



Advances in Mass Timber Buildings

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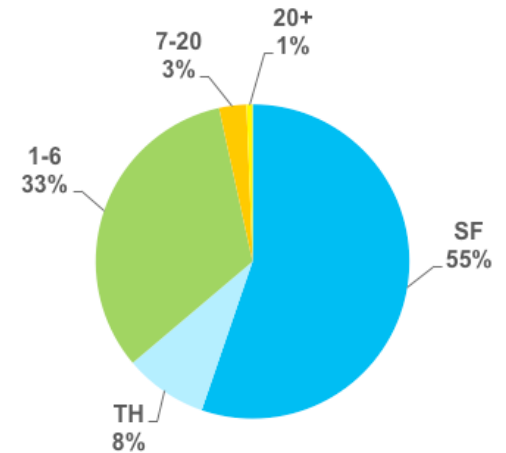
Research & Innovation Executive and Forestry Sector Advocate

Pacific NorthWest Economic Region - 26th Annual Summit
July 17- 21, 2016
Calgary, Alberta

Why do we build with wood?

- Long history of using wood for single family construction in Canada, the US and Europe
- Wood is inexpensive, flexible and durable
- Light frame construction is simple, well understood and accepted by builders, building officials and consumers

US Construction, 2015 F'cast
(Floor Area – Total 4,417 million ft²)

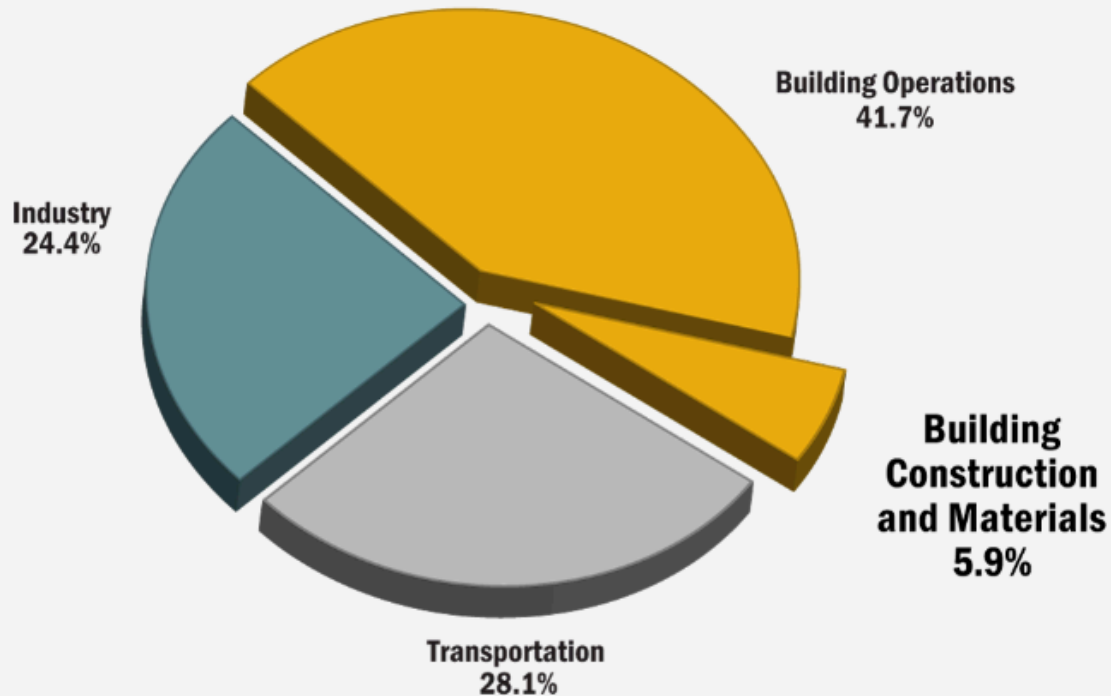


Building needs are changing

- Global trends of increasing urbanization, the emerging middle class, and climate change are changing how and what we build
 - In North America, construction of multi-family housing is increasing
 - In developing nations, housing is dominated by apartments in concrete or steel high-rises
 - There is an increasing awareness of building impacts on climate change and the environment



Our dirty little secret...



