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HEA HOSPITAL CASE STUDY VIDEO DATA SHEET

Dell Children's Medical Center of Central Texas, a 509,000-square-foot, 176-bed facility, is the world's first hospital to be awarded LEED® Platinum certification. Built on 32 acres of a brownfield—formerly part of a municipal airport site—Dell Children's serves 46 counties. The hospital's parent company, Seton Family of Hospitals, collaborated with municipal utility Austin Energy to build a district energy plant on the hospital site.

Dell Children's Medical Center of Central Texas

Austin, Texas • Opened in July 2007

A combined heat and power (CHP) system at the heart of the plant made Dell Children's one of the first hospitals in Texas to use an onsite energy system as its primary source of electricity and one of the first grid-independent hospitals in the nation.

Notable Features

- Onsite 4.3 MW natural-gas-fired CHP system.
- "Right-sized" distributed air handling units with dedicated outdoor air units with heat recovery.
- Under-floor air distribution in administration area.
- High-efficiency lighting fixtures with daylight-harvesting system and occupancy sensors.
- Exterior stairwells that don't require climate control.
- Daylighting that reaches 90 percent of the perimeter rooms and 35 percent of treatment and diagnostic areas.
- Water-efficient autoclaves and low-flow and dual-flush plumbing fixtures save an estimated 4.1 million gallons of water per year.
- Reflective roof.
- Totally integrated technology and design.

Commercial Building Initiative

CHP System Details and Benefits

- Supplies 100 percent of the hospital's electricity, heating, and cooling.
- Plant is 75 percent more efficient than coal-fired plants.
- Two electric feeds from different substations in the surrounding power grid provide 100 percent electrical redundancy.
- An emergency generator (for black-start capability) provides another backup for life-safety systems.
- Waste heat from the gas turbine is used to produce steam and chilled water used directly by the hospital.
- Enhanced quality of power ensures smooth, continuous operation of clinical equipment.
- Excess electricity is exported to the utility grid.
- The CHP system and reduced energy use enable the hospital to exceed ANSI/ASHRAE/IESNA 90.1 standards by more than 60 percent—as opposed to approximately 17 percent without CHP.
- Lower emissions of nitrogen oxides and carbon dioxide, a result of efficient combustion-chamber technology.

Financial Investments

- Capital budget was \$200 million.
- Construction cost was \$130 million.
- CHP-related construction cost was \$18 million.

Benefits

- Gross capital savings of \$6.8 million (through a collaboration with Austin Energy that eliminated the need to build a central plant).
- Reinvested \$5.8 million of those savings into energy-conservation measures and other LEED-related initiatives.
- Very high “promoter score.”



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Hospital Energy Alliance

HEA is a forum in which healthcare leaders work together with DOE, its national laboratories, and national building organizations to accelerate market adoption of advanced energy strategies and technologies.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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