## ECE Building, #409

Building Gross Sq.Ft.: 238,390

**Retrocommissioning** April 2018 - September 2018 **Team Visit Period:** 

Principal Building Use: Offices, Classrooms, Labs, Shops

## **Building & Occupant Overview**

This building was a \$95M project targeting LEED Platinum and being the largest Net-Zero building, utilizing innovative energy efficient systems and on & offsite renewable energy production. Currently, it is the highest performing lab building by energy per square foot on campus.

The new building has more than 20 lab spaces intended for student instruction and learning, including a clean room, 400 seat auditorium, a large lobby area where students study and meet with industry reps, classrooms, a machine shop and print shop, in addition to administrative and research offices.

Highlights include:

- High performance terra cotta envelope, sun shading, and natural day lighting controls
- Spaces for students to work 24/7, a coffee shop, labs, a 5,000sf. cleanroom, 400 seat auditorium, offices
- 13 AHUs, with dual energy recovery wheels, chilled beams, and heat recovery chillers
- Roof Mounted Solar Array partially accessible for research, education and innovation opportunities

## **Retrocommissioning Specifics & Results**

The retrocommissioning team identified multiple system and controls operating conditions in need of adjusting and tuning. They adjusted scheduling set-points, balanced building and space pressures, cleaned air-flow restrictions, repaired and adjusted mechanical components, evaluated building needs and installed ductwork,

Commissioned all HVAC components tuning these systems for peak efficient operations, which included modifications to many of the components, programming, set points and some controls.

Several commissioning items were identified, corrected and/or considered for future interventions.

Post-project energy use is below the LEED energy model.



## **Project Highlights**

- □ Scheduled 1/2 units off at night
- □ Reduced exhaust air at night
- Commissioned AHUs, VAVs
- □ Checked VAV and chilled beam operation
- □ Adjusted VAV minimums
- □ Added VAV trends
- □ Fixed occupancy sensors
- Optimized dual-energy recovery wheels
- □ Optimized heat-pump chillers
- □ Calibrated utility sensors

**ILLINOIS** FACILITIES & SERVICES