



LIVING WITH LAKES CENTRE: LAURENTIAN UNIVERSITY, SUDBURY, ONTARIO



Firm's Role

Sustainable Building Design

Description

The Cooperative Fresh Water Ecology Unit was established at Laurentian University to study impact of human activities on the lakes, streams and wetlands in Northern Environments. It is a partnership of Laurentian University, the Ontario Ministries of Natural Resources and Environment, Environment Canada, City of Sudbury and local industry.

The Ecology Unit, a 3000 m² (32,000 ft²) laboratory and office building, will fulfill the goals of being a high-performance building with a quality work environment that demonstrates the best technologies available. With the sustainable design strategies employed and renewable energy supplying all demands on an annual basis result in a very small ecological footprint for this project. Performance of the site and building will be monitored and measured, and resulting information will be available to the public, primarily at Science North.

Features

- Maximum site greening, no irrigation requirement, improvement of drainage water leaving site, and microclimate modifications adjacent to building
- Stormwater management through permeable pavement, bioswale parking lot runoff treatment and vegetated buffer at the water's edge
- High performance envelope including high insulation levels, green roof, airtight construction and high R-value glazing
- Water heated from architecturally integrated solar thermal system
- Passive displacement ventilation, which operates without fans for most of the year, is fed by earth corridor allowing for winter preheat and summer precool of outdoor ventilation air
- Winter heating provided by radiant slab system supplied by ground source heat pump, and augmented by solar gain captured with the fenestration system and clerestoreys above the roof plane
- In summer, significant natural air movement, heat pump dehumidification and additional air cooling augmenting natural cooling system

Architect: Castellan James + Partners

Owner: Laurentian University

- Predicted energy consumption is one-tenth of a conventional building
- Client aims to achieve Platinum Level LEED Certification