

Wood Solutions **Conference** Ottawa 2024

A showcase of innovations
and ideas in wood
products, design, and
construction.

February 1, 2024

**Presentation Abstracts
& Speaker Bios**



**Wood
Works**

Canadian
Wood Council
Resource Program



Wood Solutions Conference

Ottawa 2024

Presentation Abstracts & Speaker Bios

Pro-Housing, Pro-Transit, Pro-People

Discover innovative architectural and urban design strategies to increase affordability, reduce car dependence, support the achievement of net-zero outcomes, and lead to sustainability. This session will address how these strategies will help solve today's challenges of designing our cities for cars and addresses the implications for architects, developers, and industry professionals, the need for developments and the market to put people first and cars last, and how their benefits create strong, sustainable, and vibrant communities. These strategies include designing for active transportation, making other modes of transportation more attractive than by car, building materials, and the missing middle. The ultimate result will be to show that there are solutions available to design today's cities to be truly people-first.

Naama Blonder, B.Arch, OAA, RPP, MCIP Architect, Urban Designer, Urban Planner, Smart Density

Bio: Naama Blonder has a bold vision: to change what good housing can and should look like in a growing city like Toronto; with that in mind, she co-founded Smart Density. Her professional practice combines the disciplines of architecture, urban planning, and urban design to bring a deeper, more realistic understanding of how cities can address housing affordability and champion inclusive neighbourhoods with more equitable access to housing.

Her work has received numerous awards including the prestigious Ontario Association of Architects' Best Emerging Practice Award for 2022. To fight stigma around housing, Blonder's work seeks to inform both residents and industry colleagues about the mutually beneficial outcomes of reimagining what our big cities can look like: greater access to established public transport, shortened commutes, improved housing costs and vacancy rates, greater diversity in housing, and strengthened local economies and communities. She practices what she preaches, living with her husband and two children in a multi-family building in a transit-accessible area of Toronto, where the park is their backyard.



Mass Timber Overbuild: A Very Positive Case for Mass Timber Construction

Mass timber is increasingly being considered and used to redevelop existing buildings through an overbuild, where additional floors are added to increase floor area, provide new uses or to totally revitalize a building. The advantages of using mass timber to increase the number of floors are numerous, from reduced weight, to ease and speed of the build, reduced construction noise for neighbors, and repositioning a building with new highly leasable space. This presentation provides some recent case study overbuilds and discusses how the existing building has changed significantly and been repositioned due to the new mass timber overbuild.

David Barber P.Eng (BC), CPEng (Aust)

Principal, Arup

David is a Principal with Arup, where he specializes in the fire safety of mass timber buildings. For over 25 years David has assisted with the growth, development and enabling of timber construction, including fire testing, developing new timber technologies, authoring fire safety design guides, changing building codes and standards, working with timber product suppliers and completing fire safety solutions for low, mid-rise and high-rise timber buildings. David leads a global team within Arup that works with researchers, suppliers, approval agencies, architects, and developers to achieve fire safe construction of sustainable timber structures. David's mass timber experience is international, having delivered projects in over ten countries. He is currently working with project teams on mass timber buildings located throughout the US and internationally.



Two Eyed Seeing: Centennial College A Block Expansion Project

“Two-Eyed Seeing” is a Mi’kmaq concept of observing the world through both an Indigenous and Western lens. For Centennial College’s A-Block Expansion project, DIALOG + Smoke Architecture turned to Two-Eyed Seeing in shaping the conversations and design of this award-winning project. Hear how the firms’ winning design suggests a path forward for various institutions, architects, and designers, in forming potential solutions to the ongoing crisis of climate and inequity.

The A-Building expansion is a six-storey 130,000 sq.ft. mass timber, zero-carbon building with academic programming for Centennial College’s School of Engineering Technology and Applied Science programs (ICET). Smoke Architecture led a collaborative design process with Centennial’s Indigenous Working Group, including knowledge carriers, faculty, and staff. The design integrates Indigenous principles and cultural markers with a contemporary aesthetic, standing as a successful and compelling realization of Indigenous values and principles in a learning space that demonstrates the powerful narratives that emerge when Indigenous perspectives are integrated into a place that welcomes all cultures.

