Florida Avenue Residence Hall

Building Gross Sq. Ft: 314,290

Retrocommissioning March 2022 - August 2022

Principal Building Use: Student Housing

Building & Occupant Overview

Built in 1965 and nestled near the northeast corner of UIUC's vibrant campus, the Florida Avenue Residence Hall (FAR) boasts two 12-story towers housing primarily first-year and sophomore students. FAR offers a mix of single and double rooms, all equipped with air conditioning and induction units. Residents enjoy the on-site laundry facilities, study rooms, computer lab, fitness room, and dining. Additionally, FAR hosts the Health Professions and Women in Math, Science, and Engineering (WIMSE) Living-Learning Communities.

Project Highlights

- ☐ Added six VAVs in the lobby with occupancy sensors
- ☐ Added six VFDs, allowing the main AHUs to be run slower
- ☐ Programmed kitchen exhaust to activate based on heat
- ☐ Wired laundry exhaust fans to be off when driers are not in use
- ☐ Added a steam radiator isolation valve
- ☐ Repaired several steam and CHW valves
- ☐ Added insulation to bare steam piping
- ☐ Added RaCO2 sensor to lobby AHU
- ☐ Fixed broken RA dampers
- ☐ Allowed AHU 7/8 to recirculate air when kitchen exhaust fans are not in operation
- ☐ Programmed dishwasher exhaust to turn off on a delay timer when not in use
- ☐ Fixed controls communication issue
- ☐ Maintained and calibrated VAVs
- ☐ Fixed graphics issues

Retrocommissioning Specifics & Results

The lobby had its constant volume system converted to variable with the addition of six new VAV boxes, occupancy sensors, and a VFD

Adding VFDs to the main housing AHUs allowed the 100% outside air units to be run slower yet sill meet space conditions.

Initially kitchen exhaust fans were in operation from 5am to midnight everyday. Using CaptiveAire hood controls, the system was reprogrammed to turn on to 30% capacity with heat, with the ability to ramp up to 80%. This brought the CFM from 20k down to 6k, marking a drastic improvement.

Overall, the Retrocommissioning Team has been successful in reducing costs by over $236,800 as of September 2023, corresponding to a substantial 28% reduction in total energy consumption within the first year.