

# retrocommissioning project four

## Turner Hall

### Quick Facts...

Total Building Square Feet:	180,002
Expected Utility Savings per Year:	\$200,000
RCx Spent to Retrocommission:	>\$118,000
Estimated Payback:	1 year
RCx Team in Building:	Mar. to Apr. 2008



### Green House Emissions Reduction:

The 598 Tons of CO2 saved is equivalent to the emissions from 67,862 gallons of gasoline!

\*based on <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>)

## Background

Turner Hall is an intensive research facility for crop and environmental sciences.

### How savings were achieved:

- Reduced fume hoods and hood usage
- Reduced outdoor air intake quantities
- Adjusted supply and return fans to care for the load and balance the airflows from outdoors
- Cleaned ductwork in half of the building, reducing amount of power needed to operate fans
- Used occupancy schedules and programmable controls 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. This is approx. \$75,000 in savings / year. 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 will have complete programmable control
- ▶ Willing and cooperative building personnel
- ▶ Many maintenance items were addressed: incorrect fan rotation, oiled pneumatic stats, old inlet vanes on VFD fans, etc...

### Current Calculated Energy Savings\*:

Electrical energy saved: **1%**

Chilled water energy saved: **35%**

Steam energy saved: **43%**

\* based on a comparison between the estimated average monthly utility data from Oct. 2005 to June 2007 vs. Oct. 2007 to June 2008 (In June 2008 the building had chilled water and reheat problems with abnormal increase in both.)