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.**

2026

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: FortWhyte Alive Buffalo Crossing Paul Albrechtsen Visitor Centre
Address: 2505 McGillivray Boulevard, Winnipeg, Manitoba R3Y 1S9, Canada
Year completed: 2025

PROGRAM AND CONTEXT

Project type: [Identify all uses occupying 10% or more of gross floor area]
Admission, shop, cafe, lobby, gender neutral washrooms, staff room, MPR, prefunction, prep kitchen, meeting room, event space

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 __% new and __% renovation]

METRICS* Provide the following information as applicable to your project.

- Site Area: 22795 m^2
- Building gross floor area: 1689.45 m^2

Energy Use Intensity (EUI)
This key metric measures the total energy consumption of a building per unit of gross floor area per year. This figure includes heating, cooling, lighting and operating equipment such as computers and elevators. For industrial and commercial buildings with specific processing equipment, identify this separately from the basic EUI figure.

- Building EUI = 101 kWh/m^2/year
- Process EUI (if appropriate) = N/A kWh/m^2/year
- Reduction in EUI relative to reference building = 60 % please specify the standard used (ASHRAE/MNECB or other)
- State reference standard: https://portal.cagbc

- Recycled materials content: na % by value
- Construction materials diverted from landfill: na %
- Regional materials by value: na
- Water consumption from municipal source: 3827.7 litres/occupant/year

[Include both base building and process consumption]

- Reduction in water consumption: 25.94 %
- State the reference on which the % reduction is based: ■ LEED or other ☐

*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.

FORTWHYTE ALIVE BUFFALO CROSSING

Winnipeg, Manitoba

PROJECT SUMMARY

Buffalo Crossing Paul Albrechtsen Visitor Centre forms a new gateway to FortWhyte Alive's 660-acre urban nature preserve in southwest Winnipeg. Conceived as a living exhibit of climate resilience, reconciliation, and environmental stewardship, the 1,675 m^2 (18,000 sf) mass timber building expands the non-profit's capacity for education, gathering, and revenue-generating programming. It integrates admissions, a café, gift shop, learning spaces, Indigenous gathering and ceremony spaces, and an event venue overlooking Muir Lake.

The building is situated on previously disturbed land within a reclaimed clay quarry, balancing public access with ecological preservation. Its triangular form is oriented 27.53 degrees. It maximizes winter solar gain, limits heat loss, and frames views of the lake and surrounding aspen forest. Winnipeg's extreme climate, ranging from –40°C to +40°C, informed a passive-first design approach supported by low exergy mechanical systems.
Sustainable strategies include a super-insulated, airtight envelope; high performance, bird-friendly glazing; exterior shading; an FSC-certified mass timber structure; and a ground source heat pump with energy recovery ventilation. Designed to achieve Passive House certification and the CaGBC Zero Carbon Building Design Standard, Buffalo Crossing demonstrates that publicly accessible, culturally attuned architecture can meet the highest performance thresholds in one of North America's most demanding cold climates.

MAIN PROJECT DESCRIPTION

1. Strategic Decisions

Buffalo Crossing is the result of deliberate, strategic decisions shaped by ecological sensitivity, long-term operational sustainability, and social responsibility. The building is located on previously disturbed land at the southern edge of the FortWhyte Alive campus, protecting valuable forest habitat while establishing a welcoming public gateway. This siting strategy reinforces decades of land reclamation while increasing access and visibility from the primary motorway into the city.

The triangular form emerged through site analysis, first principles, and iterative energy modelling informed by future climate projections. One point faces north, minimizing façade area with limited solar exposure, while the northwest elevation opens to expansive lake views. The south façade addresses the roadway, balancing a strong civic presence with calibrated transparency to optimize passive solar gain. The building section is shaped so the upper level shades the lower level, reducing summer heat gain while preserving year-round daylight and views.

Passive design principles were prioritized over mechanical complexity. Continuous high-performance insulation, airtight construction, optimized glazing ratios, and thermal-bridge-free detailing reduce heating demand, allow for smaller mechanical systems, and increase resilience. A centralized service spine consolidates vertical circulation and building systems, reducing distribution losses and material use while allowing the mass timber structure to remain exposed throughout public spaces.

2. Community

Buffalo Crossing enhances community connection by transforming FortWhyte Alive's southern boundary into an inclusive and accessible threshold. The campus is clearly legible from the city, welcoming visitors by foot, bicycle, public transit, or personal motor vehicle. Coordination with transit authorities resulted in a new bus stop, reducing automobile dependency, supporting equitable access while reducing reliance on private vehicles.

The building supports year-round programming for diverse audiences, including school groups, families, Indigenous communities, and events. Flexible interior spaces accommodate informal gathering, structured learning, and large-scale events. Revenue-generating amenities, such as the café, gift shop, and event space, contribute to long-term financial sustainability while remaining aligned with FortWhyte Alive's educational and cultural mandate.

3. Site Ecology

The project builds upon over six decades of ecological restoration on a former clay quarry site. Landscape strategies prioritize climate resilience and regenerative management, reinforcing FortWhyte Alive's broader ecological network. Native planting species suited to local soils were reintroduced, enhancing biodiversity and supporting habitat creation.

Bioswales planted with more than 40 species of grasses, perennials, shrubs, and trees capture and filter stormwater from paved areas before it enters Muir Lake. Tree placement mitigates heat island effects and supports passive cooling of the building. These strategies function as part of a larger watershed system.

4. Light and Air

Access to daylight and fresh air was fundamental to the building's performance and experience. Large expanses of high-performance, bird-friendly glazing bring daylight deep into occupied spaces, with most regularly occupied floor area within seven metres of windows. Orientation, massing, and operable exterior screens balance transparency with thermal performance while maintaining visual connections to the landscape.

Fresh air is supplied through a Passive House certified energy recovery ventilator that maintains high indoor air quality while reducing energy loss. External doors at the corners of the building can be opened to encourage cross-flow ventilation. Primary ventilation is provided through the energy recovery ventilator to maintain indoor temperature and humidity. Fresh air quantities are provided per ASHRAE 62.1-2019 requirements based on space type, floor area, and occupancy. Efficient LED lighting, daylight-responsive controls, and reduced lighting power density further lower electrical demand. Projected annual energy consumption for interior and exterior lighting is estimated at 26.8 kWhr/m^2.

5. Wellness

Wellness is addressed through material selection, spatial organization, and connection to nature. Exposed mass timber provides biophilic warmth, acoustic comfort, and visual calm, contributing to physical and psychological well-being. Views to the lake, forest, and sky are prioritized throughout public spaces, reinforcing FortWhyte Alive's mission to connect people with the natural world.

The building is fully barrier-free, with intuitive circulation and generous gathering areas supporting visitors of all ages and abilities. Dedicated spaces for ceremony, reflection, and storytelling—anchored by a star blanket floor pattern—acknowledge cultural wellness alongside physical comfort.

6. Water Conservation

Water conservation strategies address building and site performance. Low-flow plumbing fixtures reduce potable water demand, while landscape design minimizes irrigation requirements. Stormwater is managed on-site through bioswales and permeable surfaces, reducing runoff while improving water quality and recharge. The building's water consumption is modeled at 2.27 liters / m^2/occupant/annum, or a 25.94% reduction versus the LEED reference standard.

7. Operating Energy – Present and Future

Buffalo Crossing's super-insulated, airtight envelope dramatically reduces heat loss, while optimized glazing captures beneficial solar gains. Remaining heating and cooling loads are met through a ground-source heat pump, radiant in-floor conditioning, and energy recovery ventilation. Annual heating demand is modeled at 13.83 kWh/m^2-year, and cooling demand at 5 kWh/m^2-year.

The building is fully electrified using Manitoba Hydro electricity and is designed to operate without fossil fuels, supporting long-term decarbonization goals. Its flexible systems can adapt to future renewable energy sources and grid advancements, providing lasting relevance and resilience.

8. Materials and Resources

Material selection prioritized durability, low embodied carbon, and occupant health. The all-mass timber structure—comprising GLT columns and beams with CLT floors, walls, roof, and cores—serves as structure and finish, reducing redundant materials. FSC-certified wood sequesters carbon while contributing to a warm, tactile interior environment.

Low-carbon concrete was used selectively for foundations and topping slabs. A disciplined modular grid optimized material dimensions, minimized offcuts, and reduced construction waste. Materials were selected for longevity and low maintenance, supporting a 100-year service life.

