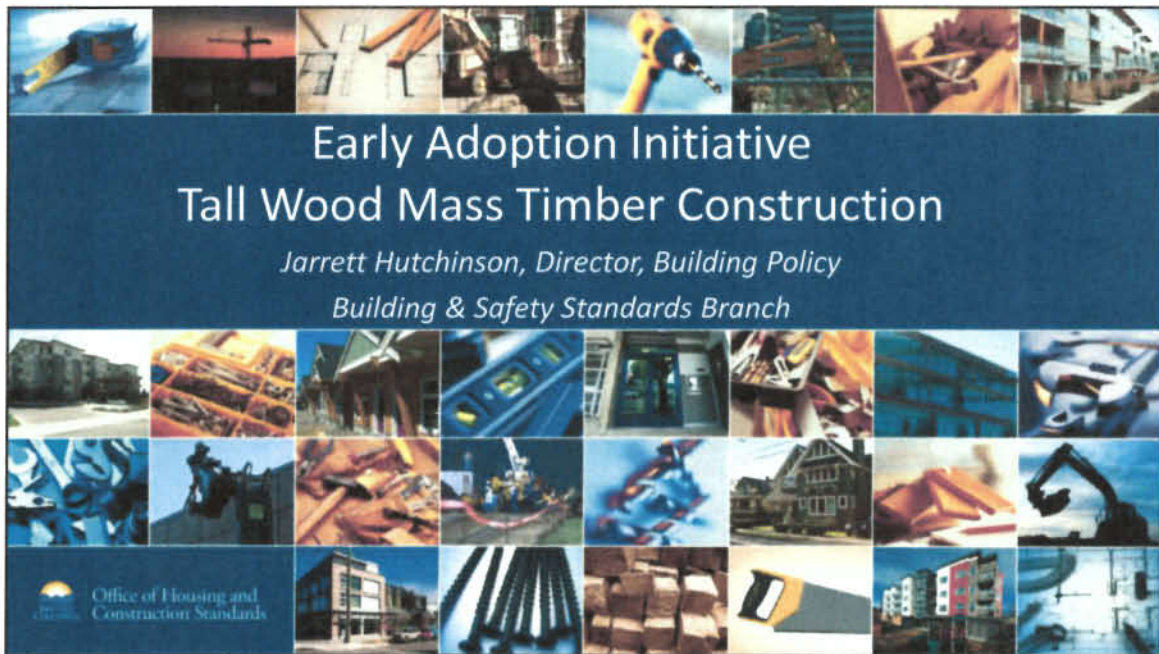


Appendix C





Agenda

1. Why are we doing this?
2. Mass Timber – what is it?
3. What can be built?
4. How do you participate?
5. Timelines?
6. Questions & Answers



Source: Acton Ostry Architects

2

<https://www.actonostroy.ca/project/brock-commons-tallwood-house/>



Context

- The 2020 National Building Code (NBC) will allow for Encapsulated Mass Timber Construction (EMTC) in buildings up to 12 storeys.
- Province wide adoption is anticipated with the next BC Building Code edition, currently proposed for 2022.
- To facilitate responsible implementation, the Building & Safety Standards Branch is inviting communities who wish to lead the way to participate in this early adoption initiative.

3

EMTC Tall wood construction will be enabled through a jurisdiction-specific regulation (JSR)



