Minneapolis Wood Solutions Fair

SEPTEMBER 17, 2013
MINNEAPOLIS CONVENTION CENTER
1301 Second Avenue South
Minneapolis, MN 55403

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# Minneapolis Wood Solutions Fair Schedule

**Space is limited. Register today!**

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<th>Time</th>
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<tr>
<td>7:00 am</td>
<td>Registration Check-in – Exhibit Hall Opens</td>
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| 8:00 am - 9:10 am | Room 1: Wood Podiums in Mid-Rise Construction  
Room 2: The Bullitt Center: Meeting the Living Building Challenge  
Room 3: Energy-Efficient Facilities: Building Envelope Design Considerations  
Room 4: Overview of Offset Diaphragms and Shear Walls  
Room 5: Introduction to Structural Design of Post-Frame Buildings |
| 9:10 am - 9:45 am | Break – Exhibit Expo |
| 9:45 am - 10:45 am | Room 1: Timber Tower Research Project by SOM  
Room 3: Making a Difference: Incorporating Environmental Information into Your Organization  
Room 4: Getting to Yes: Code Alternate Materials and Means and Permit Streamlining  
Room 5: Introduction to Structural Insulated Panels |
| 10:45 am - 11:00 am | Break – Exhibit Expo |
| 11:00 am - Noon | Room 1: Design is in the Details: Solutions to Common Mid-Rise Design Challenges  
Room 2: Modern Forestry: Growing Sustainable Bio-Materials  
Room 3: Building Envelope Design and Moisture Performance  
Room 4: Designing with the 2012 National Design Specification® (NDS®) for Wood Construction  
Room 5: Fire-Retardant-Treated Wood and the International Building Code |
| Noon - 1:20 pm | Lunch • Wood Design Awards |
| 1:20 pm - 2:20 pm | Room 1: Wood Podiums in Mid-Rise Construction  
Room 2: The Bullitt Center: Meeting the Living Building Challenge  
Room 3: Energy-Efficient Facilities: Building Envelope Design Considerations  
Room 4: Overview of Offset Diaphragms and Shear Walls  
Room 5: Sustainable Designs: Western Red Cedar |
| 2:20 pm - 2:50 pm | Break – Exhibit Expo |
| 2:50 pm - 3:50 pm | Room 1: Timber Tower Research Project by SOM  
Room 3: Making a Difference: Incorporating Environmental Information into Your Organization  
Room 4: Getting to Yes: Code Alternate Materials and Means and Permit Streamlining  
Room 5: Using Software to Design Multi-story Wood Buildings |
| 3:50 pm - 4:00 pm | Break |
| 4:00 pm - 5:00 pm | Room 1: Design is in the Details: Solutions to Common Mid-Rise Design Challenges  
Room 2: Modern Forestry: Growing Sustainable Bio-Materials  
Room 3: Building Envelope Design and Moisture Performance  
Room 4: Designing with the 2012 National Design Specification® (NDS®) for Wood Construction  
Room 5: Meeting Fire Codes with Oriented Strand Board (OSB) |
Mid-rise podium construction, with multiple stories of wood framing over a concrete first story, has been popular for many years as a way to take advantage of wood’s cost effectiveness for the superstructure while maintaining a more traditional commercial construction type below. Recently, some innovative designers have chosen to forego the concrete altogether and build the podium in wood—further decreasing their costs while speeding construction and creating less massive, more uniform buildings. This presentation will examine design considerations related to wood podiums such as durability, fire protection, sound transmission and seismic loads. Recent examples of projects in California will be highlighted.

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

**Wood Podiums in Mid-Rise Construction**
Karyn Beebe, PE, LEED AP, APA

This session will introduce the results of the Timber Tower Research Project, recently released by Skidmore, Owings and Merrill, LLP (SOM). The goal was to develop a viable structural system for tall buildings that uses mass timber as the main structural material and minimizes the embodied carbon footprint of the structure. The presentation will discuss key design and construction issues associated with tall mass timber buildings as well as SOM’s new hybrid structural solution. Benchmarked against the existing 42-story-tall concrete-framed DeWitt Chestnut Apartments in Chicago, the new prototype uses an efficient structural combination of mass timber, concrete and steel to reduce the carbon footprint and embodied energy of the resulting structure by 60 to 75 percent.

