

Natural History Building

Building Gross Sq.Ft.: 153,400

Retrocommissioning Team Visit Period: April 2019 - September 2019

Principal Building Use: Offices, Classrooms, Labs



Building & Occupant Overview

This historic renovation was targeting LEED Platinum, utilizing innovative energy efficient systems and modern controls.

The renovated building has 12 instructional classroom labs, some of which have fume hoods that are not used by instructors. Spaces include, a clean room, 400 seat auditorium, classrooms, in addition to administrative and faculty offices.

Highlights include:

- Historic Renovation of 1892 building reopened in 2017 after structural issues were found.
- Housing three departments in earth sciences with over 350 rooms; 12 instructional classroom labs, 15 research labs, a 1,000sf. cleanroom, 300 seat auditorium, offices, and an earth visualization lab.
- Three 100% OA AHUs with heat recovery on fume hood exhaust, and four recirculating AHUs with heat recovery wheels. One general exhaust and 20 fume hoods grouped on three ducts.

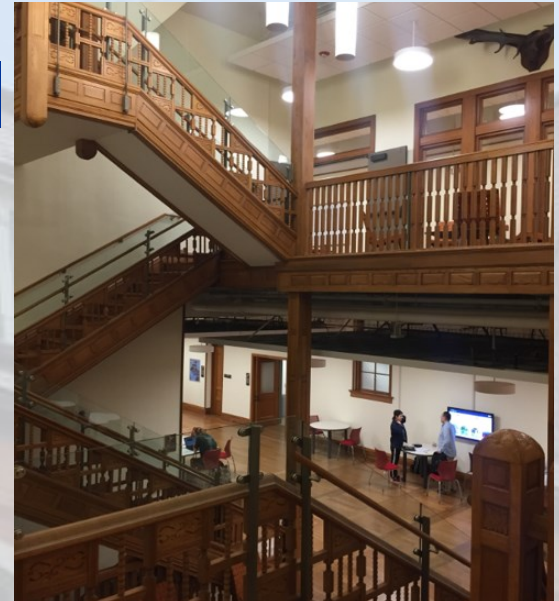
Retrocommissioning Specifics & Results

The retrocommissioning team reduced teaching lab airflow, turned off unused fume hoods, adjusted VAV minimums, and replaced broken occupancy sensors.

The biology instructors generally don't need lab airflow or fume hoods with current teaching methods. To accommodate the occasions where fumes are present, "Lab-override" occupancy override buttons were added. During the summer break, biology staff helped to consolidate chemicals into a central storage so that fume hoods could be turned off and supply air reduced.

Recirculation AHUs have energy recovery wheels but due to the large amount of exhaust in the building, building pressure doesn't require exhaust through the AHUs and these fans are allowed to turn off and dampers close.

Roughly cut energy consumption in half.



Project Highlights

- ☐ Summer consolidation of chemicals resulted in shut down of 7 fume hoods
- ☐ Four classroom fume hoods dampered off in ceiling indefinitely
- ☐ Reviewed and reduced VAV minimum airflow in many rooms
- ☐ Reduced restroom exhaust at night
- ☐ Reduced exhaust fan minimum on four return air AHUs and allowed exhaust dampers to close based on building pressure
- ☐ Semi-clean room airflow and microscope lab evaluated and adjusted
- ☐ Replaced broken occupancy sensors keeping rooms in occupied mode
- ☐ Replaced broken CO2 sensors and thermostats
- ☐ Calibrated sensors and dampers in AHUs and room VAV boxes