

INSTITUTE FOR GENOMIC BIOLOGY #1080



Building Gross Sq.Ft.: 219,788 **Expected Simple Payback:** 3 YRS
Retrocommissioned: Nov 2012—Mar 2013 **Expected Annual Utility Avoidance:** 25% OR ▼
Campus Energy Rank FY12: 11 MMBTU

Principal Building Use: Laboratories, Offices, and Classrooms

Facility Contacts: Darci Edmonson

Building & Occupant Overview

The Institute for Genomic Biology, IGB, (previously known as Post Genomic Institute) is a building dedicated to all types of research, including chemical and biological research involving food, crops and animals. The building opened in 2007 and is a \$75 million state-of-the-art facility. There are five 100% outside air units that serve labs and animal rooms and two return air units for office spaces. Building heat is provided by six hot water heat exchangers. There are two for perimeter radiation, two for reheats, and two for the preheat/heat recovering system. There is a heat exchanger providing building process cooling with city water as a back-up. The building control system is the Andover Netcontroller II. The facility's total metered energy during FY12 was 66,185 MMBTU.

Post RCx Energy Use Intensity (EUI) & Cost Index (ECI)

E.U.I.	E.C.I. #1	E.C.I. #2*
301 kBtu / Sq.Ft.	\$ — /Sq.Ft.	\$ — / person

*~ 500 PEOPLE OCCUPY BUILDING ON A GIVEN DAY

Retrocommissioning Specifics & Results

The air handling units (AHUs) providing air conditioning were maintaining space conditions in offices and labs 24/7/365. The primary energy conservation method was scheduling setbacks and reducing CFM during non occupied times.

Occupancy sensors were installed in the labs and conference rooms in the building, which controls the lighting and variable air volume boxes (VAV) for the spaces. This will reduce the CFM output of the AHUs when spaces go into unoccupied mode during a normal occupied time.

There are approximately 300 VAV boxes in the building. Each box and thermostat was inspected for proper operation and calibrated. Discharge temperature sensors were installed after all the reheat coils for monitoring leaking reheat valves. There were numerous defective controllers and actuators replaced.

Air handler 6, which supplies the office area, has an above the ceiling return. The large mechanical room adjacent to the space had not been properly seal and was open to the return path of AHU-6. This would pulled unconditioned air into the return in the winter and in the summer when the electrical vault exhaust fan was on it would pull the conditioned air into the mechanical room. The mechanical room was sealed from the conditioned space to prevent this from occurring. We also installed a VFD and a filtered intake for the electrical vault exhaust.

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Project Highlights

- There were occupancy sensors installed in the labs to control lighting and air flow when the spaces were un-occupied.
- There were setback schedules implemented in the office areas during 10PM-6AM, 7 days a week. General exhaust fans are scheduled off during this time as well.
- Electric room exhaust was re-configured by installing a filtered outside air intake in room and installing a VFD on fan. The mechanical room was also sealed from AHU6 open plenum return.
- There were VFD's installed on preheat/heat recovery loop and preheat valves were converted from 2 way to modulating.

Facilities & Services

Utilities & Energy Services | Retrocommissioning