



**Forestry Innovation
Investment®**

MARKET DEVELOPMENT SUMMARY

BRITISH COLUMBIA

Lake Revelstoke, B.C. | Photo: SMJones/iStock via Getty Images (top)

Upper Skeena Recreation Centre, Hazelton, B.C. | Photo: Ema Peter Photography, courtesy Hemsworth Architecture (bottom)

***Expanding applications
for wood products in
B.C. helps to expand
demand for our
products here at home,
while also furthering
technology and
expertise that we can
showcase to the world.***

SHOWCASING LEADERSHIP & INNOVATION

British Columbia's forest sector represents the province's social and environmental values, and continues to be a stable long-term contributor to the provincial economy.

While a large portion of our forest products are exported around the world, consumption of B.C. wood products continues to evolve here at home due to ongoing advancements in wood products and building design. B.C. is working to ensure early adoption of new approaches to wood construction as well as mass timber and biomass products. In doing so, B.C. further supports regulatory change, stimulates jobs and expands market opportunities at home and abroad.

The built environment is a major carbon emitter, presenting significant opportunities for innovative wood use to create more sustainable and less carbon intensive buildings. Wood reduces the carbon footprint of the built environment, creating healthier, more comfortable spaces. Advancing wood use in B.C. presents opportunities to evolve technologies and expertise and demonstrate how wood design can help reach climate mitigation goals around the world.

SUSTAINABLE FOREST MANAGEMENT

B.C.'s approach to sustainable forestry focuses on forests forever. B.C. has the 14th largest forest area when compared to country jurisdictions around the world, and is a leading jurisdiction, ranking third after Russia and the rest of Canada, for third-party certified sustainably-managed forests. Our forests are woven into the fabric of the province's culture; it's where we live, work and play. Responsive policies and a commitment to biodiversity are keeping B.C.'s forests healthy and resilient. B.C.'s land use planning framework conserves important areas with about 15 percent of B.C.'s forests protected. This approach has garnered international recognition for B.C. as a global leader in sustainable forest management.

Total area of B.C.
95 million hectares

Forested land base
60% of total

Land available for timber harvesting
23% of total

Annual area harvested
0.35% of forested land base

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One billion trees were planted on crown land from 2018-2021



JOBS & COMMUNITIES

B.C.'s publicly managed forest resource generates economic benefit for British Columbians across the province. It is an essential contributor to hundreds of communities as it provides approximately 100,000 jobs (direct, indirect and induced) in both rural and urban environments.

The B.C. forest industry consists of a number of separate but interconnected activities such as forest management; wood product manufacturing (primary and secondary); pulp, paper and bio-refining; and forest product marketing. To support this vast scope of forestry activities, the sector also relies on B.C. businesses supplying technology, equipment, transportation and financial services. Each of these aspects of our forest sector is integral to the provincial economy, working to generate jobs, revenue and support B.C. communities.



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

1.1

Billion in B.C. public revenue was generated by the forest sector in 2020/21

120+

Indigenous nations and organizations are involved in the B.C. forest industry

100,000

Full-time equivalent B.C. jobs are generated by the forest sector

400+

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

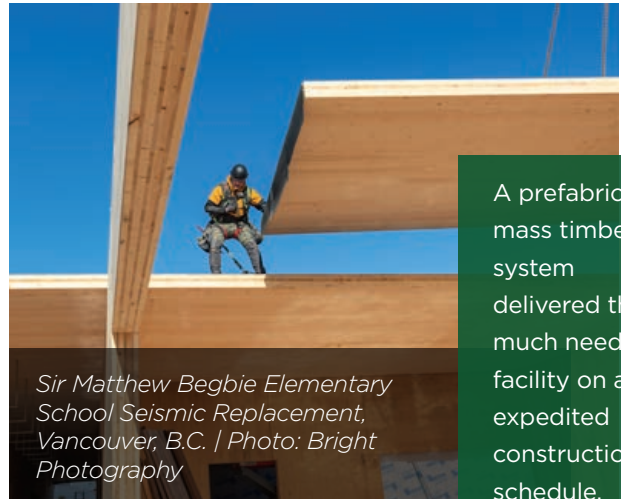
B.C. FORESTS/WOOD PRODUCTS

Following the end of the mountain pine beetle epidemic in B.C.'s interior forests, B.C. is transitioning from over a decade of predominantly salvaging and processing larger volumes of damaged logs back to smaller volumes of timber from healthy forests.

