



Multi-Unit Residential East Gwillimbury Passage House. Photo provided by Element5.

Solutions to Canada's Housing Crisis are Found in the Forest



**Forest Products Association of Canada (FPAC)
Canadian Wood Council (CWC)**

November 2023



Introduction

Canada is facing a housing crisis. We need to construct nearly 6 million affordable and accessible housing units by 2030 to meet rising demand.¹ If we follow the business as usual, we will only construct one third of what is required.² Forest Products Association of Canada (FPAC), the Canadian Wood Council (CWC), and our respective member companies stand ready to support the accelerated construction of affordable housing with harvested wood products and mass timber – products that provide essential environmental, social and economic benefits. We present several opportunities for the federal government to leverage these benefits in support of Canadian communities in need of rapid housing solutions.

The Housing Problem



**1 IN 5 CANADIANS CANNOT
ACCESS AFFORDABLE HOUSING**



**6 MILLION NEW HOMES
NEEDED BY 2030**



**ONLY 71% OF THE HOMES NEEDED
ARE ACTUALLY BUILT EACH YEAR**

¹ Roughly 5.8 million new housing units are needed by 2030. This number comes from combining CMHC's projection of [2.3 million homes](#) being added to the Canadian housing market by 2030 based on current construction rates, combined with their updated estimated that adds an additional gap of [3.5 million homes](#) needed to house Canadians affordably.

² According to the CMHC's monthly housing starts data tables last updated September 2023, we are on track to build only 240-270,000 units per year.

Context

Canada's Housing Crisis

Canada is facing an unprecedented housing crisis exacerbated by the economic impacts of the COVID-19 pandemic, rising interest rates and development taxes, zoning limitations and NIMBYism, rapid immigration, along with an increasing need to make communities climate-resilient.

Today, [one in five](#) Canadians cannot access affordable housing while the average rental price has [risen 10%](#) since last year—challenges that disproportionately impact marginalized populations. Though the difficulties experienced by those seeking to live in urban areas are most salient in news media coverage, [24% of rural residents](#) – many of whom are Indigenous – are unable to find affordable, quality rental housing, which is double the national average. Our sector has first-hand experience of this issue and its impacts, with some forest sector companies forced to build their own residential units in rural and remote areas to ensure continuity of operations and some measure of stability for our sector's labour force.

The [National Housing Strategy](#) notes that “affordable housing is a cornerstone of sustainable, inclusive communities and a Canadian economy where we can prosper and thrive.” Yet the Canadian Mortgage Housing Corporation (CMHC) estimates that beyond the [2.3](#) million housing units expected to be built between 2021-2030, Canada will need an additional [3.5 million](#) more units to house Canadians affordably. What's more, latest data shows that [land acquisition](#) and [investment in residential construction](#) have dropped significantly in 2023, which further slows down home construction. In the absence of effective solutions to this dearth of supply, along with the lack of [skilled labour capacity](#), we cannot meet our affordable housing or climate targets by 2030.



Rob Salmon Photography, courtesy naturallywood.com

The Federal Agenda on Affordable Housing

A [recent survey](#) of 3,500 low-income renters in Canada found that 82% of participants view affordable housing as the primary concern they want the government to address. Housing affordability has emerged as a centerpiece of all mainstream political platforms. Following the Liberals' caucus retreat in September 2023, the federal government announced it would remove the GST on construction of new rental apartment buildings, a promise originating within the party's 2015 election platform. The retreat also precipitated some of the first funding dispersed through the [Housing Accelerator Fund](#), intended to help municipalities build 100,000 new low-carbon and climate-resilient homes. The Liberals have launched the Rapid Housing Initiative, the Tax-Free First Home Savings Account, doubled the First-Time Home Buyers' Tax Credit, along with large injections into the Affordable Housing Innovation Fund and the Canada Mortgage Bond geared towards rental housing projects.



There have been early signals that the government understands the inherent benefits of building with wood. On October 4, 2023, during a session of the Standing Committee on Transport, Infrastructure and Communities, Minister of Housing Sean Fraser [advocated](#) that “It's incumbent, I think, upon all of us to do everything we can to get creative to fight the climate crisis” and that wood construction “provides an opportunity to use cleaner building materials but also to sequester carbon in the final product.” Minister Fraser has also [emphasized](#) the importance of innovative tools and techniques to meeting our housing needs, including the adoption of prefabricated or factory-built housing solutions.

