

## BURNS & MCDONNELL DELIVERS ON TIME AND ON BUDGET

Burns & McDonnell was contractually obligated to deliver the project on time and within their proposed lump sum price. Their contract with Austin Energy included liquidated damages for delivery of chilled water, steam and grid

independent power as required by the hospital.

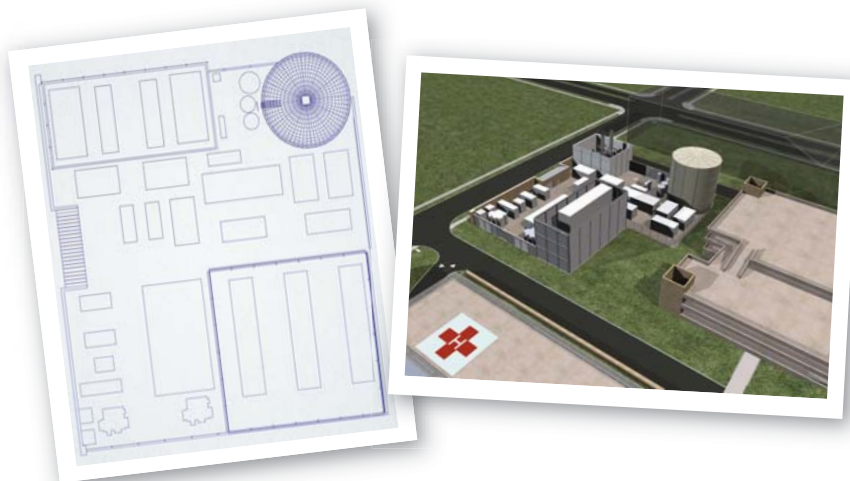
All of the dates were met and the hybrid energy plant installation was completed in approximately 10 months. The TAS modular, packaged solution helped Burns & McDonnell meet their deadlines by managing labor, weather and installation risk through an ISO 9001:2000 quality factory controlled manufacturing process.

To win projects in a highly competitive central utility plant market such as the Dell Children's Medical Center, engineering firms are forced to assume greater project risk in managing total project cost, schedule and operating performance. In order to manage their risk, Burns & McDonnell choose to promote innovation by utilizing a TAS Packaged Central Plant.

### PARTNER'S PERSPECTIVE:

"Burns & McDonnell requires a partner vs. traditional vendor approach to reduce our risk and enhance performance as we aggressively compete for Engineer-Procure-Construct projects. We selected TAS due to their ability to design, manufacture and deliver the entire packaged chiller plant and modular components – for Burns & McDonnell it's much more than just the chiller."

Ed Mardiat  
Principal, Director of CHP Development  
Burns & McDonnell



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## DELL CHILDREN'S MEDICAL CENTER COMBINED HEAT & POWER SOLUTION The First Platinum LEED® Healthcare Facility Worldwide

A global first - Platinum LEED® - in the healthcare industry. Energy conservation is a global concern and at Dell Children's Medical Center the leadership saw green when they talked about the benefits of energy efficiency. Not only is the hospital facility one of the most energy efficient in the world, it saved \$8,000,000 in capital outlay by outsourcing power, heating and chilled water needs to Austin Energy. In turn the hospital will purchase their power and chilled water from Austin Energy's on-site plant at tariffed rates over a 30 year term.





At 170 beds, the Dell Children's Medical Center will be served by an on-site 4.3 MW combustion turbine generator, which will recycle waste heat to produce 22,000 lbs/hr of steam for hospital process loads and 900 tons of chilled water from a steam absorption chiller. The plant also includes a 1,500 ton packaged electrical centrifugal chiller plant, a 20,000 lb/hr packaged boiler and a 1,500 kW diesel emergency engine generator.

The project had an aggressive goal of becoming Platinum LEED® Certified – the first healthcare facility in the world to achieve this prestigious certification. The Leadership in Energy and Environmental Design (LEED®)

Certification is based upon five well-founded scientific standards emphasizing state-of-the-art strategies for sustainable site development including energy efficiency, water savings, materials selection, waste management and indoor environmental quality.

The hybrid energy plant will be owned and operated by Austin Energy – the local municipal energy utility. Burns & McDonnell was the EPC (Engineer-Procure-Construct) partner. The combined utility system will produce grid independent power with two grid feeds from two separate substations as back up to the on-site combustion turbine generator. In the event of a grid outage, the hybrid energy plant will continue to operate and provide 100% of the hospital's power and thermal energy needs.



For Austin Energy, the economic attractiveness of the CHP installation is the ability to utilize free waste heat (thermal energy) to support the production of steam and chilled water for not only Dell Children's Medical Center but to also serve chilled water to other customers adjacent to the plant through a district cooling system.

### USGBC PERSPECTIVE:

"I was fortunate to personally meet with the team from the Austin Energy/Seton Healthcare Network and came away amazed by what I experienced. In particular, the low emissions and the high energy conversion efficiencies predicted for the Dell Children's Medical Center of Central Texas (DCMCCT) combined cooling, heating and power plant, make it quite possible for this project to be awarded the maximum 10 points allowable under Credit EA-1 and that will, in turn, allow DCMCCT to become the first LEED® Platinum Hospital in the World."

Rick Fedrizzi  
President, CEO and Founding Chairman  
United States Green Building Council

## BURNS & MCDONNELL'S BIDDING STRATEGY WAS TAS PACKAGING FROM THE START



The procurement and installation of TAS' packaged electrical centrifugal chilled water plant, which included the cooling towers and a secondary pump skid, was managed by Burns & McDonnell who won the project on a competitive bid basis. For Austin Energy, a key driver for

the project was the potential eligibility of a Department of Energy (DOE) \$3,000,000 "grant, under the cost share funding integrated energy system solicitation program".

From the onset, Burns & McDonnell's bidding strategy was to support Austin Energy in their efforts to secure the DOE cost share funds for this project. In determining their strategy, Burns & McDonnell sought to differentiate their proposal from other bidders by promoting a packaged system solution versus the traditional approach of field constructing the energy and cooling systems. Burns & McDonnell's strategy paid off. They won the project with TAS' highly efficient, modular and packaged systems approach as the foundation of their winning proposal.

In the highly competitive federal grant process, Burns & McDonnell was able to secure \$995,000 of cost share funds as part of their current CHP demonstration project to help Austin Energy incorporate additional enhancements to the hybrid energy plant.



### OWNER'S PERSPECTIVE:

"From the owner's perspective, we know that with packaging many risks are mitigated regarding overall performance and compatibility of the integrated chiller plant. To get the same level of quality and performance from a "stick built" plant would require more of our resources to review and evaluate engineering and materials selection. Pre-engineering the plant into a consolidated package gives us confidence that the chiller plant design and construction has already been optimized for maximum value."

Cliff Braddock  
Director Energy Business Development  
Austin Energy



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