



University of Florida

University of Florida Improves Laboratory IEQ and Energy Efficiency with Siemens Solutions and Service.

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The Institute of Food and Agricultural Science (IFAS) at the University of Florida is a federal, state and county alliance committed to developing knowledge in agriculture, human and natural resources, and the life sciences. IFAS has extension offices and representation in each of Florida's 67 counties.

The Microbiology building on the Gainesville campus is a 69,000 square foot facility that houses 23 laboratories, five classrooms and numerous administrative offices. The faculty's research programs span areas of broad interest in the cellular and molecular aspects of bacterial, plant and animal life functions. The facility has approximately \$7.7M in property assets. Generations of biological experiments and years of research exist. Indoor air quality and lab environment integrity is critical.

Client Objectives

In 2007, Kevin Heinicka, Director of Facilities Planning and Operations, IFAS and Adam Boudreaux, Facility Manager, IFAS were dissatisfied with the support and components from their local Johnson Controls, Inc. (JCI) provider. Heinicka and Boudreaux were fielding comfort complaints from occupants and had concerns about potentially unsafe laboratory conditions. Siemens Industry, Inc. Building Technologies Division has a long standing relationship with IFAS providing building automation solutions and service maintenance throughout the system statewide. IFAS teamed with Siemens to address the Microbiology facility issues and:

- Improve lab safety and occupant comfort
- Improve lab energy efficiency
- Replace failing M&I Heat Transfer valves



Siemens Solutions

The existing laboratory control valves in the building were nearly 18 years old, set point and plungers were failing and there were hot and cold spots in the facility. In addition there were lab pressurization abnormalities that were identified and corrected after review, design, and engineering by Moses & Associates. (Moses & Associates is a local Gainesville, FL engineering firm specializing in laboratory environments.) The solution included:

- Replacing 85 air valves (23 of which were found to be failed)
- Retrofitting the remaining M&I air valves with a Siemens retrofit solution for energy efficient labs

The team integrated the JCI system into their Siemens APOGEE Building Automation System using a N2 driver and transferred all service and support to Siemens. Integration of the systems allowed IFAS facility staff to better diagnose system problems that were causing comfort complaints. The integration also allowed the university to gradually replace the failing JCI components with new, more energy efficient Siemens controllers. After systematically replacing panels and components from JCI to Siemens the JCI integration driver was eliminated. UF/IFAS is dedicated to energy conservation while maintaining a safe

laboratory environment so the team's scope also included energy efficiency improvements by:

- Providing a VAV solution for lab air systems by installing Siemens Lab Room Controllers with new blade style supply air, exhaust air, and fume hood valves
- Implementing occupancy sensing control for lights and ventilation to receive further energy efficiency in laboratory research areas where previously there was no set occupancy schedule
- Rebalancing three air handlers and associated exhaust air systems in different wings of the building

Client Results

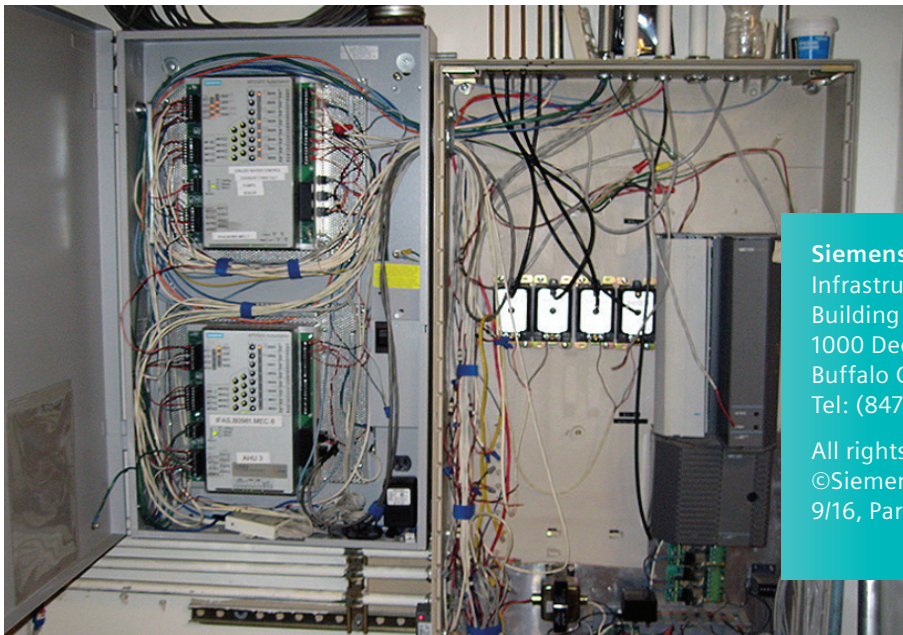
IFAS has realized positive results according to Boudreaux who said "the staff is happier and the complaints have stopped." He estimates they are saving time and labor when diagnosing issues due to greater control. "It is very helpful to be able to pull up a terminal via the graphics program on a monitor. If a person in a lab calls that it is too hot we can quickly pinpoint the problem and send a building mechanic if necessary to correct it." In addition to happier researchers and more productive facilities staff, the university is realizing energy cost savings.

Results include:

- Energy savings are tracking at 15%. The VAV labs can be turned down based on occupancy. Additional commissioning and rebalancing of equipment is planned, projecting even greater efficiencies.
- Improved safety, indoor air quality and occupant comfort. Air flow measuring stations installed at each lab air valve ensures staff will know that proper airflow is being provided to occupants.
- Increased system operability. The IFAS staff is able to maintain all systems through the APOGEE® Building Automation System and Insight® software graphics.

University of Florida IFAS was successful in creating a green lab environment with improved safety, comfort, and energy efficiency whose benefits will be enjoyed for years to come.

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Siemens Industry, Inc.
Infrastructure & Cities Sector
Building Technologies Division
1000 Deerfield Parkway
Buffalo Grove, IL 60089
Tel: (847) 215-1000

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