



MASS TIMBER:

PROMISE FOR THE

FOREST SECTOR & THE ENVIRONMENT



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A presentation for the Oregon State Bar Environmental
and Natural Resources section
October 14, 2016



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WHO IS OFRI?

The Oregon Forest Resources Institute was created by the state legislature in 1991 to advance public understanding of Oregon's forests, forest practices and forest products and to encourage environmentally sound forest management.



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OREGON'S FORESTS

- 47% of Oregon's land base is forested
- 29,984,000 acres



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Who owns Oregon's forests?



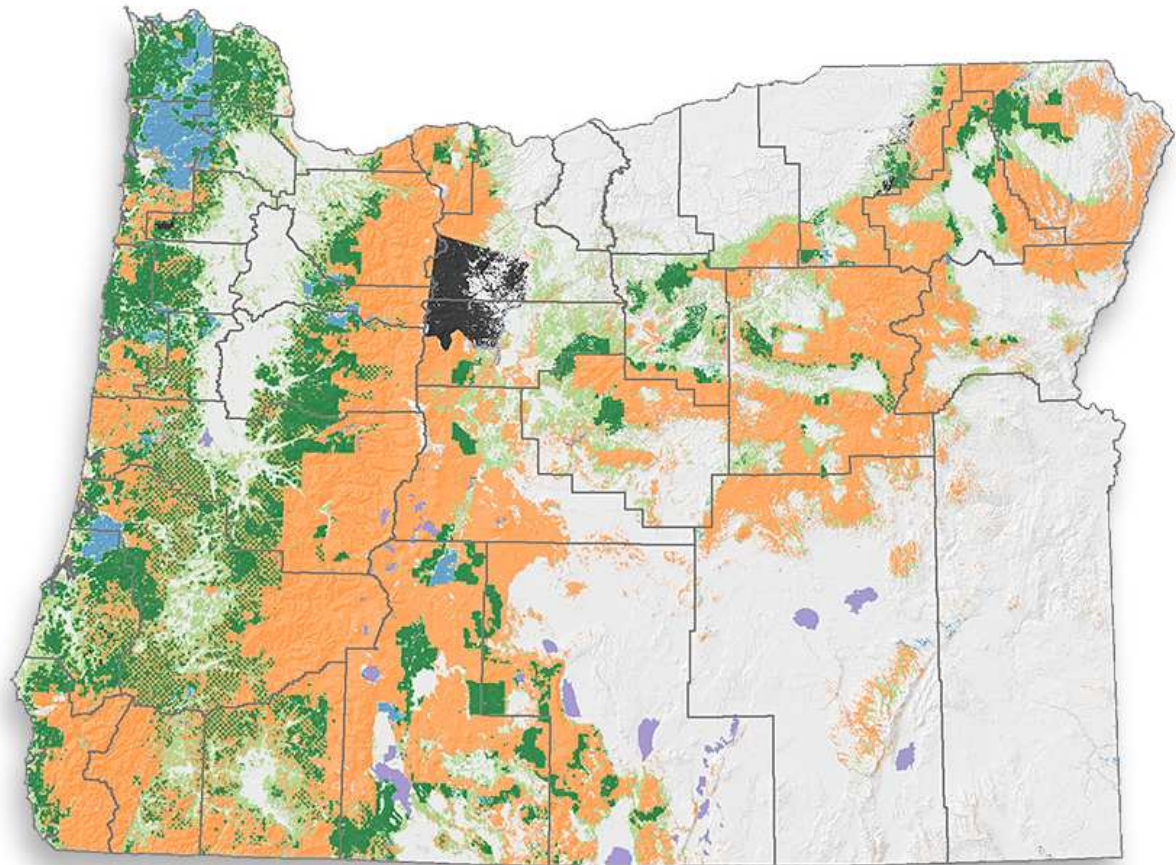
Federal

Large private

Small private

State

Tribal

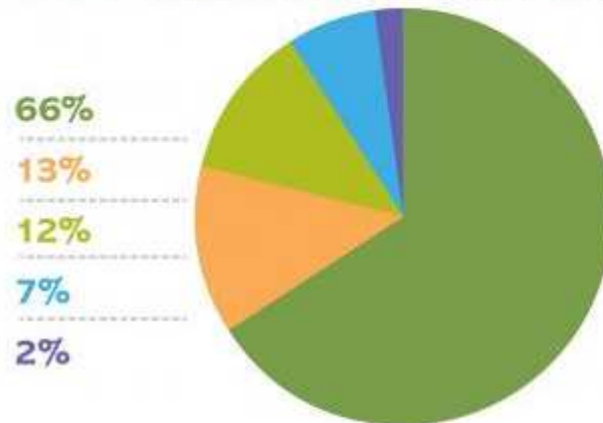


Ownership vs. production

Three-fourths of Oregon's timber harvest comes one-third of its forestland



TIMBER HARVEST BY OWNER (2013)



