FortWhyte Alive Buffalo Crossing

Winnipeg, Manitoba, Canada

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The 18,000 sf two-story mass timber Visitor Centre will consist of admissions, gift shop, café, lobby, gender neutral washrooms, prep kitchen, learning, pre-function, indigenous, and event spaces.

The new marquee gateway to FortWhyte Alive's 660 acre nature campus, offering environmental education and recreation programs, Buffalo Crossing will be a living exhibit of climate resilience, reconciliation, and stewardship, facilitating expanded programming and revenue for the non-profit.

Set back on the site amidst wispy aspens, Buffalo Crossing is perched between and over granite gabion walls, concealing the naturalized site beyond, while providing access through paired offset gabion walls. Open, transparent, and welcoming, Buffalo Crossing is designed to draw people in, framing views and connecting visitors to the campus.

Triangular in form with a reduced north façade with limited solar exposure, the northwest façade opens up to picturesque views, while the largely transparent south façade faces the motorway providing a strong physical presence. A service spine bisects the plan separating pre-function along the south from event spaces overlooking the lake.

The upper volume shading the lower, steps up at the event space. Rounded corners soften Buffalo Crossing's presence within the aspen forest. Two ends of the upper volume are carved out to form balconies. Features supporting Indigenous culture were carefully curated including language, interpretive elements, and Star Blanket pattern celebrating Indigenous history and knowledge. The bison (buffalo) make an appearance in the Donor Wall, foretelling the live heard on site.

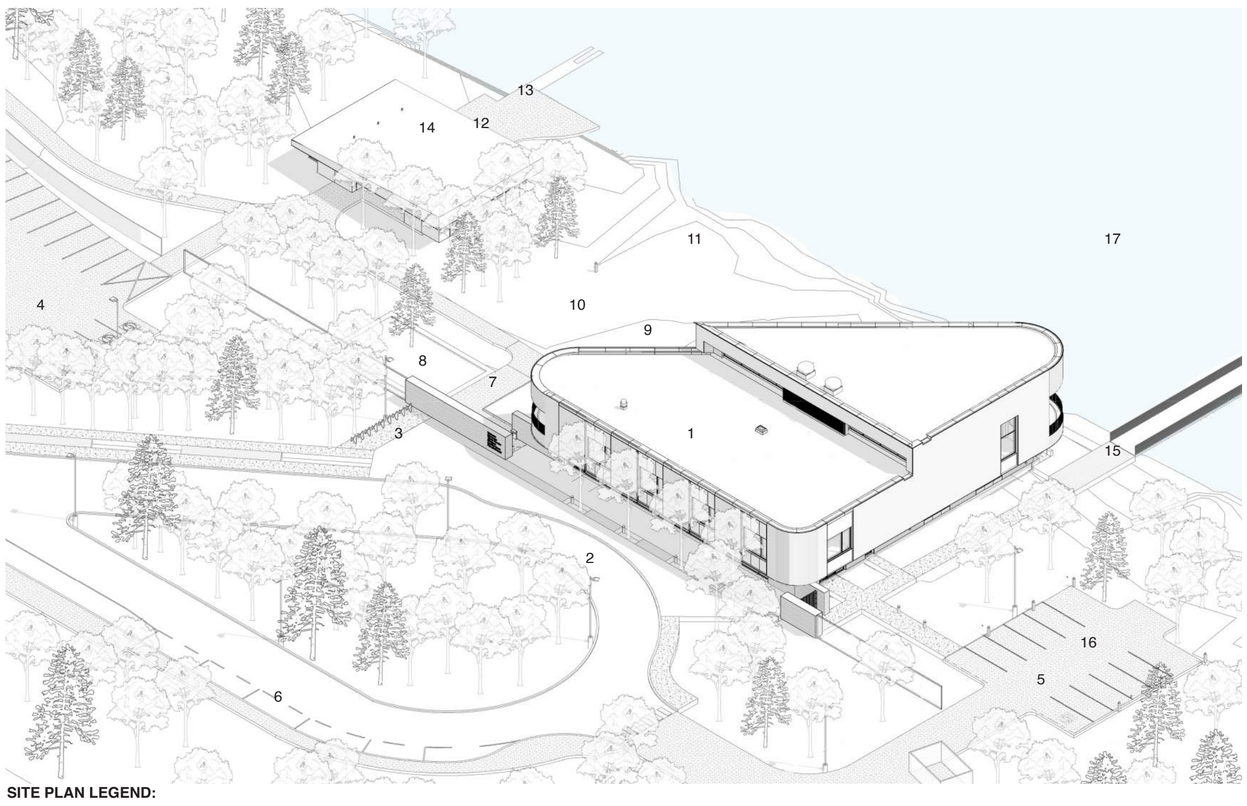
Special consideration was given to Winnipeg's extreme climate with temperatures ranging from -40° C to +40° C and future projected climate data to inform the design. Buffalo Crossing is targeting Passive House Certification and has achieved CaGBC's Zero Carbon Building Design Standard through rigorous collaboration with energy performance specialists, mechanical and building enclosure engineers.

