

FITNESS CENTRE



OWNER: Dalhousie University | ARCHITECT: FBM in association with MJMA Architects
INTERIOR DESIGN: FBM in association with MJMA Architects | MECHANICAL & ELECTRICAL CONSULTING ENGINEERS: CBCL Limited
LEED CONSULTANT: Solterre Design | GENERAL CONTRACTOR: Bird Construction | PROJECT MANAGEMENT: Dalhousie University

THE \$23.3 MILLION FITNESS CENTRE, is located on South Street in Halifax, N.S. on Dalhousie University's Studley Campus. It is a two-storey, 5217 square-meter facility attached to the existing Dalplex. The new Fitness Centre includes cardio and strength training facilities, group fitness studios, new customer service and equipment rental facilities, and new change rooms.

GREEN BUILDING FEATURES

TRANSPORTATION

The Fitness Centre is conveniently located near four bus routes with servicing stops within a 400 m distance. Twenty-four bike parking spots are located at the front entrance of the building, an additional 32 are on the north side of the building on South Street, and 6 spots are located inside. Shower facilities are available in the Fitness Centre and at the Dalplex. A car share spot is located within 400 meters of the facility. Level Two electric charge stations are available for campus and community members – bringing a car to a full charge in approx. 4-5 hrs.

ENERGY EFFICIENCY

Key energy efficiency measures used in the building are projected to save 56% of the energy compared to a typical building. Measures include:

- High performance glazing systems and highly insulated walls and roofs complement this building shape. Walls achieve a thermal resistance of R25, while the roof is heavily insulated achieving R40 thermal resistance.
- Carefully located skylights and interior windows helps the Fitness Centre achieve daylight penetration deep into the core of the building.
- A fully integrated lighting control system including occupancy sensor controls and daylight harvesting has been implemented.
- A heat recovery air handling unit recovers up to 85% of the heat from the exhaust air leaving the building. This energy is used to heat the incoming outdoor air entering the building.



- High efficiency fans and pumps are installed with variable frequency drives. The chiller has been installed with a free cooling system that will allow chilled water to be produced without using the compressors during the shoulder seasons.
- Cooling systems use refrigerants that minimize ozone depletion and global warming.
- Enhanced commissioning was performed on the Fitness Centre. This is a third-party review of building systems.
- A post-occupancy measurement and verification plan is employed to evaluate and verify the performance of the building.
- The building structure is designed to be “solar ready” meaning roof structures can hold the weight of future solar photovoltaics with the appropriate conduit already in-place.

WATER: LOW-FLOW FIXTURES AND FOUNTAIN

The new facility reduces the use of municipal potable water through low-flow plumbing fixtures. The project achieved a potable water use reduction of 36% by installing low-flow faucets, toilets urinals and showers. Water bottle filling stations and drinking fountains are conveniently located.

CONSTRUCTION AND DEMOLITION (C&D) WASTE

On the project, 84% of construction and demolition (C&D) materials were diverted from the landfill. This includes aggregates, wood, metals, cardboard, glass, and salvaged building components. These materials were delivered to local recycling facilities.

Materials from the previously existing houses and student residences on-site were extensively salvaged, re-used and recycled. Over 4 tonnes of materials, such as doors, windows, exit signs and emergency lights were given for use at local charity projects. 750 tonnes of foundation materials were reused as structural fill on site. Nearly 200 tonnes of asphalt was recycled at a local hot-mix asphalt plant.

NATURAL ENVIRONMENT

Native and adaptive species have been planted including spruce, poplar, hemlock, blueberries & sweetgrass. All plants were selected from the University Natural Environment Approved Species List. There are no irrigation systems for any of the site plantings.

A large bioswale approx. 90 meters long is installed at the front of the building. This system slows down storm and rain water and creates biodiversity with the planting of sweetfern, red fescue and sweet grass.

FINISHES AND MATERIALS

Special care was taken in material selection to provide a sustainable, healthful and resilient building. Some measures include:

- Materials made from recycled content including structural steel, reinforcing steel, pre-finished metal panels, athletic rubber and hardwood flooring systems, drywall, tiles, and metal lockers.
- All wood products in the building are certified under the Forest Stewardship Council (FSC) program.
- Paints, sealants, adhesives, and many other construction materials were specifically selected on this project for their low levels of volatile organic compounds (VOCs).
- Indoor air quality testing was conducted after the project's substantial completion to verify all pollutant levels are lower than the LEED thresholds.

GREEN CLEANING AND WASTE MANAGEMENT

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

GREEN BUILDING EDUCATION

Fitness Centre green features are outlined in the Campus Sustainability Tour map and in building signage. In addition, Green building tours are provided for this building. 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