

Xavier University, with the Help of Siemens, Builds on Momentum of Katrina Reconstruction

When Xavier University re-opened in January 2006, it was a significant achievement for the New Orleans institution's facility staff. Just four months earlier, the 27-acre campus was under 12 feet of toxic floodwater. But rather than go back to business as usual, Xavier wanted to build on its momentum and tackle deferred maintenance issues as well as the greater challenge of creating a more energy-efficient, sustainable campus.

Before Hurricane Katrina in late August 2005, Xavier's facilities team — led by Marion Bracy, Vice President of Facilities Planning & Management, and Sheppard Roubion, Director of Building Services — was planning facility improvements for the 90-year-old campus. Once Katrina inflicted \$75 million in construction-related damages, however, everything was put on hold. And since insurance and federal aid funds could be used only to restore facilities to their pre-Katrina condition, that's where Xavier focused its efforts.

Moving Beyond Recovery

By 2008, the university was again ready to move forward with campus-wide energy-efficiency improvements. Xavier was facing a \$2.5 million-and-growing electric bill, and lingering issues from Katrina also adversely affected energy use, notably a chiller plant with only one of three chillers fully operational. With budgets tightening, the situation was ideal for a performance contract to fund improvement measures through a low-interest loan paid for by future energy savings.

After consulting peers at universities across the country and developing key criteria, Xavier University chose Siemens Industry to lead its program. The selection was driven both by the bottom-line guaranteed savings and reputation, and Siemens had a solid history at Xavier based on work done there since 1980. After Siemens energy engineers conducted a detailed campus audit and recommended Facility Improvement Measures (FIMs), Xavier signed a 10-year, \$4.3 million performance contract in March 2010 that guaranteed

savings of \$553,213 annually, totaling \$5.53 million over the life of the contract.

Modernizing a Historic Campus

Siemens and Xavier developed an initial plan with more than 40 Facility Improvement Measures. Projects were evaluated on their ability to provide immediate cost savings, improve long-term sustainability and create an improved learning environment for Xavier's 3,399 students.

Key focus areas were:

Lighting-

Lighting across the campus was inefficient and wasteful, so Siemens and Xavier worked together to install 70 occupancy sensors, putting an end to lighting empty rooms. Siemens also installed energy-saving lamps, fixtures and ballasts. Resulting savings are about 1,271,989 kWh annually.

Chilled Water-

Xavier's 2,400-ton chilled water plant, which serves more than 14 buildings, was optimized using Siemens patent-pending Demand Flow™ technology, reducing energy consumption by 20 to 50%. The amount of deliverable chilled water was increased while Xavier's energy consumption was reduced by 2.3 million kWh annually, all without compromising occupant comfort.

Energy Management-

Time of Day (TOD) scheduling was added to the existing Siemens APOGEE® Building Automation System to start and stop HVAC units at set times in 15 buildings, eliminating needless operation. Demand control ventilation was also implemented to maximize outdoor air ventilation and reduce carbon emissions.

Mechanical Systems and Water Conservation-

Water piping in 14 buildings was reinsulated to improve operational efficiency and save 314,604 kWh of electricity and 437 ccf of gas annually. Siemens also installed low-water devices or new plumbing fixtures in 26 facilities to limit flow and reduce water use by 16%.



Performance Contracting Delivers Ideal Results

Performance contracting gave Xavier opportunities and financing to address problem areas and drastically lower utility expenses. Siemens worked swiftly and with little disruption for students, even completing the lighting retrofits in 12 months. The university is already enjoying:

- Annual guaranteed savings of \$553,213, including \$472,516 from reduced energy use.
- Operational and maintenance-related savings estimated at \$150,000 annually.

Together, Xavier and Siemens created an energy-efficient, healthier and more comfortable learning environment for the university's students.

"Ultimately, we wanted to be known as an energy-efficient campus," said Mr. Bracy. "Now we're not just saying we're saving money, we can show people how we're saving it and how we've been utilizing energy."

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