

Technical Sessions

Wednesday September 28, 2022



THE CANADIAN STEEL CONFERENCE

SHERATON VANCOUVER WALL CENTRE, BC

SEPTEMBER 28-30, 2022

www.cisc-icca.ca

THE CANADIAN STEEL CONFERENCE | SEPT. 28 - 30, 2022

Technical Sessions Wednesday September 28, 2022 (Dress Code: Business Casual)

8:00 AM – 6:30 PM
Trade Show Runs All Day

7:00 AM – 8:00 AM
Breakfast

8:00 AM – 8:30 AM
Steel Conference Kick-off

8:30 AM – 9:30 AM

PLENARY SESSION
Grand Ballroom

Prompt Payment: How Ya' Doin' Ontario? What about the Rest of Us? Why the Push for Prompt Payment Makes Sense
Dan Leduc (Norton Rose Fulbright)

9:30 AM – 10:00 AM
Break

10:00 AM – 10:45 AM	Junior A-B	<u>1. Risks and Trends in Construction Contracts</u>	Dan Leduc Norton Rose Fulbright
	Junior C	<u>2. Can a Mid-Rise Building Using LSF Achieve Passive House Design Criteria and Be Cost-Competitive?</u>	Capucine Lardinois Steligen ArcelorMittal
	Junior D	<u>3. One Vanderbilt Avenue</u> <u>New York, NY</u>	Edward M. DePaola Severud Associates Consulting Engineers PC, N.Y
	Gulf Island BC (Mezzanine)	<u>4. Challenges of Modular Construction</u>	Tom Greenough Entuitive

10:45 AM – 10:50 AM Transition Between Sessions

10:50 AM – 11:35 AM	Junior A-B	<u>5. Top Things You Should Know About HSS Connections</u>	Brad Fletcher Atlas Tube
	Junior C	<u>6. Safe Design of Gerber Cantilever Roofs</u>	Andy Metten Bush, Bohlman & Partners
	Junior D	<u>7. 400 Georgia Tower – A Striking Office Building Facilitated by Rotated Stacked Steel Cubes</u>	Anthony El-Araj Glotman Simpson Dario Espi-Fournier Canam
	Gulf Island BC (Mezzanine)	<u>8. Purpose-Built Rental Apartments in Chilliwack BC: Opportunities and Challenges Working with Cold Form Steel (CFS)</u>	Inder Mann Mann Group Sukh Mann LifeTec Group Himanshu Chopra Kasian Architecture

11:35 AM – 11:45 AM Transition Between Sessions

THE CANADIAN STEEL CONFERENCE | SEPT. 28 - 30, 2022

Technical Sessions Cont'd Wednesday September 28, 2022

11:45 AM – 12:30 PM

PLENARY SESSION
Grand Ballroom

9. The Path "IS" Clean Steel

Vasudha Seth (Arcelor Mittal) - Sonny Crews (Gerdau) - Ed Whalen (CISC)

12:30 PM – 1:45 PM Buffet Lunch - Grand Ballroom

1:45 PM – 2:30 PM	Junior A-B	<u>10. Seismic Behaviour and Design of Multi-Tiered Concentrically Braced Frames: X-Bracing and Chevron Bracing Configurations</u>	Christophe Comeau Read Jones Christoffersen Ltd. Engineers
	Junior C	<u>11. Improving Performance and Simplifying the Design of EBFs with Cast Steel Modular Links</u>	Michael Gray CAST CONNEX
	Junior D	<u>12. Environmental Assessment of a High-Rise Building: A Comparison between a Steel and Concrete Building Scenario</u>	Capucine Lardinois Steligence ArcelorMittal
	Gulf Island BC (Mezzanine)	<u>13. BC Ministry of Transportation and Infrastructure - Recent Flooding & Emergency Response</u>	Kevin Weicker BC Ministry of Transportation and Infrastructure Mingyu Li BC Ministry of Transportation

