Program of the Canadian Wood Council

2015 WOOD DESIGN AWARDS - WINNER

Wood Innovation

Michael Green, Michael Green Architecture

Wood Innovation and Design Centre (WIDC), Prince George, BC

"An exquisite interplay of structure and finish to provide a translucent, warm and inviting structure. The attention to detail is evident throughout, and provides pleasing aesthetic patterns which are both convincing and alluring."

- jury comments

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

The Wood Innovation and Design Centre celebrates wood as one of the most beautiful and sustainable materials for building here in British Columbia, and around the globe. This project is a milestone in the advocacy of increasingly taller wood structures. With this project, MGA sought to demonstrate economical, repeatable technologies for building high-rise structures with timber, in hopes of inspiring institutions, private sector developers, and other architects and engineers to embrace this way of building. Building in wood sourced from sustainably managed forests offers designers a rapidly renewable, low energy and carbon-sequestering alternative to traditional building materials used for larger buildings.

The form of the building is rational and restrained, allowing the beauty of wood to shine through. The building exterior is inspired by bark peeling away from the trunk of a tree; bark on the north side, thick and protective from the cold and elements, thins away towards the south sunlight. Following the metaphor, the building is more opaque to the north and becomes increasingly transparent towards the south, welcoming passive solar heat gain. To the east and west, the wood columns supporting the curtain wall glazing cut the low angle of the rising and setting sun. The summer sun is controlled with wood blinds. As a facility conceived to showcase the potential for building mid-rise and high-rise structures using engineered mass timber products, there is no concrete used in the building above the ground floor slab, with the exception of a floor topping at the mechanical penthouse. The design incorporates a simple, 'dry' structure of systems-integrated CLT (cross-laminated timber) floor panels, glulam columns and beams, and CLT walls. The wood structure is exposed as the ceiling finish in most spaces. This simplicity translates into repeatability of the system.

MGA chose to clad the building exterior in a mix of natural cedar, left to naturally weather to grey, and charred cedar. Charring exterior wood cladding is a centuries-old technique, borrowed from Japanese craftsmen. The layer of char on the exterior of the wood provides insect and rot resistance, as well as increased fire resistance. It requires very minimal maintenance, and creates a beautiful dark patina that changes with the light. Instead of focusing solely on a showpiece structure, MGA created a building that can be easily replicated. This was a fundamental choice, made in the interest of seeing many more architects, engineers, and private developers recognize the value of mass timber design as an alternative to steel and concrete.

The environmental impact of the building and construction industry is tremendous; trading wood structures for the more commonly used steel and concrete will have a major impact on reducing carbon footprints. Detailed Life Cycle Impact analysis comparing WIDC and the same building if it was built in concrete: • Global Warming Potential - 88% improvement. • Non-renewable Energy Depletion – 43% improvement. • Acidification Potential – 47% improvement. • Human Health Criteria Air Pollutants – 33% improvement. • Ozone Depletion Potential – 54% improvement. • Smog Potential – 39% improvement.