



Mass Timber: Identifying Code and Policy Hurdles

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WoodWorks

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**SOFTWOOD
LUMBER BOARD**



Canada 



No Cost Project Support for Design/Construct Firms



- Schools
- Mid-rise/multi-family
- Commercial
- Corporate
- Franchise
- Retail
- Institutional
- Recreational
- Healthcare



Cross Laminated Timber: Mass Timber



- Finished panels are planed, sanded, cut to size. Then openings are cut with precise CNC routers.
- Third party inspection at factory.
- Custom engineered for material efficiency.
- Custom designed for project.
- Each panel numbered, delivered & installed in predetermined sequence

What is the appeal of CLT?

Sustainability

- Reduced Embodied Carbon
- Minimal waste production
- Highly Energy Efficient

Performance

- Disaster Resilient
- Good Fire Resistance
- High performing Acoustics
- Structural Flexibility

Construction Efficiency

- ~75% lighter than concrete
- Reduced construction time
- Pre-fabricated and Precise

Model Building Code Acceptance



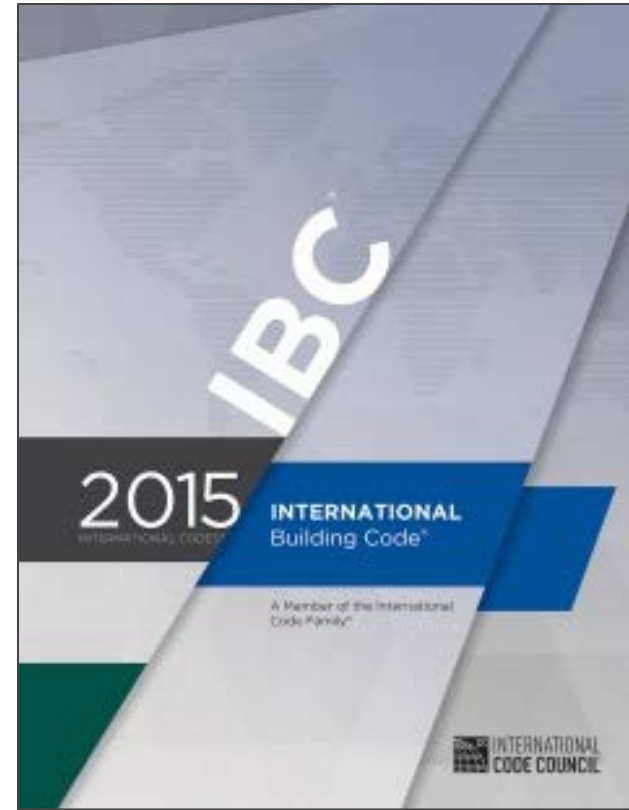
2015 International Building Code

US CLT Handbook

1. Introduction
2. Manufacturing
3. Structural
4. Lateral
5. Connections
6. DOL and Creep
7. Vibration
8. Fire
9. Sound
10. Enclosure
11. Environmental
12. Lifting



Model Building Code Acceptance



2015 International Building Code

Model Building Code Acceptance



2015 International Building Code typically adopted January 2017

- Alaska – 2009 IBC
- Washington – 2015 IBC
- Oregon – 2012 IBC w/ 2015 CLT amendment
- Idaho – 2012 IBC
- Montana – 2012 IBC working on adding 2015 CLT amendment

Model Building Code Usage

2015 **Prescriptive** International Building Code
– 5 stories of wood construction allowed



2015 **Performance** Based Design –
using wood TALLER than 5 stories



Model Building Code History



1871 Great Chicago Fire

1889 Great Seattle Fire

1899 Height of Buildings Act

1906 Model N Ford

1910 Modified Heights of
Buildings Act



2015 hybrid electric supercar

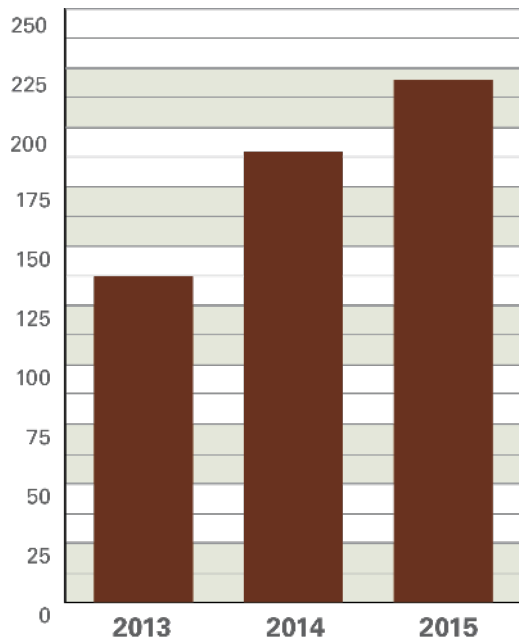
Still using heights and areas
from Model N/T Ford era

2015 PROGRAM HIGHLIGHTS

technical support for **220** projects that went to construction this year & technical support on an additional **488** projects that are still in design phase

43,300 practitioner education hours through Wood Solutions Fairs, workshops, webinars and other education events

