

OptiNet case study

Renowned Teaching Hospital

Air Handler Performance Monitoring for Energy Efficiency

RECOGNIZED INTERNATIONALLY FOR ITS EXCELLENCE in patient care, its outstanding reputation in biomedical research, and its commitment to educating and training physicians, research scientists and other health care professionals, this 747-bed healthcare facility is located in the heart of Boston's renowned Longwood Medical Area.

VENTILATION PERFORMANCE MONITORING

True to all healthcare settings, the proper level of ventilation is key to insuring a comfortable environment for both the patients and staff, while providing a safe environment in critical care areas. With energy costs



skyrocketing, balancing the delivery of the proper amount of fresh air ventilation against today's energy prices is paramount in keeping operating expenses in check.

A pilot study was undertaken to understand the

applied ventilation levels, and thus energy costs, from three large air handling units that serve the cardiac care areas. Each air handling unit has a design airflow capacity of approximately 30,000 cubic feet per minute (cfm), for a total design of 90,000 cfm.

IMPLEMENTATION

Each air handling unit was outfitted with OptiNet supply air and return air duct probes. An outside air probe was also installed as a reference to achieve a highly accurate differential measurement. Carbon dioxide levels at each probe location were monitored as an indicator of outside air ventilation levels as prescribed by ASHRAE Standard 62.1. Temperature, moisture, carbon monoxide, particulates, and total volatile organic compounds were also measured to provide an assessment of the true air quality.

THE RESULTS

After only a few weeks of continuous monitoring, it was found that the air handling units were overventilating the served spaces. Ventilation rates during the occupied hours ranged anywhere from 50 cfm per person, upward to 200 cfm per person. In total, it was calculated that approximately 20,000 cfm of unnecessary ventilation was being delivered to the space. At an average of \$3.00/cfm, energy savings of approximately \$60,000 per year will be achieved by OptiNet interfacing with the building automation system to dynamically control the outside air in lieu of the units operating in a fixed design airflow mode.



OptiNet™

Energy Savings, Safety, and Comfort for
Today's Smart Buildings

