Forestry Innovation Investment®

MARKET DEVELOPMENT SUMMARY

BRITISH COLUMBIA

Lake Revelstoke, B.C. | Photo: SMJoness/iStock via Getty Images (top)
Wolf carving in Wii Gyemsiga Siwilaawksat Student Building, Terrace, B.C. | Photo: Bright Photography (bottom)

Advancing wood use in B.C. reduces greenhouse gases, supports better housing options, and showcases B.C. products and expertise to global markets

Supporting innovation & sustainability

The British Columbia (B.C.) forest economy involves everything to do with wood—from harvesting and product manufacturing to building construction and design. It has over a century of success at adapting and responding to changing science technology and economic, environmental and social needs. Today, the need for innovation is greater than ever to support B.C. in building adequate housing and community infrastructure as well as combatting climate change.

B.C. is one of the world's largest producers and exporters of wood products. With a small population relative to its forest resources, the province relies on export markets to prosper. Wood innovations showcase B.C. as a leading competitive supplier, enabling ongoing international market development.

Our work involves natural resources which are connected to many First Nations communities located in or closely associated with forests across British Columbia. We recognize their connection to the forests and are grateful to those whose lands we reside and work on, or are visiting.

In the spirit of reconciliation, FII acknowledges that its head office is situated in the traditional territories of the xʷməθkʷəy̓əm (Musqueam), səlilwətaɬ (Tsleil-Waututh), and Sḵwx̱wú7mesh (Squamish) Nations.

Sustainable forest management

B.C.'s goal in forest management is simple but powerful—protect our diverse, natural forests. Of major forest jurisdictions around the world, B.C. has one of the highest percentages of total land covered by forests. Over the past few decades, only 0.01 percent of this land has been deforested, among the lowest in the world—among the lowest in the world.

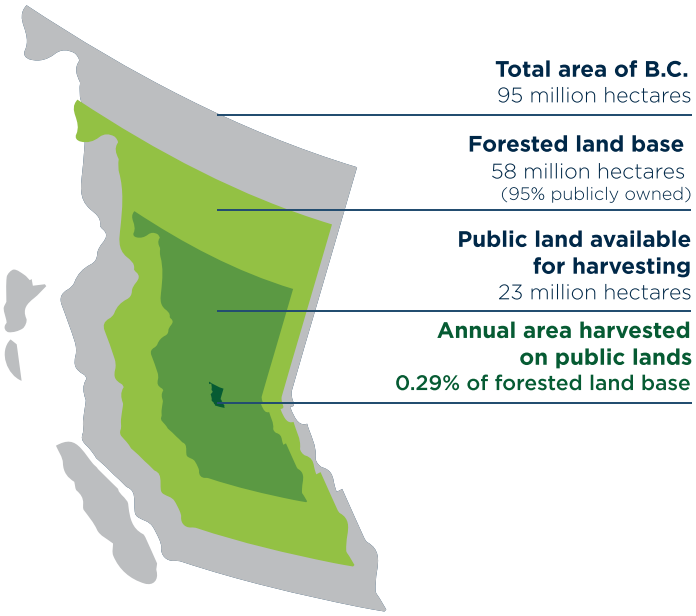
Allowable annual harvest levels are regularly adjusted to address the health of the forest ecosystem and respond to evolving policy objectives. All harvested areas in B.C. are replanted with native tree species appropriate to respective ecosystems.

Over 14 million hectares, or 15 percent, of B.C.'s forested land are protected from logging. These protected lands will expand to 30 percent of the province by 2030 through partnerships with the Government of Canada and First Nations, balancing conservation and commercial activity.

Photo: Michael Bednar, courtesy naturallywood.com

77%

of B.C. forests are third party certified—one of the highest rates of forest certification in the world



Climate change is impacting forests in B.C. and around the world, disrupting harvesting and threatening forest health. Following a devastating pine beetle epidemic in the early 2000s, the province has faced repeated, major wildfires. In response, B.C. is combining forest carbon science, wildfire science and First Nations knowledge to improve management practices, mitigate wildfire risks and encourage forest growth.

B.C.'s approach to sustainable forestry involves Forest Landscape Planning (FLP), which is developed in partnership with First Nations, local governments and communities. FLP establishes clear objectives for the long-term management of old growth, biodiversity climate change and wildfire risk.

