

SUNY Buffalo Educational Opportunity Center

Buffalo, NY

Background

The University at Buffalo constructed a new, 70,279-square-foot, Educational Opportunity Center on its campus in Buffalo, NY. The Educational Opportunity Center offers life-changing educational services to students who lack the necessary resources. The facility and its faculty are committed to helping the community with tuition-free, innovative academic programs leading to higher education and vocational training programs. The building features the Bethel Head Start program, which has a separate entrance and an enclosed outdoor playground. The remaining area is comprised of a conference center, enrollment management suite, career services suite and support spaces, classrooms, faculty and administrative offices, a computer lab, library, information commons, and student and faculty lounges. The Educational Opportunity Center adhered to the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) high-performance, green building rating system, and is currently awaiting LEED® Certification by the USGBC.

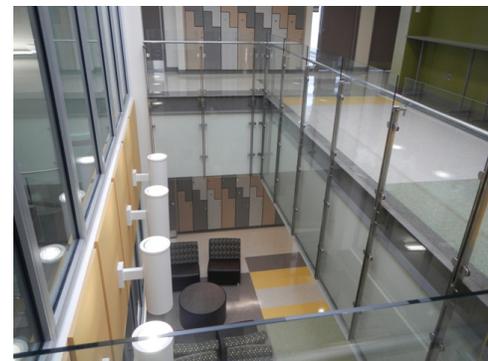
A Technical Assistance Firm was retained by NYSERDA to evaluate electric energy efficiency opportunities for the new building under the New Construction Program.

Recommendations

A Technical Assistance Firm, through a whole building analysis, identified cost-effective improvements to the building and its systems that reduced its energy consumption, decreased demand on the utility's distribution system, and increased the comfort of its occupants.

Among the energy efficiency improvements implemented in the building were:

- Improved levels of building envelope insulation.
- High-efficiency lighting and controls.
- Automatic daylighting controls.
- Variable flow/speed chilled and hot water pumping systems.
- Control enhancements through the building automation system.
- High efficiency HVAC system.
- High performance window glazing.



Incentives and Results

NYSERDA's incentive of \$47,775, after LEED certification is attained, helped the University at Buffalo defray a portion of the implementation cost to install the efficiency improvements. In total, the University at Buffalo's investment could result in:

- Annual energy savings of almost 75,900 kWh.
- Peak demand savings of 94.2 kW in the summer.
- Annual energy cost savings of almost \$27,900.
- Simple payback (after incentive) of 5.49 years for this project.

The Educational Opportunity Center is 20.4% above ASHRAE 90.1-04.

Environmental Benefits

Energy savings from the measures evaluated in this study could provide additional economic and societal benefits due to reduced emissions from electric power generating plants. These benefits include decreased incidents of respiratory ailments, asthma, and allergies, as well as the reduction of negative impacts on property and the environment. While these are examples of reduced costs and liabilities, emissions trading may be an opportunity for increased revenue.

- Annual Reduction in nitrous oxide (NO_x) - 61 lbs.
- Annual Reduction in sulfur oxide (SO_x) - 281 lbs.
- Annual Reduction in carbon dioxide (CO₂) - 233,038 lbs.

Both the energy and environmental benefits are equivalent to:

- Removing 23 cars from the road.
- Powering 13 households.

“The University at Buffalo has enjoyed a long-standing partnership with NYSERDA through their New Construction program. The technical guidance we receive and their willingness to work with our design consultants to design the most energy efficient buildings has proven to be a significant benefit to the University. The financial incentives provided by NYSERDA have enabled us to strengthen the high performance building goals and sustainable design efforts here at UB.”

*Kevin Thompson
LEED AP Director,
Facilities Planning & Design,
University at Buffalo*

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