Project Profile

NEWMAN CONSULTING GROUP

Academic Administration Building
Wayne State University, Detroit, MI

Fast Facts

A 4-story office building with vaulted entrance atrium, offices, conference rooms and training areas.

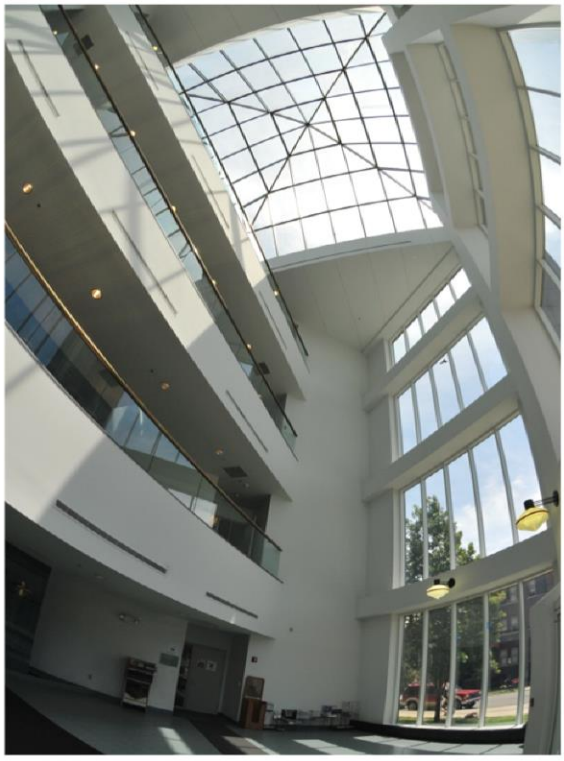
- Year Built: 1995
- Size: 131,000 SF
- Use: Office building. Mostly open 8-5, M-F

Strategies:

- Repair and Adjust mixed-air dampers
- Shift economizer setpoint
- Set proper AHU schedules

Investment = $13,200

Estimated Savings (year 1) = $20,000



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Academic Administration Building
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Project background

Wayne State University's Academic Administration Building faced many of the same concerns as other office buildings of a similar age. Tenants (in this case University employees) repeatedly complained to building maintenance staff that they were "too hot" or "too cold." And the costs of running the building kept creeping up.

As part of a DTE Energy and Nexant Retro-commissioning (RCx) project for no-cost and low-cost energy conservation measures (ECMs) with short-term payback, Newman Consulting Group (NCG) conducted an ASHRAE Level 2 Energy Analysis and RCx Study. This uncovered several opportunities that would make the tenants more comfortable and save money.

Strategies and Results

The measures below, plus additional no-cost measures, realized an estimated savings of greater than $20,000/year after an investment of only $13,200.

1. Repair and Adjust Economizer Dampers

   Due to age, corrosion, damage, etc., the mixed air economizer dampers were either not fully opening or closing, or not working at all. They were repaired to make them properly responsive to the Building Automation System (BAS) and allow in the right amount of outside air to meet code, and maintain indoor temperatures and occupant comfort.

   a. Implementation Cost: $11,200
   b. Gas Energy Savings: 6,000 Ccf/year, $3,700/year
   c. Electrical Energy Savings: 7,000 kWh/yr, $1,000/year

2. Shift Economizer Setpoint

   With the dampers properly responding to the control signal, the economizer setpoint was moved up to 65F so they respond only when necessary, as dictated by the BAS (see #3) to keep the inside temperature comfortable.

   a. Implementation Cost: $800
   b. Gas Energy Savings: N/A
   c. Electrical Energy Savings: 7,000 kWh/yr, $1,000/year

3. Set Proper AHU Schedules

   Before these measures, the system was bringing in too much outside air in the cold weather, especially at night when the building was unoccupied. This kept the AHUs running almost 24/7. Once the dampers were fixed and the setpoint adjusted, the BAS was reprogrammed to start at the optimum time in the morning so the building would be comfortable when people arrived, and to shut them off at 5:00 p.m., Monday through Friday.

   a. Implementation Cost: $1,200
   b. Gas Energy Savings: 6,000 Ccf/year, $3,800/year
   c. Electrical Energy Savings: 98,000 kWh/yr, $11,000/year

Overall payback was estimated at 8 months. Measurement & Verification (M & V) using BAS and trending information ensured that savings estimates were being met. The savings were even greater than expected by more than 10%.

About Newman Consulting Group

Newman Consulting Group, LLC (NCG), headquartered in Farmington Hills, Michigan, is a globally recognized authority in energy efficient buildings. The NCG reputation rests on a team of highly skilled engineers, analysts, program managers and professionals certified in efficiency implementation and verification to guarantee a positive ROI. The team helps commercial, industrial and multi-family property owners all over the U.S. implement energy efficiency projects (including renewable energy such as solar, wind, geothermal), eliminate waste, and save money through innovative financing solutions.