

# NASCC: THE STEEL CONFERENCE

**ATLANTA**

Georgia World Congress Center

April 22–24, 2020

incorporating:

World Steel Bridge Symposium

QualityCon

SSRC Annual Stability Conference

NISD Conference on Steel Detailing

Architecture in Steel

TECHNICAL SESSIONS + NETWORKING + PRODUCT SHOWCASE

for structural engineers, detailers, erectors, and fabricators

[aisc.org/nascc](http://aisc.org/nascc)

# Advance Program



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# Welcome to ATLANTA

## What is The Steel Conference?

NASCC: The Steel Conference is the premier event for structural engineers, fabricators, detailers, erectors, and architects to come together to learn about innovations in the design and construction of fabricated steel buildings and bridges. The event also includes a series of specialty conferences: World Steel Bridge Symposium, SSRC Annual Stability Conference, QualityCon, NISD Conference on Steel Detailing, and Architecture in Steel. Admission to all of the conferences, which offer nearly 250 technical sessions, is included with a single registration. In addition to practical seminars on the latest design concepts, construction techniques, and cutting-edge research, the conference also offers an extensive trade show, featuring products ranging from structural design software to machinery for cutting steel beams. And, of course, the three-day event provides plenty of opportunities to network with your peers and other leaders in the design and construction industry.

## What should everyone know?

- More than 5,000 industry professionals participate each year.
- This year, we're offering a special pre-show opportunity to tour a union ironworker training facility.
- We offer two pre-conference short courses (your choice: welded connections or non-linear analysis).
- This year's keynote, Gerry O'Brion, spoke at AISC's Future Leaders Ideas Lab last year and received a perfect score on the attendee evaluation form.
- Admission to all six conferences is included with your Steel Conference registration.
- Attendees can receive up to 17.5 hours of professional development credits.

## Who are the speakers?

Unlike most conferences, which offer a general call for papers, The Steel Conference planning committee selects topics first, then seeks out the top experts in those areas. While some of the speakers are perennial favorites, others are less familiar but are nevertheless experts in their areas.

## What about the exhibit hall?

This year's exhibit hall features around 275 exhibitors demonstrating a wide array of products. You'll find fabrication equipment, detailing software, connection products, safety equipment, engineering software, and coatings. Equipment manufacturers typically provide full demonstrations of their equipment: Steel beams are cut, punched, and drilled right on the exhibit hall floor! The exhibit hall is open April 22–24. See page 11 for exhibit hall hours.

## What is the World Steel Bridge Symposium?

The World Steel Bridge Symposium (WSBS) brings together bridge design engineers, construction professionals, academics, transportation officials, fabricators, erectors, and constructors to discuss and learn state-of-the-art practices for enhancing steel bridge design, fabrication and construction techniques. See page 33 for the detailed WSBS agenda.

## What is QualityCon?

We're debuting the first-ever structural steel quality conference! In more than 20 sessions, industry experts will share the latest on both the principles of quality management and specifics on how improving your quality processes will boost your bottom-line. Whether you are AISC-certified, a fabricator, an erector, or just want to learn more about quality system, these sessions are for you! You will leave QualityCon with ideas and tools that will bring immediate value to your fabrication facility or erection jobsite.

## What is the SSRC Annual Stability Conference?

The Structural Stability Research Council's Annual Stability Conference has been held in conjunction with the Steel Conference since 2001. In addition to 13 sessions with more than 60 papers, the SSRC Conference includes the 2020 Beedle Award and 2019 MAJR Medal presentations. SSRC also holds its annual meeting immediately prior to the SSRC Conference. Admission to all SSRC Conference sessions is included with your registration. Session descriptions begin on page 41.

## What is the NISD Conference on Steel Detailing?

The National Institute of Steel Detailing has developed a 13-session program specifically for detailers. The program parallels the NISD Certification program and provides practical information to help make you a better detailer!

## What is the Architecture in Steel conference?

The Architecture in Steel conference, which offers AIA LUs, features exciting sessions on topics such as sustainability, performance-based fire design, facades, and designing with new materials. It's also a prime opportunity for architects to meet other designers with similar interests as well as engineers and fabricators. For more information, see the session descriptions beginning on page 48.

Georgia World Congress Center  
285 Andrew Young International Blvd NW, Atlanta, GA 30313  
[gwcca.org/georgia-world-congress-center/](http://gwcca.org/georgia-world-congress-center/)

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Interested in exhibiting at The Steel Conference? Contact Renae Gurthet at [renae@gurthetmedia.com](mailto:renae@gurthetmedia.com) or 231.995.0637 or visit [aisc.org/nascc/exhibitors](http://aisc.org/nascc/exhibitors) for more information.

Sponsorships For information regarding sponsorship opportunities, contact Elizabeth Purdy at [purdy@aisc.org](mailto:purdy@aisc.org) or 312.670.5438 or visit [aisc.org/nascc/sponsors](http://aisc.org/nascc/sponsors).

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For the most up-to-date program, download the digital version at: [aisc.org/nascc](http://aisc.org/nascc)



# NASCC: THE STEEL CONFERENCE

schedule-at-a-glance

HRS.	WEDNESDAY SESSIONS   4.22.20		8:00– 9:00a	9:15– 10:15a	10:30– 12:15p	🕒	1:45– 3:15p	3:30– 4:30p	4:45– 5:45p
1.0	K1	KEYNOTE: What Big Brands Know!			ALL				
1.0	C6	Expanding the Georgia World Congress Center and More!	ALL						
1.0	E1	Meeting Tolerances Where Steel and Façade Collide	D E R F						
1.0	E2	Structural Steel in Exterior Applications		D E F					
1.5	E4	Fast and Efficient Design for Stability					E		
1.0	E5	Introduction to Software Development for Structural Engineers						E	
1.0	E6	Industrial Crane Runway Capacity Upgrades							E
1.5	E8	Principles and Practice Related to the Direct Analysis Method					E		
1.5	E14	Composite Construction 101: Fundamentals, Practical Implementation, and New Thrust Areas					E		
1.0	I1	SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments	ALL						
1.0	I2	Lessons from the First SpeedCore Project		ALL					
1.0	I3	The World's First Metal 3D-Printed Bridge						ALL	
1.5	J1	Integrating the Real World Into the Classroom	7:00–9:00a J						
1.5	M1	From the Mill to Topping Out Session 1: Introduction		8:00–9:30a E R F					
1.5	M2	From the Mill to Topping Out Session 2: The Manufacturing of Structural Steel Shapes					2:00–3:30p E R F		
1.5	M3	From the Mill to Topping Out Session 3: Steel Fabrication						4:00–5:30p E R F	
1.0	O1	Shear Connections 101	D E R F						
1.5	O3	WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors					E R F		
1.0	O4	Delegating Connection Design						E F	
1.0	O5	Strategies for Managing Projects with Delegated Design							D E F
1.0	O13	Economic Design of SMF Connection Continuity Plate Welds							D E F
1.0	P1	Your Code of Standard Practice—A Fabricator's Perspective	F						
1.5	RT1	Fabricator Roundtable					F		
1.0	T2	Legal Lessons Learned with Building Information Modeling (BIM)		D E F					
1.5	T3	Artificial Intelligence: The New Frontier in Structural Design					D E F		
1.0	T4	New and Evolving Applications for Virtual Reality and Augmented Reality						D E F	
1.0	T5	Mind the Gap: Addressing the Tech Disparity in Construction							A D E F
1.0	T9	Cyber Threats in the Construction Industry	E R F						
1.0	U1	Structural Inspections for Seismic Design Structures	E						
1.0	U2	Movement Joints: What Are They and When Are They Needed?						ALL	
1.0	U4	Design of Building Structures with Fluid Viscous Dampers for Seismic Energy Dissipation using ASCE 7 Alternative Procedures							E
1.5	U6	Principles and Practice in Seismic Design					E		
1.0	W1	Work is Making Me Sick!	D E R F						
1.0	W2	Fundamentals of Project Scheduling for Steel Fabrication		A D E F					
1.0	W3	Walk Before You Run: The Importance of Pre-Planning Meetings						ALL	
1.0	W4	The Code of Standard Practice for Steel Buildings and Bridges as a Handbook for Project Management							ALL

NASCC: The Steel Conference

LUNCH IN THE EXHIBIT HALL | noon – 2:00 p.m. | EXHIBIT HALL OPENS AT NOON

## Key

A | Architects    D | Detailers    E | Engineers    R | Erectors    F | Fabricators    J | Educators

# schedule-at-a-glance WEDNESDAY

HRS.	WEDNESDAY SESSIONS   4.22.20		8:00–9:00a	9:15–10:15a	10:30–12:15p	🕒	1:45–3:15p	3:30–4:30p	4:45–5:45p
1.0	K1	KEYNOTE: What Big Brands Know!			ALL				
1.0	Y1	Technology Meets Constructability		E					
1.5	Y2	Best Practices for Steel Joist, Joist Girder, and Steel Deck Construction					E		
1.5	Y3	Challenges for Designers of Crane-Supporting Steel Structures					E F		
1.0	Y4	Rebuilding the Big Box						ALL	
1.0	Y5	What's Wrong with This Picture?							D E R F
1.0	Z1	Succession Planning for the Steel Industry	R F						
1.0	Z2	Building Relationships of Trust		E R F					
1.0	Z3	Build Teamwork That Works to Win						ALL	
1.5	Z4	Effectively Influence Others to Optimize Results					ALL		
1.0	Z5	Strengthen Your Impact as a People Manager	ALL						
1.0	Z6	Understand Your Assets as a Manager		ALL					
1.5	Z11	Navigating Marijuana in the Workplace					ALL		
1.0	Z12	Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center							ALL
1.0	Z16	Engaging Workplace: Don't Throw Away That Training Investment						ALL	
1.0	B1	Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations	D E R F						
1.0	B2	Get to Know the NSBA Designer Resources for Faster Results		D E					
1.5	B3	Lions, and Tigers, and Bearings, Oh My!					D E R F		
1.0	B4	New and Proposed Changes to the <i>Bridge Welding Code</i>						E F	
1.0	B5	Typical Construction Techniques for Railroad Bridges: Accelerated Bridge Construction							E R F
1.0	B14	A Novel Alternative to Corrosion Resistance: A709 Grade 50CR	E F						
1.0	B15	Review of Tubs for Pedestrians and Improved Details for Tubs		E F					
1.5	B16	Redundancy of Steel Bridges					E		
1.0	B17	Railroad Bridges: A Unique Experience (Part 1)						E R	
1.0	B18	Complex Steel Bridge Load Rating							E
1.0	Q1	Certification Forum	R F						
1.0	Q2	Quick Methods for Quality Assurance Reviews		R F					
1.5	Q3	Demystifying Chapter N and the Building Code: What Everyone Should Know					R F		
1.0	Q4	Technology: It's Going to Make You Better!						R F	
1.0	Q5	Specs to Receiving: The Whole Nine Yards							R F
1.0	Q13	How to Use Business Case Writing to Establish a Measurable Goal		R F					
1.5	Q14	How To: A Paint Primer					R F		
1.0	Q15	How to Write Clear, Simple, and Effective Quality Procedures						R F	
1.0	Q20	How to Incorporate Risk-Based Thinking							R F
1.0	S1	Stability of Wall and Roofing Systems	E						
1.0	S2	Advances in Stability Analysis		E					
1.5	S3	Stability of Columns					E		
1.0	S4	Special Topics in Structural Stability						E	
1.0	S5	Stability of Structural Systems							E
1.0	D1	Detailing and Coordinating Steel Deck	D E R F						
1.0	D2	Detailing Contracts with Your Domestic and Offshore Partners—What's in Yours?		D E F					
1.0	D3	Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III					D E R F		
1.0	D4	Detailing for Metal Bar Grating						D E R F	
1.0	D5	Detailing for Steel Joists and Joist Girders							D E R F
1.0	A1	Shaping Structures: The Case for Cast Steel	ALL						
1.0	A2	What Fabricators Wish Architects Knew About Optimizing Their Designs		A F					
1.5	A3	Sustained in Steel					A E F		
1.0	A4	Performance-Based Structural Fire Engineering for Steel Buildings						A E	
1.0	A12	Self-Assembly and Programmable Materials							A E R F

NASCC: The Steel Conference

WSBS

QualityCon

SSRC

NISD

Architecture

LUNCH IN THE EXHIBIT HALL | noon – 2:00 p.m. | EXHIBIT HALL OPENS AT NOON

Don't miss the Welcome Reception in the Exhibit Hall!