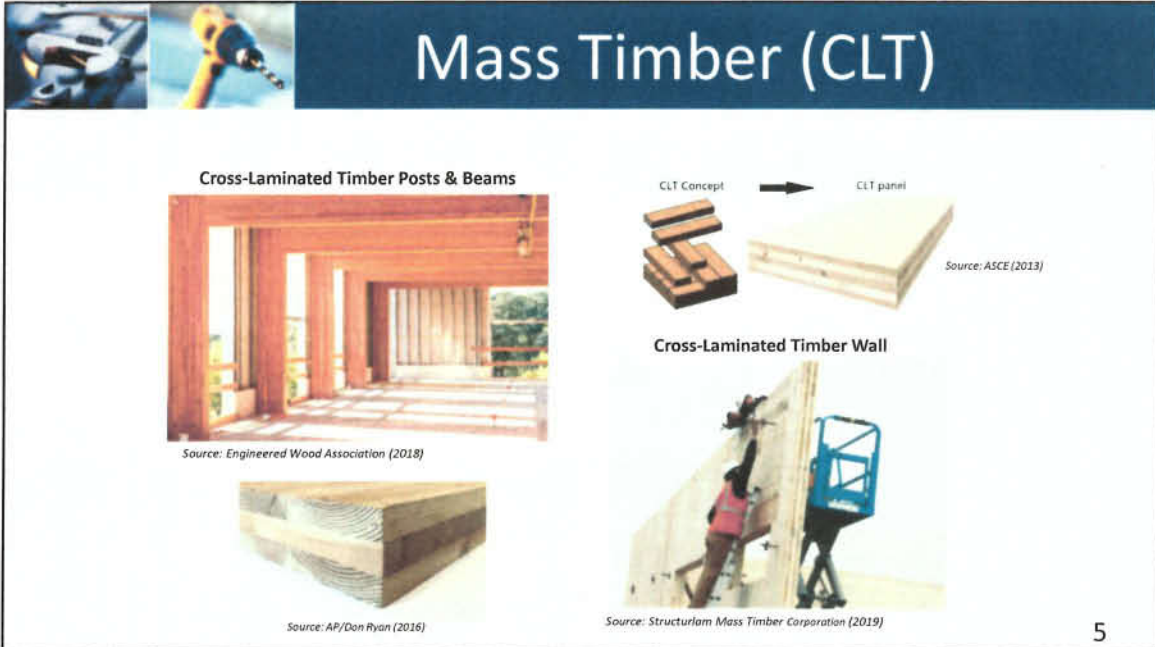
Context



Building & Safety Standards Branch

4

Jarrett Hutchinson (Director) – 5 from the bottom right
Don Pedde (Code Administrator) – 2 from the top left
Keith Calder (Code Consultant) – 6 from the top left
Lori Roter (Sr. Policy Advisor) – 3 from the bottom left



Cross-Laminated Timber (CLT) is the most common type of manufactured mass timber. It is very similar to plywood in its construction. It is comprised of varying layers of thicker wood planks (depending on the thickness desired), oriented parallel to each other and glued together under pressure.

The diagram shows exposed mass timber for posts, beams and a wall and a close up of CLT.

PHOTO URL INFORMATION

Source for second photo – URL <https://www.structurlam.com/whats-new/news/tilt-wall-construction-wood-yes-meaning-behind-wood/>

Source for diagram - **Journal of Architectural Engineering** Vol. 19, Issue 4 (December 2013) - <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29AE.1943-5568.0000117>

Source for close up URL <https://nbc16.com/news/local/cross-laminated-timber-were-seeing-some-major-growth-factors>



Mass Timber (DLT & Glulam)

Dowel-Laminated Timber



Glulam



Source: Structure craft

6

Dowel-Laminated and Glulam are two other common forms of manufactured mass timber.

Dowel-laminated Timber (DLT) – Many different layers of wood, oriented in parallel. To form DLT members, softwood lumber panels are stacked like NLT and are friction-fit together with hardwood dowels. The dowels hold the boards together, and the friction fit, achieved by the differing moisture content of the softwood panels and the hardwood dowels, affords additional dimensional stability.

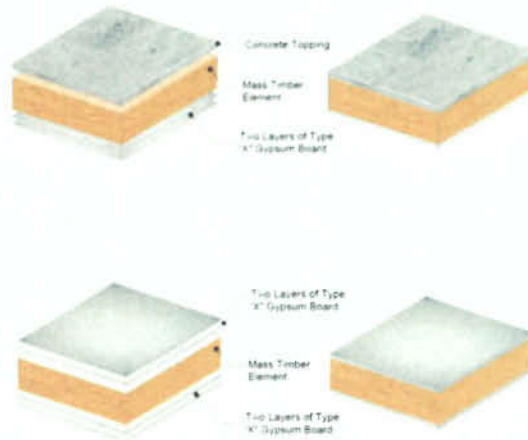
Glulam – uses a special glue to laminate multiple pieces of timber together under pressure. Glulam differs from Cross-Laminated Timber in that the timber component are combined in parallel rather than perpendicular.

