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: BMO Fischer Hallman
Address: 1270 Fischer-Hallman Road, Kitchener, Ontario
Year completed: 2024

PROGRAM AND CONTEXT

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

Project site: [Check all that apply]

[X] 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: 6600 m^2
- Building gross floor area: 465 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 = 95 kWh/m^2/year
- Process EUI (if appropriate) = _____ kWh/m^2/year
- Reduction in EUI relative to reference building = 64 % please specify the standard used (ASHRAE/MNECB or other)
- State reference standard: Survey of Commer

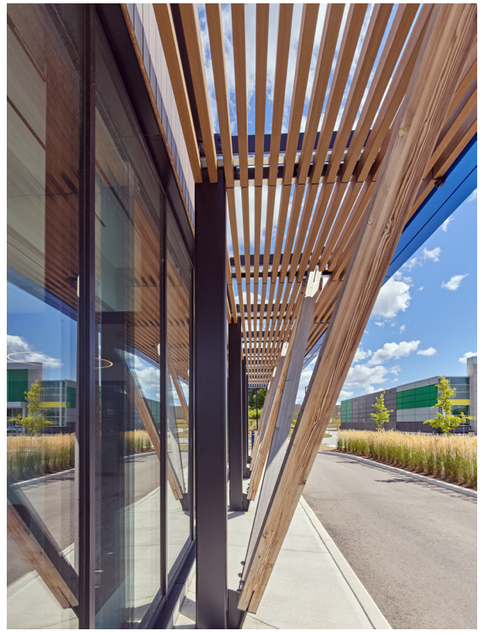
- Recycled materials content: _____ % by value
- Construction materials diverted from landfill: _____ %
- Regional materials by value: _____
- Water consumption from municipal source: _____ litres/occupant/year

[Include both base building and process consumption]

- Reduction in water consumption: _____ %
- 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.

BMO Fischer Hallman



LOCATION	SIZE	COMPLETION DATE	CLIENT
Kitchener, ON	5000 sq ft	June 21, 2024	BMO

We are pleased to present the BMO Fischer Hallman branch in Kitchener, Ontario, a landmark project poised to become North America's first Passive House (PH) Classic and Zero Carbon certified retail bank building. The design demonstrates how low carbon and high performance sustainable design can be adapted in a retail commercial building.

The 5,000 sq ft building is constructed using cross-laminated timber (CLT), significantly reducing embodied carbon while reaping the benefit of high quality construction and short installation time from prefabrication performance. The exterior envelope with triple-glazed curtain wall system is cladded with aluminum composite panels and siding in multiple colors, in alignment with BMO's retail design standards and corporate identity. The result, a stunning wood structure from the outside with bright open views and light filled interior providing a warm and inviting environment for the staff and customers.

STRATEGY

The BMO Fischer Hallman branch was developed as a pilot project to advance BMO sustainable mandate to develop future low carbon high performance retail bank buildings in Canada. The project pursues Passive House Classic and GBC Zero Carbon certifications to minimize operational and embodied carbon. The strategies to achieve these certifications include:

- Design to meet very low PH and CAGBC targets using Passive House Design Principles.
- Managing extended hours and higher ventilation rates typical of bank operations via iterative energy modelling.
- Selective exclusion of high-risk program that would compromise achieving Passive House performance targets.
- A building structural system with low carbon embodiment while reducing site installation time and construction waste using prefabrication methods.

PROJECT CONTEXT & ORIENTATION CHALLENGE

Located in a cold climate setting, the building's orientation was predetermined by the plaza layout and the lease agreement. The north-facing entrance necessitated increased glazing on the remaining facades to optimize solar heat during winter while integrated canopies on the south and west facades provide summer shading, reducing cooling loads. These canopies with true purpose become an expression of sustainable design for the building.

