



“Demand control ventilation makes sense for college campuses. Lecture halls, libraries, and other spaces that have fluctuating occupancies are ideal space types for DCV.”

*Jerry Hiller, Vice President
for Finance and Administration
Keuka College*

Demand Control Ventilation (DCV)

Finger Lakes Region, New York

Background

Keuka College, a liberal arts institution located in Keuka Park, New York, partnered with the New York State Energy Research and Development Authority (NYSERDA) to take part in the **New York Energy SmartSM** Commercial and Industrial Performance Program. Working with Trane, a NYSERDA independent contractor, Keuka College installed demand control ventilation (DCV) sensors in three buildings to help reduce heating and cooling loads where over-ventilation was identified.

Technology

DCV saves energy by automatically adjusting building ventilation rates, in real time, based on occupancy. DCV sensors measure the carbon dioxide levels in the air to establish the number of people in the space. They then adjust the air conditioner’s economizer so that the air flow either increases or decreases to match the per person ventilation requirements as established by code. Typically, economizers provide air flow as if a space was at maximum occupancy, which results in over-ventilation. By setting the ventilation rates based on actual occupancy, building occupants receive improved air quality while the need to heat or cool excessive amounts of outside air is reduced, thereby saving significant amounts of energy.

Results

Under this comprehensive project, more than 865,000 kWh annually was saved after implementation of energy-efficient lighting and DDC Controls with Demand Control Ventilation. Trane installed DCV sensors in Hegeman Hall, Jephson Hall and Lightner Library to correct over-ventilation. The eight DCV sensors are tied to seven air handling units with a total of 225 tons of cooling capacity. This installation was completed in early 2005 and is expected to save more than 70,000 kWh of electricity and 21,000 therms of gas per year – translating to an annual dollar savings of approximately \$15,000.



New York Energy SmartSM

All **New York Energy SmartSM** programs are funded by a System Benefits Charge (SBC) paid by electric distribution customers of Central Hudson, Con Edison, NYSEG, Niagara Mohawk, Orange and Rockland, and Rochester Gas and Electric. NYSERDA, a public benefit corporation established by law in 1975, administers SBC funds and programs under an agreement with the Public Service Commission.

New York Energy SmartSM programs are designed to lower electricity costs by encouraging energy efficiency as the State’s electric utilities move to competition. The programs are available to electric distribution customers (residential, commercial, institutional, and industrial) who pay into the SBC.

For more information about these services, contact NYSERDA
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