U.S. Energy Consumption by Sector

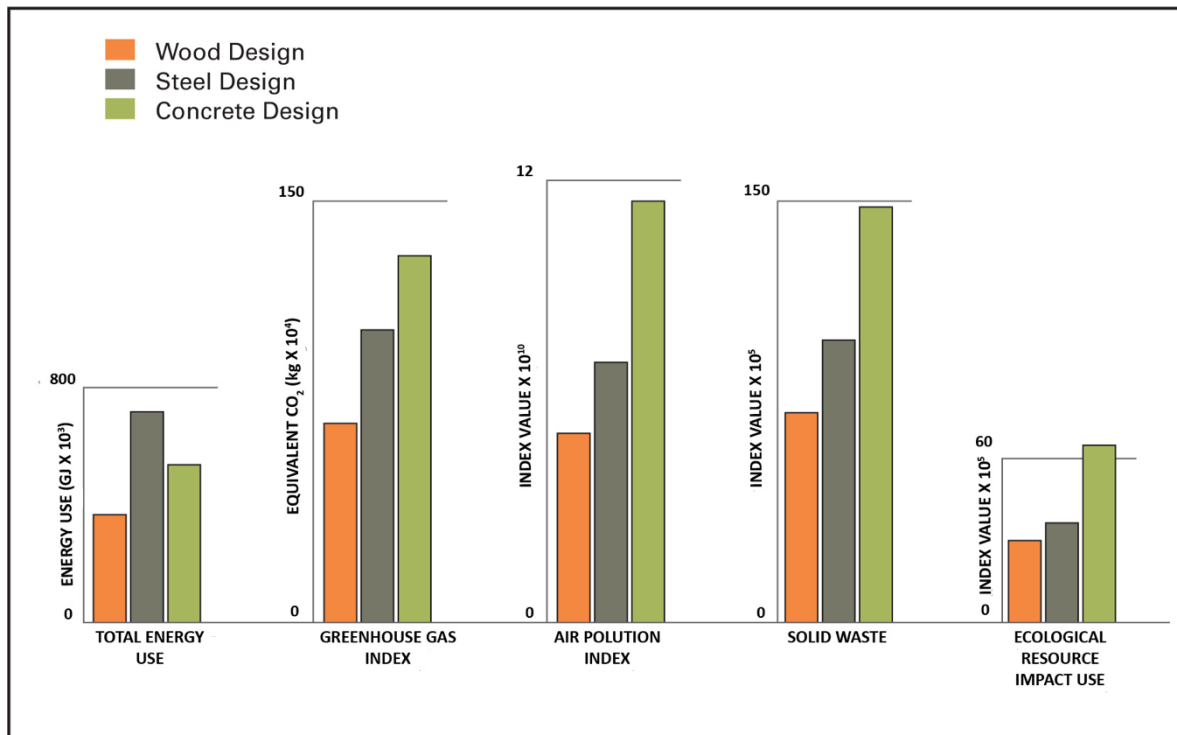
Source: ©2013 2030, Inc. / Architecture 2030. All Rights Reserved.
Data Source: U.S. Energy Information Administration (2012).

Buildings are the major source of global demand for energy and materials that produce by-product greenhouse gases (GHG). The raw resource extraction, manufacturing, transportation, construction, usage, and end-of-life stages of building products each generate significant GHG emissions.



Why encourage wood construction?

- Architects and consumers are increasingly looking at “green” credentials and energy costs
- Wood is a renewable building material, has the lowest environmental foot print and sequesters carbon



