Fanshawe College Innovation Village

London, Ontario

2025 Canadian Green Building Awards, SABMag

PART 1
PROJECT DESCRIPTION

Use for all categories. Projects are judged based on criteria of sustainable design, architectural merit and innovation. **Please submit Part 1 and Part 2 as separate pdf files.**

2025 CANADIAN GREEN BUILDING AWARDS

THE NATIONAL PROGRAM OF SUSTAINABLE ARCHITECTURE & BUILDING MAGAZINE SABMag

PROJECT CATEGORIES

Identify which Award category you are entering

☐ **1. Residential [small]**
Open to new or renovated buildings less than 600m² in area, of which a minimum of 75% is dedicated to single-family or multi-family residential uses.

☐ **2. Residential [large]**
Open to new or renovated buildings [typically multi-unit buildings or groups of related buildings] greater than 600m² in area, of which at least 75% is dedicated to residential uses.

☐ **3. Commercial/Industrial [small]**
Open to new or renovated buildings up to 2,000m² in area, of which more than 75% is dedicated to commercial or industrial uses.

☐ **4. Commercial/industrial [large]**
Open to new or renovated buildings [or groups of related buildings] greater than 2,000m² in area, of which at least 75% of the floor area is dedicated to commercial or industrial uses.

☐ **5. Institutional [small]**
Open to new or renovated buildings up to 2,000m² in area, of which more than 75% is dedicated to institutional uses.

■ **6. Institutional [large]**
Open to new or renovated buildings [or groups of buildings] greater than 2,000m² in area, of which at least 75% of the floor area is dedicated to institutional uses.

☐ **7. Mixed Use**
Open to new or renovated buildings [or groups of related buildings] of any size, in which no individual use exceeds 75% of the overall floor area.

☐ **8. Existing Building Upgrade**
Open to buildings of any size or type in which the primary focus of the work has been to enhance the performance or extend the life of an existing structure. Entries in this category are required to respond only to the submission criteria appropriate to the project.

☐ **9. Interior Design**
Open to interior design projects of any size or type. Entries in this category are required to respond only to the submission criteria appropriate to the project.

An award will be given in each category at the discretion of the jury.

PROJECT DETAILS

Project name: Fanshawe College Innovation Village
Address: 1001 Fanshawe College Blvd, London, ON N5Y 5R6
Year completed: 2024

PROGRAM AND CONTEXT

Project type: [Identify all uses occupying 10% or more of gross floor area]
Academic

Project site: [Check all that apply]

☐ Previously undeveloped land ■ Urban ☐ Rural

■ Previously developed land ☐ Suburban

Other Building description: [Check only one]

☐ New ☐ Renovation ■ Both [If both, list 49% new and 51% renovation]

STATISTICS* Provide the following metrics as applicable to your project.

- Site Area: 4,470 m²
- Building gross floor area: 11,783 m²
- Energy Intensity: 93.8 KWhr/m²/year [Include both base building and process energy]

[optional: report energy intensity separately as follows:

- Energy Intensity, base building: 72.9 KWhr/m²/year
- Energy Intensity, process energy: 20.9 KWhr/m²/year

- Reduction in energy intensity: 33.6 %.
- State the reference standard on which the % reduction is based: MNECB, NECB or ASHRAE 90.1

[include version]: ASHRAE 2013 as Modified by SB-10

- Recycled materials content: _____ % by value see page 15
- Construction materials diverted from landfill: 97 %
- Regional materials by value: see page 15
- Water consumption from municipal source: 3,641 litres/occupant/year

[Include both base building and process consumption]

- Reduction in water consumption: 20 %
- State the reference on which the % reduction is based: ☐ LEED or other ■ Ontario Building Code

*NOTE FOR PART 9 RESIDENTIAL PROJECTS: PROVIDE THE STATISTICS ABOVE IF AVAILABLE. Include in the Executive Summary [see next page] the EnerGuide or the Home Energy Rating System [HERS] ratings if available, and the WalkScore rating [see www.walkscore.com]. Also, a qualitative assessment of project performance should be included in the appropriate sections of the narrative.

Fanshawe College Innovation Village

London, Ontario

Project Description

The Innovation Village at Fanshawe College is a new vibrant and collaborative space that caters to the different ways people learn. The 126,828-square-foot facility transforms and expands the College's core, creating a new campus hub that brings students, professors and professionals from across the College, and broader community, together to engage in cross-disciplinary collaboration and foster unique industry partnerships.

Located at the centre of Fanshawe's London Campus, Innovation Village brings together previously disconnected interior spaces and courtyards to create a new heart for Fanshawe College. Drawing on the incubator space model, the design reflects the College's academic approach which is focused on experiential learning. Catering to the various ways people learn and collaborate, Innovation Village offers a variety of adaptable spaces that range from silent study zones to open work/study areas, homework labs to multi-use event and presentation spaces. It is a place where all students have access to innovative technology, including maker spaces, an augmented reality and virtual reality lab, multimedia labs, and Leap Junction – a centre for all things entrepreneurship – fostering a start-up culture among both students and alumni alike, and teaching them the soft skills required to succeed in the changing workforce.

