Hardin Medical Center

CASE STUDY

Challenge

The aging, outdated systems at Hardin Medical Center (HMC) provided inadequate cooling and insufficient humidity control. The medical facility sought to improve the environment of care, especially in its labor and delivery area, to increase patient, physician and staff comfort, while also helping to reduce the chance of medical errors and infection. HMC also wished to increase the efficiency of its systems in order to combat rising operational and energy costs.

Solution

Based on a longstanding relationship, Hardin Medical Center consulted with Trane regarding the needed upgrades. Trane utilized a number of solutions from its Trane Intelligent Services portfolio, including an Energy Assessment using an Energy Analyzer report to benchmark HMC against similar facilities. Hardin and Trane also completed an environment of care study to uncover building issues and identify ways to increase patient comfort, physician and staff satisfaction, and the bottom line. A computer model was created to simulate the effects of various energy conservation measures (ECMs).

HMC leaders used the energy modeling and physical environment study to determine the upgrades that would best meet their needs. The identified ECMs proved significant enough to cover the cost of a new HVAC system that would provide reliable temperature and humidity control for the labor and delivery area. A Trane PACT™ (Performance Agreement for Comfort from Trane) allowed the healthcare facility to leverage future energy and operational savings to finance the infrastructure improvements without upfront capital.

Increasing reliability and efficiency

To improve energy efficiency throughout the facility, an HVAC system was added to serve the labor and delivery area, and the boiler plant was replaced. The boiler plant consists of two domestic hot water boilers, two condensing boilers and one non-condensing boiler to provide the needed capacity and redundancy. Two 1000-gallon hot water storage tanks; a 50-ton nominal heat recovery chiller with chilled, heating and domestic hot water pumps; a double wall heat exchanger with a 500-gallon tank for domestic water preheat; hot water heaters and circulating pumps were also installed.

Hardin Medical Center

Savannah, Tennessee

PROJECT HIGHLIGHTS

Performance contracting upgrades improve environment of care, reduce energy and operational costs 30 percent, and result in an $11,500 energy rebate.

Hardin Medical Center employs approximately 450 individuals within its hospital, nursing home, physician offices, and other healthcare services.

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CASE STUDY

Providing a comfortable, healthy, relaxing environment
A Trane chilled water Performance Climate Changer™ air handling unit was installed on the low roof outside the labor and delivery operating rooms. Designed to address critical indoor air quality issues to improve comfort and aid in patient recovery, the air handler helps ensure optimal operating room temperatures and humidity levels, removes airborne contaminants and lowers sound levels, providing a comfortable, healthy and relaxing indoor environment.

Saving energy, conserving resources
To reduce energy consumption, 2,135 lighting fixtures at HMC were replaced with new high efficiency T-8 lamps and ballasts; energy efficient, compact fluorescent lamps are now used instead of incandescent lamps; and exit signs were retrofitted with new LED signs. To conserve water, more than 350 fixtures were replaced with low flow plumbing systems, which meet or exceed the Energy Act water use requirements.

Managing energy, operations and comfort
The existing Tracer™ Summit direct digital control system was expanded to manage operation of the hot water system, the air handling unit on the labor and delivery wing, twelve variable air volume and two constant volume terminal units, as well as rooftop units serving the cafeteria, administration offices and conference room. The new digital controls enable precise management of the health care facility environment, while reducing energy and operational costs.

Hardin Medical Center facility managers use Tracer™ ES, a web-based systems integration solution that provides an on line, enterprise-wide view of all the medical center buildings and systems. With easy access from any PC or mobile device, facility managers handle daily operations, such as scheduling, alarm management and troubleshooting. HMC also uses Tracer ES to monitor and control energy use, lighting and HVAC to improve efficiency and maintain optimal temperature, humidity and carbon dioxide levels.

About Hardin Medical Center

A Trane Performance Climate Changer air handler addresses temperature, humidity and airborne contaminants in the labor and delivery rooms to improve comfort and patient recovery.

Results

Administrators at Hardin Medical Center report that improvements to the healthcare facility have reduced annual energy and operational costs by more than 30 percent, while increasing patient comfort, and physician and staff satisfaction. The hospital received an $11,500 rebate from the Tennessee Valley Authority (TVA) for reducing its load on the electrical grid. “We’re pleased that we can provide a more comfortable environment for patients, and a more satisfying workplace for physicians and staff,” said Nick Lewis, chief executive officer at Hardin Medical Center. “It’s even better that the improvements generate significant energy and operational savings each year, and that we were able to fund them through a performance contract without any capital outlay.”

TRANE

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit *trane.com* or *tranetechnologies.com*.

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