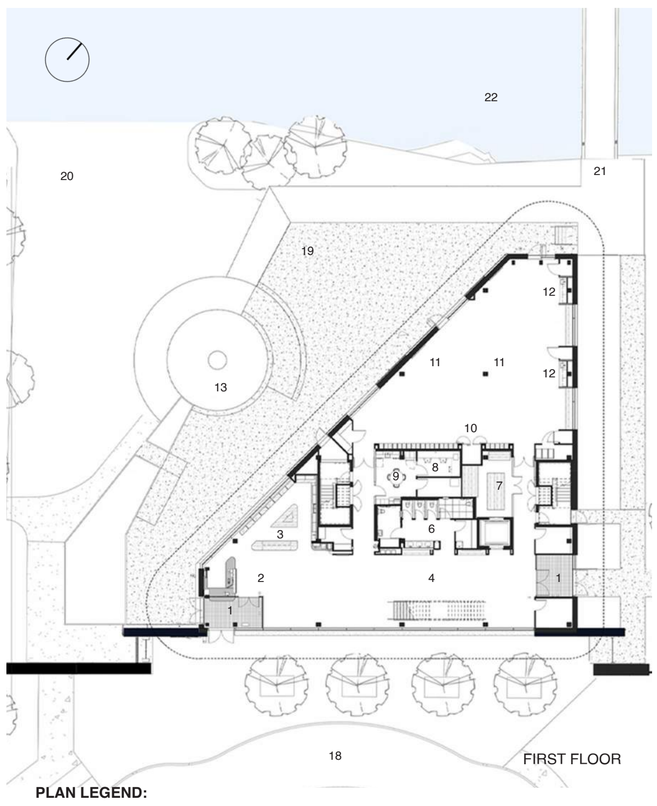
Large bird-friendly insulating glass units passively harvest solar heat during the heating season, while the overhang and operable screens, theatrically opening and closing in response to the sun, passively shade the interiors during the cooling season. Paired with a high-performance building enclosure, the heating energy demand is lowered by ~90%.

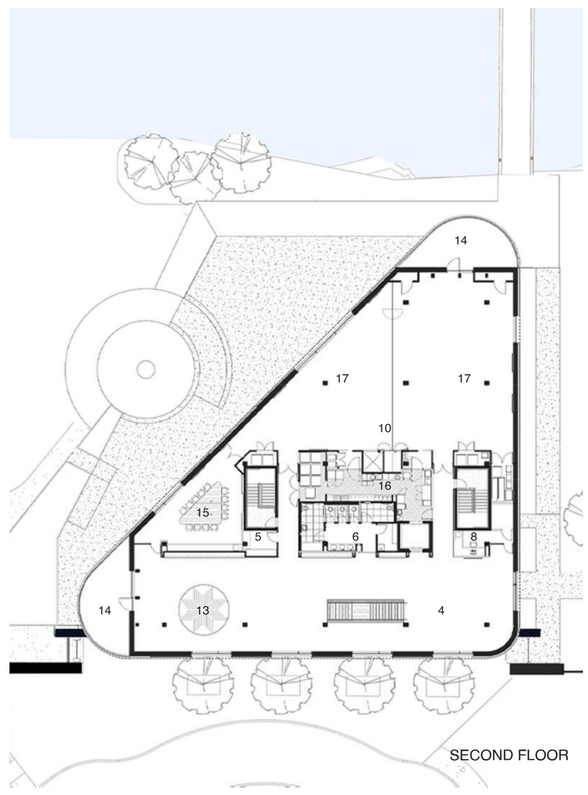
The buildings HVAC system consists of a ground source heat pump, energy recovery ventilator, and in-floor heating/cooling. Short duct runs concealed within the service spine fully unveil the mass timber in all public spaces.

The building module was carefully determined to reduce resource use, embodied carbon, and waste maximizing FortWhyte's investment. Informed by standard material sizes, the module established a rigorous framework for design and planning, including geometry, structure, mass timber, openings, material selection, veneer plywood, saw cuts, and electrical/mechanical device locations.

Buffalo Crossing demonstrates FortWhyte's commitment to climate action through the built environment, promoting an awareness and understanding of the natural world, to inspire action toward sustainable living and a better future for all.







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

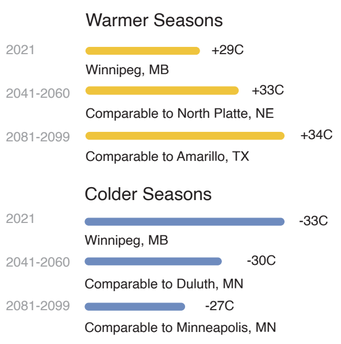
PLAN LEGEND:

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

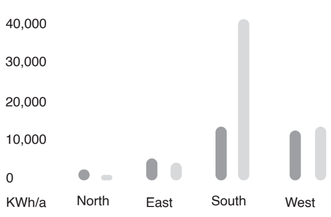
PROJECT INFO

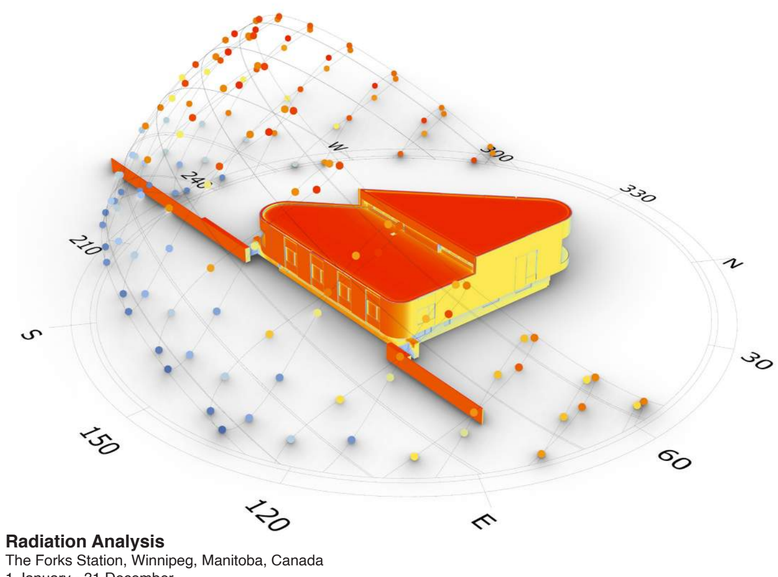
Building:	Visitor Centre
Height:	2 Storeys
Area:	8,000 sf
Sustainability:	Passive House + CaGBC Zero Carbon Building Design
Total Energy Use Intensity (TEUI):	65 kWH/m2 year avg
Embodied Carbon (500kgCOe/m2 limit for ZCB):	385 kgCOe/m2
Greenhouse Gas Intensity (GHGI):	0.19 kgCOe/ m2 year
Phase:	Construction

CLIMATE CHANGE

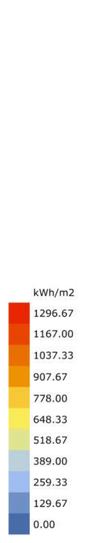


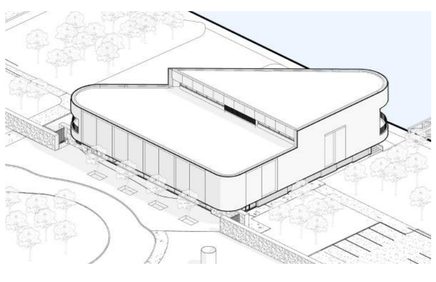
SOLAR SHADING ANALYSIS

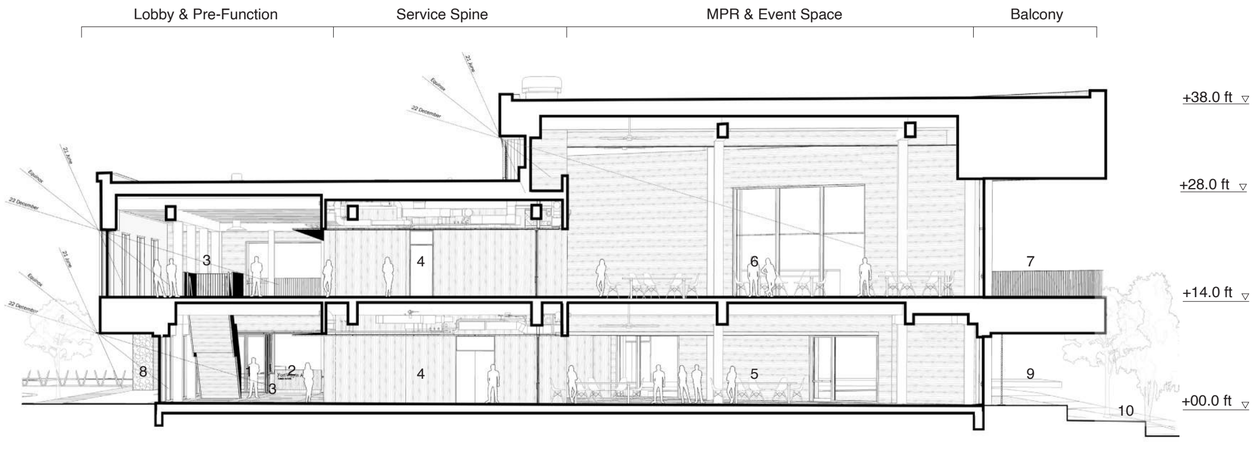




Radiation Analysis
The Forks Station, Winnipeg, Manitoba, Canada
1 January - 31 December

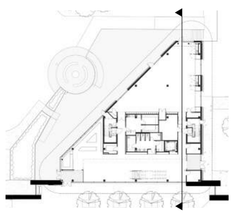


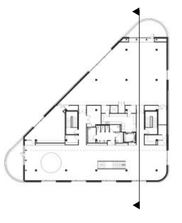




BUILDING SECTION LEGEND:

01 Vestibule
02 Admission
03 Lobby
04 Corridor
05 MPR
06 Event Space
07 Balcony
08 Site Access Gate
09 Deck Area
10 Shore Line





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500 WORDS

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