CANADIAN INSTITUTE OF STEEL CONSTRUCTION
INSTITUT CANADIEN DE LA CONSTRUCTION EN ACIER

2019 TECHNICAL SESSIONS

THE CANADIAN STEEL CONFERENCE

SEPT 30 - OCT 2, 2019
HÔTEL BONAVENTURE, MONTRÉAL, QC

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CANADIAN INSTITUTE OF STEEL CONSTRUCTION
INSTITUT CANADIEN DE LA CONSTRUCTION EN ACIER

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#WeAreSteel

CHAIRMAN'S WELCOME MESSAGE

"A WARM QUEBEC WELCOME!"

On behalf of the CISC Board of Directors, the CISC staff and the Quebec Region, I would like to welcome all to the Annual CISC Canadian Steel Conference and Trade Show in the historic Montreal, Quebec.

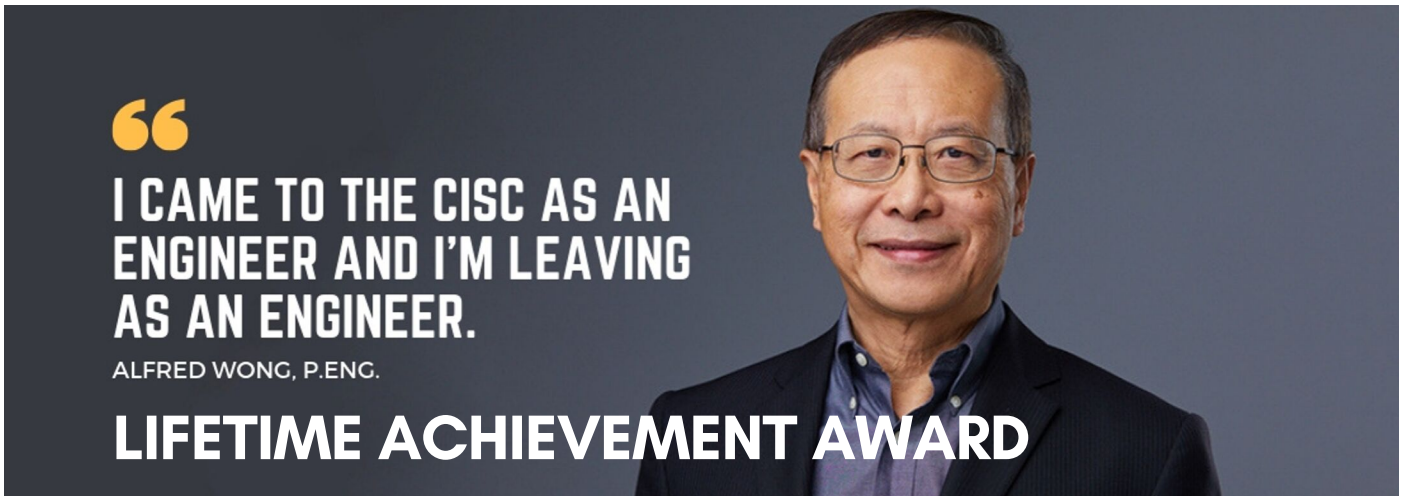
The trade show has proven to be a success and along with education and business development forums, there are many excellent networking opportunities for all.

Attendees can look forward to the Steel Sponsors' reception, awards for Education and Lifetime Achievement, and of course, local hospitality on the fun night.

We look forward to hosting and trust it will provide a benefit to everyone. Lastly, there will be opportunity to rekindle friendships and get caught up with each since we met last year.

A warm Quebec welcome!

Paul Mikolich
Chairman of the Board



Alfred Wong started his career as an engineer at CISC in 1979. Since then he has worked tirelessly up the corporate ladder and has been the CISC's Director of Engineering for the last 25 years.

Throughout his career, Alfred has provided leadership on innumerable projects and has contributed immensely to the steel design and construction industry, as well as to the CISC's overall success. His involvement in projects that have pushed the boundaries in the innovation of steel buildings and bridges across Canada will continue to be celebrated by his colleagues and industry partners today and everyday.

Q&A with Alfred Wong

Do you remember your first day at the CISC?

Yes. I came to the CISC at a time when people used fountain pens and the men in the office dressed in three-piece suits!

How has the steel industry changed during your tenure?

The steel industry has changed in many ways. But, if I had to sum it up in one word, it would be: globalization.

How do you think your work in the steel industry has impacted the way Canada looks like today?

All I know is this: I came to the CISC as an engineer and I'm leaving as an engineer. I just hope during my time here I have made a small contribution to the total effort and activities in bridging the gap between research and needs, between research and code provisions, between codes and design practice, as well as between code implementation and construction.

Do you have any advice for engineers currently working in the steel industry?

It is important to keep reminding yourself that your profession, the steel industry and society in its entirety needs you.

2018 / 2019 CISC BOARD OF DIRECTORS

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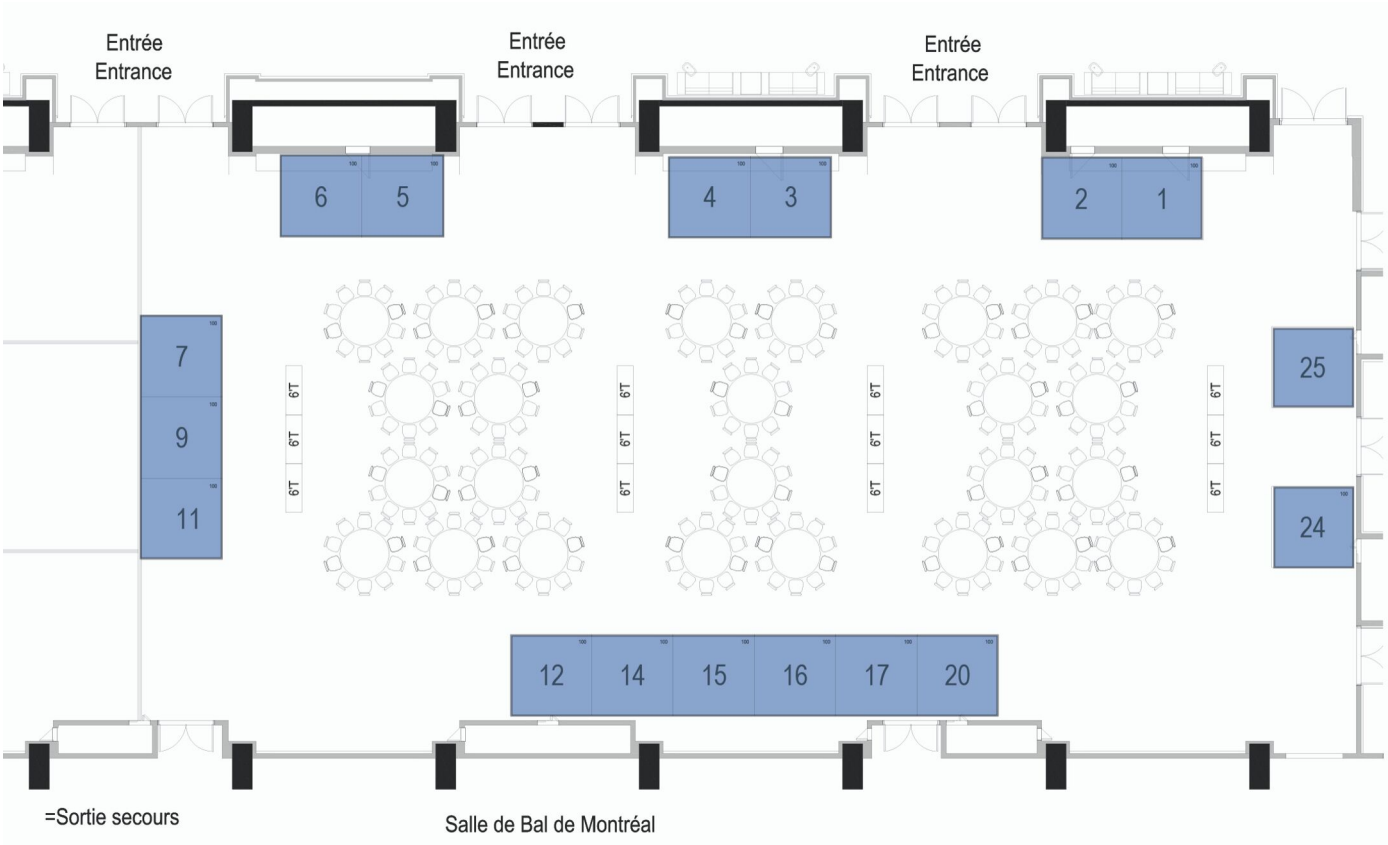
TRADE SHOW EXHIBIT FLOOR PLAN



1. AGT Robotics
2. Sherwin-Williams Company
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9. Corbec Inc.
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14. Techflow Inc.
15. Cast Connex
16. Graitec
17. Infasco
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25. Canam

