

Rethinking the Building From the Ground Up

$$x = \sqrt{y} * i$$

where:

x = building height

y = tree height

i = imagination

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University**



Three Thoughts for Today:

1. Western Oregon is the Best Place in the World to Grow High Value Trees

- Readily available natural inputs
- Only plantation area with native species
- Huge natural forest reserve relative to plantation area
- Our conservation values are not practiced elsewhere
- Stable climate predicted for growing trees

2. How Much We Harvest is Not As Important as How Many Jobs Are Created by What We Harvest

- Jobs per board foot harvested is THE economic driver relevant to our rural economies.
- We must focus on creating secondary manufacturing jobs that produce engineered wood products.

3. Oregon is Positioned to Compete in Global Markets for “Green Buildings” made of Engineered Wood Products

- Architects are embracing wood as a sustainable material for tall wood buildings.
- Doug Fir is the best species in the world for these products
- Global urbanization is driving demand



89.9M
NOBLE
FIR



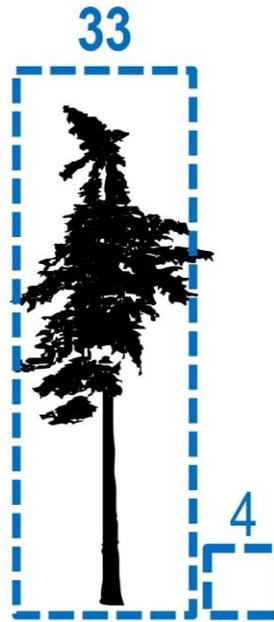
90.7M
TASMANIAN
BLUE GUM



94.9M
GIANT
SEQUOIA



96.9M
SITKA
SPRUCE



99.4M
COAST
DOUGLAS
FIR



99.6M
MOUNTAIN
ASH



115.6M
COAST
REDWOOD

TRADITIONAL WOOD FRAME CONSTRUCTION



MASS TIMBER

CHANGES EVERYTHING.