Top 5 sustainable design strategies:

1. building Integrated Photovoltaic (BIPV) panels, and PV panels
2. reuse of an existing building
3. connecting social spaces
4. natural light and connection to outdoors
5. material selection

strategic decisions

south courtyard with glulam canopy

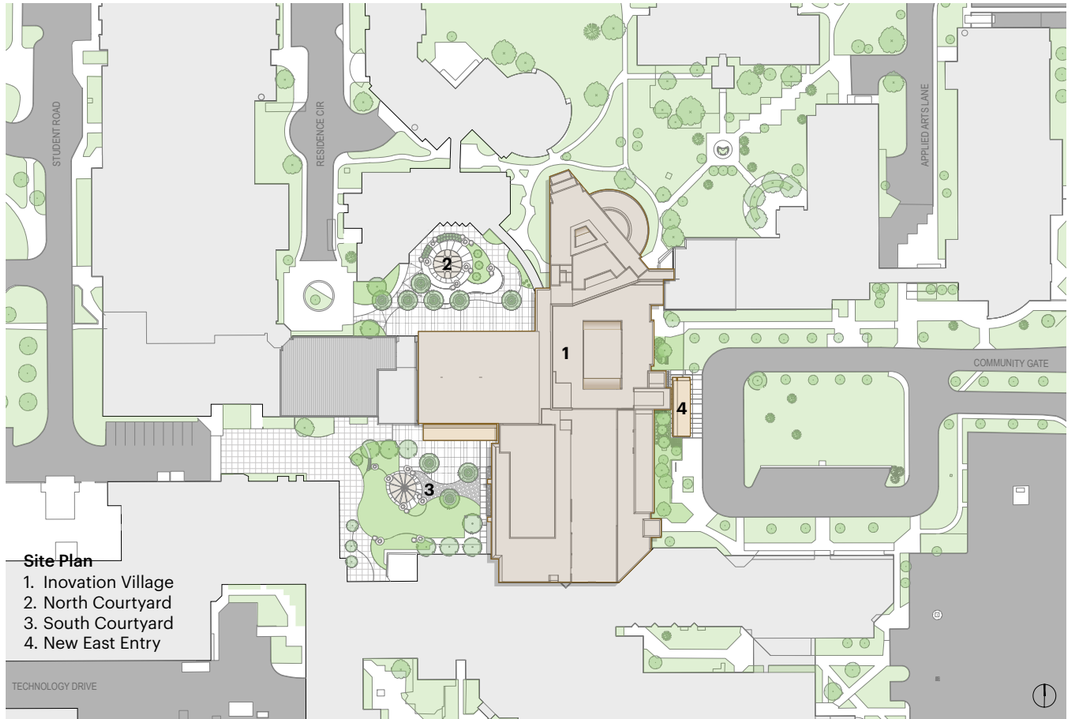
existing south courtyard

Innovation Village is located at the centre of the existing campus and includes substantial renovation of existing facilities significantly contributing to minimizing the carbon impact of the overall project, as well as demolition and new construction. The project makes use of existing developed land, and through the construction of new additional floors of shell space, the project also creates increased density and use of shared resources at the campus core. This reverses the previous development approach which relied upon horizontal expansion across un-built lands.

Student and Indigenous engagement informed the building's design, visually and spatially, establishing a dynamic learning environment that supports diverse programming. Indigenous engagement has been a key component and was led by the College's advisor in Indigenous education and development, from the Nlaka'pamux Nation.

Sustainability has played an important role in the design, with the building wrapped in a custom BIPV façade that also expresses the facility's focus on innovation.

construction view from north courtyard



Site Plan

1. Inovation Village
2. North Courtyard
3. South Courtyard
4. New East Entry

community

Kalihwiyo Circle

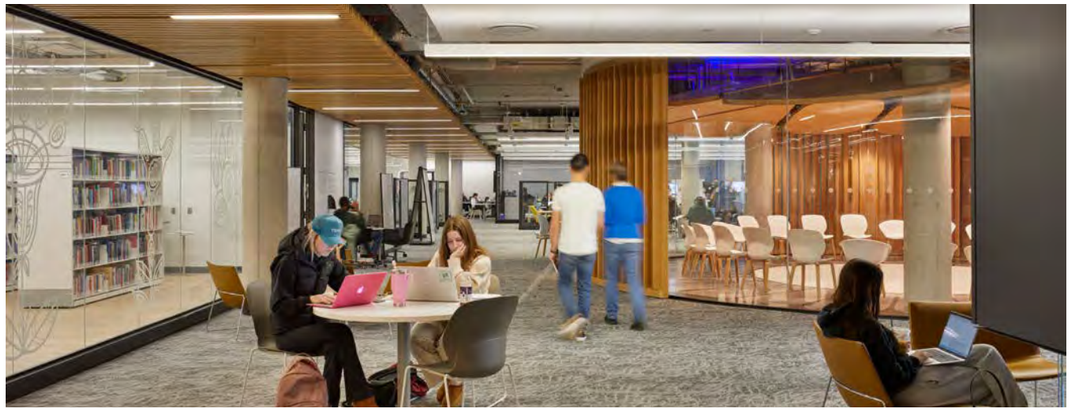
Fanshawe College is a well-established campus located to the east of downtown London and has existing access to quality transit including a bus stop at the new main entrance. There are existing bicycle facilities, showers and change facilities on campus. No new parking was created as part of this project.

