

# THE WOOD CHARTER



Photo : Stéphanie Grébeau

**ENSEMBLE**    
*on fait avancer* le Québec

**Québec** 



“ REAL ACTIONS TO SUPPORT  
THE WOOD CONSTRUCTION  
INDUSTRY ”

## A WORD FROM THE MINISTER

In 2016, at the Forum Innovation Bois (Wood Innovation Forum), we worked with other industry actors to build a shared vision of the wood construction industry's future. At the same time, actions were identified to help spread the expertise that has been developed in recent years.

Wood is a noble, sustainable, high-performance material, and it is important to promote its use in the construction of non-residential and multi-family buildings. The forests are one of our greatest natural assets, and it is for this reason that the Québec Government has chosen to ensure their sustainability and foster their contribution to the socio-economic development of the province as a whole. We are very proud to have one of the best forest regimes in the world, along with the expertise we need to manage our collective heritage in a sustainable way.

Québec also stands apart in the wood construction industry thanks to its ability to develop innovative construction systems and products. Examples include the construction of mid-rise and tall buildings from wood, financial support for a research chair on eco-responsible wood construction, and the development of training for the sector's professionals. These achievements, and many others, clearly reflect

the dynamism of both the Government and its partners in promoting greater use of wood for construction in Québec.

I am therefore delighted to present this new version of the Wood Charter. For each of its four main measures, we have added a list of actions taken to encourage the innovation boom currently being experienced by the wood construction industry. In taking these steps, the Government has reaffirmed its desire to ensure that wood is given the place it deserves in non-residential and multi-family construction. More than ever before, we hope wood construction will help reduce our environmental footprint, be a source of pride, and create wealth and stimulating jobs for Québec as a whole.

**Luc Blanchette**  
Minister of Forests, Wildlife and Parks

## The Wood Charter

- **TARGET SECTOR:** NON-RESIDENTIAL, COMMERCIAL, INDUSTRIAL, INSTITUTIONAL AND MULTI-FAMILY CONSTRUCTION

### Main aims:

- Increase the use of wood for construction in Québec.
- Create and consolidate employment in the regions.
- Reduce greenhouse gas emissions.
- Create higher value-added wood products.
- Enrich Québec as a whole.



Photo : Adrien Williams

# THE WOOD CHARTER MEASURES

## 1. GOVERNMENT LEADERSHIP

The Government, as a major order-giver, must lead by example in the use of wood in construction. In other words, in every project financed wholly or partly by public funds, the project manager must consider the possibility of using wood before the project begins, and must carry out a comparative analysis of greenhouse gas emissions for different materials.

To compare wood with other materials, a greenhouse gas emission measurement tool is currently being developed and will be made available in 2019. The tool, a carbon calculator designed by the Centre d'expertise sur la construction commerciale en bois (Cecobois), will use the tried-and-tested life cycle analysis method. It will be reliable, effective and user-friendly, and will produce objective, standardized results that are easy to compare.

An inter-ministerial committee on Government leadership in wood construction, composed of representatives from the main Government departments, order-giving agencies and construction sector organizations, is responsible for implementing the Wood Charter in the public and para-public sectors. The committee members must ensure that their respective departments or agencies promote the Wood Charter, in particular to their partners.

### Actions taken:

- Creation, by the high-level inter-ministerial committee, of a reporting mechanism to ensure that the Government departments and agencies concerned fulfill their commitments.
- Creation of an inter-ministerial technical committee to oversee reporting requirements.
- Granting of financial assistance to Cecobois to develop the greenhouse gas emission measurement tool and make it available online.



Photo : Stéphanie Groleau

## 2. INNOVATIVE WOOD BUILDINGS

Proper use of wood in construction generates a number of ecological, aesthetic, economic and health-related benefits. Construction of mid-rise buildings (five or six storeys) and tall buildings (seven storeys or more) can help limit the problem of urban sprawl currently faced by most municipalities.

The Government therefore wishes to encourage developmental wood construction projects, and to show that, with the innovative new wood products and building systems now available, it is possible to push back the technical boundaries and use wood to construct buildings of 12 storeys or more, as well as buildings intended for specific purposes that require alternative solutions. Its aim in doing this is to allow for the development of technical expertise that will serve as a basis for the emergence of new projects.

A further aim of this measure is to promote the use of wood in combination with other materials, and appearance wood products.

### Actions taken:

- Implementation of the Programme de vitrine technologique (Technology Showcase Program) for buildings and innovative wood solutions.
- Creation of a steering committee chaired jointly by the *Régie du bâtiment du Québec* and the *Ministère des Forêts, de la Faune et des Parcs*, to oversee the development of regulations governing the design, construction and safety of wood buildings.
- Preparation of a guide to the use of wood for construction of large schools with three or more storeys (underway).

## 3. TRAINING AND PROMOTION

Wood construction training for the sector's professionals must be improved, and there is a need for more university-level courses for future engineers and architects on good wood use practices for mid-rise and tall non-residential buildings. The Government therefore hopes to work with the universities to introduce mandatory training on wood as a construction material for these new construction sector professionals.

