

Owensboro Health Regional Hospital

CASE STUDY



Challenge

When Owensboro Health replaced its seventy-five year old flagship hospital with a new medical complex, patient comfort, energy efficiency, and cost reduction were key priorities. With a new infrastructure in place, the healthcare system began looking for ways to further improve efficiency. "Our new facility was performing well, but we wanted outside expertise to help us get the most out of our new technologies," said Joe Taylor, executive director of Facilities, Owensboro Health.

"We purchased energy efficient equipment and installed advanced controls that gave us flexibility to make adjustments if we needed."

- Joe Taylor, Executive director of Facilities, Owensboro Health

Solution

Having an established relationship with Trane that spanned many years, hospital leaders contacted the company for assistance. Trane proposed the use of controls optimization programs and its Intelligent Services to help the healthcare system improve equipment operation to further increase energy savings.

Enhancing productivity and comfort

Using a web-enabled Trane® Tracer® Ensemble™ building management system to obtain an enterprise view of its hospital and medical buildings, trained facility engineers access HVAC systems from any mobile device, such as a smartphone or tablet, to address comfort issues, make schedule changes, adjust set points, manage alarms, and troubleshoot issues. Operators use the system to monitor temperature and humidity data from sensors installed throughout the facility to help ensure comfort and manage energy use. With full visibility to equipment operations, the healthcare facility and Trane worked together to identify and implement controls optimization programming to drive continuous improvement. The programming included supply fan optimization, discharge air temp resets, and VAV scheduling, as well as free cooling, chilled water temperature resets, and chiller sequencing.

Uncovering opportunities

With an energy awareness mindset, the Owensboro Health team meets with Trane quarterly to brainstorm ideas and discuss actions for high reliability and continuous improvement. Data from the building management system is turned into useful information through intensive analysis by Trane Intelligent Services. With Building Performance, Trane evaluates equipment operations to identify inefficiencies, uncover opportunities for improvement, and provide insights and solutions to help reduce operational costs and energy consumption. "We put together a list of opportunities and prioritize that list based on the cost and return of each project," said Taylor. "Some projects cost very little and have a great return. Others might require access to capital funds."

Owensboro Health Regional Hospital Owensboro, Kentucky

PROJECT HIGHLIGHTS

Controls upgrade, energy services, and a mindset of continuous improvement optimize operations, reduce energy costs, and improve the environment of care; save health system approximately \$600,000 over a nineteen-month period.

With a mission to heal the sick and to improve the health of the communities it serves, Owensboro Health Regional Hospital and its connected medical office building service the needs of twelve counties in western Kentucky and two counties in southern Indiana. The hospital is licensed to operate 477 beds, making it one of the largest in Western Kentucky.

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Managing energy use

Energy performance services provide comprehensive utility billing analysis, usage tracking, and feedback. The services also include real-time energy monitoring through the building automation system to view energy usage and demand profiles. Using Energy Assessment, Trane transforms data into meaningful information to evaluate a project's savings potential, helping the healthcare system make effective decisions about managing its buildings.

Energy conservation measures implemented include replacing fluorescent lighting with more efficient LEDs, and installing motion sensors to reduce electricity usage in unoccupied rooms. Collaborating with the hospital's clinical staff, the Trane and Owensboro Health Facilities team also implemented the use of set-back scheduling to power down HVAC units serving operating rooms during periods of low usage. "Night setbacks allow us to save energy in our operating room, while extending the useful life of the mechanical equipment," said Taylor. "We can cut the number of air changes in half, while still meeting temperature and humidity requirements, and power everything back up to full capacity in less than three minutes."

Reducing operational costs

With Active Monitoring, Trane building professionals monitor systems and analyze alarm notifications 24/7 to continuously improve hospital operations and keep critical systems up and running. The healthcare-Facilities team contacts the Trane Help Desk to resolve issues found during daily maintenance activities. Problems are handled remotely when possible, saving the cost of an on-site service call.

Engaging and training staff

An interactive dashboard engages clinical and Facility staff and enables them to know if critical operating room systems are effectively meeting temperature, humidity, and air exchange code requirements. Staff training on use of the building management system, a focus on high reliability, and continuous improvement are making the healthcare facility safer and more efficient, and its staff more proactive in improving operations.

Results

Working with Trane as its trusted advisor, Owensboro Health has implemented controls programming, Intelligent Services, and a mindset of high reliability and continuous improvement to optimize equipment operations, improve comfort for patients and staff, and reduce energy costs. The improvements at the hospital and medical office buildings have saved the healthcare system approximately \$600,000 over a nineteen-month period. Due to this significant savings, Owensboro Health was awarded the Kentucky Excellence in Energy Leadership Award. The healthcare facility has now set its sights on obtaining ENERGY STAR® certification from the US Environmental Protection Agency (EPA) for energy efficiency improvements resulting in costs savings and a reduction in pollution.

"A couple years ago, we had a significant utility price increase," said Taylor. "Were it not for the energy saving improvements we've implemented, the impact to our facility operating budget would have been huge."



About Owensboro Health Regional Hospital

Taking a proactive approach, the Owensboro Health Regional Hospital Facilities team uses a Trane® Tracer® Ensemble™ building management system to monitor surgical suites to ensure adherence to critical temperature and humidity levels.



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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