

Case study

# Schlitz Audubon Nature Center

Milwaukee, Wisconsin



## Nature Center walks the environmental talk

The mission of the Schlitz Audubon Nature Center is to promote an appreciation, understanding and stewardship of our natural heritage through environmental education and sanctuary preservation. It was only natural then, for the Center to build its new Dorothy K. Vallier Environmental Learning Center with environmental sustainability in mind. With the assistance of Johnson Controls, Inc., the Center achieved a Gold rating under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program upon construction of the facility.

Founded in 1971 and named after the Joseph Schlitz Brewing Company, the Schlitz Audubon Center is situated on 185 acres of unspoiled beauty along the shores of Lake Michigan, just north of downtown Milwaukee, Wisconsin. The land was first used to rest the brewery's draft horses, then later as a recreational area. The new learning center is named after a woman who devoted many years to getting the land donated by the Schlitz Foundation for use as a nature center. Today the Center offers classes and programs for all ages and annually teaches 37,000 schoolchildren about nature, using its land as an outdoor classroom.

In 1999, the Center's Board of Directors began planning for the new learning center as its original 12,000-square-foot facility was bursting at the seams. According to executive director, Elizabeth Cheek, the facility was 33 years old, had been built for a staff of seven and could not accommodate the current staff of 40. "Since expansion was not an option we decided to build. And with our environmental mission in mind, we decided to walk the talk and build a sustainable and environmentally friendly facility," says Cheek.

The new 35,000-square-foot learning center provides much needed space for classrooms, an enlarged auditorium, new exhibits, a nature preschool – the first of its kind in Wisconsin, a nature store and improved access for persons with disabilities.





## LEED is the measurement of choice

Incorporating sustainable design into its new building was only part of the Center's goal. According to Cheek, it was also important for the Center to have benchmarks in place and be able to measure the impact and benefit of its efforts. This is important because working with donated funds means being answerable to those who donate them. "And as a teaching facility, part of the project's payback is using the greening process and the building itself as a learning tool," says Cheek.

The Center holds public tours and seminars, demonstrating the sustainable features of the building. Sustainability classes are held for high school and junior high students; the topic is even woven into its preschool classes. Local universities use the facility as a learning tool for future architects. The local utility also conducts conferences at the Center. "This extended use fits our whole mission of teaching," states Cheek.

According to Cheek, the Center's architects researched various resources for sustainable design but the LEED program provided better measurement tools and benchmarks for monitoring long-term benefits. "After attending a LEED conference at Johnson Controls, I was impressed with and had a better understanding of the program. Johnson Controls was able to articulate how our facility may fit into the LEED process even though it was not a typical application for the program," states Cheek.

## Maximizing sustainable design

The Center contracted Johnson Controls as the commissioning agent for the LEED certification process. A Johnson Controls LEED accredited professional and project engineer worked directly with the Center's design-build team throughout the entire process, ensuring proper implementation and complete documentation. "Johnson Controls also presented design enhancements that helped with the certification process, and were more on target with what we wanted to accomplish," states Cheek.

For example, Johnson Controls proposed the use of magnetic contacts on the operable windows that were designed into the facility to make use of natural ventilation. The contacts are tied into a Johnson Controls Metasys® building management system. If a window is opened, the system will automatically shutdown the HVAC in that zone, saving energy.

The Metasys system monitors and controls the HVAC equipment and lighting throughout the building. This includes a series of heat pumps and heat recovery units associated with a geothermal system that uses 90 groundwater wells and the earth's temperature to provide heating and cooling, lessening dependence on fossil fuels. In addition, fans and motor-driven windows in the building's cupola and auditorium are integrated with the system. Fans are switched on and windows are opened automatically to exhaust the building overnight or when activated by carbon dioxide sensors.

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**ELIZABETH CHEEK**  
EXECUTIVE DIRECTOR

Other green features of the building include extensive use of natural light, with specially designed and placed window systems that reduce energy needed for lighting, a 10-kilowatt photovoltaic solar power system that supplies a significant portion of the building's electricity, and low-flow plumbing that reduces water usage. "Construction was an environmental labor of love too," says Cheek. "During construction, the equipment zone was limited to within 40 feet of the building to reduce soil compaction and disturbance to the natural habitat. Pine logs harvested from the late Wisconsin naturalist Aldo Leopold's nature preserve were also used as external structural supports."

## A bright green future

According to Cheek, even though the Center achieved LEED's Gold rating right from the start, it is not stopping there. "We already have visions of achieving the Platinum rating under the LEED for Existing Buildings program," says Cheek.

"As we pursue this goal we will look to Johnson Controls as a resource. It is one of many ways we feel our relationship can grow. Johnson Controls position on conservation is a match with ours. This connection can be leveraged for our mutual benefit, and for the benefit of our local community."



The Center teaches 37,000 children annually about nature.



The Center holds public tours and seminars on sustainability

## Sustainability highlights

- Extensive use of daylighting
- Operable windows facilitate natural ventilation
- Geothermal system lessens dependence on fossil fuels
- Thicker walls allow greater insulation
- Building overhangs help reduce heat gain
- Finished concrete floors minimize use of materials
- Low-flow plumbing fixtures conserve water
- Photovoltaic generation of electricity
- Use of locally available materials minimized transportation
- Site harvested lumber for frame and decking
- Recycled content materials reduced use of virgin resources
- Low VOC finishes
- Employed construction waste recycling program
- Two week building flush-out before occupancy