FEDERAL GOVERNMENT

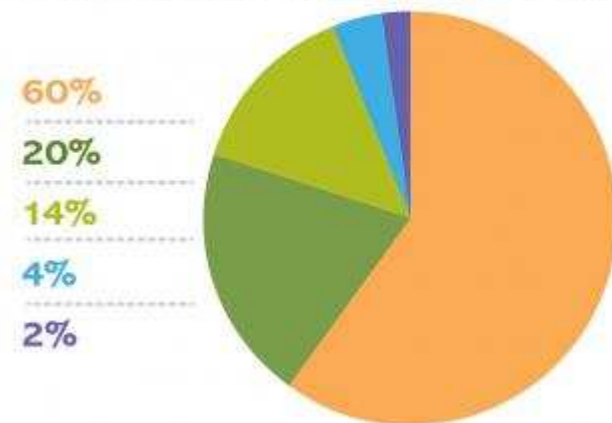
LARGE PRIVATE

SMALL PRIVATE

STATE AND OTHER PUBLIC

TRIBAL

FORESTLAND ACREAGE BY OWNER



OREGON FOREST FACTS

- **100,000 acres of timberland is harvested each year in Oregon**
- **1/3 of 1% of the total forestland**
- **About $\frac{3}{4}$ of that is clear cut**



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OREGON FOREST FACTS

**Average acres burned
annually (2003-2014): 125,000**



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OREGON FOREST FACTS

Oregon Forest Practices Act

- First in the nation
- Requires reforestation
- Requires protection of water quality and habitat
- Updated frequently
- 95%+ compliance



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OREGON FOREST FACTS

ASTM D7612

- **Internationally recognized standard for global wood sourcing**
- **Categorizes wood three ways: Legal, Responsible, Certified**
- **OFPA-subject wood meets ASTM D7612 - Responsible**



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State Context



Place: Western Oregon is the best place in the world to grow high-value trees



People: How much we harvest is not as important as the economic impact created



Position: Oregon is positioned to compete in global markets for 'green buildings' made of engineered wood products

FOREST SECTOR ECONOMIC IMPACT

- **Total Industrial Output: \$12.7 billion**
- **Accounts for 6.8% of state's economy**
- **Up to 20% in rural areas**



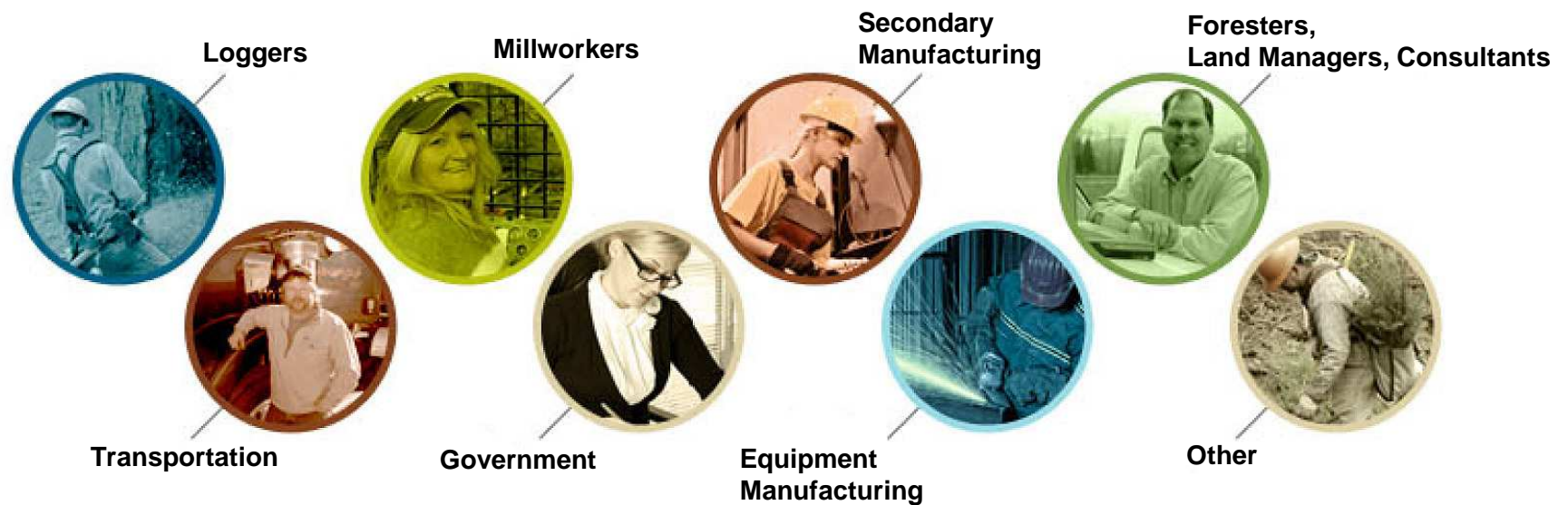
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FOREST SECTOR ECONOMIC IMPACT

