

NASCC: THE **VIRTUAL** STEEL CONFERENCE

schedule-at-a-glance

Tuesday, April 21

9:30 – 10:30 a.m.	L1	Change Orders: How to Avoid Making Their Problems Your Problems	Legal	1.0 hours
	O10	Raising the Standard: An Inside Look at AISC Committees and Standards Development	Connections	
	Y6	Listen Up: Sound Isolation and Noise Control in Steel Buildings	Constructability	
11:00 a.m. – noon	O4	Delegating Connection Design	Connections	1.0 hours
	P1	Your <i>Code of Standard Practice</i> —A Fabricator's Perspective	Code	
	Y13	Serviceability Considerations for the Practicing Engineer	Constructability	
	Z7	Don't Be Scared! Learn How to Manage Conflict	Business	
1:30 – 3:00 p.m.	E3	Designing Built-Up Flexural Members	Design Analysis	1.5 hours
	L3	The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?	Legal	
	Y2	Best Practices for Steel Joist, Joist Girder, and Steel Deck Construction	Constructability	
3:30 – 4:30 p.m.	T8	Managing the Legal and Practice Issues of Building Information Modeling (BIM)	Technology	1.0 hours
	U4	Design of Building Structures with Fluid Viscous Dampers for Seismic Energy Dissipation using ASCE 7 Alternative Procedures	Seismic	
	Y10	Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications	Constructability	
	Z6	Understand Your Assets as a Manager	Business	

Wednesday, April 22

9:30 – 10:30 a.m.	A4	Performance-Based Structural Fire Engineering for Steel Buildings	Architecture	1.0 hours
	O5	Strategies for Managing Projects with Delegated Design	Connections	
	P2	Your <i>Code of Standard Practice</i> —An Engineer's Perspective	Code	
	Z5	Strengthen Your Impact as a People Manager	Business	
11:00 a.m. – noon	A5	Architecturally EXPOSED! From High-Tech Architecture to Today's Best Practices in Architecturally Exposed Structural Steel	Architecture	1.0 hours
	B2	Get to Know the NSBA Designer Resources for Faster Results	WSBS	
	P3	Your <i>Code of Standard Practice</i> —An Erector's Perspective	Code	
	Y11	Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them	Constructability	
1:30 – 3:00 p.m.	A3	Sustained in Steel	Architecture	1.5 hours
	B3	Lions, and Tigers, and Bearings, Oh My!	WSBS	
	E4	Fast and Efficient Design for Stability	Design Analysis	
	L5	COVID-19: Your Construction Contract and Insurance Questions Answered!	Legal	
3:30 – 4:30 p.m.	A6	Working With New Materials and New Techniques	Architecture	1.0 hours
	B4	New and Proposed Changes to the Bridge Welding Code	WSBS	
	Z15	The Construction Marketplace during COVID-19: Opportunities and Challenges	Business	

schedule-at-a-glance

Thursday, April 23

9:30 – 10:30 a.m.	A11	Innovations in Steel for Architects	Architecture	1.0 hours
	B7	Pricing Study of Recently Constructed Steel and Concrete Bridges	WSBS	
	T9	Cyber Threats in the Construction Industry	Technology	
11:00 a.m. – noon	B11	Railroad Bridges: A Unique Experience	WSBS	1.0 hours
	C5	A Tale of Two Cities: Assessment of Existing Iron and Steel Structures	Case Study	
	T10	New Technology, Existing Spaces	Technology	
1:30 – 3:00 p.m.	B16	Redundancy of Steel Bridges	WSBS	1.5 hours
	O3	WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors	Connections	
	Y7	Is This Floor Moving? Vibration Analysis of Steel Joist Concrete Slab Floors	Constructability	
	Z4	Effectively Influence Others to Optimize Results	Business	
3:30 – 4:30 p.m.	B12	Design and Construction Challenges of the Governor Mario M. Cuomo Bridge Replacement of the Iconic Tappan Zee Bridge	WSBS	1.0 hours
	Q1	Answers to your AISC Certification Questions	QualityCon	
	Z8	Negotiating with Confidence	Business	

Friday, April 24

9:30 – 10:30 a.m.	B18	Complex Steel Bridge Load Rating	WSBS	1.0 hours
	E10	A Primer on Lateral Load-Resisting Frames Using Steel Joists and Joist Girders	Design Analysis	
	Q14	How To: A Paint Primer	QualityCon	
11:00 a.m. – noon	B22	The Latest Research on Shear Connector Placement in Bridge Design	WSBS	1.0 hours
	E13	Resistance and Resilience of Composite Floor Systems to Fire: Experiments, Modeling, and Design	Design Analysis	
	R4	Advances in Erection Engineering for High-Rise Steel Structures	Erection	
	W4	The <i>Code of Standard Practice for Steel Buildings and Bridges</i> as a Handbook for Project Management	Project Management	
1:30 – 3:00 p.m.	B27	Fatigue of Welded Connections	WSBS	1.5 hours
	O8	Solving the Puzzle of Delegated Connection Design	Connections	
	U5	AISC Research: Understanding and Improving the Seismic Performance of Chevron Configured Special Concentrically Braced Frames	Seismic	
3:30 – 4:30 p.m.	B25	Current Information on Constraint-Induced Fractures and Intersecting Welds	WSBS	1.0 hours
	O13	Economic Design of SMF Connection Continuity Plate Welds	Connections	
	R5	Design Guide 10: <i>Erection Bracing of Low-Rise Structural Steel Buildings</i>	Erection	