Meeting Housing Needs with Wood-Based Building Systems

Minister Fraser’s comments illustrate a growing recognition and support for the use of Canadian harvested wood products and wood-based building systems to meet our housing and climate goals. The National Building Code was updated in 2020 to permit mass timber buildings up to 12 storeys, offering new opportunities for the use of these technologies and methods in the construction of higher-density housing.

Massive or “mass” timber refers to both product and process—first, the term encompasses several types of engineered wood products composed of small pieces of wood sealed into sturdy building materials, like panels and joists. Product innovation has unfolded alongside new approaches to manufacturing, transporting, and assembling buildings using these materials. The [Smart Prosperity Institute](#) estimates that meeting Canada’s 2030 housing needs would require 18.8 billion board feet of softwood lumber, which translates to roughly 79% of Canada’s current production capacity. Wood-based affordable housing solutions are therefore within reach, but the forest sector will require federal policy support to ensure there is long-term capacity to meet housing needs alongside capacity to supply other uses of Canadian wood products.

Despite its enormous forest resources, Canada is only now emerging as a global force in mass timber production and consumption. As of 2023, the Canadian Wood Council estimates that there were 560 completed mass timber projects and another 559 underway or planned for construction in Canada (of which 82 are residential), totalling more than 61 million square feet of floor area. Compared to other major forested countries like Finland – with 4,150 wood apartment buildings by 2022 and more than 2,000 planned over the next few years³ – Canada has enormous potential to scale its wood-based building construction. Currently, 8 mass timber plants operate in Canada and North American capacity for mass timber production has increased 400% since 2016.⁴ Forest Economic Advisors (FEA) estimate that 1.25 million cubic metres of mass timber are needed for the construction projects currently in design across Canada, the majority (80%) of which could be realized in the next 30 months.⁵ This puts Canada close to its available effective capacity, and suggests that there is ample room for our country’s mass timber and prefabricated construction sector to grow in line with increasing domestic demand.

³ A [recent study](#) by researchers at Tampere University found that by mid 2021, 117 two-story timber apartment buildings had been built in Finland in one year, while more than 2,750 new secure timber apartment buildings would be built in the next few years.

⁴ According to FEA (2023), there were 4 manufacturers of mass timber panels for construction applications in 2016 across North America. As of 2023 there are 16.

⁵ FEA does not have direct data on Canadian mass timber projects in design, but made their estimates at 25% of the current floor area in design in the US.

How the Federal Government Can Unlock Forest-Based Solutions

The federal government will play a critical role in removing development barriers and stimulating innovation with wood products. We can accelerate the construction of affordable and climate-resilient housing through a set of complementary actions:

Embrace and Promote Wood-Based Housing Solutions in a Federal Affordable Housing Strategy:

Alongside regulatory and financial support, the federal government should embrace the lessons learned in other jurisdictions by actively promoting wood and mass timber solutions, particularly wood-based multifamily residential buildings,⁶ within a federal affordable housing strategy. Strong government support in Finland has led to the rapid expansion of mass timber construction, with wood housing becoming common for both single-family homes and apartment buildings.⁷ Meanwhile, support for wood-based building solutions is driving the rapid expansion of the US mass timber market, which is growing 30% in size annually. Wood and mass timber incentives offered through the Inflation Reduction Act and Wood Innovations Grant are generating “[win-win-win](#)” solutions for ecosystem restoration, industrial innovation, and climate resilience. In addition to the inclusion of wood-based housing solutions in a national affordable housing strategy, the Canadian government must ensure that future policy frameworks—such as a national forest sector strategy and the Green Buildings Strategy—are aligned and complementary.

A Harmonized Regulatory Framework for Permitting Processes:

Under the existing regulatory framework, homes take 2-3 years to build from initial proposals to construction completion. The process creates a significant administrative burden on developers looking to build affordable housing in an expedient fashion. A national harmonized regulatory framework would enable more efficient approval and permitting processes and support the