PLANNING & MASSING CHALLENGES

Balancing the bank's retail design standards with high-performance building criteria posed unique design challenges. Maintaining a balance of customer experience, security, and accommodating specialized equipment while adhering to low carbon and PH design methods and necessitates constant design evaluation between opposing priorities. For example, a typical branch would have an extensive glazed entrance facade. On this project, the main entrance faces north with reduced glazed area opposing this typical practice. There were many such examples when working BMO's internal design team to find the right balance between a standard bank branch design and high performance low carbon Passive House design.

The bank's small Treated Floor Area posed difficulties in meeting energy targets as it increased the heat loss area to volume ratio. Typical features such as the tower signage and the drive-thru ATM room also presented unique challenges. For example, to alleviate the impact of the large direct exterior penetrations within the room, the drive-thru ATM room had to be excluded from the PH envelope.

GROUND FLOOR PLAN

FLOOR PLAN

1 ATM Vestibule
2 ATM Room
3 Banking Hall
4 PBA
5 Office/ CMR
6 Staff Room
7 Filling Room
8 Mechanical
9 Electrical
10 Drive-Up ATM

ROOF PHOTOGRAPHY

NORTH ELEVATION

WEST ELEVATION

SOUTH ELEVATION

MATERIALS AND RESOURCES

Material selection was driven by a commitment to reduce embodied carbon while ensuring durability and performance. A comprehensive Life Cycle Assessment (LCA) was initiated at the schematic design phase to guide the design decisions and continued throughout construction, quantifying carbon impacts across the building's life cycle.

The primary building's main structure and envelope structures are constructed of cross-laminated timber (CLT), to reduce embodied carbon.
All CLT components were fabricated off-site and assembled, bringing high quality construction and reducing installation time and waste on site. Intensive design co-ordination between the supplier and the consultant team is a pre-requisite for prefabrication system construction. The CLT wall panels serve as the substrate for the airtightness membrane with continuous sealed tape at every joint forming an extremely airtight membrane meeting PH air change target below 0.6 ACH.

A high-performance, Passive House certified triple glazed curtain wall system is used balancing transparency and performance. Structural thermal breaks are incorporated at every structural penetration to reduce thermal bridging through the Passive House envelope. The exterior façade is cladded with aluminum composite panels and siding in multiple colors in alignment with BMO's retail design standards.

Wood slat canopies on the south and west façades provide fixed solar shading while contributing to the building's architectural expression. On the north façade, where glazing is minimized for thermal efficiency, the front entrance is announced by a wall projection band and wood pattern siding. The building exterior wall palette and exterior projections communicate the sustainable design goal of the building make it unique and inviting to visitors and customers.

Inside, the spatial planning echoes BMO's intent to provide an open inviting environment for their customers. An open generous light-filled north-south banking hall connects the entrance to the office waiting area terminating with an open view to the facing curtain exterior. The suspended circular light fixtures echo the shape of the BMO logo's red rondel, embracing a subtle branding opportunity.

Innovative lighting strategies contribute to the overall energy efficiency of the building. Detailed photometric analysis guided the selection of direct/indirect fixtures that reduce electrical loads without deviation from BMO's lighting standards.

All components and materials used were evaluated not only for their performance and aesthetic contribution but also for their carbon impact to meet BMO's sustainability commitments.

COMMUNITY

As an organization, BMO is dedicated to creating an inclusive environment for employees, clients and the communities they serve. It cultivates a culture of belonging, where the unique backgrounds, perspectives, and experiences of employees are not only recognized but valued. By fostering inclusion for everyone, collective innovation, decision-making, and overall performance can be enhanced.

In the built environment, care is taken in the design to consider the comfort and safety of the employees and customers alike. Color, materials and lighting are used to provide visual and textural cues to help navigate the space from open collaboration to increasingly private space. A range of space types contribute to flexible customer-employee interactions from confidentiality requirements to physical and emotional accommodations.