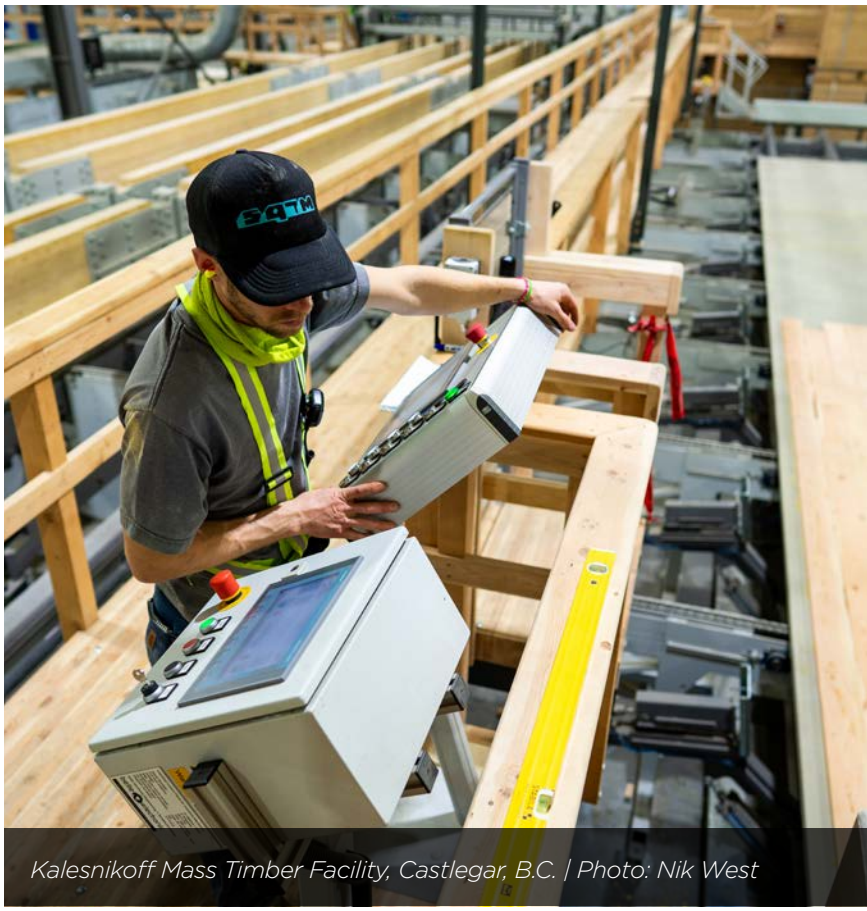
With the passing of B.C.'s Declaration on the Rights of Indigenous Peoples Act establishing the UN Declaration on the Rights of Indigenous Peoples as the Province's framework for reconciliation, the province is forging a path for shared governance and decision-making. Putting First Nations at the centre of land-based decisions builds a foundation for reconciliation, recognizes the generations of experience with forest resources and creates certainty for the sector, communities and global customers.

B.C. forest economy & jobs

The wood economy consists of separate but interconnected activities, including forest management, silviculture, harvesting, transportation, milling, pulp, paper, wood pellets, bio-refining, engineered wood products and value-added manufacturing. It also extends to the architects, engineers and consultants that support and drive the innovative use of wood in buildings and infrastructure, both in B.C. and in markets around the world.

To support this wide range of activities, the sector relies on businesses supplying equipment, transportation, information technology, financial and professional services. All of these businesses are essential to the provincial economy, generating jobs and revenue in both urban and rural communities.

First Nations are increasing their participation in the sector with new tenures, ownership of logging and manufacturing companies, and joint ventures with forest companies. With a focus on building capacity and creating long-term job opportunities for their communities, the First Nations Forestry Workforce Strategy aims to double First Nations employment in the forest sector by 2027.



