

Materials Science and Eng Bldg, #34



Building Gross Sq.Ft.: 101,803

Retrocommissioning Feb–June

Team Visit Period: 2014

Principal Building Use: Lecture Halls, Classrooms, Labs, Offices

Facility Contacts: Jay Menacher

Building & Occupant Overview

MSEB is home to the department of Materials Science and Engineering and facilitates much of the department's research. The building boasts two large lecture halls on the first floor where many engineering classes are taught. It is also equipped with numerous laboratories for graduate students and faculty. There are 8 functional air handling units in the building. AHUs 1,2,4 and 7 are cooled by campus chilled water and have Schneider Electric BAC controls. AHUs 3,5,6, and 9 have DX cooling. Window air conditioners are used in many rooms, including labs with fume hoods. The building uses both steam and hydronic radiation. All reheat systems are hydronic. The facility's total metered energy during FY13 was 18,399 MMBTU.

Retrocommissioning Specifics & Results

VFDs for AHU4 supply, return, & exhaust fans and htg pumps were added. Steam and condensate lines were insulated. Occupancy sensors in labs were installed in order to reduce the exhaust from fume hoods. System fluid for the reheat loop was replaced and the perimeter heating system (glycol system) was readjusted due to bad chemistry and dirty water. Transducers were replaced. Air handler control panels were rebuilt. Roof vents were closed to save energy. Outside air dampers for AHU1 were fixed. The Ebtron AFMs on AHU2 were fixed. Override timers were placed in lecture halls to permit temperature control outside of regular hours. Their time clocks were also repaired. Freeze stats were added to AHU1. Abandoned exhaust systems were capped. An outside air economizer feature was added to AHU2. VAV boxes were fixed and adjusted. AHU1 and AHU2 will now discharge relief air to the building rather than outdoors to save energy and make the building more comfortable. The AHU3 and AHU5 DX direct expansion cooling units will be replaced with chilled water units. Remote DPTs were installed in both htg loops and chilled water loops. All unused fume hood exhausts were sealed. We recommend turning off fume hoods when not in use by consolidating chemicals in one fume hood or vented storage cabinets.



Project Highlights

- Rebuilt AHU control panels for improved operations
- Sealed off roof vents and unused exhaust systems
- Enabled OA econ in AHUs
- Installed VFDs on AHU-4 fans and both htg loops to save energy
- Insul. stm and cond lines
- Occ. sensors to be installed in labs to reduce exhaust amounts during unocc. times
- New remote DPTs to be installed in htg and chilled water loops for more accurate control
- Retrocommissioned every AHU and VAV box