CONVENTION CENTER HOUSING MAP

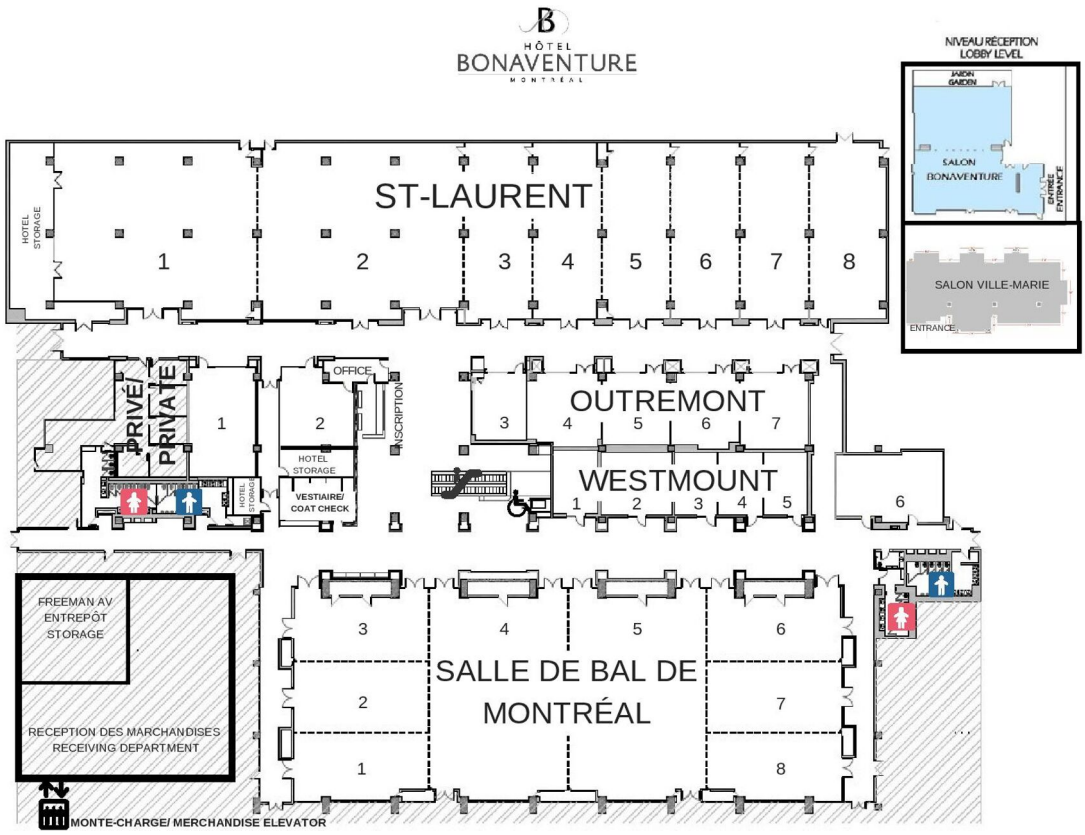

EXHIBIT HALL HOURS (MONTREAL BALLROOM 1-5)

Monday | Sept, 30
8:00 A.M. - 6:30 P.M.

Breakfast
7:00 a.m. - 8:00 a.m.

Break
9:30 a.m. - 10:00 a.m.

Lunch
12:00 p.m. - 1:00 p.m.

Break
3:00 p.m. - 3:30 p.m.

Steel Sponsors Reception
4:30 p.m. - 6:30 p.m.

Tuesday | Oct, 1
8:00 A.M. - 6:30 P.M.

Breakfast
7:30 a.m. - 8:30 a.m.

Break
9:30 a.m. - 10:00 a.m.

Lunch
12:00 p.m. - 1:00 p.m.

Break
3:00 p.m. - 3:30 p.m.

Reception
4:30 p.m. - 6:30 p.m.

REGISTRATION DESK HOURS

Sunday | Sept, 29

1:30 p.m. - 5:30 p.m.

Monday | Sept, 30

7:00 a.m. - 6:00 p.m.

Tuesday | Oct, 1

7:30 a.m. - 5:00 p.m.

SUNDAY SEPT 29TH - CONFERENCE AGENDA

1:30 PM - 5:30 PM — **REGISTRATION**

1:30 PM - 5:30 PM — **EXHIBITORS MOVE-IN**

MONDAY SEPT 30TH - CONFERENCE AGENDA

7:00 AM - 6:00 PM — **REGISTRATION**

7:00 AM - 8:00 AM — **BREAKFAST**

(CISC Canadian Steel Conference delegates only)

8:00 AM - 6:30 PM — **CISC MEMBERS & ASSOCIATES TRADE SHOW EXHIBIT**

Montreal Ballroom 1-5

Come and meet our members & associates & learn about their products & services.

8:00 AM - 9:30 AM — **CANADIAN STEEL CONFERENCE KICK-OFF**

Montreal Ballroom 6-8

Join us at the official Steel Conference Kick-Off where keynote speakers, Mr. Doug Porter, Chief Economist and Managing Director at BMO Financial Group will talk on the latest trends in the construction industry and Canada's economic outlook and Mr. Marc Dutil, President & CEO of Group Canam will address the audience on navigating our industry's accelerating transformation.

9:30 AM - 10:00 AM — **BREAK**

10:00 AM - 11:00 AM — **MULTI-TRACK TECHNICAL SESSIONS (1, 2, 3)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

11:00 AM - 12:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (4, 5, 6)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

12:00 AM - 1:00 PM — **LUNCH**

1:00 PM - 2:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (7, 8, 9)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

2:00 PM - 3:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (10, 11, 12)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

3:00 PM - 3:30 PM — **BREAK**

3:30 PM - 4:30 PM — **MULTI-TRACK TECHNICAL SESSIONS (13, 14, 15)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

4:30 PM - 6:30 PM — **STEEL SPONSORS RECEPTION**

7:00 PM - 11:00 PM — **SOCIAL FUN EVENING!**

Montreal under the stars! On board of the chartered AML Cavalier Maxim. Bus shuttles leave from the main entrance of the Hotel at 18:45 pm sharp. **Registration required. Prior of the event, please check at the registration desk that your name is on the participant list.**

TUESDAY OCT 1ST - CONFERENCE AGENDA

7:30 AM - 5:00 PM — **REGISTRATION**

7:30 AM - 8:30 AM — **BREAKFAST**

8:00 AM - 6:30 PM — **CISC MEMBERS & ASSOCIATE TRADE SHOW EXHIBIT**

Montreal Ballroom 1-5

Come and meet our members & associates & learn about their products & services.

8:30 AM - 9:30 AM — **CISC AWARDS**

Montreal Ballroom 6-8

Join us to honor CISC's Lifetime Achievement Award winner and the recipients of CISC's Education and Research Council Awards.

9:30 AM - 10:00 AM — **BREAK**

10:00 AM - 11:00 AM — **MULTI-TRACK TECHNICAL SESSIONS (16, 17, 18)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

11:00 AM - 12:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (19, 20, 21)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

12:00 PM - 1:00 PM — **LUNCH**

1:00 PM - 2:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (22, 23, 24)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

2:00 PM - 3:00 PM — **MULTI-TRACK TECHNICAL SESSIONS (25, 26, 27)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

3:00 PM - 3:30 PM — **BREAK**

3:30 PM - 4:30 PM — **MULTI-TRACK TECHNICAL SESSIONS (28, 29, 30)**

Montreal Ballroom 6-8 / St-Laurent 7 / St-Laurent 8

4:30 PM - 6:30 PM — **RECEPTION**

7:00 PM — **EXHIBITORS MOVE-OUT**

9:30 AM - 4:30 PM — **COMPANION ACTIVITY (ONLY AVAILABLE TO COMPANION OF DELEGATES):**

The day starts with a city tour to discover the charms of Montreal. Then a lunch offering a culinary experience that will allow you to learn, create and enjoy a simple, accessible and local cuisine, at the popular 'Gilde Culinaire' awaits, before ending the day among international stars at the impressive Grévin Wax Museum. **Registration Required. Please meet your GUIDATOUR guide at the bus outside the main entrance of the Hotel. Bus leaves at 9:30 am sharp.**

CISC CONFERENCE KEYNOTE SPEAKERS

CANADIAN STEEL CONFERENCE KICK-OFF

Monday September 30th, 8:00 AM - 9:30 AM Room: Montreal Ballroom 6-8

CISC is pleased to welcome at the official Steel Conference Kick-Off, keynote speakers, Mr. Doug Porter, Chief Economist and Managing Director at BMO Financial Group who will talk on the latest trends in the construction industry and Canada's economic outlook and Mr. Marc Dutil, President & CEO of Group Canam who will address the audience on navigating our industry's accelerating transformation.

DOUGLAS PORTER, CFA, CHIEF ECONOMIST AND MANAGING DIRECTOR, BMO FINANCIAL GROUP

Speaker bio:

Douglas Porter has over 30 years of experience analyzing global economies and financial markets. As Chief Economist, he oversees the macroeconomic and financial market forecasts and co-authors the firm's weekly flagship publication, Focus. His team has won numerous awards including Best Forecaster for Canada by Focus Economics, top Canadian forecaster by Bloomberg and the prestigious Lawrence Klein award for forecast accuracy of the U.S. economy.

As a respected commentator on economic and financial trends, he is regularly quoted in the national press and often interviewed on radio and television.

Before joining BMO, Mr. Porter held the positions of Economist and Country Risk Analyst with other Canadian financial institutions and began his career at the Bank of Canada.

Mr. Porter has been a member of C.D. Howe's Monetary Policy Council since 2008 and serves on the Investment Management Committees of the Bank of Montreal's Canada Pension Plan and Western's Endowment Fund. He also sits on the Board of Directors of Toronto Finance International and on the American Bankers Association's Economic Advisory Committee.

Mr. Porter, CFA, earned a Master's degree in Economics from the University of Western Ontario.

MARC DUTIL, PRESIDENT AND CHIEF EXECUTIVE OFFICER MEMBER OF THE BOARD OF DIRECTORS, CANAM GROUP INC.

Speaker bio:

Marc Dutil was born on December 25, 1964, in St. Georges, Quebec. He graduated from Boston College in 1987 and founded a software firm specialized in the design of electronic exchange systems.

Mr. Dutil joined The Canam Manac Group Inc. in 1989 where he held various positions at the St. Gedeon de Beauce, Quebec, plant until 1995 while also pursuing his studies at various Canadian and American universities.

In 2001, Mr. Dutil was appointed Vice President of The Canam Manac Group Inc. One year later, he was named Executive Vice President of the company and elected to its Board of Directors. In 2003, he was named President and Chief Operating Officer, and in 2012 he became President and Chief Executive Officer.