Rob Salmon Photography, courtesy naturallywood.com

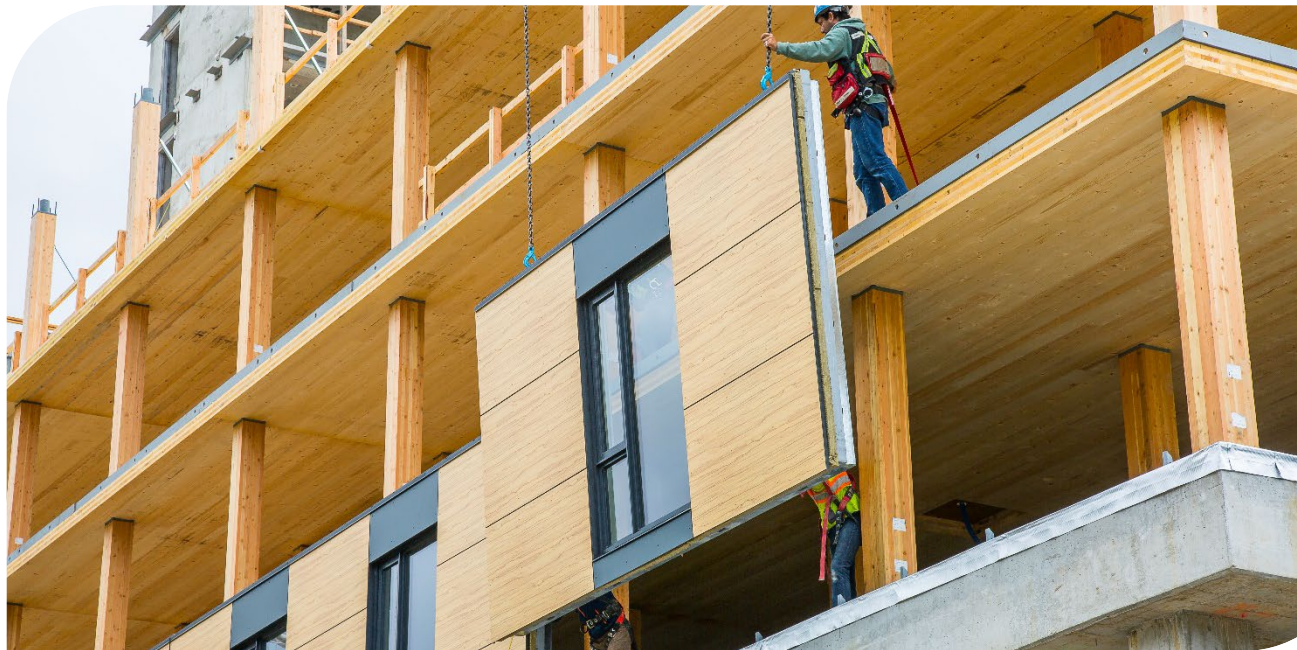
⁶ Canada is almost at capacity for single-family houses. Building multi-residential homes is therefore the priority and we see an enormous potential to do so with wood-based construction.

⁷ Information about the history of wood construction for homes in Finland can be found in Ilgin and Karjalainen’s [chapter](#) of the book, *Wood Industry – Past, Present and Future Outlook* (2022).

rapid scaling of wood-based housing structures to meet the federal government's targets.

A Strengthened National Building Code:

In alignment with its forthcoming Green Buildings Strategy, the federal government should adopt a performance-based national building code in its 2025 revision to enable greater uptake of low-carbon building materials like mass timber and light wood frames for prefabricated, modular construction. Alongside this, to reduce urban sprawl, the federal government should consider increasing height allowances for tall wood buildings. The current national cap at 12 storeys limits the extent to which mass timber solutions can address housing needs. The government should instead borrow from the 2021 International Building Code,⁸ which is used throughout the United States and was informed in part by the successes of the world-renowned Brock Commons, a residence building at the University of British Columbia, permitting mass timber construction up to 18 storeys.



Brock Commons under construction.

KK Law, courtesy naturallywood.com

Certified Building Typologies:

Mass timber and prefabricated wood-based building structures are crucial to tackling the housing crisis because of their potential for rapid, low-impact deployment. As noted in Natural Resources Canada's (NRCan) *The State of Mass Timber in Canada 2021* report, "infill projects and those in densely populated neighbourhoods greatly benefit from using mass timber building components...with

⁸ More information on tall wood buildings in the 2021 IBC can be found [here](#).

precisely manufactured panels and prefabricated components produced off-site, construction teams are able to streamline the workflow to minimize waste, noise and required labour.” These advantages are often stifled by municipal permitting processes, as well as a lack of experience and knowledge of heavy, mass and prefabricated wood building techniques and properties among municipal planners. To address this obstacle, developers and municipalities could benefit from a set of nationally certified building typologies for wood-based building structures that meet specific standards shared across Canadian municipalities. The federal government should support the development of up-to-code typologies through direct funding supports or in-kind contributions.