As one of the province's chief manufacturing industries, B.C. is North America's largest producer of softwood lumber and Canada's second-largest producer of pulp and paper products. Alongside traditional goods like cabinets, furniture and prefabricated building elements, B.C.'s value-added manufacturers make a variety of mass timber and next-generation engineered wood products, generating close to \$700 million in exports in 2020.

In addition to wood products, B.C. is also home to leading architects, engineers and consultants that support and drive the innovative use of wood in buildings and infrastructure. As a result, these services are now in demand worldwide.

8 OF CANADA'S TOP 10
MASS TIMBER
ENGINEERING FIRMS
ARE LOCATED IN B.C.



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

A prefabricated mass timber system delivered the much needed facility on an expedited construction schedule.

Around the world, mass timber and engineered wood product development and building systems are on the rise, helping shape more resilient, climate-smart communities. Mass timber buildings are where the primary load-bearing structure is made of solid or engineered wood.

Usually fabricated off-site as panels and beams, mass timber products are comparable in strength and durability to concrete and steel and are considerably lighter in weight while still meeting performance standards for safety, structural resilience and fire protection.



KF Aerospace Centre for Excellence, Kelowna, B.C. Photo: Agency Media

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 OVERVIEW

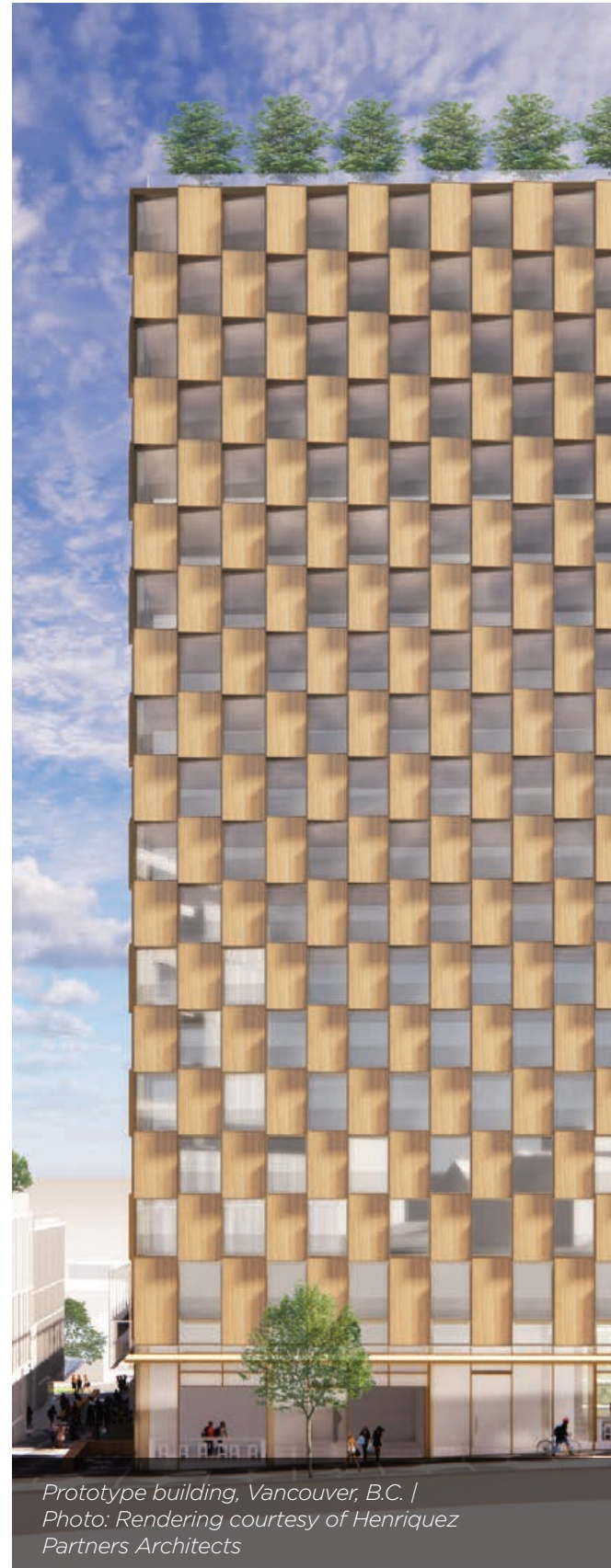
CODE CHANGES & BUILDING INNOVATION