Buildings can create impact beyond the physical site and its intended users through the careful selection of supply chain partnerships as well as building value amongst the local community. Beyond the investment value into the construction of the building, the unique construction methodology of this build also offered an opportunity to upskill partners who would need to certify and train in order to support the complexity and vigorous testing of the building.

An integrated project design approach allowed the selection of a certified diverse contractor with a strong track record and partnership. This project led to the development of new skills and knowledge for the general contractor, trades, and the client; a workforce that can now apply this knowledge into future work. As with the partners collaborating in the construction of the building, the inclusion and honoring of the community was represented through a commissioned painted mural. Ensuring the engagement of a local artist with deep knowledge of the immediate community, history and the objective of the new build led to an inspired art piece.

Reciprocity, by Choolee (2024), Paint on Drywall

“This artwork is to honour the history of the Kitchener-Waterloo region. An aerial view of the Huron Natural Area reveals waves from the winding Grand River that narrate the flow of time, extending from the horizon and the region’s oldest known past, including a First Nations longhouse and village that once stood on this site, to more recent landmarks in the foreground. The Blue Heron, commonly found in our natural area and considered to represent grace, purity and patience, highlights the importance of ecological sustainability.”

WELLNESS

The design of BMO's new branch creates a workplace that prioritizes the health, comfort, and overall experience of employees while setting an industry-leading benchmark for innovative design. Every aspect of the environment—air quality, acoustics, temperature, lighting, and material performance—was carefully considered and enhanced to create measurable improvements in employee well-being.

Acoustics are prioritized to support employee focus and comfort. By creating a quiet, tranquil environment, the branch fosters conditions that reduce stress, minimize distractions, and promote productivity. The result is a setting where employees can carry out their work with clarity and ease, enhancing both individual performance and customer interactions.

Temperature and humidity control further strengthen the wellness-focused design. With thermostats serving every three offices, employees benefit from localized temperature management, avoiding the discomfort of one-size-fits-all systems. The HVAC system maintains indoor humidity at optimal levels, to minimize the spread of airborne pathogens, reducing health risks while improving overall comfort. This approach not only advances physical wellness but also demonstrates industry-leading thoughtfulness in responding to contemporary health concerns.