Wednesday, April 22  
5:30 – 7:00 p.m.

Key

- A | Architects
- D | Detailers
- E | Engineers
- R | Erectors
- F | Fabricators

# THURSDAY schedule-at-a-glance

HRS.	THURSDAY SESSIONS   4.23.20		8:00–9:00a	9:15–10:15a	☀	11:00a–12:30p	☀	2:00–3:30p	☀	3:45–4:45p	5:00–6:00p
1.0	K2	KEYNOTE: Jim Fisher's Keys for Successful Designs: Quips & Myths				ALL					
1.0	C3	A New Base for Willis Tower								A E	
1.5	E3	Designing Built-Up Flexural Members						E			
1.5	E9	The Stability Game Show—2nd Edition						D E R F			
1.0	E10	A Primer on Lateral Load-Resisting Frames Using Steel Joists and Joist Girders		E							
1.0	E11	Get Ahead of the Curve								ALL	
1.0	E12	Shear Connection Beam Reinforcement									E
1.0	E13	Resistance and Resilience of Composite Floor Systems to Fire: Experiments, Modeling, and Design	A E								
—	J2	SCIS Career Session and Lunch				12:30–2:15p S					
—	J3	SCIS Direct Connect						2:15–3:30p S			
1.0	L1	Change Orders: How to Avoid Making Their Problems Your Problems	ALL								
1.0	L2	Manage the Risk in Your Contract Provisions		ALL							
1.5	L3	The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?						ALL			
1.0	L4	Aligning Your Contracts with the Code of Standard Practice for Steel Buildings and Bridges								ALL	
1.0	L5	Understanding Commercial General Liability and Builders' Risk Policies: What Covers What?									ALL
1.5	M4	From the Mill to Topping Out Session 4: Connection Design as a Fabricator's Representative		8:00–9:30a E R F							
1.5	M5	From the Mill to Topping Out Session 5: Steel Erection: It Doesn't Get Built Without the Erector						E R F			
1.5	M6	From the Mill to Topping Out Session 6: Stability During Construction								4:00–5:30p E R F	
1.0	O2	A Soup to Nuts Look at Nuts and Bolts	E R F								
1.0	O6	Hidden Gems: Connection Structural Integrity Code Changes and More								D E F	
1.0	O7	The Impact of Connection Design and Detailing on Cost and Productivity in Fabrication and Erection		D E F							
1.5	O8	Solving the Puzzle of Delegated Connection Design						E F			
1.0	O9	The Bottom Line: The Impact of 30 Years of Material and Code Changes on Connection Costs								D E F	
1.0	O10	Economical Exposed Steel Connections									ALL
1.0	P2	Your Code of Standard Practice—An Engineer's Perspective	E								
1.0	R1	The Importance of Temporary Bracing	E R								
1.0	R2	You Lift Me Up: Critical Lift Planning Basics 101		E R							
1.0	R3	Cranes: More Than Just Erection								R	
1.0	R4	Advances in Erection Engineering for High-Rise Steel Structures									E R F
1.5	RT2	Industry Roundtable						D R F			
1.0	T6	Robotic Assembly and Fabrication	D E F								
1.0	T7	Using Technology to Attract a New Generation of Shop Labor		D E R F							
1.0	T8	Managing the Legal and Practice Issues of Building Information Modeling (BIM)								E	
1.5	U5	AISC Research: Understanding and Improving the Seismic Performance of Chevron-Configured Special Concentrically Braced Frames						E			
1.0	Y6	Listen Up: Sound Isolation and Noise Control in Steel Buildings		ALL							
1.5	Y7	Is This Floor Moving? Vibration Analysis of Steel Joist Concrete Slab Floors						E			
1.0	Y8	Improvements to Stud Welding								ALL	
1.0	Y11	Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them	D E F								

NASCC: The Steel Conference

☀ COFFEE BREAK IN THE EXHIBIT HALL | 9:30 a.m. – 11:00 a.m. | EXHIBIT HALL OPENS 9:30 a.m.

☀ LUNCH IN THE EXHIBIT HALL | noon – 2:00 p.m.

☀ COFFEE BREAK IN THE EXHIBIT HALL | 3:00 p.m. – 4:30 p.m.

## Key

A | Architects

D | Detailers

E | Engineers

R | Erectors

F | Fabricators

S | Students

# schedule-at-a-glance THURSDAY

HRS.	THURSDAY SESSIONS   4.23.20		8:00–9:00a	9:15–10:15a	☀ 11:00a–12:30p	☀ 2:00–3:30p	☀ 3:45–4:45p	5:00–6:00p
NASCC	1.0	K2	KEYNOTE: Jim Fisher's Keys for Successful Designs: Quips & Myths		ALL			
	1.0	Z9	Closing the Deal on Major Projects (Part 1): The Fabricator's Point of View	RF				
	1.0	Z10	Closing the Deal on Major Projects (Part 2): The Owner's Point of View		RF			
	1.0	Z13	The People Side of Change: An Introduction to the ADKAR Method of Change Management					ALL
	1.0	Z14	A Job Site Built for Tomorrow					ALL
WSBS	1.0	Z15	The Crystal Ball: Construction Market Conditions and Forecasting for Buildings and Bridges					AERF
	1.0	B6	Bayonne Bridge: 'Raise the Roadway' and Demolition of the Main Span	ER				
	1.0	B7	Pricing Study of Recently Constructed Steel and Concrete Bridges		DERF			
	1.5	B8	Analytical Modeling Technique and Systematic Calibration with Weigh-in-Motion Measurements			DERF		
	1.0	B9	Service Life Design for Steel Bridges				DEF	
	1.0	B10	Technology and the Bridge Industry: BrIM & Model Based Exchange					DEF
	1.0	B19	Common Steel Bridge Repairs to Extend Service Life	ERF				
	1.0	B20	Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges		DERF			
	1.5	B21	Live Long Span and Prosper: The Benefits of Long Span Bridges			E		
	1.0	B22	The Latest Research on Shear Connector Placement in Bridge Design				E	
QualityCon	1.0	B23	Case Studies on Rehabilitating Large Steel Bridges					E
	1.0	Q6	A QMS Isn't a Burden... It's a Benefit!	RF				
	1.0	Q7	Root Cause Analysis: Let's Improve It		RF			
	1.5	Q8	Lessons Learned from Fabricator's and Erector's Views on Inspection			RF		
	1.0	Q9	The Hidden Shop: Nonconformances and Corrective Actions (Part 1)				RF	
	1.0	Q10	The Learning Shop: Effective Use and Management of Nonconformances and Corrective Actions (Part 2)					RF
	1.0	Q16	How to Set Up an Effective Training Program				ERF	
	1.0	Q17	How to Perform an Effective Internal Audit	RF				
	1.0	Q18	How to Perform an Effective Management Review		RF			
	1.5	Q19	How To: The Secret of Calibration			RF		
SSRC	1.0	Q21	How Can a Steel Erector Effectively Train Its Supervisors and Workforce on Quality?					RF
	1.0	S6	Stability under Seismic Loading	E				
	1.0	S7	Presentation Session for Beedle and McGuire Awards		E			
	1.5	S8	Stability of Members under Combined Axial and Flexural Loads			E		
	1.0	S9	Stability of Wall and Roofing Systems				E	
NISD	1.0	S10	Advances in Stability Analysis					E
	1.0	D6	Managing Offshore Detailing	DEF				
	1.0	D7	Quality Procedures in the Detailing Office		DERF			
	1.0	D8	Successful Detailing for Hot-Dip Galvanizing			ALL		
	1.0	D9	The Benefits of the Individual Detailer Certification Program				DEF	
Architecture	1.0	D10	The NISD Industry Standard					DF
	1.0	A6	Working With New Materials and New Techniques	AE				
	1.0	A7	Insane in the Membrane		A EF			
	1.0	A9	Designing Buildings for Safety and Security				AE	
1.0	A10	Non-Euclidean Façades					ALL	

EXHIBIT HALL OPENS 9:30 a.m. | 9:30 a.m. – 11:00 a.m. | COFFEE BREAK IN THE EXHIBIT HALL | 9:30 a.m. – 11:00 a.m. | COFFEE BREAK IN THE EXHIBIT HALL | 9:30 a.m. – 11:00 a.m. | COFFEE BREAK IN THE EXHIBIT HALL | 9:30 a.m. – 11:00 a.m.

LUNCH IN THE EXHIBIT HALL | noon – 2:00 p.m.

COFFEE BREAK IN THE EXHIBIT HALL | 3:00 p.m. – 4:30 p.m.