Tuesday, April 21

9:30 – 10:30 a.m. CDT

Raising the Standard: An Inside Look at AISC Committees and Standards Development

O10 1.0 PDHs

Speaker: Jonathan Tavarez, AISC

Engineers rely on the AISC *Specification* contained within the *Steel Construction Manual* every day to design safe and reliable structures, but most are not aware of how this and other AISC standards are developed. Take a behind-the-scenes look at the inner workings of how AISC staff and the many industry expert volunteers develop the standards that ensure structural steel designs are economical and safe for the world's challenges ahead. Learn about the process that must be followed to develop and maintain these standards, how the structural steel industry and engineering community participate in this process through committees, and how you can get involved and play a role in the future of structural steel design. *Connections*

Change Orders: How to Avoid Making Their Problems Your Problems

L1 1.0 PDHs

Speaker: George Pallas, Cohen Seglias Pallas Greenhall & Furman PC

Learn how to avoid problems when preparing, negotiating, and accepting changes on a project as contract experts discuss the general application of law to change order negotiation and acceptance and explain the rights, remedies, and protocol when confronted with work not contemplated in a contract. *Legal*

Listen Up: Sound Isolation and Noise Control in Steel Buildings

Y6 1.0 PDHs/LU/HSW

Speaker: Robert Connick, Acentech

Fact or fiction: Steel-framed buildings transmit more sound than those made of other common building materials. Debunk the myths. We'll give you a deep dive into AISC's Design Guide 30, *Sound Isolation and Noise Control in Steel Buildings*. *Constructability*

11:00 a.m. – noon CDT

Delegating Connection Design

O4 1.0 PDHs

Speaker: Cliff Schwinger, The Harman Group

The cost of connections is a significant percentage of the total cost of steel-framed structures. This practical session reviews how designers can efficiently delegate connection design in a manner that saves time, reduces costs and RFIs, and conforms with the requirements of the *Code of Standard Practice for Steel Buildings and Bridges*. We'll highlight tips, guidelines, suggestions, and examples to provide designers of all levels of experience with a better understanding of how to properly delegate connection design for the best possible results. *Connections*

Serviceability Considerations for the Practicing Engineer

Y13 1.0 PDHs

Speaker: Emily Guglielmo, Martin/Martin

This session will provide practical information and design examples to evaluate the serviceability performance of buildings against requirements of the *IBC* and *ASCE 7*. It will provide detailed explanations and examples of applications of code provisions and standards specific to steel material, building systems, and building components. The session will also discuss the ways the codes currently address serviceability and how future versions of the *Code* may be adapting serviceability requirements. *Constructability*

Your Code of Standard Practice—A Fabricator's Perspective

P1 1.0 PDHs

Speaker: Scott Armbrust, LeJeune Steel Co.

The AISC *Code of Standard Practice for Steel Buildings and Bridges* has been an essential document in steel construction for buildings and bridges since 1924. We've created a review of the significant provisions that are particularly crucial for fabricators. Join us to cover topics such as contract document requirements, revisions, connection design, approvals, fabrication tolerances, quality control, and AESS. *Code of Standard Practice*

Don't Be Scared! Learn How to Manage Conflict

Z7 1.0 PDHs

Speaker: Jim Reeves, Clearbridge Consulting, LLC

Strong business relationships are critical in a world where we must interact, coordinate, trust, and rely on each other to succeed. Improperly managed conflict can cause tremendous damage to those relationships and cost everyone time and money. We'll look at the top 10 things that people often do to cause and escalate conflict and explore ways to manage conflict and build stronger, more productive relationships. *Business*

Tuesday, April 21

1:30 – 3:00 p.m. CDT

Designing Built-Up Flexural Members

E3 1.5 PDHs

Speaker: Lou Geschwindner, Providence Engineering Corporation

Built-up flexural members are made by combining shapes and plates so that they work together as a single flexural member. We'll delve into the overall provisions for built-up beams, including all applicable limit states. We will also explore built-up cross-sections such as box and I-shaped beams formed from channels, double angles that form T-shaped sections, and crane rail girders formed with channels as a cap to an I-shape. Examples in both ASD and LRFD will be presented for a variety of built-up sections. *Design Analysis*

The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?