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

**Design is in the Details: Solutions to Common Mid-Rise Design Challenges**
Matthew S. Church, PE, Davis & Church, LLC

This session will use recent mid-rise projects to examine a variety of design solutions for multi-story wood construction. Discussion will focus on areas of design and detailing that often challenge designers of Type III and Type V mixed-use projects—such as designing wood and masonry shaft walls, connecting 2-hour rated walls to 1-hour rated floor/ceiling systems, and balcony construction—and offer possible solutions. Opportunities and advantages to using cross laminated timber in mid-rise buildings will also be explored.

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

**The Bullitt Center: Meeting the Living Building Challenge**
Brian Court, AIA, LEED AP, The Miller Hull Partnership

The Bullitt Center, a six-story heavy timber building recently completed in Seattle, is predicted to be the world’s most energy-efficient commercial building. It has been designed to last 250 years and to achieve the highest benchmark of building sustainability—Living Building Challenge™ (LBC) certification. A performance-based certification program, the LBC requires buildings to be evaluated after one year of occupancy prior to certification, against criteria that include 100% of energy demands met with on-site renewable energy generation and 100% of water needs met by on-site rainwater collection. In this presentation, Project Architect Brian Court will give a short overview of the LBC, discuss the design strategies for the Bullitt Center, and highlight structural and environmental virtues of the heavy timber structural system such as renewability, contribution to energy efficiency, and light carbon footprint.

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

**Environmental Impacts of Structural Systems: What Life Cycle Assessment Reveals**

This presentation will examine environmental impacts of construction alternatives as determined through life cycle assessment (LCA). Discussion will highlight energy consumption, fossil fuel depletion, carbon emissions and global warming potential, other releases to air and water, and other impacts linked to building materials selection, and the remarkable consistency of research findings worldwide. Also discussed will be the essentials of LCA and its increasing use in green building programs and model codes, cautions regarding interpretation of LCA comparisons of various products and materials, an emerging trend toward use of environmental product declarations (EPDs) on the part of materials suppliers, and what greater reliance on LCA and EPDs means for those seeking to create environmentally better buildings.

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

**Modern Forestry: Growing Sustainable Bio-Materials**
Kathryn Fernholz, Dovetail Partners, Inc.

This presentation will address land management techniques associated with agriculture (organic and non-organic) and forestry, including natural forest management as well as plantation forestry. These systems are used to grow bio-based materials such as wood products, agricultural foods and fibers, and the raw materials for bio-energy. The presentation will compare and contrast common forestry and agricultural practices and include discussion of the diverse challenges and benefits associated with each system.
Seminars and Speakers (continued)

ROOM 3
MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Energy-Efficient Facilities: Building Envelope Design Considerations
Steve Easley, Steve Easley & Associates

US K-12 schools spend more than $7.5 billion annually on energy. Operational energy is the second largest budget item after teacher salaries; but, equally challenging—energy is all too often an unpredictable expense. Because the largest contribution to energy use is heating and cooling, building enclosure design is of paramount importance. This presentation will focus on cost-effective design recommendations for high performance building enclosures. It will explore why many buildings fail to perform as expected, and provide recommendations on envelope detailing, insulation and air sealing techniques, and information to include in specifications.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM
Making a Difference: Incorporating Environmental Information into Your Organization
Dr. Jeff Howe, Dovetail Partners, Inc.

This presentation will address how design and building professionals and organizations can align with clients on “green” issues in order to maximize the success (profitability) of projects (green or otherwise). An emphasis will be placed on developing the right message at the right time in the process in order to attract and retain clients that are interested in and will pay for environmental benefits and expertise.

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM
Building Envelope Design and Moisture Performance
Sam Glass, PhD, USDA Forest Products Laboratory

Moisture management and durability are key elements of building envelope design but are often not well understood. This presentation will examine how the building envelope responds to environmental conditions with emphasis on heat, air, and moisture control. Wood-moisture relations will be highlighted, focusing on key physical properties and concepts. Strategies will be presented for evaluating building envelope design in terms of performance strengths and vulnerabilities, with examples from wood-frame and cross laminated timber construction.

ROOM 4
MORNING SESSION 8:00 AM • AFTERNOON SESSION 1:20 PM

Overview of Offset Diaphragms and Shear Walls
Terry Malone, PE, SE, WoodWorks

Lateral force resisting systems in today’s structures are much more complex than they were several decades ago, incorporating multiple horizontal and vertical offsets in the diaphragms, multiple irregularities, and fewer lateral resisting elements. This presentation will provide a brief overview of the method used to analyze these complex structures. Topics will include code requirements, recognition of diaphragm irregularities and discontinuities, distribution of shears through complex diaphragms, the transfer of forces across areas of discontinuity, and creating a single line of lateral force resistance across multiple offset shear walls.