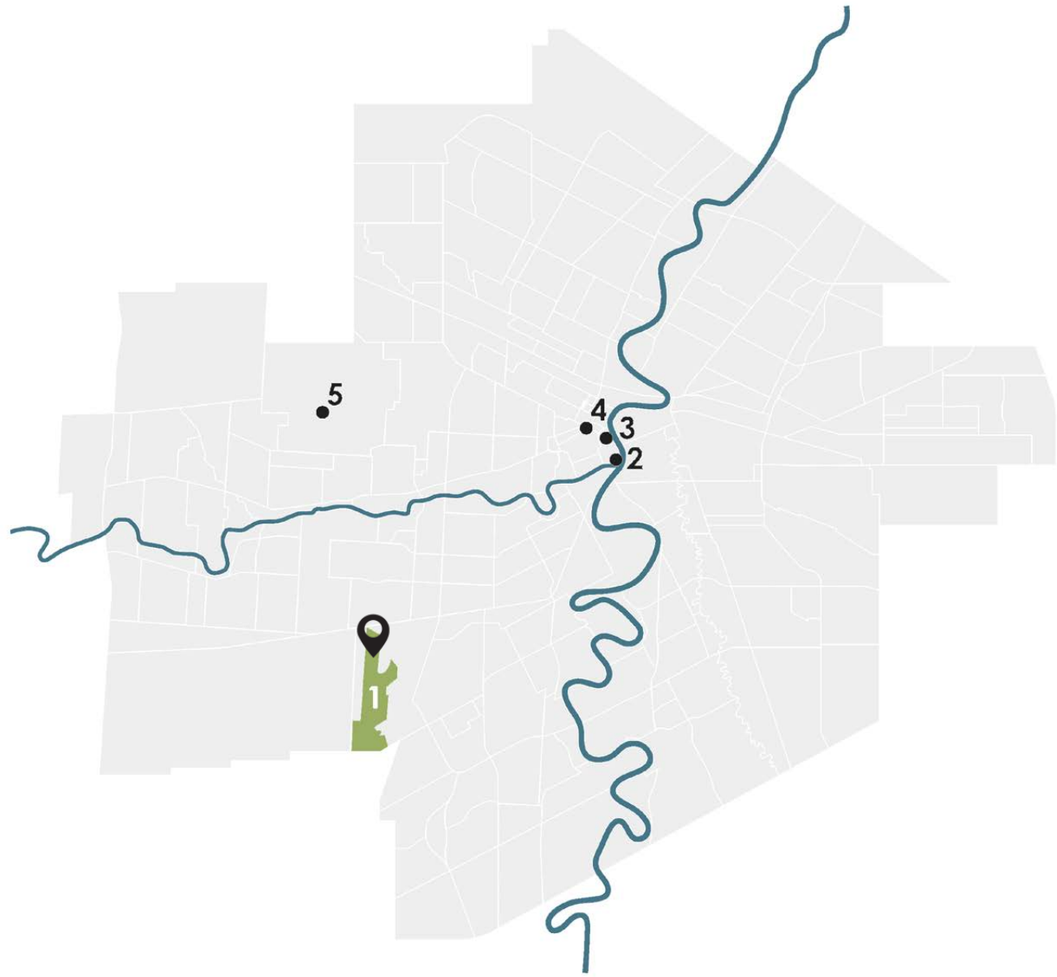
9. Building Life Cycle Considerations

Whole-life carbon reduction informed material and systems decisions. The mass timber structure reduces embodied carbon while supporting long-term adaptability. Operational carbon is reduced through Passive House performance and electrified systems aligned with a decarbonizing grid.

High-performance envelope design extends the building's "time to freeze" during winter power outages, enhancing occupant safety in extreme conditions. The building's embodied carbon is estimated at 385 kg CO_2e/m^2.

10. Education and Information Sharing

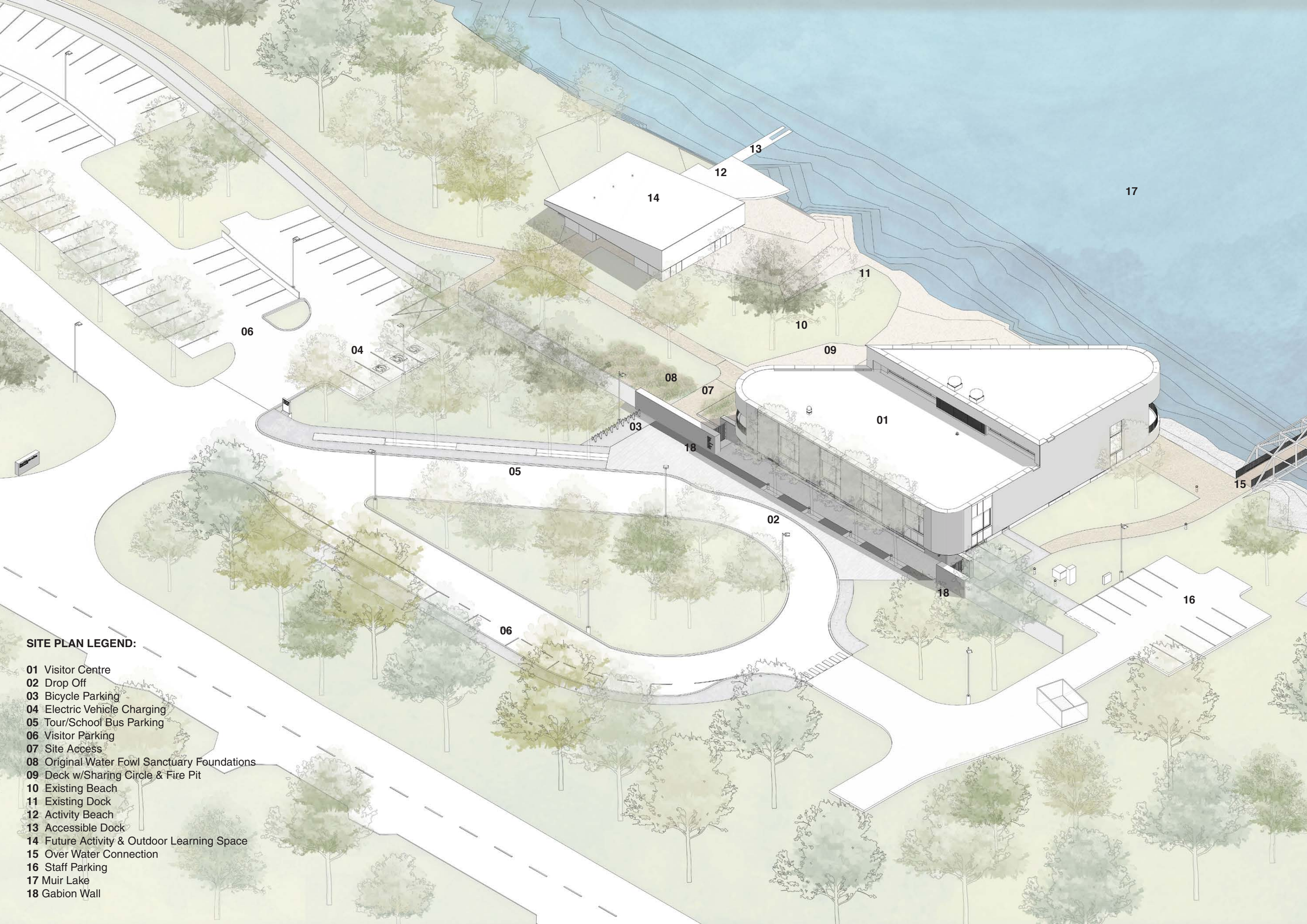
As a visitor centre within a nature preserve, Buffalo Crossing functions as a public teaching tool. Interpretive exhibits, visible building systems, and integrated programming communicate principles of passive design, climate resilience, and Indigenous stewardship. By making advanced building science and cultural narratives legible and engaging, the project inspires learning, reflection, and broader cultural transformation toward low-carbon living.



Winnipeg, MB, Canada

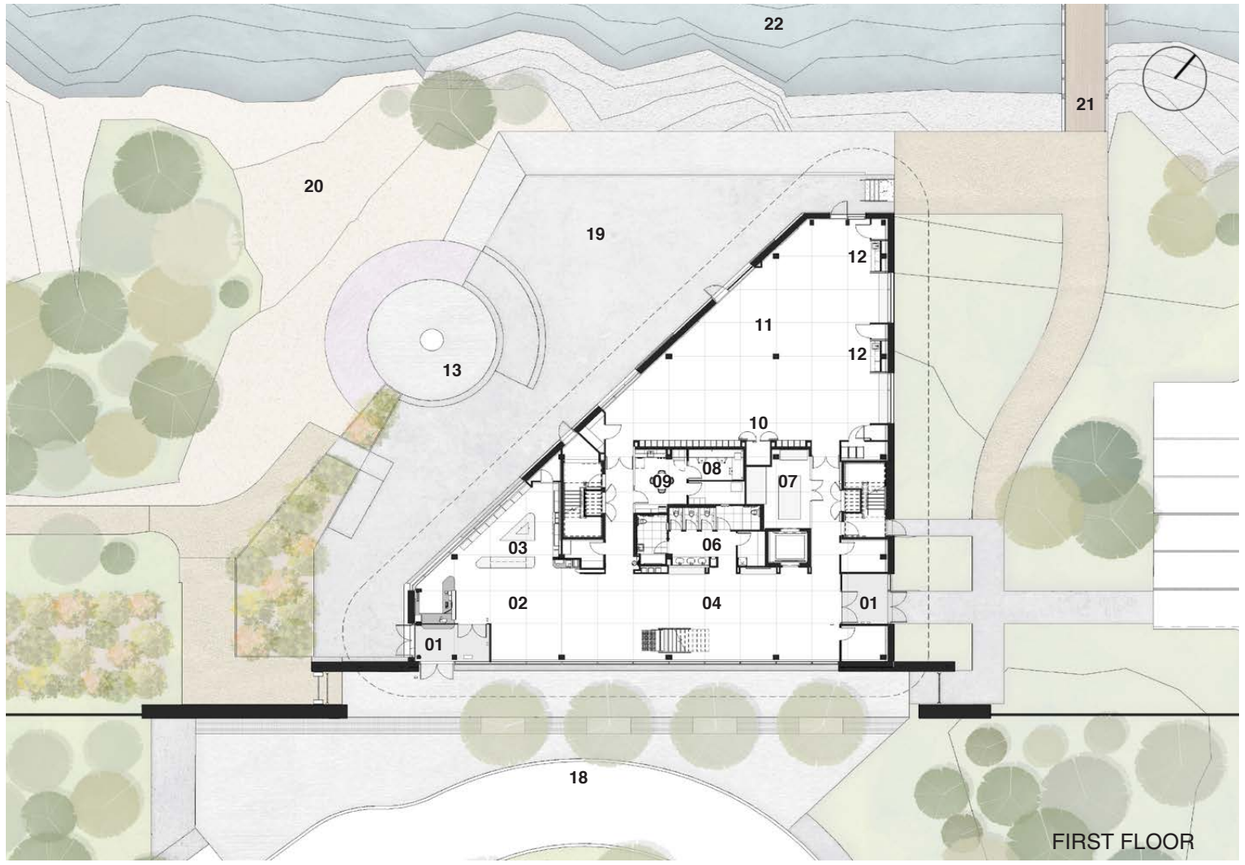
FortWhyte Alive, Winnipeg

1 FortWhyte Alive 2 The Forks 3 Canadian Museum for HumanRights
4 Portage & Main 5 James A. Richardson International Airport

