

Press Information

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THE
WILD
CENTER

LEED Fact Sheet & Background

The Wild Center/Natural History Museum of the Adirondacks, Tupper Lake, New York, received a Leadership in Energy and Environmental Design (LEED) Silver certification. The LEED certification, awarded by the United States Green Building Council (USGBC), is the internationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in six key areas of human and environmental health: sustainable site development, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovative design practices. LEED provides a roadmap for measuring and documenting success for every building type and phase of a building lifecycle.

The mission of The Wild Center is reflected in all aspects of the Museum including the building's design, construction and use. Museum architects Hellmuth, Obata and Kassabaum (HOK) were chosen to design the Museum in part for their expertise with green building design. The firm of HOK operates an internal Sustainable Design Group, maintains a database of the best green products and practices, and has executed some of the most demanding green projects in the country, including the Environmental Protection Agency's 635,000 sq. ft. research campus. While planning its solar-powered annex BioBuilding, which houses administrative offices, the Museum employed the same LEED priorities with assistance from Phinney Design Group, the Office of Charles P. Reay, and HOK.

Bovis Lend Lease who was the project Construction Manager is a charter member of the USGBC and has incorporated LEED into their global minimum requirements for environmental protection. They are leaders in the use of sustainable design and building practices. Their Project Executive for The Wild Center completed the New York State DEC headquarters, the first New York State building to be LEED certified.

The Wild Center's mission is to inspire a broad public understanding of the natural systems that shape and sustain life in Adirondacks. Through the LEED certification and planned on-site interpretation of the sustainable features, The Wild Center can effectively communicate its mission as it relates to educating the public about how natural systems work.

How the Wild Center Qualified:

Many of the site criteria outlined in the LEED certification process are inherently designed into the existing Wild Center facility. The Wild Center sought to become a LEED-certified facility by obtaining credits under the following categories.

1. Sustainable Sites

Site Selection: The location of the 54,000 square foot Museum and BioBuilding annex is in an area that was previously cleared of trees and damaged by past gravel and sand mining operations. The buildings were located on this previously disturbed section of the 31-acre Museum property thereby conserving existing nat-

ural areas to maintain wildlife habitat and promote biodiversity. The remainder of the property was only minimally developed for the purpose of non-motorized foot trails and nature viewing opportunities.

Construction Activity Pollution Prevention: During the construction phase, contractors adhered to the EPA's requirements for erosion and sediment control. Steps were taken to prevent the loss of topsoil during construction due to storm water run off or wind erosion including protecting topsoil by stockpiling for reuse. The design of the building and parking lot included a man-made pond to manage run off and sediment control. In addition, all contractors participated in and adhered to sustainable building practices for protection of the site including collection and recycling construction debris and solid waste disposal.

Alternative Transportation: The Museum site is located just a few hundred yards off the New York State Adirondack Trail Scenic Byway along Highway 30. Bike racks as well as parking spaces reserved for hybrid vehicles are provided on the grounds, practices which recognize the value in alternative reduced emitting modes of transportation. Installation of a shower and changing facilities in the Museum's BioBuilding further encourages Museum staff to bike to work.

Light Pollution Reduction: Direct-beam lighting from the building or access road are not visible beyond Museum property lines thus minimizing light pollution and disturbance of nocturnal environments. The Museum supports the International Dark Skies Association's efforts to reduce light pollution by designing outdoor lighting that has minimal impact on the surrounding environment. Exterior and interior areas were designed in conformance with foot candle requirements stated in the Recommended Practice Manual: Lighting for Exterior Environments.

Storm Water Management: The design of the building and other site features minimize storm water runoff and the disruption of natural water flows. The design of paved areas incorporates porous paving blocks and vegetative filler strips to control storm water. A green roof covering the Bio-Building roof's north side consists of a specially designed soil and vegetative planting system which reduces storm water runoff by as much as 80 percent and also contributes to reducing building heating and cooling costs.

2. Water Efficiency

Water Efficiency in Landscaping, Irrigation, Potable Water: The Wild Center's landscape plan consists of indigenous species of plant life that are drought tolerant, thus eliminating the need for irrigation systems.

Water Use Reduction: The Wild Center installed a variety of flow restricting faucets in its lavatories and sinks and constructed state-of-the-art outdoor composting restrooms. Staff participate in the Museum's Going Green pledge which encourages use of the waterless outdoor facilities.

3. Energy and Atmosphere

Fundamental Commissioning of the Building: In order to verify that the building's energy-related systems were installed, calibrated and perform according to project requirements, The Wild Center commissioned a review of heating, ventilating, air conditioning and refrigeration systems (HVAC&R); lighting and daylighting controls; domestic hot water systems; and renewable energy systems.

Minimum Energy Performance: The Wild Center incorporated a variety of changes to establish a minimum level of energy efficiency for the building systems. Included in this process was the re-programming of the HVAC&R system and installation of carbon dioxide sensors and high efficiency air filtration systems to ensure a healthy indoor air quality for all of the building's occupants.

