



WoodWorks
WOOD PRODUCTS COUNCIL



Oregon Wood Solutions Fair

OCTOBER 23, 2014

OREGON CONVENTION CENTER

777 NE Martin Luther King Jr Boulevard

Portland, OR 97232

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NATIONAL AND
OREGON FOREST
PRODUCTS WEEK

OCTOBER
19–25

*See our website
for more
information*

Oregon Wood Solutions Fair Schedule

**Space is limited.
Register today!**

7:00 am	Registration Check-in – Exhibit Hall Opens				
	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5
8:00 am – 9:10 am	Detailing for Wood Shrinkage	Comparative Life Cycle Assessment: Multi-Story, CLT Apartment in Quebec	Energy Code Compliance: Wood-Frame Buildings and the IECC	Walls That Work: Detailing for Performance	Architectural Alternatives: Post-Frame Building Systems
9:10 am – 9:45 am	Break – Exhibit Expo				
9:45 am – 10:45 am	Kiln Apartments: A Multi-Family Passive House	EPDs and HPDs: Opportunities within LEED v.4 and Green Globes	International Building Code Essentials for Wood Construction	2012 IBC and 2012 NDS Changes Affecting Structural Wood Construction	Sustainable Designs: Western Red Cedar
10:45 am – 11:00 am	Break – Exhibit Expo				
11:00 am – Noon	Detailing Considerations for Multi-Story Wood-Frame Buildings	Forests and Forest Products	Preservative-Treated Wood: Use and Specification	The Application of Traditional and Modern Heavy Timber Connections	Lumber Specifications in a Changing Market
Noon – 1:20 pm	Lunch • Wood Design Awards				
1:20 pm – 2:20 pm	Detailing for Wood Shrinkage	Comparative Life Cycle Assessment: Multi-Story, CLT Apartment in Quebec	Energy Code Compliance: Wood-Frame Buildings and the IECC	Walls That Work: Detailing for Performance	An Introduction to the Structural Design of Post-Frame Buildings
2:20 pm – 2:50 pm	Break – Exhibit Expo				
2:50 pm – 3:50 pm	Kiln Apartments: A Multi-Family Passive House	EPDs and HPDs: Opportunities within LEED v.4 and Green Globes	International Building Code Essentials for Wood Construction	2012 IBC and 2012 NDS Changes Affecting Structural Wood Construction	Sustainable Designs: Western Red Cedar
3:50 pm – 4:00 pm	Break				
4:00 pm – 5:00 pm	Detailing Considerations for Multi-Story Wood-Frame Buildings	Forests and Forest Products	Fire-Retardant Treated Wood: The Basics	The Application of Traditional and Modern Heavy Timber Connections	Lumber Specifications in a Changing Market

Seminars and Speakers

ROOM 1

MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Detailing for Wood Shrinkage

Douglas R. Steimle, PE, Schaefer

For condominiums, apartments, hotels and dormitories, multi-story wood construction is viewed by many as a way to achieve higher density at lower cost, while reducing the project's carbon footprint. One of the challenges, in designing these taller buildings, is how to calculate and address wood shrinkage, which occurs as the wood dries from its 'green' state to its in-service equilibrium state. This session will examine shrinkage associated with wall and floor design, and demonstrate how to minimize effects of both shrinkage and differential movement with proper detailing. The discussion will include solutions to shrinkage-induced construction issues such as drywall cracking, window frame wracking, and compromised plumbing lines.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM

Kiln Apartments: A Multi-Family Passive House

David Posada, GBD Architects

This case study presentation will feature one of the first market-rate apartment buildings in the US to pursue Passive House certification—a recently completed five-story, wood-frame building in Portland Oregon. In addition to the technical challenges of applying Passive House design principles to multi-family housing, topics will include a discussion on cost premiums, constructability challenges, and lessons to improve more widespread adoption of passive house methods. Discussion will also include window-to-wall ratio, assembly options and details, shade selection, modeling challenges, sequencing and schedule, blower door tests, infrared imaging and more.

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM

Detailing Considerations for Multi-Story Wood-Frame Buildings

Lisa Podesto, PE, WoodWorks

This seminar will provide an overview of detailing issues related to the design of four- and five-story wood-frame buildings under the *International Building Code* (IBC). Provided by an expert in wood design and engineering, it will cover common detailing choices related to fire and life safety, such as detailing at exterior walls, as well as balconies and shafts. Examples of various building configurations and site layouts will be used to illustrate common detailing choices.