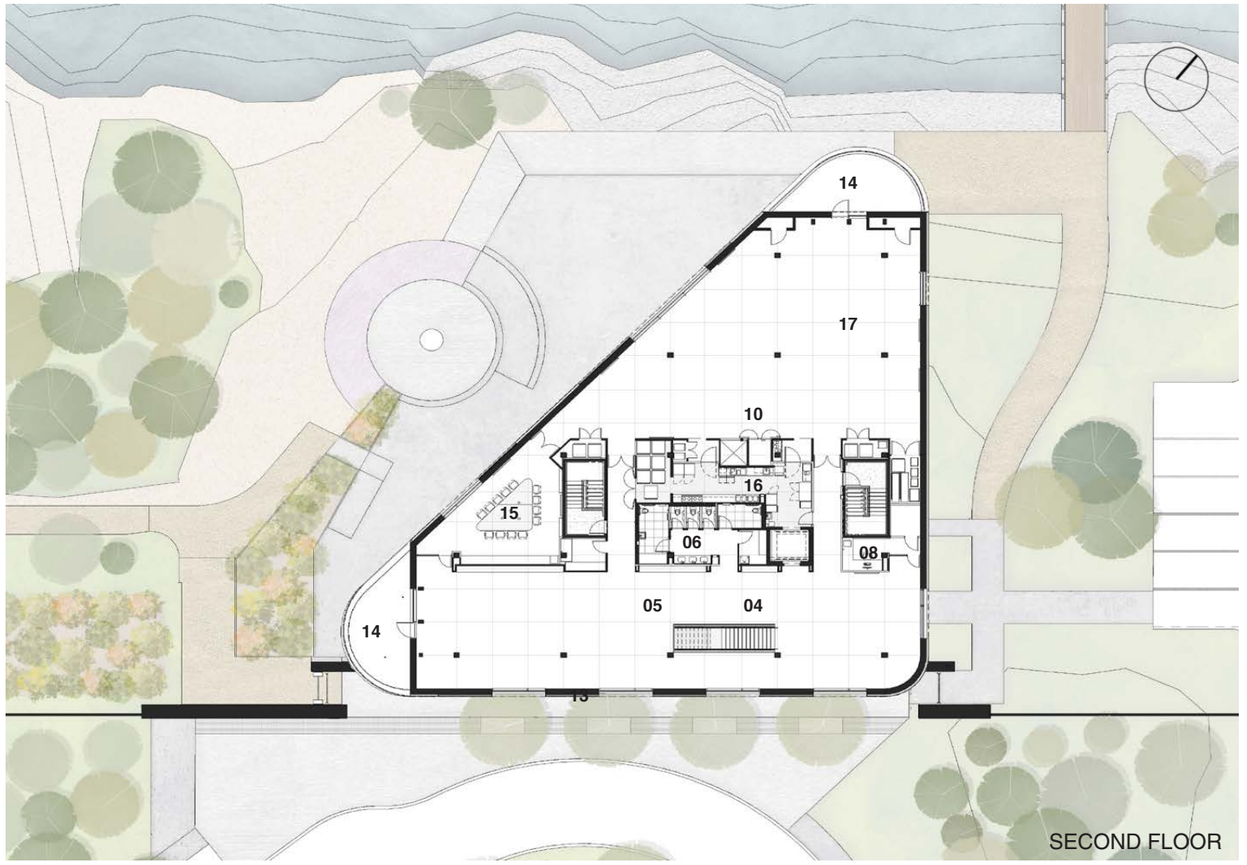


SITE PLAN LEGEND:

01 Visitor Centre
02 Drop Off
03 Bicycle Parking
04 Electric Vehicle Charging
05 Tour/School Bus Parking
06 Visitor Parking
07 Site Access
08 Original Water Fowl Sanctuary Foundations
09 Deck w/Sharing Circle & Fire Pit
10 Existing Beach
11 Existing Dock
12 Activity Beach
13 Accessible Dock
14 Future Activity & Outdoor Learning Space
15 Over Water Connection
16 Staff Parking
17 Muir Lake
18 Gabion Wall



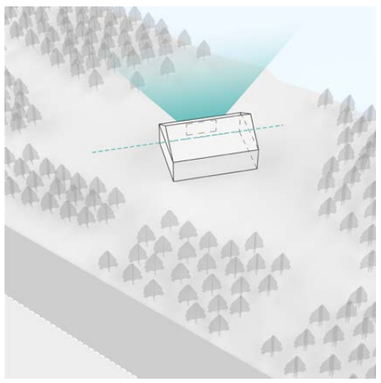
FIRST FLOOR



SECOND FLOOR

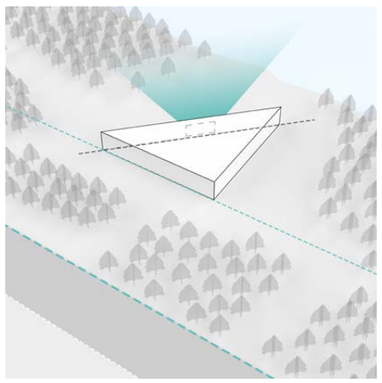
PLAN LEGEND:

01 Vestibule
02 Admission
03 Nature Gift Shop
04 Lobby
05 Elder's Room
06 WC
07 Mechanical
08 Office
09 Staff Room
10 Partition
11 MPR
12 Kitchenette
13 Sharing Circle
14 Balcony
15 Meeting Room
16 Serving Kitchen
17 Event Space
18 Drop Off Area
19 Deck
20 Beach
21 Bridge
22 Muir Lake
23 Gabion Wall



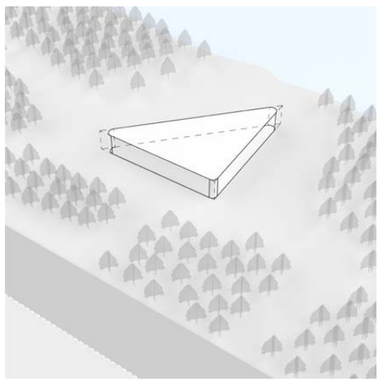
VIEW

Panoramic view across reclaimed naturalized lakes from original adventure site building.



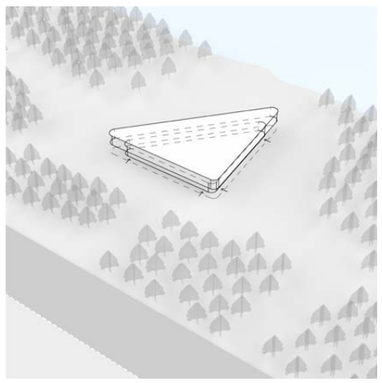
SHAPING

Informed by climate, site, orientation, and performance, the shape maintains and expands panoramic views and provides a direct presence parallel the motorway.



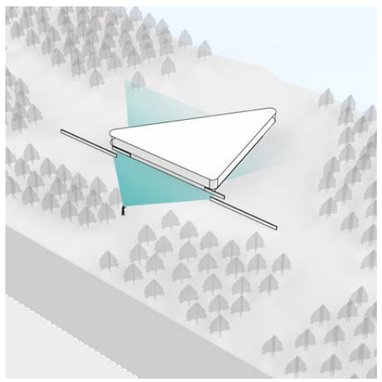
SOFTEN

Soften edges to harmonize with naturalized setting.



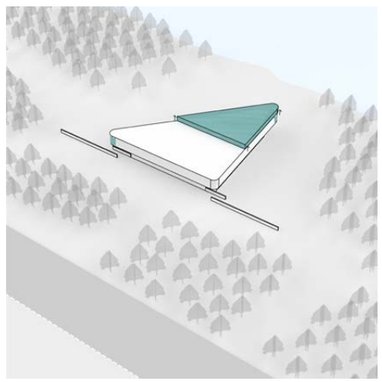
TRANSITION

Set ground floor back to shade lower level forming a transitional exterior space at the ground floor.



GATEWAY

Delineate between public and naturalized realms via gabion wall with visual access through visitor centre.



LOOK OUT

Increase volume in event space and carve out balcony lookpoints.

