Have your future in mind

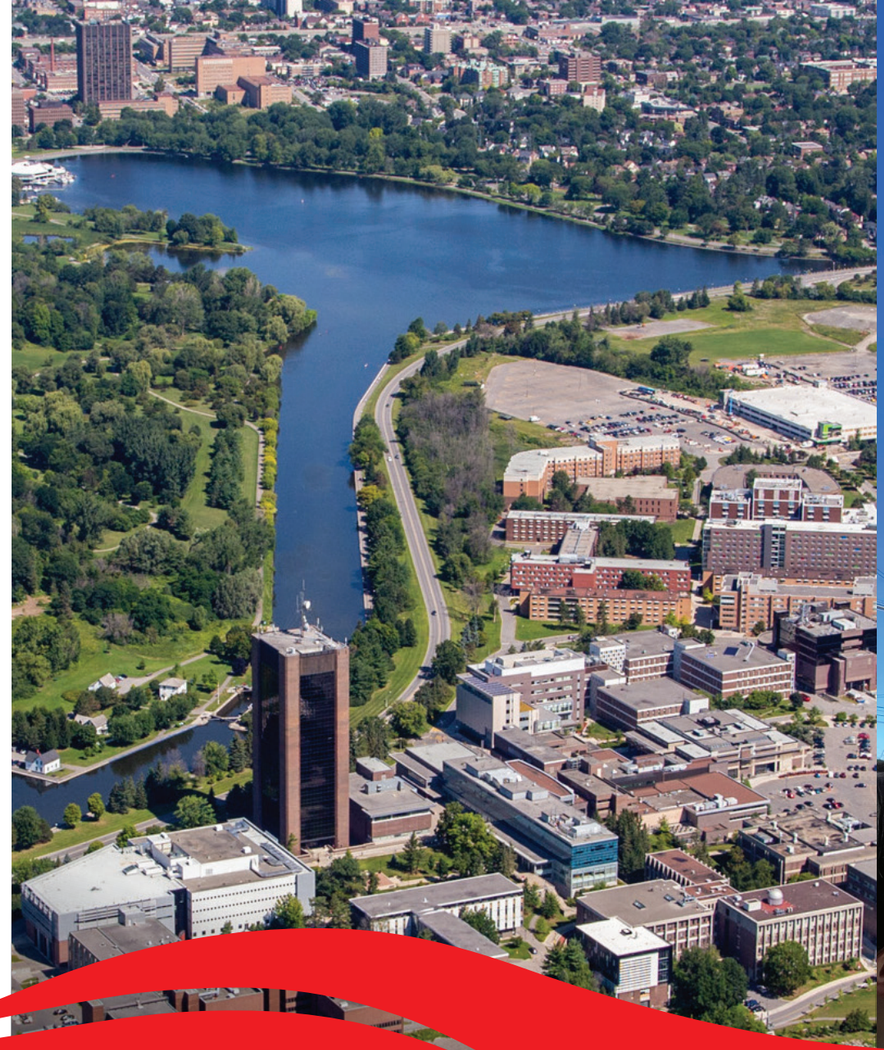
In both the private and public sectors, there is a growing need for engineers with expertise in building performance, heritage conservation, and fire safety engineering. To meet the demand of these sectors, our programs are designed to enhance the required knowledge and skills in the building engineering profession (also known as architectural engineering), through research and professional development activities.

Discover your path to one our graduate programs in Building Engineering!

Become a Raven!

BUILD, EVALUATE, AND MAINTAIN infrastructure

ADVANCE YOUR CAREER through our robust program, offered in three different concentrations



For more information

Civil and Environmental Engineering
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Carleton University

Building Engineering

Ottawa, Canada
graduate.carleton.ca

Carleton University

Building Engineering

Building Engineering programs at Carleton offer advanced interdisciplinary training on building systems. Some of the topics covered include mechanical and electrical systems, fire safety, energy and comfort performance, building envelope design and retrofits, controls and operations, structures, and heritage and existing building retrofit and rehabilitation.

Choose your program M.Eng., M.A.Sc., or Ph.D.

If you are interested in pursuing a career in research or industry with a building engineering background, consider one of our graduate programs.

- The Department of Civil and Environmental Engineering offers graduate degree programs in Building Engineering leading to Master of Engineering (coursework with a project option), Master's in Applied Science (thesis-based), and Doctor of Philosophy (Ph.D.)
- Each of these programs are offered in three concentration areas: Building Performance, Heritage Conservation, and Fire Safety Engineering

Building performance

This concentration area is focused on improving all states of the building life cycle such as design, construction, operations, retrofit/demolition, in relation to energy, greenhouse gas emissions and occupant comfort. Students will cultivate comprehensive understanding of both passive and active building systems, energy, comfort, building performance modelling and simulation, indoor environmental quality, advanced data analysis/artificial intelligence, and in-situ/field measurement approaches.

Heritage conservation

Without compromising the integrity and authenticity of existing and historic buildings, this concentration focuses on studying, measuring, and analyzing buildings to conserve them through technical recommendations. Key areas include advanced techniques for in-situ measurement such as 3D scanning, photogrammetry, non-destructive techniques, material sampling and analysis, seismic assessment, structural health monitoring, digital modelling of existing buildings, advanced computational modeling of historic structures, and restoration/retrofit analysis.

Fire safety engineering

This concentration includes structural fire engineering, materials' reaction to fire, combustion and fire dynamics, smoke management, fire modelling, fire detection and suppression, and behaviour of people in fires. Students will conduct both computer modelling and experimental approaches.

Admission process and requirements

Master's (M.A.Sc. or M.Eng.): an undergraduate degree from an engineering or related program (approval from Director or supervisor(s) must be obtained) with a minimum of a B+ average.

Ph.D.: a master's degree from an engineering program with a minimum of an A- average. We also offer a fast-track Ph.D. program from M.A.Sc. to Ph.D. To learn more about the Ph.D. fast-track program, visit the Building Engineering website.

M.A.Sc. and Ph.D. applicants must have a thesis supervisor during the degree program. Before submitting a formal application, we highly recommend contacting professors who are most appropriate to your research experience and interests. To learn more about our faculty, visit our website.

Benefit from our capital location

Located in Canada's capital, our location allows students' direct exposure to industry and world-renowned government research and development laboratories such as the Natural Resources Canada and National Research Council Canada. Take advantage of the proximity to these facilities and secure your potential career!

"Carleton University not only facilitates ground-breaking research, but also encourages tight-knit engagement with peers and faculty. I am ever grateful for the guidance and support by my professors and fellow students, who foster ambition and enhance my knowledge and researching abilities. Carleton's commitment to higher education is manifested in its students – as a student of almost nine years, I can speak to that!"

Dre Markus,
B.Eng., M.A.Sc. (Carleton)
Ph.D. student in Building Engineering

Your career

Our building engineering graduates have secured prestigious positions and research and development positions in major engineering companies and in federal government departments. Some of the career paths include:

- Building science specialist
- Energy modellers
- Sustainability consultants
- Restoration and retrofit experts for heritage buildings
- Digital and advanced computational modelling specialists
- Fire safety engineers
- Building controls engineers
- Mechanical design engineers
- Researchers at government labs, industry, and universities
- University and college professors