2:30 PM – 2:35 PM Transition Between Sessions

2:35 PM – 3:20 PM	Junior A-B	<u>14. Prompt Payment: How Ya' Doin' Ontario? What about the Rest of Us? Why the Push for Prompt Payment Makes Sense</u> This Session has been moved to 8:30 AM as a plenary session	Dan Leduc Norton Rose Fulbright
	Junior C	<u>15. Construction Stage Analysis and Jacking Design for Truss Spans of the St. Andrews Lock and Dam Bridge</u>	Saqib Khan Spannovation Consulting
	Junior D	<u>16. Speedcore: A Revolutionary and Game-Changing Structural System</u>	Robert E Shaw Jr Steel Structures Technology Center, Inc. United States Amir Jamshidi Niik Group
	Gulf Island BC (Mezzanine)	<u>17. Safety First: From Safety Tips to trends, to options and to procedures – The CISC is leading the National Conversation</u>	Jim Kanerva Carry Steel

3:20 PM – 4:30 PM

Steel Sponsors "Special" Sessions to be Announced

4:30 PM – 6:30 PM

Steel Sponsors Reception

7:00 PM – 12:00 AM

Social Event: Dinner Cruise

(Dress Code: Business Casual - Dinner will be indoors)

Each session is worth 0.075 CEU = 0.75 PDH - Information to receive a certificate will be provided during the event.

1. Risks and Trends in Construction Contracts

Date: Wednesday September 28, 2022 | **Time:** 10:00 AM – 10:45 AM

Room: Junior A-B

SPEAKERS



Dan J. Leduc. B. A., LL.B. | Partner, Norton Rose Fulbright

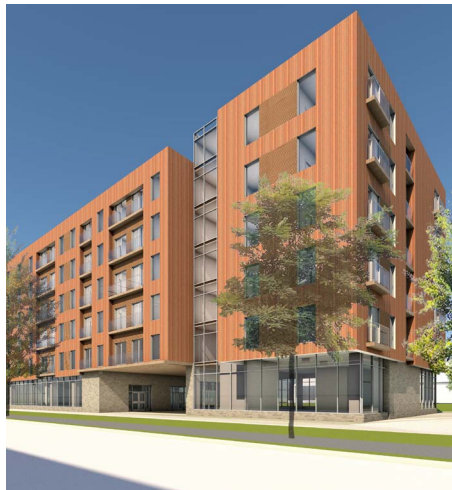
Dan Leduc specializes in negotiating, mediating, arbitrating and litigating construction disputes. Much of his portfolio includes handling construction liens, trust claims, delay claims, construction insurance claims, as well as architect's or engineer's errors and omissions. He has extensive experience in drafting and negotiating various forms of construction contracts on behalf of owners, developers, general contractors, subcontractors and suppliers. Additionally, Leduc's expertise extends to surety bonding claims on construction projects, including performance bond claims and labour/material payment bond claims.

2. Can a Mid-Rise Building Using LSF Achieve Passive House Design Criteria and Be Cost-Competitive?

Date: Wednesday September 28, 2022 | **Time:** 10:00 AM – 10:45 AM

Room: Junior C

Yes. Even though steel is 400 times more thermally conductive than wood, appropriate constructive details and adequate insulation for a steel stud exterior wall are sufficient for achieving a high thermal resistance value. The energy model assessing a building having a high resistivity envelope, limited thermal bridges, high-performance windows and mechanical ventilation with heat recovery shows the building meet Passive House design criteria. In addition, comparing a steel passive house with a passive house made with concrete or timber, the Steel scenario was found to be the most environmentally sustainable and economical overall.



SPEAKER



Capucine Lardinois | Steligen ArcelorMittal

Capucine Lardinois is a Project Manager at ArcelorMittal Global R&D in the Construction and Manufacturing products Team. She is involved in the review of technical design reports for the Steligen® building case studies comparing functional-equivalent buildings with different design scenarios. She promotes the steel solutions communicating about the economic and environmental benefits based on the research results. She has a structural background mainly oriented in steel and composite solutions. She gained valuable work experience taking different roles in Research & Development and Steel industry in Europe and Canada. She served as European Expert Evaluator at the Research Fund for Coal and Steel (RFCS). She is a Professional Engineer of Ontario and holds master's and bachelor's degrees in Construction Civil Engineering from Liege University in Belgium.

3. One Vanderbilt Avenue New York, NY

Date: Wednesday September 28, 2022 | **Time:** 10:00 AM – 10:45 AM

Room: Junior D

One Vanderbilt employed a steel-first erection sequence developed and refined by Severud Associates in which framing at the core was designed to stand alone for 12 stories. As erection proceeded, concrete shear walls followed the steel below, using a self-climbing form system and hand-set forms. Column transfer systems at the 5th and 12th Floors required floor-deep trusses. At truss nodes, forgings were utilized to make connections as compact as possible while also providing a smooth flow of forces and simplifying field work.