- **59,000 forest sector jobs in Oregon**
- **3.4% of all occupations**
- **Average salary: \$49,200 per year**

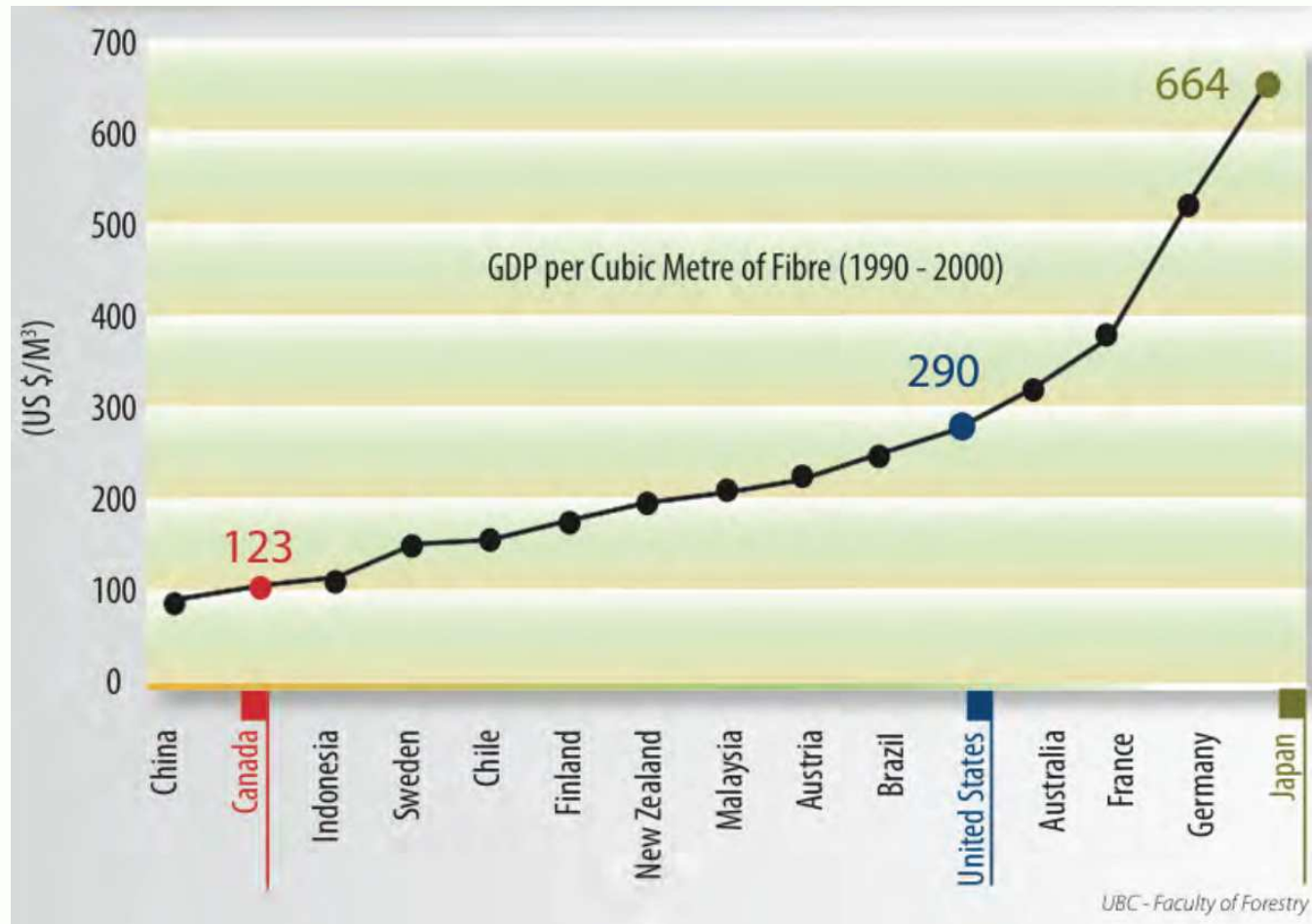


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Value-added manufacturing



THE PROMISE OF MASS TIMBER

- Expanded wood markets
- Wood products innovation
- Rural economic development
