

A look inside Canada's largest net zero institutional building

Mohawk College's new Joyce Centre for Partnership & Innovation empowers students to carve out their own net zero future

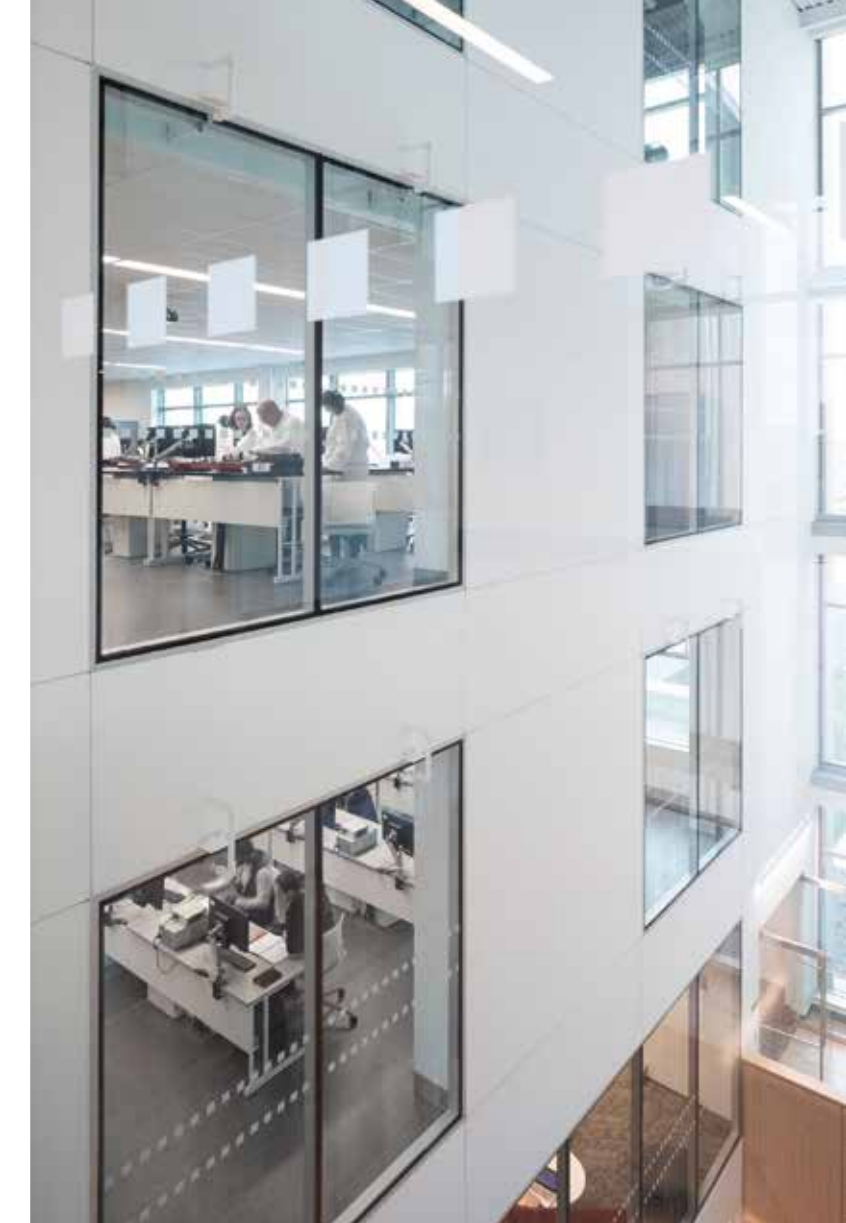


Students at Mohawk College's Fennel Campus were welcomed back to school this fall with a 96,000-square-foot, solar-powered and state-of-the-art research, learning and lab facility. The Joyce Centre for Partnership and Innovation will also be the future home to the Centre for Climate Change Management, and will create a new paradigm for sustainable building and education in North America.

Photo credit: Ema Peter

Designed by B+H in collaboration with mcCallumSather, the \$54 million centre is Canada's largest, and the region's first, net zero institutional building. It is also the first out of 16 selected buildings in Canada to be completed under the the Canada Green Building Council's (CaGBC) new net zero carbon pilot program.

Driven by sunlight, flexible co-working spaces, labs and lecture theatres are centred around a light-filled atrium. The atrium functions as a social space that encourages formal and informal gatherings.



The design builds a culture of awareness where continuous performance feedback informs users about how much energy they are consuming. A living lab on sustainability in itself, students will be trained how to shift the way they consume energy when inside to help ensure the building meets its energy targets.

The themes of connectivity, interaction and collaboration run throughout the design of the Joyce Centre's social learning environment. Enhancing the user experience, classrooms and laboratories are organized around a large central atrium which acts as a social activator and central hub. Laboratories and classrooms are flexible and modular, offering students the option to cluster into groups or work independently, as needed. The interior learning spaces are designed to evolve over time, in tune with advancing technology.



The facility is heavily metered to achieve real time data. As part of the new curriculum, students at the Joyce Centre learn about the building's operations and how to interpret its energy performance data, so that occupant behaviour and building system performance can be more accurately synchronized.

About B+H

B+H Architects is a global, award-winning firm with a 65 year legacy of building creative solutions for clients through the delivery of architecture, interior design, landscape, planning, Advance Strategy and other consulting services. Working from studios in Toronto, Vancouver, Calgary, Seattle, Los Angeles, Dubai, Shanghai, Beijing, Hong Kong, Singapore & Ho Chi Minh City, its more than 350 team members are committed to responding to the needs of clients and shaping buildings, environments, and communities.



The interior material palette is balanced between robust steel and concrete, and warmer materials such as wood and stone tile, to create a rich and inviting learning environment. All materials were locally sourced.



High-performance elements include 2000 solar panels, a building envelope that minimizes heating and cooling loads while maximizing natural light, 28 geothermal wells that store excess heat during the summer for use in winter months, a storm water harvesting of up to 342,000 litres, and occupancy sensor-controlled heating, cooling and LED lighting.



Photo-voltaic panels are housed in a set of wings that soar above the four-storey complex. Dramatic overhangs help give the building a signature shape on campus and provide covered terraces that can be used to host summer events.

About Mohawk College

Mohawk College educates and serves 30,000 students from three campuses in Hamilton, Ontario. Mohawk has been named one of Canada's greenest employers for the past four consecutive years and ranks 15th among all colleges in Canada for applied research activity. Mohawk was the first college in Ontario to formally adopt an environmental management plan and has since introduced a second plan with even more aggressive carbon emission reduction targets. The Joyce Centre for Partnership & Innovation is part of the largest renewal of labs and classrooms in Mohawk's 50-year history.

About mcCallumSather

From renovations to new construction, small community initiatives to multi-million dollar, one-of-a-kind projects, our team at mcCallumSather remains relentlessly focused on achieving our clients' goals guided by a commitment to design excellence and sustainable solutions. Rooted in Hamilton for 21 years, we offer architectural, mechanical engineering, interior design, heritage consulting, LEED facilitation and project management services. mcCallumSather fluidly navigates between design and engineering disciplines and are known for delivering highly coordinated documents and thoughtful, innovative facilities of the highest quality.

The building's energy is mainly sourced from sunlight and solar panels are accessible to students so that they can learn about sustainable building management firsthand.



The Joyce Centre for Partnership & Innovation builds on Mohawk's applied research strengths in areas of health, energy and technology. The building is equipped with state-of-the-art labs, workshops, lecture theatres, and industry training centres. Hybrid classrooms create flexible environments that facilitate group learning and the collaborative exploration of ideas.



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