

# OCEAN SCIENCES BUILDING

## Dalhousie University – Green Building Features



LEED (SILVER CANDIDATE)

**Owner:**

Dalhousie University

**Architect:**

Duffus Romans Kundzins  
Rounsefell Architects Ltd.

**Mechanical & Electrical  
Consulting Engineers:**

**LEED Consulting:**  
Elemental Sustainability

**Construction Manager:**  
PCL Constructors Canada

**Project Manager:**  
MHPM Project Managers

The \$41.5 million dollar Dalhousie Ocean Sciences Building, is located on the west side of Studley Campus facing Oxford Street. It is a four-storey, 76,000-square-foot facility that hosts offices and labs for several of Dalhousie's key oceans projects.

### Green Building features of the Ocean Sciences Building

**Electric charge station:**

The first Dalhousie electric charge car station is located at the Oceans Science Building. The charge station uses 6 kilowatt-hours of power to charge a vehicle providing a full charge in four to six hours.

**Permeable pavement:**

A strip of permeable pavement is installed at the back end of the Ocean Sciences Building parking lot. The lot is designed so that water is directed towards this section. Water slowly percolates through the pavement, reducing run off.

**Lighting:**

Passive lighting design is used to help light parts of the building such as the Atrium. LED lighting is used in interior and exterior fixtures along with high efficiency T8s. Spaces throughout the building utilize either occupancy or vacancy sensors to reduce the amount of energy used for lighting. Light level sensors with automatic dimming controls are installed where natural light is available, further reducing the amount of energy used.

**Cycling facilities:**

Bicycle racks are provided indoors (10 spots) and outdoors (30 spots). Inside a shower there is 20 lockers, and a water fountain. Outside by the racks, a bicycle fix-it station is available.

**Water:**

Low flow fixtures (1.9 lpm) and low flow toilets (4.8 lpf) are installed in the building. A prominent drinking water fountain (hydra-station) is showcased in the atrium to encourage the use of reusable drinking water containers.

**Air quality**

Most building finishes have zero or low emissions. These materials reduce the release of significant pollutants, such as volatile organic compounds (VOCs), into the indoor environment. All manufactured wood products are produced with no added urea formaldehyde (NAF). These measures make for a healthier indoor environment.





### **Wood reuse and biomass replacement policy:**

Approximately 47 trees of various sizes were removed to create space for this building. As part of Dalhousie's natural environment policy and guidelines, an equal amount of biomass needed to be replaced. Money for this replacement was calculated and provided to replant biomass material on campus (trees and shrubs). The trees that were removed were shipped to a local non-profit organization. Some of this wood (oak, maple, birch) was dried in a solar kiln. This wood was used to create five benches in the Ocean Sciences Building atrium.

### **Energy:**

Sea water is pumped from the northwest arm to be used in research. Pumps and fan motors are 'premium efficiency'. The chilled beam HVAC system reduces energy consumption using conditioned outdoor air ducted from a central system and chilled water to condition air in the building. The air and the water are supplied at higher temperatures than a conventional system which makes chilled beam more efficient and the spaces it conditions more comfortable. Heat is also recovered from exhaust air. Controls on fume hoods and motors use Variable Frequency Drives so that the appropriate power can be supplied for a function rather than running a motor 100% power all the time.

### **Green Cleaning and Waste Management:**

Green cleaning products and practices outlined in Dalhousie's green cleaning policy are used in the building. Four-bin waste management systems are used throughout the building (paper, recyclables, organics, and waste). Universal and hazardous waste are also collected and recycled where possible.

### **Green building education:**

A green building video highlights green features of the Ocean Sciences Building. Green features information are included in the Campus Sustainability Tour map. Green building tours of this building are provided.

Other relevant building features include preferred parking for car-pooling, native species landscaping to provide biodiversity and bird habitat, and convenient bus access.

For more information on Dalhousie Green buildings and Sustainability Projects visit:

[http://www.dal.ca/dept/sustainability/programs/Built\\_Environment.html](http://www.dal.ca/dept/sustainability/programs/Built_Environment.html)

For more information on campus development visit:

<http://www.dal.ca/dept/facilities/campus-development.html>