Collaboration between Canadian and US agencies

Research Agencies

- Provide credible technical data for policy makers and design professionals

Government Agencies

- Develop codes and standards for building performance and safety

Wood Promotion Agencies

- Promote wood use through lobbying, code changes and marketing

Professional Education Agencies

- Provide education and support for design professionals and builders



Wood Building Systems



Light Frame Construction

Residential and Mixed-Use
1-6 Storey



Mass Timber Construction

Residential and Non-Residential
4-12 Storey



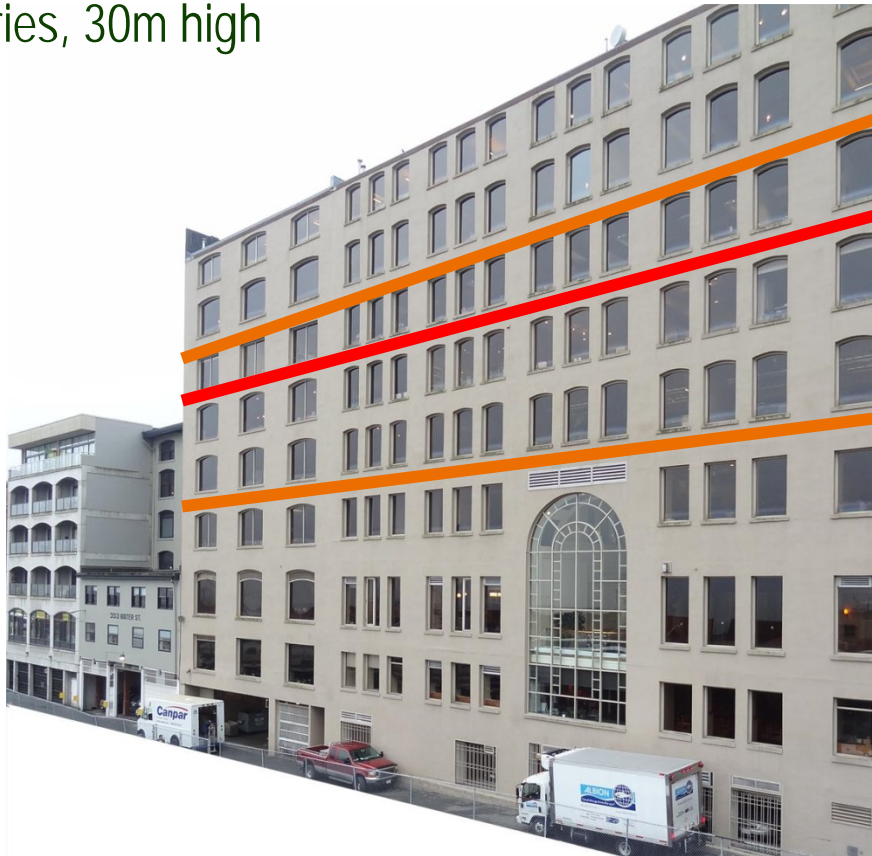
Hybrid Construction

30+ Stories

History of Canadian Building Codes

The Landing, 1905

