BC HYDRO OPERATIONS CENTRE

LOCATION
Port Alberni, British Columbia

SIZE
2,100 m²

ARCHITECTURE, ENGINEERING & CONSTRUCTION MANAGEMENT
Omicron

GLULAM FABRICATOR
Structurlam Wood Products

PROJECT OWNER
British Columbia Hydro and Power Authority

Project Overview

This new 2,100 square metre facility is located on the outskirts of Port Alberni, B.C. It brings together the provincial electrical utility's indoor and outdoor workers for the first time under a single unifying roof - a metaphoric bridge connecting these historically independent departments. Located in Canada's highest seismic zone, and required to function as a post-disaster operations centre, the building has been designed for strength, flexibility and durability.

Under the province's Climate Action Plan, BC Hydro is required to work towards carbon neutrality in its operations, and thus this project targeted high standards of environmental design and energy performance. The architects' approach was to maximize building performance using passive design strategies, and only then add active environmental control systems.

The program, which includes offices and warehouse spaces, is arranged on a single storey with a partial mezzanine. The plan is elongated in the east-west direction to maximize the benefits of solar exposure and optimize control for daylighting and energy performance. Louvered skylights bring daylight deep into the building, while the double-height volumes assist with natural ventilation.

The building envelope is highly insulated and incorporates high-performance double glazing to reduce energy demand for heating and cooling. Primary energy comes from an extensive geo-exchange system.

Photo courtesy of Terry Guscott - ATN Visuals

"With wood we have found a cost conscious solution that fits naturally into its forested surroundings and shows visible support of the forest products industry in B.C."

***Keith Waiz**, Senior Manager*
Facilities Services and Capital Projects, BC Hydro

Photos courtesy of Terry Guscott - ATN Visuals

These various measures combine to reduce overall energy demand by greater than 50% when compared to a traditionally designed building of similar size and type.

Internally, the exposed glue-laminated (glulam) roof structure, wood finishes and abundant natural light help to create a warm and welcoming atmosphere rarely seen in an industrial facility of this type. Externally, the structure and western red cedar siding connect the building visually to its forested surroundings. Thus wood has contributed to the success of the project on many levels: structurally, economically and architecturally.

With its longstanding commitment to sustainability, and its support of the province's Wood First Act, BC Hydro incorporated wood to a significant extent in this project. Forestry has been a significant contributor to the Port Alberni economy for more than a century, and the use of wood in this building reflects a desire to maximize the economic benefit to the community.

Wood Use

The roof structure is a hybrid of wood and steel, with open web steel joists used in the warehouse portion of the building. The office portion consists of a braced, steel frame supporting glulam beams of 175mm x 608mm on the main column lines. These in turn support 130mm x 532 mm glulam purlins which are cross-braced by solid, fir members.

The interior features vertical grain fir for the doors and millwork, and custom western red cedar slatted ceilings.

FOR MORE INFORMATION

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

For more examples of innovative wood building projects throughout British Columbia, visit:

naturallywood.com

The wood grain featured in this profile is western red cedar.