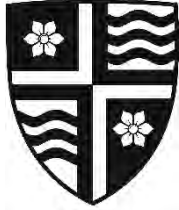


Township of
Langley



Est. 1873

REPORT TO MAYOR AND COUNCIL

PRESENTED:	APRIL 15, 2019 - REGULAR AFTERNOON MEETING	REPORT:	19-56
FROM:	COMMUNITY DEVELOPMENT DIVISION	FILE:	0730-01
SUBJECT:	EARLY ADOPTION INITIATIVE MASS TIMBER CONSTRUCTION		

RECOMMENDATION:

That Council support Township of Langley's participation in the provincial initiative for early adoption of mass timber technology for construction of buildings up to 12 storeys.

EXECUTIVE SUMMARY:

Wood-based materials, over their life cycle, use less energy and emit fewer greenhouse gases (GHGs) and pollutants than traditional, energy-intensive materials. Using wood products can typically reduce the overall carbon footprint of buildings. In addition, timber technology allows faster construction where large sections of a building can be manufactured in a plant and then assembled on site.

The 2020 National Building Code (NBC) of Canada, prepared by the National Research Council (NRC) of Canada, is expected to contain provisions for the construction of "encapsulated mass timber" buildings up to 12 storeys in height. The province of BC has announced that this provision will be reflected in the next edition of the BC Building Code.

A mass timber building is one where the primary load-bearing structures are made of either solid or engineered wood. Encapsulated mass timber is where the timber components are surrounded by fire-resistant materials, such as drywall.

The province of BC has obtained permission from the NRC to use the encapsulated mass-timber construction provisions from the 2020 NBC through a jurisdiction-specific regulation. Accordingly, the province recently announced the opportunity available to interested local governments for early adoption of the anticipated national provisions in advance of the provincial adoption of the 2020 NBC.

The province of BC is home to Brock Commons at the University of British Columbia, which at 18 storeys, was the world's tallest mass-timber building when it opened in 2017.

The early adoption initiative will allow participating local governments to allow construction of innovative tall wood buildings in their communities.

PURPOSE:

To obtain Council support for early adoption of mass timber technology for construction of tall buildings of up to 12 storeys.

BACKGROUND/HISTORY:

Changes to the National Building Code (NBC) that allow for construction of wood buildings of up to 12 storeys in height will come into effect in 2020. The provincial government has recently announced that rather than waiting for the national adoption of the NBC next year, it has obtained approval of the National Research Council (NRC) to implement an early adoption program for local governments.

Eligible local governments throughout B.C. are invited to become early adopters of mass-timber technology for construction of buildings up to 12 storeys, up from the current allowance of six storeys. A mass timber building is one where the primary load-bearing structure is made of either solid or engineered wood. Encapsulated mass timber is where the mass timber components are surrounded by fire-resistant materials like drywall.

Mass timber technology allows faster construction where large sections of a building can be manufactured in a plant and then assembled on site. Further, mass timber buildings can be one-fifth the weight of comparable concrete buildings, while still meeting performance standards for safety, structural resilience and fire protection. Studies have shown the environmental benefits of using mass timber. The estimated carbon benefit from the wood used in the Brock Commons building (the tallest wood structure building in the world in 2017 at 18 storeys) was equivalent to taking 511 cars off the road for a year.

The technology has been reviewed by the National Building Code committees, as well as by experts such as fire safety specialists, structural engineers, architects, scientists and builders.

DISCUSSION/ANALYSIS:

Local governments wishing to have the flexibility to allow construction of encapsulated mass timber buildings, providing for creativity and innovation, is eligible, subject to the following conditions:

- Municipal Council resolution supporting the initiative;
- Staff support for participation in the process from the relevant planning, building and fire departments;
- Building official holding a Level 3 Certification from the Building Officials' Association of BC; and
- Demonstration that municipal land use policies support buildings greater than six storeys in height.

Subject to Council's approval, all conditions outlined above can be demonstrated to have been met for the Township of Langley.

Mass timber buildings have been proven to meet or exceed performance standards for safety, structural resilience and fire protection. Other benefits to using mass timber construction include reduced traffic to a site, reduced waste and reduced noise during construction. Compared to other materials, wood is a more environmentally friendly option, potentially reducing the carbon footprint in construction when sourced from sustainably managed forests.

In reviewing the NBC technical regulations related to this type of construction, staff note that occupancies are currently limited to residential and office uses only; with no allowance provided for occupancies such as assembly, care and treatment, retail, or industrial uses.

Applicable Policies:

Township of Langley’s Official Community Plan (OCP) provides for mid-rise (7 to 12 storeys) and high-rise (over 12 storeys) buildings in the Regional Centre, Town Centres, and Frequent Transit Development Areas, as well as along major arterials and key intersections, such as 200 Street, in the Willoughby Community Plan

Further, the OCP commits the Township to pursuing a low-carbon community and life-style, using equipment and technologies that use less energy and produce lower amounts of Greenhouse Gas (GHG) emissions.

Respectfully submitted,

Ramin Seifi
 GENERAL MANAGER
 for
 COMMUNITY DEVELOPMENT DIVISION

This report has been prepared in consultation with the following listed departments.

CONCURRENCES	
Division / Department	Name
PROTECTIVE SERVICES - FIRE	S. Gamble