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Case Study

Infrastructure & Cities Sector
Building Technologies Division

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Sustainability at the Institutional level – West Virginia University adopts new approach

As higher education facilities' professionals look for innovative ways to fund campus refurbishment programs and upgrade building systems, performance contracting is becoming an increasingly popular means through which efficiencies can be achieved with a budget-neutral approach. Administrators at West Virginia University (WVU) chose this option to address their eight million square foot built environment, significantly improving facilities and increasing energy efficiency, while at the same time helping to improve safety.

Before work commenced, WVU was eager to find a way to reduce utility costs, improve facility operations, address deferred maintenance and lessen the impact of its campus buildings on the environment. Many of the facilities built in the 1960s and 1970s were still operating with original equipment and limited centralized building automation systems. "We were keeping a lot of the systems running, but they weren't running very well," says Joe Fisher, from Facilities and Services at WVU.
Following a tendering process which saw bids submitted by 18 companies, each of the three selected finalists was asked to undertake an investment-grade energy audit analyzing consumption and identifying where WVU could maximize energy saving. Siemens was chosen as the partner for this project.

Achieving substantial savings

Once selected, Siemens recommended facility improvement measures that would deliver the greatest impact in this multi-phase project which runs over eight years.
The anticipated $60 million cost of the building and refurbishment program, once all projects are completed, will be significantly exceeded by the savings achieved through adoption of the new, more energy-efficient technology. The cost of the project was divided by the guaranteed annual savings to determine the length of the contract.
Central to the project was the provision of new building automation systems at WVU. Some facilities will have new energy management systems installed, while in others modifications are

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being made to improve the efficiency of building operations and even out temperature variations. “Two to three million dollars worth of controls upgrades in the first and second phases will both help their buildings operate more efficiently, and improve comfort levels for students, faculty and staff”, explains Jim Platz, senior account executive at Siemens.
The close cooperation with the university resulted in identifying requirements for campus facilities in terms of urgency of repairs and upgrades, and balanced payback periods to select the right combination of projects. ”It was a mix of projects with greatly varying payback periods”, says Fisher. “Projects with quick payback like power factor correction offset projects with longer payback or even training which offered no payback at all.”

Improving energy efficiency and safety

The performance contracting program underway at WVU is beneficial to the institution for a number of reasons. Chief among these is the improved efficiency, comfort and operation of campus facilities. ”However, It also helps with safety” explains Lisa Saurborn, Engineering Manager, Facilities Management WVU. Installing monitors on fume hoods to ensure that they are exhausting properly is just one example.
“We’ve been able to flat-line our utility budget to a great extent because of these contracts,” says Tim Bostonia, Associate Director for WVU’s Purchasing, Contracts, and Payment Services Department. Financial benefits to the university are just as significant. This budget-neutral process reduces unexpected and emergency capital expenditures and controls future utility expenses for the institution.
The partnership with Siemens is helping WVU to operate its facilities with fiscal responsibility, and to minimize the impact of more than 80 campus buildings on the environment by reducing the overall CO_2 footprint. With friendlier, more accessible data and healthier buildings, this multi-phased performance contracting project is significantly contributing to the institution’s commitment of providing the highest quality educational experience to its students.

Ongoing development

In addition to the extensive work that has already been completed, further phases are ongoing. In Phase 2 facility improvements are being made at 3 campus locations – Evansdale, Parkersburg and WVU Institute of Technology – resulting in guaranteed energy savings of approximately $1.1 million. In Phase 3 guaranteed annual savings of more than $580,000 are being provided at WVU’s Health Sciences campus, with further savings to be realized through the Phase 4 and 5 investments.

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