Campbell Hall #376 & Richmond Studio #551

Building Gross Sq.Ft.: 40,731

Retrocommissioning Team Visit Period: FY 2011 June—Nov

Expected Simple Payback: 3.5 YRS

Expected Annual Utility Avoidance: 32% **OR** ▼ 5,645 MMBTU

Campus Energy Rank FY10: 119

Principal Building Use: Public Media Broadcasting and Offices

Facility Contacts: Elizabeth Weathers, Rick Finnie & Matt Jones

Building & Occupant Overview

Campbell Hall is home to the public AM / FM radio and WILL TV station that serves the Champaign-Urbana campus and surrounding community. The building was originally built in 1996, with two larger server rooms required for broadcasting. The majority of folks work during the day, but a few also work weekends and nights. The HVAC system is composed of three air handling units, two remote Lieberts (for server rooms) and multiple VAVs. Cooling is provided by means of two McQuay, 130 ton chillers. The heat in the building is provided by three 80% efficient boilers. Building central equipment controls are Invensys LCMs and GCMs. Terminal units are under pneumatic control.

Facility total metered energy during FY11 was 17,639 MMBTU.

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

E.U.I.	E.C.I. #1	E.C.I. #2*
294.5 kBTU / Sq.Ft.	$4.52 / Sq.Ft.	$3,067 / person

** ~60 PEOPLE OCCUPY BUILDING ON A GIVEN DAY...*

Retrocommissioning Specifics & Results

The department had the need to maintain space conditions in their broadcasting areas 24/7. Building air was provided to those critical spaces (25%) and the remaining offices (75%). Two CRAC units were available to care for that 25% at night, while allowing the building air to shut down. RCx worked with the facility managers to implement this idea. Now the air handling units (AHUs) are scheduled to shut down for 6-8 hours a day while the CRACs care for the space.

To maintain comfort conditions, all 84 VAVs were balanced and the pneumatic heating strategy revised to allow the heat to come on ahead of increasing the air flow to wash the outside walls. reheat coil control valves were. Various VAV controllers and boxes were found non-operational and were replaced, restoring thermal comfort and improving air flow control.

Additional changes were scheduling a 24/7 rooftop unit, improving boilers & chillers, adding VFDs & CO2 sensor to single zone, increasing economizer possibilities and items affecting building pressure.

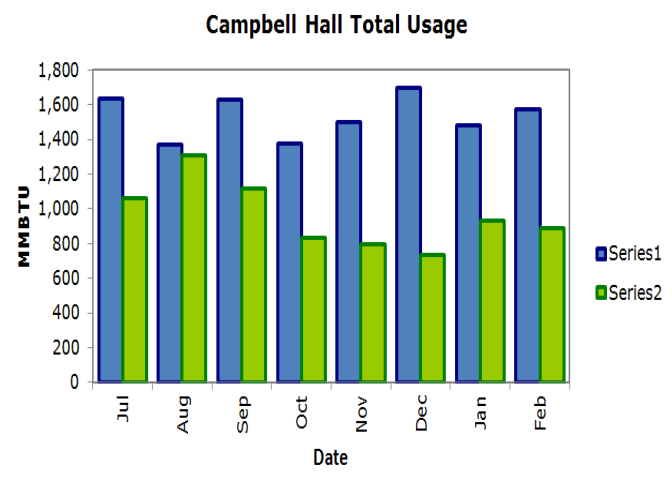
Project Highlights

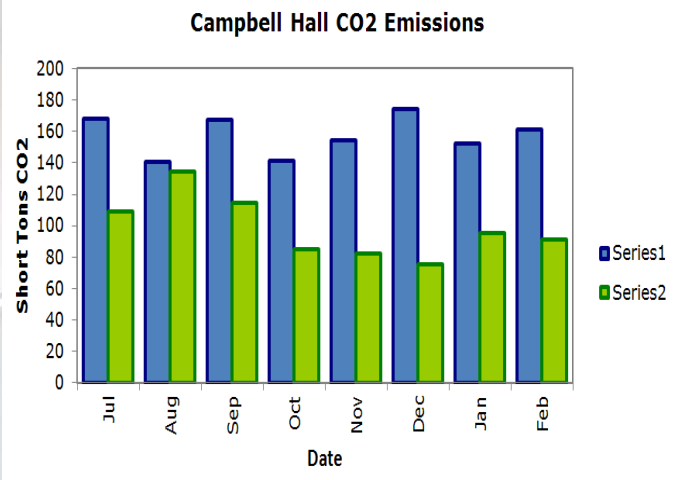
- The return path originally was intended to pass through the slots in the lighting fixtures, but the metal covering the slot was never removed. New return grilles were installed throughout to improve air flow and comfort.
- The “V” control pattern for the VAV boxes was increasing the airflow before opening the heating valve causing cold drafts. Pneumatically this was altered to provide heat before ramping up.
- Electric chillers were installed with proprietary controls as well as DDC controls, each working against each other. RCx made adjustments to gain coordination.

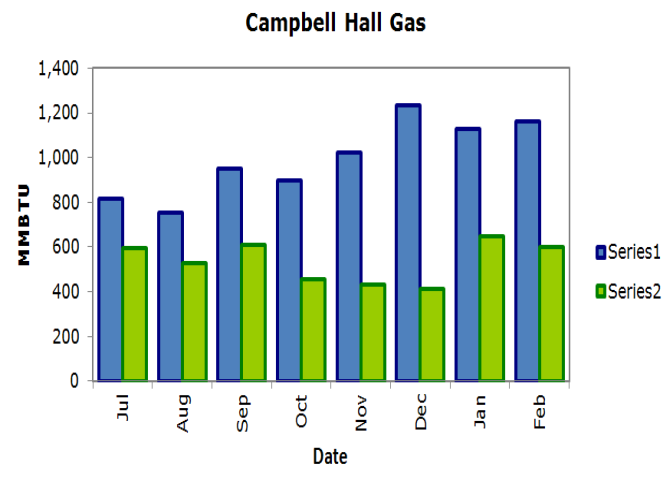
March 28, 2012

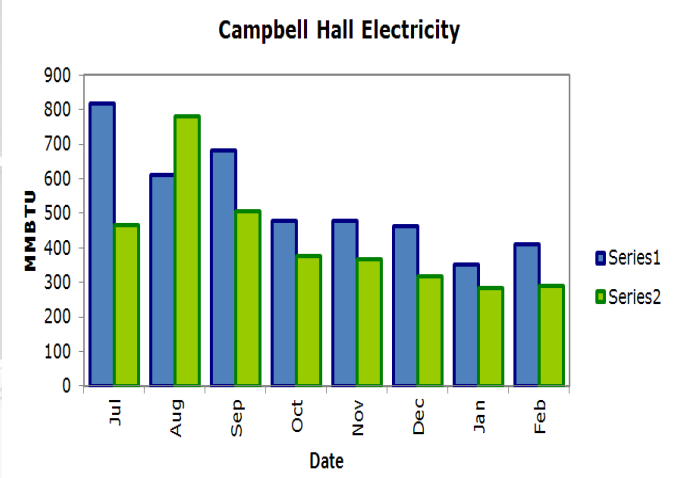
Campbell Hall #376

This building is NOT connected to the campus chilled water loop and therefore does not have any “Chilled Water Usage”. Cooling energy shows as part of the Electricity Usage.









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