PROJECT INFO

Building:	Visitor Centre
Height:	2 Storeys
Area:	1,670 m²
Sustainability:	Passive House + CaGBC Zero Carbon Building Design
Thermal Energy Demand Intensity (TEDI):	14.7 kWh/m²s
Total Energy Use Intensity (TEUI):	65 kWH/m² year avg
Embodied Carbon (500kgCOe/m2 limit for ZCB):	385 kgCOe/m²
Greenhouse Gas Intensity (GHGI):	0.19 kgCOe/ m² year
Phase:	Construction

DESIGNING FOR THE FUTURE

Warmer Seasons

2021 — +29C
Winnipeg, MB

2041-2060 — +33C
Comparable to North Platte, NE

2081-2099 — +34C
Comparable to Amarillo, TX

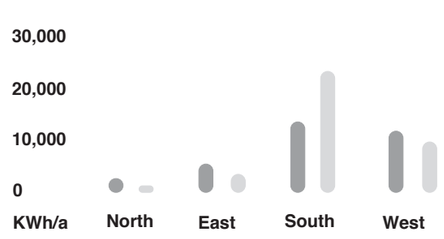
Colder Seasons

2021 — -33C
Winnipeg, MB

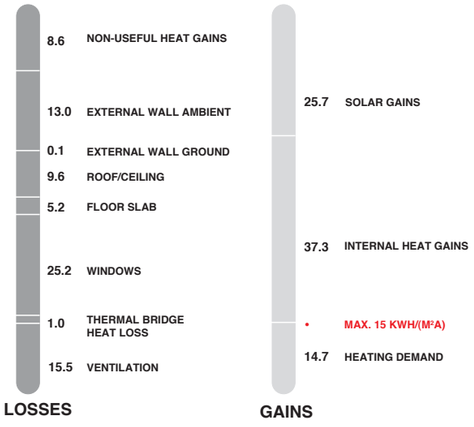
2041-2060 — -30C
Comparable to Duluth, MN

2081-2099 — -27C
Comparable to Minneapolis, MN

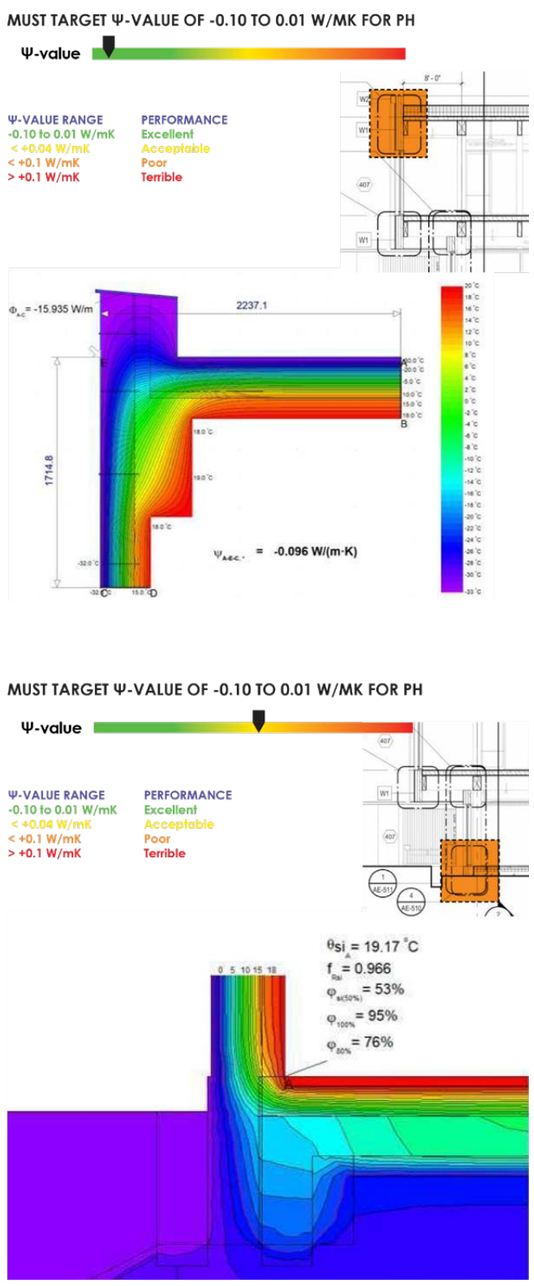
SOLAR SHADING ANALYSIS

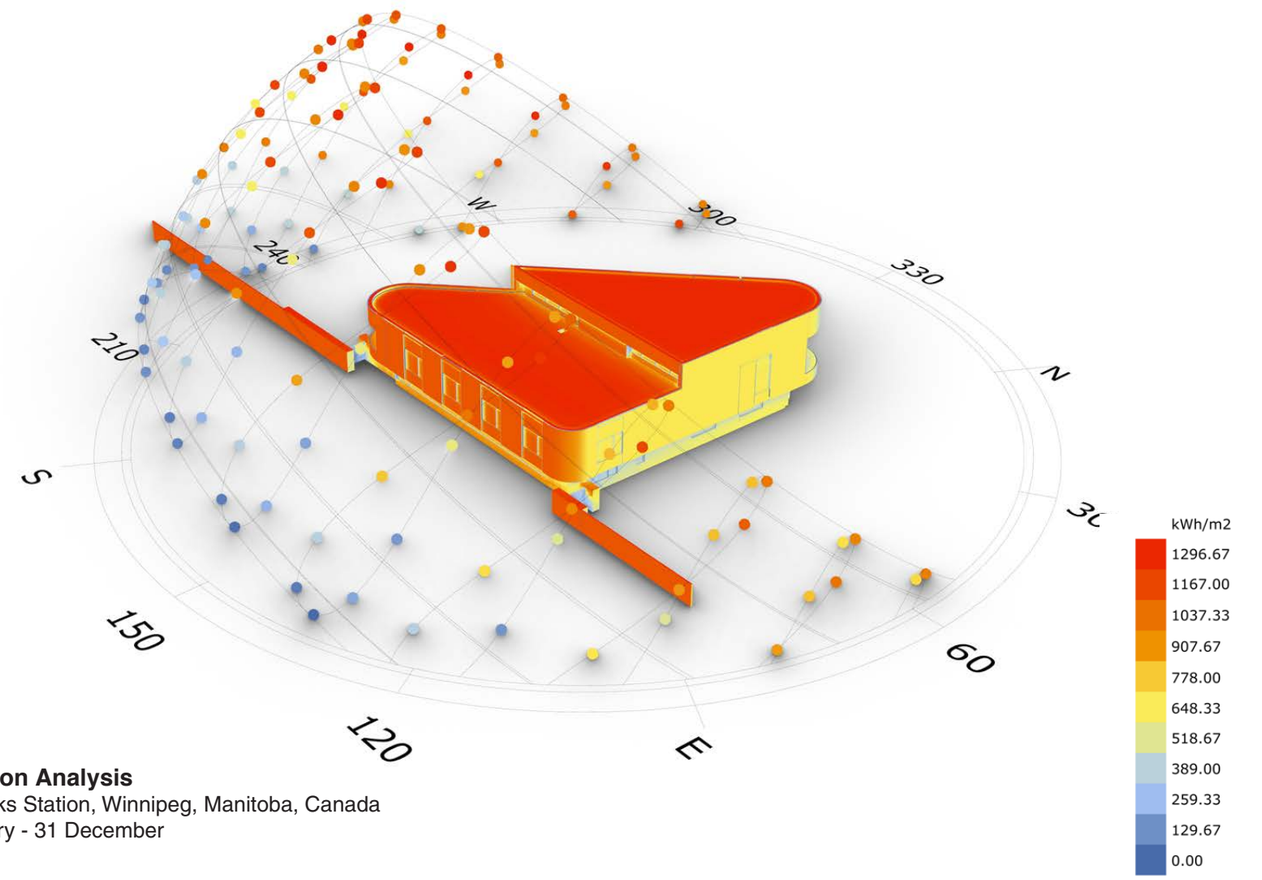


ENERGY BALANACE kWh/(m²a)