Kalesnikoff Mass Timber Facility, Castlegar, B.C. | Photo: Nik West

350+ SUPPLIERS

of a diverse range of sustainably-sourced forest products operate across the province

$691

Million in taxes and fees generated by the forest sector in 2023/24

4,800

Indigenous people are directly employed in the B.C. forest industry

1 in 6

manufacturing jobs are in the B.C. forest sector

Driving value through innovation

B.C. is North America's largest producer of softwood lumber and Canada's second-largest producer of pulp and paper products. Beyond these primary industries, the province has a large value-added wood manufacturing sector. B.C. manufacturers produce mass timber and next-generation engineered wood products, alongside traditional goods like cabinets, furniture, millwork and prefabricated building components. In 2023, value-added product exports topped $1.1 billion.

B.C. also supplies customers with a wide variety of consumable forest products. These include paper products, wood pellets and specialty pulps used in everything from rayon fabrics to medical face masks.

Mass timber describes a family of engineered wood products known for their strength, durability, versatility and sustainability. Mass timber products are large structural building components made by connecting smaller wood elements, such as dimension lumber, veneers or strands, with adhesives, dowels, nails, or screws. B.C.'s diverse forests and forest product suppliers are positioned to respond to market demand while adhering to sustainable resource management practices.

Mass timber supports a flexible, interconnected design in this two-storey, light-filled and seismically safe elementary school designed for today's students and teaching needs.

Sir Matthew Begbie Elementary School Seismic Replacement, Vancouver, B.C. | Photo: Bright Photography

Mass timber: Large structural building components made by taking smaller wood elements, such as dimension lumber, veneers, or strands, and connecting them with adhesives, dowels, nails, or screws.

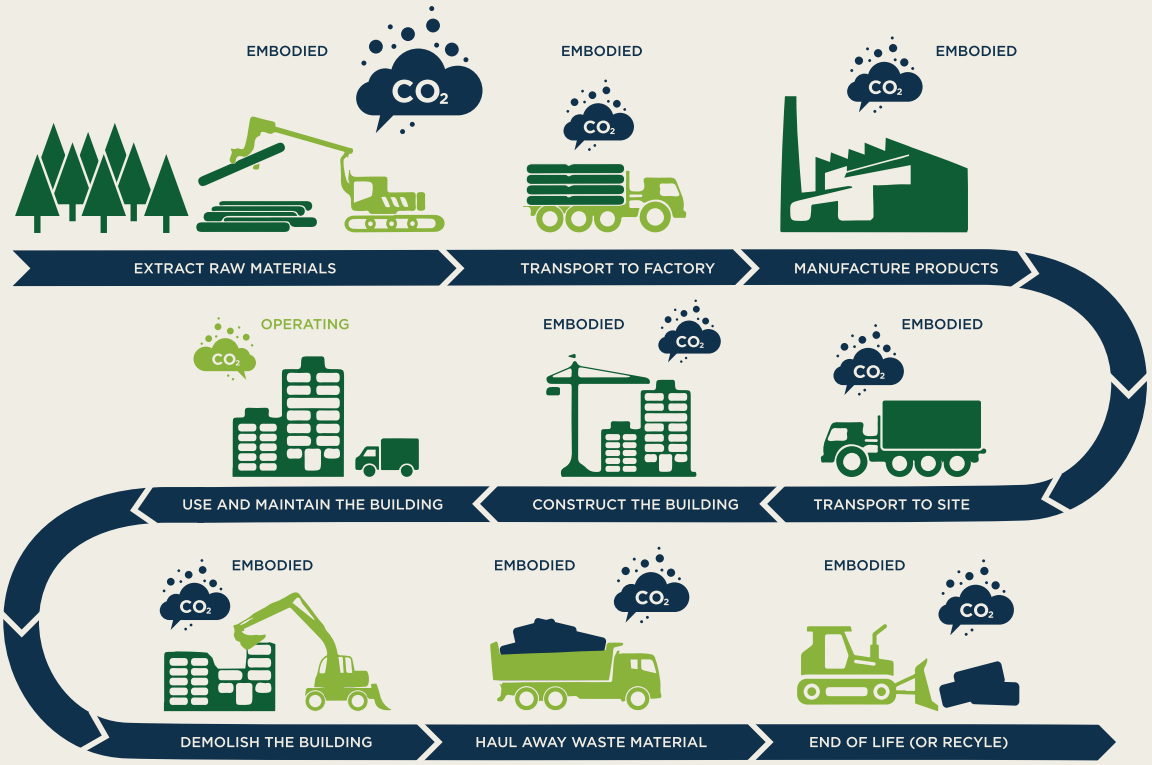
Around the world, mass timber products and building systems are on the rise, helping shape more resilient, climate-smart communities.