Generous timber glulam canopies at the main east entrance and south courtyard establish a warm and welcoming approach. Their seven pillars reference the 7 Indigenous teachings and the 7 job skills of the future outlined by the College.

A new Library Learning Commons demonstrates the College's commitment to inclusivity, and support for its more than 400 Indigenous students. It is home to the Kalihwíyo Circle (Kalihwíyo is from the Oneida (Onʌyotaʾaːka) language meaning 'good message') – the Indigenous Spirit Assembly. Its circular formation creates a feeling of safety and trust and encourages the gracious sharing of culture.

Anchored by a terrazzo floor 'petal' motif that represents the 28 days and ceiling motif that represents the 13 moons of the Lunar calendar, it is protected by a 'turtle-shell' ceiling which references the creation of Turtle Island, and can host Indigenous workshops, exhibitions, and smudging ceremonies. Illustrations by Indigenous artist Hawlii Pichette, are the basis of the graphic language of patterning that is used throughout the Innovation Village.

new east entry with bus stop and glulam canopy



library learning commons

Kalihwíyo Circle

site ecology and water conservation

south courtyard looking into Forwell Hall

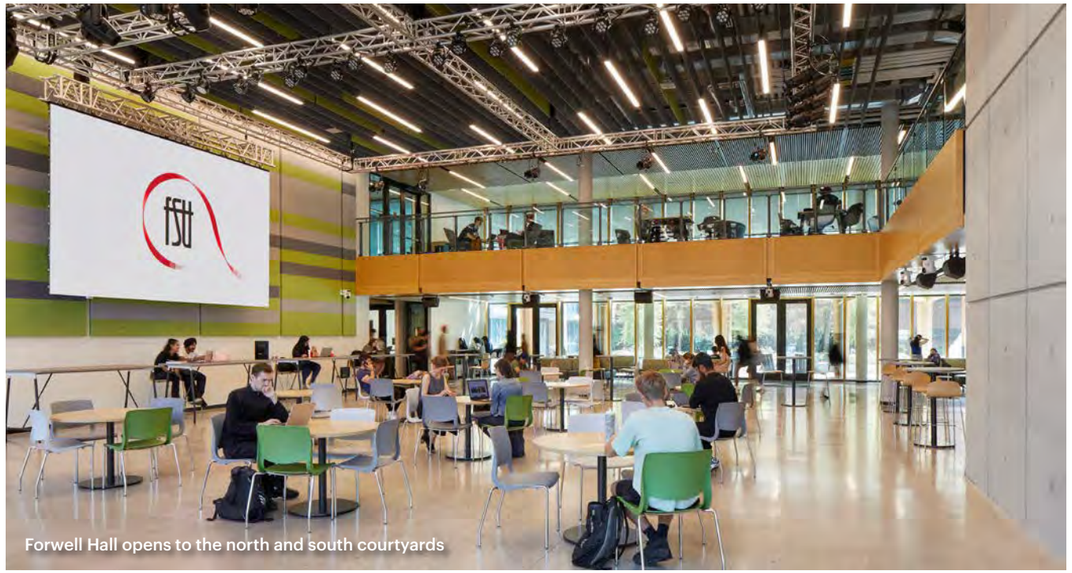
Forwell Hall is a flexible and open event space run by the Fanshawe Student Union that can be used for tradeshows, fashion shows, or as a student lounge. Opening to courtyards to the north and south, the Hall offers through views and is characterized by a two-storey curtain wall system supported by wood glulam columns. Bird-friendly glass is used throughout the project.

The two new courtyards with extensive seating provide outdoor gathering space for students and faculty. Respecting the four cardinal directions, the Kalihwíyo Circle has direct access to the south courtyard.

Native plantings promote biodiversity by providing habitat for wildlife, birds and insects and reduce the need for irrigation. Minimal maintenance is required for the plantings. Low flow fixtures are included throughout the building to minimize water usage.