Incentives for Developers:

In line with the recently announced GST rebate for rental units, the government should develop new incentives for developers that use a significant proportion of Canadian harvested wood products in new construction, as well as expanding the number of units in existing multi-residential buildings and retrofitting of non-residential buildings into residential buildings. These incentives should reward developers for their commitment to the climate benefits of harvested wood by reducing the cost and time required to navigate municipal permitting processes. The incentives could be delivered in the form of tax credits, grants, or unique permitting streams for pre-certified building typologies to accelerate building construction.



KK Law, courtesy naturallywood.com

Training a Future-Ready Workforce:

Even if the regulatory and financial support is present, there is a large shortage of skilled tradespeople, architects, designers, engineers and building consultants with the appropriate knowledge and experience working with wood to build climate-resilient and affordable homes on the scale required to meet our needs. Traditional education and training programs lack a standardized curriculum on green buildings, leaving many graduates without the skills necessary to secure the green jobs that our future depends on. Moreover, remote communities – especially remote Indigenous communities – face [greater barriers](#) to pursuing higher levels of education necessary for building with wood. The federal government should offer targeted funding for companies looking to emulate European initiatives to create a highly skilled, future-ready green workforce through on-the-job or experiential learning (i.e., pairing students or worker transitioning from other sectors with experienced green building practitioners).⁹



Photo credit Agency Media

⁹ Firms in countries like Austria, who are widely viewed as global leaders in mass timber, offer high-quality training opportunities for students, interns, and recent graduates. See, for example, the student, intern, and recent graduate experiences offered by [Binderholz](#). According to a recent [report](#) from the Austrian government, across the country there are 12 types of apprenticeships, 4 vocational school programmes, 6 training colleges and numerous university courses specifically focused on wood and timber construction.

Benefits of Harvested Wood Products in Housing Construction

Carbon-Sequestering Properties:

Both mass timber and more traditional harvested wood products store carbon that would otherwise be emitted through decomposition or combustion, playing a crucial role in mitigating the impacts of climate change. When utilized in housing construction, wood products will continue to store carbon for the lifetime of the building, significantly reducing the overall carbon footprint of construction and development.¹⁰ As we build larger and taller structures with wood, these benefits increase proportionally—for instance, Brock Commons houses 400 students and stores an estimated 1,753 tonnes of CO₂. The total construction process avoided 2,432 tonnes CO₂, which is equal to removing the emissions from 511 cars annually.¹¹ Similarly, the 13-storey *Origine* residential project in Quebec stores an estimated 2,295 tonnes of CO₂ in its 3,111 cubic metres of wood.



Steven Errico, courtesy naturallywood.com

Lower-Carbon Profile:

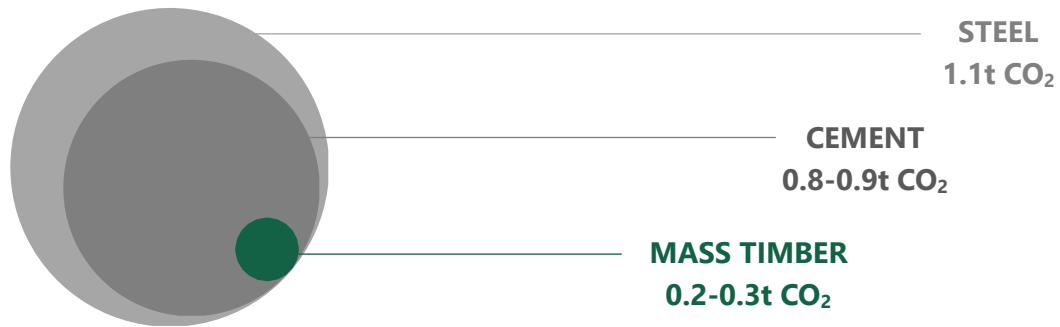
In addition to its carbon-sequestering properties, wood-based construction solutions are recognized as an [instrumental nature-based climate solution](#) due to wood products' lower-carbon profile than other common building materials like steel and concrete. Globally, building construction accounted for [37% of carbon dioxide emissions](#) in 2021 while the manufacturing of other key building materials like concrete, steel and aluminum – which are some of the hardest to abate sectors – are responsible for [23% of global emissions](#). For every tonne of material produced, the carbon footprint of Canadian mass timber is at least 72% smaller than the footprint of steel and 66% smaller than the footprint of cement,¹² making wood an incredibly valuable material for building climate-friendly communities. Canadian

¹⁰ Moreover, taking an all-building approach to wood construction – that is, integrating wood not just into the frame but into insulation, energy use, roofing, and furniture – can further lower the CO₂ impact and sustainability of buildings. While Canada has yet to delve into this innovation space, countries like [Austria](#) are leading this systematic approach to green building design.