SPEAKER



Edward M. DePaola, PE, SECB, F.SEI | President & CEO, Severud Associates Consulting Engineers PC, N.Y

Ed DePaola, PE is President and CEO of Severud Associates Consulting Engineers PC, New York. He is licensed in 21 states, and a member of numerous professional organizations including the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE) and the American Institute of Steel Construction (AISC). He is a past President and Founding Member of the Structural Engineers Association of New York (SEAoNY), an ex-member of the Board of Governors of the Structural Engineering Institute (SEI), a director on the Board of Directors of the Structural Engineering Certification Board (SECB), the past chair of the Structural Engineering Institute Futures Fund (SEIFF), and a Life Member of ASCE.

He received a Bachelor of Science Degree and a Master of Science Degree in Civil Engineering from the University of Notre Dame, and his Juris Doctorate from Seton Hall School of Law. In March of 2012, he was made a Fellow of The Structural Engineering Institute of ASCE.

Over the past 40 years at Severud, he has designed numerous projects including high-rise buildings, long-span facilities and special structures requiring innovative structural solutions. His structural designs include the Jeppesen Terminal Roof and Glass Enclosure Structures of the Denver International Airport and the American Airlines Terminal at JFK International Airport. He was the principal-in-charge of the Bank of America Tower at One Bryant Park, formerly the second tallest building in NYC and the first high-rise office structure in the world to receive a LEED Platinum rating.

His current projects include the recently completed One Vanderbilt Avenue and the new headquarters building for JP Morgan Chase at 270 Park Avenue.

4. Challenges of Modular Construction

Date: Wednesday September 28, 2022 | **Time:** 10:00 AM – 10:45 AM

Room: Gulf Island BC (Mezzanine)

The construction industry is coming under increased pressure to provide better value through improved building performance. Modular construction, is a highly versatile approach with the potential to deliver substantial value, reduce project schedules, boast quality, and improve productivity, working environments and sustainability.

Using project examples, this session will explore the design opportunities and challenges of structural steel modular construction. The following topics will be covered: project delivery methods and team organization; key design and tolerance considerations; fire safety strategies; temporary conditions including hoisting and transportation; and the integration of computational design and building information modelling (BIM) into the design workflow.



SPEAKER



Tom Greenough | Entuitive

Tom is a structural engineer with over 15 years of industry experience working on projects in the commercial, cultural, institutional, residential, and retail sectors.

Tom is currently working on numerous projects involving Offsite and Modular Construction across North America. Tom is a member of the Canadian Standard Association (CSA) Technical Committee on Volumetric Modular Construction responsible for the development of the new standard Process for Delivery of Volumetric Modular Buildings. Tom was also a contributor to the CSA Standard Research Report on High-Rise Modular Construction.

5. Top Things You Should Know About HSS Connections

Date: Wednesday September 28, 2022 | **Time:** 10:50 AM – 11:35 AM

Room: Junior A-B

Connections are often the most overlooked part of structural design. We as structural engineers are educated in school of the many ways to analyze structural systems and to design beams and columns. But for many reasons, little time is spent on actual connection design. Perhaps in graduate school we have the chance to take an advance course on connection design, but often we are not truly exposed to the subtleties and complexities of steel connections until we are on the job, where, too often, we learn the biases and bad habits of our mentors.



In addition, most engineers in the US and Canada delegate the responsibility of connection design to the project's fabricator. While this can be a good way to get cost effective connections, the Engineer of Record (EOR) often provides member designs that make it challenging for the fabricator's engineer to get the connections to work for the loads given without reinforcing the members or choosing a costly connection type. This is especially true for connections that involve Hollow Structural Sections (HSS).



HSS connections have often been a source of additional mystery for even the most experienced engineers. For many years, there were not many resources here in the US that we as engineers could turn to for guidance on HSS connections. In the mid to late 1990's, this started to change and over the past 20 years many excellent resources have evolved, especially with the inclusion of Chapter K in AISC 360.