As local and global priorities are shifting toward green and low-carbon building systems, building codes are evolving to recognize wood and modern performance standards for wood assemblies. B.C. has a long history of supporting the evaluation and evolution of codes that may allow for building larger and taller structures with wood. B.C.'s leadership approach now sees structural wood use in residential, commercial, institutional and industrial buildings, creating new market share for wood.

- **12 storeys**—The federal National Building Code is expected to allow mass timber construction up to 12 storeys, and will be reflected in the next edition of the B.C. Building Code.
- **Early adopters**—B.C. was the first Canadian province to allow the construction of mass timber buildings up to 12 storeys. Following an invitation by the Government of B.C. to all local governments, 21 communities in B.C., along with the City of Vancouver, are leading the nation as they adopt innovative and safe mass timber technology for 12-storey wood buildings.



Tallwood 1, Victoria, B.C. | Photo: Dasha Armstrong, courtesy Design Build Services



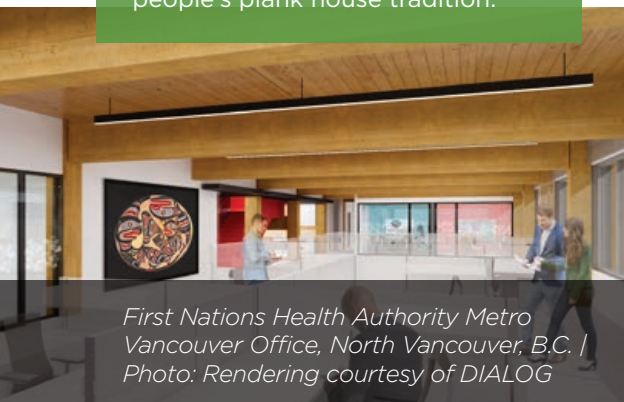
Prototype building, Vancouver, B.C. | Photo: Rendering courtesy of Henriquez Partners Architects



Brock Commons Tallwood House

This 18-storey student housing tower at The University of British Columbia was the tallest modern mass timber hybrid building in the world when it was completed in 2017. The mass timber structure took 70 days to construct—about four months less than traditional construction. Carbon stored in the building's wood products is equivalent to removing 511 cars from the road for a year.

Exposed mass timber construction will give the First Nations Health Authority a new Metro Vancouver office that envelops employees in the biophilic benefits of wood and pays homage to the Coast Salish people's plank house tradition.



First Nations Health Authority Metro Vancouver Office, North Vancouver, B.C. / Photo: Rendering courtesy of DIALOG

BUILDING MARKETS & WOOD CONSTRUCTION

B.C. is a North American leader in wood construction.