Fundamental Refrigeration Management: Heating, Ventilation and Air Conditioning (HVAC) system uses only non ozone depleting refrigerants containing no chlorofluorocarbons (CFCs).

Onsite Renewable Energy: The Wild Center's BioBuilding dome roof supports the largest installed photovoltaic system in the Adirondack Park. It can generate up to 40-kilowatts of electricity offsetting up to 10 percent of the Museum's power consumption. This renewable energy system reduces environmental and economic impacts associated with fossil fuel energy use.

Renewable Energy Credit Purchaser: The Museum supports the development and application of renewable energy sources through the purchase of Renewable Energy Credits (RECs). Every time a renewable energy (wind, geo-thermal, bio-mass, solar, etc.) producer adds electricity to the national electric grid, it also generates a renewable energy credit. A REC represents the additional cost and value of a specific amount of renewable energy that is generated. These credits are the industry standard method of accounting for renewable energy production.

The Museum purchased over 700,000 kilowatt-hours of renewable energy credits which directly relates to the elimination of 685,000 pounds of carbon dioxide emissions or the equivalent of taking 60 cars off the road or planting 90 acres of trees.

4. **Materials and Resources**

Storage and Collection of Recyclables: The Wild Center has dedicated recycling containers and collection areas throughout its campus to help reduce waste generated by building occupants.

Construction Waste Management: During the construction of the Museum facilities, The Wild Center contractors recycled and/or salvaged at least 50% of non-hazardous construction and demolition debris.

Recycled Content: During construction, the Wild Center used building products that incorporated recycled content, thus reducing the impact of extracting and processing virgin materials. This included acoustic ceiling systems, structural metal components, shading systems and finished floor surfaces.

To the greatest extent possible, the wood products used for the Museum are certified, supporting environmentally responsible forest management. Suppliers were selected based on their conformance with Forest Stewardship Council Guidelines.

Regional Materials: By using building materials and products manufactured, extracted or harvested within 500 miles of the project site, the Wild Center reduced environmental impacts associated with transporting materials from great distances.

All Museum exterior siding was lumbered, milled and air-dried within 25 miles of the Museum site.

5. **Indoor Environmental Quality (IAQ)**

Minimum Indoor Air Quality Performance: The Wild Center verifies its minimum indoor air quality performance through its HVAC&R system. Therefore it contributes to the comfort and well-being of Museum visitors and staff.

Environmental Tobacco Smoke Control: Smoking is prohibited in the building, with signage indicating designated outdoor smoking areas away from building entrances and pathways.

Outdoor Air Delivery Monitoring: The Wild Center monitors its ventilation system for emissions such as carbon dioxide to help sustain occupant health and well being.

Increased Ventilation: The Wild Center's existing system provides for additional outdoor ventilation to improve indoor air quality.

Low Emitting Materials: The quality of indoor air contaminants that were odorous, irritating and/or harmful was limited during construction. For instance, the use of certain low-emitting adhesives and carpets were used in the Wild Center's construction.

Indoor Chemical and Pollutant Source Control: Through the use of highly efficient filters, the Wild Center will minimize occupant exposure to potentially hazardous particulate and chemical pollutants.

Daylight Views: The Wild Center's design provides for a minimum of 75% connection between the indoor spaces and outdoors through the introduction of daylight. The Museum provides 90% direct line of sight to the outdoor environment above the required finished floor, in all regularly occupied areas.

6. Innovation and Design Processes

Innovative Education Commitment: The Wild Center developed a LEED education and public interpretation outreach program that exposes Museum visitors to the U.S. Green Building Council's LEED Green Building Rating System and the Wild Center's LEED certification. The program is presented in multiple formats and integrated with the Museum's existing 31-acre interpretive plan. The program will be part of the Museum's instruction on the local ecosystem and its importance to the global ecosystem.

LEED Accredited Professional: The Wild Center supported and encouraged the LEED design integration by having at least one LEED Accredited Professional involved in the project team.

LEED CERTIFICATION BENEFITS

The benefits of LEED certification are significant and include:

- Reduced building operating cost.
- Reduced sanitary landfill waste and pollution.
- Reduced consumption of natural resources.
- Conservation of energy and water
- Ensured proper operation of HVAC systems.
- Healthier indoor building environments.
- Increased building security and safety.
- Reduction of harmful greenhouse gas emissions.
- Increased property values.
- Demonstration of owner's commitment to environmental stewardship and social responsibility.

1. *Reduced Building Operating Cost:*

Given the expanding market presence of green technologies, the first cost premium associated with LEED projects has dropped substantially over the last few years. Premiums associated with LEED certification have relatively short pay-backs due to high-performance systems and associated energy savings. Over the entire life-cycle of the project, LEED projects will cost 10 percent to 30 percent less than traditional projects. LEED building features such as improved wall and ceiling insulation systems, low-E windows and doors and computer controlled lighting and environmental systems contribute to significantly lowered operating costs.