Larissa Roque, OAA, MRAIC, M.Arch., BEDS, AdvDipID

Architect, Smoke Architecture

Larissa Roque, Anishinaabekwe from Wahnapiatae First Nation, is an architect at Smoke Architecture Inc. She holds a Bachelor of Environmental Design Studies with Distinction and a Master of Architecture from Dalhousie University. Previously, she received a 3-year Advanced Diploma in Interior Design from Georgian College. Larissa has worked diligently throughout her professional career to gain an extensive knowledge of contemporary construction methods, natural building materials, and community engagement practices to pursue a career in First Nations architecture.



Mass Timber at CNL

Canadian Nuclear Labs' Chalk River Laboratories comprise the largest single complex in Canada's science and technology community. The site contains more than 50 unique facilities and laboratories including three new buildings constructed with mass timber. The projects are considered successful examples of sustainable procurement aligning with the 'greening government' strategy which supports the Government's commitment to net-zero emissions by 2050, and includes a 40% reduction by 2025 for federal facilities.

This case study presentation will explore the drivers that led CNL to choose mass timber, touching on carbon impact, procurement (Integrated Project Delivery Method), building performance (construction elements, energy performance, envelope performance, fire performance, durability, resiliency, and potential for adaptive reuse), and code requirements.

Donald Chong, OAA, MRAIC, B.Arch

Design Principal, Associate Vice President, HDR

Don has firmly established himself in Toronto's architecture culture through his inventiveness and investment in placemaking. His project skills volley between the strategic planning of urban and institutional work through to the detailing of finely crafted furniture, as well as research-based design. Don has held numerous design conference speaking engagements, from the Wood at Work Conference to the Architectural League of New York, and has been featured in print publications, such as Design Lines, related to mass timber design.

Susan Croswell, OAA, MRAIC

Project Delivery Principal, HDR

Susan is a project architect with over 27 years of diversified experience. Her expertise in both architectural design and technology allows her to excel in the profession from concept design through to contract administration. Susan's ability to deliver complex projects and documentation on time is a hallmark of her work and is achieved through effective leadership and teamwork. She has developed a reputation as a highly competent, efficient, effective and approachable project architect who loves the challenges that each and every project brings to the team. Some of her recent, award-winning projects include the CNL Chalk River Laboratories "New Builds," Queen's University John Deutsch University Centre, and Kingston Frontenac Public Library.



Advancing Mass Timber Sustainability Through Enclosure Design

Mass timber is often chosen for its reduced environmental impact, and this presentation addresses the crucial role of building envelope design and construction in supporting the sustainability of mass timber structures.

The presentation will discuss approaches to rapid enclosure of mass timber structures using panelized wall systems, while still maintaining thermal performance, airtightness and embodied carbon efficiency. Key envelope design processes integral to sustainability will be explored, such as energy modeling, life cycle carbon assessment (LCA), and careful detailing to minimize thermal bridging and enhance durability. Drawing on diverse Canadian mass timber building case studies, we will share ways to successfully navigate building envelope design and construction challenges, helping to realize the full sustainability potential of mass timber structures.

Paul Carter B.Arch.Sc., C.E.T., CPHD

Associate – Building Envelope Specialist, Entuitive

Paul Carter has worked extensively on low carbon projects that include new buildings and existing building retrofits. His involvement in the envelope design for several mass timber buildings provides him with valuable insights into realizing efficient enclosures that support mass timber sustainability benefits.



Advancing Sustainability in Building Codes and Standards

This presentation will describe how climate change is influencing sustainability provisions in current and future Buildings Codes and Standards. Learn about how climate change adaptation and mitigation is being addressed in upcoming National Building Code and CSA standards provisions, as well as emerging initiatives on reducing the environmental impact of buildings. This session will highlight the pivotal role wood has in a sustainable built environment, covering topics such as embodied carbon, durability, and circular economy.

