

Homestead High School

Mequon, Wisconsin

February 2015

Trane Energy Performance empowers effective decision-making for improved building operations and energy management.

Challenge

A declining enrollment and lower revenues left Homestead High School with the challenge of determining ways to reduce costs, while maintaining an environment conducive to learning, and supportive of significant after-hours use of the facility by the community. With fewer dollars available to pay rising gas and electric bills, as well as significant demand charges, the school sought ways to save by implementing energy saving strategies, setting energy consumption targets, creating awareness regarding the cost of community events, engaging students, and enabling more effective decision-making by facility managers and school administrators.

Solution

Introducing a knowledge-based solution

Homestead High School had previously initiated a building re-commissioning. While the energy-focused tune-up was somewhat helpful, Homestead knew they needed an ongoing solution to help increase efficiency and achieve cost-saving objectives. The school met with Trane to discuss their needs. To improve building operations and efficiency, Trane proposed its analytics-based Energy Performance, a solution in the Trane Building Advantage™ portfolio.

Gathering data to enable informed decisions

Trane Energy Performance facilitates monitoring, analysis and reporting to help Homestead make informed decisions to optimize building operations. From 494 collection points, the



Homestead High School prepares its more than 1,300 students for future opportunities and challenges in its 480,000 sq ft building, which includes classrooms, an auditorium, pool, field house, labs and offices.

tool gathers updates every fifteen minutes, collecting more than 47,000 points of data daily from meters, sub-meters, sensors and the building automation system. Homestead facility managers use a customized dashboard to display key information, with multiple setups allowing standard looks at different variables.

Energy Performance provides real-time tracking of energy use for comparison to projections to improve budgeting and forecasting. The tool also allows the facility manager to calculate the cost of energy consumed during the school day and for after-hours community events, arming the district with the knowledge needed to make informed decisions regarding facility use.

Using data analysis to manage energy use

Using a quick visual representation of the building's energy consumption, Homestead gains insight into usage peaks and valleys to identify hidden energy waste and opportunities for potential energy conservation. Trending tools allow Homestead to drill into the building's energy usage to identify operational abnormalities, and areas of highest consumption and cost. Viewing past data regarding HVAC, lighting and other systems enables facility managers to predict future patterns, and make adjustments to better manage building operations.

Partnering to perfect energy management strategies

Acting as a "second set of eyes" Trane works with Homestead to improve the school's business climate. Key Performance Indicators (KPI's) are monitored to collect performance data and analyzed to evaluate efficiency. Reports generated by Trane allow Homestead facility managers to view actual results vs goals and see areas for potential improvement. Trane provides Homestead facility managers and staff with training, coaching and guidance on energy management strategies. Using screen shots from Energy Performance, Trane demonstrates areas for concern, and helps Homestead analyze data to make knowledgeable facility management decisions.

Results

Data collected from Trane Energy Performance shows that Homestead High School is running more efficiently, with electrical energy consumption approximately ten percent below similar buildings, as benchmarked by the Department of Energy Buildings Performance Database. Homestead predicts future energy savings to be in excess of \$40,000 a year.

Drawing on coaching and knowledge from the Trane energy management tools and personnel, Homestead maintains an



Homestead High School uses a customized dashboard, with multiple setups, to view key data regarding its building's operational performance.

optimal learning environment, has engaged students and staff in its energy saving program, and created awareness among district administrators regarding energy usage. The ability to see the results of strategic actions fifteen minutes after implementation provides Homestead with a great feedback mechanism for continual evaluation of energy use and ongoing development of energy management strategies.

"We've discovered that energy management isn't finding that one silver bullet," said Kyle Thompson, director of buildings and grounds, Mequon-Thiensville School District. "It's doing a bunch of little things that make the savings."

"Energy efficient equipment is important, and we're lucky to have the building automation, but that only gives you so much," Thompson added. "It's not about equipment and controls, it's about having the information and knowledge we need to run our building smartly."



Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a \$13 billion global business committed to a world of sustainable progress and enduring results.