- Carbon sequestration

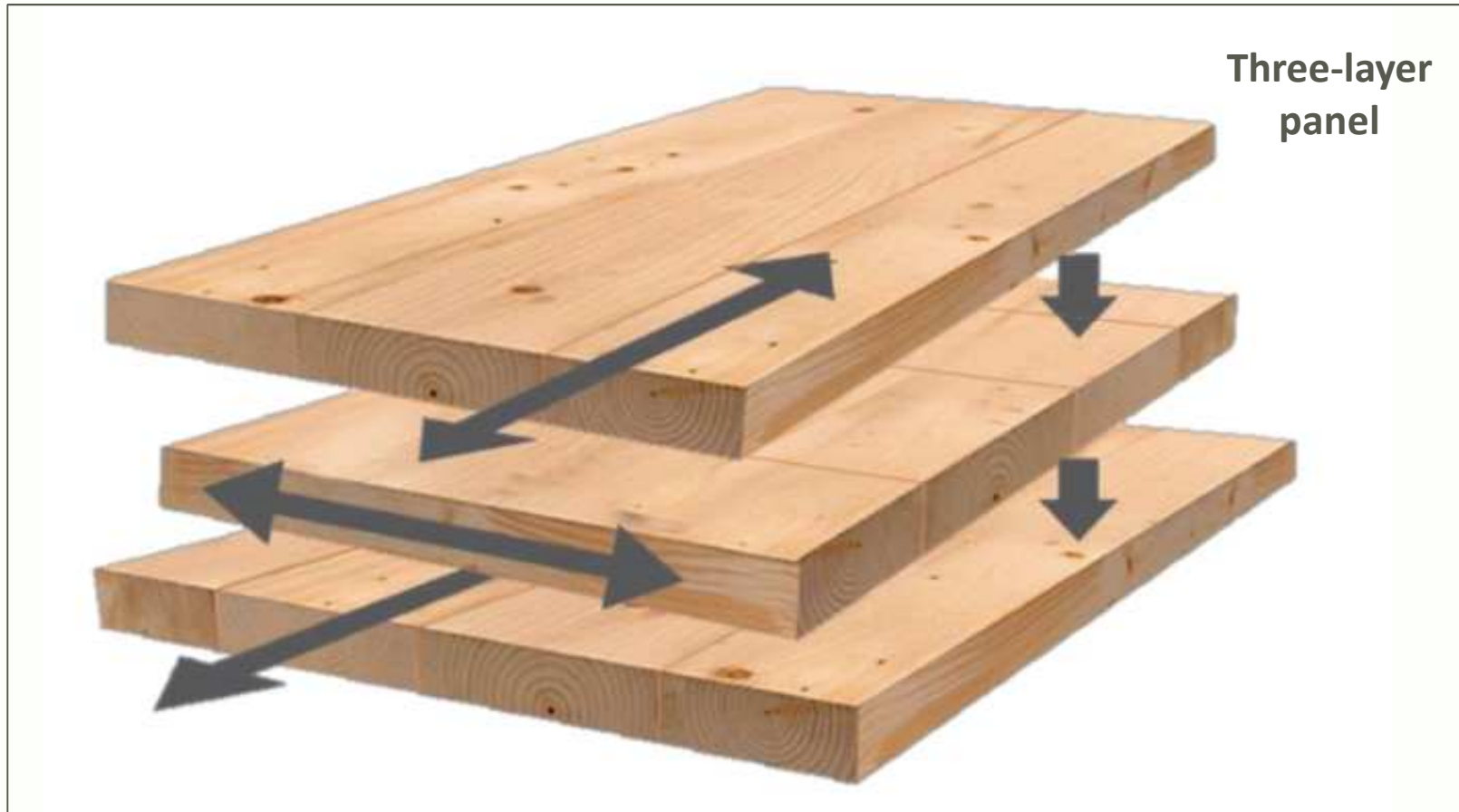


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Cross-laminated timber (CLT)



A wood panel typically consisting of 3, 5, or 7 layers of lumber oriented at right angles to one another and glued to form structural panels with exceptional strength, dimensional stability, and rigidity.