Light-frame mid-rise residential

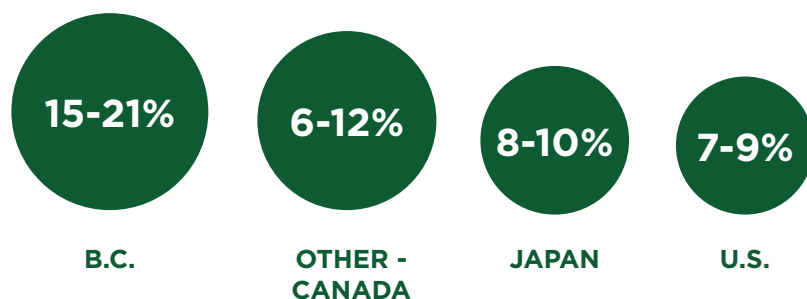
B.C. led North America by increasing the maximum height for light-wood-frame residential construction from four to six storeys, with the revision of the B.C. Building Code in 2009.

The provincial mid-rise multi-family sector grew eight-fold from about one million square feet in 2008 to over eight million square feet in 2020, with the wood market share currently sitting at 83 percent (compared to 63 percent in the U.S. and 52 percent in Canada), highlighting B.C.'s pioneering role.

The market share of mid-rise residential (five to six stories) in B.C. is already high, but there still exists potential to further advance use of wood through mass timber and next-generation lumber products and hybrid wood-frame and mass timber systems.

Non-residential

B.C. holds the greatest share of non-residential construction built in wood:



** In any given year over the past decade.*

The B.C. government and many municipalities have stated a preference for wood buildings for a variety of factors including support of the local forest industry, the visual appeal of wood, sustainability, health benefits (biophilia) and increased seismic performance. Institutional buildings are also good exemplars for local communities as they influence the construction of other types of wood buildings in the community, including residential and commercial buildings. The institutional building market in B.C. is large, with over 12 million square feet of institutional buildings constructed in B.C. between 2015 to 2019.

Mass timber and tall wood

B.C. is leading Canadian mass timber construction.

- Between 2007 and 2019, B.C. constructed over half of the mass timber buildings built in Canada.
- Of the 259 mass timber buildings constructed between 2007 and 2019, 72 included contemporary mass timber products such as cross-laminated timber (CLT) and dowel-laminated timber (DLT).



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

This innovative four-storey project by Timber Engineering Inc. demonstrates new approaches to insulative CLT assemblies and damage-resistant seismic design.



Fast + Epp Home Office, Vancouver, B.C. | Photo: Mathias Fast photography, courtesy Fast + Epp

Internationally recognized for a vast portfolio of hybrid wood structures, the new headquarters for structural engineering firm, Fast + Epp show what's possible with mass timber, including a spacious airy interior with the warmth of exposed wood.

In 2021, perceptions of wood among B.C. specifiers (building industry professionals regularly involved in the consultation, design, specification or construction of new multi-family residential buildings and/or non-residential buildings) was:

- Wood is an environmentally sustainable material (89%).
- Wood products are durable and wood products are a good value for money (both at 84%).
- Wood will be an important part of B.C.'s future (93%).
- B.C. is a leader in wood construction (84%).

There are **20 six+ storey** projects under development across B.C., all using mass timber products. The projects include **21-storey** and **34-storey** tower concepts by leading B.C. developers, as well as **two 12-storey** buildings on southern Vancouver Island.

Even though the proportion of 7-12 storey buildings constructed in B.C. is relatively low, market stakeholders feel that—similar to that experienced for mid-rise buildings—the number of taller residential buildings will likely increase due to escalating land prices which dictate the construction of taller buildings to meet housing needs.

Although it is early in the growth curve, there is great opportunity for B.C. suppliers and expertise to grow market share in Canada and the U.S. By 2035, the mass timber construction market in B.C. is expected to grow by 100,000 cubic metres, equivalent to almost three additional mass timber plants¹. This North American market area is projected to grow by 1.9 million cubic metres (+55 plants). Given the right set of market conditions, B.C. could capture a sizable portion of this growth, particularly in Western Canada and the Western U.S.

¹ Assuming 50,000 cubic metre average plant size operating at 70 percent capacity.



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

MARKET & INDUSTRY DEVELOPMENT APPROACH

PRIORITY: SUPPORTING INNOVATION

STRATEGY: B.C. has the capability to manufacture, design and construct with new and innovative next-generation wood-based products and building systems that create and respond to market demand. FII and our partners support innovation in next-generation wood-based products and building systems through training and research.