Photo Source:

<https://structurecraft.com/materials/mass-timber/dlt-dowel-laminated-timber>



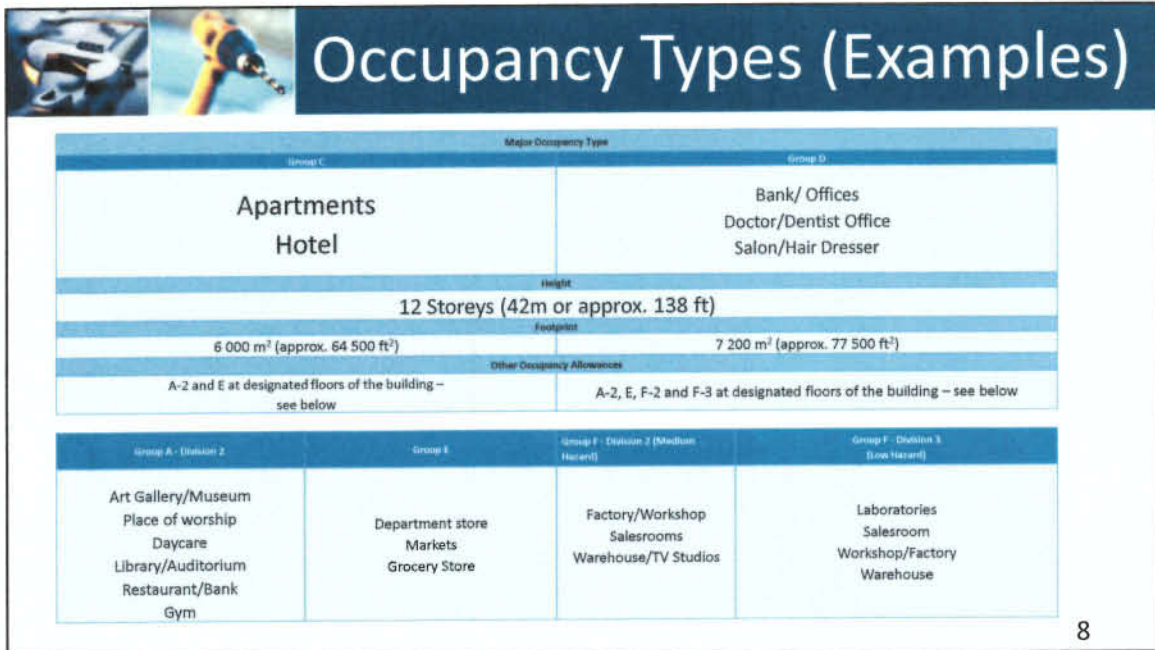
Encapsulation Graphic



Source: Morrison Hershfield (2018)

7

Mass timber encapsulation adds additional fire resistance to mass timber, creating a barrier, delaying the time it takes flames to reach the wood element. It is comprised of layers of gypsum board or concrete.



Major Occupancy Type	
Group C Apartments Hotel	Group D Bank/ Offices Doctor/Dentist Office Salon/Hair Dresser
Height 12 Storeys (42m or approx. 138 ft)	
Footprint 6 000 m ² (approx. 64 500 ft ²) 7 200 m ² (approx. 77 500 ft ²)	
Other Occupancy Allowances A-2 and E at designated floors of the building – see below A-2, E, F-2 and F-3 at designated floors of the building – see below	

Group A - Division 2	Group E	Group F - Division 2 (Medium Hazard)	Group F - Division 3 (High Hazard)
Art Gallery/Museum Place of worship Daycare Library/Auditorium Restaurant/Bank Gym	Department store Markets Grocery Store	Factory/Workshop Salesrooms Warehouse/TV Studios	Laboratories Salesroom Workshop/Factory Warehouse

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There are two major occupancy that will be allowed in the regulation (as per the draft 2020 National Building Code provisions): Residential (Group C) and Business and Personal Services (Group D).

Other types of occupancies will be permitted on lower levels of the buildings (examples in four boxes at the bottom of the diagram).

Area footprints for Encapsulated Mass Timber Construction (EMTC) buildings are larger but limited to 6,000 sq m and 7,200 sq m for Group C and Group D buildings respectively.

The height limitation for EMTC is 12 m. The early adoption initiative will permit buildings that are between 7 and 12 storeys in height, up to the maximum measured height noted.

The storey height range for the early adoption is limited to 7 to 12 storeys to allow for learning on experiences building taller wood buildings. The current 2018 BC Building Code allows for wood frame constructed buildings up to 6 storeys in height.