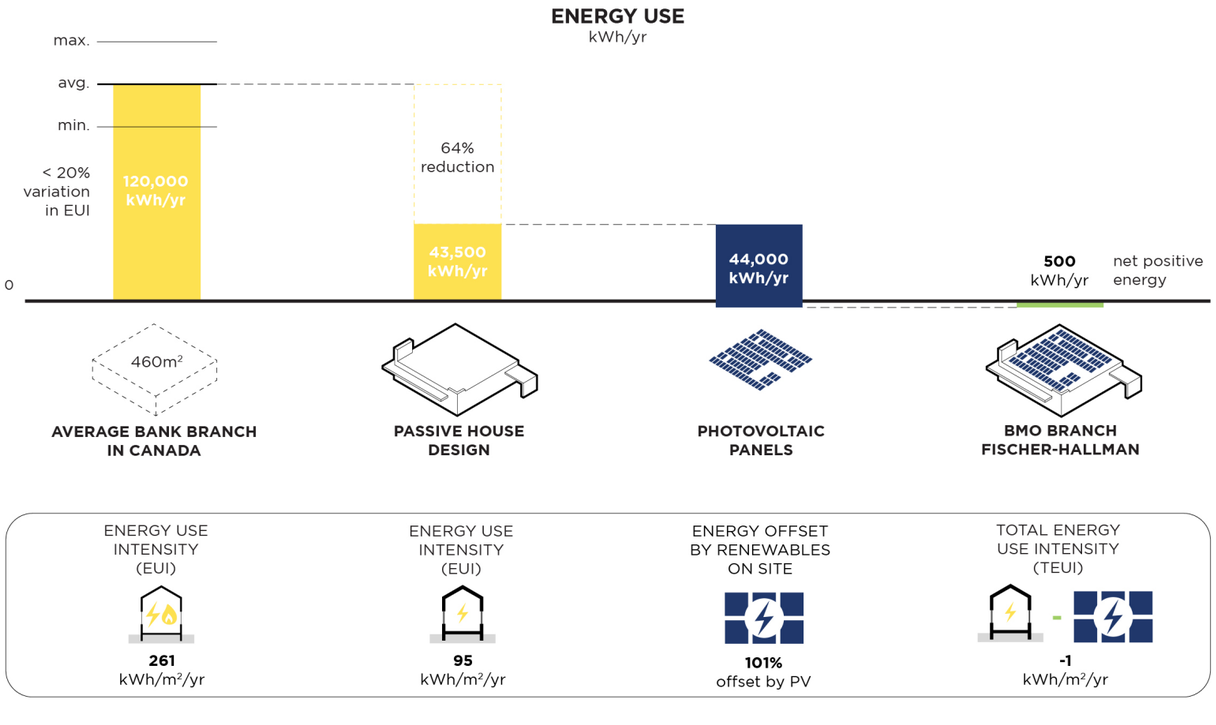
LIGHT AND AIR

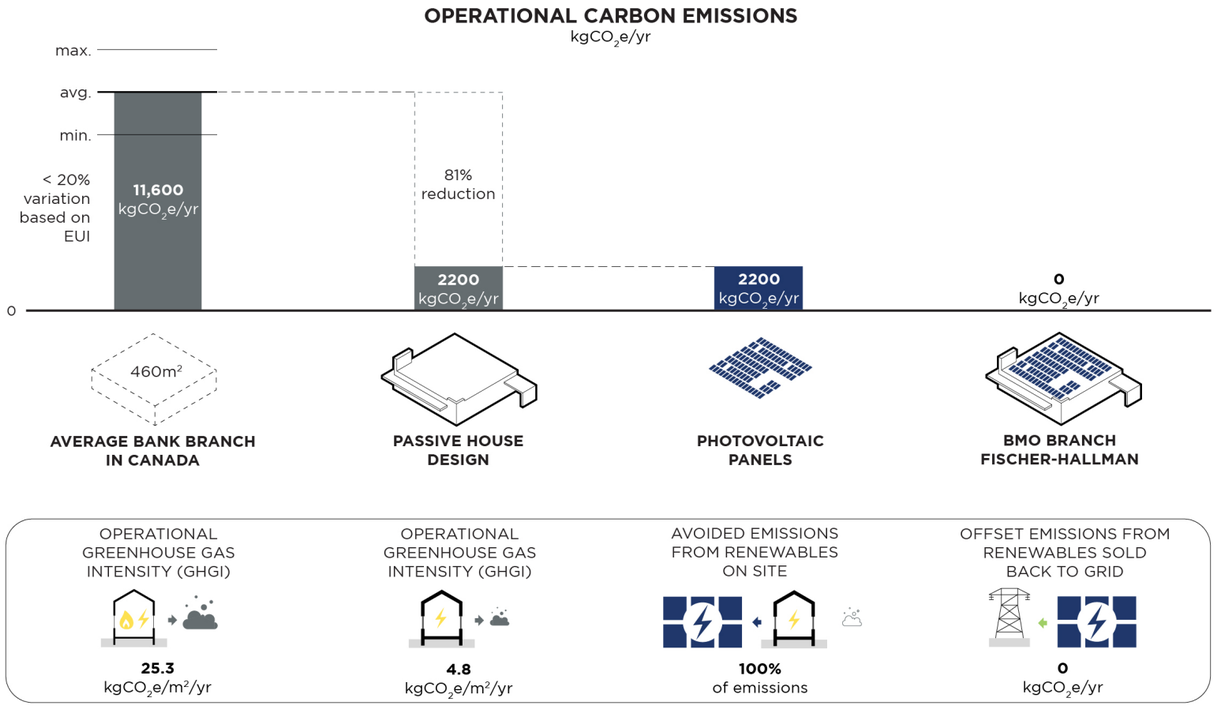
One of the most significant wellness achievements is the exceptional indoor air quality. The system is designed to supply fresh air ducted to each individual office and workspace without recirculation. This ensures that contaminants are not spread between spaces and provides a safe, healthy environment free of airborne pollutants. In a post-pandemic context, this feature represents a major advancement in creating workplaces that actively protect occupants. The enhanced air delivery is complemented by advanced filtration, ensuring the quality of indoor air consistently surpasses that of the outdoors.

