

# Get to know the MacKimmie Complex and Professional Faculties Building Redevelopment Project



The MacKimmie Complex and Professional Faculties Building Redevelopment Project is a multi-year, multi-phase project to enhance pedagogical environments, address deferred maintenance, accommodate growth, and strengthen the sense of place and community in the heart of the University of Calgary's main campus.



## Designing a net-zero carbon building

### Leading the way in green buildings

The redeveloped MacKimmie Tower, new link and block will be one of the most energy efficient buildings on a Canadian post-secondary campus and strives to be net carbon neutral for annual operations. UCalgary is helping to create a new standard by taking part in a two-year program to help finalize the Canada Green Building Council's (CaGBC) new Zero Carbon Building Standard.

### What is a net-zero carbon building?

A net-zero carbon building is a highly energy-efficient building that produces onsite, or procures, carbon-free renewable energy to offset the annual carbon emissions associated with building operations.

### Unlike any other building on campus

MacKimmie Tower's double-skin façade will respond to changing weather, requiring less energy to keep building occupants comfortable and its outer façade (building envelope) will be unique, working in concert with the mechanical system to decrease energy consumption and improve the indoor environment in terms of thermal comfort, day lighting and air quality.

### A concrete idea

By leaving the original concrete structure exposed, the building will be able to use its structure as a thermal mass to reduce energy consumption through the building's heating and cooling cycles. Reusing the existing structure drastically reduced the amount of waste created by the project and avoided more than 3,300 t of CO<sub>2</sub>e of Global Warming Potential (GWP).

## Sustainability

### Solar energy

The roof of the new tower and block and a portion of the south and east façade of the block will be covered in solar photo-voltaic panels to capture sunlight, producing almost one megawatt of electricity combined.

### A sustainable landscape

Swann Mall's new landscape will integrate a greater variety of regionally appropriate plant materials to support biodiversity and minimize water use. A more natural surface water infiltration and retention system will help mitigate against future, heavy rainfall events, which supports resiliency on and off campus.

### Rainwater harvesting

The complex will include a 150,000 litre cistern to capture and hold rainwater to be used in over 150 water closets throughout the complex.

### Campus as a learning lab

The project is a showcase for the University of Calgary Campus as a Learning Lab (CLL) initiative, which creates opportunities for students and faculty members to engage in experiential learning and applied research on sustainability throughout the design, construction and operation phases of the facilities.

## Construction

### Moving on up

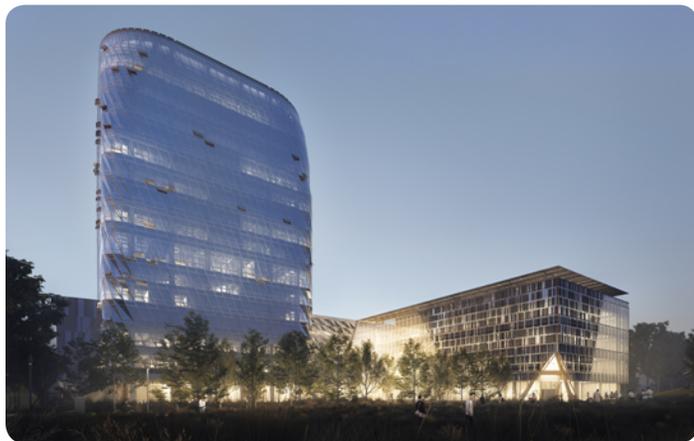
MacKimmie Tower is being redeveloped to include two new floors. Using the same general method from when the original tower was constructed, outside columns will be formed, followed by the interior core walls and shafts and finished with a suspended structural slab.

### Bringing it down

To make room for the new block, the existing MacKimmie Block will be torn down floor by floor: construction crews will remove interior and structural materials one floor at a time so materials can be separated and diverted for recycling or reuse.

### Striving for zero waste

100 per cent of the concrete panels removed from MacKimmie Tower are being recycled, as is the steel and glass. The concrete is crushed offsite and used as a premium aggregate additive for new products throughout southern Alberta.



## Creative and innovative design

### I spy

The new link is designed with playfulness and transparency in mind: people will be able to see through it, connecting interior and exterior spaces. The new block and link will be connected with bridges to the tower over open areas that allow sightlines up, down and across spaces.

### Well travelled

As UCalgary's original open space, Swann Mall's new pedestrian pathways are designed to recognize the years of travel between buildings.

### A new home

The new block will serve as the home for the Hunter Hub for Entrepreneurial Thinking.

## By the numbers

---

**500 new Full-Load Equivalent students** (FLEs) will be supported through the completed project

---

**More than 90%** of all construction materials are being **recycled**

---

**~3,000 metric tonnes of concrete** has been recycled to date

---

**Two more floors** are being added to the existing **MacKimmie Tower**

---

**3,000 cubic metres** of earth was removed during the 2018 spring and summer excavation of Swann Mall

---

**13 unique glass panels** will comprise MacKimmie Tower's façade, each wrapped diagonally in one continuous line across the surface

---

An **89-metre-tall construction crane** with a 76 metre swing radius will be **onsite until 2022** to assist in construction activities

---

Over **1,300 people** will be moving into the new MacKimmie Tower when it opens in the fall of 2019

---

**1/3 of trees in Swann Mall** have been protected during construction and the excavation of Swann Mall

---

**150 new mature trees** will be added to the revitalized landscape

---

More than **10 projects** are being explored through the MacKimmie project as part of the Campus as a **learning lab initiative**

---