

BC HYDRO MAINTENANCE AND OPERATIONS FACILITY

LOCATION

Maple Ridge, British Columbia

COMPLETION

2012

ARCHITECT

Omicron

CONSTRUCTION MANAGER

Omicron

**SPECIALTY WOOD STRUCTURE
DESIGN / BUILDER**

StructureCraft Builders Inc.

PROJECT OWNER

BC Hydro

PROJECT OVERVIEW

Maple Ridge, a suburban municipality on the eastern outskirts of Metro Vancouver, has experienced rapid population growth over the past few years. With this growth has come an increased demand for new infrastructure to service new residential development. BC Hydro, the provincial electrical utility, commissioned this building as a base for the crews who provide operations and maintenance support to new and existing infrastructures for the delivery of electricity.

This facility is a sister project to a previously completed operations centre in Port Alberni, B.C.

The building program is divided almost equally between administrative and light industrial uses. The office areas provide open work spaces for staff, and the industrial areas include vehicle bays, workshops, drying rooms and warehouse/storage spaces. Operations centres generally

require large and flexible yard areas where materials and equipment can be stored and accessed easily by work crews, a particular challenge in this case because of the development setbacks and riparian enhancement requirements related to two adjacent streams.

In addition to meeting these regulatory requirements, the client and design team further minimized the environmental impacts of the building by incorporating energy and water conservation elements and durable, non-toxic, low embodied energy materials, all of which earned the facility a LEED Gold rating. The approach is similar to that taken for the operations centre in Port Alberni.

This building is also designed to function as a post-disaster operations centre after a major seismic event.



Photo courtesy of Terry Guscott

“The use of wood in our previous BC Hydro Operations Centre in Port Alberni has been positively received by building users and maintenance personnel alike. This has encouraged both the client and the design team to be more adventurous on this project.”

Kevin Hanvey, Architect, Principal, Omicron

WOOD USE

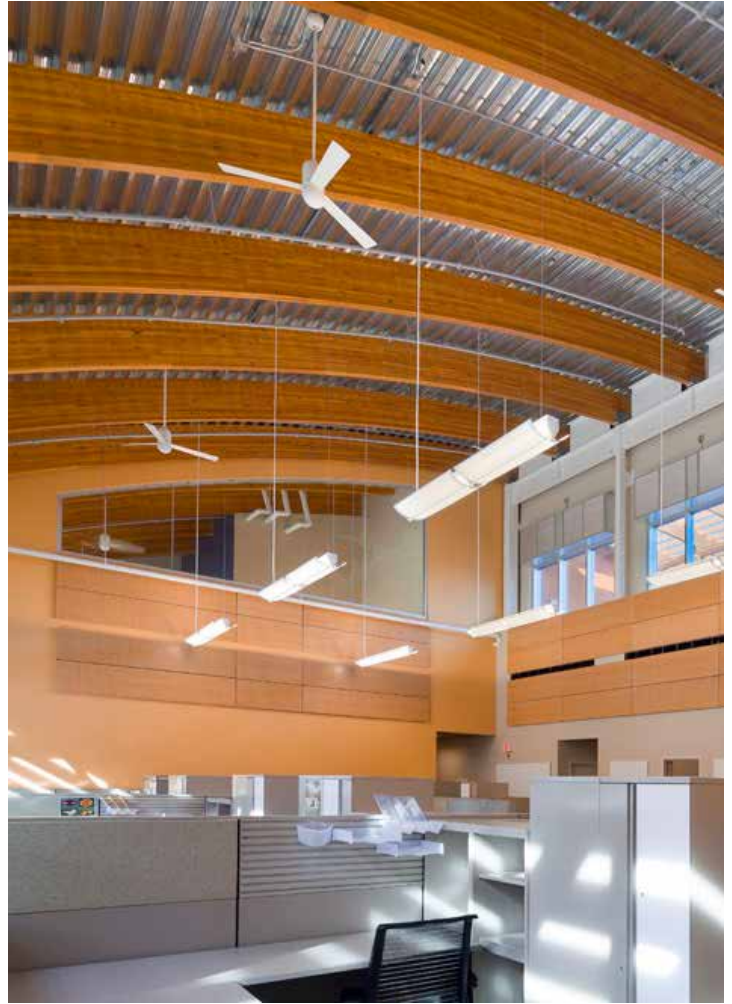
The use of wood in the operations centre in Port Alberni was precedent-setting and, in terms of durability and maintenance, has exceeded expectations. For this reason, the client and design team chose to look for additional opportunities to use wood in the Maple Ridge facility.

From a building code perspective, these buildings are classified under 3.2.2.53, Group D, up to two storeys, and sprinklered. Using this classification, the project was permitted to be constructed of combustible materials with a one-hour fire resistance rating for supporting assemblies. Under this same provision, the roof framing (where the majority of the structural wood is used) did not require a fire resistance rating.

The wood structure for the curved roof was developed in consultation with the fabricator and installer. The high-bay industrial areas are

clear-spanned with manufactured composite bow-shaped trusses made up of a 215 mm x 608 mm, curved, glulam top chord and hollow square section steel tensile members. This roof also covers the external vehicle and equipment storage areas at the west end of the building. The office area roof is framed with similar 215 mm x 608 mm curved glulam beams, some of which are exposed on the exterior of the building to become trellis framing and/or shading elements.

The building is clad with proprietary panels that use a natural wood veneer on a resin substrate and are finished with a durable, clear UV resistant coating. The cladding is face-fixed to girts that in turn are fastened to the sheathing beyond. Solid sawn Douglas-fir elements are used to create sunshades and trellises around the building.



Photos courtesy of Terry Guscott

FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia's market development agency for forest products.

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