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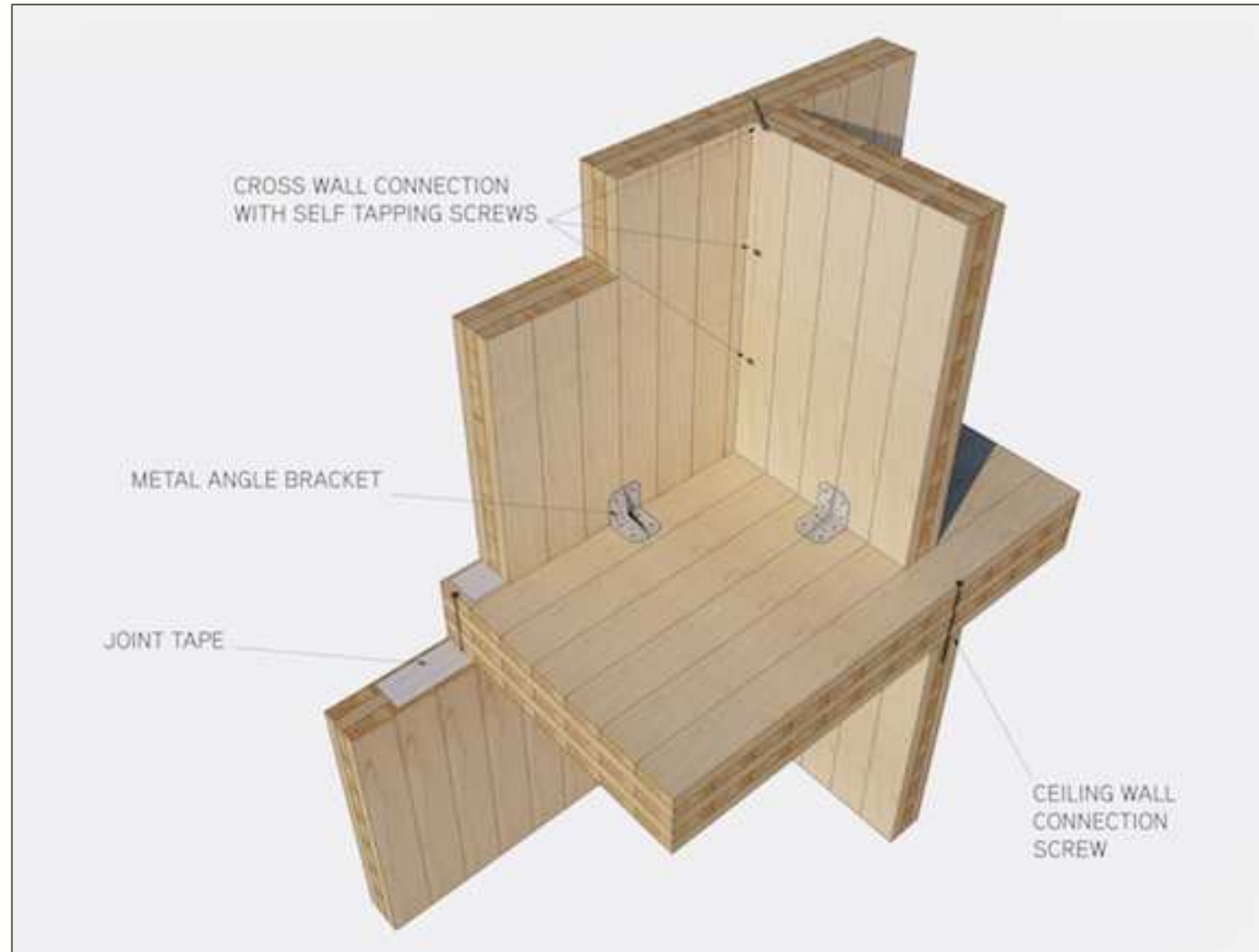
Complex cuts