¹¹ More information on the carbon benefits and design of Brock Commons is available on *Think Wood's* [website](#).

¹² According to research released in 2023 from [Simon Fraser University](#), Canadian mass timber generates 0.2-0.3t CO₂ per tonne of timber, while steel generates 1.1t CO₂ and cement generates >0.8-0.9t CO₂ per tonne of material.

heavy, mass and prefabricated wood-based building systems create new opportunities to scale up product substitution in higher-density housing developments (i.e., tall wood buildings), and contribute to achieving third-party building certifications, like LEED (79 projects thus far) and Passive House (8 projects).



Mass timber emits a fraction of the CO₂ of traditional building materials*

*Per tonne of material produced.

Efficiency of Heavy, Mass and Prefabricated Wood-Based Building Systems:

Beyond its potential to reduce emissions, heavy, mass and prefabricated wood-based building structures promise significant efficiency gains for developers. Since mass timber weighs less than standard building materials and pre-fabrication can occur offsite, structures can be erected faster, at lower costs, and with less on-site labour compared to traditional construction methods. [T3 Minneapolis](#), a 7-storey office building of 180,000 square feet of timber, was installed in just 9.5 weeks. Mass timber also offers opportunities for greater customizability without proportional increases in the time required to complete a project. Wood-based materials also [use less energy](#) over their life cycle and contribute to less waste when using prefabricated mass timber, reducing cleanup requirements and disruption for surrounding communities. We also note practical examples of these efficiency gains in meeting rural and remote housing needs—15 timber home kits were built by and for [Liard First Nation](#) in the Yukon. Each home took just one day to assemble. The forest sector is well positioned to scale this single-family effort to multi-family and six-floor dwellings across the country. This time and cost savings represents a [paradigm shift](#) in how we build housing, while directly translating to more affordable housing options for Canadians.

Fire and Earthquake Resilience:

Contrary to assumptions, mass timber buildings demonstrate very strong fire and earthquake-resistant characteristics, offering better safety and durability outcomes than other common building materials. Cross-laminated timber (CLT), one of the

most widely used mass timber products, is as strong as concrete yet [five times lighter](#), which means that wood can tolerate more seismic activity compared to heavier building materials. In the context of increasingly frequent and severe natural disasters due to climate change, this resilience not only protects residents but also contributes to the longevity, customizability, and sustainability of our housing investments.

Macro-Economic Benefits:

Leveraging domestically produced wood and mass timber products will bolster Canada's GDP and employment. Support for the forest sector creates jobs and increases federal and provincial tax bases while ensuring the affordability and availability of housing. Mass timber construction will be vital in the creation of green building jobs, which are necessary for achieving the net-zero, climate-resilient sector by 2050 that is envisioned in Canada's [Green Buildings Strategy](#) announced last year.

From an industry viability standpoint, forestry companies can benefit substantially from greater affordable housing supply in rural and remote areas, where much of the forest sector's manufacturing takes place. Mass timber cannot be produced without this critical labour, so investing in affordable housing is also an investment into the prosperity of Canada's core industries and the GDP they generate. By building up the reputation of the forest sector as a nature-based climate solutions provider, mass timber construction for affordable housing will be especially attractive to young talent who tend to value sustainability more than previous generations.

Mental Health and Wellbeing:

In addition to physical health benefits of wood buildings like air purification and temperature control, wood buildings can have positive effects on mental health and wellbeing. Biophilia refers to the human tendency to interact with or be drawn towards other forms of life in nature, including trees and wood products. Research illustrates that incorporating wood into building materials can have positive effects on mental health by reducing stress, enhancing productivity, creativity, and promoting general feelings of wellbeing.¹³