ROOM 2

MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Comparative Life Cycle Assessment: Multi-Story, CLT Apartment in Quebec

Blane Grann, MSC, FPInnovations

Cross laminated timber (CLT), in combination with other engineered wood products, is creating new opportunities for the use of wood as a structural material in taller building systems. This presentation examines the results of a life cycle assessment (LCA) comparing the environmental performance of a multi-story CLT apartment building in Quebec with a similarly designed concrete slab building. While the carbon benefits related to the use of wood in building systems has been well documented, LCA also highlights potential trade-offs in other impact categories. Results from this assessment underscore the importance of adopting LCA in the design phase, rather than as a post-hoc assessment tool, to identify specific opportunities to improve life cycle environmental performance.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM

EPDs and HPDs: Opportunities within LEED v.4 and Green Globes

Dr. Jim Bowyer, Dovetail Partners, Inc., Bowyer & Associates, Inc.

User-friendly product transparency and LCA tools facilitate exploration of design alternatives and lead to environmentally better buildings, while freeing design and engineering teams from adherence to long lists of prescriptive provisions. Two of these tools, Environmental Product Declarations (EPDs) and Health Product Declarations (HPDs), are being used to improve environmental impacts and occupant environment. This presentation will provide an overview of these tools, including what goes into their development, what they reveal, and how to use them effectively. Opportunities for applying EPDs, HPDs and LCA provisions within LEED v. 4, Green Globes and other green building standards will also be explored.

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM

Forests and Forest Products

Kathryn Fernholz, Dovetail Partners, Inc.

This presentation will answer many questions about forests and forest products, such as: Where do our trees and forests grow? How have forests changed over time? What is the relationship between people and forests—now and in the past? How are forests managed—and are they being managed responsibly? Are our forests and forest products sustainable? Why is wood an environmental-friendly choice?

Seminars and Speakers (continued)

ROOM 3

MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Energy Code Compliance: Wood-Frame Buildings and the IECC

Andrew Klein, PE, A S Klein Engineering, PLLC

This presentation focuses on the challenges of meeting 2012 *International Energy Conservation Code* (IECC) requirements in modern wood-frame buildings, as well as related design considerations. Topics will include the code's scope, content and significant changes since the 2009 edition. Compliance path options will also be discussed in the context of specific building systems and features.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM

International Building Code Essentials for Wood Construction

Dennis Richardson, PE, CBO, CASp, American Wood Council (AWC)

Based on the new AWC/International Code Council publication, *Code Conforming Wood Design* (CCWD), this presentation takes the mystery out of IBC parameters for wood in non-residential and multi-residential construction. Topics will include maximum building sizes (participants will receive pre-calculated tables for eight occupancies, with and without frontage and sprinkler increases); alternatives for establishing required fire resistance; special provisions for pedestal buildings; precautionary recommendations for buildings under construction; criteria for finishes, exterior coverings, appendages, and other wood features; and the use of AWC design standards and other publications in relation to the IBC. Participants may download a complimentary copy of the CCWD www.awc.org/codes/ccwdindex.html.

MORNING SESSION 11:00 AM

Preservative-Treated Wood: Use and Specification

Butch Bernhardt, Western Wood Preservers Institute

In applications where wood may be exposed to moisture, insects or fungal organisms, preservative-treated wood can help ensure a building's durability. In this presentation, participants will learn about the manufacturing process for pressure-treated wood, available products and their differences, and how preserved wood is used in construction. Topics will include types of preservative treatments and the required levels of retention, as dictated by the end-use application, desired service life and exposure conditions. AWPAs Use Category standards and ICC-ES Report Evaluations will be reviewed, and discussion will cover current issues concerning treated wood in residential and commercial construction. Participants will also receive free access to the Treated Lumber smartphone app.

AFTERNOON SESSION 4:00 PM

Fire-Retardant-Treated Wood: The Basics

Butch Bernhardt, Western Wood Preservers Institute

For some applications—such as exterior walls in Type III Construction—building codes allow the use of wood providing it is fire-retardant-treated (FRT). This presentation offers an overview

of FRT wood in the United States, including specific references under the IBC, available products and examples of typical use. This session will explore how treatments are impregnated into the wood, how the preservatives offer fire protection and the testing required to confirm fire-retardant capabilities. Topics will also include understanding the labels on FRT wood products for interior and exterior uses, and occupant safety.