THERMAL BRIDGING

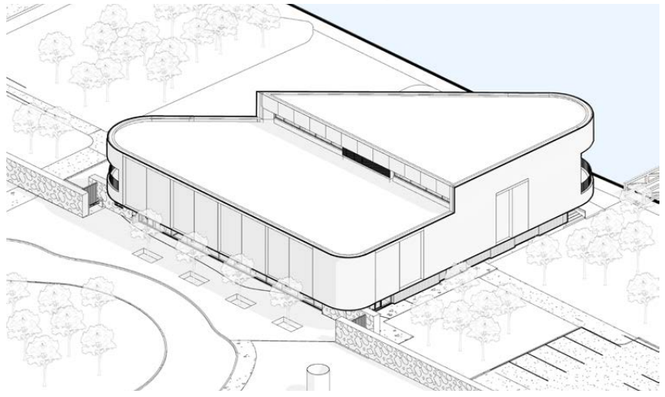


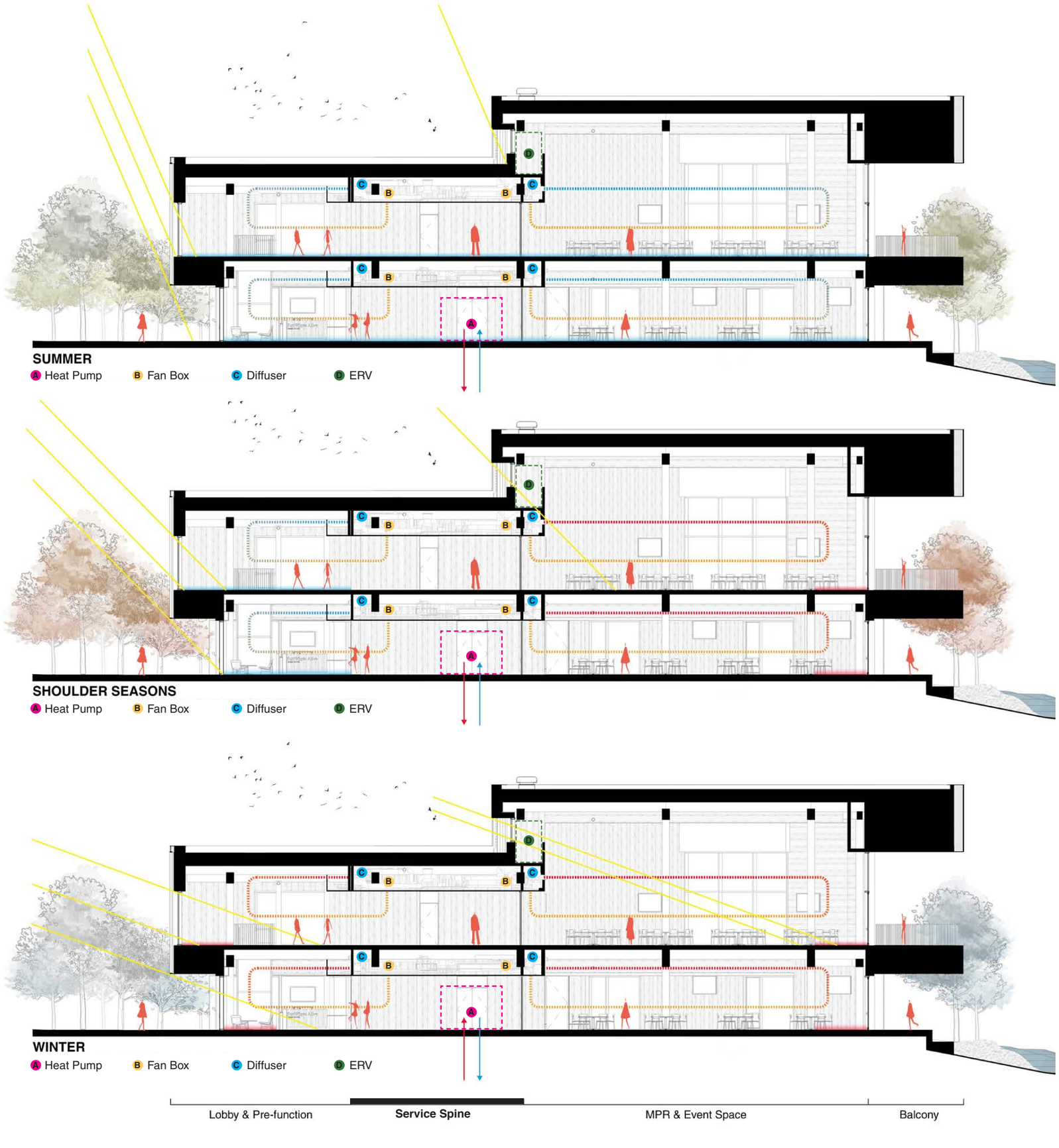


Radiation Analysis
The Forks Station, Winnipeg, Manitoba, Canada
1 January - 31 December

Passive Design | Solar Shading: Late Spring, Summer, and early Autumn

Passive Design | Solar Shading: Late Autumn, Winter, and early Spring



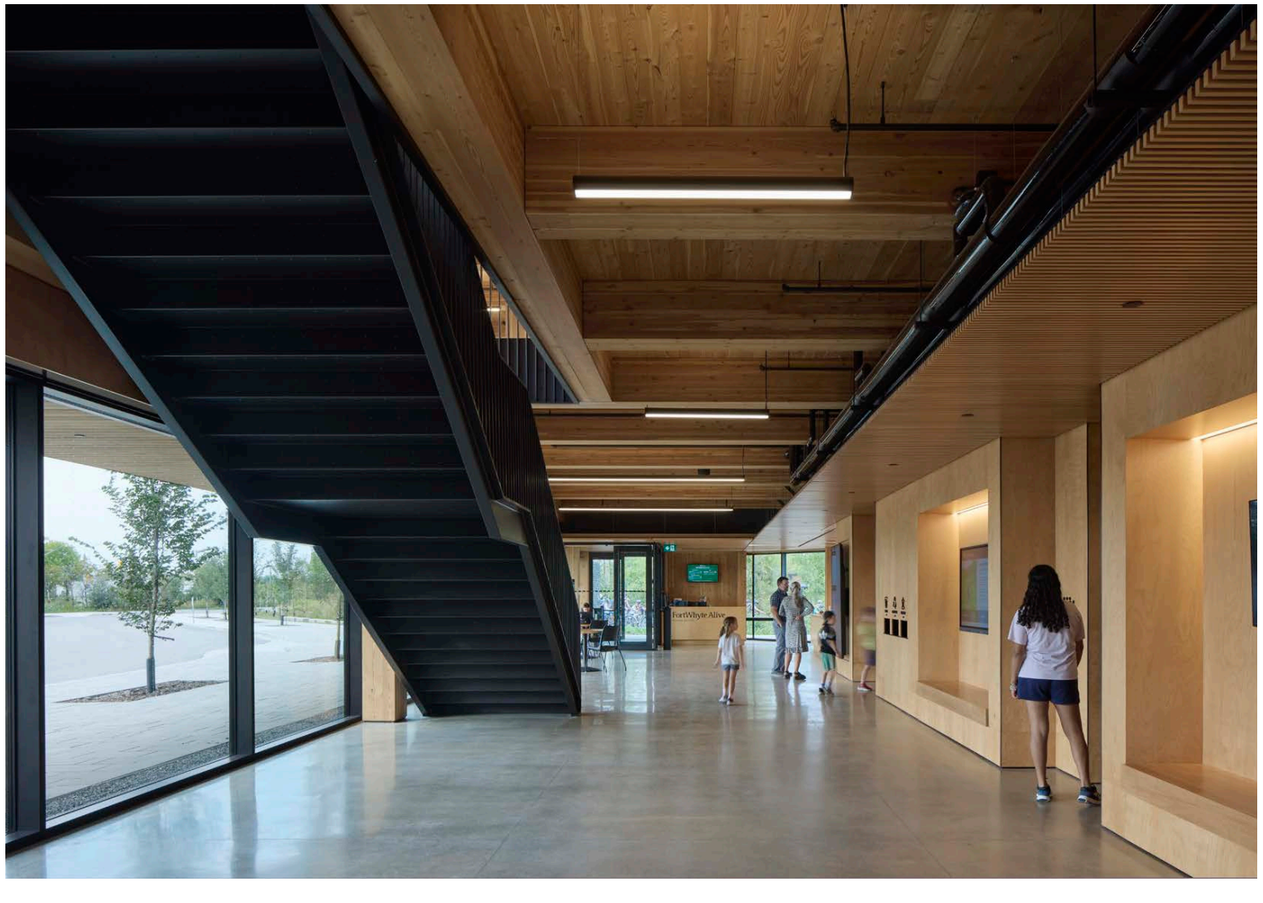

SUMMER
A Heat Pump
B Fan Box
C Diffuser
D ERV
SHOULDER SEASONS
A Heat Pump
B Fan Box
C Diffuser
D ERV
WINTER
A Heat Pump
B Fan Box
C Diffuser
D ERV
Lobby & Pre-function
Service Spine
MPR & Event Space
Balcony

