BC COUNCIL OF FOREST INDUSTRIES

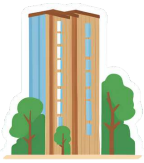
# Building For The Future

The Challenge

## Wood is a renewable building material

Canada faces a housing shortage, with 5.8 million new units needed by 2030. The materials we use today matters, as buildings and construction materials are a major contributor to climate change. BC is uniquely positioned to supply low-carbon building materials that are needed here and around the world for affordable homes and resilient communities.

**15%**
of BC's carbon emissions come from buildings



Total embodied carbon in wood construction is
**72% lower than steel**
**66% lower than cement**

**Wood insulates 15x better than concrete and 400x better than steel**

Carbon Cycle

## Storing forest carbon in buildings

As trees grow, they absorb and store carbon, exchanging it for oxygen which they release into the atmosphere. Older trees gradually lose their carbon-absorbing benefits over time, and when they die, the stored carbon is released back into the atmosphere as they decay.

When trees are sustainably harvested and made into wood products such as lumber, veneer, plywood, and mass timber, the carbon remains embodied in the wood for the product's life. Absorbed carbon contributes up to 50% of the weight of wood.

Wood Benefits

## Benefits of building with wood

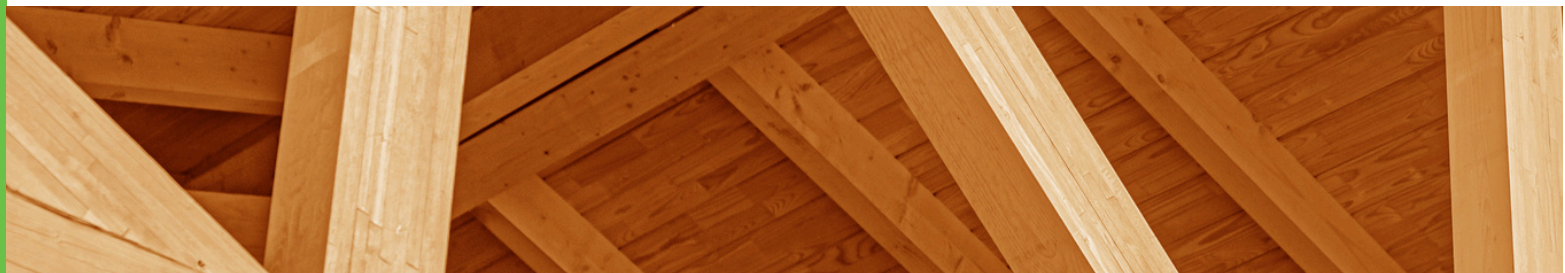
Wood products are a more climate-friendly choice compared to non-renewable materials like plastics, steel, and concrete due to this carbon-locking capacity.

**355** of the **832** mass timber projects across Canada are in BC

Innovations in engineered wood products and building solutions, such as mass timber, pre-fabrication, and offsite manufacturing can streamline the construction process. These innovations reduce traffic from road closures, minimize waste, and consume 25% less energy compared to traditional concrete and steel buildings.

Moreover, building homes with mass timber and offsite methods can reduce costs by 5.5% and shorten construction schedules by up to 32%, improving efficiency and helping communities deliver more affordable, resilient, and lower-carbon housing faster.

***References for data points are available at cofi.org/forest-facts**



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# Building For The Future

## The Challenge

### 1. Building for the Future has more information available in more detailed reports below

- Building for the Future – Executive Summary (to be launched September 4, 2024)
- Building for the Future – Technical Report (to be launched September 4, 2024)

### 2. Canada is facing a housing shortage with 5.8 million new units needed by 2030

- CBC – Canada needs 5.8 million new homes by 2030 to tackle affordability crisis, CMHC warns Canadian Mortgage and Housing Corporation (CMHC)

### 3. 15% of BC's carbon emissions come from buildings

- Government of BC – Provincial Inventory of greenhouse gas emissions

### 4. Embodied carbon in wood construction is 72% lower than steel, 66% lower than cement

- FPAC – Solutions to Canada's Housing Crisis Are Found In The Forest

### 5. Wood insulates 15x better than concrete and 400x better than steel

- Canada Wood – Thermal performance of light frame assemblies, International Building Series No. 5

## Carbon Cycle

### 6. When trees reach the end of their lifecycle, the stored carbon is released back into the atmosphere as the tree decays

- Natural Resources Canada – Forest Carbon

### 7. Older trees tend to gradually lose their carbon-absorbing benefits over time

- NCASI – Forest Carbon from Young vs. Old Forests

### 8. When trees reach the end of their lifecycle, the stored carbon is released back into the atmosphere as the tree decays

- Natural Resources Canada – Forest Carbon

## Wood Benefits

### 9. 355 of the 832 mass timber projects across Canada are in BC

- Natural Resources Canada – State of Mass Timber in Canada
- Database is updated over time, statistic quoted as of August 2024

### 10. Mass timber can reduce energy consumption by approximately 25%

- Journal of Building Engineering – Environmental benefits of using hybrid CLT structure in midrise non-residential construction: An LCA based comparative case study in the U.S. Pacific Northwest

### 11. Mass timber and offsite methods can reduce costs by up to 5.5%

- BC Housing – A Comparative Feasibility Study for Encapsulated Mass Timber Construction

### 12. Deliver up to 32% time savings on the construction schedule

- BC Housing – A Comparative Feasibility Study for Encapsulated Mass Timber Construction