STRUCTURALLY

SPEED OF CONSTRUCTION | COST

FIRE SAFETY

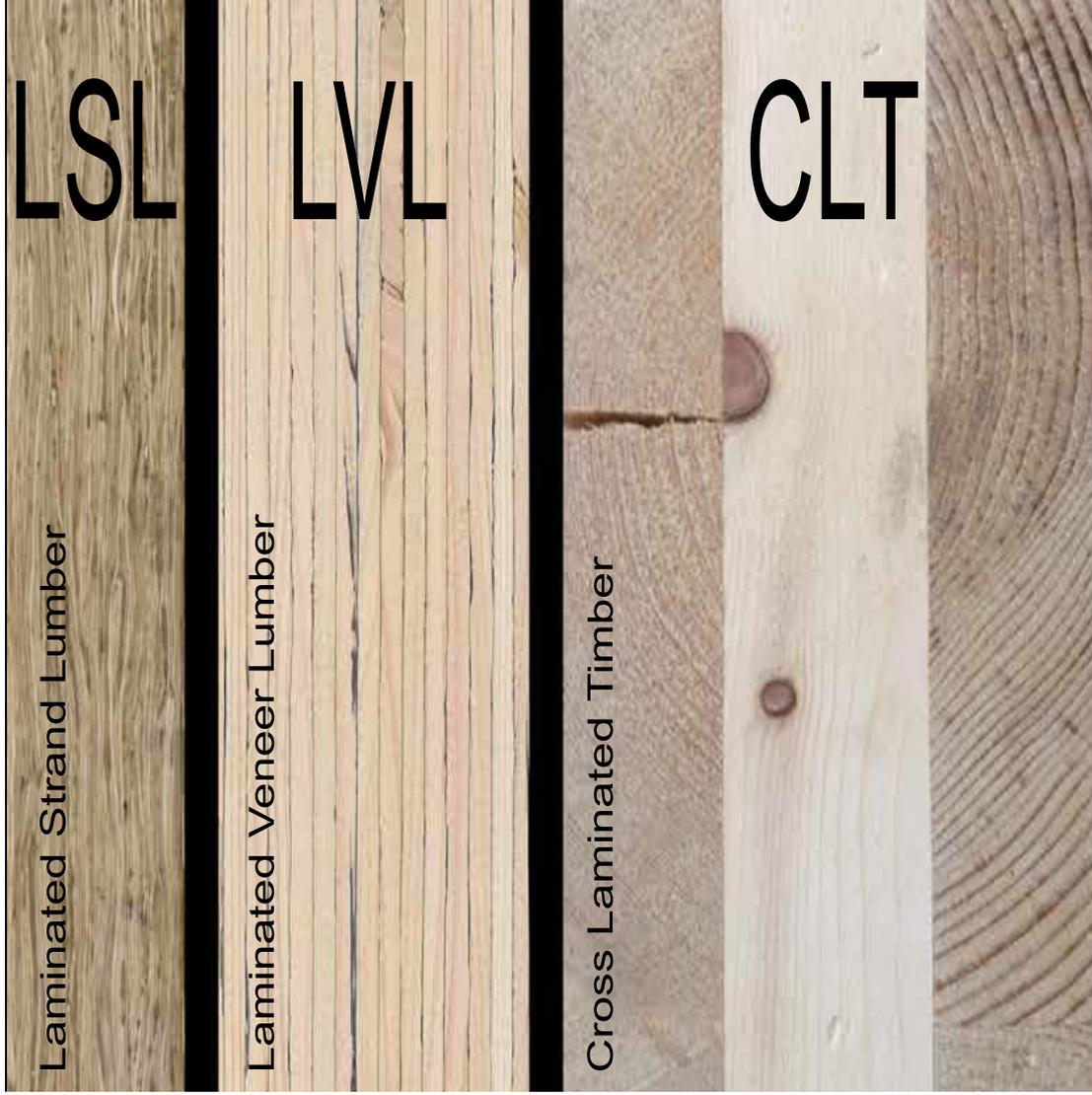
DURABILITY AND LIFESPAN

HEALTH OF OCCUPANTS

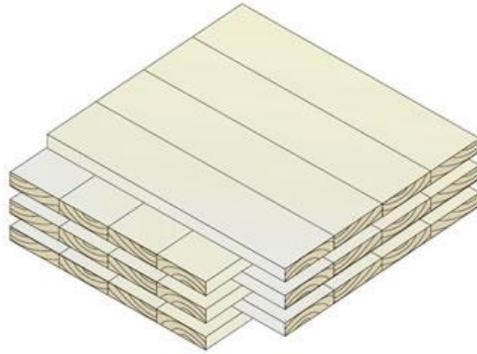
ENVIRONMENTAL PERFORMANCE

VALUE ADDED LARGE SCALE PANELS

6



Cross-Laminated Timber



Glue-Laminated Timber

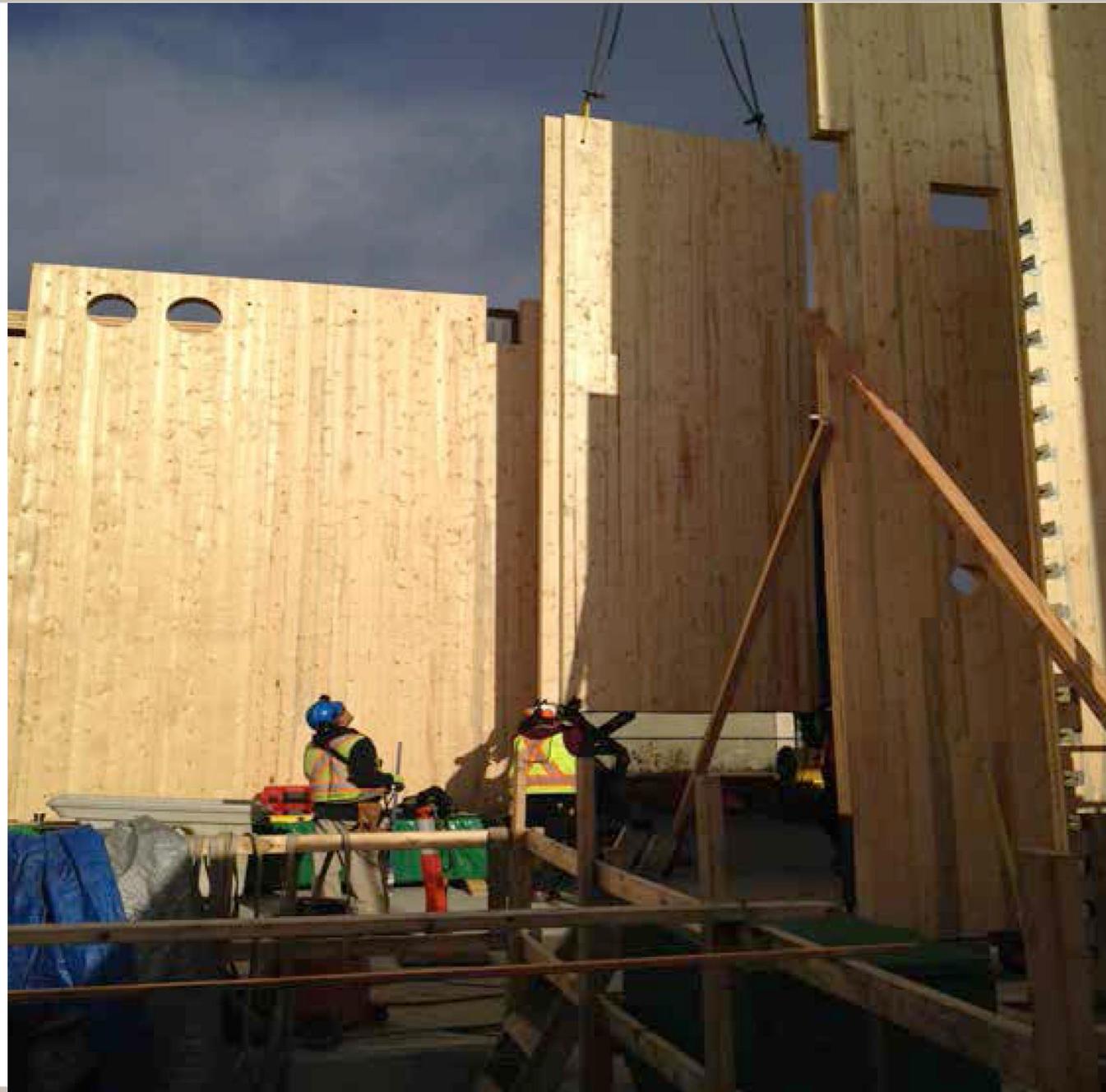




This is sequestered carbon













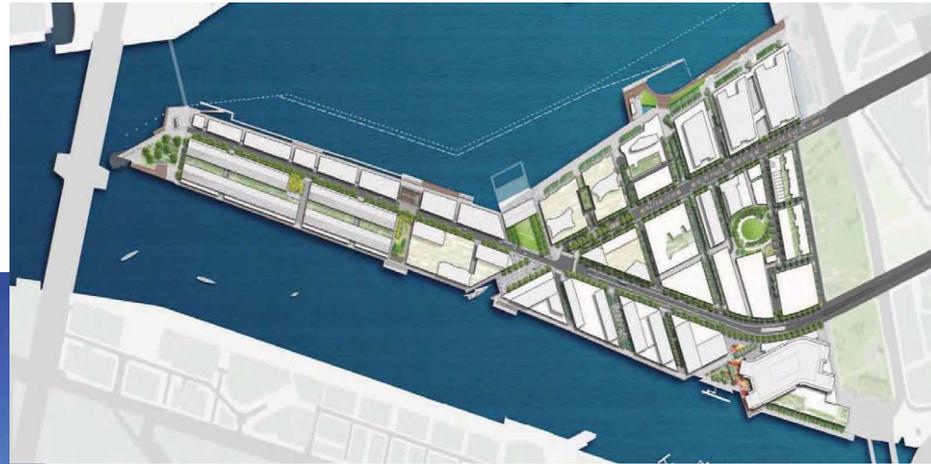


MURRAY GROVE

Waugh Thistleton Architects

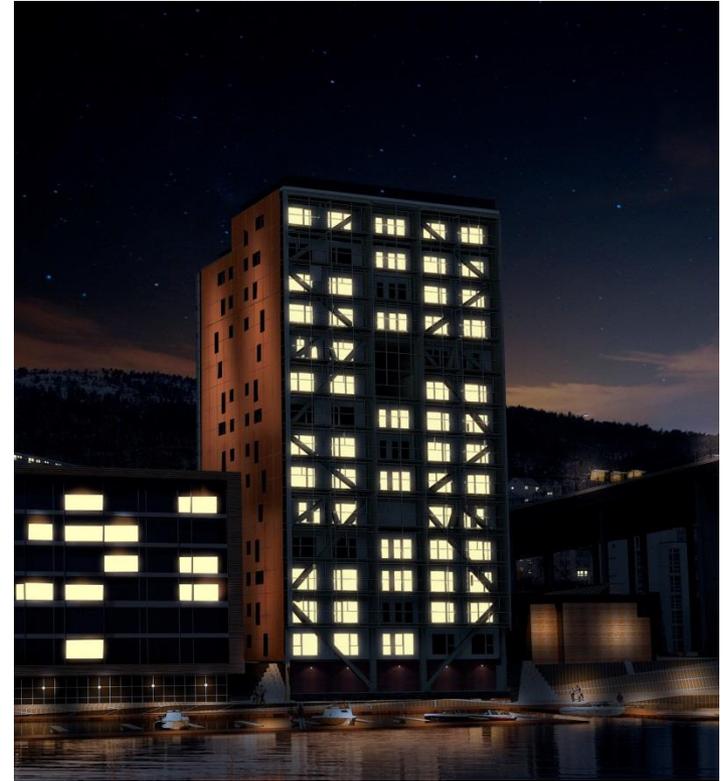
London, England

Completed 2009



- Completed in 2012
- 10 stories
- ~ 105 ft. tall, > 18.6 K sqft.
- 3 million in R&D
- Poor soils required a much lighter building

**Forte', Victoria Harbor, Melbourne,
Australia
Architect: Lend Lease**



TREET

Artec Architekten

Bergen, Norway

To be completed this year



HO HO PROJECT

Rüdiger Lainer and Partner

Vienna, Austria

To be Completed 2016