Mr. Dutil spent 10 years on the Board of the Canadian Institute of Steel Construction before serving as Chairman from 2001 to 2003. He is a member of the Cercle des présidents du Québec and founder and President of the École d'Entrepreneurship de Beauce. In October 2013, he was awarded the title of 2013 Quebec Entrepreneur of the Year by the International firm, Ernst & Young. At the end of the year, he was appointed Member of the Order of Canada for his achievements as a business leader, and for promoting the well-being of his community and the next generation of entrepreneurs.

Mr. Dutil has also chaired on the boards of not-for-profit organizations. He has equally presided over numerous community fundraisers and is frequently invited to speak at various functions across Canada and abroad.

Marc Dutil and Catherine Larochelle have been married since 1989 and have five children.

CISC MEMBERS & ASSOCIATES TRADE SHOW EXHIBIT

Time: Monday, September 30th, 2019 | 8:00 AM - 6:30 PM

Location: Montreal Ballroom 1-5

Come and meet our members & associates and learn about their products and services.

CANADIAN STEEL CONFERENCE KICK-OFF

Time: Monday, September 30th, 2019 | 8:00 AM - 9:30 AM

Location: Montreal Ballroom 6-8

To kick things off, we've invited the steel industry's leading professionals to share their insight on local and national market trends in the steel construction industry.

STEEL SPONSORS RECEPTION

Time: Monday, September 30th, 2019 | 4:30 PM - 6:30 PM

Location: Montreal Ballroom 1-5 (Trade Show Exhibit)

Enjoy a glass of wine and indulge in appetizers inspired by Montreal's unforgettable cuisine with steel industry colleagues, new and old!

SOCIAL FUN EVENING!

Time: Monday, September 30th, 2019 | 7:00 PM - 11:00 PM

Location: AML Cruise, Montral Old Port

Cost: CISC Member & Associate Delegates: Included in registration if selected
Non-Member & Associate delegates: $125 at registration

Montreal under the stars! On board of the chartered AML Cavalier Maxim, we invite you to furrow the St. Lawrence under the illuminated Jacques-Cartier bridge, enjoy the cuisine of Quebec products and wines during a 3-course dinner, attend circus performances performed by local artists of international caliber that will impress you just before the DJ takes the lead. All in a fully glassed room or on the outside terrace to watch the sunset in an enchanting panoramic setting.

Bus shuttles leave from the main entrance of the Hotel at 18:45 pm sharp.
Registration required. Prior of the event, please check at the registration desk that your name is on the participant list.

#WeAreSteel

CISC MEMBERS & ASSOCIATE TRADE SHOW EXHIBIT

Time: Tuesday, October 1st, 2019 | 8:00 AM - 6:30 PM

Location: Montreal Ballroom 1-5

Come and meet our members & associates and learn about their products and services.

CISC AWARDS

Time: Tuesday, October 1st, 2019 | 8:30 AM - 9:30 AM

Location: Montreal 6-8

Join us in celebrating the accomplishments of steel professionals form all across Canada. We'll be presenting CISC's Lifetime Achievement Award, as well as the winners of the G.J. Jackson fellowship, the Architectural Student Design Competition, the Kenneth B. Benson Scholarship and the H.A. Krentz Award.

COMPANION ACTIVITY

Time: Tuesday, October 1st, 2019 | 9:30 AM - 4:30 PM

***This event is only available to the companion of delegates**

The day starts with a city tour to discover the charms of Montreal. Then a lunch offering a culinary experience that will allow you to learn, create and enjoy a simple, accessible and local cuisine, at the popular 'Gilde Culinaire' awaits, before ending the day among international stars at the impressive Grévin Wax Museum. **Registration Required. Please meet your GUIDATOUR guide at the bus outside the main entrance of the Hotel. Bus leaves at 9:30 am sharp.**

RECEPTION

Time: Tuesday, October 1st, 2019 | 4:30 PM - 6:30 PM

Location: Montreal Ballroom 1-5 (Trade-Show Exhibit)

To close out the Conference, we welcome you to an evening of networking with steel industry leaders over refreshments and mouthwatering hors d'oeuvres.

EXCLUSIVE INVITATION: INFASCO SHOP TOUR

Time: Wednesday, October 2nd, 2019 | 10:00 AM - 2:00 PM

Location: Marieville, QC

Infasco has been a premiere supplier of Structural Fasteners to the Canadian construction industry for more than 60 years. As a proud associate of the CISC for a number of years Infasco would like to offer the opportunity to all CISC Steel Conference delegates to visit their plant to see how their structural fasteners are manufactured. As the largest fastener manufacturing plant in North America a visit and tour of the plant provides a unique view into the processes required to produce structural bolts and nuts. This product is used across Canada and globally in many major projects as well as less major projects. Please join us to view their plant and followed by an enjoyable lunch.

The buses will departure from the Hotel Bonaventure at 10:00 am. A brief 45 minute ride gets you to the Infasco plant in the village of Marieville QC. After a brief safety orientation an hour long tour of the facility will be conducted. Following the tour, lunch will be provided. Following lunch a brief ride back to the city should allow all guests to be back at the hotel at close to 2:00 pm. Please sign up for this entertaining and informative visit to INFASCO's facility.
*Registration Required: at point of registering for the Canadian Steel Conference.

CISC Technical Sessions Schedule

Monday, September 30, 2019

	Montréal 6-8	St-Laurent 7	St-Laurent 8
10:00 AM – 11:00 AM	**1. Reconstructing Christchurch: A Seismic Shift in Building Structural Systems** *Michel Bruneau, University at Buffalo, Buffalo, New York*	**2. Lean Construction for the Structural Steel Industry** *Louis Parent, Builthink Consultants*	**3. Shop Applied Intumescent Fire Resistive Material (IFRM) The Leading Supplier's Perspective** *Vadivelu Balasankar, Sherwin-Williams*
11:00 AM – 12:00 PM	**4. Stability of Steel X-Bracing Connections** *Dr. Robert Tremblay, École Polytechnique de Montréal & Alexandre Gélinas, WSP*	**5. Vibration Mitigation of a Refinery Building** *Matthew Tonello, Majid Maleki & Huirong Min, HATCH*	**6. The Business of Non-Destructive Testing from a Management Perspective** *Bonnie Pankrantz, Axis Inspection Inspection Group Ltd.*
12:00 PM – 1:00 PM	**Lunch**		
1:00 PM – 2:00 PM	**7. Rainier Square Tower: Fabrication Techniques and Challenges** *Kevin Guile, Supreme Group*	**8. Kâhasinîskâk footbridge - From Vibration Challenges to Parametric Design** *Pierre-Louis Cons & Sébastien Côté, ARUP*	**9. Certification of Existing Crane-Supporting Steel Structures** *Bob MacCrimmon, HATCH*
2:00 PM – 3:00 PM	**10. Steel Tariffs and Duties** *Edward Whalen, CISC*	**11. Current and upcoming code provisions for the seismic design of steel structures** *Dr. Robert Tremblay, École Polytechnique de Montréal*	**12. Steel Structural Connections – Points to Watch When Designing Projects** *Benoît Rancourt, Conn-x*
3:00 PM – 3:30 PM	**Afternoon Break**		
3:30 PM – 4:30 PM	**13. CIBC Square: Connecting Toronto with Steel Solutions** *Andrew Voth, Benoît Boulanger & David Ruggiero, RJC Engineers*	**14. Overview the Clause 27 of CSA S16-14 for the Design of Seismic Connections** *Elie St-Onge, Hydro-Québec*	**15. How and Why Use the CISC Code of Standard Practice for Structural Steel** *Hellen Christodoulou, CISC*

Tuesday, October 1, 2019

	Montréal 6-8	St-Laurent 7	St-Laurent 8
10:00 AM – 11:00 AM	**16. HSS Truss Connections: The T's, Y's and K's of It All** *Bradlee Fletcher, Atlas Tube*	**17. Seismic Assessment and Retrofit of Braced Frame Building** *Lucia Tirca, Concordia University*	**18. Industry 4.0 by FICEP** *Filippo Gremese & Didier Bonnet, FICEP*
11:00 AM – 12:00 PM	**19. Structural Design of the Gerber Girder Cantilever System – Filling in the Knowledge Gap** *Andy Metten, Bush, Bohlman & Partners LLP*	**20. Why is Steel Certification Essential? Why Should it Be Considered Mandatory?** *Hellen Christodoulou, CISC*	**21. Graitec Solutions for Finite Element Steel and Connection Analysis and Design: Break the limits of hand-calculations with CBFEM-based tools** *Farshad Pourshargh, Graitec Canada*
12:00 PM – 1:00 PM	**Lunch**		
1:00 PM – 2:00 PM	**22. The Amazing Grace of Steel** *Rob Third, George Third & Son*	**23. Construction Scheduling & Delay Claims Seminar – When "Left Holding the Bag" Is Not the Best Practice** *Dan Leduc, Norton Rose Fullbright*	**24. New Zinc-Rich primers for High Corrosion Resistance and High Productivity Tradition and Innovation from Carboline** *Pedro Escudero* *Carboline Canada*
2:00 PM – 3:00 PM	**25. Steel Joist & Deck in Composite Floor System – Solutions for multistory construction** *Suresh Jacob & Dustin Gravelle, Nucor Vulcraft*	**26. An Overview of Ultrasonic Testing of Structural Steel Welds in Canadian Industry** *Paul Holloway, Holloway NDT & Engineering Inc*	**27. Overview of Ductile Multi-Tier Bracing Design as per CSA S16-14** *Elie St-Onge, Hydro-Québec*
3:00 PM – 3:30 PM	**Afternoon Break**		
3:30 PM – 4:30 PM	**28. AESS UPDATE! It's Been 10 Years – Current Best Practices** *Terri Meyer Boake, University of Waterloo*	**29. Steel – Solution to Earthquake Resilience** *Dorian P. Tung, RJC Engineers*	**30. Structural Steel in Green Buildings: How to sell your EPD?** *Hugues Imbeault-Trétault, Groupe AGECO*

CISC TECHNICAL SESSIONS

Sessions will be delivered in English or French. Interpreters will be available for each session. The language of delivery is indicated in the session's title line.*

1 RECONSTRUCTING CHRISTCHURCH: A SEISMIC SHIFT IN BUILDING STRUCTURAL SYSTEMS *ENGLISH

Monday, September 30th | 10:00 a.m. - 11:00 a.m. | Room: Montréal 6-8 *0.1 CEU / 1.0 PDH*

Speaker: Michel Bruneau, Ph.D., P.Eng., University at Buffalo, NY

After the 2011 earthquake, much of downtown Christchurch was demolished and a new city has emerged in its place, with a variety of structural forms, an extensive amount of steel structures, and some more resilient structural systems. Data collected has made it possible to identify some of the drivers that have influenced decisions about the selection of structural material and systems used.