Vancouver, BC
9-stories, 30m high



National Building Code

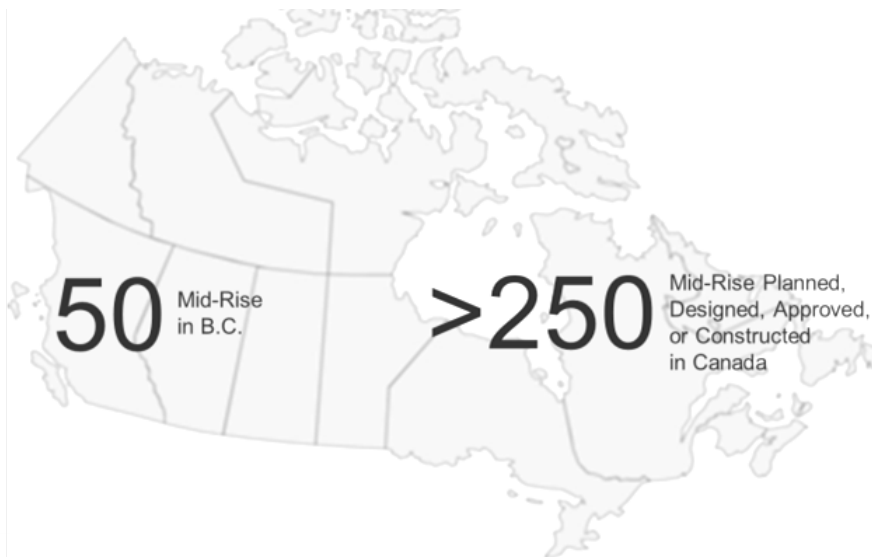
NBCC 1941

NBCC 2015

NBCC 1953

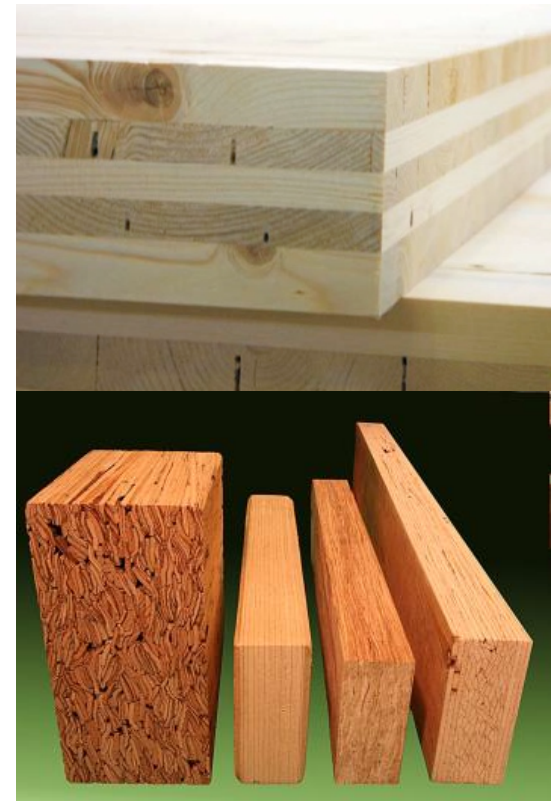
Consortium for Mid-Rise Buildings

- 5-6 storey light wood frame
 - BC – Building code changed in 2009
 - Quebec – RBQ Design Guide 2013 (equivalent to code)
 - Ontario – Building code changed in 2015
 - 2015 National Building Code of Canada

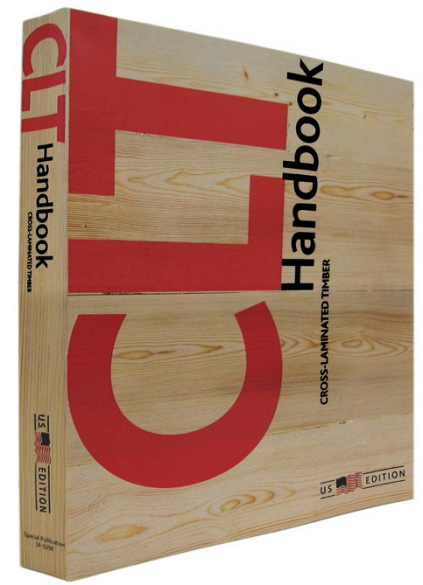


New materials for larger buildings

- Wide range of engineered wood products provide designers high strength and fire resistance
 - Glulam, Timberstrand, LVL columns & beams
 - Pre-fabricated bolt together systems
 - Cross Laminated Timber – CLT



