

**Tuesday, November 15, 2022 - Vancouver Convention Centre – East**  
**Presentation Outlines and Speaker Bios**

**1/ Offsite Construction: The Profit is in the Process**

*Gerry (Gerald) McCaughey, CEO, Offsite Tek LLC, El Segundo, CA, USA*

**Description:** This presentation will discuss current challenges facing the construction industry, with a focus on offsite manufacturing becoming a part of the solution. Some of these challenges include labour shortages, scheduling issues and increasing building costs, all of which can be effectively addressed with integrated building systems that can also increase profits for builders.

**Learning Outcomes:** Identify current challenges in construction and how they disrupt a market; Learn how to overcome those challenges and increase profit with better processes.

**Track/Seminar: T1/S1 & T4/S4    Theme: Architectural/Design and Codes, Standards and Building Performance**



**Bio: Gerry (Gerald) McCaughey:** Gerry McCaughey, CEO of Offsite Tek, is an internationally respected business leader who has dedicated his career to helping builders on four continents maximize efficiency and boost profitability with modern methods of construction. He co-founded and successfully grew two offsite construction start-ups into the best-in-class companies – Century Homes in Europe and Entekra in the United States.

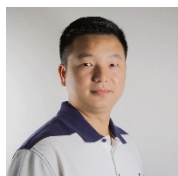
**2/ Practical and Advanced Modeling for Design and Performance of Mass Timber Structures**

*Dr. Zhiyong Chen, Scientist, Building Systems Group, FPInnovations, Vancouver, BC*

**Description:** This definitive guide for timber structure modelling is the first of its kind, bringing together the experience gained from recently built timber projects with the latest research development in the modelling of timber structures. This guide supports the application and development of timber construction given that timber structures increasingly require demonstration of performance or equivalency through computer modelling, regardless of whether prescriptive or performance-based design procedures are used. This session offers an overview of the guide and the learnings from it.

**Learning Outcomes:** Learn a wide range of practical and advanced modelling topics; key modelling principles, methods, and techniques specific to timber structures; modelling approaches and considerations for wood-based components, connections, and assemblies; analytical approaches and considerations for timber structures during progressive collapse, wind, and earthquake events.

**Track/Seminar: T1/S2 & T2/S4    Theme: Architectural/Design and High Performance Design**



**Bio: Dr. Zhiyong Chen:** Dr. Zhiyong Chen is a Scientist in the Building Systems Group at FPInnovations. He is also an external graduate faculty at the University of Maine. He has 15 years of research experience in the advanced structural simulation of timber structures exposed to various actions, e.g., earthquakes and fire. He has authored over 120 scientific and technical publications, including textbook chapters, the Modelling Guide for Timber Structures, the Canadian Guide for Design of Tall Wood Buildings, and the Canadian CLT

Handbook. Moreover, he is a member of the Wood Structures Committee of Canadian Society for Civil Engineering and of technical task groups of the Canadian Standard for Engineering Design in Wood.

### 3/ A Labour of Love: Locally Sourced and Installed Wood Solution in BC's Interior

*Darin Harding, Director, Community + Sport, hcma Architecture + Design, Vancouver, BC*

**Description:** Creative wood solutions can be challenged in projects with budget and procurement pressures. This session will look at a series of projects that overcame challenges to their wood designs and highlight one in a community where wood is integral to their identity. Prioritizing local sourcing and construction at the beginning of the project can remove some of these barriers and result in a building the local community is proud of.

**Learning Outcomes:** Creative design and construction methods using wood solutions from a series of projects; Insight into procurement strategies that encourage locally sourced materials; Insight into local construction and installation methodologies in BC's interior; Innovative ways of using wood as a structural and fire rated assembly for a path of egress.