L3 1.5 PDHs

Speakers: Ed Seglias, Jason Copley, and Matt Skaroff, Cohen Seglias Pallas Greenhall & Furman PC; David Ratterman, Stites & Harbison, PLLC; Kirk Harman, The Harman Group; David Zalesne, Owen Steel Company

"Design-assist" can mean many different things. We'll look at how the understanding of this concept can vary from contract to contract and examine the various ways court cases and state regulations have defined the term. Come learn about what the construction industry is doing to develop a common definition. *Legal*

Best Practices for Steel Joist, Joist Girder, and Steel Deck Construction

Y2 1.5 PDHs

Speakers: Doug Hoffman, Vulcraft-Nucor; Tim Holtermann, Canam Steel Corporation

There's a lot to consider when it comes to the economies of various combinations of joists, joist girders, bridging, and deck that create bay framing. Which span-to-depth ratio is most economical? What about special shapes and freight? Joist spacing versus deck gage and type? And what about fastener types and installation protocol for the deck? We'll review the relative cost impacts of special loads and conditions (such as a concentrated load at undefined locations). *Constructability*

3:30 – 4:30 p.m. CDT »

Managing the Legal and Practice Issues of Building Information Modeling (BIM)

T8 1.0 PDHs

Speakers: Andrew Mendelson, Berkley Design Professional

Building Information Modeling (BIM), an emerging and evolving design technology for engineers across the spectrum of design and construction projects, can improve a design firm's productivity, quality, and project team relationships when used properly. Combined with Integrated Project Delivery (IPD) approaches, BIM can add value to the design and construction process through cost modeling and analysis, virtual building coordination, logistics and continuity, digital record documentation, and operations and maintenance. We'll explore the investments required in terms of tools, technology, and training as well as quality management standards, processes, and protocols. Learn about the legal implications of using BIM, including its impact on the standard of care, controlling the use of your intellectual property, professional association tools, and contract forms to manage BIM and protect your firm from professional liability risk. *Technology*

Design of Building Structures with Fluid Viscous Dampers for Seismic Energy Dissipation using ASCE 7 Alternative Procedures

U4 1.0 PDHs

Speaker: Aaron Maletesta, Taylor Devices Inc.

Do you know all of the alternative procedures for the simplified design of structures with supplemental damping systems provided in chapter 18 of ASCE 7? We'll run through them—and give a preview of the forthcoming updates to future versions of the building code. When properly designed, a supplemental damping system that uses fluid viscous dampers will provide a cost-efficient building structure that is protected not only from catastrophic failure but also from costly repairs. Fluid viscous dampers have been used to protect building structures from seismic events for more than 25 years, and thousands of structures across the world now use these devices. A prototype building project will give us a lens into the design procedures and practical considerations for the implementation of a steel special moment frame with fluid viscous dampers. *Seismic*

Tuesday, April 21

« 3:30 – 4:30 p.m. CDT

Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications

Y10 1.0 PDHs

Speakers: Catherine Houska, Catherine Houska Consulting LLC; Nancy Baddoo, The Steel Construction Institute

The need for high-performance materials in the built environment continues to grow—so much so that AISC is writing a new Structural Stainless Steel Standard for release in 2021. We'll examine case studies to review the many applications for structural stainless steel, including infrastructure and in highly corrosive industrial environments. We'll equip you with an understanding of how stainless steel's mechanical and physical properties and design rules for members and sections will compare with those of structural carbon steels and aluminum, with a focus on both corrosion performance and resilience in guidance about the different stainless steel alloy families and specific alloy selection for different service environments. *Constructability*

Understand Your Assets as a Manager

Z6 1.0 PDHs

Speaker: Dan Coughlin, The Coughlin Company

As a manager, you are your first resource. Learn how to better turn that resource into results by understanding how you're hard-wired, how you process ideas, how you make decisions, how you approach situations, and how to temporarily shift your approach in order to be more effective. *Business*

Wednesday, April 22

9:30 – 10:30 a.m. CDT

Performance-Based Structural Fire Engineering for Steel Buildings

A4 1.0 PDHs/LU/HSW

Speakers: Bevan Jones, Holmes Fire LP; Mikko Salminen, Holmes Fire LP

Discover a performance-based approach for achieving equivalence to prescriptive code provisions for fire-resistance ratings for structural steel buildings—and learn how to meet stakeholder requirements for safety, aesthetics, cost, and healthy buildings while you're at it. *Architecture in Steel*

Strategies for Managing Projects with Delegated Design

O5 1.0 PDHs

Speaker: Michael Stubbs, Stubbs Engineering, Inc.