projected potable water consumption: 3641 litres/occupant/year

percentage improvement over the water consumption of the reference building: 20%



Forwell Hall opens to the north and south courtyards

Kalihwiyo Circle opens to the south courtyard

north courtyard before

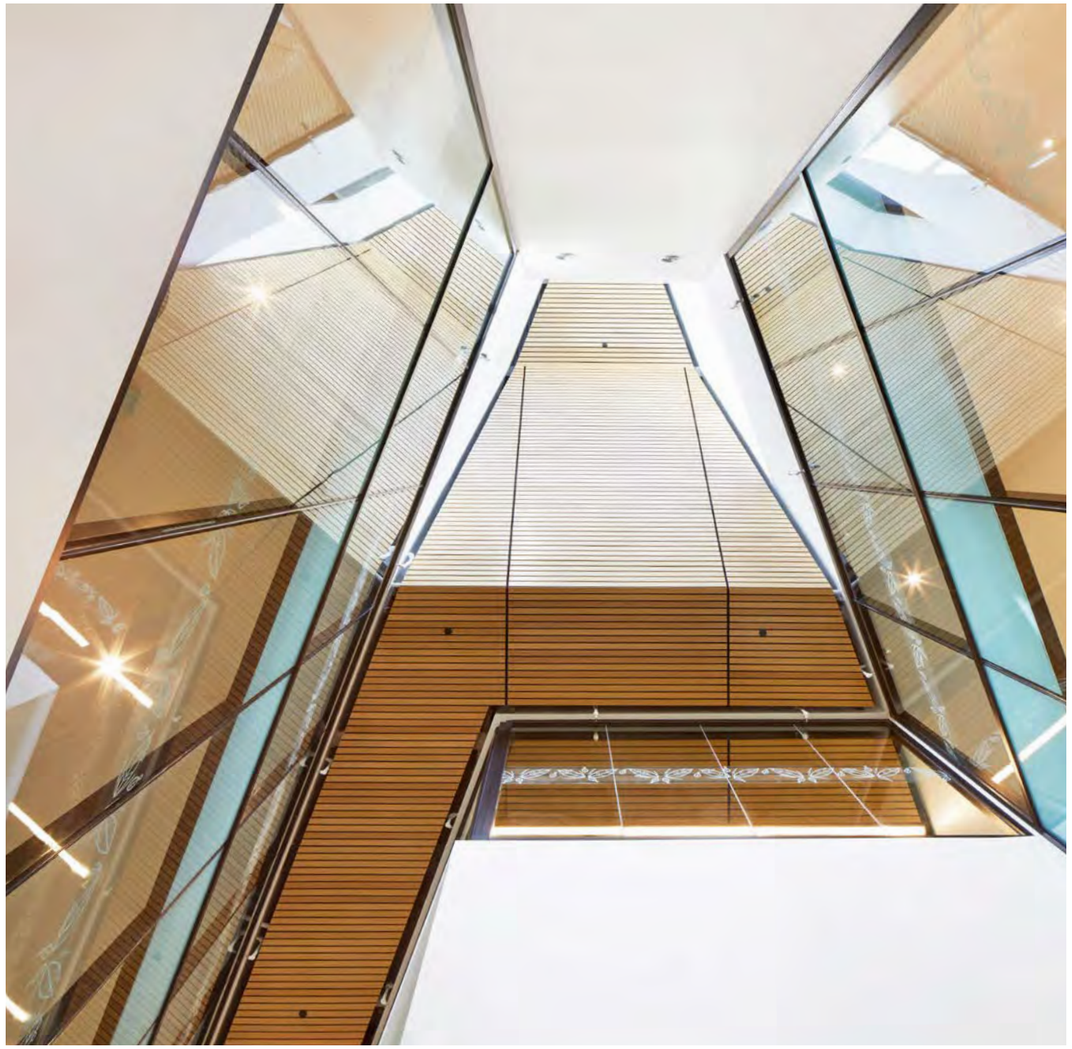
north courtyard

light and air

Since the Innovation Village is located in the middle of the existing campus, creative solutions were needed to bring daylight into the building core. New clerestory windows in double height spaces bring daylight into all floor levels. Daylight sensors, energy efficient LED lighting and lighting controls reduce the energy consumption of the lighting system. Variable frequency drives have been used on all pumping and fan systems to save energy at part loads.

The design is based on cross flow air to air heat exchangers with low contamination. Aside from providing safer circulating paths for air, the exchangers are also highly efficient and can recover energy from general, sanitary and lower temperature process building exhaust and incorporate this energy into the supply stream. These units come with two separate banks of cores that accumulate energy in two separated parallel airstreams to best take advantage of air temperatures by circulating, by-passing or free cooling as necessary depending on outdoor temperature conditions.

The projected annual energy consumption of the lighting system: 10.5 ekWh/m^2



a roof-top ‘pop-up’ addition provides clerestorey light

feature stair

New openings framed in extending construction

roof-top addition
(pop-up for clerestorey light)

roof-top addition
(pop-up for clerestorey light)

opening cut into existing building and new long-span raised roof
(inserted to create the Canada Life Village Square with clerestorey daylight)

north-south section

1. AR/VR Studio
2. Maker Space
3. Canada Life Village Square
4. Study Spaces
5. Meeting Rooms

new addition (5 storeys)

opening cut into existing building and new long-span raised roof
(inserted to create Agora Canada Life Village Square and clerestory daylight)

new addition
(new main east entrance with executive meeting room above)

east-west section

1. Forwell Hall
2. Maker Space
3. Canada Life Village Square
4. Study Spaces
5. Multi-use Classroom
6. Meeting Room

wellness

Canada Life Village Square - presentation mode

At the core of Innovation Village is the Canada Life Village Square, a full-height multipurpose agora that is positioned at the crossroads of the campus's major corridors. This welcoming forum can be used for guest lectures or pitch presentations, as an exhibition space, classroom, study space, or student lounge. Surrounded by interior glazing, the Square has multiple access points that open towards the building's interior. This transparency establishes visual connections throughout and offers students and faculty a glimpse into the activities taking place within, encouraging spontaneous participation.

Circulation spaces are animated by open lounge areas that create additional opportunities for impromptu discussions and connections.

Canada Life Village Square - classroom mode (two rooms)

Circulation spaces are animated by open lounge areas that create additional opportunities for impromptu discussions and connections. Illustrations by Indigenous artist Hawlii Pichette, are used throughout the Innovation Village.