MICHEL BRUNEAU, PH.D., P.ENG., UNIVERSITY AT BUFFALO, NY

Speaker bio:

SUNY Distinguished Professor, Department of Civil, Structural and Environmental Engineering. Michel Bruneau has received several national awards and recognitions for his work on the design and behavior of steel structures subjected to earthquakes and blasts, and has recently been inducted as fellow of the Canadian Academy of Engineering. He is also an ASCE Fellow, an SEI Fellow, and a member of various AISC and CSA committees developing design specifications for bridges and buildings. He has conducted numerous reconnaissance visits to disaster-stricken areas and has served as Director of MCEER. He has also participated in various expert peer review panels, project advisory committees, and special project design teams

2 LEAN CONSTRUCTION *ENGLISH

Monday, September 30th | 10:00 a.m. - 11:00 a.m. | Room: St-Laurent 7 *0.1 CEU / 1.0 PDH*

Speaker: Louis Parent, P. Eng., MBA, PMP, SSLBB,
President, Builthink Consultants

The Canadian industry always innovate, and fabricators have benefited from Lean manufacturing to face some of its many challenges. From the architectural design concept through engineering, detailing, fabrication and installation. The presentation will show how Lean Construction principles can improve safety, quality and performance by increasing productivity.

LOUIS PARENT, P. ENG., MBA, PMP, SSLBB, PRESIDENT BUILTHINK CONSULTANTS

Speaker bio:

Louis Parent is the founder of Builthink, a firm that assists and advises construction industry stakeholders in project management, organizational performance and quality.

Louis has more than twenty years of experience in steel structure. From project manager, he rose through the ranks as general manager then V.-P. His professional background includes many achievements of commercial, industrial and even water park structures around the world. Among his greatest accomplishments, Louis was responsible for the design of one of North America's most advanced steel structure plants at JV Driver in Alberta.

Louis is a graduate engineer from the ÉTS in Construction Engineering, earned his MBA from the University of Alberta in International Business, is a PMP Certified Lean Six Sigma Black Belt.

3 SHOP APPLIED INTUMESCENT FIRE RESISTIVE MATERIAL (IFRM) THE LEADING SUPPLIER'S PERSPECTIVE *ENGLISH

Monday, September 30th | 10:00 a.m. - 11:00 a.m. | Room: St-Laurent 8

Speaker: Vadivelu Balasankar, Senior Fire Protection Engineer, Fire Engineering and Estimation Team, Sherwin-Williams Canada inc.

0.1 CEU / 1.0 PDH

FIRE is often devastating and sometimes catastrophic, sometimes fatal – above all else let's remember that this is a life safety issue. Sherwin-Williams created shop applied fireproofing technologies that gave the steel industry what it needed.

VADIVELU BALASANKAR, SENIOR FIRE PROTECTION ENGINEER, FIRE ENGINEERING AND ESTIMATION TEAM, SHERWIN-WILLIAMS CANADA INC.

Speaker bio:

Vadivelu Balasankar is a Mechanical Engineer and is currently working as a Senior Fire Protection Engineer for the Fire Engineering and Estimation Team at Sherwin-Williams Canada Inc. He is responsible for designing the thickness of intumescent fire resistive material in both commercial and oil & gas projects. He prepares the specification of fire-protection reports based on simple and complex calculations, as well as inputs from Building Information Modeling (BIM) software. Velu has more than 10 years of experience in the fireproofing industry.

4 STABILITY OF STEEL X-BRACING CONNECTIONS *ENGLISH

Monday, September 30th | *11:00 a.m. - 12:00 p.m. | Room: Montréal 6-8*

Speakers: Robert Tremblay, P.Eng., PH.D., Professor, Montreal Polytechnique & Alexandre Gélinas, P.Eng., M.SC.A., LEED AP BD+C, Structural Engineer, WSP Canada

0.1 CEU / 1.0 PDH

In Canada, the use of bolted connections are generally preferred for steel concentric X-bracing diagonals made of HSS profiles or double angles back-to-back. Experimental and numerical studies conducted at Polytechnique Montreal have shown that these connections are likely to buckle in compression and undergo a complete tensile rupture under the effect of a seismic event. The expected failure modes will be presented and discussed. Calculation methods will then be presented to predict the buckling strength of the connections in order to obtain adequate seismic behavior.

ROBERT TREMBLAY, P.ENG., PH.D., PROFESSEUR À L'ÉCOLE DE POLYTECHNIQUE MONTRÉAL

Speaker Bio:

Robert Tremblay is Professor of Structural Engineering and former Canada Research Chair in Earthquake Engineering at Polytechnique Montreal, Canada. Before undertaking his doctoral studies, Prof. Tremblay worked for 10 years in the industry. His current research activities are mainly directed towards the seismic design and response of steel structures for buildings and bridges, with focus on innovative structural systems for enhanced seismic performance. He is a member of the CSA-S16 Technical Committee on Structural Steel Design (Chair of the Work Group on Seismic Design), Standing Committee on Earthquake Design of the National Building Code of Canada, CSA-S6 Sub-Committee on Seismic Design of Bridge Structures, AISC Task Committee 9 on Seismic Design Provisions for Structural Steel Buildings, AISC Task Group on Industrial Buildings and Nonbuilding Structures, and the AISC Adhoc Task Group on Seismic Analysis 2020.

ALEXANDRE GÉLINAS, P.ENG., M.SC.A., LEED AP BD+C, STRUCTURAL ENGINEER, WSP

Speaker Bio:

Graduated of a bachelor's degree in civil engineering from Laval University (2011), a master's degree in structural and seismic engineering from École Polytechnique de Montréal (2013) and holding the LEED AP BD+C's credential (2018), Mr. Gélinas is working on various construction, rehabilitation and inspection projects as a structural engineer at WSP Canada at the Montreal's offices. Recently, he has been actively involved in the renovation's project of the iconic tower of the Montreal's Olympic Stadium. Since 2013, Mr. Gélinas is also a lecturer for the CIV3503 - Design of steel structure's course at École Polytechnique.

5 VIBRATION MITIGATION OF A REFINERY BUILDING *ENGLISH

Monday, September 30th | 11:00 a.m. - 12:00 p.m. | Room: St-Laurent 7

Speakers: Majid Maleki, Ph.D., P.Eng, Huirong Min, M.A.Sc., P.Eng, & Matthew Tonello, EIT, HATCH

0.1 CEU / 1.0 PDH

Vibratory equipment supported by steel structures require proper design to avoid resonance. Neglecting resonance can result in excessive vibratory response in a structure causing premature equipment failure, fatigue failure of steel members, and lost time for the client. This presentation focuses on a case study where 12 vibratory screens working within a close frequency range resulted in excessive vibrations in the steel structure of a refinery plant. Upon completing a thorough vibration measurement and structural dynamic assessment, a cost-effective solution was devised to isolate the vibration sources by implementing structural steel framing modifications to reduce the vibration across the plant.

MAJID MALEKI, PH.D., P.ENG, HATCH

Speaker Bio:

Majid has a Ph.D. degree in structural engineering with +15 years of experience in design and analysis of structures and equipment in the fields of oil & gas, mining and metal production. Majid has been involved in variety of design and fitness-for-service assessment of structures and foundations subject to both static and dynamic loads, off-shore equipment coming to contact with icebergs (soil-structure interaction), metalogical equipment and refractory lining at elevated temperature (pressure vessel thermo-mechanical analysis), stacks under seismic and wind load (vortex shedding analysis), heat-exchangers (fluid-structure interaction), sea transportation, etc. Majid is proficient in numerical simulation and material modelling using implicit and explicit finite element analysis as the main numerical tool in above fields.

HUIRONG MIN, M.A.SC., P.ENG, HATCH

Speaker Bio:

Huirong is a structural consultant with over 30 years of experience in the design of nuclear thermal/nuclear power plant structures, transmission and substation structures, mining, smelting and industrial structures. Huirong has extensive knowledge and experience in finite element analysis, structural dynamics, and seismic analysis/design for both nuclear and non-nuclear structures, systems, and components.

MATTHEW TONELLO, EIT, HATCH

Speaker Bio:

Matthew is recent graduate from the University of Waterloo and has been working with the structural engineering team at Hatch for the past two years. This keen, young engineer is ready to take on any tasks and challenges that are brought his way. In his short tenure at Hatch, he has been involved in multiple projects that involve the design of industrial steel structures, bridge load testing, finite element analysis, and vibrational analysis. Matthew looks forward to broadening his knowledge in the field of structural engineering by continuing to take on challenging design tasks under the mentorship of the experienced and diverse team of engineers at Hatch.

6 THE BUSINESS OF NON-DESTRUCTIVE TESTING FROM A MANAGEMENT PERSPECTIVE *ENGLISH

Monday, September 30th | 11:00 a.m. - 12:00 p.m. | Room: St-Laurent 8

Speaker: Bonnie Pankratz, President, AXIS Inspection Group Ltd. *0.1 CEU / 1.0 PDH*

Non-Destructive Testing is a complex topic. It is important for people to understand the basics to assist with appropriate cost estimation, project time movement, and fabrication scheduling. To understand Non-Destructive Testing, one must first learn the key terms and requirements, a task that can seem daunting by many. This presentation will help those who work with Fabrication by outlining the Canadian Code Requirements and key information regarding Inspection and Non-Destructive Testing (NDT). In addition, the types of NDT methods will be explained and an understanding of the purpose and application of each will be explored.