HSB 2023

C.F.Møller

Stockholm, Sweden

To be Completed 2023

Center for Advanced Wood Products Manufacturing and Design

Applied Research

- New product incubation
- New applications of current technology and materials
- Material and manufacturing process innovations

Expanded Degree Programs

- Credit and Degree Offerings at both Universities

Professional Training Programs

- Manufacturing workforce training – fabrication
- Link to Community College technical training programs

Product Testing and Certification

- Product and materials testing
- Code compliance and validation
- Building certification and lifecycle performance

Center for Advanced Wood Products Manufacturing and Design

Total Funds = \$2.5 General Fund* and \$1.86 million Federal Funds**

| | |
|-------------|---|
| \$815,000 | Center Administration and Start-Up |
| \$600,000 | Enhancements to Educational and Research Program Capacity |
| \$1,245,000 | Research Project Funding |
| \$647,231 | Commercial Application Testing Project Funds*** |
| \$500,000 | Equipment and Technology Investment |

* Budget language indicates roll-up to \$3.4 million in 2017/2019 biennium

** Includes Federal FY 2016 Appropriation of \$1.0 million from ARS – not yet allocated among categories

*** Includes February 8, 2016 award federal EDA funds totaling \$447,231

OSU Forest Science Complex

NEW ADVANCED WOOD PROCESSING LABORATORY:

STRUCTURAL HIGH BAY,
MANUFACTURING + COMPOSITES

18,000 SF

NEW ACADEMIC WING:

CENTRAL ATRIUM, INNOVATIVE
CLASSROOMS, LABORATORIES +
STUDENT SPACES

80,000 SF



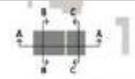
EXPANDED ARBORETUM:

INTEGRAL WATER MANAGEMENT
SYSTEMS, EXTERIOR CLASSROOM +
GATHERING SPACES

2
2

Advanced Wood Products Lab (AWP)





SECTION A



SECTION B

SECTION C

AWP SECTIONS
SCALE 3/32" = 1'