Participation

1. Land Use Bylaws permit building height above six storeys;
2. Building Official on staff with BOABC Level III Certification;
3. Organizational Alignment to work with initiative;
4. Council Resolution submitted by June 30, 2019;
 -*THAT Council gives permission to the Province of B.C. to include the (Legal Name of Local Government) as a participating local authority in the regulation for the Tall Wood Early Adoption Initiative...*
5. Commitment to share learning.

9

1. Political Support: A council or board resolution supporting participation in the initiative is required.
2. Organizational Alignment: This can be documented in the form of a letter from the Chief Administrative Officer stating that the Fire, Building and Planning Departments are comfortable with participating in the initiative OR a copy of the staff report regarding the initiative that went to Council/Board that included sign-off by the Fire, Building and Planning Departments can be supplied.
3. Organizational Capacity: A building official with a Level 3 certification from the Building Officials Association of B.C. who is either a staff member or contracted for the purposes of this initiative.
4. Land Use Bylaws: The community's zoning bylaw or official community plan must support buildings greater than six storeys in height.
5. The checklist forwarded in response to your Expression of Interest and a Council Resolution must be provided

Draft model resolution will be provided for consideration



Local Government Feedback

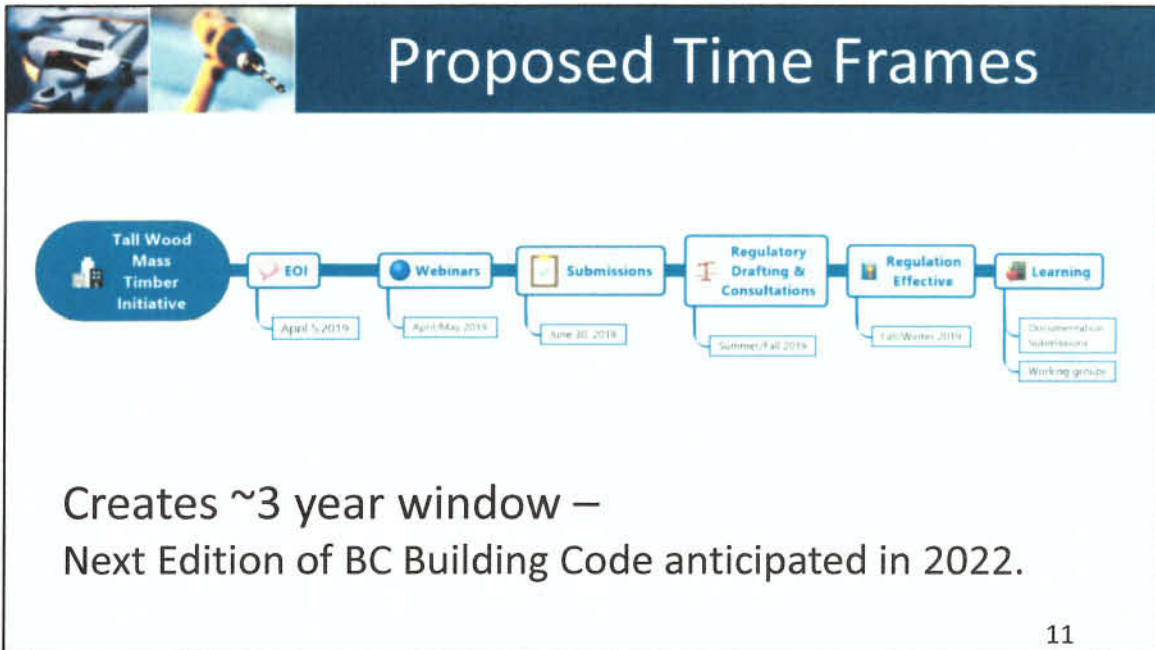
- Jurisdiction staff participation & feedback:
 - Specified project information
 - Sharing lessons learned
 - In person group discussions/surveys etc.
- Rationale
 - To help inform BSSB of issues encountered in practical application of new Code language.
 - Help guide future National and BC Building Code development.



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Local Government Feedback: It is expected that local government staff will participate in provincial working groups or provide feedback and other information on their encapsulated mass timber construction projects to the Building and Safety Standards Branch.

This will allow the Province and industry to learn and adapt building requirements based on real life experiences.



June 30 submission of application package

Timing

Jurisdiction Specific Regulation (JSR) end 2019 (est.)

EMTC up to 12 storeys province-wide in 2022/2023 BC Building Code



Thank you!

Time for Q&A

For More Information: Lori.Roter@gov.bc.ca 778.974.2324



Office of Housing and Construction Standards