Kansas City Board of Public Utilities

KANSAS CITY KANSAS COMMUNITY COLLEGE CASE STUDY

BPU's conservation efforts energize college campus.

In 1992, Kansas City Kansas Community College (KCKCC) used nearly 10 million kilowatt hours of electricity. With aggressive plans for growth of the campus and dramatic increases in electricity prices, KCKCC had to do something to get costs under control. So they asked Kansas City Board of Public Utilities (BPU) to help them develop a new heating and cooling system that would help reduce their energy consumption and monthly expenses. Backed by strong cost incentives, BPU helped KCKCC investigate and purchase a new Energy Management System (EMS) and implement other energy savings technology that has saved the school a fortune on utility bills.

SITUATION

The campus of Kansas City Kansas Community College hosts more than 3,500 students and 300 faculty members each year. With 1,200 computers and 14 buildings, it requires a very significant amount of electricity to keep it all up and running.

In 1992, KCKCC used 9.945 million kilowatt hours of electricity. The school reached its peak in 2001, with 12.652 million kilowatt hours spent. With the cost of electricity skyrocketing from 3.75 cents per kilowatt hour in 1992 to 9.54 cents in 2006 (a 254 percent increase), utility costs constitute a large part of KCKCC's operating budget.

As construction on a new building began in 1992, KCKCC made a strong commitment to conserving energy. The school also wanted a solution that would provide labor savings and offer a convenient way to turn units on and off automatically. As a result, BPU suggested a Niagara EMS to begin the process of totally renovating their energy system across campus.

ACTION

Design requirements called for retrofitting the new EMS into 14 existing buildings and installing it in new buildings as they were designed. In addition to the Flint Building in 1992, the system was installed in the new Jewell Center and maintenance buildings. It was also retrofitted with the remodel of the Allied Health Building and Wellness Center. When air conditioning was added to the Field House last year, it too was designed to include EMS.

The Niagara Energy Management System operates from a laptop and currently controls seven of the 14 buildings on campus, comprising 403,000 square feet of heating and cooling space.

Kansas City Kansas Community College
7250 State Avenue
Kansas City, KS 66112

BPU installed digital meters to measure energy usage in 15-minute increments, along with an energy track program to help the college determine energy spikes and avoid peak utility charges.

Each semester, a new class schedule is entered into the system for automatic HVAC ramp-ups before classes and during downtime after classes end. Since it's all automated, the school saves money on labor costs.

The EMS also offers surveillance on fire alarms and air conditioners. In case of an emergency, alerts are automatically sent out to key personnel.

BPU has also helped KCKCC conserve energy and cut costs by replacing T12 fluorescent bulbs with T8 bulbs, which consume less energy. More than 40,000 fixtures have been converted so far, with changes being made on holidays and vacation breaks to avoid any class disruptions.

Motion sensors have been installed in classrooms to ensure lights are not left on when not in use and employees have been urged to turn off all computers and lights at the end of each day.

Solar screens are being phased in throughout the campus to cover all morning-facing windows to reduce heat. Several double-pane windows have also been installed to further control heating and cooling costs. And anytime the school constructs or replaces a rooftop, they make it white to reflect heat.

KCKCC has taken other steps to increase energy savings, like closing the college on Fridays during the summer, restricting classes to certain buildings on nights and weekends to reduce the heating and cooling requirements, and reducing water usage.

RESULTS

Campus-wide improvements have resulted in a 23-26 percent energy savings and have brought KCKCC's electricity usage down dramatically. Rather than doubling to 24 million kilowatt hours, the school actually reduced usage to pre-1992 levels.

"BPU's efforts in suggesting a new state-of-the-art Niagara Energy Management System has literally saved us hundreds of thousands of dollars," says Larry Seal, KCKCC Director of Buildings and Grounds.

Today, instead of spending $2 million on utilities, the school's annual budget for electricity and water is $915,000. In addition to the incredible cost savings, the school also loves the overall performance of EMS system.

"We can control this system from anywhere," notes Jeff Sixta, KCKCC Assistant Director of Buildings and Grounds. "If we have an unexpected event on a weekend, we can be notified at home. Using a laptop computer, we can regulate the heat or air conditioning, depending on what is needed."

Kansas City Kansas Community College prepares students for the future. Thanks to astute foresight, an unwavering commitment and assistance from BPU, they've ensured their own future includes continued savings and an enhanced learning environment for students and faculty.

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540 Minnesota Avenue • Kansas City, Kansas 66101
Phone: (913) 573-9012 • Fax: (913) 573-9175 • E-mail: gpowell@bpu.com
Web: www.bpu.com