A SOCIETY GROWS GREAT WHEN OLD MEN PLANT TREES WHOSE SHADE THEY KNOW THEY WILL NEVER SIT IN

THE BEAUTIFUL RESTS ON THE FOUNDATIONS OF

THE CREATION OF A THOUSAND

Arch

Architecture Program



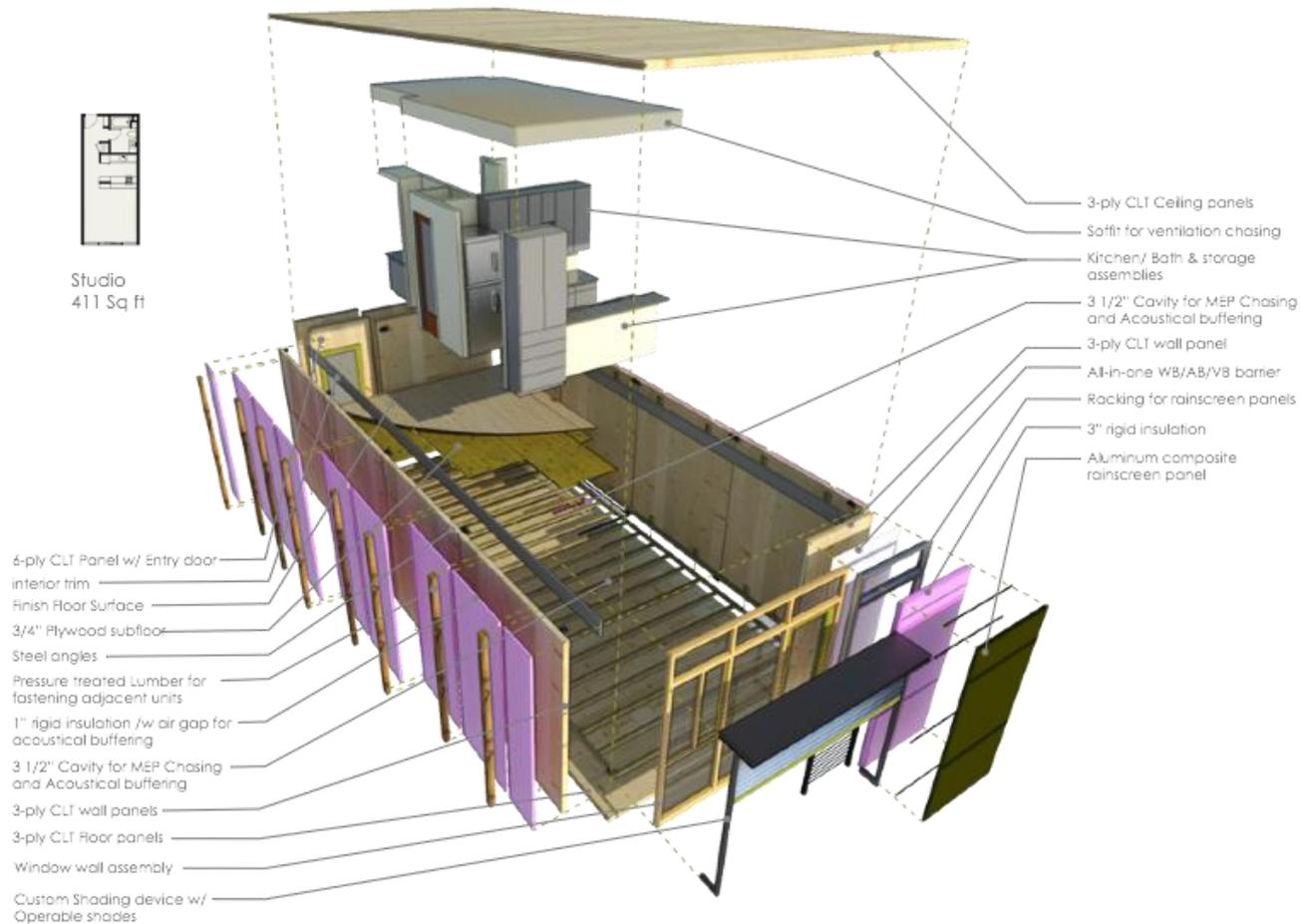
First Place – ACSA Timber in the City Competition
Benjamin Bye, Alex Kenton, Evan Rood
Judith Sheine, Faculty Advisor

Department of
Architecture



UNIVERSITY OF OREGON
School of Architecture and Allied Arts

PREFAB SYSTEM



Cross Laminated Timber Modular Housing, San Francisco, California
 William Zenk
 Michael Fifield, Faculty Advisor

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Architecture



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Slide: OSU Retreat Center
 Kelsey McLaughlin
 Judith Sheine, Faculty Advisor



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Modern Building Systems Modular CLT Classroom
Cameron Huber, Kelsey McLaughlin
Judith Sheine, Faculty Advisor





Slide: Springfield Mass Timber Parking Garage

Tom Adamson, Ryan Kiesler, Tom Moss
Judith Sheine, Mark Donofrio Faculty Advisors



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