DALHOUSIE UNIVERSITY

COLLABORATIVE HEALTH EDUCATION BUILDING (CHEB)

OWNER: Dalhousie University
ARCHITECT: Barrie & Langille Architects of Halifax in association with Moriyama & Teshima, and Education Consultants Services
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS: O'Neill, Scriven and Assoc's Limited (ONSA)
GENERAL CONTRACTOR: Bird Construction | PROJECT MANAGER: Dalhousie University

THE $38.5 MILLION DOLLAR COLLABORATIVE HEALTH EDUCATION BUILDING, is located on the corner of University and Summer Street in Halifax, NS. It is a five-story, 9941 square-meter facility. Students of the Faculties of Medicine and Health Professions are brought together to learn from each other. The goal of the space is to educate students in the health professions through an integrated approach so that they learn in the same way that they will be practicing when they enter the workforce.

GREEN BUILDING FEATURES

TRANSPORTATION

CHEB is conveniently located near local transit with nine bus routes servicing stops within a 400 m distance. Thirty-two bike parking spots are located at the entrance of the building and eight spots are located inside. Public shower facilities are available in the connected building beside CHEB. Ride Share spots are made available in any of Dalhousie parking lots. Car share spots are located across the street and around the corner.

ENERGY EFFICIENCY

- Key energy efficiency measures used in the building are projected to save 40% of the energy compared to a typical building. Measures include:
- Reduced lighting power density with occupancy sensor controls are used throughout the building. LED lighting is utilized for exterior lighting and most public areas inside the building. High efficiency T8 fluorescent lamps are utilized in service spaces.
- A "dual-core" heat recovery air handling unit recovers up to 90% of the heat from the exhaust air leaving the building; this energy is used to heat the incoming outdoor air entering the building.
- The ventilation air is ducted to "active chilled beams" within each space; the primary air is used to induce room air from the space which mix together to satisfy the space cooling loads. The primary airflow passing through the chilled beams is typically 1/3 to 1/2 of the air required by conventional HVAC systems; this equates to smaller air handling units, smaller ductwork, and results in significant fan energy savings.

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- All heating/cooling pumps and all air handling unit fans are equipped with variable frequency drives (VFD's) that reduce the motor speed when loads are reduced thereby reducing the building's electrical consumption.
- "Carbon dioxide (CO2) demand-control ventilation" is utilized throughout the facility to measure the CO2 levels within each of the spaces and adjust (decrease/increase) the amount of outdoor air (which has to conditioned - filtered, heated, cooled, humidified & dehumidified) supplied to the space.
- Enhanced commissioning was performed on the CHEB. This includes third-party comprehensive document review, commissioning of major energy systems, building walk through and preparation of systems manual. Post occupancy energy data will be analyzed against energy models to identify performance, trends, and opportunities.

FINISHES

CarbonCure concrete blocks were used in the basement level of the building. CarbonCure's technology captures C02 from industrial sources and uses this in the production of new concrete blocks. The blocks become carbon sinks as the injected C02 reacts with cement to produce limestone. This makes the blocks stronger with less cement and permanently locks the GHGs into the block.

Over 36% of the material in the building were made from recycled content including steel, aluminum framing, pre-finished metal panels, and carpet. Forest Stewardship Council (FSC) certified wood is used in millwork and doors. Most building finishes have zero or low emissions. These measures make for a healthier indoor environment.

NATURAL ENVIRONMENT

A number of native and adaptive species have been planted including sugar and red maples, dogwood and lavender. Of the trees that were cut on site, the new plantings on the site and the university biomass replacement guideline will be used to replace an equivalent amount. 100% of the roof is light-coloured to help reflect incoming sunlight and reduce the roof temperature and associated air in the summer time.

WATER: LOW-FLOW FIXTURES AND FOUNTAIN

This facility utilizes low-flow faucets (1.9 liters per minute) and dual-flush low-flow toilets (4.2/6 Liters/flush). A shower is located nearby in the connected building. A refillable bottle station and fountain are prominently displayed.

CONSTRUCTION AND DEMOLITION (C&D) WASTE AND SITE REMEDIATION

On the project, including construction and demolition (C&D), over 89% of C&D materials were diverted from landfills. This includes aggregates, wood, metals, cardboard, glass, and salvaged building components.
These materials were delivered to local recycling facilities.

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).

GREEN BUILDING EDUCATION

CHEB green features will be outlined in the Campus Sustainability Tour map. In addition green building tours will be provided for this building accompanied by a two-page fact sheet. Utility meter information from the building will be used for ongoing energy and water management.

For more information on Dalhousie Green buildings and Sustainability Projects visit:
dal.ca/dept/sustainability/programs/Built_Environment.html

For more information on campus development visit:
dal.ca/dept/facilities/campus-development.html

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