UBC'S CENTRE FOR INTERACTIVE RESEARCH ON SUSTAINABILITY

LOCATION
Vancouver, British Columbia

SIZE
5,675 m^2

COMPLETION
2011

PROJECT MANAGER
UBC Properties Trust

ARCHITECT
Perkins+Will Canada Architects Co.

STRUCTURAL ENGINEER
Fast+Epp Structural Engineers

GENERAL CONTRACTOR
Heatherbrae

PROJECT OWNER
University of British Columbia

Project Overview

Located at the University of British Columbia, the Centre for Interactive Research on Sustainability (CIRS) is designed to be the most sustainable building in North America. Wood was chosen as the primary building material to help meet that goal.

CIRS houses 200 researchers from private, public and non-governmental organization sectors, who work together to advance innovation in sustainable technology and building practices—and to create a springboard for their widespread implementation.

The four-storey U-shaped building wraps around a large auditorium. It is organized into two four-storey wings, linked by an atrium, and it includes academic offices, meeting rooms and a 450-seat auditorium.

CIRS was designed to meet exemplary sustainability goals and high performance targets and to be both cost-effective and replicable. The overall design emphasizes simple forms and materials, exemplified by the exposed wood structure and visible connections.

More than a building, CIRS is a research tool that demonstrates the possibilities in sustainable design and construction.

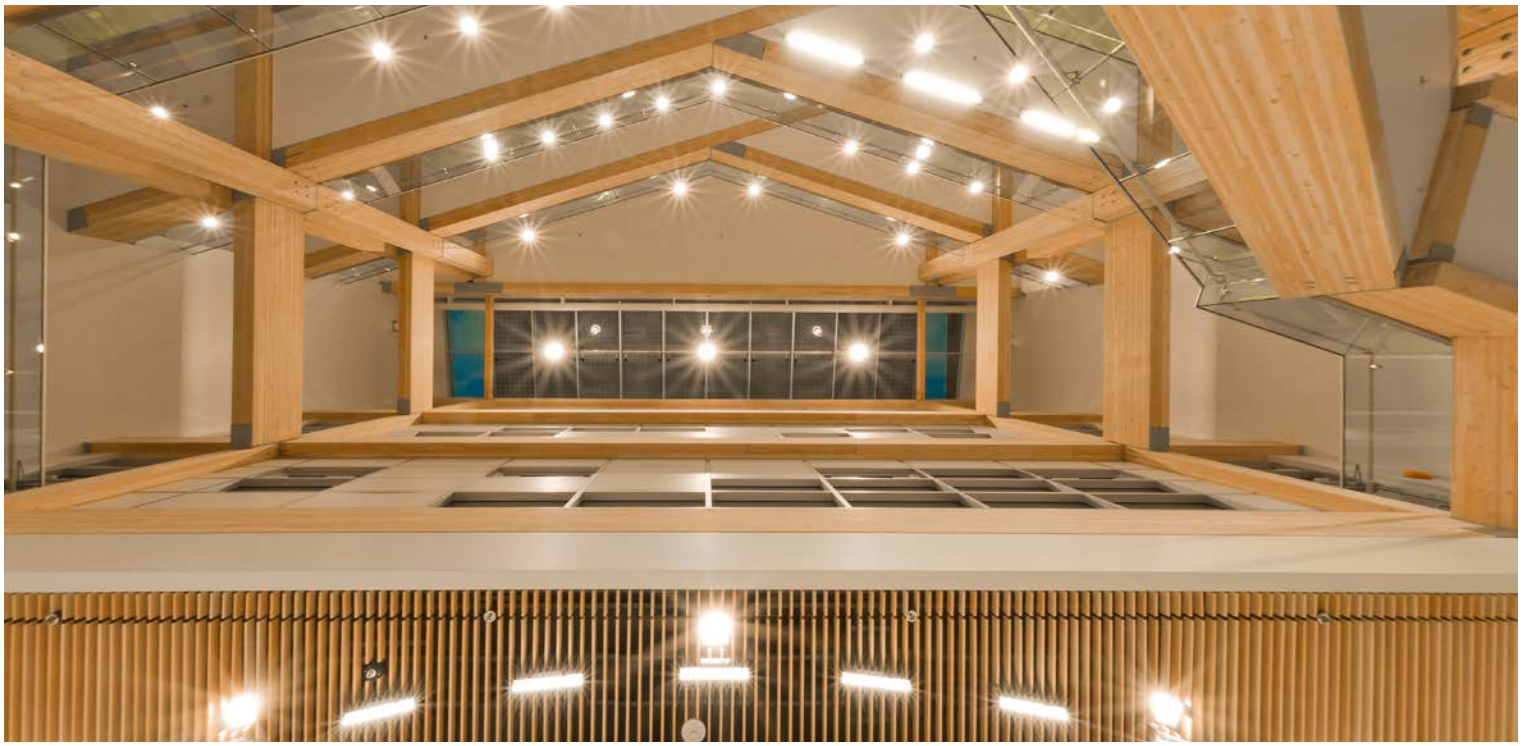

Photo courtesy of naturallywood.com

"Wood is the most sustainable construction material, low-embodied energy, quickly renewable resource. From a structural point of view, the modern engineered materials such as glue laminated timber have increased the strength of wood so that they have a much greater structural capacity. Finally, the warmth wood brings to the building – it creates an ambiance that is just fantastic."

***Paul Fast**, Structural Engineer, Fast + Epp*

Wood Use

CIRS was one of the first large, multi-story institutional buildings at UBC to be constructed of wood.

The overall design emphasizes simple forms and materials, exemplified by the exposed wood structure and visible connections. It includes a combination of glue laminated timber (glulam) components, dimensional lumber, plywood, and a minimal amount of concrete.

The structure is a hybrid system. The basement and ground level auditorium are cast-in-place concrete, with a roof of curved glulam beams supporting a solid wood roof over the auditorium. The upper floors have a frame of engineered wood members supporting a solid wood floor assembly.

The decision to use wood was in keeping with the regenerative concept of CIRS. While green buildings try to reduce harmful environmental impacts, regenerative buildings seek to go beyond that by improving both the natural environment and the lives of their human inhabitants.

The spruce-pine-fir (SPF) lumber in the building comes from forests that have been impacted by the mountain pine beetle infestation.

CIRS was the first UBC building to be awarded LEED Platinum certification, which is the highest designation in green building performance from the Leadership in Energy and Environmental Design rating system.

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

Photo courtesy of naturallywood.com

ESTIMATED ENVIRONMENTAL IMPACT OF WOOD USE

- Volume of wood products used: **940 cubic meters**
- U.S. and Canadian forests grow this much wood in: **3 minutes**
- Carbon stored in the wood: **701 metric tons of CO_2**
- Avoided greenhouse gas emissions: **1,473 metric tons of CO_2**
- Total potential carbon benefit: **2,173 metric tons of CO_2**

GHG EMISSIONS ARE EQUIVALENT TO:

- **415** cars off the road for a year
- Energy to operate **185** homes for a year

**Estimated by the Wood Carbon Calculator for Buildings, cwc.ca/carboncalculator.*

**CO2 refers to CO2 equivalent.*

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