

ECHO lake Aquarium & Science Center at the Leahy Center for Lake Champlain

Recipient of the first LEED® Green Building Certification in Vermont



Project: ECHO Lake Aquarium & Science Center at the Leahy Center for Lake Champlain
Facility Size: 30,000+ sq. ft.
Location: Burlington, Vermont

The Facility

This two-story, 30,000 square foot aquarium and science center is located in Burlington's revitalized waterfront district on the shore of Lake Champlain. ECHO (Ecology, Culture, History and Opportunities for the Lake Champlain Basin), owns the distinction as Vermont's first LEED Certified building project. The building is physically attached to the University of Vermont's Rubenstein Ecosystem Science Laboratory, which was also engineered by Yeaton Associates.

Project Scope

Yeaton Associates, Inc. provided HVAC engineering services, as well as aquarium water tempering systems design. Energy efficiency and sustainable design were of paramount importance to both the owner and the design team, given the nature of this project.

Project Result

The mechanical systems serving ECHO include a central station air handler with a 70% efficient energy-recovery wheel, CO2-based demand-control-ventilation control strategies coupled with occupancy sensors, variable-speed fans and pumps, high-efficiency condensing boilers and domestic water heaters, and summer and winter cooling plants. In addition to providing cooling, dehumidification, humidification, heating and ventilation for the building, the mechanical and plumbing systems also provide circulation of chilled and ambient fish tank make-up water, drainage systems for tanks, and circulation among exhibit tanks and "back-of-house" life support systems.

Yeaton Associates worked collaboratively in an intense, integrated and interactive design process, with a project team that included the architect, commissioning agent, environmental consultant, exhibit designers and life-support system consultant/contractor. As a result, ECHO uses 35% less energy and 36% less water than an equivalent building complying with ASHRAE 90.1-99 energy code and Energy Policy Act, 1992, respectively.

As a follow-up to the original project, Yeaton Associates, Inc. has been asked to provide mechanical, electrical, plumbing, and sustainable design services for a 10,000 square foot addition to the facility. The new Lakeside Pavillion includes additional exhibit and function space and utilizes water-to-air heat pump technology. This new addition is slated to open in the summer of 2012.