Projects with delegated design for connections and stairs can present difficulties for designers and fabricators. We'll discuss better ways to manage these projects, including an overview of basic engineering concepts, insurance requirements, relevant provisions in the *Code of Standard Practice* and CASE documents, reaction calculations, and stair design specifics. You will also learn strategies for improving the interaction between team members to create better project solutions. *Connections*

Your Code of Standard Practice—An Engineer's Perspective

P2 1.0 PDHs

Speakers: Mike West, CSD Structural Engineers; David Ratterman, Stites & Harbison, PLLC

The AISC *Code of Standard Practice for Steel Bridges and Buildings* has been an essential document in steel construction for buildings and bridges since 1924. During this session, we will review crucial provisions of specific significance to engineers. Join us to learn about how structural steel differs from steel, iron and other metal items, the RFI process, mill materials, fabrication tolerances, temporary support of structural steel frames, and much, much more. You'll also get a sneak peek at a new section on tolerance that the Code Committee is currently considering. *Code of Standard Practice*

Strengthen Your Impact as a People Manager

Z5 1.0 PDHs

Speaker: Dan Coughlin, The Coughlin Company

We all know what makes a company great: its people. Managing them, therefore, is a crucial differentiator between great and mediocre companies—and it's not enough to have a great strategy and a plan. We'll equip you with tools and approaches to make your company exceptional by effectively managing the people who make it what it is. *Business*

Wednesday, April 22

11:00 a.m. – noon CDT

Architecturally EXPOSED! From High-Tech Architecture to Today's Best Practices in Architecturally Exposed Structural Steel

A5 1.0 PDHs

Speaker: Terri Boake, University of Waterloo

Architects want architecturally exposed structural steel (AESS) to meet their expectations when it comes to appearance, budget, quality, and structural integrity. The category system in AISC's *Code of Standard Practice for Steel Buildings and Bridges* effectively communicates expectations and should be used on any AESS project. Learn about the birthplace of AESS and its roots in high-tech architecture, where designers first took the bold approach of exposing the bones of our buildings. You'll take home today's best practices for AESS, including how and when to implement the category method to effectively communicate the desired appearance for AESS in a format that contractors can easily understand. *Architecture in Steel*

Get to Know the NSBA Designer Resources for Faster Results

B2 1.0 PDHs

Speakers: Domenic Coletti, HDR, Inc.; Chris Garrell, NSBA

Bridge designers are often faced with too much to do and too little time to do it, especially when it comes to design. The NSBA has numerous resources available for free to help you design a steel bridge faster than ever before. From more common resources like LRFD Simon and the AASHTO/NSBA Collaboration Documents to upcoming resources currently in development, the NSBA resources are a proven design aid for bridge designers. *World Steel Bridge Symposium*

1:30 – 3:00 p.m. CDT »

Sustained in Steel

A3 1.5 PDHs/LU/HSW

Speakers: Luke Johnson, AISC; Mustapha Beydoun, Houston Advanced Research Center

Let's talk about structural steel through the lens of sustainability. We'll begin with an overview of the steel supply chain that fully communicates the implications of the sourcing and end-of-use cycles for steel before exploring how steel fits into the principles of re-use and adaptability in the built environment. We'll examine why one compelling project chose steel to create a LEED Platinum building through a whole-building LCA. The Houston Advanced Research Center (HARC) is also one of the first commercial buildings to achieve a net-zero operational energy consumption in Texas. *Architecture in Steel*

Your Code of Standard Practice—An Erector's Perspective

P3 1.0 PDHs

Speakers: Philip Torchio, Williams Erection; David Ratterman, Stites & Harbison, PLLC

The AISC *Code of Standard Practice for Steel Bridges and Buildings* has been an essential document in steel construction for buildings and bridges since 1924. Each member of the AEC team has different obligations under the provisions of the *Code of Standard Practice*. We'll cover what's required of the erector, fabricator, owner's designated representative for design, and owner's designated representative for construction. *Code of Standard Practice*

Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them

Y11 1.0 PDHs

Speaker: Brian Volpe, Cives Steel Company

We will explore typical steel detailing culprits that add costs to projects. Discover indicative design details and how these details can add costs to your structural steel projects. We'll discuss real-world examples and present strategies to improve these details from a cost perspective. We will also explore the importance of communication between PEs from the design and construction standpoint and address obstacles to communication and strategies to ensure that commercial considerations don't interfere with essential technical communication. *Constructability*

Lions, and Tigers, and Bearings, Oh My!

B3 1.5 PDHs

Speakers: Ronald Watson, R.J. Watson, Inc.; Mike Culmo, CME Engineering

Bearings for steel bridges are a critical part of the overall design and construction process, and your project could encounter unnecessary expenses if they're not properly designed and detailed. We'll dive into three key topics related to bearings: the newly resurrected AASHTO/NSBA Collaboration task group that is revising *G9.1-Steel Bridge Bearing Design and Detailing Guidelines*, high load multi-rotational disk bearings for steel plate girder bridges, and elastomeric bearings. *World Steel Bridge Symposium*

Wednesday, April 22

« 1:30 – 3:00 p.m. CDT

COVID-19: Your Construction Contract and Insurance Questions Answered!

