



2021 *Virtual* Wood Design Seminar

3 leading wood innovators as speakers | 3 projects to advance your wood knowledge and proficiency

Date: Tuesday, February 23, 2021 Time: 12:00pm – 3:30pm Cost: \$29.50

This event will take you on an exciting journey to discover what's possible with structural mass timber in design and building. Three distinguished designers will present three remarkable projects, each unprecedented and unique. Challenge your design sense and advance your wood proficiency and knowledge as you learn about these ingenious projects: a complex hybrid structure utilizing logs, steel, light wood-frame and dowel laminated timber walls; the world's tallest timber vertical extension using cross-laminated timber; and a 300-foot-long span timber gridshell using doubly-curved glulam. Be among the first to learn from these extraordinary new structures - a showcase of advanced architectural and structural wood design!



Photo: Tai Yuan Dome – Courtesy, StructureCraft

12:00 pm – 12:10 pm: Welcoming Remarks

12:10 pm – 1:10 pm: Tsawwassen First Nation Youth Centre: Mass Timber and Poles Recall Coast Salish History – Presenter: Dr. Nancy Mackin – Mackin Tanaka Architecture, Vancouver

The Community Youth Centre for the Tsawwassen First Nation showcases a hybrid dowel-laminated timber (DLT), Western red cedar pole-and-beam, and steel beam structure. Mass timber panels and poles were harvested and crafted/ machined in southwest British Columbia, minimizing greenhouse gas emissions while optimizing the characteristics of each wood species. 3D design models were translated into computer numerical control (CNC) prefabrication systems, resulting in a relatively rapid construction timeline. Even with 3D modeling, coordination of exposed building systems presented some challenges. The pole structure respectfully celebrates Coast Salish architectural history while the negative greenhouse gas emissions rating enhances environmental health.

1:15 pm – 2:15 pm: The World's Tallest Mass Timber Vertical Extension – Presenter: Nathan Benbow – VISTEK, Melbourne, Australia

In the heart of Melbourne's busy Southbank precinct, lies the world's tallest cross-laminated timber (CLT) extension. Developed by Hume Partners, designed by architects Bates Smart and engineered by VISTEK, the impressive structure located at 55 Southbank Boulevard is grounded in the latest timber construction technology. Choosing CLT as the key construction material allowed innovative solutions towards complex design challenges faced throughout the project. CLT enabled the extension to be pushed to 10 storeys, thus unlocking four additional floors of apartments. This was critical for achieving the target room number and, importantly, developing a viable business case for the apartment complex.

2:20 pm – 3:20 pm: Taiyuan Domes Botanical Garden: Three Impressive Timber Gridshell Dome Structures in China - Presenter: Lucas Epp – StructureCraft, Vancouver

The Taiyuan Domes are a series of three long-span timber gridshells with spans up to 300 ft that function as greenhouses for the new Botanical Gardens in Taiyuan, China. The domes vary in use from smallest to largest: an aquatic environment, a desert environment, and a tropical biome. The long span

and slender cross section of the gridshells represented a significant structural obstacle, and the glulam elements are doubly curved, leading to unique challenges in structural design. Covering more than 130,000 sq ft and using 11,000 pieces of glulam, these structures are one of the largest of their kind worldwide.

3:20 pm – 3:30 pm: Closing Remarks

Don't miss the annual Wood Design Seminar, formerly the Wood Design Luncheon Conference!

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SPEAKER BIOS



Dr. Nancy Mackin – Mackin Tanaka Architecture, Vancouver

Dr. Mackin's PhD in architecture and landscape ecology guides her ecological/cultural approach to community-based design. Her completed projects have been recognized in awards including Grand Care Award, Building of the Year, and AIBC/Barbara Dalrymple Award for community service in architecture. International recognition includes invited presentations in Italy, Iceland, Denmark, New Zealand, Australia, and across Canada from PEI to Nunavut.



Nathan Benbow – VISTEK, Melbourne, Australia

Nathan is a highly skilled structural engineer who genuinely believes there is a better way to build. He is widely recognized as a leader in mass timber design in Australia, having engineered landmark designs such as the first building made of Australian cross-laminated timber (CLT) and the world's tallest timber vertical extension.



Lucas Epp – StructureCraft, Vancouver

Lucas Epp is a structural engineer with significant mass timber experience across North America. He is passionate about timber engineering and has built a team at StructureCraft of more than 30 structural engineers and computational designers hailing from around the world. Lucas spent seven formative years abroad working in London, China, and New Zealand developing significant expertise in complex structures/geometry prior to returning to Vancouver. Lucas has lectured across the USA and Canada, and has taught at the Architectural Association, ETH, Imperial College, and the University of British Columbia.

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