

Bevier Hall, #158



Building Gross Sq.Ft.: 156,770

Simple Payback: 3.7 YRS

Retrocommissioned: Dec 2009—Feb 2010

Annual Energy Avoidance: 18%

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

Principal Building Use: Classrooms & Food Labs

Facility Contacts: Gregg Knott

Building & Occupant Overview

The Bevier Hall is the hospitality hub for the Champaign-Urbana campus. The building was originally built in 1956 and since then remodels and HVAC upgrades have taken place. The building occupants perform research during the day and offer excellent restaurant style meals in the evening. There are 21 different air handling units serving the comfort conditions of the building. Over 50 exhaust fans remove the various odors from the labs. Cooling is provided by means of campus chilled water. The heat in the building is provided by a combination steam and hydronic system. Building controls platform is the Barber Coleman Network 8000 with GCSs, LCMs and MNBs.

The facility's total metered energy during the previous year was 41,245 MMBTU.

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

E.U.I.	E.C.I. #1	E.C.I. #2*
216.8 kBTU / Sq.Ft.	\$3.42 / Sq.Ft.	N/A

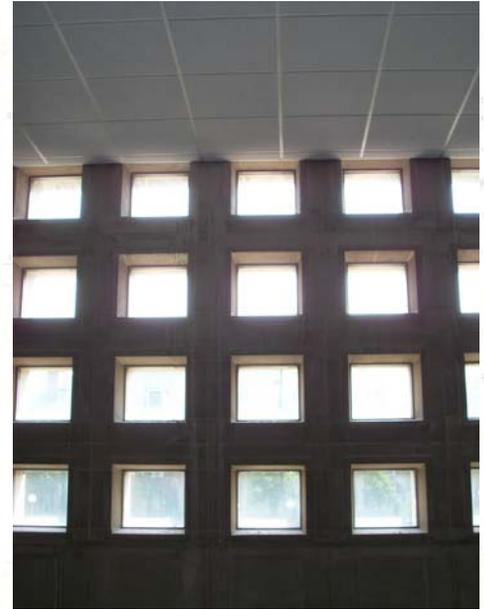
* THE QUANTITY OF PEOPLE THAT OCCUPY THE BUILDING ON A GIVEN DAY IS NOT KNOWN.

Retrocommissioning Specifics & Results

The 21 air handling units (AHUs) providing air conditioning were maintaining space conditions 24/7/365. The primary energy conservation method was scheduling 10 of the AHUs serving the areas to shut completely off for 6 or more hours a day. The remaining units were scheduled to reduce airflows during unoccupied hours.

Eight of the 50+ exhaust fans were found to be unnecessary, even though they were exhausting 24/7 from the premises. RCx assisted in shutting these fans off and abandoning them in place. Various other exhaust fans serving restroom areas were brought over to DDC control and scheduled to operate when building was occupied.

To maintain comfort conditions, reheat coil control valves were checked for leakage rates. Reheat valves were replaced as required. Various VAV controllers were found non-operational and were replaced, restoring thermal comfort and improving minimum air flow control.



Project Highlights

- Occupancy schedules were created and applied to the operation of the 21 air handling units
- Reduced the VAV minimums from the template 50% to actual required minimums per ASHRAE 62.1
- Reduced the minimum outside air quantities at the air handling units to match space requirements
- Upgraded HVAC controls on three AHUs serving 18,000 square feet
- Installed VFDs on four AHUs and removed the inlet vane control
- Scheduled or abandoned unnecessary exhaust fans