B.C.'s Mass Timber Demonstration Program aims to help drive economic growth and accelerate the use of mass timber in the province by supporting early adopters. Announced in September 2020, the program is supporting a variety of demonstration and technical research projects, advancing mass timber use in a range of building types. FII and the B.C. government's Office of Mass Timber Implementation (OMTI) will work closely with the successful projects—documenting and sharing key lessons learned, results and research findings—to help support future mass timber projects across B.C.

Research

FII funds research through a variety of partners including FPInnovations, the University of British Columbia, the University of Victoria, the University of Northern British Columbia and other industry organizations on topics such as the biophilic properties of wood, fire performance, embodied carbon and acoustic performance of mass timber. Research is then shared through FII's communications activities and online research library.

Demonstration projects

A stronger engineered wood sector means greater economic, social and environmental value from our forest resource and supports government priorities for climate action, innovation, housing affordability, the long-term sustainability of the forest economy and shared prosperity for people across the province.

FII works alongside government partners, including OMTI, to position B.C. for success by leveraging expanded building codes and regulations to encourage the use of wood in taller buildings. Demonstration projects are used to expand and advance opportunities for engineered wood use and serve as a showcase for national, North American and international markets.

PRIORITY: ACCELERATING ADOPTION

STRATEGY: Architects, engineers, designers, developers and builders specify more wood because they have the skills, ability and confidence to choose wood products and building systems over alternatives.

Together, FII and its partners work to accelerate adoption through knowledge mobilization, capacity building and demonstration projects.

Knowledge mobilization

FII develops and shares a wide variety of resources including technical tools and construction guides, project profiles and information—all of which highlight the benefits of building with wood and showcase examples of wood innovation and lessons learned by early adopters from across B.C.

Key resources include:

B.C. Research Library: market and export data, sector reports, as well as product, technical, building/construction and environmental information—all of which is funded and commissioned by FII and its funding recipients.

naturally:wood Learning Centre: toolkits, calculators, must-have guides and published research on topics ranging from forest practices and products to B.C. building design and construction expertise, including profiles of almost 200 buildings using next-generation mass timber and lumber products and systems.

Think Wood Research Library (managed by FII): over 1,750 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.

Training and Capacity Building

Alongside advancements in wood-based products and building systems comes a need to develop the skills, ability and confidence to choose wood over alternative materials—thereby driving adoption and maintaining B.C.'s leadership in wood use. Training—for both current and next-generation workers—is vital to improving the capacity and effectiveness of all parts of the supply chain, from primary and secondary manufacturers to architects, engineers, developers, builders, assemblers and installers. FII and its industry and government partners continue to focus on strengthening manufacturing and building capacity in wood use in B.C. through training programs in business, marketing, design and technology.

Key activities:

- **Technical workshops** delivered through a Wood *WORKS!* BC partnership sees the delivery of technical workshops on key topics relating to structural timber engineering, fire safety and prefabrication.
- **Company-specific workshops** delivered by a partnering with BC Wood and UBC's Centre for Advanced Wood Processing provide company-specific capacity building projects and training for firms across the province.
- **Culturally-appropriate skills training** delivered by a partnership with the Construction Foundation of BC works to grow interest in woodworking among Indigenous youth and provides hands-on trades discovery for K-12 classes.

