

WEST FRASER CENTRE

LOCATION

Quesnel, British Columbia

SIZE

5,806 m²

COMPLETION

September 2017

ARCHITECTS

HDR | CEI

STRUCTURAL ENGINEER

Fast + Epp

GENERAL CONTRACTOR

VVI Construction

ENGINEERED WOOD SUPPLIER / FABRICATOR

Structurlam

PROJECT OWNER

City of Quesnel and the Cariboo Regional District

PROJECT OVERVIEW

With forestry being a central component of Quesnel's economy, it was natural for community leaders to further the area's culture of wood by featuring it as a key structural and finishing component of their new arena. Part of the regional North Cariboo Recreation and Parks Service, the new West Fraser Centre holds a professional-sized hockey ice surface with seating for 1,300 people, a home-team dressing room, meeting rooms, offices and a concessions area, along with an upper-level concourse with walking track. The two-storey facility is a focal point for the community, and will also serve as a venue for live entertainment, trade shows and community events.

Cross laminated timber (CLT) panels frame the roof structure of the main lobby, as well as the foyer leading to the adjacent existing ice rink. Inside, the large roof structure of the main arena is framed with curved steel girder trusses accented by a wood slat ceiling assembly. The innovative slat design allowed them to showcase the wood while concealing acoustic materials needed to absorb sound in the big space, making it a suitable venue for anything from hockey to music concerts.

Wood for the slat ceiling assembly came from the local mills around Quesnel, and installation kept an on-site crew of six workers busy for roughly eight weeks.



Photo courtesy of VVI Construction Ltd.

“Given Quesnel’s strong links to forestry and the wood industry, it was important for our community to incorporate wood. The wood ceiling provides an aesthetically appealing environment while also serving important functional purposes, concealing mechanical infrastructure and improving the building’s acoustic performance.”

Jeff Norburn, Director of Community Services, City of Quesnel

WOOD USE

To improve the speed of construction, contractors for West Fraser Centre used CLT to frame the lobby of the main arena, the stairwell and a foyer, which leads to an adjacent existing ice rink. The CLT roof was not covered, leaving the wood exposed to visitors below both inside the lobby and in the exterior roof overhang.

Inside the new arena, strips of plywood were first fastened to the open web steel joists running perpendicular to the trusses, with 1x6 spruce-pine-fir (SPF) dimension lumber attached

to the plywood. By leaving a 2-inch air space between each piece of lumber, the wood naturally absorbs noise from below. The wood framework also hides the electrical systems and allowed additional acoustic insulation to be added behind the slats. The lumber for the slat panels was treated by a local subcontractor with a clear coating for fire protection before it was installed. Durable medium-density fibreboard was also installed around the perimeter of the walking concourse.

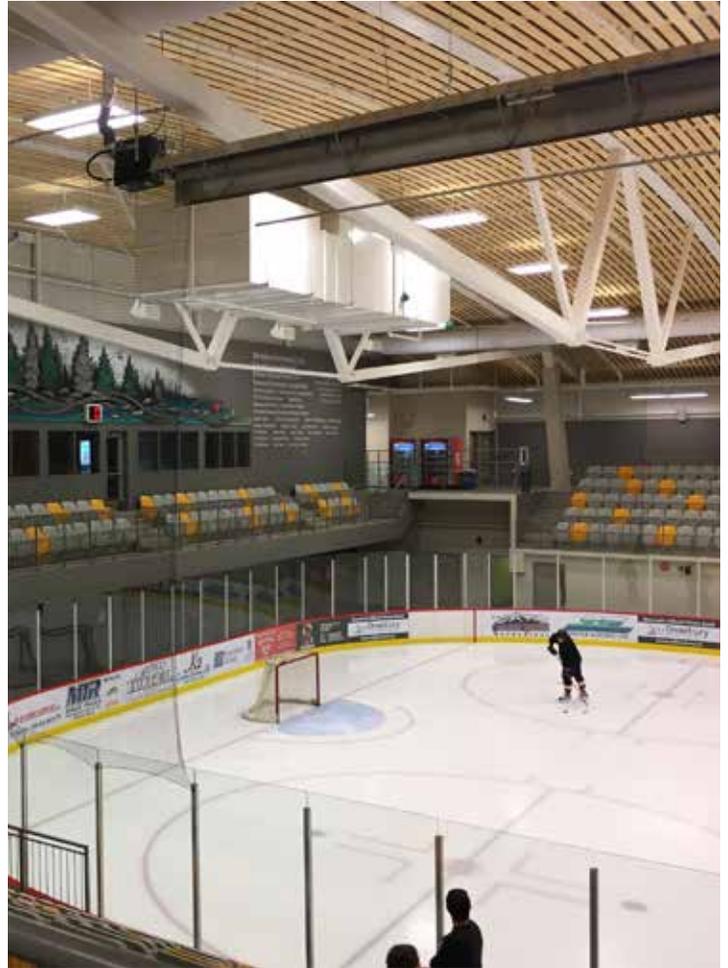


Photo courtesy of VVI Construction Ltd.

ESTIMATED ENVIRONMENTAL IMPACT OF WOOD USE

V	Volume of wood products used: 93 cubic meters	GHG EMISSIONS ARE EQUIVALENT TO:
	U.S. and Canadian forests grow this much wood in: 15 seconds	39 cars off the road for a year
C	Carbon stored in the wood: 73 metric tons of CO ₂	Energy to operate 20 homes for a year
	Avoided greenhouse gas emissions: 111 metric tons of CO ₂	<small>*Estimated by the Wood Carbon Calculator for Buildings, cwc.ca/carboncalculator.</small>
	Total potential carbon benefit: 185 metric tons of CO ₂	<small>*CO₂ refers to CO₂ equivalent.</small>

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