The Government also hopes to improve professional development training on the use of wood in non-residential and multi-family buildings, so that professionals and tradespeople alike have access to the most recent information. Working professionals need new skills to cope with the emergence of new engineered wood products and the recent amendments to Québec's Construction Code. To complete their training, they will also be given proper technical tools to facilitate their design work and encourage the use of wood as a construction material.

### Actions taken:

- Granting of financial assistance to the *Université du Québec à Chicoutimi* to organize training on the use of wood as a construction material.
- Granting of financial assistance to *Université Laval* to hire two professors specialized in wood construction.
- Financing for Cecobois' activities and creation of the Cecobois Network, an advisory committee on wood construction.
- Preparation of a professional development program on the use of wood as a construction material.

## 4. RESEARCH AND INNOVATION

To support an innovative and dynamic wood construction sector, it is important to foster the development of local research expertise and encourage technology transfers. Research and development are needed in particular to support the design of mid-rise and tall buildings, since a global approach to building systems is required to obtain good thermal, acoustic, mechanical and other performance.

To promote an innovative approach to the use of wood in construction, the Québec Government will support research and development activities in the field of eco-responsible wood construction, with the aim of improving the competitive capacity of wood constructor sector firms.

### Actions taken:

- Introduction of the Programme Innovation Bois (Wood Innovation Program) to develop technology watch activities and market intelligence, encourage applied research and the development of innovative products, processes, technologies and systems, and support factory-based demonstration and implementation of innovative technologies and products.
- Funding granted to FPIinnovations to help it carry out its national collaborative research program on the development of advanced construction systems.
- Funding granted to FPIinnovations for the development of new knowledge on low carbon footprint materials.



# WHY USE WOOD FOR CONSTRUCTION?

## **WOOD:** A LOCAL, RENEWABLE RESOURCE

Wood is a ubiquitous element of Québec's culture and identity. It is a source of pride, wealth, stimulating employment and development in every region of Québec.

Lumber, used in wood construction systems, is derived mainly from the commercial boreal forest, which is managed sustainably so as to maintain or improve the long-term health of the forest ecosystems. In all, 93% of Québec's public forest has been certified by an internationally recognized forest certification system. Certification is an independent, impartial evaluation process that confirms the use of sustainable forest management practices. Its principal merit is to encourage ongoing improvement of forestry practices.

The choice of wood as a building material is also a choice to use a local resource and play a role in the social, economic and environmental development of Québec.

## **WOOD:** A TOOL IN THE FIGHT AGAINST CLIMATE CHANGE

Throughout the world, the construction sector generates roughly one-third of all greenhouse gas emissions. Most of a building's environmental impacts occur during use. However, with current insulation techniques, the same energy performance levels can be achieved regardless of the type of material used. The rest of the sector's emissions are generated mainly during the production, processing and transportation of building materials.

Wood, however, comes from our forests. It is created from solar energy, and only a small quantity of additional, mainly renewable, energy is required to convert it into useful products. When wood is used in construction instead of other materials that are produced using large quantities of fossil fuel, the emissions from the production process are greatly reduced.

In addition, trees are able to capture CO<sub>2</sub> – a greenhouse gas that is partly responsible for climate change – and store the carbon from it. The forests therefore become vast sinks for atmospheric carbon, which is stored in the wood. This carbon remains in the products made from that

wood, throughout the time they are in use. In fact, the amount of carbon contained in many wood products is greater than the amount emitted into the atmosphere when they are produced. Recycling and reuse of wood extends the carbon storage period.

## **WOOD:** A HIGH-PERFORMANCE MATERIAL

On a weight-for-weight basis, wood is the most resistant of all structural materials. In spite of human know-how and technology, it has not yet been possible to design a material that performs as well, technically speaking, as wood. Wood is produced from trees, and is flexible, lightweight and resistant. In addition, contrary to popular belief, the low thermal conductivity of wood allows it to maintain its load-bearing capacity for longer than other materials in fires. The heat spreads more slowly through the wood, and its temperature increases less quickly.



## DID YOU KNOW THAT ...

- Based on information from building permits, the annual value of the non-residential buildings that could be built using wood in Québec is more than \$4 billion.
- In 2014, roughly 24% of non-residential buildings with four storeys or less were built mainly using wood.
- In Québec, there are more than 95 factories and roughly 4,500 jobs with ties to the wood construction sector.
- By using wood for its own construction projects, the Government officially supports the principles of sustainable development set out in its Sustainable Development Strategy.
- Construction of a 13-storey building began in Québec City in 2016. Twelve of the storeys will be built from 100% Québec-sourced heavy timber. The project will use 3,000 cubic metres of wood, thereby avoiding 3,295 tons of CO<sub>2</sub> equivalent emissions – the amount produced by 800 cars in circulation on the road for a full year.



Photo : Ceacobois

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**Forêts, Faune  
et Parcs**

**Québec**