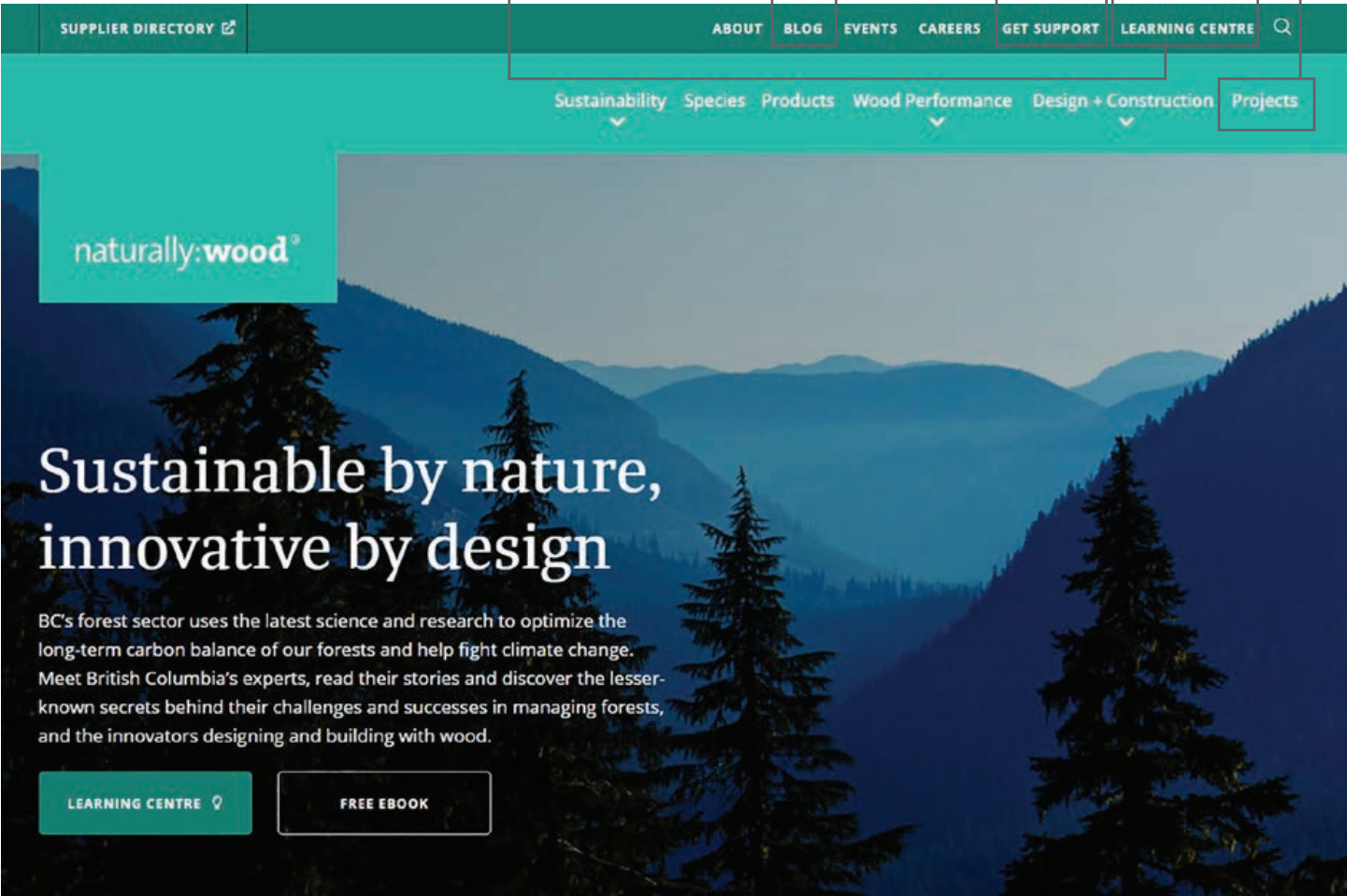
PRIORITY: SHOWCASING B.C. AS A GLOBAL LEADER

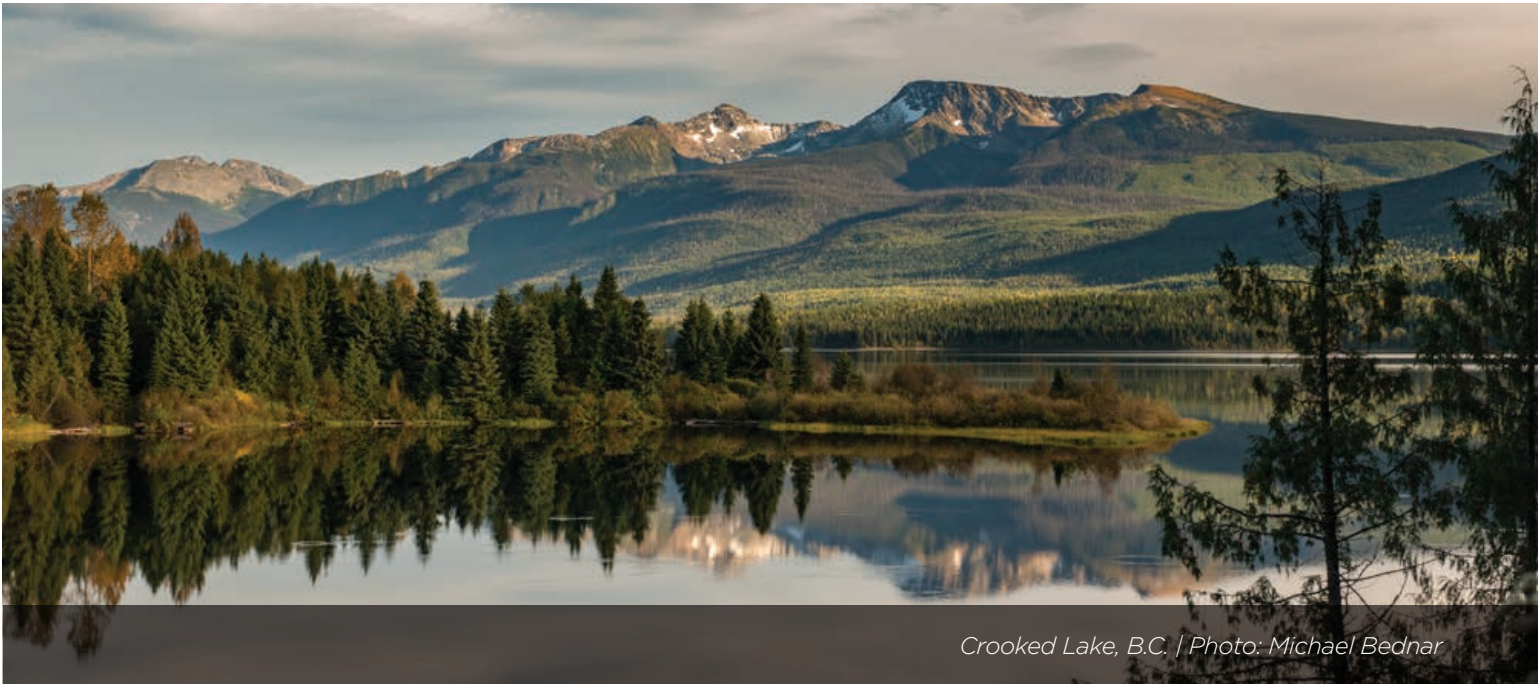
FII and its partners work to showcase B.C.'s leadership in innovative products and building system technologies to advance the use of wood across the province. Key examples of this work include a digital communications ecosystem through naturallywood.com and other digital marketing channels, connecting key audiences from various parts of the building supply chain, including architects, engineers, wood and mass timber manufacturers and installers, as well as researchers and other stakeholders, with emerging information. Materials shared build awareness of key industry events and the latest topics on wood building and environmental performance.

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

Developing resources, from factsheets on B.C. forests to curated blogs on a variety of topics, as well as sharing our partners' technical guides and research on all things forestry and next-generation product innovations.

Featuring hundreds of timber projects including ones from the Mass Timber Demonstration Program and B.C.-based projects in the NRCan Green Construction through Wood Program, ranging from schools and offices to tall wood buildings and manufacturing facilities.





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

OUR PARTNERS

With funding support from the Province of B.C. (through FII), several organizations lead market development efforts across the province. By working together, government and industry have continued to grow the market here at home for our high-quality primary and secondary wood products. Leveraging resources ensures that B.C. remains a leader in innovative wood use and building systems.

