

Turner Hall #197



Building Gross Sq.Ft.: 180,002 **Expected Simple Payback:** 4.5 YRS
Retrocommissioning FY 2008 **Expected Annual Utility Avoidance:** 11% **OR ▼**
Team Visit Period: Mar—Apr **Campus Energy Rank FY08:** 25 6,534 MMBTU
Principal Building Use: Classrooms, Laboratories and Offices
Facility Contacts: Ralf Moller & Darren Gentzler

Building & Occupant Overview

Turner Hall is the home of the Department of Natural Resources and Environmental Sciences for the Champaign-Urbana campus. The building was originally built in 1964 and since then multiple remodels, an addition and HVAC upgrades have taken place. Various laboratories are open 24/7 conducting research at all times of the year. There are 14 air handling units: 6 multi-zone and 8 constant volume. These serve multiple laboratories with 60+ constant volume fume hoods. Cooling is provided to the building by the campus chilled water loop. The heat in the building is provided by a combination steam and hydronic system. Building controls were upgraded to Siemens Modular Series.

Facility total metered energy during FY07 was 57,827 MMBTU.

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

E.U.I.	E.C.I. #1	E.C.I. #2*
285.0 kBTU / Sq.Ft.	\$5.29 / Sq.Ft.	N/A

Retrocommissioning Specifics & Results

Turner Hall is an intensive research facility for crop and environmental sciences. As leaders in caring for earth, the occupants helped the retrocommissioning process greatly. RCx worked with the occupants to reduce fume hoods, hood usage, and the idea of sharing space. Outdoor air intake quantities were reduced. Supply & return fans were adjusted to care for the load, as well as to balance the airflows from outdoors. The ductwork was vigorously cleaned in half of the building, requiring less power for fans to operate. Occupancy schedules and programmable controls are being used to regulate equipment operation.



Project Highlights

- Created occupancy schedules to reduce select fan systems at night & close outdoor air dampers
- **8** fume hoods removed & **7** abandoned in place. Occupants educated about fume hood energy consumption
- The NRES and Crop Science departments have an active goal to reduce energy usage by 25% in this building
- Improved control logic & airflow adjustments maintain building pressure
- **6** units were provided with complete programmable control
- **Many** maintenance items were addressed: incorrect fan rotation, oiled pneumatic stats, old inlet vanes on VFD fans, etc...