

RTS 13597 Enabling Mass Timber Construction

City of Vancouver Planning, Urban Design & Sustainability Patrick Enright, Sr. Green Building Engineer May 27, 2020



1) Introduction

Van Dusen Visitor Centre Vancouver, BC 1-storey Institutional Mass Timber (glulam beams) Mashroom

Volunteer Lounde



- 1) 12-Storey Encapsulated Mass Timber
- 2) Climate Emergency Response
- 3) Benefits of Mass Timber
- 4) Recommendations



2) 12-Storey Encapsulated Mass Timber

Tallwood House at Brock Commons Vancouver, BC 18-storey Residential Mass Timber



Cross-Laminated Timber (CLT)





Glu-Laminated Timber (Glulam)







Mass timber is made in BC





Mass timber is inherently fire resistant









What is encapsulation?





12-Storey code option is taking off:

- 25 projects in BC since Dec. 2019
- 13 municipalities have opted-in, including Richmond, Surrey, City of North Van.
- Many planned residential and commercial buildings in Vancouver could use this option



Tallwood House, UBC

Vancouver is a leader in mass timber



2150 Keith Drive, DIALOG



3) Climate Emergency Response

1001 Kingsway Vancouver, BC 12-storey Residential Mass Timber Credit: VAHA / ZGF

Climate Emergency Response



BIG MOVE



LOWER CARBON CONSTRUCTION MATERIALS AND DESIGNS

By 2030, the embodied emissions in new buildings and construction projects will be reduced by 40% compared to a 2018 baseline.



Low carbon construction - why?

- A new NYC every month for 40 years
- construction is 11% of global emissions
- time matters: embodied emissions happen today
- with zero emissions buildings, materials are everything



4) Benefits of Mass Timber

Carbon 12 Portland, OR 8-storey Residential Mass Timber Credit: Kaiser Group + Path Architecture



- 1) Low carbon, renewable materials
- 2) Local jobs
- 3) Housing affordability
- 4) Energy efficiency and comfort



5) Seismic resilience

- 6) Faster construction
- 7) Quieter, cleaner, safer construction
- 8) Less traffic and site parking



5) Recommendations

2150 Keith Drive Vancouver, BC 10-storey Office Mass Timber Credit: DIALOG

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Recommendation A:

THAT Council approve, in principle, **amendments to the Building By-law** generally in the form attached as Appendix A, to align with provincial regulation and National Building Code proposals enabling encapsulated mass timber construction up to 12 storeys for residential and commercial uses, to come into force and take effect on July 1, 2020;

Recommendation B:

THAT Council approve, in principle, **amendments to the Fire By-law** generally in the form attached as Appendix B, adopting amendments to the BC Fire Code related to encapsulated mass timber construction, to come into force and take effect on July 1, 2020;