

Case study

Florida State University

Tallahassee, Florida



Energy-smart upgrades bring exceptional environmental, economic and academic results

Florida State University (FSU) is a comprehensive, national, graduate research university that puts research into action for the benefit of its students and society. Its mission is to maximize the excellence in all its programs. In the spirit of this mission, FSU has been working together with Johnson Controls since 1997 on energy conservation initiatives that have resulted in improved academic environments, reduced environmental impact of FSU facilities and energy savings of nearly \$12.5 million.

FSU is one of the largest and oldest of Florida's 11 state universities. With an impressive breadth of programs, FSU has leading graduate, professional and undergraduate programs in a variety of fields. The university's vision is to become recognized nationally and internationally as one of the top public research institutions according to T.K. Wetherell, president of FSU.

"To accomplish this vision we need to continually improve our facilities, our academic programs and retain prominent faculty members, all of which require financial resources that can be difficult to acquire," says Wetherell. With additional challenges of rising utility costs, aging facilities and the demands of increasing enrollment, FSU researched performance contracting as a means of improving energy efficiency, facilities, and reducing operational costs.

Taking a leadership role among Florida Universities in 1996, Alan Peck - FSU utilities and engineering services director, contacted Johnson Controls as part of the request for proposal selection process. "When we looked at our finalists, Johnson Controls had far more experience in performance contracting. And, their focused higher education involvement in Florida was a major factor because the projects they



implemented since enabling legislation passed in 1993 were flowing smoothly,” says Peck. Johnson Controls conducted a study of FSU’s top energy consuming buildings and outlined potential facility improvements along with the resulting energy savings.

Flexible financial solution provides quicker results, expertise

As a result of the study, in 1997 FSU initiated a 10-year energy performance contract with Johnson Controls that guaranteed a reduction of utility bills by \$8.5 million over the life of the contract. In less than eight years the project was \$2.5 million ahead of schedule. “Based on the exceptional environmental and economic results we have achieved, we extended the contract with Johnson Controls to address additional facility upgrades and energy conservation opportunities they identified,” says Peck. Upgrades completed under the recent five-year extension are guaranteed to bring FSU another \$1.2 million in energy savings.

Collectively, the performance contract features facility improvements at 57 FSU buildings. Mechanical upgrades include heat recovery devices on air handlers and variable speed drives, and steam system retrofits. Control system upgrades include CO₂ sensors that control outside air intake to reduce the amount of energy to heat or cool it, and HVAC occupancy sensors that adjust the cooling and heating when large classrooms are vacant for long periods of time. Lighting system upgrades include lighting retrofits to T-8 28W lamps, occupancy sensors and exterior

lighting control. Water and sewer upgrades include water/sewer retrofits that will save over 12 million gallons of water each year.

New technologies used in the recent project include 4 Watt LED technology lamps that were used to replace the high energy consuming 70 Watt high pressure sodium bulbs in the blue light security kiosks scattered across campus, which reduced the system’s energy usage by 94 percent.

“By contracting with Johnson Controls, we were able to get these projects done sooner and without capital outlay. Not to mention the positive impact on the environment by more quickly reducing our energy consumption,” states Dennis Bailey – associate vice president for facilities. “Johnson Controls also brought a level of expertise and access to resources that we don’t always have in the university environment. As a result, the project flowed more smoothly from both a financial and a project management perspective, allowing us to focus on other concerns,” adds John Carnaghi – senior vice president, finance and administration.

Beyond energy-smart upgrades

Focused on continuing its energy initiatives, FSU initiated a planned service agreement with Johnson Controls that spans the life of the performance contract. In addition to maintenance of the university’s extensive steam system, the agreement provides for an onsite technician who is charged with helping the FSU staff find additional ways to remediate excess energy usage and keep the campus utility efficient.

“Johnson Controls is doing an outstanding job of helping us save money. This is important to our continued growth since the money we save can be used to enhance, and add, programs that are directly related to students.”

T.K. WETHERELL
PRESIDENT
FLORIDA STATE UNIVERSITY

The technician also manages an energy awareness program dubbed "Toward a Sustainable Campus," which is a joint effort between FSU and Johnson Controls. The program comprises recycling and energy awareness programs for students and staff, and training of FSU operations personnel on energy conservation strategies among other initiatives.

Training workshops provide structure for FSU staff to accomplish best practices and more energy efficient operations using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program as a model. Students have the opportunity to participate in researching sustainable campus initiatives and their results on a nationwide and worldwide basis, and field questions regarding FSU's conservation efforts through a campus-wide email network. Students, staff and the community can review the initiatives of the sustainability program on a special website commissioned by Johnson Controls.

Together, FSU and Johnson Controls have uncovered additional energy savings opportunities within the 18 dormitories on campus. Lighting retrofits and water conservation measures there will result in an additional \$230,000 annually as well as improve the living environment of students. And as part of the sustainable campus initiative, Johnson Controls is working closely with FSU to identify opportunities for LEED certification of existing buildings and new facilities as the university expands.



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UTILITIES AND ENGINEERING
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