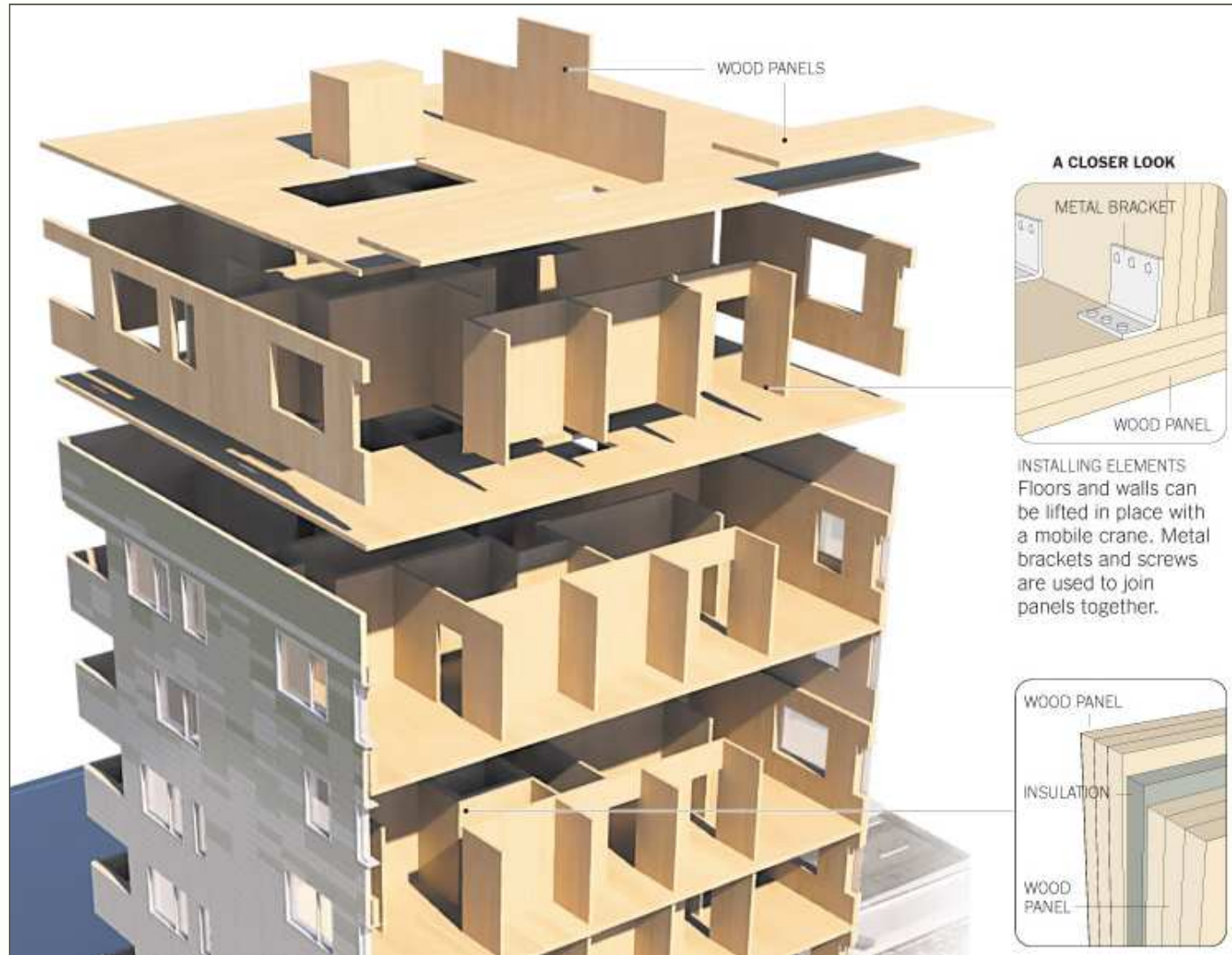
While at the mill, CLT panels are cut to size, including door and window openings, with state-of-the-art CNC (Computer Numerical Controlled) routers, capable of making complex cuts with high precision.