This presentation is for a general audience and will be delivered from a business management perspective. After attending this presentation everyone Engineers, Project Managers, Estimators, and Shop personnel will gain a better understanding of the purpose of Inspection and NDT in both the Quality Control and Quality Assurance applications.

Optional: Interactive Session: Download "Kahoot!" App

BONNIE PANKRATZ, PRESIDENT, AXIS INSPECTION GROUP LTD.

Speaker bio:

Bonnie Pankratz is the President and founder of AXIS Inspection Group Ltd, based in Winnipeg, Manitoba. Bonnie has over 20 years of experience in the industrial welding industry and has spent the past 15 focusing on Welding Inspection and Testing. Bonnie's experience includes business development and management with ASME, CSA and various Welding procedure and quality requirements, Industry Facility Maintenance Inspection planning and execution, Various Welding inspection and NDT methods and the implementation and maintenance of ISNET, COR Safety, ISO 9001 and other quality and safety requirements for industrial applications.

7 RAINIER SQUARE TOWER: FABRICATION TECHNIQUES AND CHALLENGES *ENGLISH

Monday, September 30th | 1:00 p.m. - 2:00 p.m. | Room: Montréal 6-8

Speaker: Kevin Guile, President, Supreme Group *0.1 CEU / 1.0 PDH*

A new revolutionary game-changer composite shear wall system has been introduced in the design and construction of tall buildings and is now being put into practice in constructing of Rainier Square Tower in the center of Seattle's retail district. The system comprises of two steel plates connected by steel spacing anchor rods with the cavity between the plates filled with concrete. Developed by MKA with in-kind support provided by Supreme Group, this cost-saving system provides faster and safer construction and schedule. This presentation will shed lights on the steel fabrication techniques used and challenges being faced with.

KEVIN GUILE, PRESIDENT, SUPREME GROUP

Speaker Bio:

Kevin Guile is the President at Supreme Group, where he leads a talented team of individuals in the steel industry, specifically in the areas of fabrication, modularization and erection including all facets of the project, from inception to completion.

Kevin has worked in the steel industry for over 25 years, garnering considerable experience from working with various departments within Supreme for the majority of those years. With his wealth of knowledge, he assists colleagues and clients in building innovative structures with a steel backbone, bringing their vision of majestic skylines to life across Canada and the U.S.

Kevin is a husband and father to three amazing children and spends his downtime with his family on their acreage near Spruce Grove, AB.

8 KÂHASINÎSKÂK FOOTBRIDGE - FROM VIBRATION CHALLENGES TO PARAMETRIC DESIGN *FRENCH

Monday, September 30th | 1:00 p.m. - 2:00 p.m. | Room: St-Laurent 7

Speakers: Pierre-Louis Cons ing. & Sébastien Côté ing., M.Ing, ARUP *0.1 CEU / 1.0 PDH*

The Kâhasinîskâk footbridge will open soon near Downtown Edmonton. The 60-metre-long through bridge is part of the new Valley Line Light Rail Transit. On each side of the orthotropic slab, two box girders feature weathering steel; their variable height helps improving the dynamic performance of the structure as well as the visual quality of the bridge. Still, due to stringent vibration requirements, the bridge had to be fixed at one abutment. A parametric optimization helped managing the complex geometry of the signature bridge, and the automation of the design process facilitated BIM integration.

PIERRE-LOUIS CONS ING., INGÉNIEUR SENIOR PONTS ET OUVRAGES D'ART, ARUP

Speaker bio:

Pierre-Louis joined Arup in January 2017 after working 5 years with COWI North America (formerly Buckland & Taylor). He graduated in 2011 from the EPFL, Swiss Institute of Technologies in Lausanne, with a Master's Degree in Structural Engineering.

During his career, Pierre-Louis has worked on a variety of bridge projects, including design and analysis of cable-stayed bridges, bridge inspections and more recently he was involved in the construction of the new Gerald Desmond cable-stayed bridge in Long Beach, California.

SÉBASTIEN CÔTÉ ING., M. ING INGÉNIEUR PONTS ET OUVRAGES D'ART, ARUP

Speaker bio:

Sebastien has worked for Arup for 5 years now. He graduated in 2017 from Polytechnique de Montreal with a Master's Degree in Project Management for the Construction Industry.

He has helped on the construction and the design of multiple bridges on the New Turcot Interchange project and followed the New Champlain bridge from the reference design phase to its construction. His most important involvement in bridges design has been the new Kâhasinîskâk footbridge in Edmonton.

9 CERTIFICATION OF EXISTING CRANE-SUPPORTING STEEL STRUCTURES *ENGLISH

Monday, September 30th | 1:00 p.m. - 2:00 p.m. | Room: St-Laurent 8

Speaker: Bob MacCrimmon, P.Eng, HATCH *0.1 CEU / 1.0 PDH*

There are several situations where, for instance, a change in use or compliance with regulations would warrant certification of a crane-supporting structure by a Professional Engineer.
Owners often consider upgrading overhead crane capacities and adding other types of lifting devices. Problems with crane operations may lead to an evaluation of the supporting structure.
The certification process often uncovers deficiencies not previously identified.
These scenarios could result in a need for modifications to the crane-supporting steel structure.
This presentation focuses on the above topics, offering strategies for evaluation, modification and rehabilitation.

BOB MACCRIMMON, P.ENG, HATCH

Speaker bio:

Bob is a Senior Civil/Structural Specialist with more than 35 years' experience in management, design and construction of a variety of work associated with the civil engineering profession and multi-discipline projects. His experience includes design of light and heavy buildings; crane carrying steel structures; site works; bridges; dry docks; and wharfs. He is a past member of the CSA committee that authors the Canadian Standard for Design of Steel Structures, a past member of the AIST subcommittee that authors the recommendations for design of steel mill buildings, a member of the AISC Task Group on Industrial Buildings and Non-Building Structures and co-author of several papers and a CISC sponsored Design Guide for Crane Supporting Steel Structures. Since 2009 he has been a lecturer on a cross-Canada course on design of steel industrial buildings, sponsored by the Canadian Institute of Steel Construction. For the Halifax Shipyard Modernization Project, Bob was the Principal Structural Engineer for the Assembly Hall and Ultra Hall buildings and foundations.

10 STEEL TARIFFS AND DUTIES *ENGLISH

Monday September 30th | 2:00 p.m. - 3:00 p.m. | Room: Montréal 6-8

Speaker: Ed Whalen, P.Eng., President & CEO, CISC *0.1 CEU / 1.0 PDH*

This presentation will provide an update on present and future steel related tariffs and duties and the potential impacts for the steel construction industry.

ED WHALEN, P.ENG. PRESIDENT & CEO, CANADIAN INSTITUTE OF STEEL CONSTRUCTION

Speaker bio:

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 34 years and is a passionate advocate for Canadian steel construction.

11 CURRENT AND UPCOMING CODE PROVISIONS FOR THE SEISMIC DESIGN OF STEEL STRUCTURES *ENGLISH

Monday, September 30 | 2:00 p.m. - 3:00 p.m. | Room: St-Laurent 7

Speaker: Dr. Robert Tremblay, École Polytechnique de Montréal *0.1 CEU / 1.0 PDH*

The presentation will provide an overview of the seismic design provisions of CSA S16-14 and NBC 2015 for steel seismic force resisting systems. The intended seismic response of the systems will be reviewed and changes to the design and detailing requirements will be highlighted. Modifications to the NBC 2020 and CSA S16-19 for seismic design will also be introduced, together with a brief presentation of innovative structural steel systems for enhanced performance.

DR. ROBERT TREMBLAY, ÉCOLE POLYTECHNIQUE DE MONTRÉAL

Speaker bio:

Robert Tremblay is Professor of Structural Engineering and former Canada Research Chair in Earthquake Engineering at Polytechnique Montreal, Canada. Before undertaking his doctoral studies, Prof. Tremblay worked for 10 years in the industry. His current research activities are mainly directed towards the seismic design and response of steel structures for buildings and bridges, with focus on innovative structural systems for enhanced seismic performance. He is a member of the CSA-S16 Technical Committee on Structural Steel Design (Chair of the Work Group on Seismic Design), Standing Committee on Earthquake Design of the National Building Code of Canada, CSA-S6 Sub-Committee on Seismic Design of Bridge Structures, AISC Task Committee 9 on Seismic Design Provisions for Structural Steel Buildings, AISC Task Group on Industrial Buildings and Nonbuilding Structures, and the AISC Adhoc Task Group on Seismic Analysis 2020.

12 STEEL STRUCTURAL CONNECTIONS - POINTS TO WATCH WHEN DESIGNING PROJECTS *FRENCH

Monday, September 30th | 2:00 p.m. - 3:00 p.m. | Room: St-Laurent 8

Speaker: Benoit Rancourt, Vice President, Conn-X Inc. *0.1 CEU / 1.0 PDH*

This presentation provides an opportunity to review various consideration when developing specifications and details on engineering plans.

- Beam support reactions (evenly distributed load vs. core shearing)
- Bolted/welded connections
- Rigid bracing and connections
- Costs associated with complex connections

Special attention will also be paid to seismic connections. Considerations and suggestions regarding structural elements and details will also be discussed.

BENOIT RANCOURT, VICE PRESIDENT, CONN-X INC.

Speaker bio:

Steel Structural Engineer and Vice President of Conn-X.

He spent 10 years as a project manager on several steel structure projects across North America. Over the past 20 years, he has specialized in steel construction and design. During this time, he has completed several assembly projects in Canada and the United States. He has extensive experience in all types of commercial, institutional and industrial buildings. He also has extensive expertise designing seismic connections.

Occasional lecturer for the Canadian Institute of Steel Construction and part-time professor at Ahuntsic College for the last 10 years.

University degree from the École de Technologie Supérieure and college diploma in architecture.