This 1 hour presentation attempts to de-mystify HSS connections. While this is not a "how-to" guide, the presentation will highlight areas of HSS connection design that are often overlooked or misunderstood. Connection types that are addressed include tension, bracing, shear, moment and truss connections. Attendees will gain an appreciation of the similarities and the subtle differences between HSS connections and other types of connections.

Also addressed will be the effect certain design decisions have on fabrication and the cost of connections.

SPEAKER



Brad Fletcher, S.E. | Senior Sales Engineer, Atlas Tube

Brad Fletcher, S.E., is the senior sales engineer at Atlas Tube. In this role, Brad leverages his over 30 years of experience in engineering design and the steel industry to provide technical expertise on the use of steel hollow structural sections (HSS) and pipe piling products to design engineers, detailers, fabricators and architects.

A registered structural engineer in the state of Illinois, Brad has held senior positions at leading architecture and engineering firms, Skidmore, Owings & Merrill; Sargent & Lundy; and Halvorson and Partners. For the past fifteen years, while working at Tata Steel (formerly known as Corus) and now with Atlas Tube, Brad has focused his efforts on serving as a liaison between structural designers and the steel industry.

Brad holds a Bachelor of Science and a Master of Science in Civil Engineering (BSCE, MSCE) from Purdue University. He is active in many industry groups, including the American Institute of Steel Construction (AISC), the Structural Engineers Association of Illinois (SEAOI) and ASTM International. Brad participates in the Technical Committees responsible for the AISC Specification as well as the HSS Committee of the Steel Tube Institute. Brad is also on the Board of the CISC Education and Research Council (formerly SSEF) in Canada and the S16 Technical Committee for the Canadian Standards Association (CSA).

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6. Safe Design of Gerber Cantilever Roofs

Date: Wednesday September 28, 2022 | **Time:** 10:50 AM – 11:35 AM

Room: Junior C

The Gerber roof system is very common in Canada saving both material and structural depth but can be subject to instabilities and local failures that lead to collapse. This talk will show how to avoid the stability and detailing issues.

SPEAKER



Andy Metten | Bush, Bohlman & Partners

Andy Metten is well known in the Vancouver structural engineering community where he has been a structural engineer with Bush, Bohlman & Partners for forty years. Andy has taught structural steel design with the Structural Engineers Association of BC and co-written the textbook Structural Steel Design for Canadian Buildings. Andy's steel buildings include the international terminal building at YVR and TRIUMF's Institute for Advanced Medical Isotopes. Andy is a member of the S16 committee and the NBC Standing Committee on Earthquake design and is currently working on Canada's first tsunami evacuation tower.

7. 400 Georgia Tower – A Striking Office Building Facilitated by Rotated Stacked Steel Cubes

Date: Wednesday September 28, 2022 | **Time:** 10:50 AM – 11:35 AM

Room: Junior D

The Deloitte Summit Tower, 400 W. Georgia is a 24-storey stacked cube office tower is one of the most complex and rewarding. This 370,000-square-foot, LEED® Platinum targeted building features 4-storey cantilevered rotated boxes, living green walls, and an open floor-partitioned concept. Construction innovations featured a robust crane tie-back system, impressive cast nodes and exterior trusses tying back to the core. Located on a thoroughfare into the downtown core, the 5500 MT Deloitte Summit is a landmark structure for generations to come.

SPEAKER



Anthony El-Araj, P.Eng | Managing Principle, Glotman-Simpson

Anthony El-Araj, is a Principal at Glotman•Simpson and a Project Manager with 22 years of structural design experience. He focuses on technically intensive projects with an expertise in projects using reinforced concrete, post-tensioned concrete, structural steel, wood frame and masonry.

Anthony's recent projects include Deloitte Summit, TELUS Sky, TELUS Garden, UBC Gage Residences + Exchange, and UBC Robert H. Lee Alumni Centre. Anthony's technical abilities provide a major contribution and supporting resource in assisting Glotman•Simpson to better serve our clients.



Dario Espi-Fournier, P.Eng | Canam

Dario Espi-Fournier is a Project Engineer at Superm tal – Canam with 5 years of structural steel experience. He focuses on technically intensive projects with an expertise in connection design, steel fabrication and steel erection. Dario's recent projects include Deloitte Summit, and currently at Oakridge Park , Mirvish Village, CIBC Square.