MORNING SESSION 9:45 AM • AFTERNOON SESSION 2:50 PM
Getting to Yes: Code Alternate Materials and Means and Permit Streamlining
Michael Malinowski, AIA, Applied Architecture, Inc.

This session will cover principles and strategy for effective navigation of the building permit process when materials or designs don’t comfortably fit with conventional code application, as well as the use of permit streamlining for more effective and efficient processing. Alternate Materials and Means Requests (AMMR) can be used for various reasons including: use of innovative products and systems, new design concepts, complex geometries, code conundrums, political problem solving and the resolution of interpretation differences. Successful project examples will be used to demonstrate how to approach the AMMR process and demystify the concept of an alternate design. In addition, the landscape of permit streamlining concepts will be outlined, with a focus on streamlining approaches that can engage design professionals on the ‘public’ side of the counter in a project’s ultimate success.

MORNING SESSION 11:00 AM • AFTERNOON SESSION 4:00 PM
Designing with the 2012 National Design Specification for Wood Construction
Michelle Kam-Biron, PE, SE, American Wood Council

Minnesota is in the process of adopting the 2012 International Building Code (IBC) which references the 2012 National Design Specification (NDS) for Wood Construction as the standard for design and construction of wood structures. This presentation will familiarize participants with the NDS format and contents of each chapter in order to help them utilize the standard efficiently in their design process. Included will be a summary of significant changes in the 2012 version of the NDS and Supplement relative to previous editions. Participants will also learn about a new wood structural framing product, cross laminated timber, that will be incorporated into future versions of the NDS.

ROOM 5
MORNING SESSION 8:00 AM

Introduction to Structural Design of Post-Frame Buildings
Dr. Harvey Manbeck, PE, National Frame Building Association

This program begins with a brief description of post-frame building systems followed by an overview of 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: one for post-frame systems without diaphragm action, the other for post-frame systems with diaphragm action. The majority of the program is focused on the latter. 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. The program 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.
Seminars and Speakers (continued)

MORNING SESSION 9:45 AM
Introduction to Structural Insulated Panels
Lee Bergum, Energy Panel Structures
This presentation will focus on the benefits of designing with structural insulated panels (SIPs), including energy optimization and other contributions to project sustainability. Design professionals will gain a better understanding of how to effectively and properly utilize SIPs through discussion of their application, assembly and detailing. Topics will also include energy code requirements and the economics of panel construction.

MORNING SESSION 11:00 AM
Fire-Retardant-Treated Wood and the International Building Code
Jim Gogolski, Hoover Treated Wood Products
This presentation takes an in-depth look at fire-retardant-treated wood (FRTW) focusing on: FRTW characteristics, properties and performance in a fire; preparation, treatment, inspection and labeling; fire tests, standards and building code requirements; how and where FRTW is used; and the impact of FRTW on construction and insurance costs.

AFTERNOON SESSION 1:20 PM
Sustainable Designs: Western Red Cedar
Steve From, Western Red Cedar Lumber Association
This presentation will include information basic to lumber and forest products while focusing on the nature of western red cedar lumber, the benefits unique to these products, and how they are appropriate for incorporation in any sustainable design. It will also touch on information about western red cedar lumber grades, installation, and finishing. Forest certification will be discussed, as will reasons why using western red cedar affords your clients the best environmental and sustainable products for their design requirements.

AFTERNOON SESSION 2:50 PM
Using Software to Design Multi-story Wood Buildings
Mike Olson, PE, RISA Technologies
See how engineering software can be used to design multi-story buildings featuring wood walls, wood diaphragms, glued laminated timber (glulam), and dimension lumber. Learn how wind and seismic loads are automatically generated and applied to the structure, and how finite element analysis offers improved accuracy over conventional hand calculation methods. A special emphasis will be placed on the design of an entire building for both strength and serviceability requirements.

AFTERNOON SESSION 4:00 PM
Meeting Fire Codes with Oriented Strand Board (OSB)
Dr. Mike Huddy, Louisiana Pacific
This presentation will provide an overview of fire-rated cementitious coated oriented strand board (OSB) sheathing for wall and roof sheathing applications. Topics will include its structural and performance properties and contribution to enhancing the sustainable built environment.

Who Should Attend?
With a full day of seminars and a trade exposition, the Minneapolis 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 “Events” 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 CEHs (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

Free architectural and engineering support for wood buildings
WoodWorks provides free resources that can help you design and build non-residential and multi-family structures out of wood more easily and at less cost. For one-on-one project support, online training, CAD/REVIT details, case studies and more, visit woodworks.org.