L5 1.5 PDHs

Speakers: John A. Greenhall and Jonathan A. Cass, Cohen Seglias Pallas Greenhall & Furman PC

Have you thought about the legal implications of COVID-19? We'll answer the questions that designers and fabricators are asking about contracts and insurance issues related to COVID-19. Learn valuable information about force majeure clauses and what you need to do to protect your company; the impact of indemnification provisions on potential COVID-19 exposure claims; business interruption coverage for damages related to the COVID-19 shutdowns; and whether your business will have coverage for COVID-19 exposure claims brought by employees and non-employees.

Legal

Fast and Efficient Design for Stability

E4 1.5 PDHs

Speakers: Rafael Sabelli and Larry Griffis, Walter P Moore

The design of building structures requires consideration of both strength and stiffness. For strength design, methods that permit the use of $K=1$ are very convenient. This engaging session introduces the Indirect Analysis Method, a simplified form of the Direct Analysis Method (DM) that substitutes an amplifier on lateral loads for the DM modeling requirements. Many structures are drift-controlled, meaning that the design process is intended to result in (or approach) a known second-order drift: the drift limit. Methods of determining force and displacement amplifiers based on first-order drift may give very approximate results or require iteration if a target second-order drift is used. This session develops equations based on second-order drift for amplifiers on first-order analysis quantities used for approximate second-order analysis and for the design for stability.

Design Analysis

3:30 – 4:30 p.m. CDT

Working With New Materials and New Techniques

A6 1.0 PDHs/LU/HSW

Speaker: Shaina Saporta, Arup

What's the role of the structural engineer in the use of new materials and new project delivery methods? We'll explore that question in-depth with three case studies involving innovative sculptural forms as we address how to more easily bring novel structures or materials into the mainstream. We'll talk about using small projects as prototypes when experimenting with new materials and new techniques as well as how to work with traditional skilled labor to deliver non-traditional materials and structures. We'll also consider the tension between the structural engineer's ability to analyze increasingly complex geometries and systems and the relatively unchanged construction methodologies in widespread use. Join us for a presentation that's sure to spark discussion about the transition between the innovative construction techniques being developed (digital fabrication, etc.) and the methods and materials that are already used in the majority of the built environment.

Architecture in Steel

New and Proposed Changes to the Bridge Welding Code

B4 1.0 PDHs

Speakers: Curtis Schroeder, WJE; Nina Choy, Caltrans

Learn the latest updates to the AASHTO/AWS D1.5 *Bridge Welding Code*, with discussions about recent changes to the document as well as a background on proposed modifications based on findings from recent research.

World Steel Bridge Symposium

The Construction Marketplace during COVID-19: Opportunities and Challenges

Z15 1.0 PDHs

Speaker: Tabitha Stine, NUCOR

The forecast we had a few months ago is completely different from the path that lies before us. The "new normal" we are all experiencing in light of the international and domestic pandemic of COVID-19 is challenging all of our perceptions and realities. Realizing this experience is unlike any past construction disruption is essential to moving forward and realizing the opportunities at hand. Let's pause to understand how today's downturn differs from the great recession in 2008. Join us as we curate the viewpoints and opinions of the many construction experts in the marketplace who are speaking on the future opportunities for construction ahead in 2020 and beyond.

Business

Thursday, April 23

9:30 – 10:30 a.m. CDT

Innovations in Steel for Architects

A11 1.0 PDHs/LU/HSW

Speaker: Maysa Kantner, AISC

Have you heard about the latest steel innovations? We will demonstrate how recent structural steel industry innovations allow architects to easily express their design concepts, overcome client serviceability and safety concerns, enhance their use of architecturally exposed structural steel, and help ensure a comfortable, safe, and sustainable building environment for occupants. *Architecture in Steel*

Pricing Study of Recently Constructed Steel and Concrete Bridges

B7 1.0 PDHs

Speaker: Michael DiGregorio, HDR, Inc.

HDR recently completed a nationwide pricing study of steel and concrete bridges on behalf of AISC/NSBA. There is a perception that steel bridges are more expensive than concrete bridges, even though steel bridges offer many advantages that concrete bridges cannot. The expectation of higher upfront construction cost leads to the decision to use concrete over steel. We'll explore the upfront construction cost on both steel and concrete bridges from around the country.

