STRATEGIES AND POLICIES IMPLEMENTED IN QUEBEC TO SUPPORT THE INCREASED USE OF WOOD IN NON-RESIDENTIAL CONSTRUCTION

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ABSTRACT: In 2007, only 15% of new non-residential buildings in the province of Quebec included a timber structure. Recognizing the potential economic and environmental benefits of an increased use of wood, the Quebec government launched a wood strategy in 2008. In 2011, some important gaps in the wood construction value chain became more apparent and the Quebec government created a working group responsible for recommending solutions. This paper presents the methodology and key findings of this working group. It elaborates on the main conclusions and discusses the actions arising from these findings and the revised strategy recently initiated.

KEYWORDS: Governmental policies, wood education, professional skills, climate change mitigation policies, construction sector, timber construction, education, market development strategy.

1 INTRODUCTION

In 2007, only 15% of new non-residential buildings in the province of Quebec included a timber structure. The Quebec government launched a wood strategy in 2008, aiming to restore a wood culture in the province [1]. At the same time, Cecobois, a non-profit organization, was put in place to promote and facilitate the use of wood in this market segment. Cecobois deployed a comprehensive strategy that involved a promotional and educational campaign to position wood as a building material that is renewable and sustainable as well as efficient and innovative.

Although the province has since experienced a continuous increase in timber construction, it has not met original expectations. In 2011, the Quebec government created a working group responsible for recommending solutions. This committee’s report, published in 2012 [2], prompted the government to launch its “Wood Charter” in 2013 [3].

2 OBJECTIVES

The working group’s main objectives were to identify solutions to:

- Consider the benefits of timber construction in sustainable development and climate change mitigation objectives.
- Encourage the government to fulfill its duty to set an example by using more wood in its infrastructure.
- Increase wood education and make sure it is more broadly included in the curriculum of future professionals.
- Ensure that building regulations allow the use of this material, while respecting established safety standards.

3 METHODOLOGY

For these four aspects of its mandate, the working group conducted targeted studies.

The “environmental benefits subcommittee” completed a comprehensive literature review on climate change mitigation policies. Based on its findings, it recommended implementing a practical and simple method to take into account the carbon benefits of timber construction. The “exemplary government” subcommittee consulted with ministries and agencies to assess the opportunity to recognize environmental attributes of wood in ministries’ sustainable development strategies. The “professional
skills” subcommittee met with practitioners, professionals and university professors to identify gaps in wood education, and proposed a list of minimum timber structure skills any professional should acquire during university or college studies. Finally, the “standards subcommittee” assessed the possibility of proposing changes to current building codes for all new constructions to ensure wood is considered equitably and fairly compared to other building materials.

4 KEY FINDINGS

4.1 ENVIRONMENTAL BENEFITS SUBCOMMITTEE

The subcommittee documented the extent to which a wood use policy accurately reflected the objectives of Quebec’s sustainable development laws, strategies and policies. It recommended relying on Life Cycle Assessment (LCA), for quantifying the environmental benefits of wood in new buildings. It further recommended that the government consider material-embodied energy in addition to operational energy in the next edition of the Quebec Energy Code.

4.2 EXEMPLARY GOVERNMENT SUBCOMMITTEE

According to the subcommittee, the use of wood must be driven first and foremost by environmental and socio-economic considerations. The subcommittee believes that the government strategy to consider wood in all new buildings represents a sound sustainable development policy that clearly meets Quebec’s goal with respect to mitigating climate change. It insisted on including the use of wood into ministries’ environmental action plans in order to achieve their targets.

4.3 PROFESSIONAL SKILLS SUBCOMMITTEE

The subcommittee identified lack of familiarity and lack of professional skills as key reasons for not proposing wood. This was particularly true for larger buildings with a more complex design that required experienced professionals. It became obvious that changing current practices with respect to wood cannot be achieved without addressing wood education in Quebec universities and colleges. Committee members recommended, at minimum, that a course on wood structure become mandatory for civil engineers. More advanced courses should also be made available on a regular basis for structural engineers specializing in building structures.

4.4 STANDARDS SUBCOMMITTEE

This subcommittee identified some Code limitations, such as the 4 storey limitation for wood structure, that were perceived to be unnecessarily restrictive, considering current advancement in wood science and wood system technologies. At the time, an increasing number of promoters hoped to erect wood buildings of five and six storeys like in British Columbia, where the provincial construction Code was amended in 2009 to render such constructions acceptable. The subcommittee did not go as far as to propose to amend the Quebec Construction Code as in British Columbia. Rather, they proposed implementing measures to accelerate the evaluation and approval of alternative solutions.

5 A NEW GOVERNMENT STRATEGY

Based on the working group recommendations published on February 2012, the Quebec government later announced a new strategy called the “Wood Charter” that included the following key elements [3]:

1) Obligation to consider wood for all new public construction and to perform a comparative environmental impact assessment at the preliminary design stage.
2) Amendments to the current building legislation to allow the construction of six-storey wood buildings.
3) Solicitation of universities and colleges to increase the offer of courses on wood materials and wood design.

With the Wood Charter, the government reiterated its commitment to work toward reducing greenhouse gases through the increased use of wood in construction, simultaneously recognizing that it benefits Quebec’s forest-based economy.

6 CONCLUSIONS

The past year has seen a decrease in various roadblocks and sustained growth of non-residential wood buildings. This work continues today as refined policies and strategies aim to fully capitalize on the benefits that wood provides as an environmentally friendly construction material.

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REFERENCES