Othello Community Hospital

CASE STUDY

Energy Savings Performance Contract project awarded Department of Commerce and utility grants of more than $240,000; addresses humidity issues; reduces operational costs; and improves comfort, patient care and physician retention.

Challenge

Othello Community Hospital was challenged to control the humidity level in its operating rooms, particularly in the summer and when farmers were irrigating adjacent fields. As a result, the hospital found it necessary to reschedule surgeries or send patients to other locations for treatment, frustrating staff and inconveniencing patients and surgeons.

The unstable humidity levels were also costly to hospital operations, requiring staff to frequently re-sterilize operating rooms and equipment to prevent bacteria growth and reduce liability. To compensate for this condition, the HVAC system was operating outside of design parameters with a very low chilled water supply setpoint, running its chillers continuously to control humidity and then reheating the air to serve other zones of the hospital that had become too cold.

To provide quality care, retain physicians, and prevent loss of revenues, Othello Community Hospital knew it was critical to control temperature and humidity levels. The health care facility sought to replace its outdated controls, lower operational costs and reduce excessive energy use associated with simultaneous heating and cooling.

Solution

After completing a walk through and preliminary assessment to prioritize opportunities, Othello Community Hospital selected Trane to complete an Investment Grade Audit (IGA) of their facility through the State's Energy Savings Performance Contracting (ESPC) program administered by the Department of Enterprise Services. Trane began by determining baseline building operation and energy consumption to diagnose the root cause of the humidity control problem and prepared preliminary design documents.

Based on information gathered during the IGA, Trane proposed an Energy Savings Performance Contract (ESPC) consisting of Energy Conservation Measures (ECMs) to resolve humidity issues, improve system operation, address capital improvement needs and maximize energy efficiency. The IGA data enabled the hospital to secure incentive funding from Avista and the Department of Commerce to offset project costs.

Under the ESPC, Trane performed as the single point of accountability for design and construction services, equipment installation, staff training, measurement and verification, and commissioning. This allowed the hospital to have greater control, make informed financial decisions, and transfer costs and equipment performance risk to Trane prior to project start.

Othello Community Hospital

Othello, Washington

PROJECT HIGHLIGHTS

Licensed for forty-nine beds, Othello Community Hospital services a 400 square mile agricultural area, offering the newest technologies for patient care, from diagnosing diseases to delivering babies.

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Improving humidity control
To comply with Department of Health guidelines, achieve desired humidity setpoints, and address HVAC system deficiency, dedicated humidity control was installed in each of the hospital's two operating rooms. The chilled water supply temperatures were reset and the HVAC system is now operating within design parameters, reducing the need for simultaneous heating and cooling, and helping to extend the life of the facility's chillers.

Implementing a contingency plan
Trane worked closely with hospital staff and administrators to ensure the operating room humidity control upgrade minimized impact to hospital operations. Trane coordinated all shut downs and contractor access to sterile areas in collaboration with the hospital. To maintain a healthy and safe environment, and to keep the number of rescheduled surgeries as small as possible, Trane completed work on weekends and under tight time constraints. Anytime it was necessary to shut down the operating rooms, a temporary operating room was set up, and the nearest hospital in Moses Lake was prepared to receive emergency procedures if needed.

Reducing energy cost
In order to eliminate chronic ductwork over-pressurization, fan motors were replaced with inverter rated motors and variable frequency drives (VFDs) were installed to modulate supply and return fan speed of both main air handlers. The measure reduced energy use of the air handlers and maintenance costs associated with ductwork repairs.

Results

Leveraging resources and revenue streams to optimize operations, and minimize energy and operational costs, Othello Community Hospital completed energy saving upgrades under a State of Washington Energy Services Contract with Trane. Based on projected and verified energy savings, the project was awarded a grant from the Department of Commerce of more than $209,000 and a utility grant from Avista of more than $35,000. The verified energy savings has exceeded initial projections, and the project is expected to be cashpositive within 10 years. Improved comfort and humidity levels help ensure quality patient care, as well as retention of physicians and employees.

About Othello Community Hospital

Helping to manage the Infection Control Risk Assessment (ICRA) program throughout the project, Trane used a mobile containment unit to control dust particles and maintain the air quality of the critical environment.

"We have better airflow throughout the hospital, making it a more comfortable working environment for our doctors and staff members," said Stan Fuhriman, maintenance manager, Othello Community Hospital. "For the project, we wanted a company we could trust and was dependable. Trane engineers and their subcontractors were knowledgeable and got the work done. Very professional. Our board members and administration are pleased with the results."

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