

m.o.r.e. Cabin

Architecture firm:

Kariouk Architects

Location:

Quebec, Canada

Completion year:

2021

Gross built area:

1,000sqft

General contractor:

GPL Construction

Structural engineer:

Daniel Bonardi Consulting Engineers

Heavy timber consultant:

StyxWorks

Heavy timber assembly:

Lavery Log Homes

CLT, glulam, and specialty steel:

Zublin Timber

Photographer:

Scott Norsworthy

STRUCTURAL ELEMENTS



The paradigmatic North American cottage is romanticised as a wilderness log cabin. Nonetheless, typical cottages are “woody” versions of suburban homes with modern convenience. These buildings sustain the myth that appearing to be one with the land equates to a reduced impact on the environment.

The m.o.r.e. Cabin, designed by Kariouk Architects, inverts this idea through a separation from the landscape that is more sustainably constructed than other cottages. This unravelling of eco-fiction is not cynical, but optimistic: while organic environments are being degraded, what remains can be engaged more responsibly.

To this end, m.o.r.e. Cabin touches the land lightly through interpreting the law creatively to uphold its principles; reducing foundation size through a steel mast; using a low waste cross-laminated timber (CLT) structure; achieving greater tensile strength through a “folded” structure; using off-grid power and high-efficiency heating; and creating a home for endangered bats.

The name of the cabin, m.o.r.e., is an acronym of the names of the clients’ grandmothers.

INTERPRETING THE LAW

Zoning rules required a 30m setback



from the lake. A cliff face at that 30m mark was incorporated into the design, whereas conventional construction approaches would entail blasting. To minimise harm to the hillside and forest, a zoning variance was obtained to allow the front of the cabin to hover above, rather than sit on, the 30m mark.

THE MAST

The technical solution to the environmental issue involved a single concrete footing and a steel mast placed within the required setback. Avoiding a conventional large foundation

preserved the watershed and prevented erosion, as did elevating the construction zone. Use of concrete was also reduced for a lower carbon footprint.

M.O.R.E. THAN ONE WAY TO SKIN A HOME

m.o.r.e. Cabin is built with suitably-sourced CLT panels and glulam beams. The CLT was milled off-site then hoisted into place, avoiding damage to the landscape by the manoeuvring of construction machinery.



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The cabin's environmental considerations yielded structural innovation. Kariouk Architects' challenge became to develop a structural strategy using cantilevered CLT panels as a response to the zoning variance that they obtained. CLT is fundamentally deployed in vertical or compressive sections, not horizontally in tension.

Conventional five-ply CLT is too heavy to support itself over longer spans. The solution used thinner three-ply CLT, with structural capacity ensured through "folding", just like paper gains strength when folded.



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OFF-GRID

The cabin is solar-powered. The elevated cottage catches more breeze and has optimal cross-ventilation. Heat is provided by a "green carbon" wood stove. Good R-value and thermal comfort are provided by CLT's mass, and precise joinery provides air-tightness.

INVITING OVER THE NEIGHBOURS

One goal of the home was to create extensive lodging for endangered brown bats. Bat pods were integrated into the mast to provide safety from climbing predators and a clear flight path to the lake. **P**

Legend

- 1 The cabin hovers above the 30m zoning mark
- 2 A corridor of the cabin
- 3 The dining area
- 4 Good insulation and thermal comfort are provided by CLT's mass
- 5 The cabin predominantly uses CLT and glulam, while reducing the reliance on concrete
- 6 Three-ply CLT panels are used and folded to gain structural integrity
- 7 Three-ply CLT panels are preferred over five-ply for their thinness and lightness



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