Daylight and solar management are equally important to employee well-being. High-performance windows, coupled with responsive blinds and glazing films, address glare and excessive heat gain without sacrificing natural light. This ensures that staff benefit from daylight exposure—proven to enhance mood, energy, and circadian rhythms—while maintaining thermal comfort throughout the day. The result is a consistently balanced indoor environment that adapts to changing exterior conditions.

Lighting design reinforces this emphasis on comfort and hospitality. Indirect and reflected lighting strategies were implemented to avoid harshness and shadows, producing an evenly lit workspace that reduces eye strain and supports a calm atmosphere. The use of these strategies enhances both wellness and aesthetics, creating a modern and inviting work environment that embodies hospitality principles.

This project demonstrates that wellness and hospitality are not add-ons, but integral to the design of future workplaces. By prioritizing measurable outcomes in air quality, acoustics, comfort, and light, the branch sets a precedent recognized by peers as industry-leading, offering a model for environments that actively improve employee health and experience.





OPERATING ENERGY PRESENT AND FUTURE

This project is a demonstration of BMO's commitment to advance their Climate Ambition. Since 2010, BMO has matched 100% of annual residual scope 1 and 2 operational GHG emissions with carbon offsets and renewable energy certificates. This innovative build, while being the first of its kind in North America, was equally a first for BMO. The pursuit of Canada Green Building Council Zero Carbon certification alongside Passive House Classic certification ensures that the building's performance aligns directly with BMO's corporate sustainability commitments. Every design decision, from building envelope strategies to energy systems, was driven by this intent. The building is designed to achieve a net zero energy performance and reduce embodied carbon in its build.

By following the passive house design, the energy requirements of the building have been greatly lowered. Passive House principles reduced the heating and cooling loads by approximately 81%. In addition, a renewable energy source was added: photovoltaic panels were maximized on the building roof surface. The building modelled energy performance is balanced across seasons to target a net zero annual energy consumption.

These measures guarantee not only exceptional operational efficiency today but also long-term resilience. With robust envelope design, advanced airtightness, and right sized mechanical systems, the building is optimized for future climate conditions and sustained low operational emissions aligned with BMO's strategic climate goals.