Thursday, April 23  
7:00 – 9:00 p.m.  
\$60 pre-reg  
\$85 on-site

- Key**
- A | Architects
  - D | Detailers
  - E | Engineers
  - R | Erectors
  - F | Fabricators

# FRIDAY schedule-at-a-glance

HRS.	FRIDAY SESSIONS   4.24.20		8:00–9:00a	9:15–10:15a	10:45–11:45a	noon–1:30p
1.5	K3	KEYNOTE: T.R. Higgins Lecture Gusset Plates: The Evolution of Simplified Design Models				ALL
1.0	C4	425 Park Avenue—A New Building Built inside an Existing Building		ALL		
1.0	C5	A Tale of Two Cities: Assessment of Existing Iron and Steel Structures			ALL	
1.0	C7	State Farm Arena Renovation—Panel Discussion on Project Challenges	ALL			
1.0	E7	Lean On Me: Contemporary Railing Systems Will Help You Carry On	A D E F			
1.0	E15	Update from 2019: Lateral Load Transfer From Diaphragms to Resisting Elements		E		
1.0	E16	Recent Developments in Seismic Performance of Composite Buildings			DER	
1.0	L6	The Formula for a Project Train Wreck		ALL		
1.5	M7	From the Mill to Topping Out Session 7: Field Fixes and Solutions	8:00–9:30a E R F			
1.5	M8	From the Mill to Topping Out Session 8: Quality Control and Quality Assurance		10:00–11:30a E R F		
1.0	O11	Connection Design Using Advanced Finite Element Analysis: Why, When, and How	E			
1.0	O12	Connections: Art, Science, and Information in the Quest for Economy and Safety— Current Views From Past Higgins Award Winners		DERF		
1.0	O13	Economic Design of SMF Connection Continuity Plate Welds		DEF		
1.0	P3	Your Code of Standard Practice—An Erector's Perspective	R			
1.0	R5	Design Guide 10: Erection Bracing of Low-Rise Structural Steel Buildings	E R F			
1.0	R6	Erection Planning Made Easy!		R		
1.0	R7	What a Steel Erection Engineer Wishes Steel Erection Engineers Knew About Steel Erection			ERF	
1.0	T1	Yes, You Scan! Laser Scanning and Steel	D E F			
1.0	T10	New Technology, Existing Spaces		A D E R		
1.0	T11	A Visual Explanation of the IFC Standard			DEF	
1.0	Y9	How Varying Tolerances and Lack of Coordination Can Cause Constructability, Quality, and Cost Issues		ALL		
1.0	Y10	Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications			ALL	
1.0	Y12	Welding to Unknown Steels			ERF	
1.0	Y13	Serviceability Considerations for the Practicing Engineer	A E			
1.0	Z7	Don't Be Scared! Learn How to Manage Conflict	ALL			
1.0	Z8	Negotiating with Confidence			ALL	
1.0	B11	Railroad Bridges: A Unique Experience (Part 2)	D E R F			
1.0	B12	Design and Construction Challenges of the Governor Mario M. Cuomo Bridge Replacement of the Iconic Tappan Zee Bridge		ERF		
1.0	B13	Unique Projects Near The Northern Border and a Complex Widening in a Major City			ER	
1.0	B24	Holy Beams, Batman! Evaluating Capacity of Corroded Steel Beams	E			
1.0	B25	Current Information on Constraint-Induced Fractures and Intersecting Welds		E		
1.0	B26	Walk This Way: Pedestrian Bridges—Unique Design and Analysis			DERF	
1.0	Q11	The Whys of Job Descriptions, Organization Charts, and Biographies		R F		
1.0	Q12	Do You Have Bolting Questions? AISC's Steel Solutions Center Has the Answers!			R F	
1.0	Q22	How to Use 5S Methodology in the Office, Shop, and Field to Increase Speed!		R F		
1.0	Q23	How and Why to Quantify Quality Data			R F	
1.0	S11	Topics in Local Stability	E			
1.0	S12	Stability of Structural Systems		E		
1.0	S13	Topics in Lateral-Torsional Buckling			E	
1.0	D11	The Steel Detailer and Client Steel Management Software	D F			
1.0	D12	Weld Details, Welding Code Requirements, Symbols, Processes, and Joints		DERF		
1.0	D13	Working with BIM XPs in the Detailing Office			ALL	
1.0	A5	Architecturally EXPOSED! From High-Tech Architecture to Today's Best Practices in Architecturally Exposed Structural Steel	A D E F			
1.0	A11	Innovations in Steel for Architects	A E R F			

NASCC: The Steel Conference

WSBS

QualityCon

SSRC

NISD

AiS

EXHIBIT HALL OPENS 9:00 a.m.

SNACK IN THE EXHIBIT HALL | 10:15 a.m.–10:45 a.m.

## Key

A | Architects

D | Detailers

E | Engineers

R | Erectors

F | Fabricators



## Continuing Education Credit

Attendees earn one professional development hour (PDH) for each hour of participation at a technical session at The Steel Conference (One PDH is equivalent to 0.1 CEU). Additionally, AISC is a Registered Provider with The American Institute of Architects Continuing Education System (AIA/CES), and some sessions have been approved for AIA continuing education credit (LU or LU/HSW). Some of the session topics may not align with the PDH criteria for licensure requirements in some states. Attendees wanting to earn AIA continuing education credit must provide their AIA member number.

# NASCC: THE STEEL CONFERENCE

## short courses

### Design of Fatigue-Resistant Welded Connections

**SC1** Tuesday 1:00 p.m. – 5:00 p.m.

Speaker: Duane K. Miller, PE, ScD,  
The Lincoln Electric Company

\$275 members\* | \$400 non-members  
Add \$50 if purchased on-site.

\*Members of the following organizations qualify  
for a member rate: AISC, NSBA, SSRC, NISD.

**Registration is required for this short course.**  
See **PART 5** of the registration form on page 63.

Do you design or detail steel bridges? Crane supports for industrial buildings? Cyclically loaded structures like sign supports or luminaries? Or maybe you fabricate cyclically loaded structures? If so, this short course on the design of cyclically-loaded welded connections is for you. This half-day program will review the causes of fatigue crack initiation and propagation, discuss the role of stress range, and explore the performance of various welded connection details. Using the methodology detailed in AISC 360 Appendix 3, the influence (or the lack thereof) of maximum stresses, minimum stresses, and the strength of the steel will all be reviewed. The interaction of fatigue and fracture will be discussed, as will be the constraints associated with the Appendix 3 methodology. Attendees will learn how to design welded connections that will be fatigue-resistant, regardless of the type of structure or source of cyclic loading. This course will be presented by Duane Miller, one of the world's leading authorities on the design of welded structures and a renowned lecturer. Duane is a former Chair of the AWS D1 Structural Welding Code Committee. He was the first Chair of the Seismic Welding Subcommittee and is a former co-chair of the AASHTO-AWS D1.5 Bridge Welding Code Committee. His current technical involvement includes membership on the AWS D1 committee and the AISC Specification Committee. He is a Professional Engineer, and formerly a Certified Welding Inspector and Qualified Welder.

4.0 PDHs

### SSRC Short Course Nonlinear Structural Analysis Methods Used in Modern Steel Design

**SC2** Tuesday 1:00 – 5:00 p.m.

Speakers: Barry T. Rosson, PE, PhD,  
Florida Atlantic University

\$275 members\* | \$400 non-members  
Add \$50 if purchased on-site.

\*Members of the following organizations qualify  
for a member rate: AISC, NSBA, SSRC, NISD.

**Registration is required for this short course.**  
See **PART 5** of the registration form on page 63.

Per Chapter C of AISC's *Specification for Structural Steel Buildings*, second-order effects, geometric imperfections, and stiffness reductions due to inelasticity and residual stresses must be considered. Modern-day software programs are capable of analyzing these conditions, but designers who use them need to have a fundamental understanding of how these nonlinear analyses are completed, which elements of structural behavior are included and which are neglected, and the degree to which various methods of analysis have inherent limitations that can affect solution accuracy and consistency. This course will provide an overview of:

- Modeling geometric imperfections directly versus with notional loads
- Equilibrium in the deformed configuration using an incremental second-order analysis approach versus the approximate amplification methods in Appendix 8
- Elastic critical load analysis versus alternate methods to determine effective length factors
- Inelastic behavior and analysis of steel beams and frames
- Analysis of alternating loads that produce shakedown and incremental collapse conditions

Engineers

4.0 PDHs

# NASCC: THE STEEL CONFERENCE

## keynote presentations



### What Big Brands Know!

**K1** Wednesday 10:30 a.m. – 12:15 p.m.

Speaker: Gerry O'Brion,  
What Big Brands Know

Gerry O'Brion is a strategy and branding expert who has worked on several billion-dollar brands (including Procter & Gamble, Coors Brewing Company, Quiznos, and Red Robin) and distilled that experience into a framework that will challenge your thinking about why customers buy and how they make referrals. Participants will learn a framework in innovation and influence that will show you how to become the #1 choice in crowded industries. Gerry will show you how to create disruptive strategies and messaging to attract your ideal customers and how to leverage change to create unique competitive advantages that make you the clear choice.

ALL

1.0 PDHs

#### bio:

After earning his MBA at the University of Michigan, Gerry O'Brion worked with Procter & Gamble on brands such as Crisco, Tide, Mr. Clean, and Spic & Span. Next, at Coors Brewing Company, he managed Coors Light, a \$2 billion business. He was then VP of Marketing for the \$1.5 billion Quiznos restaurant chain. Gerry was most recently VP of Marketing for Red Robin Gourmet Burgers, a \$1 billion brand.



### Jim Fisher's Keys for Successful Designs: Quips & Myths

**K2** Thursday 11:00 a.m. – 12:30 p.m.

Speaker: James M. Fisher, PE, PhD,  
CSD Structural Engineers, Emeritus

For more than half a century, James M. Fisher has been the design industry's leading pragmatist. Whether designing an industrial facility or leading AISC's specification efforts, Jim has been the go-to person for practical advice on both design and constructibility. His keynote presentation highlights what he has learned about how to create successful designs. These items are not calculations and analysis methods, but rather how to use good judgment and consider the needs of the structural team members (engineers, steel detailers, steel fabricators, erectors, material suppliers) and the owner. Means of creating successful designs with quality construction documents and cooperation with the team members are discussed. Quips and myths which affect quality designs and lead to create successful designs are presented. Challenges are presented to senior and young engineers and to educators.

ALL

1.0 PDHs

#### bio:

James M. Fisher received a BS degree in Civil Engineering from the University of Wisconsin in 1962. After serving two years as a Lieutenant in the U.S. Army Corps of Engineers, he continued his formal education and in 1965 and 1968 respectively he received his MS and PhD degrees in Structural Engineering from the University of Illinois. Prior to joining Computerized Design in 1973, Fisher was an assistant professor of Structural Engineering at the University of Wisconsin – Milwaukee. Fisher's structural expertise has resulted in authoring and co-authoring sixteen books, numerous technical publications, and several AISC seminars and short courses. He has lectured for AISC throughout the U.S. and Mexico.

Fisher served as the Chairman of the AISC Specification Committee from 2003 until 2010. He continues to be active on several AISC Specification Task Committees. He is a member of the AISI Cold-Formed Specification Committee and ASCE 7. In addition, Fisher serves as the Consulting Engineer to the Steel Joist Institute (SJI). In 1984, Fisher received the T.R. Higgins Lectureship Award presented by AISC, and in 2000 he received AISC's Lifetime Achievement Award. Both awards recognized his exceptional contribution to the steel construction industry. He also received AISC's highest award, the J. Lloyd Kimbrough Award, in 2006. Fisher is the 2020 NASCC: The Steel Conference Speaker Award winner.