8. Purpose-Built Rental Apartments in Chilliwack BC: Opportunities and Challenges Working with Cold Form Steel (CFS)

Date: Wednesday September 28, 2022 | **Time:** 10:50 AM – 11:35 AM

Room: Gulf Island BC (Mezzanine)

The Mann Group is a construction and development company that is based in Surrey, BC. We embrace innovation and thoughtful design to add value for our customers and distinguish ourselves from the competition. The Mann Group constructs buildings with a cold form steel (CFS) frame in association with Lifetec, a local manufacturer specializing in CFS for construction. This presentation will explore the opportunities and challenges of CFS frame buildings: what does it mean for

sustainability, cost savings, design, and construction? Join Inder Mann, CEO of the Mann Group, Sukh Mann of the Lifetec Group, and Himanshu Chopra, Associate Architect at Kasian Architecture, for a presentation and dialogue sharing their experience applying CFS to construction projects.



SPEAKERS



Inder Mann | Mann Group

The Mann Group is a real estate development company which specializes in commercial, industrial, retail, multi-family, and subdivision projects. Established in 1989, Mann Group has extensive knowledge and experience in land acquisition, project design, project financing and property management

Sukh Mann | LifeTec Group

Himanshu Chopra | Kasian Architecture

9. The Path “IS” Clean Steel

Date: Wednesday September 28, 2022 | Time: 11:45 AM – 12:30 PM

Room: Grand Ballroom

SPEAKERS



Vasudha Seth | Vice-President Strategy, ArcelorMittal



Sonny Crews | Gerdau

Sonny is an Environmental Manager for Gerdau Long Steel North America, a leading producer of hot-rolled sections. He started in the steel industry 28 years ago as an Environmental Specialist at a Knoxville Tennessee steel mill, and for the past 18 years, Sonny has been based out of the Gerdau corporate office in Tampa, FL as a regional Corporate Environmental manager.



Ed Whalen | CISC

Ed Whalen is an engineer and President & CEO of the Canadian Institute of Steel Construction (CISC). Prior to joining the CISC, as President in 2009, he rounded out his steel expertise in the welding certification, ISO registration, engineering consulting and steel fabrication.

Ed Whalen is active on many national and international standards relating to steel and steel in construction which include the National Building Code of Canada, CSA, ASTM, ISO and IIW. He is the current Chair of CSA G40.20 & 21, and ISO TC167 Working Group 3 for Steel Fabrication.

Ed has been in the steel industry for 37 years and is a passionate advocate for Canadian steel construction.

[View all CISC Technical Sessions](#) ↑

10. Seismic Behaviour and Design of Multi-Tiered Concentrically Braced Frames: X-Bracing and Chevron Bracing Configurations

Date: Wednesday September 28, 2022 | **Time:** 1:45 PM – 2:30 PM

Room: Junior A-B

Steel multi-tiered concentrically braced frames (MT-CBFs) consist of multiple braced tiers stacked over the height of a storey or a structure. This bracing configuration requires shorter braces, which typically results in lighter braced frames. MT-CBFs are commonly used to resist lateral loads in tall single-storey buildings such as industrial buildings, airplane hangars or sports centres. In MT-CBFs, intermediate struts are placed between adjacent tiers to resist horizontal unbalanced brace loads that would otherwise be applied to the columns upon buckling of the braces during strong seismic events. Braced panels in MT-CBFs are generally X-bracing or chevron bracing. This presentation first details current code provisions and design practices for moderately ductile MT-CBFs in Canada. Secondly, the seismic behaviour of chevron MT-CBFs is investigated. In chevron bracing, current seismic provisions would require the struts to also resist the vertical unbalanced brace loads developing at their midspan when braces respond nonlinearly, which would detrimentally impact the structure cost. This presentation examines the possibility of using an alternative design approach in which inelastic flexural response of the struts would be permitted.