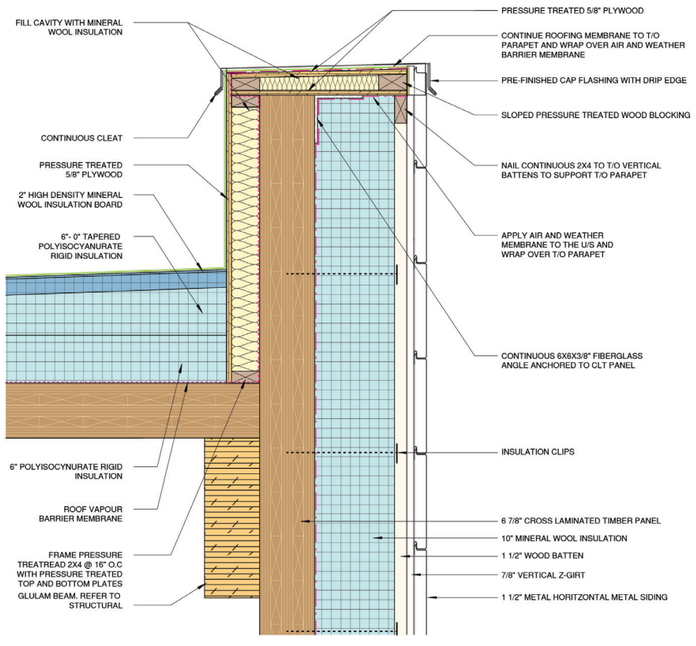
BUILDING CYCLE CONSIDERATIONS

From conception through construction and long-term operation, the project was designed with a full life cycle perspective. Early stage modeling, including the LCA and energy simulations, informed decisions that reduced both operational and embodied emissions. Prefabricated CLT elements minimized waste, shortened construction timelines, and ensured durable, high quality envelope performance.

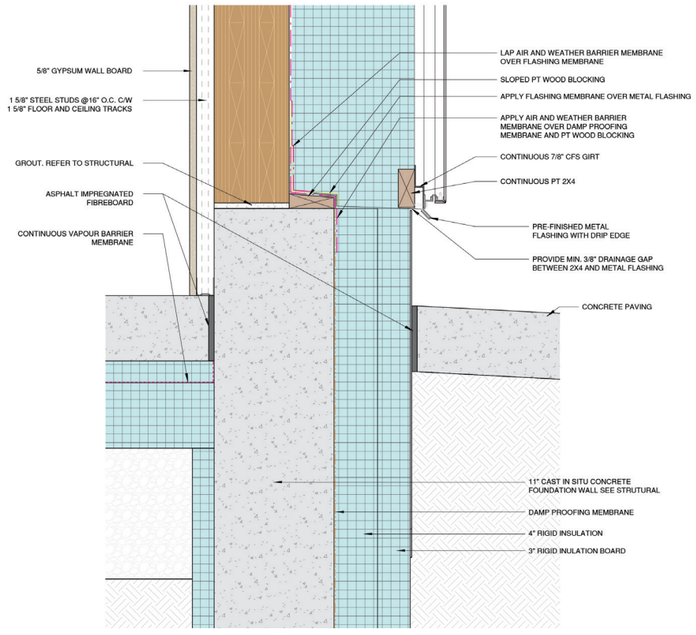
Throughout construction, the design team worked closely with the contractor to ensure precise execution of the design and compliance with Passive House's rigorous performance requirements. This included detailed coordination, on-site mock-ups, and continuous quality control to verify airtightness, thermal continuity, and overall construction precision.

By integrating Passive House performance, renewable energy systems, and low carbon materials, and by considering impact across the entire building life cycle, the project achieves substantial reductions in both operational and embodied GHG emissions.