Clerestory windows in Canada Life Village Square. Cross views from surrounding lounges offers students and faculty a glimpse into the activities taking place within.

operating energy present and future

Annual horizontal solar irradiation	1.5 MWh/m²
Köppen climate classification	Warm humid continental - Dfb
BIPV application	Integrated exterior cladding
PV technology	Mono-crystalline Si
BIPV array nominal power	174.86 kW
Annual electricity generation per BIPV module area	263 kWh/m² for active cell area only
Annual electricity generation	122.98 MWh (facade only)

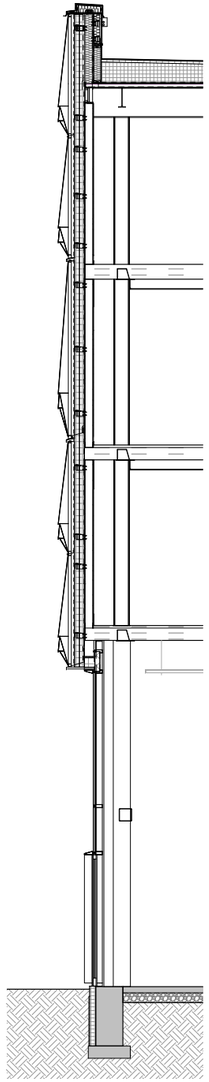
exterior facade detail

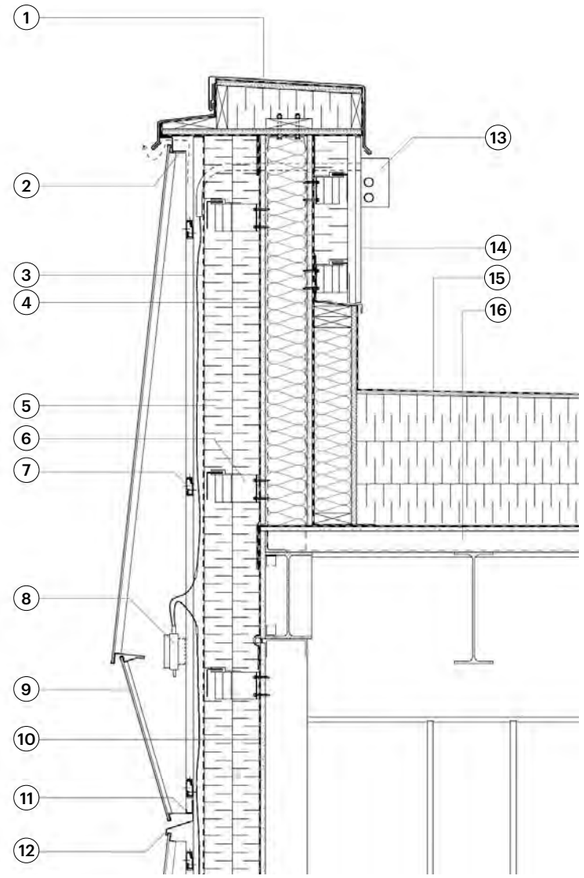
The cladding includes custom-sized active and passive panels of pvd coated glass, with active PV panels ranging from 120W-470W per panel. Early cost-benefit analysis demonstrated the positive ROI for BIPV and the solar façade has been installed on all sides of the new tower, including the north-facing elevation. The cladding is composed of alternating upward-tilted active panels and smaller off-set passive panels, creating a distinctive form for the new structure. This custom cladding is estimated to provide approximately 18% of the project's near-term power requirements. When the future rooftop PV array is installed, 30% of the total power demand will be generated by the combined PV systems.

The sub-trade contractors responsible for the installation of both PV systems are also responsible for the construction of the associated back-up wall cladding components. Detailed mock-ups were constructed on site at intervals to study and test the alignment of components. Since the BIPV cladding panels were fabricated outside of Canada, testing of the component parts included off-shore and on-site testing and labelling to meet Canadian regulatory standards.

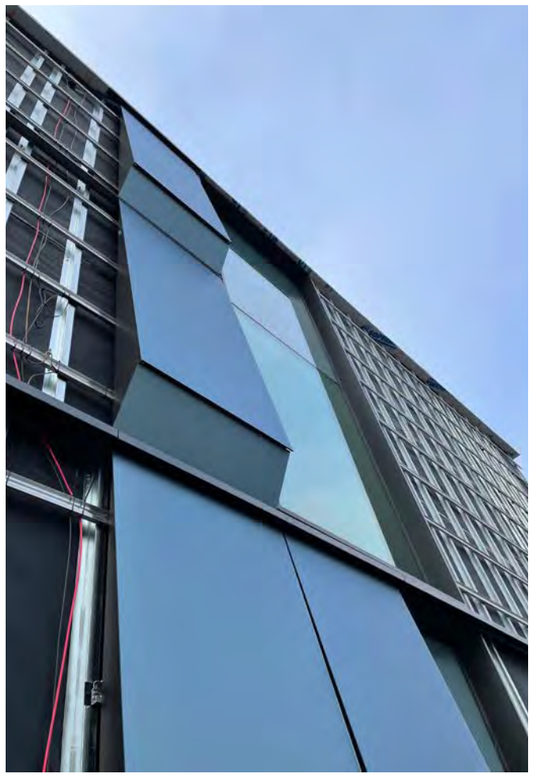
CO2 emissions saved for complete façade and roof systems: 86t (3,950 trees planted)

