

Animal Sciences Laboratory #165



Building Gross Sq.Ft.: 149,211 **Expected Simple Payback:** 1.7 YRS
Retrocommissioning Team Visit Period: FY 2009 Nov-Jan **Expected Annual Utility Avoidance:** 25% **OR ▼**
Principal Building Use: Laboratories, Offices & Classrooms **Campus Energy Rank FY09:** 51 8,112 MMBTU
Facility Contacts: Ralf Moller & Darren Gentzler

Building & Occupant Overview

The Animal Sciences Laboratory is home to multiple science disciplines related to animal husbandry for the Champaign-Urbana campus. The building was originally built in 1952 and since then multiple remodels / additions have taken place. Research is performed around the clock in this facility. The original air handling systems (AHUs) were replaced during the 1988-92 remodel and addition. There are seven AHUs serving the laboratories with 50 VAV fume hoods, adjacent office spaces and one lecture hall. The building's cooling needs are met by the campus chilled water loop, while the heat is delivered by combination campus steam and hydronic systems. Building DDC controls are Alpha Controls LCMs at the AHUs and pneumatic controls at the terminal devices. Facility total metered energy during FY08 was 32,447 MMBTU.



Post RCx Energy Use Intensity (EUI) & Cost Index (ECI)

E.U.I.	E.C.I. #1	E.C.I. #2*
162.4 kBTU / Sq.Ft.	\$3.25 / Sq.Ft.	N/A

Retrocommissioning Specifics & Results

The air handling units providing air conditioning were maintaining space conditions 24/7/365 for zones made up entirely by office space. The primary energy conservation method was scheduling the AHU equipment serving those offices to operate only when occupied.

Many lab occupants were unaware as to how their fume hoods worked and the amount of energy that was being consumed. A major education campaign was launched to encourage the lab occupants to "Shut the Sash" on the fume hood when not personally using it. Meanwhile RCx determined that the exhaust was drawn to the roof by two large constant volume exhaust fans. To maintain proper flow through fans, two bypass dampers modulate to allow outside air from the roof into exhaust header. As building patrons adopted the new culture to shut the sash, bypassed air reached 70%, allowing one fan to be shut off.

Project Highlights

- Programmed occupancy schedules to reduce energy consumption during unoccupied hours.
- Provided DDC controls and web graphics for the building systems.
- Enhanced humidity control thereby saving chilled water costs.
- Reduced number of exhaust fans and/or air quantities using pressure controls.
- Removed inlet vanes to improve fan efficiency.
- Encouraged closing fume hood sashes when not in use.
- Inspected/replaced numerous sensors, actuators and valves.

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