

UPPER SKEENA RECREATION CENTRE

LOCATION
Hazelton, B.C.

SIZE
5,050 m²

COMPLETION
2019

ARCHITECT
Hemsworth Architecture

STRUCTURAL ENGINEER
Equilibrium Consulting Inc.

GENERAL CONTRACTOR
Yellowridge Construction Ltd.

ENGINEERED WOOD SUPPLIER
Structurlam Products Ltd.

PROJECT OWNER
Regional District Kitimat-Stikine

PROJECT OVERVIEW

When the 40-year-old ice arena in Hazelton was condemned because of structural safety concerns, community leaders knew they wanted more than just a hockey arena in replacement. They wanted a new recreation centre that would truly serve the community.

A key driver behind the project was not to just build the centre for the community—but to build it with the community. They wanted a new recreation centre that would help address some of the social problems in the area. Poverty and unemployment pose huge challenges; unemployment for local residents runs upwards of 80 percent during winter months. Substance abuse and mental health issues were also concerning.

While some on the Hazelton planning committee advocated for the use of steel because they thought it would be faster, others wanted wood for its warmth and durability. Since wood is a local product, they knew they could employ more people from the community in the building of the arena if they used wood-frame construction.

During the initial planning phase, community leaders discovered a 2014 study called *BC Wood Arenas - Design and Construction of Wood Recreational Facilities*, commissioned to determine if replacement structures could be built using wood instead of prefabricated steel. The report included a detailed comparative wood arena design, and by coincidence, the location chosen for load calculations was Hazelton. The design met nearly all of Hazelton's criteria, and they decided to move forward. The resulting wood structural system is very close to the original design in the report.

The centre contains an NHL-sized ice surface, seating for 500 spectators and a full-sized gymnasium, along with a fitness room, rental space and areas for community programming promoting wellness and personal development. The beautiful wood structure gives the community a point of pride that will last for decades.



Photo: Ema Peter Photography, courtesy Hemsworth Architecture

“When we looked at the challenges of our scattered community, we realized we had the opportunity to make a once-in-a-lifetime decision, so we chose wood. The beauty and warmth of wood strikes a strong bond between the building and the community, and they will identify with it in a way they could not have with another building material. When community members toured the Centre during construction, the word heard almost universally was ‘awesome’”

Dr. Peter Newbery, Chair, Heart of the Hazeltons

WOOD USE

The wood roof, exposed to the space below, is supported by glue-laminated timber (glulam) beams and columns, which provided a cost-effective framing solution for the loading requirements. Site-fabricated panels made with 2x10 dimension lumber and plywood frame the roof and exterior walls. Most structural members in the building work in compression except for the outside wall-located tension member frames. These frames added lateral resistance, which was another unique part of the building’s design. Typically, shear from a roof diaphragm is transferred to the outside walls but with the Upper Skeena Recreation Centre, every wood frame takes its share of the lateral shear, which is perpendicular to the long direction of the building. Plus, the angle of the wood frames added to the unique architecture of the building.

Interior walls were built using 2x6 and 2x8 dimension lumber and plywood. They also used glulam roof joists over parts of the building, including the mechanical area.

To speed construction, wood wall and roof panels were pre-fabricated and then dropped in, creating a rigid structure almost immediately. Local labourers, working under the general contractor’s supervision, built the panels and helped erect the frames.

Local connection was one of the primary goals of the project. The design team worked to minimize the number of building members that had to be fabricated elsewhere while maximizing the number of elements that could be fabricated at the jobsite. Therefore, the walls and the roof were built with dimension lumber framing and plywood manufactured by builders in the community.

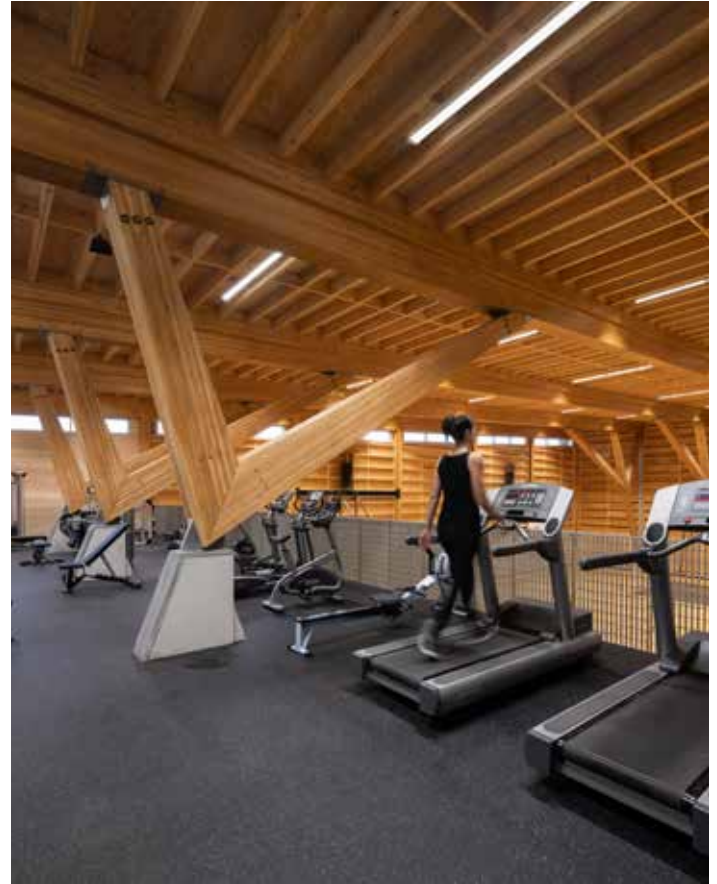


Photo: Ema Peter Photography, courtesy Hemsworth Architecture

Construction took place over a rugged winter. Since framers can easily work with wood, even in extreme cold temperatures, they avoided some of the challenges they would have faced if they had used steel, since it is difficult to weld in below-freezing temperatures.

The decision to use wood for the Upper Skeena Recreation Centre provided benefits that extend beyond structural performance and ease of installation. Wood’s ability to store carbon and the fact that it was sourced locally provided important environmental benefits. The exposed wood also provides a sense of connection.

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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