



SIEMENS

# Kentucky Christian University

Siemens helps a private university cut growing utility costs with an energy-saving, Performance-Based Solution.

Set within the foothills of eastern Kentucky, Kentucky Christian University (KCU) is a private, non-profit university. Founded in 1919, KCU provides a combination of biblical studies, liberal arts, and professional studies to more than 600 students working towards their four-year degrees.

## Client Objectives

Like many small, private colleges and universities, KCU must keep a close eye on its finances. At KCU, this responsibility falls to Bill Bondurant, the University's Sr. Vice President of Operations and CFO. In 2011, Bondurant saw cause for concern. "Our utility costs had been climbing steadily in recent years," he remembers. "Then, our local utility announced that rates were going to increase another 25-30% over the next five years. We knew we had to do something."

In addition to rising utility rates, some of KCU's older buildings had inefficient mechanical infrastructure, which further increased operating costs. One of the most inefficient was the Ruth Administration Building. With both utility rates and operating costs rising, KCU decided to embark on a program of campus-wide efficiency improvements.

In late 2011, KCU interviewed a number of energy services companies with the intent of using an energy-saving Performance-Based Solution to finance the project. Through a Performance-Based Solution, efficiency improvements are made upfront and the installation costs are then offset by the

resultant energy savings over the term of the contract. The costs to cover improvements are guaranteed, with additional savings going directly to the University.

According to the Siemens team lead, Michael Azzara, a Performance-Based Solution was a good fit for KCU. "Through a Performance-Based Solution, KCU could position itself for rising electricity costs by becoming more efficient while, at the same time, addressing immediate needs, such as improvements to the administration building," Azzara notes.

After reviewing each company's presentation, KCU selected the Building Technologies Division of Siemens Industry, Inc. for the project. The selection was based on Siemens capabilities highlighted in the review process, as well as its past successes in implementing Performance-Based Solutions at other colleges and universities throughout the state.

## Siemens Solution

Siemens began the project with a comprehensive energy audit of the entire KCU campus. They then presented the findings to Bondurant and his campus facilities team. Siemens and KCU worked together to define the project scope, including an overall budget and a list of Facility Improvement Measures (FIMs) that would provide the biggest efficiency gains. "It was a daunting process," according to Bondurant. "But Siemens made it as efficient as possible and I couldn't be happier with the result."

[www.usa.siemens.com/kcu](http://www.usa.siemens.com/kcu)

*“Siemens really led the way. It was professionalism and organization from start to finish. And the end product is fantastic.”*

*Bill Bondurant*

*Sr. Vice President of Operations  
& Chief Financial Officer,  
Kentucky Christian University*



The project scope included \$1.1 million in improvements designed to reduce the University's energy consumption by 20%. Siemens then monetized the University's energy and operational savings in the form of a \$1.8 million performance guaranty over 15 years. These savings are designed to offset project costs, with the potential to improve KCU's bottom line.

The conservation measures implemented by Siemens impacted 16 campus buildings totaling 361,763 square feet. They included:

- Mechanical improvements at the Lusby Center, which houses classrooms and various student services, including replacement of three aging boilers with two new high-efficiency condensing boilers and variable frequency drive (VFD) control for heating and cooling pumps
- Replacement of the existing rooftop HVAC unit at the Ruth Administration Building with a new variable refrigerant volume system and energy recovery ventilator
- Installation of building automation systems and variable frequency drives for greater energy management at select campus buildings
- Comprehensive interior and exterior lighting upgrades incorporating high-efficiency fixtures and occupancy sensor and controls for interior spaces
- Retrofitting water fixtures in all campus buildings with new, water-saving low-flow devices
- Commissioning of all newly installed equipment, re-commissioning on existing equipment impacted by upgrades, and systems training for KCU personnel

Construction began in August 2012. Siemens worked quickly to make sure that all improvements, especially the new HVAC system in the Ruth Administration Building, were completed before the chilly fall weather arrived. According to Bondurant, "Siemens did a lot of work in the evenings and weekends to limit the impact on students. And, they did a great job of communicating when there would be a disruption. It was professionalism and organization from start to finish."

#### Client Results

One year after construction was completed, the improvements made by Siemens are already meeting – and exceeding – expectations. For the 12 months ending on July 18, 2013, utility and operational savings realized by KCU exceeded the guaranteed amount by 30%. The project is also on target for meeting its goal of a 20% reduction in energy consumption.

For 2014, KCU's monetized energy and operational savings amount to \$101,485 and will increase 3% per year through the end of the contract period. The total monetized amount of the energy and operational savings for KCU are guaranteed at \$1.8 million for the 15-year contract period. Additionally, Siemens helped KCU qualify for \$62,000 in rebate incentives from its local utility.

Azzara highlights the KCU project as a success that other small, private colleges or universities can emulate. "Many of these institutions feel they don't have the time, expertise, or funding to make their campus more efficient," he says. "We can bring all three and help them make good decisions for improvements that, like KCU, are paid with guaranteed savings."

With efficiency improvements in place, less of KCU's budget is going towards utilities so that more can go to its students. Bondurant reflects on what this means to him as CFO. "For a small institution, we've been fortunate to receive a lot of gifts from individuals. We need to be good stewards of that money, and I feel we've done that with this project."

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