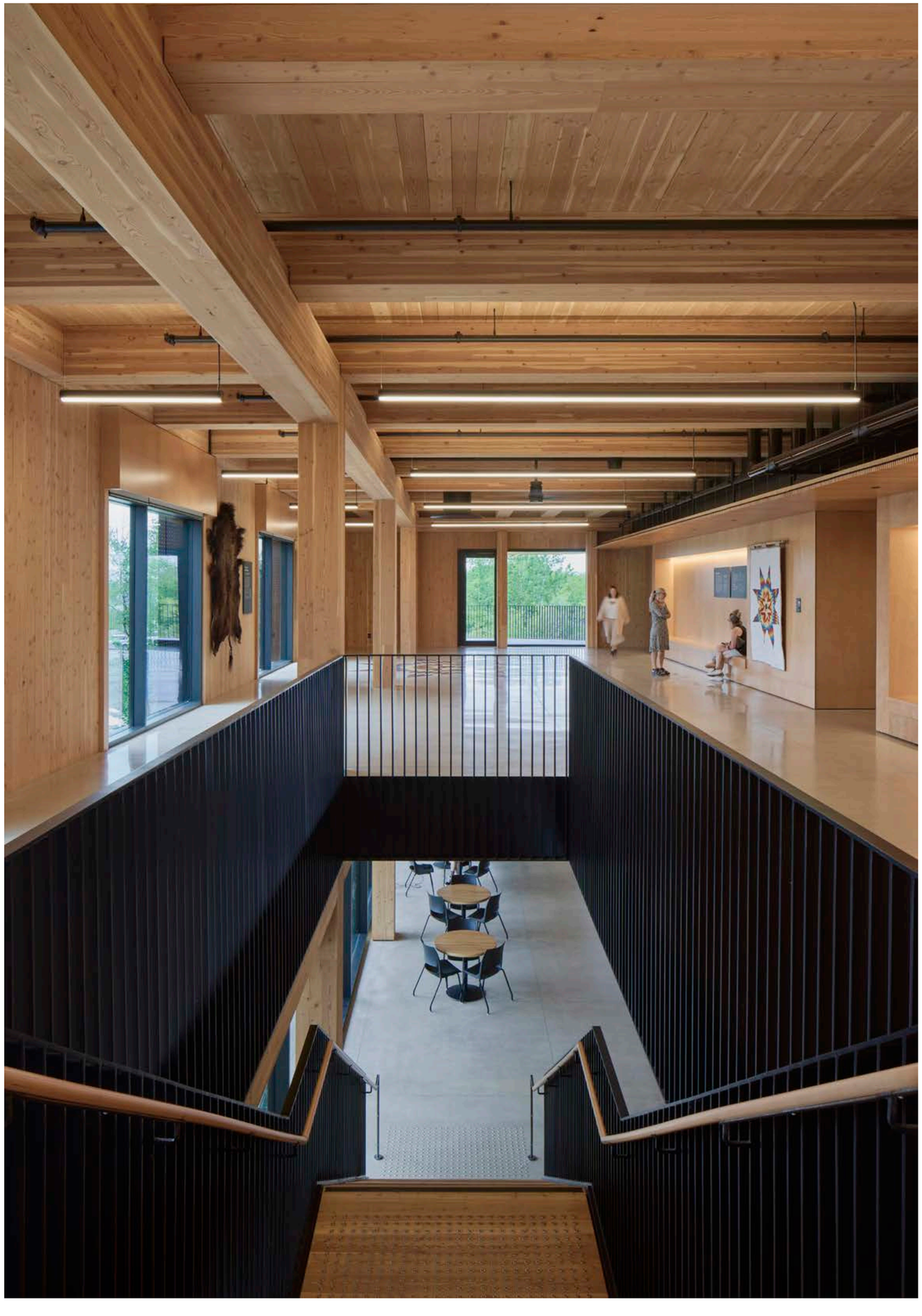

Fort Whyte Alive
Buffalo Crossing
Pool Admission
Visitor Centre

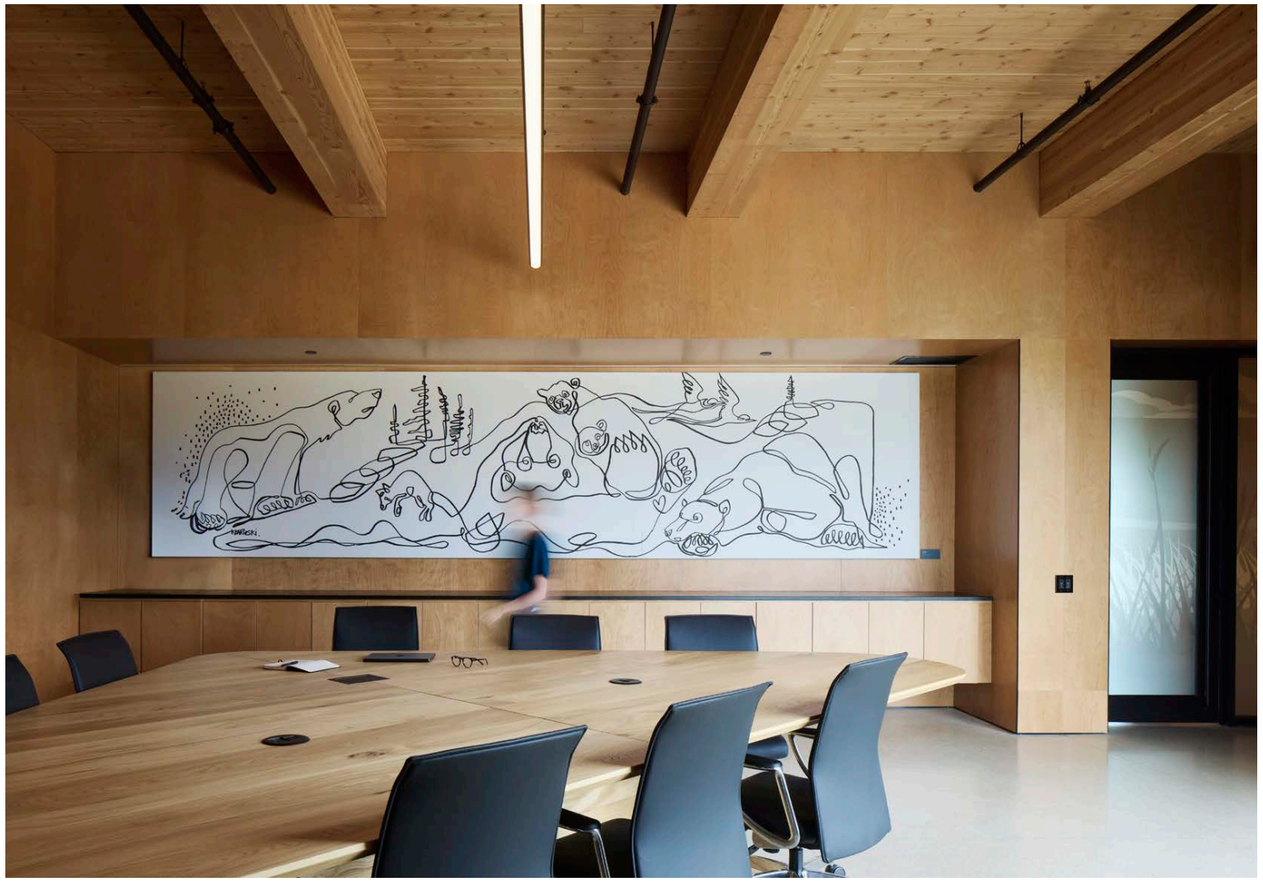

PortWhyte Alive

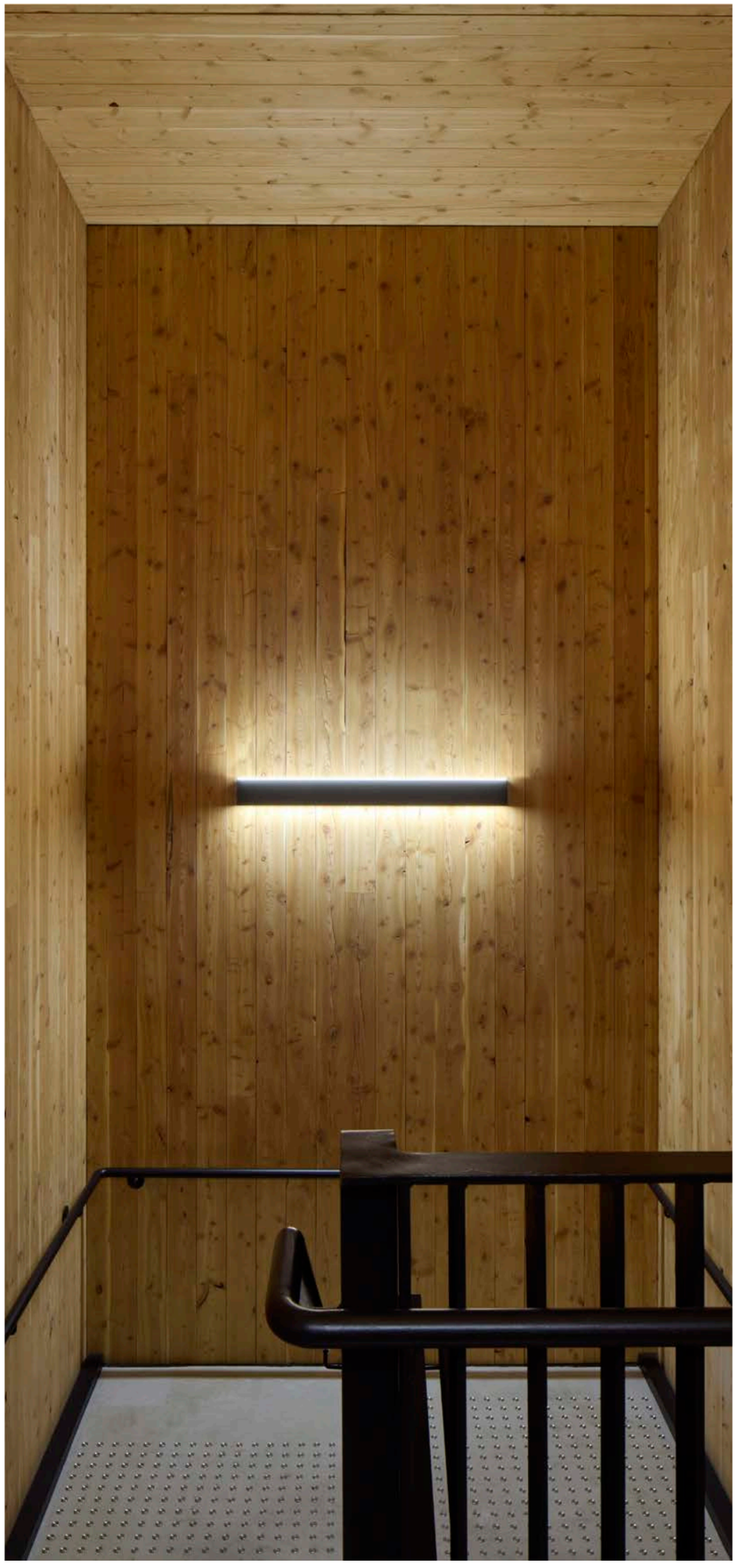

COFFEE


COFFEE


FortWhyte Alive





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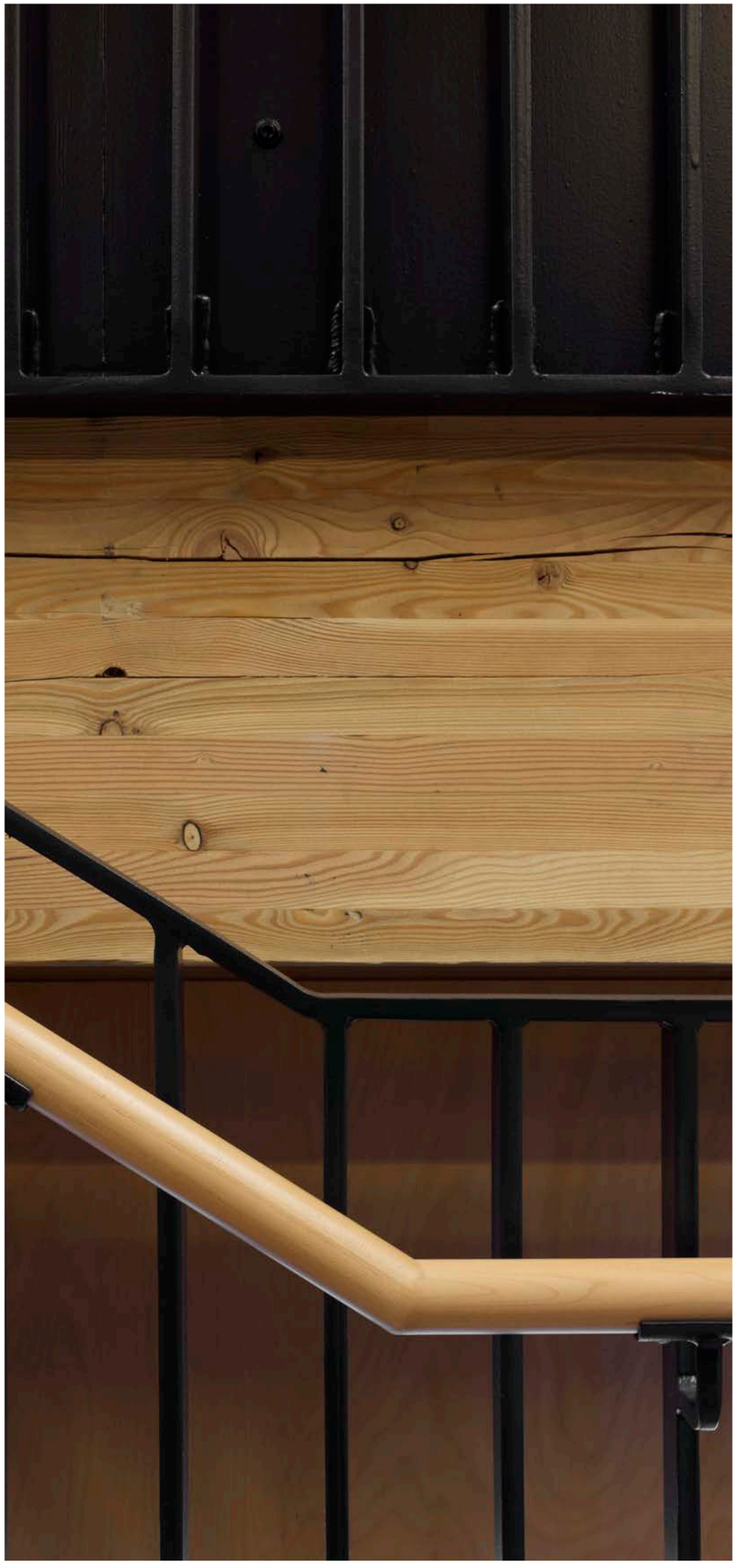