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Easy installment



Use of CLT in buildings



NEW MARKETS: COMMERCIAL CONSTRUCTION

Commercial Construction Value 2015

Source: Dodge Data and Analytics, reported by AIA December 2015

Office	\$56.1 billion
Hotel	\$21.1 billion
Retail/Other	\$67.3 billion
Education	\$84.3 billion
Religious	\$3.4 billion
TOTAL	\$144.5 billion



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NEW MARKETS: MULTI-FAMILY

Multifamily Construction Outlays
January 2016 seasonally adjusted annual rate

\$59.8 billion

Source: National Association of Homebuilders, reported in Multifamily Executive



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THE PROMISE OF MASS TIMBER

Total market potential =

\$204.3 billion

Most categories experiencing
double-digit growth in 2016

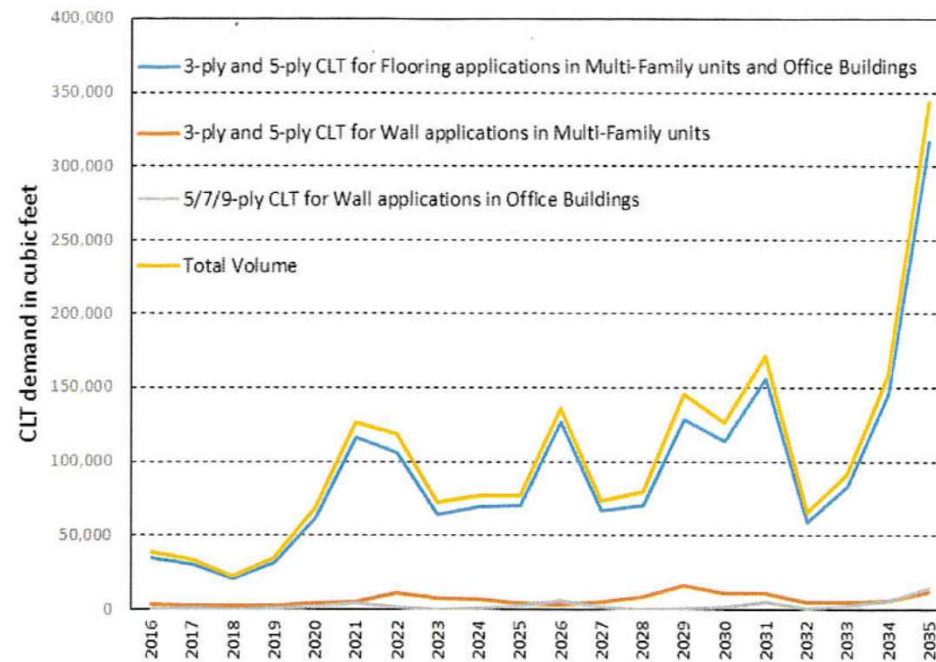


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THE PROMISE OF MASS TIMBER

Canadian study:

Total North American demand for Tall Wood is

- 280 million sf in U.S.
 - 57 million sf in Canada
- » 7.3 bbf of lumber

Photo: Tom Waddell, Forest Business Network



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THE PROMISE OF MASS TIMBER

Clay Creative:

- 60,000 sf creative office building
- 350,000 bf glulam
- 632,000 bf dimension lumber
- 73,600 sq. ft. 5/8" plywood



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THE PROMISE OF MASS TIMBER

Albina Yard:

- 16,000 sf creative office building
- 61,500 bf CLT
- 57,000 bf glulam
- 42,500 bf dimension lumber
- 19,550 sq. ft. 5/8" plywood



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RURAL ECONOMIC DEVELOPMENT

Direct benefits

- A handful of jobs to run the new line



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RURAL ECONOMIC DEVELOPMENT



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RURAL ECONOMIC DEVELOPMENT

“If increased demand from mass timber helps lumber prices stay consistently over \$200, we’d add a shift and our competitor in town would as well.”

--CEO of a prominent lumber producer in Oregon



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WHY BUILD WITH WOOD?



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WHY BUILD WITH WOOD?



"We are faced with the two major issues of our time, man-made climate change and a soaring world population. To construct adequate housing for future generations we must reinvent constructions so that we can fulfill this need with the minimum effect on our environment."

—Andrew Waugh, Principal Waugh Thistleton Architecture

Timber can help solve our global problems. As timber grows it soaks up carbon dioxide through photosynthesis. This is surely what we have been looking for.