**T.R. Higgins Lecture**  
**Gusset Plates: The Evolution of Simplified Design Models**

**K3** Friday noon – 1:30 p.m.

Speaker: Bo Dowswell, PE, PhD,  
 ARC International, LLC

In the design of steel structures, each member is isolated and evaluated using the appropriate requirements from the AISC *Specification for Structural Steel Buildings*. Similarly, gusset plate connections can be complex structural systems that are separated into several elements for design purposes. The behavior of these gusset plate elements can be captured with simple design models, where portions of the plate are treated as structural members with well-documented and predictable behavior. This presentation will provide a brief history of gusset plate design methods and discuss their evolution over the last century. We'll examine current design provisions, where column and beam models are used to predict the strength of gusset plates in various configurations, including wrap-around gusset plates. The presentation will conclude with a preview of a new method to predict the compression strength of gusset plates using notional loads.

ALL

1.5 PDHs

**bio:**

Bo Dowswell started in the steel industry in 1985 as a detailer. Since then, he earned BS, MS, and PhD degrees from Auburn University and The University of Alabama at Birmingham. As a professional engineer, his design practice focuses on steel structures. Currently, he is principal of both SDS Consulting, a design firm, and ARC International, which specializes in research and consulting. Bo is also an adjunct professor at The University of Alabama at Birmingham, where his research and teaching is concentrated on steel connection design. Additionally, he provides consulting services for the AISC Steel Solutions Center.

Dowswell is the author of AISC Design Guide 33: *Curved Member Design*, and he regularly publishes technical articles on steel design. He is a member of several AISC Committees, including the Committee on Specifications, the Committee on Manuals, the Committee on Research and the Task Group on Industrial Buildings and Nonbuilding Structures. Bo is also a member of Structural Stability Research Council, where his activities are primarily related to connection element and beam stability.

1.0 PDH = 0.1 CEU (check with your state licensing board for eligibility for professional credits)

**Exhibit Hall Hours**

<b>Wednesday   4.22.20</b>	<b>noon – 7:00 p.m.</b>
Lunch	noon – 2:00 p.m.
Welcome Reception	5:30 – 7:00 p.m.
<b>Thursday   4.23.20</b>	<b>9:30 a.m. – 5:30 p.m.</b>
Coffee Break	9:30 – 11:00 a.m.
Lunch	noon – 2:00 p.m.
Coffee Break	3:00 – 4:30 p.m.
<b>Friday   4.24.20</b>	<b>9:00 a.m. – 1:00 p.m.</b>
Snack Break	10:15 – 10:45 a.m.

**Registration Desk Hours**

<b>Tuesday   4.21.20</b>	noon – 6:00 p.m.
<b>Wednesday   4.22.20</b>	7:00 a.m.– 5:30 p.m.
<b>Thursday   4.23.20</b>	7:00 a.m.– 5:00 p.m.
<b>Friday   4.24.20</b>	7:30 a.m.– 2:00 p.m.

**NASCC: THE STEEL CONFERENCE**  
 mobile app

Put NASCC: The Steel Conference in the palm of your hand! Stay organized with the session schedule tool, navigate the exhibit hall, learn about exhibitors, and network with attendees during the conference with our mobile app, exclusively designed for The Steel Conference. Visit [aisc.org/nascc](http://aisc.org/nascc) to download the app in early 2020.

Make it social by networking with attendees and joining the conversation on Twitter and Instagram by using **#NASCC20 #AISC**.



## business

### Succession Planning for the Steel Industry

**Z1** Wednesday 8:00 – 9:00 a.m.

Speaker: Trey Prophater, Navix

Moderator: Bray Bourne, LEED AP,  
Universal Steel Inc.

What will you do with your business after retirement? It's never too early to start planning. Join us for some tips and tricks on creating a succession plan, and we'll review important key milestones for transitioning your business.

Erectors, Fabricators

1.0 PDHs

### Building Relationships of Trust

**Z2** Wednesday 9:15 – 10:15 a.m.

Speaker: Aaron Rose, Sure Steel

Moderator: Troy Dye, SE,  
ARW Engineers

What does a lack of trust cost your business? Is it measurable? What does it also do to your personal relationships? Learn how to build trusting relationships and how trustworthiness is categorized. Understand why controls circumvent productivity and why feedback is king. We'll explore real-life examples to demonstrate how building trust and relationships have transformed companies, improved client relations, and saved personal relationships.

Engineers, Erectors, Fabricators

1.0 PDHs

### Build Teamwork That Works to Win

**Z3** Wednesday 3:30 – 4:30 p.m.

Speaker: Dan Coughlin,  
The Coughlin Company

Learn how you as a manager can create effective group dynamics that emphasize a healthy culture with a clear common meaningful purpose, important measurable outcomes, and the vulnerability necessary to work together successfully toward the fulfillment of that purpose and the achievement of those goals.

Architects, Detailers, Engineers,

Erectors, Fabricators

1.0 PDHs

### Effectively Influence Others to Optimize Results

**Z4** Wednesday 1:45 – 3:15 p.m.

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.

Architects, Detailers, Engineers,

Erectors, Fabricators

1.5 PDHs

### Strengthen Your Impact as a People Manager

**Z5** Wednesday 8:00 – 9:00 a.m.

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.

Architects, Detailers, Engineers,

Erectors, Fabricators

1.0 PDHs

### Understand Your Assets as a Manager

**Z6** Wednesday 9:15 – 10:15 a.m.

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.

Architects, Detailers, Engineers,

Erectors, Fabricators

1.0 PDHs

## Don't Be Scared! Learn How to Manage Conflict

**Z7** Friday 8:00 – 9:00 a.m.

Speaker: Jim Reeves, ClearBridge Consulting

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.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Negotiating with Confidence

**Z8** Friday 10:45 – 11:45 a.m.

Speaker: Jim Reeves, ClearBridge Consulting

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.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Closing the Deal on Major Projects (Part 1): The Fabricator's Point of View

**Z9** Thursday 8:00 – 9:00 a.m.

Speaker: Michael Senneway, MJS Management

Join us to learn what is different about big jobs and how to improve your chances of winning them. We'll take a look at tips and tricks for increasing your profitability in the major project arena and explore the best ways to quickly close the deal. Don't miss out on these valuable insights!

Erectors, Fabricators 1.0 PDHs

## Closing the Deal on Major Projects (Part 2): The Owner's Point of View

**Z10** Thursday 9:15 – 10:15 a.m.

Speaker: Michael Senneway, MJS Management

In these tales from the dark side, we'll take a look at closing deals from the owner's perspective. You'll learn to understand owner concerns and what they find most important. You can then use this information to your advantage and to protect your own position.

Erectors, Fabricators 1.0 PDHs

## Navigating Marijuana in the Workplace

**Z11** Wednesday 1:45 – 3:15 p.m.

Speakers: William Judge, Drug Screening Compliance Institute; Charles Prezzia, I-DOHC: Integrated Disability Occupational and healthCare Consultants; Andrew Powell, NCI – Nursing Corps; Wayne Creasap, Ironworkers International Union

The panelists will review what is happening across the country with a variety of legislation regarding the use of marijuana: workplace, medical, and recreational.

Architects, Detailers, Engineers, Erectors, Fabricators 1.5 PDHs

## Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center

**Z12** Wednesday 4:45 – 5:45 p.m.

Speakers: Pamyla Brown, Turner Construction; Kelly Baria, Powers and Sons

The Lakeside Alliance is the five-company joint venture that will manage the construction of the Obama Presidential Center. The Construction Management team is challenging the status quo in its efforts to meet the aggressive diversity goals for the Obama Presidential Center with a robust contractor and community engagement program. We will review the details of the program, which is aimed at creating opportunity for both diverse workers as well as for diverse business entities and contractors.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## The People Side of Change: An Introduction to the ADKAR Method of Change Management

**Z13** Thursday 5:00 – 6:00 p.m.

Speaker: John Schuepbach, Phoenix Solutions Group

A perfectly designed process that no one follows produces no improvement in performance—employees must embrace and adopt a change for it to really make a difference. Change management is a process for engaging employees to make meaningful changes to business results. We'll introduce you to the ADKAR model (Awareness, Desire, Knowledge, Ability, and Reinforcement) and show you how change management can help your small business.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## more business

### A Job Site Built for Tomorrow

**Z14** Thursday 5:00 – 6:00 p.m.

Speakers: Nyckey Heath, Bosworth Steel Erectors;  
Vicki O'Leary, Ironworkers International;  
Lynda Leigh, SE, Turner Construction

Moderator: Jennifer Traut-Todaro, AISC

Job sites are actively changing to bring in more diverse talent to support the increasing need for safety and equity. We'll share diverse perspectives as ironworkers, erectors, and construction managers on the front lines and detail a successful new training program developed to help everyone onsite: #BeThatOneGuy. #BeThatOneGuy gives power back to the workers at every level and in every trade to keep harassment off the job site. Learn how to attract more diverse talent to your site, your shop, and your office by implementing intentional safety and equity policies.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### The Crystal Ball: Construction Market Conditions and Forecasting for Buildings and Bridges

**Z15** Thursday 5:00 – 6:00 p.m.

Speaker: Tabitha Stine, AISC

Moderator: Maysa Kantner, PE, AISC

The current economic climate has a great impact on the construction market. By focusing efforts on developing markets, businesses can be better prepared for possible slowdowns in certain geographic areas or by types of projects. You will gain knowledge of the current construction conditions and a sense of design and construction trends that can help your businesses. You will also learn about historical market conditions for both the building and bridge markets and how we are working to increase those markets.

Architects, Engineers, Erectors, Fabricators 1.0 PDHs/LU

### Engaging Workplace: Don't Throw Away That Training Investment

**Z16** Wednesday 3:30 – 4:30 p.m.

Speakers: Kelly Robers, Walter P. Moore; Jonathan Bayreuther, PE, Veitas & Veitas Engineers; Zahraa Saiyed, PE, AIA, LEED AP, Scyma Consulting

Moderator: Maysa Kantner, PE, AISC

This session will discuss the underlying issues of why retaining employees is an issue and the problems and situations, making them more susceptible to leave the industry. We are going to discuss factors such as work/life balance, private/federal company benefits, maternity/paternity leave, and similar topics that all affect the reasons why professionals leave the AEC industry. We will then dig into what changes would help retain employees and allow for longer and happier tenure. The Panelists will each provide their perspective from various experiences and what they have found to be the significant factors in the shift of equity. We will also discuss the research from the SE3 project and the work they are doing to improve equity in the industry.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## case study

### A New Base for Willis Tower

**C3** Thursday 3:45 – 4:45 p.m.

Speakers: William Bast, SE, PE,  
Thornton Tomasetti; Lynda Leigh, SE,  
Turner Construction

Chicago's Willis Tower (formerly known as the Sears Tower) is now undergoing a \$500 million renovation that will add a new, four-story base surrounding the tower. Construction began in January 2018 and is expected to wrap up by the end of 2019. This expansion adds about 300,000 sq. ft of new space, and another 350,000 sq. ft of existing space will be renovated. The new space will feature a conference center, green rooftop park, and many new restaurants, as well as a food court to enliven the space and serve the building's tenants. Join us to learn how approximately 2,000 tons of structural steel made this renovation project possible.