- Comparable in strength and durability to concrete and steel, with a significantly smaller carbon footprint
- Light weight while still meeting performance standards for safety, structural resilience and fire protection
- Manufactured in a controlled environment to ensure high-quality and quick on-site assembly, reducing construction time and cost

KF Aerospace Centre for Excellence, Kelowna, B.C. Photo: Shawn Talbot

Technology meets tradition in this multipurpose aviation centre that draws inspiration from historic aircraft design and takes advantage of the latest in mass timber building systems.

Market trend: reducing carbon in the built environment



Embodied carbon is the sum of greenhouse gas emissions released during the following life-cycle stages: raw material extraction, transportation, manufacturing, construction, maintenance, renovation, and end-of-life for a product or system.

Buildings are a major source of carbon emissions—from a broad range of building materials and operating infrastructure to construction activity and demolition. Cutting carbon output is a priority for industry and government. Understanding carbon inputs and outputs at all stages of the building life cycle is important when making choices to optimize carbon emissions.

For example, wood is carbon efficient because trees grow by taking carbon out of the atmosphere. The choices made in the "built" environment—whether during design and construction or operation—have a significant impact on achieving carbon reduction goals.

Prefabricated wood construction involves factory-built, precisely manufactured timber components that make better use of resources and reduce the number of deliveries to a building site. This decreases overall vehicle emissions and on-site construction waste. These benefits, along with wood's ability to serve as a carbon sink, can make timber buildings a compelling choice to achieve low-carbon construction and design targets.

International reviews of embodied carbon policies reveal a growing trend to develop comprehensive strategies that address various facets of sustainable building. These include reducing embodied carbon, adapting to climate change, and minimizing operational carbon emissions. As global policies and regulations continue to evolve to tackle embodied carbon, the adoption of low-carbon materials like wood is expected to rise.

Market trend: supporting low-carbon infrastructure & housing solutions

B.C. is working to speed delivery of better, more affordable homes through its BC Builds program. It is also driving carbon emissions reductions through the Clean BC Roadmap, a guide to reducing carbon outputs by 40 percent by 2030. Advanced wood building systems are an important part of this strategy as they offer a significantly lower carbon footprint compared to concrete and steel.

The Roadmap includes B.C.'s Mass Timber Action Plan, a program to accelerate the use of mass timber construction while ensuring codes, expertise and associated technologies keep pace. Initiatives, such as the Mass Timber Demonstration Program, have been incentivizing mass timber innovation in the private sector, while government policy has prioritized the use of wood and engineered wood products in public projects.

B.C. updated its building and fire codes in April 2024 to enable more mass timber construction across public and private projects. The new codes allow for:

- building height up to 18 storeys;
- more eligible building types (schools, care homes, retail, industrial facilities); and
- more exposed wood surfaces.

By driving innovation through high-performance commercial and residential applications of wood and mass timber, B.C. is positioning itself as a global supplier of low-carbon building goods and services. This underscores B.C.'s commitment to more renewable, scalable and environmentally friendly building solutions.

B.C.'s low-carbon initiatives aim to build awareness of wood's role in reducing carbon impacts among key stakeholders, including the forest industry, government bodies, building designers, and construction professionals in B.C., Canada, and other global markets.

As wood and wood-hybrid buildings become taller, larger and more complex, the use of integrated project delivery (IPD) and digital design tools such as building information modelling (BIM) is important to improve cost and construction efficiencies to deliver timely and affordable building solutions.