13 CIBC SQUARE: CONNECTING TORONTO WITH STEEL SOLUTIONS *ENGLISH

Monday September 30th | 3:30 p.m. - 4:30 p.m. | Room: Montréal 6-8

Speakers: Andrew Voth, Ph.D., P.Eng.,
Benoit Boulanger, M.A.Sc., P.Eng., Ing., & David Ruggiero, Ph.D., RJC Engineers

0.1 CEU / 1.0 PDH

A discussion of the innovative steel solutions employed in the design of CIBC Square in Toronto, a first-of-its-kind development integrating approximately 2.9 million square feet of office space, a transit terminal, a 1.4 acre elevated park above Canada's largest train station and pedestrian bridges to the surrounding area.

DAVID RUGGIERO, PH.D., RJC ENGINEERS

Speaker bio:

DAs a member of RJC's Toronto office, David applies the technical expertise gained as a researcher to the practical challenges of large scale construction projects. David's background includes international and local design experience and extensive investigation of the shear behaviour of reinforced concrete structures and seismic design and assessment of buildings. He is a frequent reviewer for the Journal of Earthquake Engineering and Engineering Structures.

BENOIT BOULANGER, M.A.SC., P.ENG., ING., RJC ENGINEERS

Speaker bio:

After completing is Bachelor and Masters at Université de Sherbrooke, Benoit joined RJC Engineers and its tall building group in Toronto. Having worked on numerous residential and commercial projects with significant technical challenges across Canada, he combined his earthquake engineering technical background with his hand-on design experience to advance RJC's lateral design procedures. In addition to CIBC Square, select projects Benoit has worked on include Calgary City Center, Toronto's Eglington Crosstown and Waterpark Place Phase III.

ANDREW VOTH, PH.D., P.ENG., RJC ENGINEERS

Speaker bio:

Andrew Voth is a structural engineer at RJC Engineers in Toronto specializing in design and performance of unique steel structures. He has gained local and international design experience working on a wide range of residential, retail, commercial, and entertainment structures including London's 20 Fenchurch Street office building, Square One Shopping Centre South and West Expansions and the Canadian Museum for Human Rights in Winnipeg. In addition to delivering the over one-acre elevated pedestrian park and adjoining pedestrian bridge as a part of the CIBC Square project, he is currently leading the design of the innovative 30 Bay Street Development in Toronto's south core area. Andrew received his doctorate from the University of Toronto with focus on the behavior and design of connections to round hollow structural sections. He has been a reviewer for the Journal of Constructional Steel Research and is currently an associate member of CSA S16 Design of Steel Structures – Standards Development Technical Committee.

14 OVERVIEW OF THE CLAUSE 27 OF CSA S16-14 FOR THE DESIGN OF SEISMIC CONNECTIONS *FRENCH

Monday, September 30th | 3:30 p.m. – 4:30 p.m. | Room: St-Laurent 7

Speaker: Elie St-Onge, ing., M.Sc. A, Structural Engineer, Hydro Québec *0.1 CEU / 1.0 PDH*

This session will overview the clause 27 of CSA S16-14 for the design of seismic connections. What information should the designer provides on his drawings for the detailer, for the design of connections under seismic loading. The intent of the session is to inform both designers and detailers about the design reality of both parties.

ELIE ST-ONGE, ING., M.SC. A, STRUCTURAL ENGINEER, HYDRO QUÉBEC

Speaker bio:

Graduated with a bachelor's degree in construction engineering from the École de technologie supérieure de Montréal (2006), and a master's degree in earthquake engineering at the École Polytechnique de Montréal (2012), Mr. St-Onge worked for several years for a steel fabricator as a frame and connection designer. In his career, he has designed several light commercial and industrial buildings. Today he works for Hydro-Québec as a seismic and steel structure specialist engineer. He supervises several construction and rehabilitation projects, including post-disaster building of substations, hydroelectric power stations, bridge of spillways, and crane structures. In recent years, he has designed a portion of the steel structure of the new Romaine 4 hydroelectric power station. Mr. St-Onge is known for his rigour, his technical knowledge and his dedication for the steel industry.

15 HOW AND WHY USE THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL *ENGLISH

Monday, September 30th | 3:30 p.m. - 4:30 p.m. | Room: St-Laurent 8

Speaker: Hellen Christodoulou, PH.D., P.Eng., B.C.L., LL.B., M.B.A., CISC *0.1 CEU / 1.0 PDH*

The CISC Code of Standard Practice for Structural Steel is a compilation of usual industry practices relating to the design, fabrication and erection of structural steel.

The presentation summarizes the duties and obligations of stakeholders, illustrating the critical importance of the Code, its application and use to prevent and/or resolve project disputes.

HELLEN CHRISTODOULOU, PH.D., P.ENG., B.C.L., LL.B., M.B.A. QUEBEC REGION MANAGER, CANADIAN INSTITUTE OF STEEL CONSTRUCTION CISC-ICCA

Speaker bio:

Dr. Hellen Christodoulou brings over 35 years of experience in bridges and major bridge structures across Canada and the US, in the conceptualization, design, rehabilitation and supervision of major bridge projects, superstructure and infrastructure design. She is considered a leading court expert in the field of forensic analysis of bridge and large infrastructure projects.

Dr. Christodoulou holds a PhD in Civil Engineering with specialization in bridges, degrees in civil and common law and a master's in business administration. She is currently the Quebec Region Manager for the Canadian Steel Construction Institute and is an active member of several technical and industry committees for setting industry standards and updating of codes used for design.

The Senate Sesquicentennial Medal was conferred to Dr. Hellen Christodoulou, in commemoration of the hundred and fiftieth anniversary of the Senate of Canada and in recognition to her valuable service to the nation, by Senator Rosa Galvez.

16 HSS TRUSS CONNECTIONS: THE T'S, Y'S AND K'S OF IT ALL *ENGLISH

Tuesday, October 1st | 10:00 a.m. - 11:00 a.m. | Room: Montréal 6-8

Speaker: Brad Fletcher, S.E., senior sales engineer, Atlas Tube *0.1 CEU / 1.0 PDH*

The joints and connections of HSS members in trusses can be a cause of confusion during design and of unneeded costs during fabrication. This presentation will share some simple rules of thumb to follow to avoid the common pitfalls of HSS truss design.

BRAD FLETCHER, S.E., SENIOR SALES ENGINEER, ATLAS TUBE

Speaker bio:

Brad Fletcher, S.E., is the senior sales engineer at Atlas Tube. In this role, Brad leverages his 28 years of experience in engineering design and the steel industry to provide technical expertise on the use of steel hollow structural sections (HSS) to design engineers 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 fourteen years, Brad has focused his efforts on serving as a liaison between structural designers and the steel industry.

Brad holds a BSCE and MSCE from Purdue University. He is active in many industry groups, including AISC, CISC, CSA, STI and ASTM International.

17 SEISMIC ASSESSMENT AND RETROFIT OF BRACED FRAME BUILDINGS *ENGLISH

Tuesday, October 1st | 10:00 a.m. - 11:00 a.m. | Room: St-Laurent 7

Speaker: Dr. Lucia Tirca, PH.D. *0.1 CEU / 1.0 PDH*

Prior to 1990, various definitions of seismic demand were provided in building code editions and design approaches released in steel design standards were not capacity-based. Thus, the pre-1990 building stock is prone to exhibit severe seismic damage due to lack of lateral resistance and ductility. Recent research and seismic retrofit design examples of braced frame buildings are presented.

DR. LUCIA TIRCA, PH.D.

Speaker bio:

Dr. Lucia Tirca joined the Department of Building, Civil, and Environmental Engineering at Concordia University in 2008 after she pursued post-doctoral work at Polytechnique Montreal and five years of professional practice in consulting companies in Montreal. Her main research interest is related to seismic design of steel building structures, assessment of structures, and retrofit design. Her work focuses on developing innovative earthquake resistant systems and detailed numerical models able to capture the failure mechanism. Current research topics include the development of building vulnerability curves for life-cycle cost using data from fragility analysis. She participated in post-earthquake investigations in Italy (2012) and New Zealand (2016). She is an active member of "Centre d'études interuniversitaires sur les structures sous charges extremes" (CEISCE), a member of SEI-ASCE Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems and a member of International Advisory Committee at STESSA conference.

18 INDUSTRY 4.0 BY FICEP *ENGLISH

Tuesday, October 1st | 10:00 a.m. - 11:00 a.m. | Room: St-Laurent 8

Speakers: Filippo Gremese & Didier Bonnet, FICEP *0.1 CEU / 1.0 PDH*

In this presentation, FICEP GROUP, the principal supplier of CNC machines and software for steel fabrication in the world market will showcase that it is ready for Industry 4.0. This current trend of automation and data exchange in manufacturing technologies includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the fourth industrial revolution.

FILIPPO GREMESE, EXECUTIVE VICE PRESIDENT, FICEP CORPORATION

Speaker bio:

Master Degree in Engineering Management
Executive Manager with 15 years of experience in reinforcement and structural steel business domains for diversified markets with prominent international background in: Sales Management, Business Development, Projects Management, Operations Management

DIDIER BONNET, PRESIDENT, STEEL PROJECTS - FICEP SOFTWARE DIVISION

Speaker bio:

Engineer from ECAM engineering school
Executive manager with 26 years of experience in production management software development, including 11 years in structural steel business worldwide with background in: Structural steel production management, Software design and development, Projects management, Operations and sales management

19 STRUCTURAL DESIGN OF THE GERBER GIRDER CANTILEVER SYSTEM – FILLING IN THE KNOWLEDGE GAP *ENGLISH

Tuesday, October 1st | 11:00 a.m. - 12:00 p.m. | Room: Montréal 6-8

Speaker: Andy Metten, P.Eng., Struct.Eng., Partner: Bush, Bohlman & Partners LLP *0.1 CEU / 1.0 PDH*

The Gerber Girder cantilever system is a popular roof design system for steel buildings in Canada. The system produces material savings and reduces deflections and is popular for the design of roofs in many big-box retail stores. With cantilever girders the system has stability issues that are not present in roof framing systems containing only simple span members. The talk presents simple ways of looking at and addressing the stability issues in design and how the important knowledge of this system design is now being passed on and how S16-19 will include provisions to cover Gerber framing system.