Architects, Engineers 1.0 PDHs/LU/HSW

## 425 Park Avenue— A New Building Built inside an Existing Building

**C4** Friday 9:15 – 10:15 a.m.

Speakers: Tom Ziemann and Michael David,  
Ziemann Engineering, LLC; Stacey Oxendine,  
Owen Steel Company, Inc.

The new building at 425 Park Avenue in New York City is an 800-ft-tall, 43-story building with an eccentric concrete core located on the east side of the building, steel jumbo columns on the west side of the building, and a steel structure in between. Permitting issues required the building to retain 25% of the existing 31-story building at the site and incorporate this retained structure into the new building. We'll cover the complex process of constructing the new building within the existing building and then demolishing 75% of the existing building, focusing on construction logistics, structural analysis, and load transfer. We'll also highlight the temporary structures used to support hung floors 8 to 20, including load transfer procedures and issues related to differential column shortening/elongation, and finish up with a discussion about the fabrication and installation of jumbo column nodes that connect multiple inclined, skewed, and rotated heavy steel sections at transfer floors.

Architects, Detailers, Engineers,  
Erectors, Fabricators

1.0 PDHs/LU/HSW

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

**C5** Friday 10:45 – 11:45 a.m.

Speakers: Chris Hewitt and Ronald  
Hamburger, Simpson Gumpertz & Heger

Simpson Gumpertz & Heger (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 assessing 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.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

## Expanding the Georgia World Congress Center and More!

**C6** Wednesday 8:00 – 9:00 a.m.

Speaker: Jonathan Hurff, Walter P Moore

Moderator: Jennifer Traut-Todaro, AISC

Demand and revenue in the conference and exhibition industry have risen steadily since 2011, leading to several recently completed, in-progress, and planned convention center expansions. In many cases, convention center expansions require some level of interaction with existing facilities and create unique engineering challenges. We'll look at the Georgia World Congress Center's contiguous exhibition facility expansion as well as other convention center expansion case studies that emphasize unique steel retrofit strategies.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

## State Farm Arena Renovation— Panel Discussion on Project Challenges

**C7** Friday 8:00 – 9:00 a.m.

Speakers: Will Jacobs, Stanley D. Lindsey and  
Associates; Chris Christoforou, Thornton  
Tomasetti, Inc.; Jason Romine, SteelFab

Moderator: Bray Bourne, LEED AP,  
Universal Steel Inc.

This expert panel will discuss the design, fabrication, and erection challenges for the renovation of the State Farm Arena.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

## code of standard practice

### Your Code of Standard Practice— A Fabricator's Perspective

**P1** Wednesday 8:00 – 9:00 a.m.

Speakers: Babette Freund, Dave Steel Company;  
Christian Crosby, PE, Cianbro Corporation

Moderator: 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. We've created a review of the significant provisions that are particularly crucial for fabricators. Join us to cover topics such as fitting and fastening, fabrication tolerances, and inspection of surface preparation and shop painting, as well as guidance about IFCs and contracts.

**Fabricators**

1.0 PDHs

### Your Code of Standard Practice— An Engineer's Perspective

**P2** Thursday 8:00 – 9:00 a.m.

Speaker: Michael West, CSD Structural Engineers

Moderator: 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 AISC Code Committee is currently considering.

**Engineers**

1.0 PDHs

### Your Code of Standard Practice— An Erector's Perspective

**P3** Friday 8:00 – 9:00 a.m.

Speaker: Philip Torchio, Williams Erection

Moderator: 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.

**Erectors**

1.0 PDHs

## connections

### Shear Connections 101

**O1** Wednesday 8:00 – 9:00 a.m.

Speakers: Andrew Haas, PE, Drucker Zajdel  
Structural Engineers, Inc.; Carol Drucker,  
Drucker Zajdel Structural Engineers, Inc.

Shear connections can easily make up 90% of a projects connections, and their importance should not be underestimated. Join us as we highlight industry trends and best practices for cost-effective shear connections. We'll also explore useful tips for job standards and situations that are not covered in AISC's Design Examples ([aisc.org/designexamples](http://aisc.org/designexamples)). Plus, we'll share some great tips and tricks to simplify connection design.

**Detailers, Engineers, Erectors, Fabricators**

1.0 PDHs

### A Soup to Nuts Look at Nuts and Bolts

**O2** Thursday 8:00 – 9:00 a.m.

Speaker: Heath Mitchell, SE, PE, GWY, Inc.

Moderator: Christian Crosby, PE,  
Cianbro Corporation

Since its original publication in 1951, the *Specification for Structural Joints Using High-Strength Bolts*, published by the Research Council on Structural Connections (RCSC), has been an essential document in steel construction for buildings and bridges.

**Engineers, Erectors, Fabricators**

1.0 PDHs



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

03 Wednesday 1:45 – 3:15 p.m.

Speaker: Robert Shaw, 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.

Engineers, Erectors, Fabricators 1.5 PDHs

## Delegating Connection Design

04 Wednesday 3:30 – 4:30 p.m.

Speaker: Clifford 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.

Engineers, Fabricators 1.0 PDHs

## Strategies for Managing Projects with Delegated Design

05 Wednesday 4:45 – 5:45 p.m.

Speakers: Jonathan Frosch, PE, and 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.

Detailers, Engineers, Fabricators 1.0 PDHs

## Hidden Gems: Connection Structural Integrity Code Changes and More

06 Thursday 3:45 – 4:45 p.m.

Speaker: Brian Cobb, Structural Detailing, LLC

Moderator: James Stever, Virtual Steel Technologies, Inc.

The information in the contract drawings at the heart of fabrication and detailing bids does not always agree with what is in the specifications—or even what the detailer/fabricator knows. Have you been asked to fabricate or detail a job using *IBC Structural Integrity Code Requirements*? Know what that is and when or how it applies? We'll make sure you, as the fabricator/detailer/connection design specialty engineer (CDSE), are equipped with what you should know and are able to resolve pre-bid or post-bid conflicts between what is given and what is required.

Detailers, Engineers, Fabricators 1.0 PDHs

## The Impact of Connection Design and Detailing on Cost and Productivity in Fabrication and Erection

07 Thursday 9:15 – 10:15 a.m.

Speakers: Lutfur Khandaker, PE, KBK Structural Design; Raunac Khandaker, Parsons

After a steel project is awarded, the fabricator gets a final opportunity to cut down the schedule and reduce the cost without sacrificing quality—starting with connection design and detailing. We'll use design documents from projects around the country to discuss the role of design engineers, connection designers, detailers, fabricators, and erectors in this process. By the end of the session, you'll have a deep understanding of how the connection designer and detailer can maximize fabricator resources.

Detailers, Engineers, Fabricators 1.0 PDHs

## Solving the Puzzle of Delegated Connection Design

08 Thursday 2:00 – 3:30 p.m.

Speakers: Sayle Lewis, PE, and Katelyn O'Donnell, Fluor; Carol Drucker, Drucker Zajdel Structural Engineers, Inc.; 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!

Engineers, Fabricators 1.5 PDHs

## more connections

### The Bottom Line: The Impact of 30 Years of Material and Code Changes on Connection Costs

09 Thursday 3:45 – 4:45 p.m.

Speaker: Eric Sobel, SE, PE, Martin/Martin

Thirty years ago, a postage stamp cost 25 cents. A gallon of gas cost \$1. And steel connection costs were completely different. Learn how changes to the AISC specification affecting connection design and current material availability/pricing affect connections that have become more or less expensive in the last 30 years. Assuming that each fabricator is set up for maximum efficiency, this session will focus on minor changes to consider, such as preferred bolt mix and size/grade of connection material, instead of comparing different connection styles. We'll look at the impact of member materials (A36 vs A572 vs A913), some specification changes from 9th Edition through 14th Edition, connection material availability and cost (A36 vs A572), and bolt cost (A325 vs A490).

Detailers, Engineers, Fabricators

1.0 PDHs

### Economical Exposed Steel Connections

10 Thursday 5:00 – 6:00 p.m.

Speaker: Terri Meyer Boake, LEED AP, University of Waterloo

Connections are the primary point of focus when designing Architecturally Exposed Structural Steel. The AISC *Code of Standard Practice* Section 10 defines a range of categories and fabrication characteristics that suggest approaches to connection detailing. This results in a range of choices that can be made that directly impact the cost of the connections and therefore the overall cost of the structure. This presentation will highlight various approaches to AESS connection design that can be used to reduce the cost of detailing while still achieving the aesthetic intentions of the design. The presentation will include a wide variety of close-up examinations of AESS connections from the perspective of an architect and fabricator.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

### Connection Design Using Advanced Finite Element Analysis: Why, When, and How

11 Friday 8:00 – 9:00 a.m.

Speakers: Rafael Macedo and Luiz Macedo, Emasa Engineering

Although finite element analysis (FEA) has advanced tremendously in the last decade, it is still regarded with skepticism by the structural steel industry. We'll explore the application of FEA techniques for designing connections as well as current state-of-the-art advanced FEA and why using it can improve material optimization and costs. We'll use real-world examples to illustrate the differences between connection design calculated using FEA and those calculated using a traditional approach and share practical FEA best practices and pitfalls.

Engineers

1.0 PDHs

### Connections: Art, Science, and Information in the Quest for Economy and Safety—Current Views From Past Higgins Award Winners

12 Friday 9:15 – 10:15 a.m.

Speaker: William Thornton, Cives Steel Company

Few people are as familiar with changes to steel connection design over the last 25 years as the Chair of the AISC Manual Committee from 1985 to 2011. This is your chance to get a unique insider perspective on major changes such as the uniform brace method for bracing connections, improved ductility requirements for simple shear connections, recognition of the Lower Bound Theorem of limit analysis as a fundamental principle of structural steel design for both mainframe and connections, a prying action solution formulation that has been used in every AISC *Manual* from the 1st Edition *LRFD Manual*, gusset buckling analysis based on the Whitmore section and an equivalent simple column, development of a method for the design of extended single-plate shear connections, and a method to estimate the effects of eccentricities in claw angle bracing connections.

Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

### Economic Design of SMF Connection Continuity Plate Welds

13 Wednesday 4:45 – 5:45 p.m.

Speakers: Kevin Moore and Adel Mashayekh, PhD, Simpson Gumpertz & Heger

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.

Detailers, Engineers, Fabricators

1.0 PDHs

# constructability

## Technology Meets Constructability

Y1 Wednesday 9:15 – 10:15 a.m.

Speakers: David Ruby, SE, PE, and  
Tim Francisco, PE, PhD, Ruby+Associates

Moderator: Zach Hansen, SE, ARW Engineers

Incomplete or inaccurate assumptions in your model can cause problems when it comes to the fabrication and erection of structural steel. We'll tell you what to look out for.

Engineers 1.0 PDHs

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

Y2 Wednesday 1:45 – 3:15 p.m.

Speakers: Doug Hoffman, Vulcraft – Nucor;  
Tim Holtermann, Canam Buildings

Moderator: Michael Whittle, Vulcraft

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).