Photo: Wade Comer Photography, courtesy naturallywood.com

Market trend: building markets & wood construction

Trinity Western University Student Housing | Photo: Metric Modular, courtesy naturallywood.com

Prefabricated construction

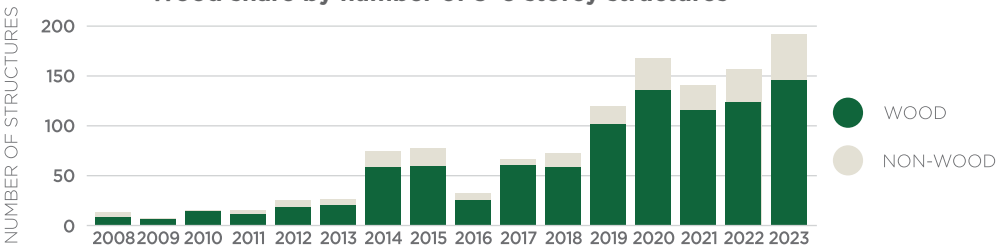
Prefabricated construction is any building that contains significant sections built in a manufacturing plant and then assembled on site. Wood's versatility, light weight, and workability make it well suited to prefabricated construction. Off-site construction creates significant efficiencies, improves built quality, and can be rapidly assembled on site, helping to reduce construction costs and timelines. According to several studies, this efficient building method reduces the time to complete a construction project by up to 50 percent.

Light-frame, mid-rise residential

Over fifteen years ago, B.C. led North America in mid-rise residential construction by increasing the maximum height from four to six storeys for light-frame wood building systems. Developers quickly realized that this wood-based system was the solution to providing reasonably priced and energy-efficient housing in the mid-rise market.

Demand skyrocketed. The floor area for wood-frame structures in the 5–6 storey segment grew from 700,000 square feet in 2008 to 13.1 million square feet in 2023. The opportunity exists for wood to capture an even greater share of the residential market due to recent advances in hybrid-timber and mass timber building systems and components, as well as the expansion of B.C. building code to allow mass timber for buildings up to 18 storeys.

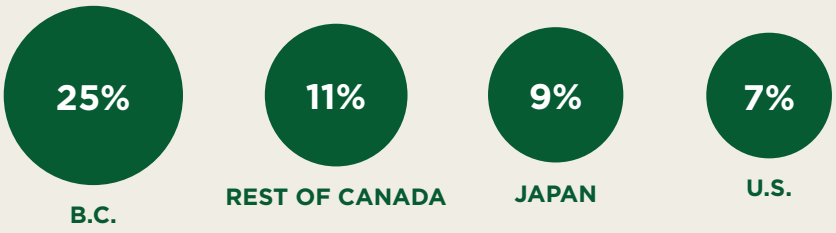
Wood share by number of 5–6 storey structures



Non-residential

Wood market share in the B.C. non-residential sector is the highest in the world. This reflects the broad awareness and capacity to design with and specify wood in the design, development and construction sectors.

2023 share of non-residential projects built in wood



** Data is for 2023 for all regions except U.S., where the datapoint is 2020*

Provincial and local governments continue to encourage wood usage for public and institutional buildings to support the B.C. forest industry and leverage its benefits such as visual appeal, low environmental and carbon impacts, and seismic performance.

Mass timber and tall wood

Since 2007, over 400 mass timber projects have been built or are under construction in B.C. This is almost all the mass timber buildings in Canada.

B.C.'s leadership in advanced wood building systems continues to influence the growing mass and tall timber markets in North America and around the world.

oN5 building construction, Vancouver, B.C. | Photo: KK Law

Photo: Brudder Productions, courtesy naturally:wood

Brock Commons Tallwood House, B.C. was the tallest hybrid mass timber building in the world when first built. Since 2007, B.C. has 33 tall mass timber buildings (over 6 storeys) completed or under construction.

This leadership has also influenced professionals, who see increasing benefits to building with wood. In 2022, perceptions among B.C. building industry professionals involved in multi-family residential buildings and non-residential design and construction were that:

- 95 percent felt that wood will be an important part of B.C.'s future;
- 88 percent agreed that wood is an environmentally sustainable material; and
- 80 percent agreed that wood products have less of a carbon footprint than other building materials and wood products offer good value for money.

8 of Canada's top 10 mass timber engineering firms are located in B.C.

128 architecture firms, 41 engineering firms, and 116 building firms in B.C. have experience on mass timber projects

As in the mid-rise sector, the environmental and cost benefits are creating compelling arguments to build taller with wood. With recent refinements to building codes, B.C. is positioned to show further leadership to drive growth and market share in Canada and the U.S.