ANDY METTEN, P.ENG., STRUCT.ENG., PARTNER: BUSH, BOHLMAN & PARTNERS LLP

Speaker bio:

Andy Metten a practising structural engineer and partner in the Vancouver-based structural engineering firm of Bush, Bohlman & Partners LLP. Over the past 35 years, he has been the design engineer on several buildings and bridges, including the Vancouver International Airport and the U.S. Terminal in Nassau, Bahamas and the Skytrain Fraser River crossing at New Westminster. Andy is still closely involved in day-to-day design of structures from conceptual design through field services. Andy Metten has practised structural engineering since graduation from the University of British Columbia with a bachelor's degrees in Civil Engineering in 1978 and a master's degree in structural engineering in 1981. He is currently a member of the Standing Committee for Seismic Design for the National Building Code of Canada and a member of the S16 structural steel design committee for Canada. Since 2002, he has also taught an evening structural steel design course offered by the Structural Engineers Association of BC (SEABC) the notes from that course have now evolved into the textbook Structural Steel for Canadian Buildings which is used by both EIT's and an undergraduate textbook at several universities

20 WHY IS STEEL CERTIFICATION ESSENTIAL? WHY SHOULD IT BE CONSIDERED MANDATORY? *ENGLISH

Tuesday, October 1st | 11:00 a.m. - 12:00 p.m. | Room: St-Laurent 7

Speaker: Hellen Christodoulou, PH.D., P.Eng., B.C.L., LL.B., M.B.A., CISC *0.1 CEU / 1.0 PDH*

The CISC-ICCA "Steel Bridge Certification Standard, 3rd Edition, for Complex Steel Bridges and Simple Steel Bridges" and the "Steel Structures Certification" are standards that address the special processes and specific requirements of steel fabrication for quality of the steel fabrication industry. Mandatory certification ensures compliance with Codes and Standards and guarantees the
best overall return of $ value for projects.

HELLEN CHRISTODOULOU, PH.D., P.ENG., B.C.L., LL.B., M.B.A. QUEBEC REGION MANAGER, CANADIAN INSTITUTE OF STEEL CONSTRUCTION CISC-ICCA

Speaker bio:

Dr. Hellen Christodoulou brings over 35 years of experience in bridges and major bridge structures across Canada and the US, in the conceptualization, design, rehabilitation and supervision of major bridge projects, superstructure and infrastructure design. She is considered a leading court expert in the field of forensic analysis of bridge and large infrastructure projects.

Dr. Christodoulou holds a PhD in Civil Engineering with specialization in bridges, degrees in civil and common law and a master's in business administration. She is currently the Quebec Region Manager for the Canadian Steel Construction Institute and is an active member of several technical and industry committees for setting industry standards and updating of codes used for design.

The Senate Sesquicentennial Medal was conferred to Dr. Hellen Christodoulou, in commemoration of the hundred and fiftieth anniversary of the Senate of Canada and in recognition to her valuable service to the nation, by Senator Rosa Galvez.

21 GRAITEC SOLUTIONS FOR FINITE ELEMENT STEEL AND CONNECTION ANALYSIS AND DESIGN: BREAK THE LIMITS OF HAND-CALCULATIONS WITH CBFEM-BASED TOOLS *ENGLISH

Tuesday, October 1st | 11:00 a.m. - 12:00 p.m. | Room: St-Laurent 8

Speaker: Farshad Pourshargh Local Product Manager Graitec Canada *0.1 CEU / 1.0 PDH*

There is a growing divergence in tools used for structural design and code-check of steel structures. For frame elements (i.e. global models of structures), adoption of finite elements has been wide and successful. For steel connections and joints, on the other hand, toolkit of an engineer or fabricator is still predominantly based on hand-calculations following templated examples from design handbooks.
In this presentation, we will investigate available solutions provided by Graitec to engineers, their drawbacks and benefits and demonstrate them on practical examples. Special focus will be paid to Graitec Advance Design for General FE analysis and Component-based Finite Element Method (CBFEM), also we will present Advance design Connection software enabling thousands of engineers to break the limits of steel members and connection design.

FARSHAD POURSHARGH, LOCAL PRODUCT MANAGER, GRAITEC CANADA

Speaker bio:

Mr. Pourshargh joined GRAITEC family in September 2015 as a Senior Structural Engineering Application Specialist. His duties included technical consultations and solutions on modeling and design of different types of structures for structural engineering firms and contractors in North America who use GRAITEC Solutions. He also monitors the new updates for the associated and relevant structural design codes and standards to be incorporated in software.
Before 2015, Mr. Pourshargh worked in Structural Engineering industry for Canadian, French, Malaysian and Iranian consulting offices. He is now on the final stages of Ph.D. degree from Sherbrooke University. His thesis was about: “Non-linear analysis and modelling of transmission line structures”.
He also has several years of training and field supervision on Civil engineering. Mr. Pourshargh won several awards and scholarships including the scholarship from Research chair Hydro Quebec-RTE and MITACS Accelerate. Currently, he is the Local Product Manager for the Structural Engineering Solutions of GRAITEC in North America.

22 THE AMAZING GRACE OF STEEL *ENGLISH

Tuesday, October 1st | 1:00 p.m. - 2:00 p.m. | Room: Montreal 6-8

Speaker: Rob Third, President, George Third & Son, Burnaby, BC *0.1 CEU / 1.0 PDH*

Canadian steel fabricators have always stood out for their ingenuity and passion in building structures and art displays that push the boundaries. This presentation will showcase the most remarkable and innovative architectural structures that Canadian fabricators have built in steel in the recent years.

ROB THIRD, PRESIDENT, GEORGE THIRD & SON, BURNABY, BC

Speaker Bio:

Rob has over 30 years of steel construction experience.
The close links Rob's has established with personnel within the steel construction community has allowed him to leverage his many years of experience in design, project management and construction, with proven manufacturing capabilities existing in-house at George Third and Son. Rob's industry connections have open doors to facilitate Joint Venture partnerships with some of the largest steel fabricators in North America.

He is past Chairman of the Canadian Institute of Steel Construction (CISC), past Member of the CISC Board of Directors, past Chairman of the Steel Structures Education Foundation, past Member of the Board of Directors for the Canadian Welding Bureau and past Chair and Honorary Board Member of the Endeavour Charity Society.

23 CONSTRUCTION SCHEDULING & DELAY CLAIMS SEMINAR – WHEN "LEFT HOLDING THE BAG" IS NOT THE BEST PRACTICE, WSP CANADA *ENGLISH

Tuesday, October 1st | 1:00 p.m. - 2:00 p.m. | Room: St-Laurent 7

Speaker: Dan Leduc, Partner Norton Rose Fulbright

0.1 CEU / 1.0 PDH

Even the best detailed and competitive bid, perfect execution plan and excellent management of a project can lead to a loss because of unanticipated delay, productivity, cumulative impact or acceleration.

As in any claim, it is not simply a matter of developing a list of changes and work disruptions. The contractor must show how the changes caused the greater impact and disruption. Problems of proof and quantification are formidable ones. Notice is always kept in deciding when and how to provide notice is critical.

This presentation will take you through an introduction as to when you might want to consider advancing such a claim and how to take those initial steps, including what to look for any claims consultant and from your lawyer, as well as being on the receiving end of such a claim.

DAN LEDUC, PARTNER, NORTON ROSE FULBRIGHT

Speaker Bio:

Dan Leduc practices primarily construction law and dispute resolution. He is frequently called upon to advise and represent owners, subcontractors, suppliers and builders in such front-end services as contract review, tender issues and general construction matters, as well as in litigation and arbitration.

Mr. Leduc specializes in negotiating, mediating, arbitrating and litigating construction disputes including construction liens, trust claims, delay claims, construction insurance claims, and architect's and 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. Mr. Leduc also has experience in surety bonding claims on construction projects, including performance bond claims and labour and material payment bond claims, and managing cases involving large volumes of documents, at times in excess of 300,000 documents.

Mr. Leduc is also an advocate of and makes every effort to employ Lean Sigma Six principles in his practice and with clients.

24 NEW ZINC-RICH PRIMERS FOR HIGH CORROSION RESISTANCE AND HIGH PRODUCTIVITY TRADITION AND INNOVATION FROM CARBOLINE *ENGLISH

Tuesday, October 1st | 1:00 p.m. - 2:00 p.m. | Room: St-Laurent 8

0.1 CEU / 1.0 PDH

Speaker: Pedro Escudero, B.,Eng., M.B.A., PCS, NACE CIP-3, Senior Engineer, Coatings/Fireproofing Carboline Canada

Modern zinc-rich primers, both inorganic and organic, are formulated to provide the high corrosion resistance to steel that zinc primers are known for, while overcoming the application challenges that are associated with applying zinc primers in a steel shop. Features such as Quick Re-Coat for fast shop throughput, Class B Ratings for Slip Critical connections and Two Component formulations for ease of handling are options now available to the specifier and fabricator. This presentation will review the key features of SSPC's Paint 20, Zinc Rich Primers, and explore newer formulations that make the use of high performance, zinc-rich based coating systems more in-line with the demands of today's steel industry.

PEDRO ESCUDERO, B.,ENG., M.B.A., PCS, NACE CIP-3, SENIOR ENGINEER, COATINGS/FIREPROOFING CARBOLINE CANADA

Speaker Bio:

Pedro is a Structural Engineering graduate who completed his MBA at Queen's University after his arrival in Canada. Throughout his more than 21 years with Carboline, he has been part of many projects where large steel structures have been coated and/or fireproofed to withstand corrosive and industrial hazardous environments. A significant amount of Pedro's time is spent training and educating colleagues and the architectural and engineering community on corrosion, coatings and fireproofing. With his wife Edith, they have raised three children, all proud Queen's graduates, and enjoy interacting with their eight grandchildren.