Engineers 1.5 PDHs

## Challenges for Designers of Crane-Supporting Steel Structures

Y3 Wednesday 1:45 – 3:15 p.m.

Speakers: Robert MacCrimmon,  
Hatch and Associates; John Rolfes,  
CSD Structural Engineers

Designing crane-supporting steel structures requires several unique considerations. We'll start with a review of typical framing systems used to support top-running cranes and basic terminology. You'll also learn about different types of potential crane forces, key design elements, and finish with erection consideration.

Engineers, Fabricators 1.5 PDHs

## Rebuilding the Big Box

Y4 Wednesday 3:30 – 4:30 p.m.

Speaker: Shelley Clark, SE, PE,  
Magnusson Klemencic Associates

Want a little insight into one of the hottest redevelopment topics? You've come to the right place. Retail is going through another evolution, and what to do with closed anchor stores has become one of the hottest challenges in redevelopment. We'll touch on many important aspects of redevelopment costs and leasing strategies, as well as how steel is frequently the material of choice for adaptive re-use of vacant retail space. Hurry while supplies last!

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## What's Wrong with This Picture?

Y5 Wednesday 4:45 – 5:45 p.m.

Speakers: Socrates Ioannides, SE, Structural  
Affiliates International; Tony Hazel, PE,  
Innovative Engineering Solutions

Quick—can you spot the design and/or construction error? There's only one way to find out! Engineers with careers spanning over 40 years will host a casual, interactive session where your task is to find the problem in each photograph. Put your knowledge to the test!

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Listen Up: Sound Isolation and Noise Control in Steel Buildings

Y6 Thursday 9:15 – 10:15 a.m.

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*.

Architects, Detailers, Engineers,  
Erectors, Fabricators 1.0 PDHs/LU/HSW

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

Y7 Thursday 2:00 – 3:30 p.m.

Speakers: Thomas Murray, Virginia Tech;  
Brad Davis, University of Kentucky

Moderator: Keith Juedemann, Valley Joist

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.

Engineers 1.5 PDHs

## more constructability

### Improvements to Stud Welding

**Y8** Thursday 3:45 – 4:45 p.m.

Speaker: Bill Houston, Stanley Black & Decker

Join us for an overview of recent advances in the field of stud welding.  
Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### How Varying Tolerances and Lack of Coordination Can Cause Constructability, Quality, and Cost Issues

**Y9** Friday 9:15 – 10:15 a.m.

Speakers: Daniel Welsh, Washington Ornamental Iron Works, Inc.; Nyckey Heath and Carl Williams, Bosworth Steel Erectors

Moderator: Harvey C. Swift, IMPACT

Want to avoid constructability, quality, and cost issues that stem from varying tolerances and a lack of coordination? Then this is a must-attend session for you. Join us to learn how to proactively manage issues surrounding steel tolerances (mill, fabrication, and erection) and the conflicts with other differing trade tolerances that exist within nearly every project (concrete, masonry, glass, etc.).

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

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

**Y10** Friday 10:45 – 11:45 a.m.

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 and focus on both corrosion performance and resilience in guidance on the different stainless steel alloy families and specific alloy selection for different service environments.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

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

**Y11** Thursday 8:00 – 9:00 a.m.

Speaker: Brian Volpe, SE, PE, LEED, 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.

Detailers, Engineers, Fabricators 1.0 PDHs

### Welding to Unknown Steels

**Y12** Friday 10:45 – 11:45 a.m.

Speaker: Tim Duke, Williams Erection Company

Congratulations! Your firm has secured the renovation of an historic fixture in your city! Now, where are all those old mill certs for that iron they built it out of so you know what you're dealing with? Let's take a walk through a few renovation projects and discuss some lessons learned from a fabricator's and erector's view.

Engineers, Erectors, Fabricators 1.0 PDHs

### Serviceability Considerations for the Practicing Engineer

**Y13** Friday 8:00 – 9:00 a.m.

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.

Architects, Engineers 1.0 PDHs

## design analysis

### Meeting Tolerances Where Steel and Façade Collide

**E1** Wednesday 8:00 – 9:00 a.m.

Speakers: James Parker, SE, Simpson Gumpertz & Heger; Jim Casper, SE, enclos

Moderator: Ebiji Akah, PE, SMBH, Inc.

Steel building structures must integrate with the façade systems they support. Whether the connections resist vertical or lateral loads, the two systems must be coordinated. We'll go beyond superficial exploration of several topics related to façades and steel frame structures from both an EOR and façade contractor perspective.

**Detailers, Engineers, Erectors, Fabricators** 1.0 PDHs

### Structural Steel in Exterior Applications

**E2** Wednesday 9:15 – 10:15 a.m.

Speaker: Bruce Gibbons, Thornton Tomasetti

Moderator: Steven Hofmeister, SE, Thornton Tomasetti

Exterior applications for steel are everywhere, from parking garages to exoskeleton structures to long spans in stadia—all requiring additional consideration for things like corrosion protection, wind-induced vibration, thermal differentials, and enhanced aesthetics. However, with up-front planning, deliberate construction, and a maintenance plan, exposed structures can provide creative architectural and structural solutions with long, trouble-free lifespans.

**Detailers, Engineers, Fabricators** 1.0 PDHs/LU/HSW

### Designing Built-Up Flexural Members

**E3** Thursday 2:00 – 3:30 p.m.

Speaker: Louis F. Geschwindner, PE, PhD, 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.

**Engineers** 1.5 PDHs

### Fast and Efficient Design for Stability

**E4** Wednesday 1:45 – 3:15 p.m.

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.

**Engineers** 1.5 PDHs

### Introduction to Software Development for Structural Engineers

**E5** Wednesday 3:30 – 4:30 p.m.

Speakers: Leigh Arber, SE, SOM; Barbara Simpson, PhD, Oregon State University

From analysis to detailing to drawing production, software is a major part of the steel industry. Join us for an introduction to programming fundamentals and tips to get started. We'll cover the basics of how to construct a simple program and present sample source code relevant to the structural steel industry.

**Engineers** 1.0 PDHs

### Industrial Crane Runway Capacity Upgrades

**E6** Wednesday 4:45 – 5:45 p.m.

Speaker: Tim Bickel, PE, CSD Structural Engineers

Let's dive into the critical issues that need to be addressed when we increase either crane capacity or the service life of a bridge crane. We'll also explore the roles and responsibilities of all stakeholders involved in this process.

**Engineers** 1.0 PDHs

## more design analysis

### Lean On Me: Contemporary Railing Systems Will Help You Carry On

**E7** Friday 8:00 – 9:00 a.m.

Speaker: Tony Leto, Wagner Architectural Systems

Moderator: Jerod Hoffman, PEng, PE,  
Meyer Borgman Johnson, Inc.

Explore contemporary design options for railing systems including post-mounted systems, cable railings, structural glass railings, and LED illuminated railings. We will also address code and safety issues related to handrails and guards.

Architects, Detailers, Engineers,  
Fabricators

1.0 PDHs/LU/HSW

### Principles and Practice Related to the Direct Analysis Method

**E8** Wednesday 1:45 – 3:15 p.m.

Speakers: Joshua Buckholt, SE, PE, CSD Structural Engineers; Ronald Ziemian, Bucknell University

We'll review the Direct Analysis Method, essential stability basics, and practical ways that the Direct Analysis Method can be applied to the design of steel structures. We will also outline the provisions of AISC's *Specification for Structural Steel Buildings*, including new clauses in AISC 360-16.

Engineers

1.5 PDHs

### The Stability Game Show—2nd Edition

**E9** Thursday 2:00 – 3:30 p.m.

Speakers: Cliff Bishop, Exponent, Inc.; Patricia Clayton, University of Texas at Austin; John Hooper, Magnusson Klemencic Associates; Larry Griffis, Walter P Moore; Craig E. Quadrato, Wiss, Janney, Elstner Associates, Inc.; Ronald Ziemian, Bucknell University

By popular demand: The team is back with a whole new set of interesting structural collapse case studies! Our esteemed panel of engineers and academics will present their views on the root cause of each collapse, then it's your turn to vote for the most likely failure mode.

Detailers, Engineers, Erectors, Fabricators

1.5 PDHs

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

**E10** Thursday 9:15 – 10:15 a.m.

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

Moderator: Eric Siew, Gooder-Henrichsen Co.

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.

Engineers

1.0 PDHs

### Get Ahead of the Curve

**E11** Thursday 3:45 – 4:45 p.m.

Speaker: Bo Dowswell, PE, PhD, ARC International, LLC

Curved beams have great visual aesthetics but behave much differently from straight members. Dive deep into the new Design Guide 33: *Curved Member Design* with us!

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

### Shear Connection Beam Reinforcement

**E12** Thursday 5:00 – 6:00 p.m.

Speaker: Matthew Kawczynski, PE, AIA,  
McLaren Engineering Group

Moderator: Matthew Messing,  
Orange County Ironworks, LLC

We'll review how to properly design web doublers, size welds, and detail doublers. We will also review alternate details such as haunch plates with single or double shear tabs.

Engineers

1.0 PDHs

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

**E13** Thursday 8:00 – 9:00 a.m.

Speakers: Spencer Quiel, PE, 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.

Architects, Engineers

1.0 PDHs

## Composite Construction 101: Fundamentals, Practical Implementation, and New Thrust Areas

**E14** Wednesday 1:45 – 3:15 p.m.

Speakers: W. Samuel Easterling, PE, PhD, Iowa State University; Susan Burmeister, PE, S2B Structural Consultants

Let's review the fundamentals of composite design as it pertains to steel-framed building floor systems, including recent changes to the AISC *Specification*. We'll also introduce opportunities for construction using composite framing alternatives.

Engineers

1.5 PDHs

## Update from 2019: Lateral Load Transfer From Diaphragms to Resisting Elements

**E15** Friday 9:15 – 10:15 a.m.

Speaker: Thomas Meyer, Magnusson Klemencic Associates

Let's revisit the analysis of loads passing through diaphragms and collectors to the lateral load-resisting system, highlighting aspects of these systems that were not covered in the 2019 NASCC seminar. We'll present practical design examples, focusing on critical connections and the proper application of the diaphragm-specific provisions of ASCE 7, and discuss when and how to incorporate horizontal steel truss diaphragms.

Engineers

1.0 PDHs

## Recent Developments in Seismic Performance of Composite Buildings

**E16** Friday 10:45 – 11:45 a.m.

Speakers: Tiziano Perea, Universidad Autónoma Metropolitana; Jerome Hajjar, Northeastern University

This session will look at two recent efforts, one experimental and one analytical, to develop better and more economic detailing of connections in composite structures. The experimental research focuses on testing simple details for connections between wide flange beams and rectangular HSS columns under the cyclic loading protocol from the AISC *Seismic Provisions* (ANSI/AISC 341-16). These tests allow characterization of failure modes (i.e. yielding, buckling, fractures), and the connection strength, stiffness and ductility. The analytical work centers on the development of a finite element framework capable of simulating cyclic fracture through the use of high fidelity, user-defined, steel and concrete material models thus providing the capacity to predict failure and collapse in composite structures. The presentation itself focuses on the simulation of composite connections and their integral role in the seismic performance of the steel deck diaphragm.