Growth in Number of Direct Projects Supported

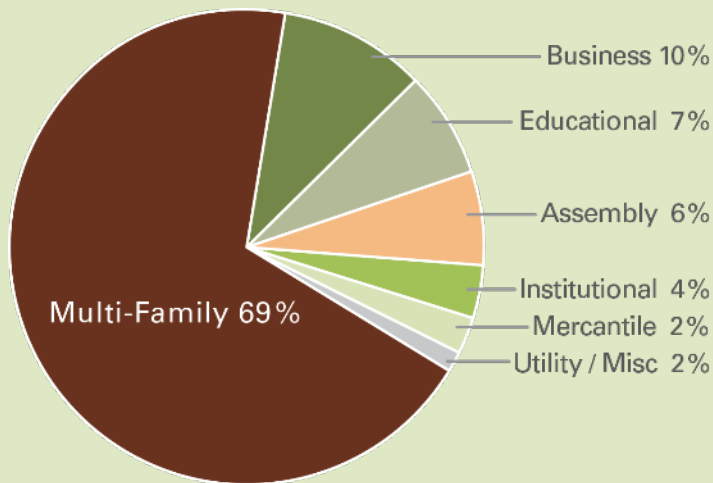


EDUCATIONAL OUTREACH TO SUPPORT PROJECT ASSISTANCE



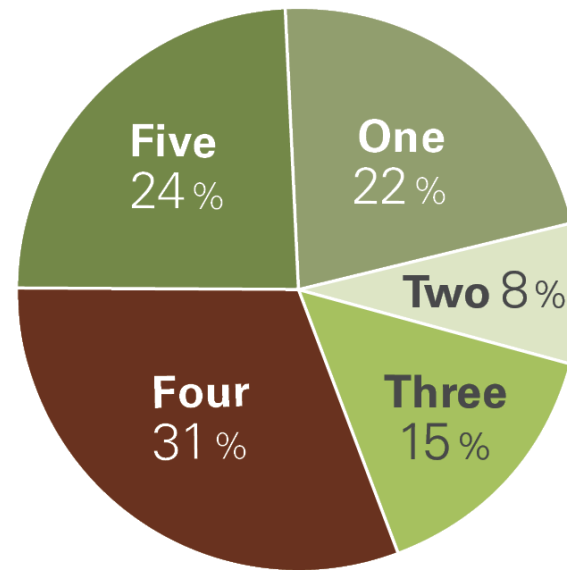
Supporting a Full Range of Projects

Projects by Building Type



Projects by Number of Stories

In 2015, 55 percent of the projects supported were taller than 3 stories, compared to 50 percent in 2014. The average height of a supported project was 3.3 stories, up from 2.7 in 2014.



Lead by Example

Oregon Executive Order 12-16 - 2012

- “Promoting wood products in commerce as a green building material, encouraging innovative uses of wood products and increasing markets for Oregon wood products”
- WoodWorks assisted on both WOU and OSU buildings

USDA Tall Wood Building Competition - 2015

- “showcase the safe application, practicality and sustainability of tall wood structures that uses mass timber, composite wood technologies and innovative building techniques. It was established to provide scientific as well as technical support to encourage and support the design and construction of tall wood demonstration projects within the U.S.”
- WoodWorks assisted on several submittals and the 2 winners

DR Johnson 1st US Manufacturer - CLT Fabrication Press



Photo Credit: DR Johnson

Lead by Example - Western Oregon University Monmouth, OR Mahlum Architects



Image Credit: Western Oregon University and Mahlum Architects

2 story, 57,000 sf

Offices, classrooms, and
gathering spaces

CLT utilized for floor plates
and bearing/shaft walls

1st project to utilize US
manufactured CLT



WOU Richard Woodcock
Education Center
Top Photo: Oregon Dept. of
Forestry
Bottom Image: Mahlum Architects

Project is currently under construction, anticipated completion fall 2016



WOU Richard Woodcock Education Center
Images: Andersen Construction & DR
Johnson

Lead by Example – 475 West 18th 10-stories Manhattan, NY Shop Architects



Lead by Example – Framework 12-stories Portland, OR Lever Architecture



Lead by Example

Oregon BEST CLT Design Contest - 2016

- “Award's funding and research will speed use of CLT, a new building material that sequesters carbon and could breathe life into the Pacific Northwest timber industry”
- WoodWorks assisted on all three: Springfield Parking Garage, OSU National Center for Advanced Wood Products Manufacturing and Design, and Carbon 12 project

Washington House Bill HB-2380 - 2016

- “Funding to analyze cost effective options to procure high quality, sustainably built, energy efficient, and healthy classroom space to address the needs for K-3 classroom statewide”
- WoodWorks assisting on framework of WA Forterra leadership and the modular CLT schools for five school districts

**Lead by Example – Carbon 12 8-stories
Portland, OR
Path Architecture**



Lead by Example – Glenwood Parking Structure 4-stories Springfield, OR SRG Architects



Lead by Example - Franklin Elementary School

Franklin, WV

MSES Architects





HOME		VISITOR	
SCORE	SCORE	SCORE	SCORE
PERIOD	PERIOD	PERIOD	PERIOD
BONUS	PLAYER	BONUS	FOULS
FOULS	FOULS	FOULS	FOULS

Summit
COMMUNITY BANK

Photo Credit: Pam Wean, MSES Architects

Lead by Example

Timber Innovation Act – U.S. Congress 2016

- “bipartisan legislation would open up new markets and create jobs for rural economies by providing research funding, technical assistance, and lower costs for the construction of tall wood buildings throughout the United States”
- WoodWorks assisting

Develop the Future

Significant amount of “Supply Side” organizations

- USDA USFS, American Forest Resource Council
- Softwood Lumber Board
- University Forestry Programs
- OFRI, OFIC, WFPA, Forterra, WWPA, FBN
- Logging organizations, manufacturing organizations

Need to support “Demand Side” opportunities

- WoodWorks
- American Wood Council
- Timber Innovation Act

Questions?

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