

CANADIAN COAST GUARD SEARCH AND RESCUE STATION

LOCATION

Port Hardy, British Columbia

SIZE

622 m²

COMPLETION

June 2014

ARCHITECT

Chernoff Thompson Architects

STRUCTURAL ENGINEER

Herold Engineering Ltd.

CONSTRUCTION MANAGER

Island West Coast Developments Ltd.

**ENGINEERED WOOD
FABRICATOR**

Western Archrib

PROJECT OWNER

Department of Fisheries and
Oceans

PROJECT OVERVIEW

The community of Port Hardy (population 4,000) is located on the north coast of Vancouver Island, separated from the mainland by the waters of the Inside Passage. It is an important hub for the commercial fishing industry, with half the wild fish caught off the British Columbia coast being offloaded here each season. In addition, there is a popular sport fishery and significant recreational boating activity adding to the volume of marine traffic.

This project, situated on the downtown waterfront, replaces existing operational and residential accommodation for the Canadian Coast Guard detachment. The program is split between two buildings, and includes functional operations space, administrative offices, training areas, equipment storage, staff living space and related facilities. The operations building is on the water's edge, just 1.5 metres above the

high-tide line, while the residential building sits behind it on top of a 6-metre high cliff.

Strategic organization of the building program and massing, together with careful placement of windows, ensures that the officer in charge has clear views from the main living areas over and around the lower building to the harbour and the main docks.

In realizing the client's ambition to provide functional and attractive living and working space, the project also had to overcome the technical challenges of the topography and the harsh marine environment, address sensitive ecological issues, and preserve several culturally significant First Nations middens located on the site. The flexibility, lightness, durability and low environmental impact of wood construction made it an ideal choice for this project.



Photo credit: Sama Jim Canzian Architectural Photography

“Because of the inherent lightness, flexibility and ductility of wood-frame construction, it is particularly well suited to the construction of post-disaster buildings at this scale.”

Lee Rowley, Principal, Herold Engineering Ltd.

WOOD USE

Given the relatively remote location of Port Hardy, careful consideration was given to the design to ensure the maximum use of local materials and labour. Dimension lumber was locally sourced and connection details made simple, keeping with the local building traditions and expertise.

Both buildings are designed and constructed to post disaster standards, meaning that they must be capable of resisting seismic loads 50% higher than those required for a conventional building. In addition, structures must have a regular geometry in plane and section to ensure seismic forces can be evenly distributed throughout the building.

Both structures are predominantly wood-frame with glue-laminated timber (glulam) beams used to span the living area in the residential building and the open plan offices in the operations building. In this latter case, the glulam roof beams bear on a deep lateral beam and cantilever beyond the building to support the projecting eaves.

Local wood species were used where possible. Both buildings feature western red cedar for horizontal tongue and groove cladding and eaves fascias. Douglas fir tongue and groove decking was used for the roof, and is left exposed internally. It is complemented by slatted wood panelling in the living room of the residential building, and in the main corridor of the operations building.



Photo credit: Sama Jim Canzian Architectural Photography

ESTIMATED ENVIRONMENTAL IMPACT OF WOOD USE

| | |
|---|--|
| <p>V Volume of wood products used: 154 cubic meters</p> | <p>GHG EMISSIONS ARE EQUIVALENT TO:</p> |
| <p>T U.S. and Canadian forests grow this much wood in: 25 seconds</p> | <p>81 cars off the road for a year</p> |
| <p>C Carbon stored in the wood: 130 metric tons of CO₂</p> | <p>Energy to operate 41 homes for a year</p> |
| <p>CO₂ Avoided greenhouse gas emissions: 255 metric tons of CO₂</p> | <p><small>*Estimated by the Wood Carbon Calculator for Buildings, cwc.ca/carboncalculator.</small></p> |
| <p>✓ Total potential carbon benefit: 385 metric tons of CO₂</p> | <p><small>**CO₂ refers to CO₂ equivalent.</small></p> |

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