Detailers, Engineers, Erectors

1.0 PDHs

## erection

### The Importance of Temporary Bracing

**R1** Thursday 8:00 – 9:00 a.m.

Speakers: Troy Dye, SE, and Barry Arnold, ARW Engineers; Ryan Godfrey, Sure Steel

Let's talk about the importance of temporary bracing plans for the erection process and the critical partnership between the erector and specialty structural engineer. We'll use examples of common steel buildings to show how to use AISC Design Guide 10: *Erection Bracing of Low-Rise Structural Steel Frames* and ASCE 37-14 to determine environmental forces on the building during erection and which elements of the bracing systems need evaluation.

Engineers, Erectors

1.0 PDHs

## more erection

### You Lift Me Up: Critical Lift Planning Basics 101

**R2** Thursday 9:15 – 10:15 a.m.

Speaker: Will Jacobs, SE, PE, Stanley D. Lindsey and Associates, Ltd.

We'll explore the basics of critical lift planning, focusing on mobile cranes for those who may be unfamiliar with this aspect of the industry. Learn about categorizing critical lifts, crane behavior, critical lift concerns, requirements for documenting critical lift plans, and more!

**Engineers, Erectors**

1.0 PDHs

### Cranes: More Than Just Erection

**R3** Thursday 3:45 – 4:45 p.m.

Speakers: Jeremy Billig, PE, and Eric Helt, PE, McLaren Engineering Group

Cranes have become ubiquitous at jobsites, but they're hoisting much more than structural beams these days. We'll review how to use cranes for non-typical hoisting applications such as supporting outdoor performers and other film industry and marketing efforts.

**Erectors**

1.0 PDHs

### Advances in Erection Engineering for High-Rise Steel Structures

**R4** Thursday 5:00 – 6:00 p.m.

Speaker: Tim Nelson, SE, Degenkolb Engineers

Moderator: John Kennedy, SE, PE, Structural Affiliates International, Inc.

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 describe engineering approaches that can facilitate constructing these complicated and unique structures.

**Engineers, Erectors, Fabricators**

1.0 PDHs

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

**R5** Friday 8:00 – 9:00 a.m.

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*.

**Engineers, Erectors, Fabricators**

1.0 PDHs

### Erection Planning Made Easy!

**R6** Friday 9:15 – 10:15 a.m.

Speakers: Daniel Kaufman, Strategic Certification Support; Alan Sheppard, PE, The DuRoss Group

Moderator: Kenny Waugh, IMPACT

We'll take a look at the AISC 207-16 requirements for erection plans (5.20 Erection Plan) and provide some practical examples and possible options for meeting those requirements.

**Erectors**

1.0 PDHs

### What a Steel Erection Engineer Wishes Steel Erection Engineers Knew About Steel Erection

**R7** Friday 10:45 – 11:45 a.m.

Speakers: Nyckey Heath and Carl Williams, Bosworth Steel Erectors

Moderator: Harvey C. Swift, IMPACT

More design engineering firms are creating construction engineering divisions with young engineers, trained to be designers of buildings, creating plans for how to assemble them in the field. One engineer will share wishes to share reflections on some of the differences and considerations between being a design engineer and a construction engineer derived from 34 years of experience as an engineer for erectors and fabricators.

**Engineers, Erectors, Fabricators**

1.0 PDHs



## Legal

### Change Orders: How to Avoid Making Their Problems Your Problems

L1 Thursday 8:00 – 9:00 a.m.

Speaker: George Pallas, Cohen Seglias Pallas Greenhall & Furman, P.C.

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.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### Manage the Risk in Your Contract Provisions

L2 Thursday 9:15 – 10:15 a.m.

Speaker: Jason Copley, Cohen Seglias Pallas Greenhall & Furman, P.C.

Don't fall prey to the risks associated with certain contract provisions. We'll give you a toolkit to execute bids that consider or exclude risk as necessary. Such risks may include payment, design risk, schedule, design changes, and pricing for materials. By the end of the session, you'll know precisely which provisions in contracts shift the most risk to fabricators and erectors and how to best manage these risks. We'll also discuss strategies to negotiate terms that account for things that are not within your control.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

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

L3 Thursday 2:00 – 3:30 p.m.

Speakers: David Zalesne, Owen Steel Company; Kirk Harman, The Harman Group; Edward Seglias, Cohen Seglias Pallas Greenhall & Furman, P.C.

Moderator: Edward Seglias, Cohen Seglias Pallas Greenhall & Furman, P.C.

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.

Architects, Detailers, Engineers, Erectors, Fabricators 1.5 PDHs

### Aligning Your Contracts with the Code of Standard Practice for Steel Buildings and Bridges

L4 Thursday 3:45 – 4:45 p.m.

Speaker: Jason Copley, Cohen Seglias Pallas Greenhall & Furman, P.C.

How do the requirements of a contract differ from the trade practice established in the AISC *Code of Standard Practice for Steel Buildings and Bridges*? And what should you do when they say conflicting things? We'll provide you with a set of steps you should take to handle variations between your contract and the *Code of Standard Practice* to minimize disputes.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### Understanding Commercial General Liability and Builders' Risk Policies: What Covers What?

L5 Thursday 5:00 – 6:00 p.m.

Speaker: Jonathan Cass, Cohen Seglias Pallas Greenhall & Furman, P.C.

Learn more about the interplay between the coverages provided under commercial general liability (CGL) and builder risk policies through real-world claim examples and take home recommendations to protect your company when claims arise.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### The Formula for a Project Train Wreck

L6 Friday 9:15 – 10:15 a.m.

Speakers: Stuart Sobel, Siegfried Rivera; Roger Ferch, Ferch Consulting; Gregory Parsons, Stites & Harbison, PLLC; Kirk Harman, The Harman Group, Inc.

Moderator: Edward Seglias, Cohen Seglias Pallas Greenhall & Furman, P.C.

A panel of construction attorneys and structural steel experts who recently litigated a case involving a complex urban project will discuss actions taken by the owner, A/E and CM that dramatically increased the steel fabricator/erectors' costs and led to expensive litigation. The panel will discuss evolution of a complex, partially delegated design on a fast track project, the owner's mismanagement of the A/E, the CM's ineffective handling of project communications/logistics, the fabricator/erectors' reaction, how compliance with the AISC *Code of Standard Practice* could have prevented the litigation, and the relevance of the *Code* in evaluating the performance of all parties.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## innovations

### SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments

**I1** Wednesday 8:00 – 9:00 a.m.

Speakers: Amit H. Varma, Purdue University; Michel Bruneau, PEng, PhD, University At Buffalo – SUNY

Moderator: Devin Huber, AISC

We're sure you've heard about SpeedCore by now. This concrete-filled composite steel plate shear wall core is revolutionizing the industry. AISC and the Charles Pankow Foundation are funding ongoing research at Purdue University and the University at Buffalo. Learn what these cutting-edge researchers are discovering about experimental behavior, numerical analysis, seismic design, and fire-resistant design.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

### Lessons from the First SpeedCore Project

**I2** Wednesday 9:15 – 10:15 a.m.

Speakers: Ron Klemencic, Magnusson Klemencic Associates; Amir Jamshidi, Supreme Steel

Moderator: Lawrence F. Kruth, PE, AISC

Rainier Square Tower in Seattle is the first project to use the new SpeedCore concrete-filled composite plate shear wall system. The building topped out in August 2019, an estimated 38% sooner than it would have with a cast-in-place concrete core. Members of the project's team will give an invaluable analysis of what they learned during design, fabrication, and erection with this game-changing core system.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs/LU/HSW

### The World's First Metal 3D-Printed Bridge

**I3** Wednesday 3:30 – 4:30 p.m.

Speaker: Leroy Gardner, Imperial College London

Fire up the robots: The world now has a 10.5-m footbridge printed using wire and arc additive manufacturing (WAAM). We'll talk about the potential for metal 3D printing in structural engineering as well as the challenges and necessary considerations for designing with this technology, drawing from lessons learned during the testing, analysis, and verification of this bridge and its components. 3D laser scanning and Digital Image Correlation facilitated experiments including material testing, compressive testing of cross-sections, and full load testing of the bridge, and verification used parallel finite element modeling of the full bridge and its constituent components. Learn more about this thrilling project from the experts who are leading the way.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## roundtable

### Fabricator Roundtable

**RT1** Wednesday 1:45 – 3:15 p.m.

Moderator: Brad Lange, AISC

Fabricators rarely get to talk with their peers in a non-competitive setting. This workshop allows groups of fabricators from different regions of the country, assisted by a moderator, to sit down in small groups and discuss issues critical to the operation and functioning of a structural steel fabrication shop. Discussions will range from dealing with escalation clauses to implementing quality systems. Take advantage of this annual event to learn and explore opportunities with your peers!

Fabricators

1.5 PDHs

### Industry Roundtable

**RT2** Thursday 2:00 – 3:30 p.m.

Moderator: Erin Conaway, AISC

This roundtable is an opportunity for fabricators, erectors, detailers, service centers, and producers to talk openly with each other in a non-competitive setting. Expanding on the popular fabricator roundtable, this workshop enables team players to sit down in small groups and discuss common issues encountered when working together. Each group will be moderated and discussions will range from contractual issues to improving communication and working with BIM. Use this opportunity to explore ideas with your peers, customers, and vendors.

Detailers, Erectors, Fabricators

1.5 PDHs

## project management

### Work is Making Me Sick!

**W1** Wednesday 8:00 – 9:00 a.m.

Speakers: Kathi Dobson, Alberici; Vicki O’Leary, Ironworkers International

We’ve all been sick of work, but exposing workers to things that can make them sick is no joke. Fabrication shops—and even general office settings—are full of hidden hazards that affect worker well-being, from harsh chemicals like paints and solvents to an environment that doesn’t foster a safe work culture. The costs associated with worker illness and workers compensation can make or break a company, depending on how they are managed. This review of common and not-so-common hazards is a must for anyone who works in or manages steel fabrication and steel erection.

Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

### Fundamentals of Project Scheduling for Steel Fabrication

**W2** Wednesday 9:15 – 10:15 a.m.

Speaker: Mark Holland, Paxton & Vierling Steel Co.

Learn all about the basic concepts necessary to plan and schedule the steel fabrication and erection process—all the way from award to final billing. We’ll explore the fundamentals of the critical path scheduling method (CPM) and how to determine how much detail you need to predict the outcome but still enable efficient updates to the schedule. The project schedule is vitally important at bid; we’ll use real-world examples to show how the schedule evolves over time. We’ll also tell you all about concepts of baseline, resource management, and different ways to present the schedule to manage both the shop and customer demands.