B.C. has become North America's leading jurisdiction in engineering, building, and design expertise. The increasing demand for building taller and bigger with wood has incentivized more architects, engineers and building professionals to broaden their skillsets. Supporting this growth, many of the province's post-secondary institutions are at the forefront of testing, designing, and training students on innovative ways to use wood. As the supply chain becomes more and more robust, demand for B.C.'s building and design expertise is spreading through North American markets and overseas.

Wood Innovation and Design Centre, Prince George, B.C. | Brudder Productions

VanDusen Visitor Centre | Photo: KK Law, courtesy naturallywood.com

Biophilic design

Biophilic design is a growing architectural movement that targets scientifically based health and performance outcomes through connection to nature. Wood is a natural material and—when exposed—has been shown to bring health benefits to occupants of indoor built environments. Biophilic design with wood is a way to ensure that a building we put in place today will provide health and economic dividends over its operational life. As British Columbia is a leader in wood building design and construction, it is well positioned to lead in the research, demonstration and promotion of the biophilic benefits of wood buildings.

Market & industry development

Support innovation

B.C.'s wood design and manufacturing sectors continue to expand their capacity to advance next-generation, wood-based products and building systems that create and respond to market demand. FII works with partners to support continued advancement through research and demonstration building projects.

Research

Currently underway in North America is a growing body of applied research focusing on performance-based building codes. These codes look to address issues related to prefabrication, repeatability, scalability, embodied carbon, acoustic performance, health and biophilic properties in mass timber and wood-hybrid assemblies. FII funds a variety of non-profit research and academic institutions, including the Canadian Wood Construction Research Network, the University of British Columbia, the National Research Council Canada, the University of Victoria, the University of Northern British Columbia and FPInnovations.

Demonstrating leadership

Demonstration projects are used to expand and advance opportunities for engineered wood use, serving as a showcase for provincial, North American and international markets. These projects are an important step in creating a commercial market, as they support early adopters with the skills and knowledge in design, development and construction practices necessary for success. Findings and lessons learned are shared with key stakeholders in all levels of government and the building design and construction sector to action new building codes and address technical barriers.

Accelerate adoption

Design and construction professionals choose wood products and wood building systems when they have the skills, ability and confidence to design and specify wood. Together, FII and its partners work to accelerate adoption by improving the capacity of the whole supply chain—from primary and secondary manufacturers, architects, engineers and developers, through to builders, assemblers and installers. Barriers to advanced mass timber construction are being addressed through the development of resources for municipalities, building officials and the insurance industry.

Training and capacity building

FII, industry and government partners continue to strengthen B.C. manufacturing through training programs in business, marketing, design and technology. Education and skills development are vital in advancing a globally competitive wood products industry.

- **Technical workshops** offer insights on key topics relating to structural timber engineering, fire safety and prefabrication.
- **Company-specific projects** delivered by partnering with industry associations and academic institutions provide consulting services for firms across the province, including business marketing, manufacturing process design and technical solutions.
- **Culturally and community appropriate skills training** in woodworking, architecture and construction among Indigenous youth provides hands-on trades discovery for K-12 classes.

Addressing barriers

FII has also been supporting efforts to address barriers faced for large, complex prefabricated wood buildings, including local government planning, building policies and the need for the insurance industry to catch up to changes in mass timber solutions. These barriers can inadvertently block innovative new building systems through zoning restrictions and a lack of available financing for new construction systems. Working with industry experts, municipalities and building officials, a suite of reports, guides and other tools have been developed to address these barriers and make mass timber buildings an attractive choice for the investment and insurance community.

Technical experts and knowledge mobilization

To build capacity and foster knowledge sharing, technical advisors, such as WoodWorks BC, researchers and design professionals, are available. There is also a wide variety of resources, such as digital tools, construction guides and research libraries. B.C.'s technical experts and resources highlight the possibilities of building with wood, showcase examples of wood innovation and lessons learned from across B.C., and provide hands-on support for early adopters of wood and mass timber building systems.

Databases and resources

B.C. Research Library: market and export data, sector reports, as well as product, technical, building/construction and environmental information—all funded and commissioned by FII and its funding recipients.
See https://www.bcfii.ca/research-library/.

naturally:wood: toolkits, calculators, case studies and lessons learned, guides, and published research covering topics from B.C. forest practices and products to building design and construction expertise. Access over 200 building profiles featuring next-generation B.C. mass timber and lumber products and systems. See https://www.naturallywood.com.