SPEAKER



Christophe Comeau | Read Jones Christoffersen Ltd. Engineers

11. Improving Performance and Simplifying the Design of EBFs with Cast Steel Modular Links

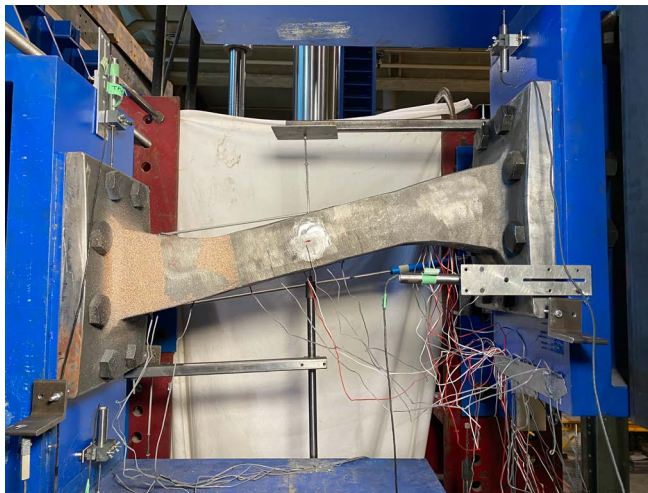
Date: Wednesday September 28, 2022 | **Time:** 1:45 PM – 2:30 PM

Room: Junior C

Type D eccentrically braced frames (EBFs) are a popular steel frame due to their relatively high seismic force modification factors, R_d and R_o . However, difficulty in optimizing link beams for both gravity and seismic forces has led to a shift in popularity from traditional EBFs to modular EBFs. Modular EBFs are designed using a bolt-in fabricated link element for the inelastic segment between the braces of the EBF. The modular EBF offers additional benefits including simplified field-bolting of the steel frame during construction, and ease of repair/replacement post earthquake.

A challenge in using modular EBFs is that the link elements are complex fabrications that require demand critical complete joint penetration welds to the end plates and complex full-depth stiffener plates. A new research project at the University of Toronto has focused on testing full scale cast steel modular link elements, which would eliminate the need for the labour-intensive manufacturing of fabricated modular links.

This presentation will introduce the concept of the replaceable cast steel links. Test results from component testing and full-scale frame testing will be presented. Observed ductility will be compared to a cyclic ductile low-cycle fatigue fracture model for cast steel. Sample design of full-scale building seismic force resisting systems will be presented with focus on how a practicing engineer may adapt current code provisions for the cast steel modular links.



SPEAKER



Michael Gray, Ph.D., P.Eng., Executive VP. | CAST CONNEX

Michael is a co-founder and Executive VP of Cast Connex. He possesses a Doctorate in Civil Engineering from the University of the Toronto and has co-developed several patented devices for seismic performance of steel structures. Michael is a past winner of the CISC G.J. Jackson Fellowship and has been an active member of the CISC Education and Research Council since 2014. Under his leadership, Cast Connex has become recognized as an industry leader in innovative design for complex connections.

12. Environmental Assessment of a High-Rise Building: A Comparison between a Steel and Concrete Building Scenario

Date: Wednesday September 28, 2022 | **Time:** 1:45 PM – 2:30 PM

Room: Junior D

Minimizing Greenhouse Gas emissions is a massive challenge the world faces today. Building materials and construction account for 11% of global CO₂ emissions. Architects and Engineers have a role to play in reducing those emissions by understanding the carbon footprint of a building when selecting between different materials and structural systems.

The case study compares a functional equivalent generic building in terms of environmental impact, cost, and speed of erection. Two structural scenarios (steel and concrete) for a high-rise building were analyzed. The life cycle assessment demonstrates that the Steel Building has a reduced carbon footprint than the concrete solution.



SPEAKER



Capucine Lardinois | Steligen ArcelorMittal

Capucine Lardinois is a Project Manager at ArcelorMittal Global R&D in the Construction and Manufacturing products Team. She is involved in the review of technical design reports for the Steligen® building case studies comparing functional-equivalent buildings with different design scenarios. She promotes the steel solutions communicating about the economic and environmental benefits based on the research results. She has a structural background mainly oriented in steel and composite solutions. She gained valuable work experience taking different roles in Research & Development and Steel industry in Europe and Canada. She served as European Expert Evaluator at the Research Fund for Coal and Steel (RFCS). She is a Professional Engineer of Ontario and holds master's and bachelor's degrees in Construction Civil Engineering from Liege University in Belgium.