World Steel Bridge Symposium

Cyber Threats in the Construction Industry

T9 1.0 PDHs

Speaker: Gregg Bundschuh, Greyling, a division of EPIC

Cybersecurity incidents aren't a matter of if, but when. Are you prepared for cyber threats in construction not just today but tomorrow as well? We'll provide a crucial overview of what cyber risk in construction means and why they can lead to potential operational and safety risks. You'll leave with a grasp of your company's cyber risk, both in its current state and as new technology is embraced. Don't wait. We'll get you started on a cyber risk management plan so you can be ready when you need it most.

Technology

11:00 a.m. – noon CDT

Railroad Bridges: A Unique Experience

B11 1.0 PDHs

Speakers: Clay Greenwell, Stantec Consulting Services Inc.; Rick Floyd, Koppers Railroad Structures

Steel bridges have been the workhorse of the railroad industry for more than 100 years and continue to provide value and flexibility for rail owners. We will explore the evaluation of the fatigue life of existing steel bridges and a unique rail bridge repair project of a historic Swing Span bridge.

World Steel Bridge Symposium

A Tale of Two Cities: Assessment of Existing Iron and Steel Structures

C5 1.0 PDHs

Speaker: Chris Hewitt, Simpson Gumpertz & Heger (SGH)

SGH structural engineers will review the growth of the steel industry in two American cities and discuss the development of steel industry standards over time, reflecting on early design and construction methods. We'll discuss how to assess historic steel structures, best practices for sampling, evaluating, and retrofitting existing steel structures, and design requirements for repairs, alterations, and additions from the *International Existing Building Code (IEBC)* and *AISC Specification for Structural Steel Buildings Appendix 5*. *Case Study*

New Technology, Existing Spaces

T10 1.0 PDHs/LU/HSW

Speaker: Thad Wester, Clarity Scanning

Existing buildings rarely have square corners or flat floors, and creating a usable drawing can be a real pain. Laser scanning opens the door to improved analysis of existing space, for small buildings or large arenas, with phenomenal accuracy. Drones can also be a great tool, particularly for exterior work. This session will be of interest to engineers, architects, detailers, and general contractors.

Technology

1:30 – 3:00 p.m. CDT

Redundancy of Steel Bridges

B16 1.5 PDHs

Speakers: Andrew Smith, Wisconsin Department of Transportation; Jason Lloyd, NSBA; Brian Kozy, Federal Highway Administration

AASHTO recently adopted two new guide specifications on bridge redundancy, entitled “Internal Redundancy of Mechanically-Fastened Built-Up Steel Members” and “Analysis and Identification of Fracture Critical Members and System Redundant Members.” Join us to explore these two new guide specifications and learn how you can implement them to leverage redundancy in the analysis of steel bridges. *World Steel Bridge Symposium*

WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors

O3 1.5 PDHs

Speaker: Robert Shaw, Jr., Steel Structures Technology Center Inc.

This session is for engineers who want to learn more about WPSs and WPS qualification as well as fabricators and erectors who want to learn more about writing WPSs and conducting WPS qualification testing. We'll look at governing standards such as AISC 360, AISC 341, AWS D1.1, and AWS D1.8 and discuss things like how to write and review a WPS and when to consider WPS qualification even if it isn't required. What are the responsibilities of engineers, fabricators, and erectors regarding WPSs and WPS qualification when qualification is required? What are the limits to prequalification in AWS D1.1 and AWS D1.8? When should—or can—requirements for WPS qualification be waived? We'll answer all of that and more. *Connections*

Is This Floor Moving? Vibration Analysis of Steel Joist Concrete Slab Floors

Y7 1.5 PDHs

Speaker: Brad Davis, University of Kentucky

Join us to explore common pitfalls and misconceptions of vibration analysis and specific considerations needed to design concrete slab steel joist floors. We'll take a look at suggested procedures and criteria for determining the adequacy of steel joist concrete floors subject to everyday human movements, such as walking. Then we'll explore the basic concepts needed to finite elements for vibration serviceability analysis. *Constructability*

Effectively Influence Others to Optimize Results

Z4 1.5 PDHs

Speaker: Dan Coughlin, The Coughlin Company

Join us to learn tips and tricks to interact with others, including how to meet their individual needs, how to communicate effectively with them, and how to influence the way they think in order to improve results for everyone. *Business*

Thursday, April 23

3:30 – 4:30 p.m. CDT

Design and Construction Challenges of the Governor Mario M. Cuomo Bridge Replacement of the Iconic Tappan Zee Bridge

B12 1.0 PDHs

Speakers: Michael Martello and Ken Wright, HDR

The Governor Mario M. Cuomo Bridge replaced the iconic Tappan Zee Bridge over the Hudson River north of New York City. This session will explore the project and why a composite steel superstructure was used to provide the ideal solution for the site. The chosen alternate, fueled in part by the large equipment available to the contractor team, led to a highly modularized solution both for the steel and concrete superstructures. The steel solution led to the lightest structure alternative, which was important given the challenging foundation conditions. The key to a successful project was rooted in a team focus on developing an overall bridge system that provided the best overall value. The presentation will contain construction photos to demonstrate how the bridge effectively spans the Hudson River, as well as indicating some of the special erection equipment and procedures used for the bridge. The presentation will also explain the innovative steel design details and construction methods developed for efficient and safe erection of steel segments of the Cuomo Bridge. *World Steel Bridge Symposium*