ROOM 4

MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Walls that Work: Detailing for Performance

Roger Roatch, APA

With wall systems serving so many functions in a building, they can be a challenge to effectively design. As a part of the structural and thermal envelopes, wood-frame walls are vital to building performance. Structural design must be balanced with the need for door and window openings and, at the same time, detailed to limit water and air infiltration. This program focuses on how to maximize wall performance while reducing cost through a combination of new design methods and time-tested details.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM

2012 IBC and 2012 NDS Changes Affecting Structural Wood Construction

Michelle Kam-Biron, PE, SE, SECB, M. ASCE, AWC

Oregon recently adopted the Oregon Structural Specialty Code which uses the 2012 IBC as its model code. This presentation will focus on structural wood construction changes in the 2012 IBC and the American Wood Council standards, *2012 National Design Specification* (NDS) for Wood Construction and *2008 Special Design Provisions for Wind and Seismic* (SDPWS). It will also include relevant wind and seismic design changes in Minimum Design Loads for Buildings and Other Structures (ASCE 7-10) standards developed by the American Society of Civil Engineers (ASCE).

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM

The Application of Traditional and Modern Heavy Timber Connections

R.L. "Ben" Brungraber, PhD, PE, Fire Tower Engineered Timber

The selection of heavy timber connections can be challenging, even for designers experienced with these types of building projects. This presentation will provide a thorough discussion of traditional and modern heavy timber connectors and connections, including their design and application. Topics will include some of the connection types and methods used to repair or reinforce existing heavy timber members, such as wooden pegs, wooden wedges, and fully-threaded screws. Discussion will also include a review of European connectors and their selection for specific design applications including cross laminated timber.

Seminars and Speakers (continued)

ROOM 5

MORNING SESSION 8:00 AM

Architectural Alternatives: Post-Frame Building Systems

Dr. Harvey Manbeck, PE, National Frame Building Association

Architecturally, post-frame buildings can resemble any other building, so much so that it's increasingly difficult to identify a post-frame structure. This presentation will provide an overview of post-frame construction and its benefits, such as cost effectiveness, energy efficiency, durability and sustainability. Topics will include structural features that make post-frame systems unique, two basic design approaches, and design resources. More than 20 project examples will be showcased to illustrate key performance characteristics and architectural alternatives.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM

Sustainable Designs: Western Red Cedar

Paul Mackie, Western Red Cedar Lumber Association

This presentation will include some information basic to lumber and forest products while it features the nature of the western red cedar lumber, the benefits unique to these products, and how they are appropriate for incorporation in any sustainable design. The presentation will also touch on information about western red cedar lumber grades, installation and finishing. Forest certification will be discussed, and reasons why using western red cedar affords your clients the best environmental and sustainable products for their design requirements.

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM

Lumber Specifications in a Changing Market

Frank Stewart, Western Wood Products Association

Writing lumber specifications, which meet structural and esthetic design requirements can be challenging under the best market conditions. New market realities and changing client priorities have left many designers and suppliers rethinking traditional approaches to wood design specifications. This presentation will cover relevant industry standards and specification issues, which can arise with material substitutions. Product availability at both the local and national level and its impact on design considerations will be discussed in depth.

AFTERNOON SESSION 1:20 PM

An Introduction to Structural Design of Post-Frame Buildings

Dr. Harvey Manbeck, PE, National Frame Building Association

This program begins with a description of post-frame building systems and key concepts for their structural design. Information is presented from a conceptual standpoint as opposed to an equation and computational standpoint. Two design methods are addressed: for post-frame systems with and without diaphragm action, focusing mostly on the former. The presentation will show how a simple yet powerful and readily available computer program, DAFI, determines the proportion of design lateral loads that are carried to ground by the individual post frames and the proportion carried to ground by the roof diaphragm and shear walls. It then shows how the isolated post foundations are designed to resist lateral and uplift forces. Technical resources available to design professionals will also be discussed.

Who Should Attend?

With a full day of seminars and a trade exposition, the Oregon Wood Solutions Fair will pack an informational punch for architects, engineers, developers, code officials and anyone else interested in wood's exciting design possibilities. Register today if you'd like access to wood design experts for one-on-one support, informative seminars, technical information from manufacturers, engineering consultants and industry associations, and exhibits featuring a wide range of structural and finishing products.

How to Register

To register, visit woodworks.org and look under "Education" on the home page. As part of the registration process, you will be asked to choose which seminar you plan to attend in each time slot. Once your request has been processed, you will receive an email confirmation that your registration is complete. To help make your choices, speaker bios are available on the website.

Cost

There is no cost to attend and complimentary lunch will be provided.

Education Credits

Attendees can earn up to 6 AIA/CES LUs (HSW) or PDH credits (one per attended seminar). Visit woodworks.org for details and learning objectives. AIA/CES forms and professional development certificates will be available on site.

More Information

Visit woodworks.org



WoodWorks is an approved AIA provider.



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For project assistance, email help@woodworks.org. For resources such as CAD/REVIT details, span tables, design examples and more, visit woodworks.org.

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