**Track/Seminar:** T1/S3 & T1/S5    **Theme:** Architectural



**Bio: Darin Harding:** As a director of community and sport at hcma, Darin is a registered architect with over 15 years of experience in civic institutions, community centres, and recreation, sport and aquatic facilities. He has played an important role in the design of projects such as the Harry Jerome Community Recreation Centre in North Vancouver and the 100th street funicular in Edmonton.

### 4/ University of Victoria National Centre for Indigenous Laws: Two Row Architect in collaboration with Teeple Architects and Low Hammond Rowe Architects

*Stephen Teeple, Founding Principal, Teeple Architects, Toronto, ON*

*Matthew Hickey, Partner, Two Row Architect, Ohsweken, ON*

*Roya Darvish, Architect, Associate, Lowe Hammond Rowe Architects, Victoria, BC*

**Description:** This session will explore the unique and rich connection between Coast Salish people and the forests that have sustained them since time immemorial, through the lens of an Indigenous focused project for a post-secondary institution. We will discuss our process of relationship building with Elders and rights-holders to inform the design narrative, as well as the cultural ways of knowing and being unique to the ɫəkʷəŋən, Songhees, Esquimalt and ƱSÁNEĆ peoples. Of importance will be the understanding of their relationship with trees and ultimately how that led us to the siting of the expansion as well as the reuse of significant felled trees. With an eye on the future, we will also discuss the unique use of point supported CLT in conjunction with the use of site harvested timber.

**Learning Outcomes:** Learn about the design of an Indigenous focused project for a post-secondary institution; Discover the process of relationship building with Elders and rights-holders to inform the design narrative; Discuss the unique use of point supported CLT in conjunction with the use of site harvested timber.

**Track/Seminar:** T2/S2 & T1/S4    **Theme:** High Performance Design and Architectural/Design



**Bio: Stephen Teeple:** Stephen Teeple, founder and principal of Teeple Architects, is a Fellow of the Royal Architectural Institute of Canada and Royal Canadian Academy of Arts, and is the recipient of 6 Governor General's Medals for Architecture—Canada's top architectural recognition—as well as 3 Canadian Green Building (formerly SAB) Awards, and a prestigious International Holcim Award for Sustainable Design.

Stephen is a prominent member of the Canadian design community, committed to active and ongoing

engagement in all aspects of discourse regarding design, creativity and the public realm. Stephen Teeple was honoured to receive the Queen's Diamond Jubilee Medal in 2013 in recognition of his outstanding service and contribution to Canadian design and culture. Throughout his career, Stephen has been dedicated to education and the development of the profession; he has taught design studio and lecture courses at many of Canada's top post-secondary institutions and participates frequently in public lectures and public debates.



**Bio: Matthew Hickey:** Matthew is Mohawk, Wolf clan, from the Six Nations of the Grand River Reserve. Receiving his Masters of Architecture from the University of Calgary and his Bachelor of Design from OCAD University, his background continues to have a significant impact on his work. Practicing architecture at Two Row Architect, located on Six Nations, for 14 years, he currently oversees design and development for the firm. Their core focus is on Indigenous design and architecture, designing buildings, landscapes, and installations, on and off reserve, located all over Turtle Island. Matthew's focus towards sustainability is on regenerative and restorative design—encompassing ecological, cultural, and economic principles. His work pushes the concepts of integrated landscape, Universal Accessibility, food equity, the importance of water, and placekeeping for all species, including humans. His research includes Indigenous history in architecture of Northern & Middle America and the realignment of western ideology towards historic sustainable technologies for the contemporary North American climate.



**Bio: Roya Darvish:** Roya is an Associate Architect with Low Hammond Rowe architects, with a Master of Architecture degree from the University of Toronto. Her experience is varied, ranging from institutional projects to multi-family residences, and custom homes. Current clients include non-profit housing societies, and institutional clients such as the University of Victoria and Vancouver Island Regional Library. Roya strives to find a unique solution for each project, born from the program and the site. Her work is rooted in a modern aesthetic, drawing from elements of nature as inspiration. She is influenced by her exposure to various places, countries, and cultures at a young age, moving between Iran, France, and England before settling down in Vancouver at the age of 10. A formative year living in Japan at the age of 18 formed her appreciation for authenticity and simplicity in design. This continues to inform her design approach and aesthetic.