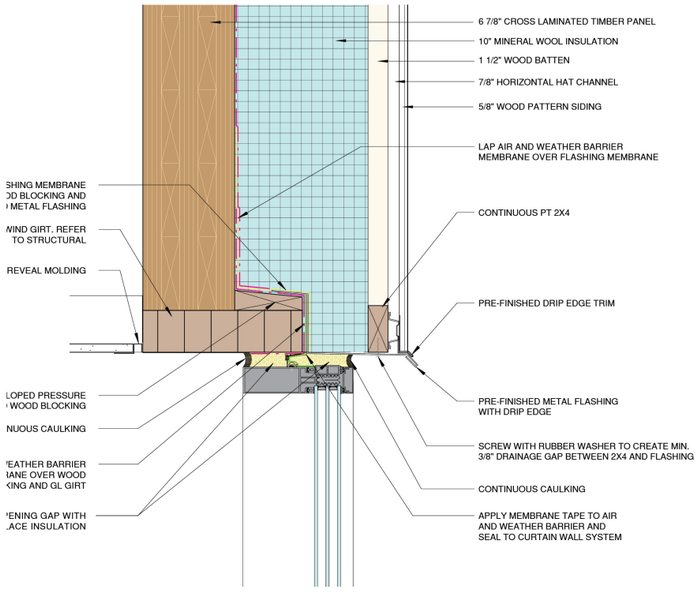
ROOF PARAPET



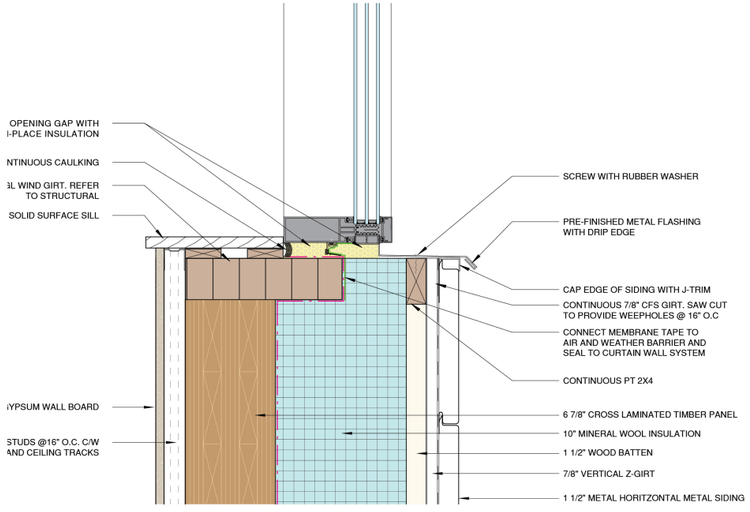
EXTERIOR WALL AT FOUNDATION WALL



WINDOW HEAD



WINDOW SILL



PRINCIPLES OF PASSIVE HOUSE

[1] ELIMINATION OF THERMAL BRIDGES

Thermal Bridge-free and compact design:
≤ 0.01 W/m

[2] CREATING AN AIRTIGHT CONSTRUCTION

Tighter Envelope:
≤ 0.6 ach continuous air barrier

[3] HIGH QUALITY EFFICIENT INSULATION

Super Insulated recommended:
u ≤ 0.15 W/m2K (Reff = 38ft2 °F.hr/Btu)

[4] HIGH PERFORMANCE WINDOWS

Thermal Bridge-free and compact design:
≤ 0.8 W/m2K (Reff = 38ft2 °F.hr/Btu)

[5] PASSIVE HEATING TECHNOLOGY

Energy Ventilation / Heat Recovery Unit:
≥ 75% efficient

[6] PASSIVE SOLAR HEAT GAINS

PASSIVE HOUSE ENVELOPE DETAILS

The exterior wall envelope consists of an interior 175mm CLT structural wall, an airtight weather membrane; 254mm of mineral wool insulation and finished with metal siding or ACM panels. This wall assembly achieves a U-value of 0.127 W/(m K).

The roof assembly is composed of a 175 mm CLT roof slab, vapour retarder membrane, 305 mm of tapered polyisocyanurate rigid insulation and topped with 51 mm high-density mineral wool insulation board. The overall roof assembly yields a U-value of 0.116 W/(m K).

The curtain wall system is a triple-glazed, PHI-certified unit from Aluprof with an installed U-value of 0.70 W/(m K).

The foundation wall assembly consists of a 279 mm cast-in-place concrete wall, with damp proofing membrane and insulated with 178 mm of XPS rigid insulation board. This assembly achieves a U-value of 0.161 W/(m K).

The slab-on-grade assembly is a 152 mm cast-in-place concrete slab over a vapour retarder membrane and 203 mm of XPS rigid insulation, achieving a U-value of 0.143 W/(m K).

PASSIVE HOUSE CERTIFICATION RESULTS

SPECIFIC HEAT DEMAND

15 kWhr/m2.yr

PRIMARY ENERGY DEMAND

69 kWhr/m2.yr

SPECIFIC COOLING DEMAND

10 kWhr/m2.yr

PRIMARY ENERGY RENEWAL DEMAND

0.43 ACH50