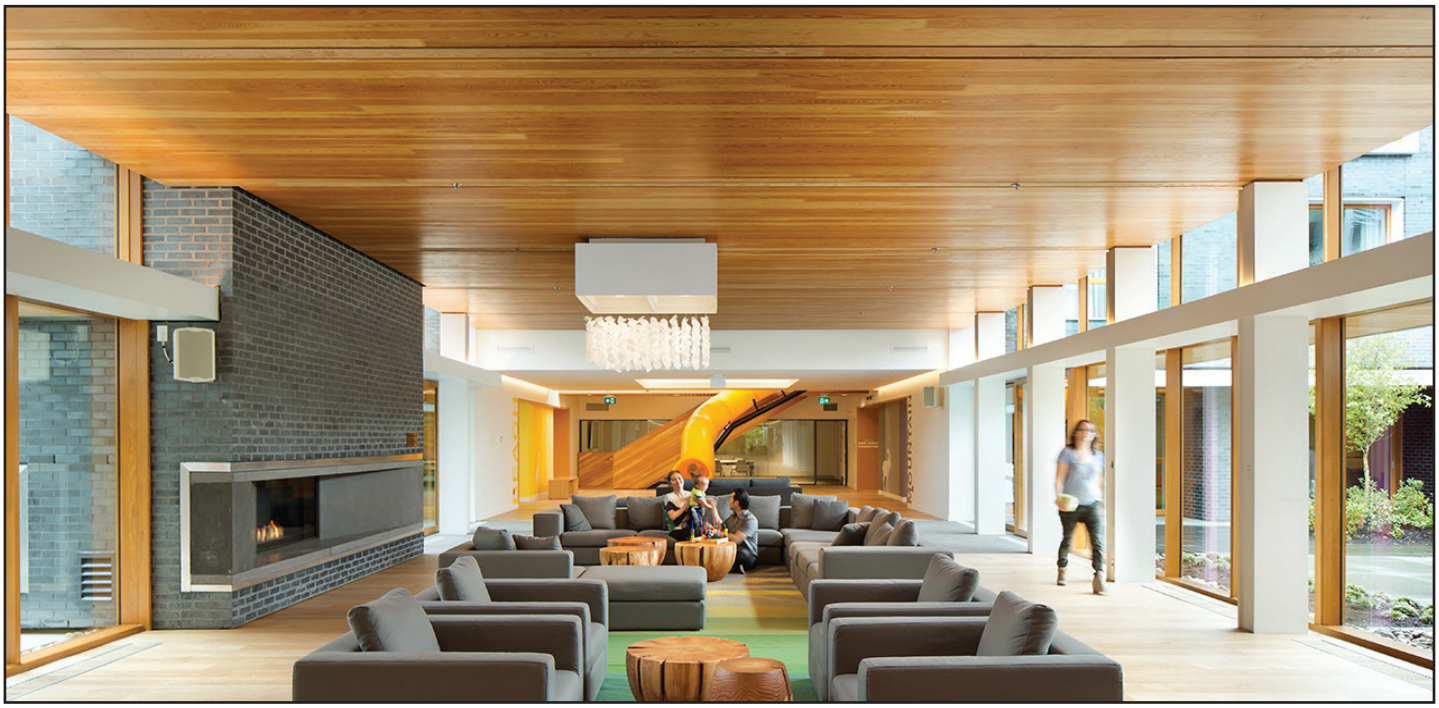
Program of the Canadian Wood Council

2015 WOOD DESIGN AWARDS - WINNER

Institutional Wood Design: Large

Michael Green, Michael Green Architecture

Ronald McDonald House British Columbia (RMH BC), Vancouver, BC



"...a refined technical solution using exposed CLT panels and wood I-joists, achieving a peaceful and welcoming place of refuge...a "home away from home."

- jury comments

High resolution images available. Please e-mail mmclaughlin@wood-works.ca

The Ronald McDonald House BC (RMH BC) provides a "home away from home" for out of town families with children receiving medical treatment at BC Children's Hospital. At the outset of the project it was clear to the design team that a warm and natural atmosphere was vital to the success of this new building. Key to this discussion was that an exposed wood structure, a strong connection to exterior landscaped spaces and a variety of other wood features would be fundamental to achieving this goal. The Community Living Room and Shared Dining Rooms feature exposed structural roof panels made from Douglas fir cross laminated timber panels. These nine- ply cross-laminated timber (CLT) panels span 30' across the space and are key visual elements when visitors first enter the house. Gaps between the wood panels allow for electrical conduits and sprinklers. Mechanical ductwork is located below grade to allow for a clean and unobstructed view of the wood ceiling. The ceiling is lit from concealed cove lights along the perimeter, providing a warm glow along the surface of the wood. This warming effect provides a very calming atmosphere within the space and also provides a warm light at night to the adjacent exterior courtyards. Special features such as a Douglas fir staircase and bridge on the upper level family suites allow parents and children access to a play slide from Level 2 to the ground floor.

The structural system for Ronald McDonald House uses cross–laminated timber (CLT) wall panels with wood I-joists supporting plywood flooring. Using CLT panels as wall elements provides the gravity and lateral stability systems in one. As a solid panel product, they have abundant strength available to accommodate unusual load requirements for most building types. Although CLT wall panels have been used in Europe for a number of years in platform construction, this building may be the first to use CLT walls in a 'tilt-up', balloon-frame application. The construction methodology is to lay a series of panels flat on the ground, attaching beam ledgers as necessary, before tilting the entire assembly up into position. As solid wood panels are relatively lightweight, wall lengths of over 10 meters can be erected at once.

Several parameters in particular led to the development of this new construction methodology, including durability, clear spans and speed of erection. The design team believes the speed of erection and cost-competitiveness will see further application beyond residential structures. Timber tilt-up could provide particular advantages in the following building types, including warehouses, industrial buildings, retail park stores and residential buildings. It is hoped that the benefits of this building method – speed of erection, competitive cost and adaptability of use – will see it adopted and applied by the construction sector on an equal footing with existing methods such as tilt-up precast concrete, steel frame and masonry.