Transportation Building #0042

Building Gross Area: 51,445 sq.ft.

Retrocommissioning Team Visit Period: Oct. 2015– Jan-2016

Principal Building Use: Offices, Classrooms, Laboratories

Building & Occupant Overview

The building was originally built in 1912. The building has gone through several smaller updates through the years. There are several smaller DX systems in the building that are older in nature and don't appear to be in good condition. The third floor senior project lab areas are served by a newer DDC VAV system. Other than that, the mechanical systems are constant volume and several of these are DX units. There are several window air conditioner units that are older and allow for a lot of outdoor air infiltration during the winter season. The classrooms in the building are served by cooling only heat pumps with the cooling tower outside in the south-east corner of the building.

Retrocommissioning Specifics & Results

The chiller in the south-east corner of the building serving AHU3 was retired and the unit was connected to the campus chilled water loop. The time-clock for AHU3 was fixed and the unit is now scheduled during unoccupied periods. The occupancy sensors in the areas served by AHU1 controlled only lights. Those sensors were replaced with new sensor with an extra set of contacts that is now used to shut down VAV boxes when the space is unoccupied. The air handling units were running continuously; the units are now scheduled to turn off during unoccupied periods. The basement occupants were experiencing cold air drafts because the rooms have floor air grills right beside their workspace and had more airflow than required. Dampers were installed in the floor grills and fan speed reduced to reduce the air flow and cold air drafts. There were separate thermostats controlling heat pumps and radiators in the classrooms causing simultaneous heating and cooling especially in winter months. They are now replaced with a single thermostat controlling both heat pumps and steam radiators. Occupancy sensors were installed in spaces with DX units and heat pumps to control both lights and air conditioning units.

Project Highlights

- Scheduled all AHUs to shut off during unoccupied periods
- Replaced the existing occupancy sensors on AHU 1 area to extend the control to the existing DDC VAV boxes
- Modified programs to enable economizer mode in air handling units
- Reduced AHU2 fan speed to reduce airflows
- Installed new thermostats in classrooms to control both the heat pumps and steam radiators; Installed occupancy sensors to set back temperature when unoccupied
- Sealed up gravity roof ventilation systems
- Installed occupancy sensors to control lighting and HVAC
- Repaired/Replaced failed steam radiators valves and traps

July 21, 2016

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