Answers to your AISC Certification Questions

Q1 1.0 PDHs

Speakers: Mark Trimble and Todd Alwood, AISC

In this unprecedented time, AISC Certification, just like you, is adapting to the new-normal of social distancing and travel restrictions. Face-to-face audits are suspended during the restrictions, and our auditors are conducting remote audits, instead. This session will describe the remote auditing process and let you know what to expect. Staff will also share updates coming to the Governing Requirements and the certification standard (AISC 207). There will be plenty of time for Q&A, so join us and bring your questions! *QualityCon*

Negotiating with Confidence

Z8 1.5 PDHs

Speaker: Jim Reeves, Clearbridge Consulting, LLC

Negotiating in a high-stakes, fast-paced industry can be stressful. We'll provide expert tips to help you negotiate effectively, achieve the results you want, and manage those tough, hard-bargaining negotiators, even when you think you have little leverage. We'll talk about what you bring to the negotiating table, how you can influence others at the table, different negotiation styles and approaches, the importance of preparation, and specific table tactics that will help you become a more effective negotiator. *Business*

Friday, April 24

9:30 – 10:30 a.m. CDT

A Primer on Lateral Load-Resisting Frames Using Steel Joists and Joist Girders

E10 1.0 PDHs

Speakers: Bruce Brothersen, Vulcraft–Nucor; Walter Worthley, Valley Joist

We'll highlight key considerations when using open web steel joists and joist girders in lateral load-resisting systems for wind and seismic loads and review commonly used frame, diaphragm, and bracing systems. Using SJI Technical Digest 11 as a reference, we'll also cover commonly used details and effective ways to communicate design requirements to the joist manufacturer. *Design Analysis*

Complex Steel Bridge Load Rating

B18 1.0 PDHs

Speakers: Brett Mattas and Parker Thompson, Michael Baker International; Sonia Lowry, Washington State DOT

We'll give you an overview of the steel bridge load ratings done in Washington and the method used to load rate a steel-tied arch bridge in Illinois. *World Steel Bridge Symposium*

How To: A Paint Primer

Q14 1.0 PDHs

Speaker: Zane Keniston, Structural Steel Parts, Inc.

What does a certified fabricator need to include in their procedures for paint requirements? What do you need to consider if you're thinking about applying for the Sophisticated Paint Endorsement (SPE)? We'll answer all of your questions about paint certification. *QualityCon*

11:00 a.m. – noon CDT

The Latest Research on Shear Connector Placement in Bridge Design

B22 1.0 PDHs

Speakers: Gary Prinz, University of Arkansas; Jason Provines, Virginia Department of Transportation

The industry demands full-depth precast deck panels to accommodate the time demands of accelerated bridge construction (ABC)—which introduces new design challenges. Pre-cast panels make it more difficult to achieve the uniform distribution that’s possible with cast-in-place construction. Clustering the studs together into a discrete void, or pocket, in the deck panel is one solution, but legacy design rules (such as the AASHTO limits on pitch, minimum longitudinal spacing, and minimum transverse spacing) make squeezing an equal number of uniformly distributed shear connectors into a limited number of discrete pockets a challenge. Some designers also question the applicability of first principle shear flow calculations to discrete clusters of studs, noting that fatigue was typically the controlling limit-state. This session will review what researchers have found to address these concerns over the last eight years.

World Steel Bridge Symposium

Resistance and Resilience of Composite Floor Systems to Fire: Experiments, Modeling, and Design

E13 1.0 PDHs

Speakers: Spencer Quiel and Michael Drury, Lehigh University

The American Society of Civil Engineers (ASCE) recently published performance-based provisions for structural fire engineering in the U.S. We’ll explore the implications of these approaches for the fire-resistant design of restrained composite floor systems and look at how the resilience of these systems (such as the loss of functionality due to damage and subsequent repair) can be evaluated using performance-based approaches. We’ll also examine topics such as the correlations between thermal and structural performance for composite steel floor systems under fire, structural interpretations of prescriptive hourly fire ratings, numerical predictions of experimental tests, and tools available for practitioners to calculate the fire-induced performance of composite floors.

Design Analysis

Advances in Erection Engineering for High-Rise Steel Structures

R4 1.0 PDHs

Speaker: Tim Nelson, Degenkolb Engineers

With all-steel high-rises becoming more prevalent in modern construction, the desire to build higher and faster creates increasingly common challenges for erection engineers. Pushing erection ahead of OSHA limits, tying tower cranes to slender high-rise structures, and generating and resisting wind demands on an unclad steel skeleton require engineering solutions that may not apply to a traditional tower with a concrete core. We’ll explore these challenges and describes engineering approaches that can facilitate constructing these complicated and unique structures.

