



Challenge

With aging equipment, an obsolete controls platform, and systems at risk for potential failure, Ozarks Technical Community College (OTC) knew that upgrades were a necessity. Not only were maintenance costs increasing, but parts were difficult to replace, and utility costs were high and continuing to rise.

“With only one or two meters on the nine building campus, we had very little visibility to our energy consumption. We couldn’t isolate our costs or diagnose where the issues were.”

- **Rick Taylor**, Director of Facilities and Grounds,
Ozarks Technical Community College

Solution

When the State of Missouri allocated bond funds to higher education institutions for deferred maintenance, the OTC facilities manager contacted Trane. Working together, Trane and OTC determined that the state dollars would best be used for replacing rooftop units that were experiencing increased repair costs and at the end of their projected life cycle, upgrading the controls system campus-wide, and implementing sub-metering in main campus buildings. The project scope also provided a complete, ongoing energy management solution with the addition of Trane Intelligent Services, including Energy Assessment, Building Performance, and Energy Performance.

Creating energy consumption visibility

Energy Assessment tools transform energy consumption data, captured by sub-meters installed in the main campus buildings, into detailed, 3-D optical energy reports, enabling OTC to view trends, easily see ineffective use of energy, and take corrective actions to reduce energy consumption. The assessment tools will also be used ongoing to validate energy savings and track project impacts.

Optimizing system performance

With Building Performance, OTC uses data-driven insights to proactively manage its facilities. Recommendations from Trane building professionals based on a thorough systemwide assessment, combined with continuous analysis, help OTC to lower operational costs, reduce energy consumption, and ensure optimal system performance.

Enabling informed decision-making

A cloud-based building energy management system (BEMS), Energy Performance identifies where and when energy is being used, uncovers energy waste, spots anomalies, and tracks metrics. With Trane working as their advisor, facility managers conduct real-time energy monitoring, implement schedule changes based on budgetary impact, and make informed cost-effective decisions for continuous improvement.

Ozarks Technical Community College

Springfield, Missouri

PROJECT HIGHLIGHTS

Equipment and controls upgrades, and implementation of comprehensive energy management solution, result in significant reduction in electricity usage; projected first-year electricity cost savings of \$200,000.

Established in 1990, Ozarks Technical Community College (OTC) boasts a nine-building main campus and four satellite locations, each providing high-quality, affordable training, and technical and general education.

Ozarks Technical Community College

CASE STUDY

Improving reliability, efficiency and comfort

Taking care not to disrupt classes, the upgrades took place during spring and summer breaks. Seven Trane® IntelliPak™ systems were installed to replace aging rooftop units. The new IntelliPak units feature an Energy Efficiency Ratio rating of 11 or more—the highest rating in the industry on standard product. The IntelliPak direct drive plenum fan technology lowers energy use, extends filter life, operates quietly, and features a beltless design to reduce maintenance. Changing from constant to a single zone variable air volume (VAV) option enables OTC to meet unique space load requirements.

Simplifying installation, reducing service costs

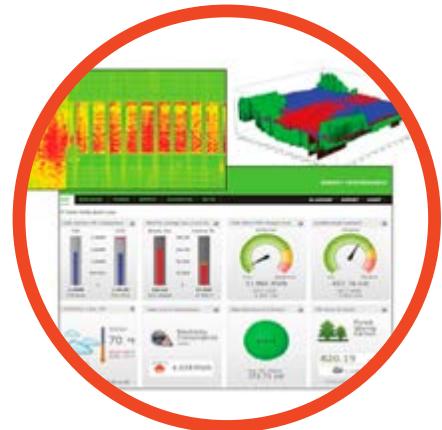
Exactly matching the footprint of the old equipment, the new IntelliPak™ rooftop units fit on existing curbs and plugged seamlessly into the current building infrastructure, eliminating the need to re-engineer the rooftop design and reducing installation costs. Each IntelliPak unit is equipped with a state-of-the-art, direct digital Unit Control Module (UCM) that is pre-configured, factory-installed and commissioned. The UCM provides accurate and reliable control and allows access to unit controls via a Human Interface panel, enabling facility managers to monitor the system, troubleshoot issues and quickly diagnose malfunctions, saving time and service costs.

Optimizing system operations

A Trane® Tracer™ SC building automation system (BAS) provides centralized building control, allowing OTC to monitor equipment, make set point changes, control spaces, and manage alarms. With the web-based BAS, building operators enjoy flexibility to access systems from anywhere using a mobile device, such as a tablet or smart phone. Facility managers use Tracer® Ensemble® to monitor and control all nine buildings on the main campus as a single enterprise, gaining greater productivity in their daily operations.

"We control temperatures, set schedules, address alarms; all from right here, or even remotely. We look at trends and last night's data, make changes and adapt schedules to start earlier or later. It all adds up to big time savings!"

- Eric Ogan, Energy Manager, Ozarks Technical Community College



About Ozarks Technical Community College

OTC uses Trane Energy Performance analytics, 3-D optics, and customized, real-time dashboards to assess energy use, view system performance and uncover opportunities for improvement.

Results

As a result of upgrades to equipment and controls, and the implementation of Trane energy services, Ozarks Technical Community College is realizing a significant reduction in electricity usage, for a projected first-year savings of \$200,000, or 20 percent in electricity costs. "Everything is performing well and the savings look good, but what really impressed me was the ease of transition. It was one of the smoothest projects we have ever implemented. Everyone was easy to work with, and provided the support we needed," said Taylor. "With 16 percent of the campus HVAC systems replaced, we are seeing the payback. That's savings we can reinvest in the college."



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.