RESEARCH OPPORTUNITIES
FOR THE CONSTRUCTION AND BUILDING INDUSTRY AT GEORGE BROWN COLLEGE
George Brown College has federal government funding to help the construction and building industry research advanced construction systems, green energy and materials integration, computer-enabled, efficient residential buildings, and the training of highly qualified and skilled personnel in these areas.

GEORGE BROWN’S PROVEN APPLIED RESEARCH CAPABILITIES FOR THE CONSTRUCTION INDUSTRY
George Brown’s Centre for Construction and Engineering Technology (CCET) has an established track record of successfully working with industry on Green Building projects.

Several major construction companies have partnered with CCET to successfully implement new technologies in green homes. George Brown can leverage the infrastructure of the college including providing the experienced faculty to act as principal investigators on projects, the students who will be conducting the applied research, and the facilities and expertise of the technical staff at the college to provide your company with the necessary tools for you to assess the performance of your products and processes at a fraction of the price of consulting firms.

Funding is available through federal programs to help you subsidize the cost of accessing our expertise and personnel.
CONSTRUCTION MATERIALS AND DESIGNS TESTING FOR
ENERGY EFFICIENCY AND SUSTAINABILITY

Our building science research capabilities include both physical testing under laboratory conditions and we are also capable of monitoring building enclosure in situ (field conditions).

• Natural Exposure Building Enclosure Test Facility (currently at the Waterfront campus) for building enclosure testing. We can help you study your building enclosure design for durability and performance. Currently it is set up for testing historic masonry walls.
• Natural Exposure Building Enclosure Rooftop Test Facility for building enclosure testing. We can help you study your building enclosure design for durability and performance. This is conveniently located at CCET’s Casa Loma Campus.

The Building Science Lab includes the following equipment to assist in building enclosure and materials testing.

• Intron Universal Testing Machine for structural testing (flexural, compressive and tensile testing).
• Fox 600 Heat Flow Meter. Guarded Hot Plate device that tests the k value or thermal conductivity of materials up to 8” thick and as large as 24”x 24” in size.
• Binder Programmable Heating/Drying Oven. This lab oven dries bricks and soil specimens.
• FLIR Infrared Thermal Camera. Studies the thermal image of a building and can help assess a building’s performance by locating building problems including condensation and air leaks in walls, missing insulation, water leaks in roofing, HVAC air flow and equipment issues through non-destructive inspection.
• Programmable Temperature and Relative Humidity Control Chambers (2). They are for studying a material response to temperature and relative humidity/moisture content.
• The Lab has the capabilities to make custom sensors for building envelope monitoring.
• The Lab has the capabilities to construct building enclosure test specimens on site.
• The Lab can perform hygrothermal computer modeling of building assemblies.
• Climate Simulator was custom designed and built by Building Science Consulting Inc. The apparatus used for testing wall assemblies is a roll-open device capable of handling 8’x10’ sized wall specimens. The purpose of the apparatus is to subject wall assemblies to a variety of climatic conditions for scientific purposes.
CONCRETE AND MATERIALS TESTING FACILITY
George Brown has the most up-to-date equipment for testing of concrete materials as per Canadian Standard and Specification.

The college has a concrete production facility including a curing room and concrete metering area.

We have the most up-to-date soil testing equipment for soil identification, classification, compression testing, as per Canadian Standard and Specification, and can also test soil permeability.

INTELLIGENT BUILDING AUTOMATION SYSTEMS LAB
Dr. Amir Shabani, George Brown’s NSERC Industrial Research Chair in Smart Connected Buildings, works with a number of companies to develop methods and technologies to improve energy management, energy integration, and automation systems in buildings.

RESEARCH THEMES
George Brown will work with your company on projects of mutual interest related to the following themes:

• Energy management and integration
• Energy data analytics
• Net-zero energy buildings
• Smart connected sensors and actuators
• Smart homes/buildings
WHY GEORGE BROWN?

INNOVATIVE RESEARCH FACILITIES AND EQUIPMENT

OPTIMIZE YOUR R&D INVESTMENTS

SUBJECT MATTER EXPERTS

BENEFITS TO PARTNERS

• Access to state-of-the-art research facilities and equipment

• Leverage and optimize your R&D investments with George Brown College

• Gain access to faculty expertise, subject matter experts and support for industry-focused green building projects
For more information on how George Brown can assist your company in your Green Buildings related questions, please contact:

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Visit us on YouTube to see these labs in action:

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youtube.com/ResearchGBC

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