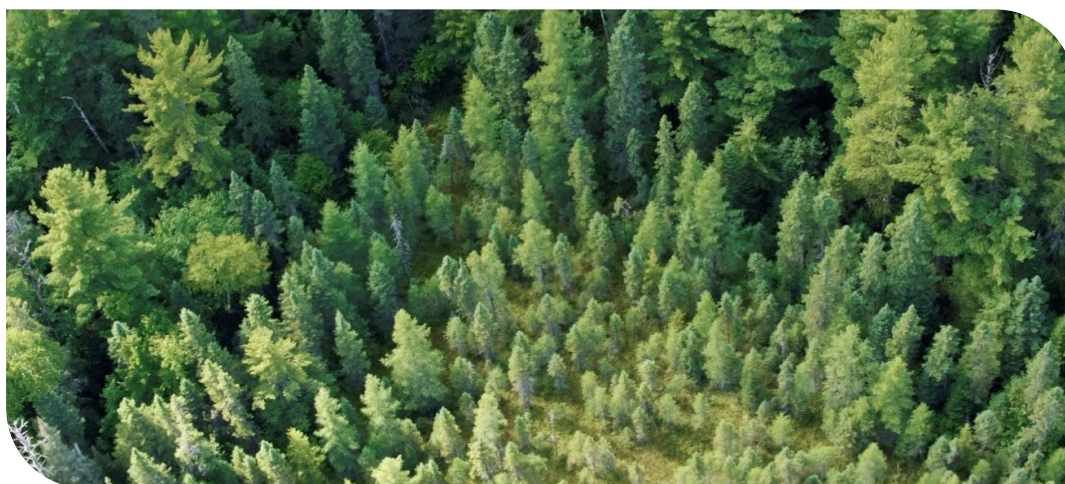
¹³ Stora Enso released a useful [white paper](#) in 2021 that compiles recent research on the effects of wood buildings on human health.

Tales about Timber: Carving out the Myths

There are several common myths and misconceptions about the use of wood as a sustainable, resilient, and affordable building material. To best use this opportunity to advance wood-based building solutions, it is important to dispel misinformation that could jeopardize the sector's social license.¹⁴

Wood-based building materials are sustainably sourced and are not driving mass deforestation.

Contrary to some assumptions, Canadian forest operations are planned and implemented according to the core principles of conservation and long-term ecological health. According to NRCan's *The State of Canada's Forests* report, in 2020 just 0.2% or 716,000 hectares of Canadian forests were harvested. Canadian forestry is based on the four key elements of sustainable forest management – maintaining a natural forest condition, managing for specific wildlife habitat features and ecosystem functions, avoiding deforestation and ensuring sustainable harvest levels, and meaningfully engaging with public interested in forest management planning, along with specific consultations with Indigenous peoples. Forestry laws and policies ensure that harvest levels never exceed forest growth, or what our forest can sustainably produce. This allows for a sustainable supply of wood to be available over generations, and ensures the social, economic, and ecological value of our forests exists in perpetuity.



¹⁴ See the following myth-busting sources: a recent (2023) [booklet](#) by the Amsterdam Institute for Advanced Metropolitan Solutions; the BC [Mass Timber Action Plan](#) (2022); several [fact sheets and infographics](#) by naturally:wood; and this [book chapter](#) In *Wood Industry – Past, Present and Future Outlook* (2022) by researchers at Tampere University, Finland.

Wood-based structures are strong and durable, even in the form of tall wood buildings.

Compared to conventional steel and concrete building materials, there is a misconception that wood products are not strong enough to support the size and scale of building needed. In reality, mass timber structures are just as strong as those constructed from concrete and are approved under the National Building Code.

Wood-based structures and materials are safe against fire.

Another misconception is that wood is an unsafe building material because it is easily flammable. This belief is often informed by emotion rather than fact, connected to images from the news of forests burning across the country. Like all other building materials that meet Canada's stringent Building and Fire Codes, mass timber is deemed safe against fire. That said, there is no such thing as "fire-proof" building materials; even concrete breaks and steel weakens under elevated temperatures.

Wood-based building materials are affordable in the immediate- and long-term.

Although the price of wood has fluctuated in recent years due largely to an unforeseen, pandemic-driven surge in demand, it can still be as or more affordable per square foot than concrete and steel. Since wood is lighter and prefabricated wood-based structures can be manufactured in factories rather than directly on building sites, there are significant cost savings associated with wood construction and faster installation times without compromising safety. Long term, the carbon sequestration potential of wood will also contribute to a more affordable future by mitigating the costly impacts of climate change across society.

Conclusion

At a time when Canada is facing a growing housing crisis, our national forest sector stands ready to scale up its rapid affordable housing solutions. By leveraging the benefits of wood-based products and mass timber construction, and with targeted support from the federal government, Canada is well-positioned to address the housing crisis in a manner that puts Canadians' essential needs at the forefront – while strengthening our climate resolve and driving economic prosperity in tandem.