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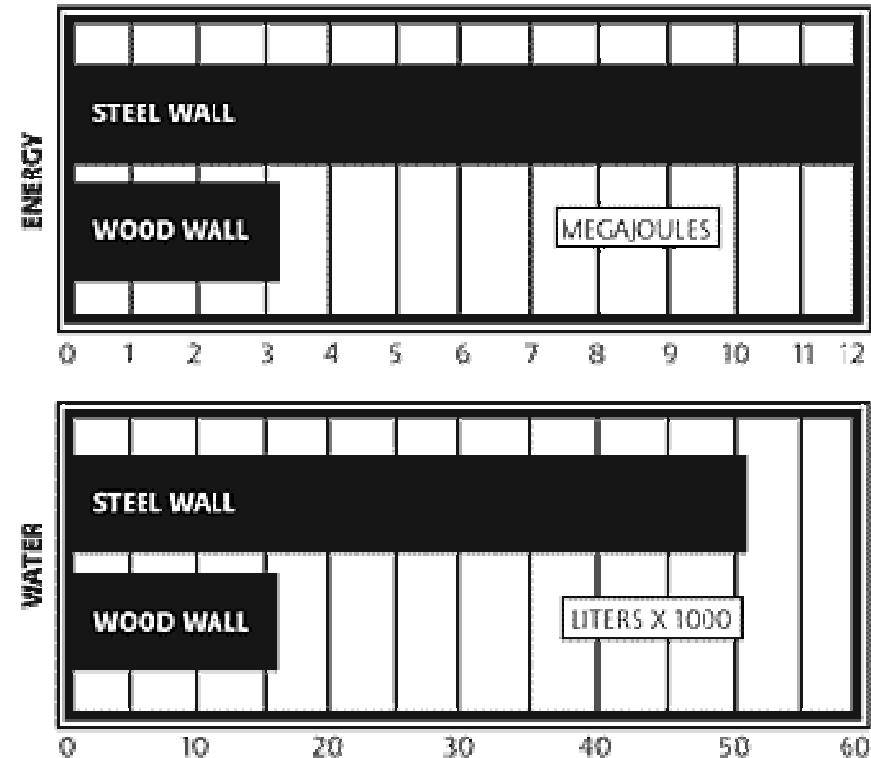


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WHY BUILD WITH WOOD?

Wood products are

- Renewable and recyclable
- Less energy and water to produce than steel and cement



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CLIMATE CHANGE

“Wood, unlike steel and concrete, sequesters carbon dioxide, storing it away for the life of the building it is in.”

—Michael Green, Architect



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CLIMATE CHANGE

*50% of the dry weight of wood
is carbon that was removed
from the atmosphere while the
tree was growing.*



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CLIMATE CHANGE

LC [13]1

Wood buildings are massive carbon storage units.



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Slide 34

LC [13]1

Did we want them to add text? One of the concerns I have is that the text in previous slides goes over the wood, which detracts from the message, I think.

Liz Cawood, 5/15/2016

CLIMATE CHANGE

Simple Bank Building

- >1,000,000 pounds carbon stored
- Offsets 1,678 metric tons of CO₂e
- 3,574 metric tons of CO₂e emissions avoided by using wood instead of steel and concrete

Calculations by Dr. Jim Bowyer, Dovetail Partners



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WHY BUILD WITH WOOD?

"...we identified the rise in timber net returns as the most important factor driving the increase in forest areas [in the United States] between 1982 and 1997." —

Lubowski et al. 2008



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WHY HERE?



"The global demand for wood has increased every year since 1950 and continues to increase along with populations. Most of the places in the world where wood is being grown is in plantations. There's really only one place where trees are grown in a native ecosystem and that's here in the Pacific Northwest."

—Dr. Thomas Maness, Dean of the College of Forestry, Oregon State University

This is the most environmentally sustainable place on earth to grow wood.



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WHAT'S HAPPENING HERE

Oregon Wood Products Working Group

“Create and Implement Strategies for development of advanced wood products manufacturing in Oregon to support rural economic development.”



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WHAT'S HAPPENING HERE

National Center for Advanced Wood Products Manufacturing and Design

Collaborative between University of Oregon School of Architecture, Oregon State College of Forestry and OSU College of Engineering.



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WHAT'S HAPPENING HERE

National Center for Advanced Wood Products Manufacturing and Design

- Clearinghouse for information
- Product performance research and R&D
- A true showcase for utilization of advanced wood products



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WHAT'S HAPPENING HERE



Carbon 12:

- 8-story mixed use
- NE Fremont & Williams

Framework:

- 12-story mixed use
- Pearl District
- Includes affordable housing units
- Will be the tallest wood building in the U.S.



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FOREST to FRAME



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Thank you



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