



UNIVERSITY OF TORONTO SCARBOROUGH (UTSC) ENVIRONMENTAL SCIENCE & CHEMISTRY BUILDING

SCARBOROUGH, ON

ENVIRONMENTAL SCIENCE & CHEMISTRY

QUICK FACTS

- + Award-winning Project
- + LEED® Gold
- + On time / on budget
- + Photovoltaic-ready
- + Highly energy-efficient
- + 110,000 square feet (approx.)
- + \$52.5-million Budget
- + Smith + Andersen Mechanical and Electrical Design
- + Sustainability Services (Footprint)





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ABOUT THIS PROJECT

- + Building for the Faculty of Environmental Science, including five floors of research and teaching labs, meeting rooms, and office space, all connected through a sunlit atrium.
- + Work completed in BIM during the design phase (rather than the construction phase).
- + Designed as a showcase for energy efficient mechanical and electrical systems.
- + Modelled as performing 53.2% better than the Model National Energy Code of Canada for Buildings (MNECB), 42.9% better than ASHRAE 90.1-2010, and 40.7% better than ASHRAE 90.1-2013.
- + Mechanical design includes earth tubes, which pre-treat outside air to the office spaces.
- + Geothermal cooling / heating system with a borehole field located below the building.
- + Design also includes: condensing boilers; magnetic bearing chillers; variable volume fume hoods; a glycol heat recovery system on the lab exhaust; an air sampling system in the labs to record and adjust air flow rates to minimize outdoor air rates; a chemical dispensing area and chemical resistant drainage/neutralization tank; services for a nuclear magnetic resonance (NMR) machine; a high pressure steam system for autoclaves; and a central compressed air and reverse osmosis system.
- + Smoke control system in the atrium and pre-action fire suppression systems.
- + LED light fixtures, an energy metering system, and an intelligent lighting control system that adjusts the lighting levels based on occupancy were installed.

LOCATION

Scarborough, ON

SMITH + ANDERSEN SERVICES PROVIDED

Mechanical, Electrical

KEY TEAM MEMBERS

Diamond Schmitt Architects

SIZE

110,000 sq. ft. (10,200 sq. m.)

BUDGET

\$52.5 Million

COMPLETION YEAR

2015

SUSTAINABILITY

LEED Gold

AWARDS

Ontario Consulting Engineering
Awards *Award of Merit* (2017)

Ontario Association of Architects
Awards *Design Excellence Finalist*
(2018)

HOT BUTTONS

MECHANICAL DESIGN

ELECTRICAL DESIGN

BIM (REVIT)

GEOTHERMAL COOLING

EARTH TUBES

LEED GOLD

LABORATORY DESIGN

DAYLIGHT HARVESTING

GEOTHERMAL HEATING

PHOTOVOLTAIC-READY