25 STEEL JOIST & DECK IN COMPOSITE FLOOR SYSTEM – SOLUTIONS FOR MULTISTORY CONSTRUCTION *ENGLISH

Tuesday, October 1st | 2:00 p.m. - 3:00 p.m. | Room: Montréal 6-8

Speakers: Suresh Jacob, P.Eng, & Dustin Gravelle, P.Eng, Nucor Vulcraft

0.1 CEU / 1.0 PDH

This session aims to highlight the construction advantages, cost and time savings of building composite floor with poured concrete on steel deck. It will touch upon the design and behavior, as well as selection and specifications of open web steel joist and deck in composite floor construction.

SURESH JACOB, P.ENG, NUCOR VULCRAFT

Speaker Bio:

Suresh has held Engineering and Management positions in manufacturing and construction related industries for over 35 years. His career has taken him across Europe, Middle East, Asia and North America, setting up and building engineering, manufacturing and construction related businesses. He has been in North American steel Joist and Deck industry for over 15 years. The last 7 years has been with Nucor Vulcraft, during which he has been instrumental in setting up and developing their Canadian operations. He is currently occupied with business development, technical marketing, training and special projects. In addition to his professional engineering status attained in 2005, he is also a Certified Welding Engineer.

DUSTIN GRAVELLE, P.ENG, NUCOR VULCRAFT

Speaker Bio:

Dustin joined the team at Nucor Vulcraft, Canada in 2018 as Engineering Supervisor. He previously held the position as Technical Lead at a consulting firm in London, Ontario, and as a connection designer at a structural steel fabrication company in the Greater Toronto Area. Dustin joins the team with an extensive background in the fabrication and construction of steel structures. He is currently involved with the technical design and analysis of roof and floor joists for all types of building projects. Other day-to-day responsibilities include on-site assessments, report writing, quality control, and team management. Dustin obtained a Bachelor's of Engineering Science from the University of Western Ontario in 2007.

26 AN OVERVIEW OF ULTRASONIC TESTING OF STRUCTURAL STEEL WELDS IN CANADIAN INDUSTRY * ENGLISH

Tuesday, October 1st | 2:00 p.m. - 3:00 p.m. | Room: St-Laurent 7

Speaker: Paul Holloway, President, Holloway NDT & Engineering Inc. *0.1 CEU / 1.0 PDH*

Recent changes to CSA W59-18 now permit use of a DAC/TCG which is commonly accepted in many other codes used worldwide. As well, phased array ultrasonic testing is now accepted in the code for manual scanning which provides improved defect imaging and discrimination.

PAUL HOLLOWAY, PRESIDENT, HOLLOWAY NDT & ENGINEERING INC.

Speaker bio:

Paul Holloway is a Professional Engineer in Ontario. He is certified CGSB UT3, MT2, PCN PAUT Level 2 and CSA W178.2 Level 2. He is the President of Holloway NDT & Engineering Inc., a company specializing in ultrasonic testing field services, NDT training and consulting, and Mechanical Engineering services. Industries served include offshore petrochemical, power generation, chemical, construction, manufacturing, automotive and aerospace sectors. He received his Master of Applied Science degree in Mechanical Engineering from the University in Waterloo in 2004. He is also an active member of the CSA W59 committee. Paul drinks Starbucks French Roast, black.

27 OVERVIEW OF THE DUCTILE MT-BF DESIGN AS PER CSA S16-14 *FRENCH

Tuesday, October 1st | 2:00 p.m. - 3:00 p.m. | Room: St-Laurent 8

Speaker: Elie St-Onge, P.Eng, M.Sc. A, Structural Engineer, Hydro Québec *0.1 CEU / 1.0 PDH*

This session will overview the new provisions for ductile steel multi-tiered concentrically braced frames (MT-BF) in which braces meet at columns between diaphragms. First introduced in CSA S16-09 for Limit ductility (LD) only, now CSA S16-14 extended MT-BF for Type MD also. The presentation goal is to introduce Engineers to the design of ductile MT-BF, as per CSA S16-14.

ELIE ST-ONGE, P.ENG, M.SC. A, STRUCTURAL ENGINEER, HYDRO QUÉBEC

Speaker bio:

Graduated with a bachelor's degree in construction engineering from the École de technologie supérieure de Montréal (2006), and a master's degree in earthquake engineering at the École Polytechnique de Montréal (2012), Mr. St-Onge worked for several years for a steel fabricator as a frame and connection designer. In his career, he has designed several light commercial and industrial buildings. Today he works for Hydro-Québec as a seismic and steel structure specialist engineer. He supervises several construction and rehabilitation projects, including post-disaster building of substations, hydroelectric power stations, bridge of spillways, and crane structures. In recent years, he has designed a portion of the steel structure of the new Romaine 4 hydroelectric power station. Mr. St-Onge is known for his rigour, his technical knowledge and his dedication for the steel industry.

28 AESS UPDATE! IT'S BEEN 10 YEARS – CURRENT BEST PRACTICES *ENGLISH

Tuesday, October 1st | 3:30 p.m. - 4:30 p.m. | Room: Montréal 6-8

Speaker: Terri Meyer Boake, B.E.S., B.Arch., M.Arch., LEED AP *0.1 CEU / 1.0 PDH*

It has been 10 years since CISC launched the "new" suite of AESS documents. This presentation aims to bring a concise and highly visual update to what are now considered best practices to apply AESS to projects. The presentation will provide a brief overview of "the system" and place focus on connection detailing, in particular approaches to splices and field connections as they merge aesthetic considerations with issues of erection. The central AESS dilemma, the one that started this entire conversation – "to grind or not to grind (welds)" will be addressed. Innovative discreet and hidden connections can provide an effective alternate to excessive field welded splices.

TERRI MEYER BOAKE, B.E.S., B.ARCH., M.ARCH., LEED AP

Speaker Bio:

Terri Meyer Boake B.E.S., B.Arch., M.Arch., LEED AP is a Full Professor at the School of Architecture at the University of Waterloo in Canada. She has been teaching building construction, structures, environmental design and film since 1986. She works with CISC, ACSA and AISC developing teaching resources for Architectural education specializing in AESS. She assisted CISC in producing the "Guide for Specifying AESS". She has published three books for Birkhäuser: "Understanding Steel Design: An Architectural Design Manual" (2012), "Diagrid Structures: Systems, Connections, Details" (2014) and "Architecturally Exposed Structural Steel: Specifications, Connections, Details" (2015). "Complex Steel Structures: Non Orthogonal Geometries in Building with Steel" will be published in 2019. She is a board member with the Council on Tall Buildings and Urban Habitat and the CISC Education and Research Council. She is an avid photographer, documenting construction processes and completed buildings.

29 STEEL – SOLUTION TO EARTHQUAKE RESILIENCE *ENGLISH

Tuesday, October 1st | 3:30 p.m. - 4:30 p.m. | Room: St-Laurent 7

Speaker bio: Dorian P. Tung, PhD, PE, LEED®AP BD+C, RJC Engineers, Vancouver, Canada *0.1 CEU / 1.0 PDH*

There is no doubt that steel construction is fast and sustainable. When it comes to post-earthquake recovery, steel structures can be resilient. This is attributed to the stable and controllable behaviour of steel when properly designed and detailed. To promote the use of steel, an energy-based design procedure is presented. This procedure expedites the design process and is suitable for consulting offices. It is also applicable to retrofit structures with steel allowing designers to incorporate innovative steel technologies. A variety of structural steel projects is presented to illustrate the use of the design procedure to achieve earthquake resilience.

Outline

- Discussion of steel as structural fuses in the context of earthquake engineering
- Introduction of equivalent energy design procedure (EEDP)
- Illustration of EEDP for earthquake resilient fused structures via example steel projects
- Application of EEDP to retrofit existing structures
- Illustration of EEDP retrofit via example projects

DORIAN P. TUNG, PHD, PE, LEED®AP BD+C
RJC ENGINEERS, VANCOUVER, CANADA

Speaker bio:

Dr. Dorian Tung is currently working at RJC in Vancouver as a structural consultant specializing in performance-based earthquake engineering. He obtained his Ph.D. in Structural and Earthquake Engineering from the University of British Columbia in 2017. His thesis focuses on developing earthquake resilient structural steel components and systems. He has expertise in numerical simulations and experimental testing, and has written many papers on the related topics. Prior to returning to school for his Ph.D., Dorian practiced in the States of Florida and Texas for 9 years, and is a certified LEED AP. He has designed many LEED certified steel structures over his career.

30 STRUCTURAL STEEL IN GREEN BUILDINGS: HOW TO SELL YOUR EPD? *ENGLISH

Tuesday, October 1st | 3:30 p.m. - 4:30 p.m. | Room: St-Laurent 8

Speaker: Hugues Imbeault-Tétreault, P.Eng., M.Sc.A., , Groupe AGECO *0.1 CEU / 1.0 PDH*

The Canadian structural steel fabricators who participated to the CISC environmental product declarations (EPDs) have access to several green building projects since EPDs are recognized by green building certifications, such as LEED. Come learn how to sell the EPDs to building professionals and be part of green building projects.

HUGUES IMBEAULT-TÉTREAULT, P.ENG., M.SC.A., GROUPE AGECO

Speaker bio:

Hugues Imbeault-Tétreault joined Groupe AGECO in 2018 as a senior analyst. An engineer physicist by training, he earned a master's degree from the International Reference Centre for the Life Cycle of Products, Processes and Services (CIRAIG), Polytechnique Montreal (Canada). He then worked as an LCA analyst for over six years and acquired extensive expertise in environmental life cycle assessment (LCA). He conducted and participated in more than 15 LCA projects in several sectors including construction products, packaging, wood products, pulp and paper, chemistry and automotive products.

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