



Project: **St. John's Mercy Hospital**

Location: **Joplin, Mo.**

Client: **St. John's Mercy Hospital**

Rebuilding Hope Through a New Hospital

Federal, state and Joplin city leaders began rebuilding quickly after a deadly tornado steamrolled through the city last May, leaving homes and buildings like crumbs in its wake. St. John's Mercy Hospital turned to Burns & McDonnell for help with one of the city's most critical needs — building an interim hospital.

The May 22 storm ravaged the city, killing 161 people and gutting the hospital, where doctors and nurses scrambled to protect patients and take cover moments before the tornado hit. In the chaos, a back-up generator failed, life-support systems shut down and hundreds of

windows shattered from winds that pummeled the nine-story hospital's frame.

The U.S. Army Corps of Engineers and Federal Emergency Management Agency hired a team from Burns & McDonnell led by Doug Lenz, civil department manager in the Aviation & Facilities Group, to provide site preparation and civil and electrical engineering services for the construction of the interim 144-bed hospital.

Hospital leaders hired Walden Structures, a California company, to fabricate a modular structure for the interim 150,000-square-foot

medical center that was transported and erected across from the old site. The structure, which consists of 224 modules — each 14 feet high and 60 feet wide — has since been transformed into a full-functioning hospital that opened in April 2012.

The new facility is made of steel, concrete and drywall. It is equipped with a full-service emergency department, imaging suite, intensive care unit, labor and delivery rooms as well as a storm shelter and helipads. Its glass windows are designed to withstand winds of up to 200 mph.

While handling site improvements such as excavation, grading and utilities installment, St. John's Mercy asked if Burns & McDonnell could also design and facilitate the building of a central utility plant (CUP) to serve the interim hospital and be operational in less than four months.

"We said yes," says Rich McKown, director of engineering in Burns & McDonnell's Healthcare & Research Facilities Group.

The Burns & McDonnell team conducted daily meetings to coordinate the project's needs. They incorporated fast-track design to provide early design packages to complete the critical path construction items, including the foundation, the underground utilities and building enclosure.

Concurrently, Burns & McDonnell provided procurement packages to order the long-lead equipment, which included emergency generators, switchgear, transfer switches, water heaters, pumps and medical gas equipment.

"In some cases there was a longer lead time to get the equipment than we had to finish the project," McKown says. The firm searched vendors and contractors to locate what they needed and built around them.

Burns & McDonnell's design included spaces for emergency generators, mechanical and medical gas equipment, and primary and emergency power systems.

The firm, which has a decades-long relationship with the Corps of Engineers had never worked with St. John's Mercy.

"They took a leap of faith since they'd never worked with us before, and it turned out to be a very successful project," McKown says.

The staff at McCarthy Building Companies Inc., which facilitated construction of the CUP, called the project a shining star for the entire interim hospital rebuild.

"This aggressive schedule could not have been completed without the hard work and dedication from the Burns & McDonnell team," says Ryan Moss, project manager for McCarthy Building Companies. "I appreciate the team's efforts and sacrifice to help make the CUP happen."

The interim facility will operate until a permanent, 900,000-square-foot hospital is constructed on a nearby 100-acre campus. The new medical center is expected to open in 2015.

For more information, contact Rich McKown, 816-822-3929.



Walden Structures, a California company, fabricated the modular structure for the interim 150,000-square-foot hospital that was transported from California and erected across from the old site.



Medical gas equipment is part of the CUP project and includes medical air compressors and vacuum pumps that supply medical gases to the interim hospital.