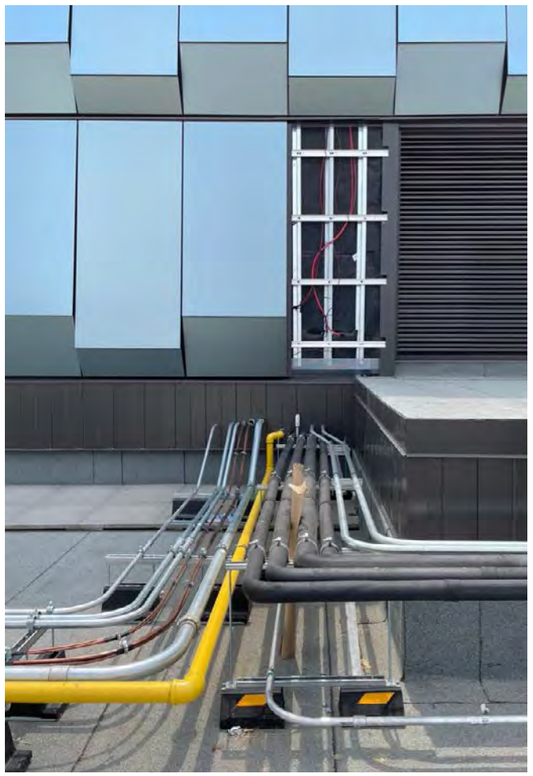
What is the annual energy intensity for heating and cooling the building in KWhr/m²/yr: 46.2 ekWh/m²





1. Insulated parapet cap
2. Ventilation opening with perforated metal insect and bird screen
3. Vapour permeable, UV stable, weather barrier
4. Vapour permeable primary air and moisture barrier at parapet
5. 203mm mineral wool insulation
6. Thermally broken stainless steel cladding clips
7. Horizontal aluminum cladding rails
8. BIPV junction box and optimizer
9. Solarlab BIPV cassette
10. Primary air, vapour, and moisture control membrane
11. Perforated metal insect and bird screen
12. Metal flashing
13. Electrical combiner box and conduit.
14. Parapet cladding and insulation
15. 2-ply mod bit roof on sloped polyiso insulation
16. Steel deck on steel structure





on-site facade mock-ups, testing and installation of the BIPV

materials and resources

An interior palette of raw natural materials, such as wood and stone aggregate, and the exposure of the building's steel and concrete structures, captures a new energy for the College. New construction is comprised of steel framing and mass timber where possible, combined with selective precast concrete in lieu of a more conventional fully concrete structure.

While an exact percentage of recycled materials content and the value of regional materials has not been fully tracked, both factors were considerations as specifications were developed. A high percentage of recycled materials were used in the concrete mix (minimum 25%) and reinforcing steel supports consist of 100% recycled content. Secondary structural components such as reinforcing steel supports were made with 100% recycled plastic.

Where possible, regional materials, extracted, harvested or recovered and manufactured within 500miles of construction sites was used. Wood is FSC certified and all materials used in the building are low emitting.

A Ministry of the Environment Waste Audit report identified strategies for waste reduction and diversion for multiple waste streams, including masonry units, insulation, roofing material, wood, etc., and resulted in 97% of waste diverted from landfill.

two-storey curtain wall system in Forwell Hall supported by wood glulam columns and steel frame

building life cycle considerations

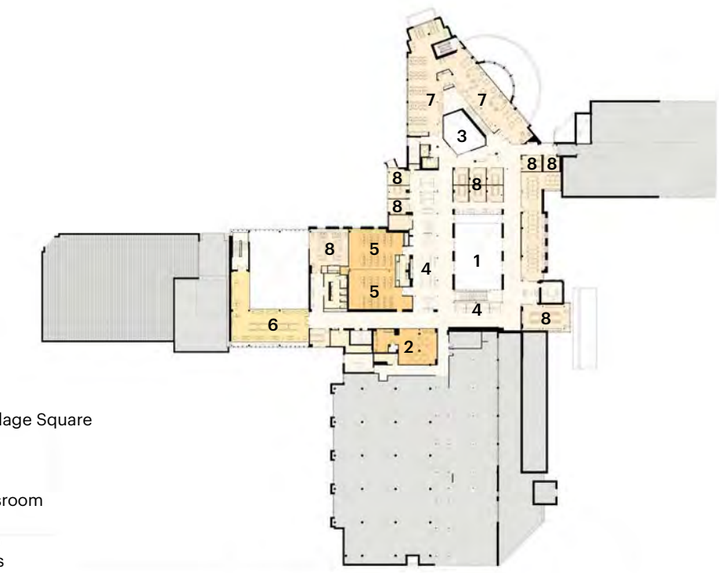
The most significant impact comes from the initial decision to retain and renovate the majority of existing building structures where possible. While existing retained floor areas have been in use for over 40-years, the overall project (new construction and renewal) is built for a 100-year life cycle, greatly extending the use-span of the original wings. Energy modeling guided decisions for the timing of upgrades to the existing envelope (for example, the roofing insulation has been replaced and upgraded as part of this project; double-glazed existing windows will be replaced incrementally when existing insulated glazing begin to fail). Most building systems are exposed to allow for easy maintenance, repair and long-term replacement.

Major program spaces were tested in multiple configurations to ensure high use for an evolving mix of teaching activities. Shell space is provided in two additional levels for future growth.

