

Siebel Center for Computer Science, #563



Building Gross Sq.Ft.: 266,825

Simple Payback: 1.3 YRS

Retrocommissioned: Aug—Dec 2009

Annual Energy Avoidance: 41%

(Based on one year's non-normalized data)

Principal Building Use: Offices, Classrooms, Labs

Facility Contacts: Rick Henderson, Jackie Kern & Teresa Schurg

Building & Occupant Overview

The Siebel Center for Computer Science is the epicenter of computing science studies for the Champaign-Urbana campus. The building was originally built in 2005. The first floor is dedicated primarily to classroom use, while the remaining three floors are departmental suites and post-graduate offices. Four air handling units in the basement feed into a central system which takes care of the building. One other is dedicated to a large auditorium. Cooling is provided by means of campus chilled water. The heat in the building is provided by campus steam thru two hydronic systems. Building controls are Andover controls.

Facility total metered energy during the previous year was 80,329 MMBTU.



Photo by Ying-Yi Lang

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

E.U.I.	E.C.I. #1	E.C.I. #2*
178.0 kBTU / Sq.Ft.	\$2.82 / Sq.Ft.	\$473.93 / person

* ~1,587 PEOPLE OCCUPY BUILDING ON A GIVEN DAY

Retrocommissioning Specifics & Results

The primary energy conservation method was revisiting the programming of the individual VAV boxes. The program frequently allowed for a 0.1, 0.5 or 0.9 deg F deadband between heating the room and cooling the room. Therefore, it was noted that each room controls were "fighting" each, heating and then cooling immediately. Another major issue found in the programming was found in the setback schedule. The intended setback range of temperatures became the setpoints. The result were rooms in winter cooling the space down to 60 deg F, then warming it up to 72 deg F, then returning to 60 deg F.

To maintain comfort conditions, reheat coil control valves were checked for leakage rates. The entire reheat system required flushing. Therefore the RCx team visited almost every VAV box and flushed the coil. Approximately 471 VAV boxes were reviewed, calibrated and balanced. Various VAV controllers were found non-operational and were replaced, restoring thermal comfort and improving minimum air flow control. The relatively "new" building was brought to its optimal condition.

Project Highlights

- Used existing occupancy sensors to control the HVAC system in office spaces and re-programmed each of the 471 VAVs
- Installed CO2 sensor to control outdoor air quantity at AHU serving large auditorium
- Re-calibrated 471 VAV's to new minimum CFMs allowing the (4) 100 HP supply fan motors to avoid energy use
- Discerned lack of water in hydronic system which maintained circulating pumps at full speed even though they had VFDs
- RCx cleaned the only outdoor air louver in use, which was plugged with debris

Facilities & Services

Utilities & Energy Services | Retrocommissioning