## 5/ Wood Design Manual 2020 - A walkthrough of main sections and changes

*Ali Mikael, Senior Manager, Codes and Standards - Structural Engineering, Canadian Wood Council, Ottawa, ON*

**Description:** The presentation will provide an overview of the Wood Design Manual 2020 with a focus on the additions and updates related to the latest changes in the CSA O86:19 standard (Engineering design in wood) and the National building Code of Canada (NBC) 2020. The presentation will also focus on the new selection tables and the updated example on the design of CLT shearwalls in platform-type construction following its adoption in the NBC 2020.

**Learning Outcomes:** How to use Wood Design Manual 2020; Additions to WDM 2020; Important changes to the CSA O86:19 standard; Updated Selections Tables and CLT shearwalls design examples.

**Track/Seminar:** T2/S1 & T4/S3      **Theme:** High Performance Design and Codes, Standards and Performance



**Bio: Ali Mikael:** Ali joined the Canadian Wood Council (CWC) in 2018. Currently, he leads the structural engineering team at the department of Codes and Standards. His work experience spans over 10 years between France and Canada. It covers the evaluation of existing structures and the design of new ones, with a focus on dynamic analysis and earthquake design. He also has R&D experience in dynamic behaviour of tall buildings, which he gained during his Ph.D. program.

## 6/ Celebrating Tallwood 1: The First 12-storey EMTC Building in Canada

*Mehrdad Jahangiri, Principal, Aspect Structural Engineers, Vancouver, BC*

**Description:** Tallwood 1, located in Langford BC, gained occupancy in May, 2022. It is the first 12-storey mass timber building in Canada constructed to EMTC provisions, and a first-of-its-kind mass timber/steel hybrid building constructed in Canada. It is located in one of the highest seismic regions in Canada, and employs point-supported CLT floor slabs and a highly resilient steel eccentrically-braced frame lateral system. The steel braces, which were designed to be built in parallel with the timber structure, were erected in up to 4-storey prefabricated sections and include seismic 'link beams', replaceable after a seismic event. This presentation will provide a high level overview into the design, construction, and lessons learned from Tallwood 1, including: procurement, specialty timber engineering, temporary and permanent fire provisions, (non) prefabricated facades, water mitigation success and failures, key sequencing takeaways, and how robustness was considered.

**Learning Outcomes:** Code provisions for EMTC; EMTC lessons learned; Constructability of tall wood buildings; Detailing considerations for construction, fire, and robustness.

**Track/Seminar: T2/S3 & T3/S5    Theme: High Performance Design and Structural/Engineering/Seismic/Fire**



**Bio: Mehrdad Jahangiri:** Mehrdad is a Principal at ASPECT and has more than three decades of international experience on notable, architecturally-challenging commercial, educational, recreational and residential projects. He is internationally recognized for his innovative approach and consulting with North American and international architects. He has a sound knowledge of building physics and sustainable design concepts that allow him to actively engage in sustainable design challenges and decisions. He has led significant mass timber projects from concept to completion, and with this experience helps push the boundaries of what is possible in mass timber buildings. Mehrdad understands the challenge of creating carefully detailed yet efficient structural designs and provides an unparalleled level of service to all his clients.



## 7/ Western Red Cedar - Distinctive, Sustainable Designs

*Paul Mackie, Cedar Specialist, Western Red Cedar Lumber Association (WRCLA), Seattle, WA*

**Description:** This presentation is intended to increase awareness of Western Red Cedar uses, properties and performance characteristics. Western Red Cedar grades and product specifications will be reviewed, as will proper installation, finishing and maintenance for a variety of applications. Through brief case study presentations, attendees will gain an appreciation of design trends that leverage cedar's versatility and the enhanced appeal it brings to institutional, commercial and residential designs. Demonstrating Western Cedar's value as one of the 'greenest' building material available, discussion will include facts about sustainable forests and forest certification systems along with a brief review of Western Red Cedar Environmental Product Declarations (EPDs).

