

STORIES BEHIND THE BATTLE



North Carolina Area Health Education Center Building

University of North Carolina at Chapel Hill
Chapel Hill, N.C.

RECOGNITION:

#11 overall winner

20% energy use reduction

SAVINGS:

34% energy savings

\$36,100 estimated cost savings

133 MtCO₂e greenhouse gas emissions prevented

BUILDING STATS:

Type: Office

Ending EUI: 258 kBtu/Sq. Ft.

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“The best advice in starting an energy management program is to establish an energy team that works together to implement (and maintain!) energy conservation measures while improving building comfort.”

Seven steps to success

UNC-Chapel Hill, the winner of EPA's first-ever National Building Competition in 2010, was back again with a different building this year. The team identified seven low-cost energy conservation measures (ECMs) that can be implemented immediately to start saving energy. They once again proved the effectiveness of their program at the North Carolina Area Health Education Center Building. Their ECM program is fundamentally an in-house retro commissioning program in which they implement seven energy conservation measures:

- Implement air handler discharge reset to vary temperature between 58° F – 70° F
- Implement HVAC unoccupied setback/shutdown
- Change minimum cooling airflow set points
- Identify and eliminate simultaneous heating and cooling
- Implement temperature standards: Summer 76-78° F, Winter 69-71° F
- Enable all heat recovery loops and economizers
- Enlist campus community to shut off lights and equipment

To help achieve the final measure, getting the campus community to pitch in, the team established an education and outreach program. They met with the building occupants to explain what the energy team would be doing in the building. They also provided an Extreme Energy Packet with flyers and energy-saving tips to be posted in the building.

Refine. Repeat.

The energy team implemented programming modifications to the building air relief system to minimize unwanted air infiltration. This stopped the infiltration of outside air and decreased the fan energy on that system. They also tuned the cooling and heating system to use free cooling when the temperature outside is cold. They implemented discharge reset strategies based on zone temperature and return humidity on the air handling units and implemented a hot water reset strategy based on outside air temperature. This, in conjunction with correcting the negative building pressure issue, helped reduce steam usage on the reheat system. The team also did basic cooling and heating system maintenance to ensure optimal performance on the systems. Lastly, they optimized the building schedules.

Pictured from left to right: Andrew Hutchins, Lane Adams, Artie Neese, Jessica O'Hara, Gene Bober. Back Row: RJ Turner, Chris Martin and Todd Freeman. Not pictured: Steve England and Dion Long.