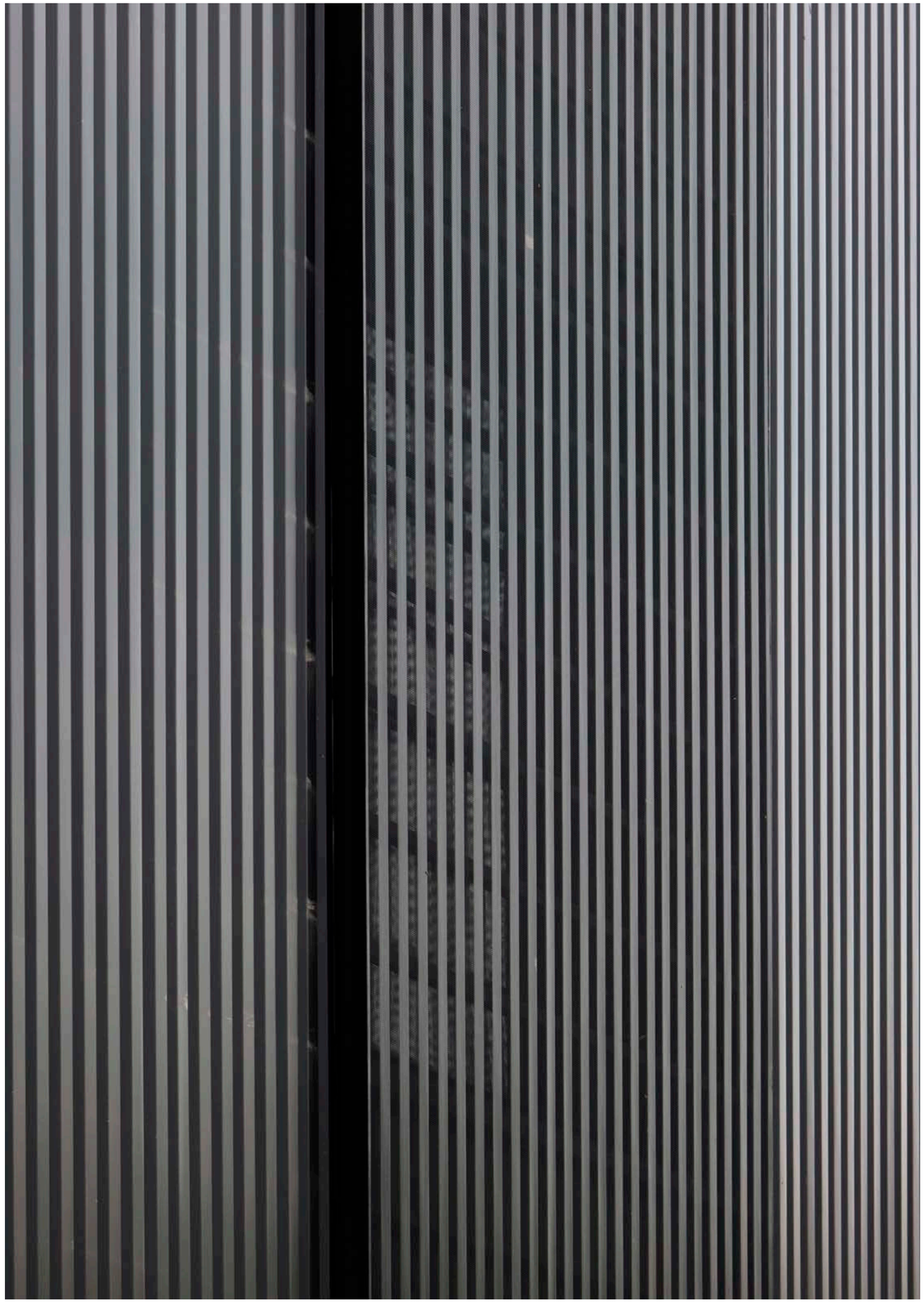

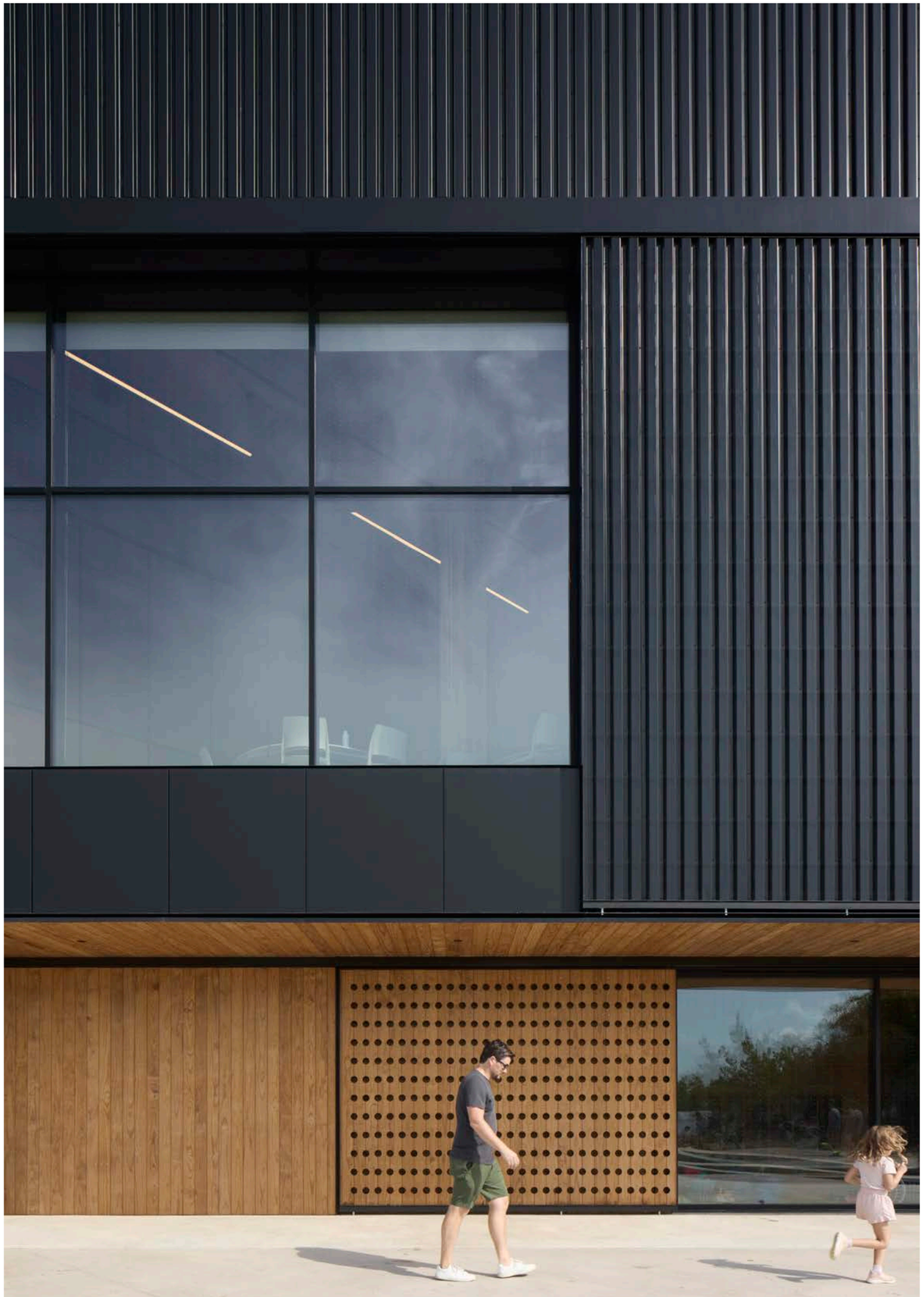

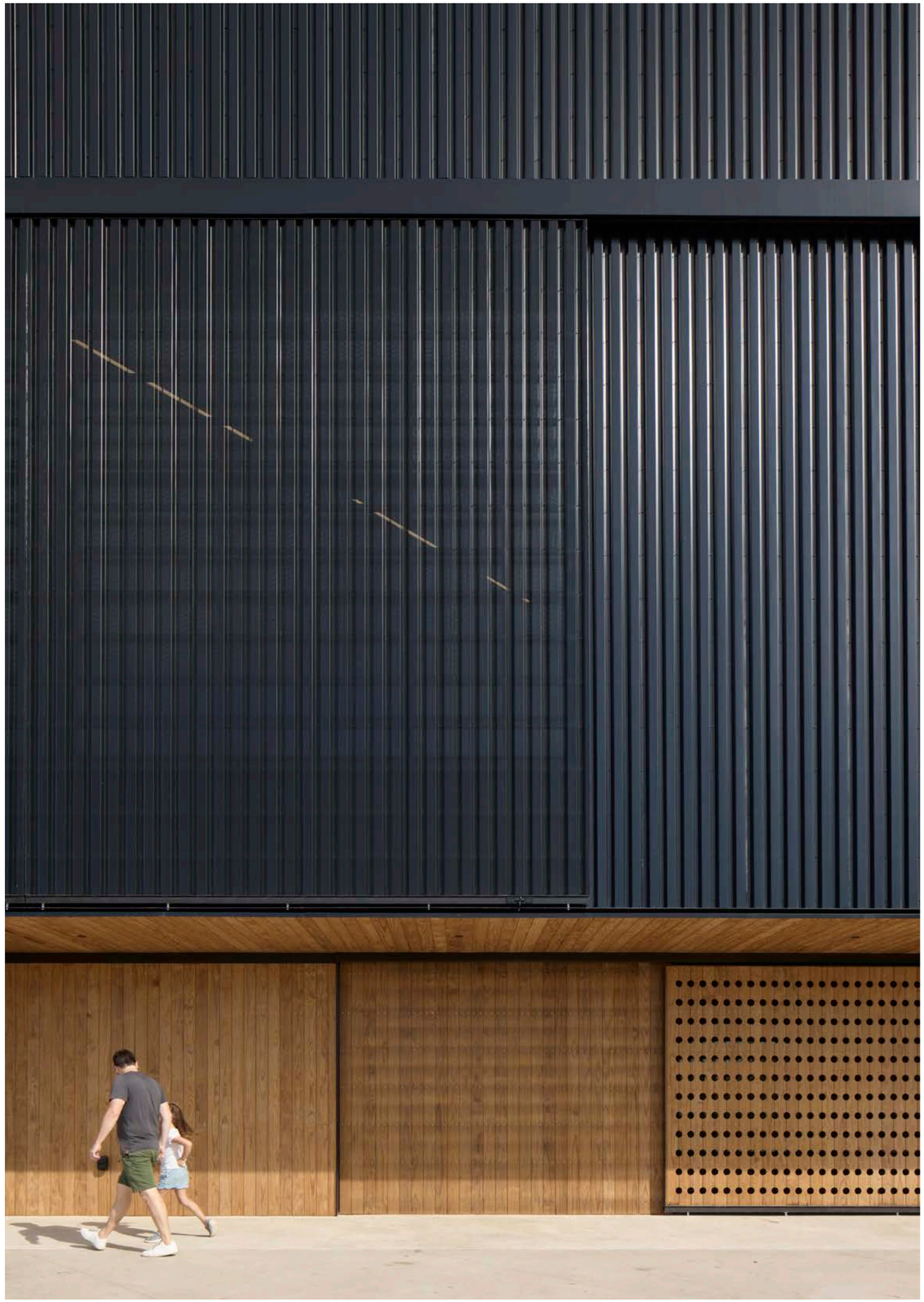

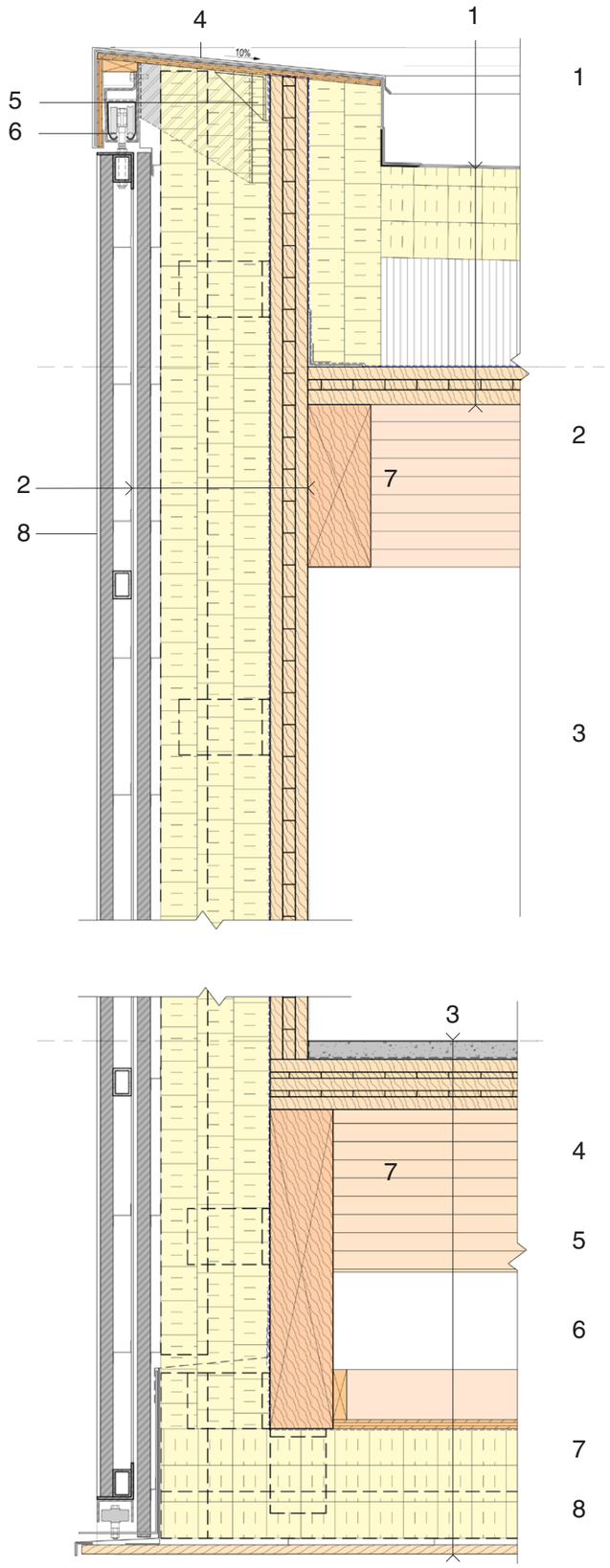

SECTION THROUGH SCREEN

1 **ROOF ASSEMBLY:**
- 2-ply sbs membrane
- 2” asphalt impregnated dual density mineral wool board insulation
- 8” (2 x 4”) polyiso board insulation
- tapered board insulation
- self adhering vapour retarder/air barrier membrane/temporary roofing membrane
- 4 1/8” clt floor slab
- glulam structure

R-78 effective

2 **WALL ASSEMBLY:**
- 7/8” corrugated metal (full height sheets)
- air space varies c/w horizontal z-girts @ 15” o.C.
- 12” (3 X 4”) mineral wool board insulation & thermally broken façade substructure
- vapour permeable self- adhered air barrier membrane
- 4 1/8” clt wall panel

R-45 effective

3 **SOFFIT ASSEMBLY:**
- 2 1/2” concrete topping c/w hydronic piping
- 5 1/2” clt floor slab
- glulam structure
- wood framing
- 1” exterior plywood sheathing
- vapour permeable self- adhered air barrier membrane
- 12” (3 x 4”) mineral wool board insulation & thermally broken façade substructure
- air space varies c/w z-girts @ 16” o.C.
- 1” Thermo wood cladding

R-45 effective

4 Preformed black prefinished metal c/w 10% back slope

5 Galvanized steel bracket support c/w steel gusset plate @ 4’ O.C., on 2” thermal break

6 Heavy-duty track Mounted to continuous steel angle on galvanized steel bracket support c/w steel gusset plate @ 4’ O.C., on 2” thermal break

7 Heavy timber beam.

8 Sliding screen plate steel frame & 7/8” perforated corrugated metal (full height sheets)