**Learning Outcomes:** Examine the properties of Western Red Cedar that make it a durable and sustainable building material; Review specification options for Western Red Cedar, including lumber and appearance

grades, as well as compatible fastener selection; Demonstrate Western Red Cedar's versatility as a building material through three case studies featuring institutional and commercial projects; Illustrate recommended installation, finishing and maintenance techniques associated with Western Red Cedar.

**Track/Seminar: T2/S5    Theme: High Performance Design**



**Bio: Paul Mackie:** Paul Mackie is a Cedar Specialist for the Western Red Cedar Lumber Association. Known in the industry as Mr. Cedar, he is expert in all things related to Western Red Cedar. His family history in the cedar business goes back to the year 1900 when his great-grandfather owned and began operating cedar shingle mills in Ballard Washington. In the early 1920's, his grandfather, Paul SR. was one of the first to export Western Red Cedar to Japan. He is a source for technical and design information for architects, builders and homeowners.

## **8/ Mass Timber Demonstration Fire Test Program – Ottawa 2022: Observations, Lessons Learned and Implications for Alternative Solutions and Code Changes**

*S. Claire Yuan, Associate, GHL Consultants Ltd., Vancouver, BC*

*Matt Turco, Associate, GHL Consultants Ltd., Vancouver, BC*

**Description:** As developers and design teams continue to research the feasibility of constructing taller mass timber buildings in urban areas in Canada, it is necessary to consider that present technical justification and standard test results may not be sufficient to overcome the industry's lack of confidence in mass timber construction. To this end, a series of research studies are being carried out in an effort to understand and demonstrate the fire performance of this up and coming construction material.

**Learning Outcomes:** Mass timber's performance in construction fire through largest fire test of mass timber in the world; latest construction fire safety guidance for EMTC construction; other fire research and testing; specific alternative solutions for mass timber construction.

**Track/Seminar: T3/S2 & T4/S5    Theme: Structural/Engineering/Seismic/Fire and Codes, Standards and Building Performance**



**Bio: S. Claire Yuan:** Claire Yuan is a Professional Engineer involved in various Mass Timber research projects including EMTC Char Rate Study and the current National Mass Timber Fire Demonstration Test Program, the largest mass timber compartment fire test. She is also responsible for several ongoing Mass Timber research projects. Specializing in fire risk analysis and performance-based design, she is pursuing a MASc degree from the University of Waterloo.



**Bio: Matt Turco:** Matt Turco is a Professional Engineer and Certified Professional involved in numerous mass timber research projects. He has a MASc degree from Carleton University specializing in Fire Safety Engineering. His research analyzed the influence of sprinklers on radiation heat transfer to prevent fire spread. In 2015, Matt received the Canadian Fire Safety Association Founders Award for Leadership and Excellence.



## **9/ Mid-Rise Engineering Considerations for Engineered Wood Products**

*Jeff Olson, EWP Technical Services Manager, Boise Cascade EWP, White City, OR*

**Description:** 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.

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

**Track/Seminar: T3/S3    Theme: Structural/Engineering/Seismic/Fire**



**Bio: Jeff Olson:** Currently the Technical Services Manager for Boise Cascade, Engineered Wood Products division. Over 30 years of experience in the design and testing of engineered wood products. Licensed as a Professional Engineer in several western Canadian provinces and U.S. states.

## 10/ Mass Timber - Municipal Challenges & Opportunities

*Tim Ryce, Chief Building Official, City of North Vancouver, North Vancouver, BC*

**Description:** Believe it or not, mass timber doesn't need to be a massive headache for the design team and local municipality when approached the right way at the right time. This session will share lessons learned and best practices recommendations by the City of North Vancouver, home to several unique, leading-edge urban buildings incorporating the use of mass timber as a core construction material. Attendees will learn how and when to engage with the local authority to maximize outcomes and minimize delays, as well as review the available regulatory tools to help the process move along smoothly.

