International Studies Building #0369

Building Gross Sq.Ft.: 24,473

Retrocommissioning Team Visit Period: Sept 2014 -Oct 2014

Principal Building Use: Offices and Conference Rooms

Building & Occupant Overview

Due to an increasing interest in study abroad programs, the International Studies building broke ground on July 12, 1990. Since then it has housed numerous professors that assist with a multitude of international students. This is primarily an office building, with some smaller conference rooms that classes are held in on occasion. There is a single air handling unit conditioning all rooms in the building. The building heat is hot water reheats, no radiation present, with 3 condensing boilers staged to deliver hot water to all reheats. There were four exhaust fans serving the building upon our initial investigation. Campus chilled water was also brought into the building in 2014 during a controls upgrade project with a chiller taken out of operation.

The facility's total metered energy during FY14 was 8,263 MMBTU.

Retrocommissioning Specifics & Results

Immediately prior to the Retrocommissioning visit, a DDC controls upgrade and chilled water entrance were installed. This allowed more opportunity to take advantage of the technology and increased the energy savings opportunities. The only AHU was operating 24/7 prior to the controls upgrade, but a schedule had been implemented months prior to Retro. This schedule was revisited and is even more aggressive now.

This is the first building where occupancy sensors are being implemented on pneumatically controlled VAV boxes via line voltage solenoid valves. The conference room had occupancy sensors installed, as well as a dedicated exhaust fan decommissioned and is much more comfortable now, using much less energy.

The building was negative during the initial investigation, so this was addressed from multiple angles, including: new SOAP sensor installed, EF4 (mentioned above) being shut down, the remaining exhaust systems were rebalanced, and the tubing corrected and verified on the DP sensor. The building is now operating at a slightly positive pressure. The hot water system was also rebalanced to ensure proper flow to the system and alleviate hot/cold issues in the building.

Project Highlights

- Installed occupancy sensors on 30 VAVs
- Calibrated all sensors and transducers
- Visited each VAV and thermostat and calibrated accordingly
- Modified existing scheduling to better match building usage
- Corrected building pressure tubing
- Decommissioned EF4, deemed unnecessary
- Tied 4 pneumatic stats serving common area together to stop "fighting" heat vs. cool
- Combustion analysis performed on boilers
- Water Balance on hot water system completed