Natasha Jeremic, MASC, PEng, LEED GA

Manager Codes and Standards – Sustainability, Canadian Wood Council

Natasha Jeremic is Manager of Sustainability in the Codes and Standards group at the Canadian Wood Council. She is engaged in strategic building code and standards initiatives related to sustainability, circularity, and durability. Natasha leverages her experience in structural design, building performance, and whole life carbon accounting to demonstrate that wood products are a viable solution for a sustainable and low-carbon built environment.



An overview of the Ottawa Mass Timber Demonstration Fire Test Project

The presentation will provide an overview of the Mass Timber Demonstration Fire Test Program which was conducted during the summer and fall of 2022. This seminar will give an overview of a series of large-scale demonstration fire tests on mass timber structures. Past research on the fire performance of mass timber construction will be reviewed briefly to provide the background necessary to understand how the latest tests support the design of taller and larger mass timber buildings. Each of the five tests performed will be reviewed along with what it means for future mass timber building design and Canadian Building and Fire Codes.

Marc Alam, Ph.D., E.I.T.

Senior Manager, Codes and Standards – Fire & Acoustics, Canadian Wood Council

As Senior Manager of Codes and Standards in the fire and acoustics department, Marc participates in CWC's building code and standards fire and acoustics related initiatives and the development of CWC's fire design tools, as well as code-related fire and acoustics research projects. He received his PhD in Fire Engineering from Carleton University and has a Bachelor's degree in Civil Engineering with a concentration in Management.



Elevate, Innovate, Acoustically Integrate: An Architects Guide to Dry Topping in Wood Structures

In this session using specific project case studies, discover the latest ground-breaking advancements in sound technology that are transforming acoustic design in wood construction. There are many critical factors to consider when looking at acoustic systems: weight reduction, fire performance, structural height, on-site sequencing and environmental sustainability must all be taken into account. This session will shed light on the advantages of dry toppings over wet toppings, presenting innovative solutions that not only comply with building codes but also keep the construction process moving forward.

Cristian Wallace

US Territory Manager, AcoustiTECH

Cristian brings a wealth of technical knowledge and a genuine passion for collaborating with Developers, Architects, and Acoustical Engineers. His primary objective is to empower clients by educating them on effective strategies to prevent noise-related problems and encourage sustainable construction methods.

AcoustiTECH has evolved into a market leader with over 20 years of extensive research and development. Along with Cristian's expertise they culminated into a team capable of delivering invaluable insights.



Holistic Feasibility Analysis for Advancing Mass Timber Solutions

This presentation will discuss off-site prefabrication, looking at a modular approach to housing supply for mining camps, and a feasibility study for mass timber schools recently completed for the Toronto District School Board. Using these two different projects, the presenter will discuss the impact of research and development (R&D) on enhanced sustainability and mass timber innovation. The presenter will also discuss the approach, design strategy, carbon and health benefits, and other outcomes for these projects.

Veronica Madonna, OAA, MAA, FRAIC, M.Arch, B.E.D.S., B.Arch.Sc.

Director & Principal, Studio VMA

Veronica is an award-winning Canadian Architect with nearly 20 years of experience working with leading architectural firms. She is licensed with the Ontario Association of Architects and, in 2020, was honoured as a Fellow of the Royal Architectural Institute of Canada, acknowledged for her outstanding contributions to the architectural profession.

Veronica obtained a Master of Architecture from Dalhousie University after receiving both a Bachelor of Environmental Design and Bachelor of Architectural Science. Upon graduation, she returned to Toronto and worked on a variety of projects ranging in complexity. Her experiences include large-scale developments to small rural buildings. Knowledgeable in both new construction and adaptive reuse of existing buildings, she is involved in all stages of a project - from programming and feasibility through to design development, construction documents and contract administration. Her work has been published in various journals and has won multiple awards, both locally and internationally.