13. BC Ministry of Transportation and Infrastructure - Recent Flooding & Emergency Response

Date: Wednesday September 28, 2022 | **Time:** 1:45 PM – 2:30 PM

Room: Gulf Island BC (Mezzanine)

The presentation is anticipated to cover three main aspects of our work to restore the highways and road networks after the flooding. The first part will be to describe the event and its impacts as well as the immediate repairs that were undertaken to re-open the highways. The second part will focus in more detail on a specific single span steel girder bridge that was utilized during the emergency response. The third part will discuss our approach to the permanent repairs with particular emphasis on the alliance project delivery model which is being utilized.

SPEAKERS



**Kevin Weicker, P. Eng. | Engineering Director for Capital Projects,
BC Ministry of Transportation and Infrastructure**



**Mingyu Li, P. Eng. | Senior Structural Liaison Engineer,
BC Ministry of Transportation and Infrastructure**

14. Prompt Payment: How Ya' Doin' Ontario? What about the Rest of Us? Why the Push for Prompt Payment Makes Sense

Date: Wednesday September 28, 2022 | Time: 8:30 AM - 9:30 AM

Room: Grand Ballroom

This Session Has Been Moved to 8:30 AM as a Plenary Session

Prompt payment legislation is progressively spreading across Canada. Prompt payment and special adjudication regimes have been sought across Canada to address issues with the flow of funds within the construction pyramid, to all stakeholders; some provinces are movers, and some are laggards. How does legislation and adjudication regimes in place in some provinces and how will progressive changes in future legislation in others to be adopted in the future, affect the construction industry? What are some the key take-aways?

SPEAKERS



Dan J. Leduc. B. A., LL.B. | Partner, Norton Rose Fulbright

Dan Leduc specializes in negotiating, mediating, arbitrating and litigating construction disputes. Much of his portfolio includes handling construction liens, trust claims, delay claims, construction insurance claims, as well as architect's or engineer's errors and omissions. He has extensive experience in drafting and negotiating various forms of construction contracts on behalf of owners, developers, general contractors, subcontractors and suppliers. Additionally, Leduc's expertise extends to surety bonding claims on construction projects, including performance bond claims and labour/material payment bond claims.

15. Construction Stage Analysis and Jacking Design for Truss Spans of the St. Andrews Lock and Dam Bridge

Date: Wednesday September 28, 2022 | **Time:** 2:35 PM – 3:20 PM

Room: Junior C

The St. Andrews Lock and Dam Bridge is a 454m long heritage structure that serves to provide commuter connectivity and flood control across the Red River near Lockport, Manitoba. The facility has three distinct structures: a 90m west approach; a central structure with seven 40.8 m long truss spans including the river dam; and an east approach. Built in 1907 this structure is undergoing a second round of rehabilitation that involves deck replacement and widening, and structural strengthening to eliminate load restrictions (currently posted for a 36-Ton truck) and allow full legal traffic. The deck rehabilitation includes a complete replacement of the concrete slab and all longitudinal stringers of the central truss spans, the partial-depth deck slab replacement along the approach spans, and a deck widening with a new pedestrian sidewalk. The presentation focuses on construction stage analysis that was conducted to assess the structure at various stages of rehabilitation to safeguard the strength and stability of the partial structure during construction. Also discussed is the analysis and design of temporary works for a 680-Ton jacking operation to replace the seized roller mechanism of the sliding bearings of the Truss Span at Pier 1.



SPEAKER



Saqib Khan P.Eng., SE | Spannovation Consulting

Saqib Khan has 20 years of leadership, management, design and delivery experience with a focus on bridge engineering. He has worked with both private and public sectors and has gained extensive technical experience through conducting analysis and design, as well as inspecting, assessing and supervising the construction of bridges. He has specialized knowledge of seismic design and analysis including retrofit and rehabilitation and serves as a member of the Canadian Bridge Code Sub-Committee for Seismic Design. Saqib is skilled at innovative solutions for bridge structures located in seismic areas.

