



SOLE SOURCE APPROACH

While facing many challenges and obstacles for the successful completion of this project, BCM never relinquished their initial quest to have the most efficient and optimized cooling plant installed. As expected in a state-of-the-art research and education facility, a chilled water system has to be designed and constructed to meet high system operating efficiency demands. Given BCM's extensive lab facilities, the complex has historically recorded high utility costs per square foot. BCM recognized that each incremental gain in the performance efficiency of the chilled water plant would translate into a commensurate reduction in operating cost. TAS' sole-source approach to chilled water plant design, construction, installation, and commissioning enabled BCM to achieve complete control over the system's efficiency performance. It also helped BCM manage performance risk through TAS' operating efficiency guarantee at system commissioning. In contrast, with a traditional chiller plant design/build approach, the design engineer does not necessarily retain full control over component selection, field construction, or system performance at commissioning.

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Next time Houston is in the midst of a late-summer down-pour, be assured that Baylor College of Medicine is staying cool and dry. TAS central plant expertise – it's a reputation we've built one project at time.

Baylor College of Medicine in Houston, the only private medical school in the Greater Southwest, was founded in 1900 and is an internationally respected medical and research institution. The College consistently ranks among the top of the Country's 125 medical schools. Located in the Texas Medical Center, a 700-acre complex housing 42 member institutions, BCM has affiliations with seven teaching hospitals, each with a national and international reputation for medical excellence.



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BAYLOR COLLEGE OF MEDICINE: READY FOR THE FUTURE

Baylor College of Medicine (BCM) suffered a significant loss of research data when the facility's below-grade level was flooded with more than 15 feet of water. As a major research and teaching facility located in Houston, Texas, Baylor College of Medicine serves as the home to many important educational programs and projects, as well as National Institute of Health research grants. On June 9, 2001, Tropical Storm Allison delivered a devastating blow, dumping over 33 inches of rain on the Houston area during which BCM lost volumes of unrecoverable laboratory research material along with the use of its central chiller plant.

Tropical Storm Allison left the facility severely damaged, requiring two weeks of service repairs before it could be reopened for business. Research data for ongoing projects that have been in operation for years were lost as a result. BCM recognized the need to implement substantial preventive measures to protect the facility from future floods. With the assistance of a FEMA (Federal Emergency Management Agency) grant, BCM was able to invest in a stand-by chiller plant. However, despite federal assistance the project still faced two major obstacles, namely space and schedule. The lack of available real estate for a stand-by chilled water plant and the next hurricane season just around the corner were primary concerns.

WHY BAYLOR CHOSE PACKAGED Compared to a traditional field constructed central plant

✓ Modular, Packaging Concept	Modular design made platform installation possible
✓ Compact Footprint	Compact size accommodated space constraints
✓ Speed of Installation	Minimized site interruption over just one weekend
✓ System Efficiency	Minimally 10% improvement over existing system
✓ Manufacturing Schedule	Six weeks upon chiller delivery

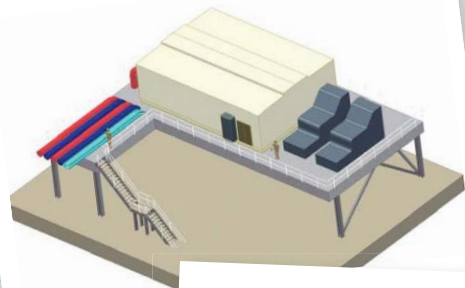


PORTABLE AND COMPACT Easy to install in tight urban spaces

The first challenge was the restricted space available to accommodate the footprint of the stand-by plant on campus. BCM is situated in the midst of Houston's internationally renowned Medical Center in a high-density section of the metropolitan area. Taking advantage of TAS' modular central plant design and construction features enabled BCM to have the new chilled water plant installed in an unconventional space – above the loading dock service drive. By constructing a concrete base above the existing truck loading dock service drive and parking area, the installation of the TAS stand-by plant took place without interference to the normal delivery access for the facility.

At the time of installation, the 5,000-ton cooling project was noted for being the largest TAS Packaged Central Plant built for the comfort cooling market. The TAS plant features Trane centrifugal chillers, condenser water pumps, electric switchgear and a Trane Tracer Summit™ chiller plant

control system. In coordination with the local Hunton Trane Services Company, TAS' engineering team designed and optimized the system to operate at 96°F dry bulb / 80°F wet bulb ambient design conditions.



REDUCE SCHEDULE RISK 75% less site construction time

In addition to the limited space availability the project also faced significant schedule constraints. Both the construction and site installation phases could prove to be costly processes if construction schedules were not properly managed. The TAS team was able to construct Baylor's plant in as little as six weeks after receipt of the Trane chillers. The approaching hurricane season dictated a compressed

project schedule to ensure that adequate backup systems were in place and operational before the new storm season arrived. TAS successfully met all schedule obligations and was also able to accommodate a special request. BCM requested that the loading dock and parking area not be obstructed during the workweek to facilitate the round-the-clock traffic flow. The TAS/Trane team successfully met this request with minimal disruption during the installation phase in BCM's congested loading dock area by completing the entire installation over a period of just one weekend.



OWNER'S PERSPECTIVE:

"The TAS modular central plant was the perfect solution for our application. We had limited space available, a confined area for construction and we wanted the most efficient plant possible."

Rock Morille, P.E.,
Senior Director of Facilities
Baylor College of Medicine