

Medical Sciences Building, #0192



Building Gross Sq.Ft.: 114,784

Simple Payback: 1.8 YRS

Retrocommissioned: Sep—Dec 2012

Annual Energy Savings: 25%
(Based on four months non-normalized data)

Principal Building Use: Classrooms, Library, Labs, Offices

Facility Contacts: Dee Ann Knollenberg

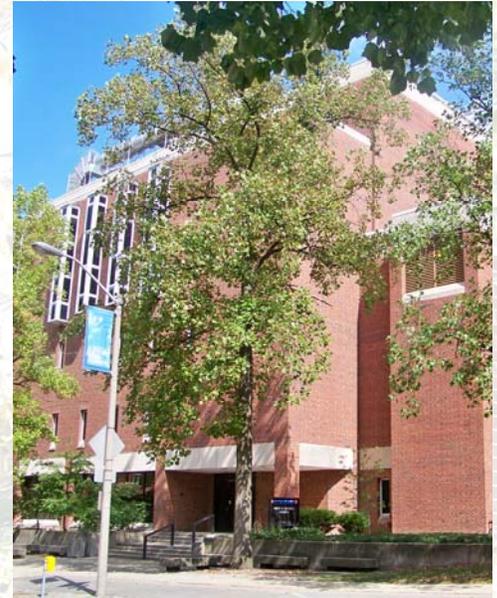
Building & Occupant Overview

The Medical Sciences building was built to house the College of Medicine. The building contains one large auditorium, several classrooms and laboratories for the education of students and for medical research.

There are seven air handling units in the facility, three of them requiring 100% outside air. These three have a form of energy recovery, two with wheels and one with heat reclaim coils. All are constant volume. Building heat is provided by campus steam. This steam goes directly to the perimeter radiation or is exchanged to hot water for the AHUs and reheats. Cooling is provided by the campus chilled water system.

The controls and four AHUs were replaced in 2011. The four use TAC MNBs and ALC MEs, while two old ones use Siemens MEC, and one is pneumatically controlled. The room controls are completely pneumatic from original installation circa 1972.

The facility's total metered energy use during the previous year was 114,784 MMBTU.



Project Highlights

- Coordination was achieved between the energy wheels and coils and their independent controls; an improved sequence was also implemented
- 175+ valves were investigated for proper operation and 128 thermostat was calibrated
- CO₂ sensors were added to the large auditorium unit and the library/office unit.
- The reheat heat exchanger was upgraded from pneumatic to DDC control
- Three AHUs were scheduled based upon occupancy and consultation with facility manager
- Cleaned clogged outdoor air louver to improve IAQ

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

E.U.I.	E.C.I. #1	E.C.I. #2*
746.0 kBtu / Sq.Ft.	\$4.99 / Sq.Ft.	\$2,084.51 / person

* - 275 PEOPLE OCCUPY BUILDING ON A GIVEN DAY

Retrocommissioning Specifics & Results

Multiple efforts have resulted in the reduction of energy use.

Two of the AHUs have two wheels each, an enthalpy wheel and a sensible wheel with the heating and cooling coils between. Much careful engineering analysis and consulting with vendors and the original design engineer was required to optimize the energy wheels with the coils. Some control was being handled by the TAC system and some by the ALC system. A new and improved sequence was implemented and the units were checked for accurate measurements. Though control is still being performed by two systems, they now work harmoniously. RCx also lowered the amount of supply air required by the units.

To maintain comfort conditions, all thermostats were calibrated and / or replaced and the heating valves were inspected for proper operation. There are approximately 128 VAV's in the building. They were all inspected for proper operation, resulting in improved comfort.