

Case Study

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High-Performance Building Envelope Solutions

Living Libations HQ Passive House Building Standard

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Project Synopsis

Project Name: Living Libations HQ (LLHQ)

Location: Haliburton Ontario

Project Description: 4-Story Industrial Passive House
Manufacturing Facility & Head Office

Project Size (Legalett): 6800 sf (main building)
1024 sf (outbuilding)

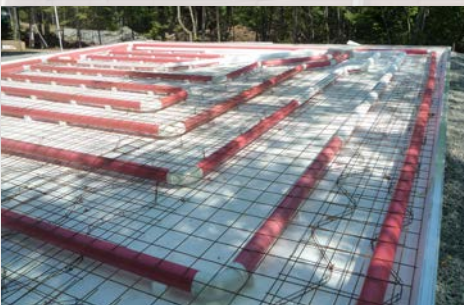
Size of Finished Project 21,246 sf (main building)
Outbuilding is single storey

Legalett Products Used: GEO-Slab (heated outbuilding)
GEO-Passive Slab (Main Building)
ThermalWall PH (Main Building)

Date of Completion (Construction): Fall 2018 (Grand Opening June 2019)

Significant Features Ambitious energy conservation targets; built
to Passive House Building Standards

Project Partners: Sales Rep: Duncan Patterson
Project Mgr: G West Building Services
PH Consultant: Peel Passive House



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1-866-299-7567

Project Details

Nestled on a south facing hillside, overlooking rolling hills of Ontario's Boreal Forest, the **Living Libations** headquarters is a gleaming example of what Passive House Building Standard design consultation and today's innovative building methods can achieve. The four level 21,246 sqft production lab and office facility starts with a GEO-Passive Slab, a structural floating slab on a continuous R50 layer of high-density EPS, unbroken around the edges of the GEO-Passive Slab and up the exterior of the 9ft high 1st level concrete walls. This solid foundation thermally separates the building from the exposed Precambrian Canadian Shield on which it is built.

The 3 stories above that is comprised of an innovative wood structure of 2x8 framed walls supporting CLT floor systems for 8,005sqft of indoor space and 2,803sqft of rooftop terraces. The 2x8 walls are wrapped in a smart air/vapor control layer and insulated with mineral wool. The walls are wrapped by a cutting edge product - ThermalWall PH - an 8" EPS insulation panel with an embedded cladding attachment system which all but eliminates thermal bridging from the locally manufactured steel siding. This R48 wall system houses 75 meticulously installed triple glazed 0.6 W/m²K cold climate Passive House timber windows.

The CLT supported roof-top terraces have an average insulation value of over R90 topped with a first-ever used sustainable bamboo roof-top decking system. The upper roof's 24" deep open web wood joists are filled with dense pack cellulose and further insulated to achieve an average R90.

The building has ample fresh air supply from its efficient ERVs and many operable windows. Life safety critical extract ventilation requirements needed careful attention to avoid excessive heat losses. The design team optimized the building layout, equipment selection and operation schedule to minimize the thermal impact while meeting safety requirements. The building's six (6) air-to-air heat-pumps function well at -25C yet don't have to work hard to keep this building comfortable through -30C winter nights & +30C summer days. The evacuated solar tubes on the roof fully heat water Spring, Summer & Fall, even pre-warming in winter months. A planned future PV system is expected to offset all utility bills.

From the locally sourced white pine fourth level ceiling to the formaldehyde free interior maple finished walls & eco-floors throughout, this healthy building provides more than a workplace for the company's 50+ and growing staff. The fourth level houses a kitchen adjoining a south facing dining area, a 75ft covered balcony, a beautiful boardroom, and a yoga room that adjoins a south-west facing 480sqft solarium opening onto a 1460sqft rooftop terrace that has a view of forest in all directions and incredible sunsets daily. The integration of smart design, innovative systems & skilled building craftsmanship proves that when owners with the courage to try new things hire a team dedicated to achieving the owners' goals, the outcome can be beautiful, healthy, and sustainable.

Visit www.LivingLibations.com for more information on their mission, company and products.

Living Libations is the first recipient of Legalett's Construction Pioneer Award.



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