Think Wood Research Library (managed by FII)**:** over 3000 research reports and technical resources from across Canada and around the world on light-frame and mass timber mid-rise to taller wood building systems.
See https://research.thinkwood.com.

Showcase B.C.

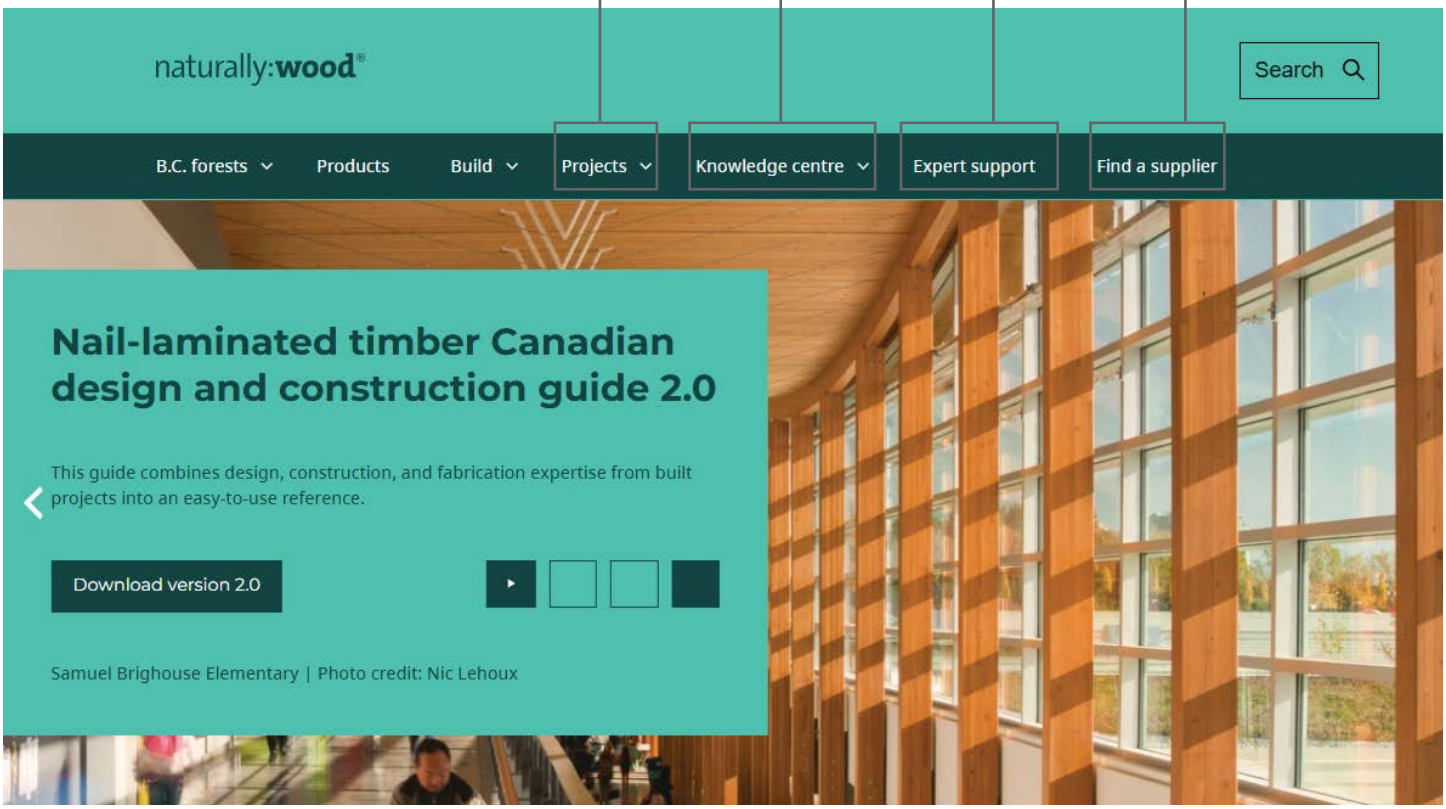
FII and its partners work to showcase B.C.'s leadership in innovative products and building system technologies to advance the use of wood across the province and around the world. This work is highlighted by a digital communications ecosystem including naturallywood.com and other digital marketing channels. It connects key audiences throughout the building supply chain, including architects, engineers, installers, wood and mass timber manufacturers, and researchers. These materials build awareness of key industry events and the latest topics on wood building and environmental performance.