Mid-Rise Engineering Considerations for Engineered Wood Products

While most designers are familiar with engineered wood products such as I-joists and structural composite lumber, it is important to understand the structural requirements associated with each in order to achieve proper performance—especially in mid-rise construction. With an emphasis on products used in light commercial and multi-family structures, this presentation will cover engineered wood product acceptance, testing requirements, quality control, allowance of holes for mechanical, lateral design, and proper fire resistance design and detailing.

1. Testing requirements and acceptance of Wood I-Joists and Structural Composite Lumber (SCL) products.
2. Allowance and design of holes for mechanical lines.
3. Lateral design, including information on I-joist diaphragm capacities and the detailing of rim board connections.
4. Fire resistance design, including wood I-joist assembly requirements and SCL char rate equivalency to solid wood.

Jeff Olson, P.Eng., P.E.

Technical Services Manager, Boise Cascade

Jeff is currently the Technical Services Manager for Boise Cascade, Engineered Wood Products division. He has over 30 years of experience in the design and testing of engineered wood products and is licensed as a Professional Engineer in several western Canadian provinces and U.S. states.



Pressure Treated Wood Specifications and Standards

Learn how to properly specify pressure treated wood in this presentation that provides a quick introduction to the relevant standards for wood preservation including proper specification, design, and installation. Participants will also learn about the regulations for the pressure treated wood industry, pressure treatment processes and specification factors such as species, preservatives, and end-uses, how to navigate the governing standard for PTW in Canada, and the Canadian Wood Protection Certification Program, a voluntary industry program unique to Canada.

Craig Wilson, BScF

Vice President Technical Services, Timber Specialties Ltd.

Craig has nearly 40 years of experience in the wood preservation industry. He currently oversees the Technical Services Department at Timber Specialties which provides preservatives and technically-related services to the wood preservation industry in Canada. He has been involved in many aspects of wood preservation and has served on many committees and associations including; the Canadian Standards Association, the American Wood Preservation Association, Wood Preservation Canada, and was past President for the Canadian Wood Preservation Association. Craig was an integral part of the development of the Use Category System and residential standards for treated wood in the CSA Standards. He has extensive knowledge on the treatability of Canadian Wood species with a variety of waterborne preservatives including CCA, ACQ, Borate, and Micronized copper.

Scott Henry

WoodSci Consulting



Outdoor Timber Structures - Past, Present and Future

Timber bridges and other types of outdoor structures are the right carbon choice for a carbon conscious world for civil infrastructure in both outdoor and indoor structures. The cost advantage and ease of erection on site make greenfield timber outdoor structures the new infrastructure of the future. When properly detailed with pre-machined, preassembled, post treated methods, timber structures make long lasting outdoor structures that compete well with the longevity of steel and concrete bridge options. Existing outdoor timber structures such as towers, earth dams where timber has been in service for 100 years as cribbing as well as timber spillways, and old timber bridges both open and covered continue provide infrastructure service to the community. These old brownfield sites continue to embody carbon and combine the history of the past with the positive esthetics sought by today's users. This talk will explore the use of timber in outdoor structures considering how to utilize advanced inspection techniques, restoration and maintenance methods and design detailing to extend the life of the old timber structure and create long lasting service in greenfield sites.

Dr. Dan Tingley Ph.D., P.Eng. (Canada) MIE Aust, CPEng, RPEQ

Senior Engineer, Wood Research and Development

Dr. Tingley has worked in the wood products industry for over 40 years. He received his Bachelor of Science in Forest Engineering and Master of Science in Civil Engineering from the University of New Brunswick. He completed his Ph.D. at Oregon State University in Wood Science, Technology and Civil Engineering.

Dr. Tingley currently holds more than 40 published patents in the reinforced wood field in the US and other countries. He has authored over 125 conference proceedings, publications, and articles in the area of reinforcement of wood and wood composites.

Dr. Tingley is the Senior Engineer for Wood Research and Development (WRD). Dr. Tingley is currently the Chairman of the subcommittee on the Development of The Handbook of Conventional Maintenance Practices for Railway Bridges for Committee 10 – Bridge Maintenance & Construction and he also serves Chairman of the subcommittee on specifications for Committee 7-Timber Structures.





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