep the facility operational during the construction.

Local contractor JEM Mechanical (Waveland), Hesma Engineering (Jackson), and the local distributor joined forces with Hancock Medical Center's facility services department to recreate the facility's building blocks in Phase I of the project.



WATER LEVELS, JOBSITE THEFT POSE PROBLEMS

Phase I consisted of renovating approximately 16,000 sq ft of the hospital's first floor, including reconstructing a medical nursing unit and constructing a new central plant and a 10,000-sq-ft addition. Phase II, scheduled to be completed in October/November 2012, and includes a remodel of the Intensive Care and Obstetrics units as well as the Emergency and Radiology departments. Phase III includes the Surgery department, Phase IV features Administrative areas as well as the Kitchen, Cafeteria and Ancillary Support Areas and Phase V includes patient-care areas in the South Wing. The entire project is scheduled to be completed in June 2014.





One of the first challenges to Phase 1 was choosing and installing a new piping system. During Hurricane Katrina, Bay St. Louis experienced a storm tide more than 30-ft deep, causing damage to the framework of most local buildings; the medical center's existing domestic water and chilled and heating water steel and copper piping systems needed to be replaced.

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-Tom, Canale, Partner in JEM Mechanical

The choice of piping system was motivated by several factors, but the fact that the local distributor had recently introduced Aquatherm polypropylene-random (PP-R) piping to the project was fortuitous. First, approximately \$5,000 to \$10,000 worth of copper medical-gas piping already had been stolen from the jobsite, despite the presence of security. The second component was the volatility of the copper and steel markets.

“The markets have been going haywire,” said Tom Canale, a partner in JEM Mechanical. “When we have a job that won't be completed for over two years, like with Hancock (Medical Center), it can really throw things off.”

The bonus was the lighter weight of the PP-R piping compared with that of steel or copper. “Our guys are starting to realize that the weight of PP-R is a labor and back saver, too,” Canale said.

Hank Wheeler, director of facility services at the medical center, also requested information

about Aquatherm PP-R piping from the American Society for Healthcare Engineers. “I received a very positive endorsement from a hospital facility manager in Washington State,” he recalled.

PIPING SELECTION DEEMED FASTER, SAFER

The project utilized ½- to 4-in. Aquatherm Greenpipe® PP-R piping for the domestic water supply; 6-, 8- and 10-in. Aquatherm Climatherm was chosen for the HVAC system and central plant. The piping ties into two 250-ton Trane Series R chillers, Grundfos pumps, a Taco air separator and NIBCO butterfly valves with Kohler fixtures. Three gas-fired boilers will be integrated into the domestic hot water system during a future phase of the restoration.



Best suited for potable water and food-grade applications, Greenpipe is corrosion- and chemical-resistant, has high environmental compatibility and impact resistance and features heat- and sound-insulating capabilities, all important considerations for a busy community hospital. Climatherm boasts all of the advantages of Greenpipe, but is engineered with thinner walls for higher flow rates, making it the perfect option for HVAC and industrial applications. It also comes with an optional fiber composite layer that delivers thermal expansion capabilities similar to copper.

Additionally, Aquatherm uses heat-fusion to form connections, a process often used in natural-gas piping because of its reliability. Heat fusion bonds both sides of a joint into a single, homogenous material without the use of chemicals or mechanical connections, which eliminates systematic weaknesses and fail-points in the pipe. The seamless heat-fusion connections do not require an open flame or burn permit, another benefit for a building that houses highly combustible medical materials, such as oxygen.

“The ease and safety of installation — no need for torches and soldering in tight spaces and reduction of fire risk,” made Aquatherm PP-R piping a fit for this project, Wheeler said. Additionally, when installed by Aquatherm-trained and certified technicians, the pipe and fittings carry a 10-year, multi-million dollar warranty covering product liability, personal injury and property damage.

'WAVE OF THE FUTURE' APPEARING ON THE COAST

Upon the completion of Phase I in early 2012, the Hancock Medical Center cut the ribbon





on the first phase of the restoration project. All parties involved with the hospital's renovation were pleased with the addition of Aquatherm to the project.

"The testing showed one bad joint for all of the thousands of connections," said Don Pizzetta, JEM Mechanical project supervisor. "With sweating copper or steel, there would have been more leaks."


According to JEM Mechanical majority owner Jim Marlowe, the company has been re-engineering many of its bids to incorporate Aquatherm PP-R piping. JEM has built a reputation for innovation and high quality work while paying close attention to the bottom line and providing value to the customer.

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"You can give the customer this added value by using Aquatherm that is resistant to corrosion, long lasting, and fully recyclable with improved energy savings," Canale said. "We see Aquatherm as the wave of the future."

Officials at the hospital are excited to have a system in place that is easy to maintain and expand via fusion outlets. Fusion outlets allow an installer to simply drill into the supply pipe then heat fuse the outlet fitting into place.

"We are in the process of procuring the tools we will need and the mechanical training necessary to be able to install the products with our in-house maintenance staff," Wheeler said. "We are also planning a build-out of shelled in space on our third floor and plan to use Aquatherm." 



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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