The project was completed concurrently with the upgrading of the campus energy plant, with close involvement of the College's energy coordinator. Metering has been added to the electrical panels to segregate electrical energy usage for lighting, receptacle/plug loads and mechanical equipment. This will help to identify opportunities for additional energy savings by tracking building-level and system-level energy use.

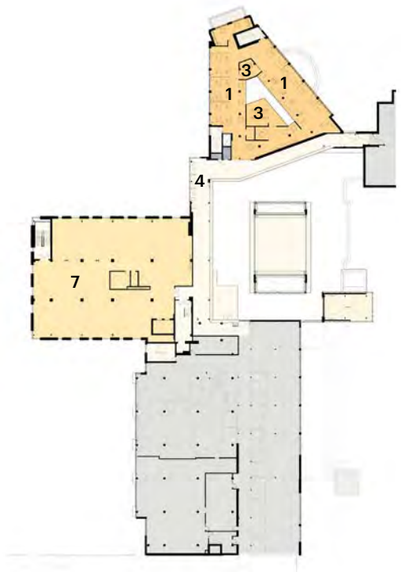
level 1

1. Entrance Vestibule
2. Canada Life Village Square
3. Maker Space
4. AR/VR Studio
5. Study Spaces
6. Forwell Hall
7. Leap Junction
8. Library Services
9. Kalihwíyo Circle



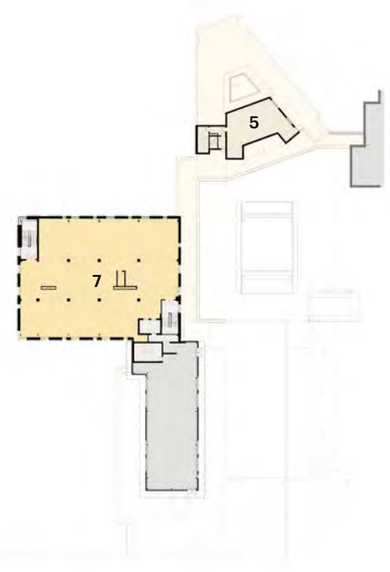
level 2

1. Canada Life Village Square
2. Studio
3. AR/VR Studio
4. Study Space
5. Multi-Use Classroom
6. Forwell Hall
7. Homework Lab
8. Meeting Rooms



