

# Coastal Maine Botanical Gardens Bosarge Family Education Center

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Boothbay, Maine

**Owner**

Coastal Maine Botanical Gardens

**Architects**

Maclay Architects  
Scott Simons Architects

**Construction Manager**

HP Cummings

**Energy Consultant**

Energy Balance Inc.

**Fabricator and On-Site Builder of  
High-Performance Shell**

Bensonwood

**Mechanical and Electrical Engineer**

Allied Engineering

**Completion Date**

July 2011

**Construction Cost**

\$4.2 million

**Total Area**

8,000 sf

**LEED Certification Level**

LEED Platinum  
Targeting Net-Zero Energy



The new Bosarge Family Education Center at the Coastal Maine Botanical Gardens (CMBG) is an important addition to its environmental program. The new 8,000-square-foot facility is a high-performance structure designed to operate with net-zero energy use. Fore Solutions, acquired by Thornton Tomasetti in 2012, served as the LEED consultant, owner's sustainability representative, and design charrette facilitator.

The Education Center functions as a teaching tool with tours, interpretive signage, programs and classes focused on its details about energy savings and environmentally-friendly features. The super efficient building envelope provides more than 50% reduction in energy usage. About 70% of heat is recovered from exhaust air using special ventilators, which deliver air back into the incoming fresh air system. An estimated 60% reduction in energy usage is expected from lighting and daylight strategies. The solar panels, which capture and convert the sun's energy into hot water and electricity, produce approximately 55,000 kWh of energy annually, equaling to about \$7,600 in energy cost savings per year. A 1,700 gallon cistern collects rain water for use in toilets.

As the owner's sustainability representative, the team assisted CMBG in designing a project process that facilitated several visioning and schematic design charrettes with the CMBG staff, board of directors and design team. The team arrived at practical, yet innovative energy and water-saving solutions that achieved the project's sustainability goals of LEED Platinum certification. We were also involved in retaining the architectural team and leading the development of a comprehensive approach to education. The educational features include a truth wall, educational display signage, posters and a dashboard providing real-time energy and water metering data displayed at CMBG and on its website.