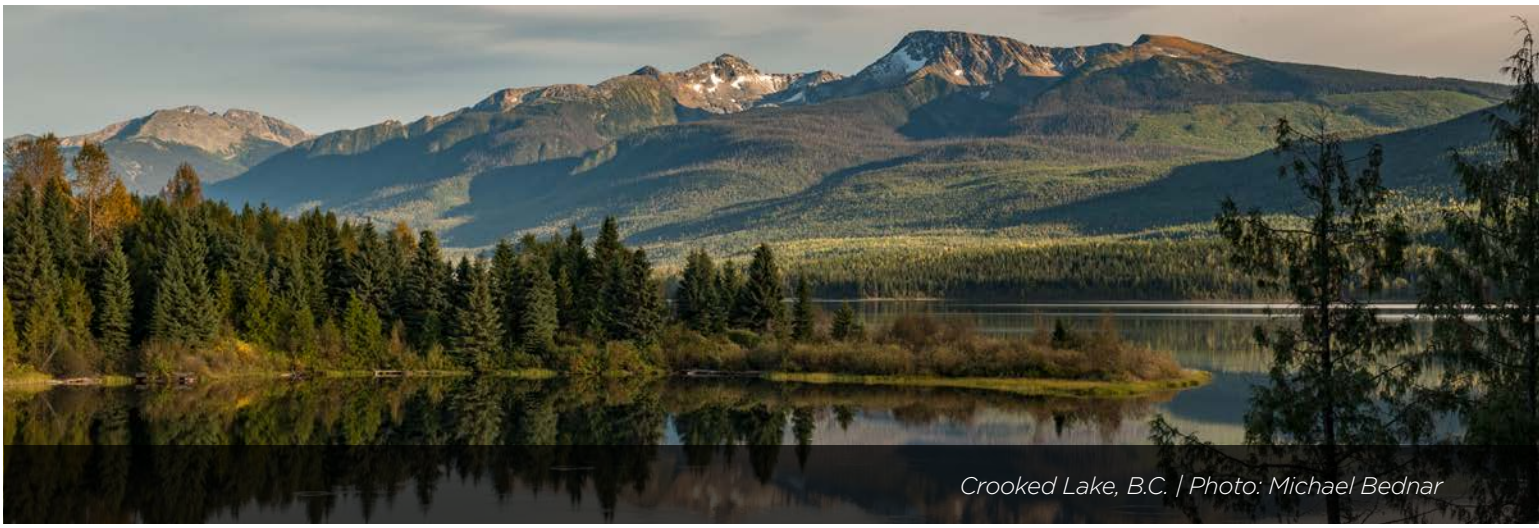
Growing collection of diverse materials, including fact sheets, research, technical guides, upcoming events, and learning opportunities.

An online resource connecting buyers with B.C. suppliers of wood products and services.

Featuring hundreds of B.C.-based timber projects including ones supported by the Province's Mass Timber Demonstration Program, ranging from community spaces to offices and residences in taller wood buildings.

Highlighting B.C. organizations, experts and facilities that provide support with wood design, codes, exports, research, testing and education.





Crooked Lake, B.C. | Photo: Michael Bednar

Our partners

Through FII and funding support from the Province of B.C., several organizations drive market development efforts across the province. By working together, government and industry continue to evolve the provincial market for B.C.'s high-quality primary and secondary wood products. Leveraging resources and encouraging cost-sharing and collaboration ensures that B.C. remains a leader in innovative wood use and building systems.

Affine Climate Solutions

Athena Sustainable Materials Institute

British Columbia

BC Council of Forest Industries

BC Wood

Canadian Wood Construction Research Network

Construction Foundation of BC

Canadian Wood Council / Conseil canadien du bois

FPAC.ca APFC.ca

FPInnovations

Natural Resources Canada / Ressources naturelles Canada

NRC-CNRC Canada

SFU

UBC

UNBC University of Northern British Columbia

UVIC

wood WORKS! A Canadian Wood Council Program

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