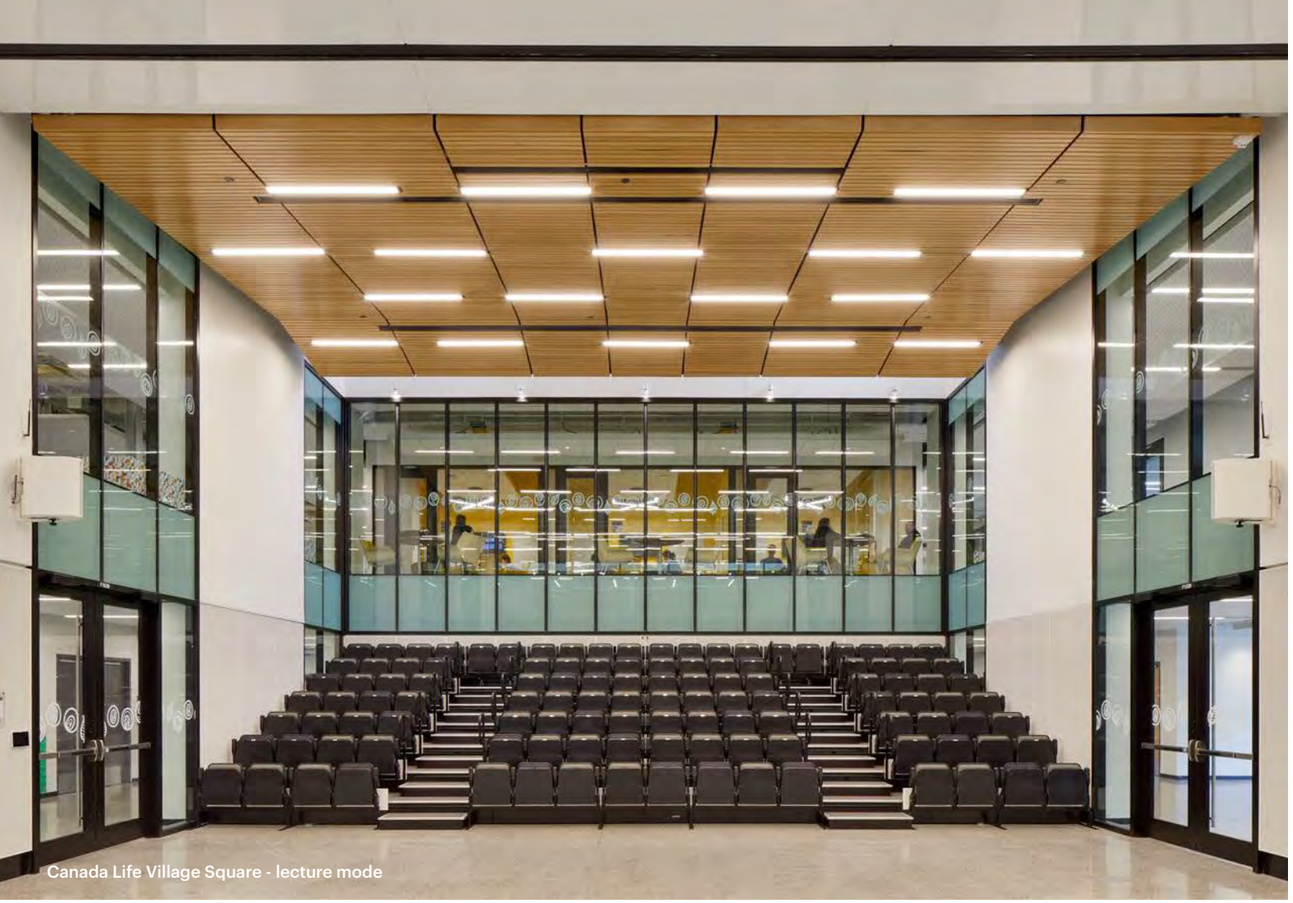
level 3

1. Library Research and Innovation Support Office
2. Meeting Room
3. Shell Space

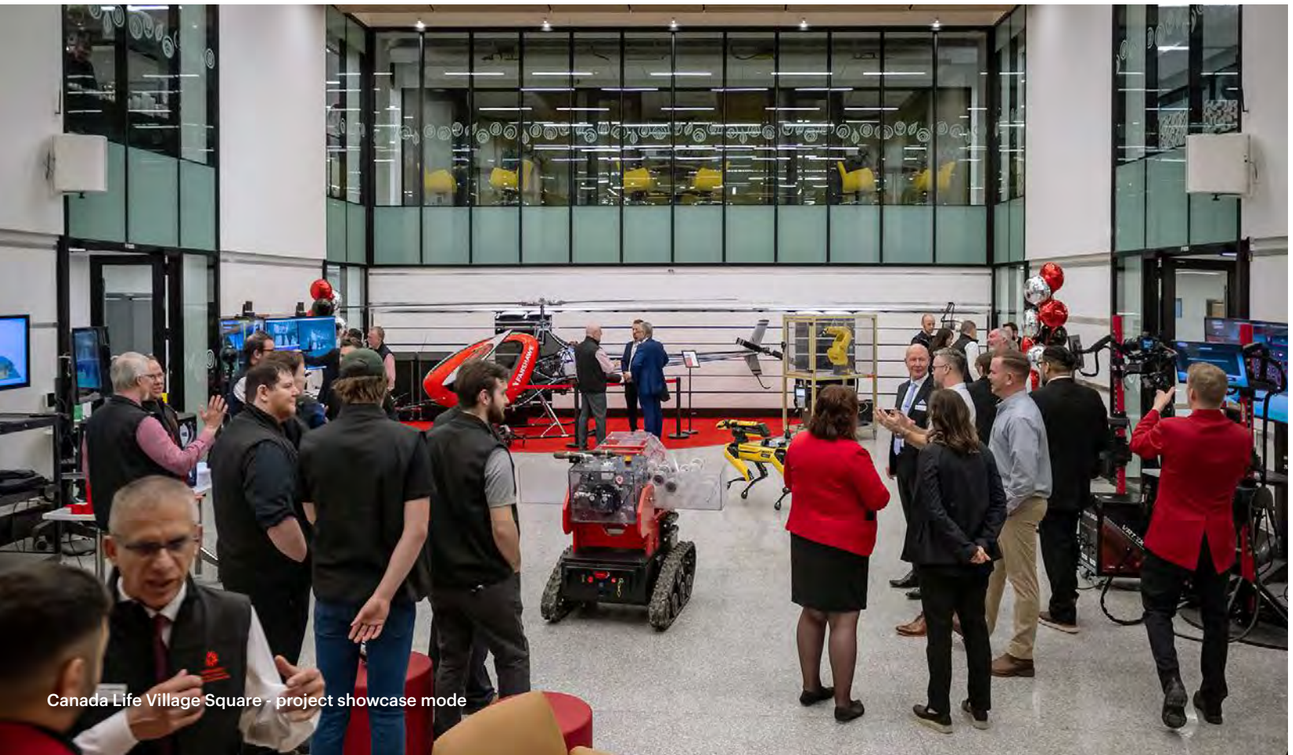


level 4

1. Mechanical
2. Shell Space



Canada Life Village Square - lecture mode



Canada Life Village Square - project showcase mode

education and information sharing

Canada Life Village Square is designed to host community partners to tackle industry, social and sustainability challenges. It provides students a space to showcase their innovations to a broad audience.

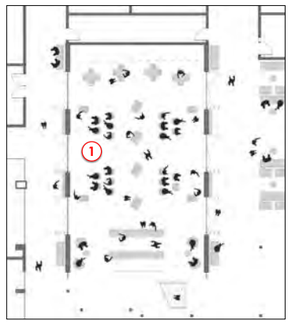
The BIPV cladding system is one of the first installations of its kind in Canada. The architects have presented the project at conferences to share lessons learned with the BIPV system, and the project has been included in the IEC's BIPV technical guidebook, published in print in 2024 and now available to all online.

In 2024 Fanshawe College was host to the conference of facilities administrators for Ontario's 24 Community Colleges, creating an opportunity to share lessons learned within the broader community college sector.

presentation + exhibition
112 retractable seats

classroom and classroom
40 seats + 32 seats

guest lecture
112 retractable seats + 84 seats



project showcase
40 seats

lounge
67 seats