

# MONA CAMPBELL

## Dalhousie University – Green Building Features



### Owner:

Dalhousie University

### Architect:

Fowler Bauld & Mitchell and  
MacFawn and Rogers Architects

### Mechanical & Electrical:

CBCL Limited

### LEED Consultant:

Soltere Design

### Construction Manager:

AECON Atlantic

### Project Manager:

Dalhousie University

### Mona Campbell Building

The Mona Campbell building is a \$30 million facility housing several faculties including the College of Sustainability, College of Continuing Education, and the School of Social Work. The 101,303 square foot was built with a number of unique green building features. In the lobby of the building a Green Building Tour directory is located beside an interactive educational touch screen.

### Green Building Features

#### Dashboard and interactive art:

Located on the third floor, Patch by Stephen Kelly is a 3-dimensional digital piece comprised of LED lights and subtle movements components that respond in real-time to the digital 'smart' systems that monitor and control the building's internal environmental conditions and energy use.

#### Cycling facilities:

The building has a bike room with two showers, 36 lockers and 32 indoor bike hanger racks. There are also 24 staple racks outside of the building, totaling over 72 bike parking spots.

#### BubbleDeck concrete:

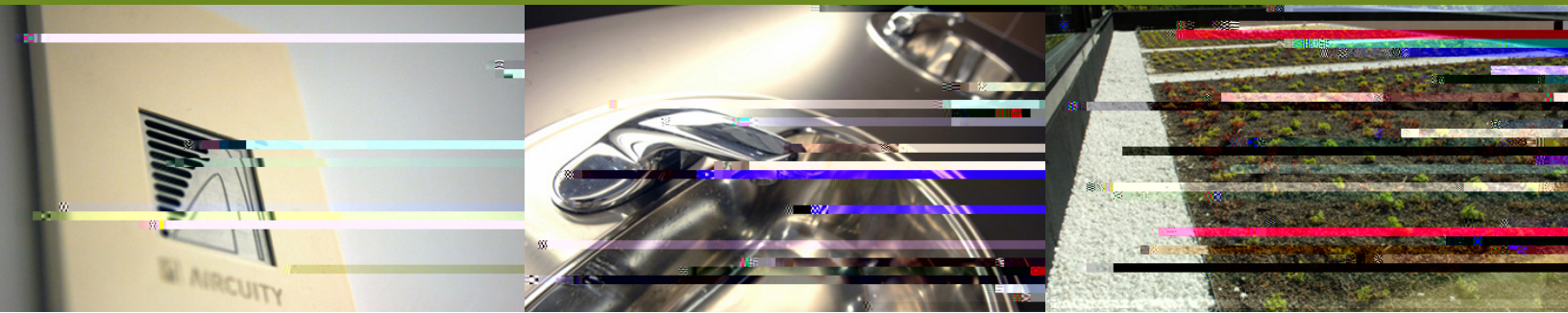
The concrete slabs in this building use BubbleDeck technology, which is concrete filled with hollow recycled plastic balls that reduce material and energy consumption. The BubbleDeck requires 30 percent less concrete, leading to further structural weight reduction throughout the building. At building opening, this was the third installation of this technology in North America.

#### C&D material recycled:

Approximately 90 percent of construction and demolition waste materials was diverted from landfills, including aggregates, wood, metals, cardboard, glass, asphalt shingles and salvaged building components. These materials were delivered to a local recycling facility.

#### Maple paneling:

Most of the wood products in this building were harvested from certified Forestry Stewardship Council (FSC) sources in Canada and the U.S. FSC certified wood is third-party verified as originating from well-managed and sustainable forests. Producers all along the supply chain must be FSC certified: from harvesting, to manufacturing, to distribution and installation.



#### **OptiNet sensors in classrooms:**

OptiNet sensors are used to monitor and document indoor air quality factors such as carbon dioxide, total volatile organic compounds (TVOCs), carbon monoxide, humidity and small particles. Detrimental changes in any of these factors trigger an increase in the fresh air supply.

#### **Low-flow fixtures and rain cistern:**

This facility utilizes low-flow faucets (1.9 litres per minute) dual-mode toilets (4.2 and 6 litres per flush) urinals (0.5 litres per flush) and low-flow showerheads (5.7 litres per minute.) Potable water use is approximately 67% below a typical building. A 77,000 litre rainwater cistern is located in the basement. Rainwater is used for the toilets, urinals, and green roof.

#### **Lights:**

All lighting in the building is modeled at being 57% better than the national model energy code. This is achieved through efficient lighting fixture placement, the use of high efficiency T8s, exterior LED canopy lighting, maximizing natural light, and lighting controls.

#### **Green roof and white roof:**

The vegetative green roof helps filter pollutants from the air and rainwater, increases biodiversity, reduces stormwater runoff, reduces heat loss, and increases the roof's life span. The plants on the green roof include varieties of Chives, Blue Fescue, Stonecrop, and Sedum. The white roof reflects heat instead of absorbing it, reducing air conditioning use during summer months. The roofs help mitigate the "Urban Heat Island Effect".

#### **Low emitting sealants and paints:**

Most of the 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.

#### **Solar wall:**

The solar wall is projected to provide a 15% reduction in energy needed to heat ventilation air. The wall is comprised of a double-walled metal cladding system that absorbs heat and draws the outside air up between the two walls. The heat from the backside of the metal preheats ventilation air, thus reducing the need for mechanical heating.

#### **Heat pumps:**

85 heat pumps provide a portion of the heat load. A heat pump extracts heat from one location and transfers it to another. The heat pump system is projected to consume 55% less energy for heating and cooling than a typical building.