2. *Reduced Sanitary Landfill Waste and Pollution:*

LEED certified buildings contribute to a cleaner environment and further reduce operating costs by redirecting traditional waste products (glass, plastic, steel, paper, cardboard, etc.) to recycling centers rather than solid waste

landfills. Less waste translates to a healthier environment and lowered refuse disposal costs. LEED buildings reduce environmental pollution through use of pervious outdoor parking and walking surfaces and effective storm water collection and treatment systems which result in fewer and cleaner releases of site improvement generated storm water.

LEED buildings promote staff use of eco-friendly transportation systems (hybrid vehicles; showering facilities and bike racks to encourage alternative transportation use.)

3. *Reduced Consumption of Natural Resources:*

LEED buildings create less of an impact on natural resources as opposed to traditional buildings through extensive use of recycled construction materials and furnishings and use of sustainable harvested wood products.

4. *Conservation of Energy and Water:*

LEED buildings use less energy and water through highly efficient and computer controlled mechanical systems and reduced water flow fixtures and appliances. Landscaping on LEED projects employ xeriscaping techniques reducing or eliminating the need for irrigation.

5. *Ensured Proper Operation of HVAC Systems:*

LEED projects have reduced start-up costs as a result of a thorough commissioning process that functionally tests various energy consuming equipment and controls systems. Commissioning is a quality process that ensures the owner's design intent is carried out through the construction phase. The commissioning process culminates in functional testing of the building's plumbing, HVAC, and electrical systems to ensure they operate at their expected high-performance levels from day one. The successful completion of a thorough commissioning process enables the eventual building occupants to immediately realize the benefits of working in a high-performance building.

6. *Healthier Indoor Building Environments:*

LEED certified buildings create improved indoor air quality and reduce potential health problems through implementation of air quality monitoring devices and installation of highly efficient air filtration systems. Day lit interiors and direct views of the outdoors translate to healthier environments which increase productivity. Statistics show increased worker satisfaction, improved morale, reduced absenteeism, and increased productivity in LEED buildings.

LEED certified buildings use environmentally friendly and correctly diluted cleaning products. This means, for example, that stains on carpets or upholstery are treated with the mildest, effective cleaner, thereby prolonging the life of expensive furnishings and reducing exposure to harsher chemicals. The use of non-toxic, low-ermitting building finishes decrease susceptibility to allergies, molds and other maladies contributing to "sick building syndrome."

Permanent walk-off grates and weekly laundered entrance mats at all exterior doors provide for significantly reduced levels of dust and dirt being brought into the building interior.

7. *Increased Building Security and Safety:*

LEED buildings are not only healthier but more secure and safer than traditional buildings. By adhering to LEED practices, hazardous products are virtually eliminated from LEED building interior, reducing the likelihood and frequency of fires and chemical spills and splashes.

8. *Reduction of Harmful Greenhouse Gas Emissions*

By reducing the amount of energy needed by various building systems and equipment, the dependency on fossil fuels is reduced, which translates to lowered carbon dioxide and other greenhouse gas emissions. Further reductions in emissions are realized through an effective program of buying locally manufactured products which reduces impacts associated with transporting products and materials from a greater distance.

9. *Increased Property Values*

LEED buildings have lengthened life cycles of building HVAC systems and related equipment. Owners of LEED buildings recognize the value of an extended replacement schedule that results from equipment that runs more efficiently and effectively than traditional systems. This benefit translates into lower operating cost and capital expenditures over the life of the building, making a LEED building more profitable than traditional structures, thereby increasing market value.

10. *Demonstration of owner's commitment to environmental stewardship and social responsibility*

A LEED certification is a prestigious distinction which clearly demonstrates the building owner's desire to not only operate efficiently and cost effectively, but also make a difference in the quality of the environment, both indoors and outdoors. As a museum, the Wild Center further expands its environmental stewardship by striving to educate its visitors on the benefits and importance of a LEED certification and operating green.

MUSEUM OPERATING GREEN PRACTICES

The Museum contributes to a sustainable environment by incorporating various green operating practices on a day-to-day basis

- ◆ Furnishing the facility with sustainable material components (store furnishings, office furnishings, benches and waste receptacles manufactured from rediscovered, green or certified wood or recycled plastic materials).
- ◆ Use of recycled padding and packaging material and recycled paper bags in the gift shop.
- ◆ Use of chlorine-free printing and writing papers containing above EPA's minimum standard for post-consumer / recovered fiber content.
- ◆ Use of tissue paper and paper towels containing above EPA's minimum standard for post-consumer / recovered fiber content.
- ◆ Use of only non-toxic, non-corrosive, bio-degradable cleaning solutions (chlorine-free).
- ◆ Utilizing recyclable serving containers and reusable tableware in the food service area.
- ◆ Maintaining an effective recycling program for used office paper, printer/copier toner cartridges, cardboard (OCC), glass and plastic containers.
- ◆ Purchasing EnergyStar rated appliances
- ◆ Administration of a Museum "Green Team" involving representatives from across the institution. The team meets periodically to discuss issues and brainstorm practices to support greener operations.