Erection

The Code of Standard Practice for Steel Buildings and Bridges as a Handbook for Project Management

W4 1.0 PDHs

Speaker: Mark Holland, Paxton & Vierling Steel Co.

Can the AISC *Code of Standard Practice for Steel Buildings and Bridges* be utilized as a handbook for project management? Spoiler alert: yes! We’ll walk through the fundamentals of project management to find the connections. From the start of a job to the last shipment, billing, and change order negotiation, the *Code of Standard Practice* will provide sound best practices that, if followed, should keep your project on the right path and you out of trouble. We’ll demonstrate why every project manager in the fabricated structural steel industry should have a well-used copy of the *Code of Standard Practice* close at hand.

Project Management

session list

Friday, April 24

1:30 – 3:00 p.m. CDT

Fatigue of Welded Connections

B27 1.5 PDHs

Speaker: Duane Miller,
The Lincoln Electric Company

This session is specifically geared to toward Engineers and Contractors involved with bridge construction, but is equally applicable to individuals involved with the design and fabrication of crane girders and supports, and other weldments subject to cyclic loading. The basic concepts behind fatigue-resistant steel structures are considered, explaining the interrelated variables of stress range, connection geometry and the expected life of the welded connection. The role of dead load stress versus live load stress are discussed, as are the variable of weld quality and steel strength. Using AISC 360 Appendix 3, weld geometries are considered in detail with a practical focus on how to increase the fatigue resistance of welded connections.

World Steel Bridge Symposium

3:30 – 4:30 p.m. CDT

Economic Design of SMF Connection Continuity Plate Welds

O13 1.0 PDHs

Speakers: Kevin Moore and Adel Mashayekh, Simpson Gumpertz & Heger (SGH)

For certain beam-column combinations in Special Moment Frame (SMF) design, the *Seismic Provisions for Structural Steel Buildings* (AISC 341-16) requires complete joint penetration groove welds (CJP) between continuity plates and column flanges, implicitly requiring that continuity plates need to remain essentially elastic. Recent experimental tests of two large-scale reduced beam section (RBS) SMF beam-column connections were comprised of details with fillet welds for connecting continuity plates to column flanges and column web. This session presents a simplified design procedure for designing continuity plate fillet welds to column flanges and web, using a capacity-based approach. *Connections*

Solving the Puzzle of Delegated Connection Design

O8 1.5 PDHs

Speakers: Carol Drucker, Drucker Zajdel Structural Engineers, Inc.; Sayle Lewis and Katelyn O'Donnell, Fluor; Yann Gueguen; DZSE

Want to learn how to improve connection design, save time and money, and reduce RFIs and unnecessary questions? Then join this session and explore how a connection reporting system can improve consistency, ensure information and data are accurate, and reduce room for human error. You won't want to miss it! *Connections*

AISC Research: Understanding and Improving the Seismic Performance of Chevron Configured Special Concentrically Braced Frames

U5 1.5 PDHs

Speakers: Charles Roeder and Dawn Lehman, University of Washington; James O. Malley, Degenkolb Engineers

Seismic lateral-force-resisting systems have used concentrically braced frames (CBFs) for many years. Chevron-braced (or inverted V-braced) frames are seldom used today because the current beam strength requirements result in very heavy beams. We'll summarize recent experimental and analytical research on beam yielding in chevron braced frames and provides design recommendations and examples. *Seismic*

Current Information on Constraint-Induced Fractures and Intersecting Welds

B25 1.0 PDHs

Speakers: Domenic Coletti, HDR, Inc.; Robert Connor, Purdue University

The Federal Highway Administration recently produced a report intended to clarify misconceptions about intersecting welds and constraint-induced fracture. We'll explain which factors actually contribute to an elevated risk of constraint-induced fracture in steel girder bridges and which don't. We'll also review the history of steel beam fractures and how these may or may not be classified as constraint-induced fractures. *World Steel Bridge Symposium*

Design Guide 10: Erection Bracing of Low-Rise Structural Steel Buildings

R5 1.0 PDHs

Speaker: Michael West, CSD Structural Engineers

It's the latest, it's the greatest, it's the second edition of Design Guide 10: *Erection Bracing of Low-Rise Structural Steel Buildings*! This updated edition provides guidance for the design of temporary lateral support systems and components for low-rise buildings. It also includes prescriptive systems for temporary bracing as well as guidance to develop structural details that are inherently erectable. This design guide provides more-detailed design examples and has been updated to the current 2016 AISC *Specification for Structural Steel Buildings* and the 15th Edition *Steel Construction Manual*. *Erection*