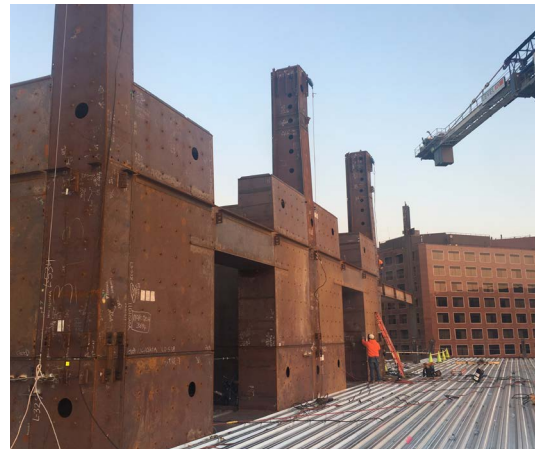
16. Speedcore: A Revolutionary and Game-Changing Structural System

Date: Wednesday September 28, 2022 | **Time:** 2:35 PM – 3:20 PM

Room: Junior D

A revolutionary composite steel plate/concrete shear wall system, known as SpeedCore, is transforming the horizon of mid- and high-rise construction. The most prominent benefit to using SpeedCore is construction schedule improvement. With this unique system, the structure will take an estimated 50% less time to complete compared to a cast-in-place reinforced concrete core system trailed by structural steel framing. With the substantially improved on-site erection schedule, construction pre-planning, material procurement, detailing, fabrication and erection systems, and construction sequence need thorough consideration.

With the experience from the last two successful SpeedCore projects, Rainier Square Tower in Seattle and 200 Park Avenue in San Jose, members of the project's team will explain the structural components of the system, share some pre-construction, fabrication, and erection practices, and shed light on the benefits and the challenges that stakeholders encounter during the process.



SPEAKERS



Robert E Shaw Jr | Steel Structures Technology Center, Inc. United States

Robert E. Shaw, Jr. PE, (Bob) is President of the Steel Structures Technology Center, his consulting firm in Michigan. A Civil Engineering graduate from Rose-Hulman Institute of Technology, he began his career in steel construction 49 years ago, starting with a steel fabricator, then on AISC staff, then founding SSTC in 1990. SSTC is best known for its popular industry handbooks on bolting and welding quality, as well as its seminars on various aspects of steel construction, most often focused on quality. Bob is intimately involved in numerous steel construction standards, including many years of service to AISC, AWS, RCSC, IIW, ASTM, and ISO, often in a position of leadership. As a consultant, he has advised on numerous steel construction projects around the globe.



Amir Jamshidi Ph.D., P.Eng., PE | Structural Engineer / President & CEO of Niik Group and Niik Steel, Niik Group

Amir, a senior structural and research engineer with over 15 years of experience in the industry, is the President of Niik Group (an engineering consulting company) and Niik Steel (a steel fabricator in British Columbia). He graduated with his PhD in structural engineering from the University of Alberta, with his research focusing on the progressive collapse of steel structures. Amir and the Niik companies focus on providing fabrication, technical services and educational opportunities in the design, fabrication, erection and inspection of steel-framed structures. Amir provides consulting services to institutions, steel fabricators, general contractors, engineers, architects, and owners and assists in overcoming challenges in steel design and construction. His knowledge and experience in the industry allow him to address complex and unique structural steel inquiries by developing innovative solutions and unconventional applications.

Before founding Niik in 2019, Amir served Supreme Group as the Director of Technical Services where he oversaw various departments such as engineering, detailing, and quality. Amir has worked on many prominent projects in North America including the Rainier Square Tower (the 1st SpeedCore Project), 200 Park Avenue in San Jose (the 2nd SpeedCore Project), SeaTac Airport, Waterdale Bridge, The Leaf at Canada's Diversity Gardens, Waltherdale Bridge, and the New Toronto Courthouse.

[View all CISC Technical Sessions](#) ↑

17. Safety First: From Safety Tips to trends, to options and to procedures – The CISC is leading the National Conversation

Date: Wednesday September 28, 2022 | **Time:** 2:35 PM – 3:20 PM

Room: Gulf Island BC (Mezzanine)

Working collaboratively across Canada to develop Key Performance Indicators (KPIs). The development of the CISC National Safety Program (NSP) is premised on the key objectives of reaching and benefitting all steel industry construction sectors. Focusing on the successful evolution, from meeting minimum requirements, to achieving certification, this initiative will add measurable value to the steel construction industry at large. Also, starting in 2023, the National “Safety Awards” will be launched at the 2023 Canadian Steel Conference, celebrating the exceptional safety performance of CISC Members.

This session will outline all the details of this initiative.

SPEAKER



Jim Kanerva | Carry Steel