**Learning Outcomes:** Mass timber usage in urban developments; construction approvals and regulatory tools/pathways; best practices for designer/municipality collaboration for mass timber projects.

**Track/Seminar: T4/S2 & T3/S4    Theme: Codes, Standards and Building Performance and Structural/Engineering/Seismic/Fire**



**Bio: Tim Ryce:** Tim Ryce is a Professional Engineer and Chief Building Official for the City of North Vancouver. He has developed and implemented construction regulations relating to green building, energy efficiency, and accessibility, both at the local and national level, acted as a peer reviewer for FPInnovations' Technical guide for the design and construction of tall wood buildings in Canada, and is a member of the BC Mass Timber Advisory Council. Recently, he introduced new performance-based requirements aimed at reducing greenhouse gas emissions in new non-complex residential buildings while quickly adapting the City's in-person and paper-based permitting processes due to the COVID-19 pandemic.

## 11/ Waugh Thistleton Applied Research: 15 Years In Mass Timber

*Dave Lomax, Associate Director, Waugh Thistleton Architects, London, UK*

**Description:** Waugh Thistleton have been pioneers in mass timber technology for a decade and a half, regularly breaking records for height, scale and the implementation of new technologies in wood. Over the years, our focus on building design has evolved into consolidating our work through primary research, punching above our weight to develop the basis for all to implement mass timber designs across sectors, territories and scales. This talk will present a survey of the evolution of our work and introduces new and ground-breaking research outcomes in Europe as well as emerging projects across the EU and in the US.

**Learning Outcomes:** Implementation of timber technologies like LVL in new sectors / scales; Emerging research on systematised application of building codes to mass timber in the EU; Principles of designing with mass timber at masterplan scale; The inter-relation between formal academic research in timber and its application in practice.

**Track/Seminar:** KEYNOTE    **Theme:** Inspirational



**Bio: Dave Lomax:** Dave is an Associate Director at WTA who led the world’s largest CLT building at the time - Dalston Works in London – and the Black and White building, the tallest timber office building in central London. Combining teaching with practice, he has taught at the Fay Jones School in Arkansas and at the London School of Architecture amongst others.

### Continuing Education Credits

CWC/WWBC is a continuing education provider offering accredited activity for continuing education learning units. In order to qualify, your name badge must be scanned as you enter the seminar rooms. **Attendance records will be submitted to AIBC on your behalf within 14 days of the event.** Please note that other organizations are self-reporting and courses are not approved by BC Housing. **Certificates for self-reporting will be emailed to all attendees after the event.**

**Seminar Seating** Educational seminar seating is available on a first-come, first-served basis so please ensure you arrive early to your preferred sessions! If the session is full upon arrival, you will be asked to move to another room for that time slot.

**Post Event Survey** We value your participation and feedback. After the conference concludes, an online survey request will be emailed to you. Please take the time to complete the survey and let us know what you thought about this year’s event. Each respondent will automatically be entered into a prize draw. Complete the survey to win!

**Photo and Video Recordings** We will be filming and taking photographs at the event. By attending this event, you acknowledge the possibility of being photographed and/or filmed and consent to the use of your likeness in promotional and/or marketing materials without notice or compensation.



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Wood WORKS! is a national industry-led initiative of the Canadian Wood Council with a goal to support innovation and provide leadership on the use of wood products and building systems. Through conferences, workshops, seminars and case studies, Wood WORKS! provides education, training and technical expertise to building and design professionals involved with commercial, institutional and industrial construction projects. For more than 20 years, Wood WORKS! has provided practical, efficient, versatile and cost-effective building and design solutions through the use of wood – the most sustainable, natural and renewable building material on Earth.

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