Cross Laminated Timber



Elkford Community Centre

Source: AHC Group



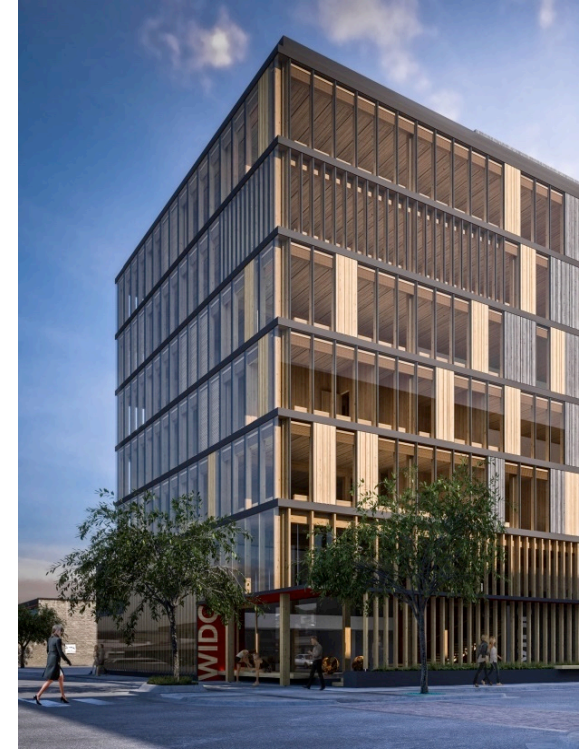
CLT Tall Wood Buildings



Stadthaus
London, England
9-storey



FORTE Building
Melbourne, Australia
10-storey



WIDC Building
Prince George, BC
Height: 28 m

Canada Tall Wood Building Demonstration Competition

2013 TALL WOOD STRUCTURE DEMONSTRATION PROJECTS
A REQUEST FOR AN EXPRESSION OF INTEREST (EOI)
PROJETS DE DÉMONSTRATION EN BOIS DE GRANDE HAUTEUR APPEL DE DÉCLARATION D'INTÉRÊT

HOME LOGIN/REGISTER SUBMIT EOI FAQs LINKS CONTACT

Revised Dates –The Canadian Wood Council announces revisions to the High Rise Wood Building Demonstration Project(s) Expression of Interest timelines including the submission deadline that has been postponed to October 18, 2013. [View Revised EOI Dates](#)

ANNOUNCEMENT
Canadian Wood Council Announces Opportunity for High-Rise Wood Demonstration Projects
OTTAWA, May 6, 2013 - The Canadian Wood Council (CWC) has issued a request for an

FPInnovations
Technical Guide for the Design and Construction of Tall Wood Buildings in Canada
Special Publication SP-056
Edited by: Erik Karacemayci P.Eng, Geony Lee P.Eng
2014 - First Edition
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FPInnovations Technical Guide for the Design and Construction of Canadian Tall Wood Buildings

Tall Wood Demonstration Projects

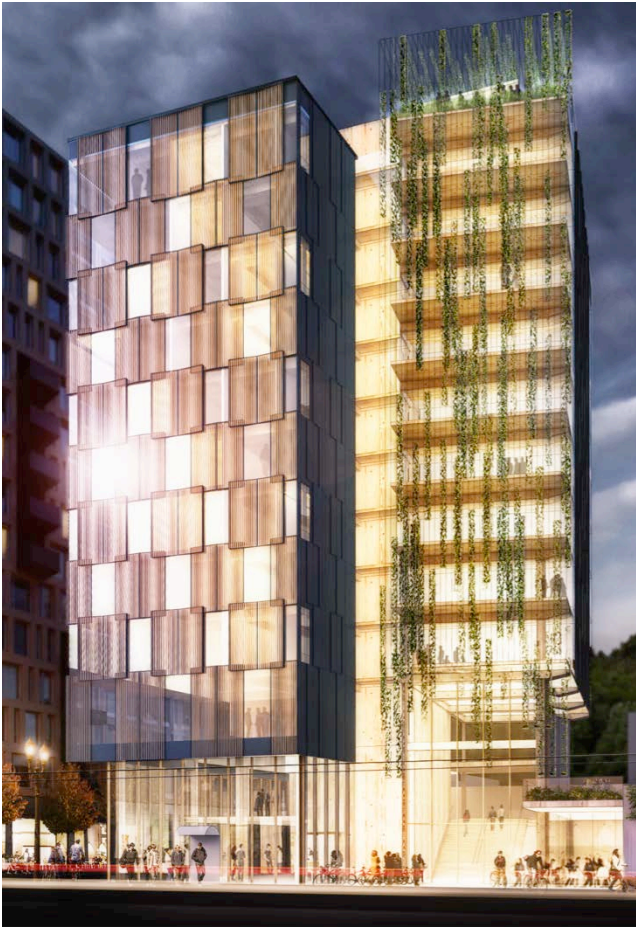


Origine
13-Storey Residence
Quebec City, QC



UBC Brook Commons
18-Storey Student Dormitory
Vancouver, BC

US Tall Wood Demonstration Projects



Framework
12-storey Mixed Use
Portland, OR



475 West 18th
10-storey Residential
New York, NY

The Wood Advantage

- Economical and durable
- Renewable and sustainable
- Strong, light-weight and beautiful!



Van Dusen Garden Visitor Centre





Thank you!

For further information, please contact:

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