Architects, Detailers, Engineers, Fabricators

1.0 PDHs

### Walk Before You Run: The Importance of Pre-Planning Meetings

**W3** Wednesday 3:30 – 4:30 p.m.

Speaker: Chris Landstrom, Cives Steel Company

Your company just won that new project you’ve been chasing for months and you’re the manager. Now what? Schedule a meeting with your team. The best chance for a successful project starts before the first piece is detailed—the more thought you provide upfront, the fewer problems you’ll encounter during project execution. Having a productive meeting with your team sets you up to achieve and surpass project goals. We’ll give you all the tools you need to hold an effective pre-planning meeting and what to discuss in order to avoid problems down the road.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

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

**W4** Wednesday 4:45 – 5:45 p.m.

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.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

## seismic

### Structural Inspections for Seismic Design Structures

**U1** Wednesday 8:00 – 9:00 a.m.

Speaker: Michael Bobinchuck, Terracon

Moderator: Zach Hansen, SE, ARW Engineers

Structural inspections have you quaking in your boots? We've got you covered! Seismic force-resisting systems (SFRS) have specific design criteria for the steel members themselves but also specific welding requirements and inspection requirements with those welds. We'll review the various codes that are applicable to seismic structures, emphasizing the two primary codes for NDE inspections. AISC 341 covers design, fabrication, erection, and inspection requirements, while AWS D1.8 covers the welding, inspection techniques, and certifications required to weld and examine SFRS welds. We'll also talk about the different certifications required and the certifying agencies associated with them.

Engineers

1.0 PDHs

### Movement Joints: What Are They and When Are They Needed?

**U2** Wednesday 3:30 – 4:30 p.m.

Speakers: Patrick McManus, SE, PE, PhD, Martin/Martin; Jules Van de Pas, SE, PE, CSD Structural Engineers

Moderator: Stephanie Hautzinger, SE, AIA, Cannon Design

Buildings that are not properly designed for thermal and seismic movements can tear themselves apart. Learn more about thermal expansion and contraction, how it differs from seismic movements, and why it's so important to account for building movement. We'll get you started with guidelines and recommendations for spacing, sizing, and detailing of various movement joints.

Architects, Detailers, Engineers, Erectors, Fabricators

1.0 PDHs

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

**U4** Wednesday 4:45 – 5:45 p.m.

Speaker: Aaron Malatesta, PE, 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 serve to 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.

Engineers

1.0 PDHs

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

**U5** Thursday 2:00 – 3:30 p.m.

Speakers: Charles Roeder and Dawn Lehman, University of Washington

Moderator: James 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.

Engineers

1.5 PDHs

### Principles and Practice in Seismic Design

**U6** Wednesday 1:45 – 3:15 p.m.

Speakers: Michael D. Engelhardt, University of Texas at Austin; John Hooper, Magnusson Klemencic Associates

Moderator: Guillermo Diaz Fanas, Qu-Ake

Get to know seismic design! In this session, we will introduce the concepts of seismic design, essential seismic design basics, and practical ways that the seismic design can be applied to steel structures. We will also discuss the appropriate provisions of AISC 341.

Engineers

1.5 PDHs

# steel construction

## From the Mill to Topping Out Session 1: Introduction

**M1** Wednesday 8:00 – 9:30 a.m.

Speaker: Andrew Twarek, SE, PE,  
Ruby+Associates

All parties involved in the steel construction process play a critical role, from the office (structural design, connection design, and erection engineering), to the plant (steel production and fabrication), to the field (erection and quality assurance). Using the *AISC Code of Standard Practice for Steel Buildings and Bridges* as a framework, we'll introduce the team of contributors who are responsible for creating a structural steel building.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## From the Mill to Topping Out Session 2: The Manufacturing of Structural Steel Shapes

**M2** Wednesday 2:00 – 3:30 p.m.

Speakers: Jim Schoen and Shane Vernon, PE,  
Nucor-Yamato Steel

Do you need to shape up your knowledge of how structural steel shapes are made? We've got you covered with a basic overview of modern steelmaking processes involved in the production of W, MC, C, M, L, S, and piling shapes. We'll cover electric arc furnace operations, ladle metallurgy furnace operations, continuous casting, rolling operations, and testing and metallurgy.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## From the Mill to Topping Out Session 3: Steel Fabrication

**M3** Wednesday 4:00 – 5:30 p.m.

Speaker: Christian Crosby, PE,  
Cianbro Corporation

What exactly happens in a fabrication shop? We'll give you a detailed review of each and every step in the fabrication process from the start of a project through final shipment: detailing, project management, purchasing of material, production (receiving material, cutting, hole making, parts, layout, fit, welding, bolting, cambering, assembling, cleaning, and coating), quality control (inspection, testing, and error resolution), and shipping.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## From the Mill to Topping Out Session 4: Connection Design as a Fabricator's Representative

**M4** Thursday 8:00 – 9:30 a.m.

Speaker: Andrew Twarek, SE, PE,  
Ruby+Associates

What does a specialty structural engineer do when the structural engineer of record delegates connection design? We'll lay out the process for you, taking you through what the *Code of Standard Practice for Steel Buildings and Bridges* says about connection design before getting down the details about critical information provided on design drawings, the request for information (RFI) process, the selection of standard connection types and materials, common challenges, practical tips to facilitate efficiencies in the shop and in the field, and helpful references for connection design.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## From the Mill to Topping Out Session 5: Steel Erection: It Doesn't Get Built Without the Erector

**M5** Thursday 2:00 – 3:30 p.m.

Speaker: Philip Torchio, Williams Erection

Structural steel erection is when the building's frame is assembled safely and economically onsite. We'll walk you through the process: erectors contractual relationships, estimating, the *AISC Code of Standard Practice for Steel Buildings and Bridges*, erection schemata, selling an erection project, prefabrication coordination, reception pre-mobilization planning, and finally completing the work.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## From the Mill to Topping Out Session 6: Stability During Construction

**M6** Thursday 4:00 – 5:30 p.m.

Speaker: Benjamin Miller, SE, PE, Ruby+Associates

What steps can the erector's engineer take to ensure the stability of each stage of construction during structural steel erection? Great question! We'll cover the *Code of Standard Practice for Steel Buildings and Bridges* requirements for the EOR and erector, design standards and design guides, the importance of load path, global stability, element stability (i.e., stability of long-span trusses), temporary bracing/shoring design, staged construction considerations, and more.

**Engineers, Erectors, Fabricators** 1.5 PDHs

## more steel construction

### From the Mill to Topping Out Session 7: Field Fixes and Solutions

**M7** Friday 8:00 – 9:30 a.m.

Speaker: Larry Kloiber, LeJeune Steel

What do you do when an anchor rod hole is misplaced? Or the columns aren't plumb? What do you do when you're notified of a field problem? More importantly, what can you do to prevent these problems from occurring in the first place? Drawing on years of practical experience, we'll provide the tools and knowledge you need to not only fix but also potentially prevent these field problems, ranging from anchor rods to columns and beams to reinforcing members and connections to fit-up problems and member selection guidelines.

Engineers, Erectors, Fabricators

1.5 PDHs

### From the Mill to Topping Out Session 8: Quality Control and Quality Assurance

**M8** Friday 10:00 – 11:30 a.m.

Speaker: Lawrence F. Kruth, PE, AISC

How do you specify and ensure a quality steel project? The answer is in Chapter N, which has been part of the AISC *Specification for Structural Steel Buildings* (ANSI/AISC 360) since 2010. Why is it in the AISC *Specification*? Are these new quality requirements for fabrication and erection? What is the difference between Quality Control (QC) and Quality Assurance (QA)? How does this relate to the *International Building Code (IBC)*? We'll address these burning questions and much more—for instance, do statistics show a quality program is functioning while increasing productivity? The answers may surprise you.

Engineers, Erectors, Fabricators

1.5 PDHs

## technology

### Yes, You Scan! Laser Scanning and Steel

**T1** Friday 8:00 – 9:00 a.m.

Speaker: Will Ikerd, PE, Ikerd Consulting, LLC

Take advantage of the current state-of-the-art innovations in laser scanning. We'll address how to specify the accuracy and tolerance requirements for steel with laser scanning and show how laser scanning can help fabricators protect their interests when steel meets other trades. You'll also learn how fabricators can request laser scanning services, define scopes, and establish conceptual budgets for estimating.

Detailers, Engineers, Fabricators

1.0 PDHs

### Legal Lessons Learned with Building Information Modeling (BIM)

**T2** Wednesday 9:15 – 10:15 a.m.

Speaker: Will Ikerd, PE, Ikerd Consulting, LLC

What risks do building design and construction teams face with Building Information Modeling (BIM)? Get insight and answers from an expert who's consulted in some of the nation's largest litigation cases and is the founding author of the BIMForum Level of Development (LOD) specification. This is your chance to get legal lessons learned from risk management with BIM LOD.

Detailers, Engineers, Fabricators

1.0 PDHs

### Artificial Intelligence: The New Frontier in Structural Design

**T3** Wednesday 1:45 – 3:15 p.m.

Speaker: Robert Otani, PE,  
Core Studio at Thornton Tomasetti

Artificial intelligence (AI) could radically disrupt traditional consulting engineering practice. AI algorithms can allow a very large firm to capture the knowledge of an entire group of engineers and make that expertise available to all. That level of knowledge-sharing is not possible in conventional interpersonal learning. We'll discuss new software that can provide the structural design of a building (including gravity, lateral, and foundation systems) in just seconds, rather than weeks.

Detailers, Engineers, Fabricators

1.5 PDHs

### New and Evolving Applications for Virtual Reality and Augmented Reality

**T4** Wednesday 3:30 – 4:30 p.m.

Speaker: Chris Keyack, CMK BIM Consulting

Virtual reality (VR) and augmented reality (AR) are evolving from simple marketing tools and video games to viable applications in design and construction. Take a look at how VR and AR can be practical tools that lead to more efficient design, construction, and training.

Detailers, Engineers, Fabricators

1.0 PDHs

## Mind the Gap: Addressing the Tech Disparity in Construction

**T5** Wednesday 4:45 – 5:45 p.m.

Speaker: Luke Faulkner, AISC

Compared with all the cool tech emerging elsewhere, the construction industry in general continues to lag behind virtually every other industry in its deployment and use of technology. There are myriad areas in which the industry can improve and just as many reasons why it lags. We'll dig into the latest set of these findings and show just how much there is to gain if we all were to make a concerted effort to adopt new and existing technology and commit to more efficient delivery.

Architects, Detailers, Engineers, Fabricators 1.0 PDHs

## Robotic Assembly and Fabrication

**T6** Thursday 8:00 – 9:00 a.m.

Speakers: Andreas Hofer, Zeman;  
Steve Grandfield, Prospect Steel

Welcome to the 21st century: Robotic welding, assembly, and fabrication are finally here to revolutionize the structural steel fabrication industry. This exciting session will explore the real-world challenges of deploying robotic technology, the potential benefits, and a vision for the expanded role of robotics in the near future.

Detailers, Engineers, Fabricators 1.0 PDHs

## Using Technology to Attract a New Generation of Shop Labor

**T7** Thursday 9:15 – 10:15 a.m.

Speaker: Bill Issler, Industry Lift

Let's talk about the shop labor shortage. How can we reframe these jobs as technology-driven? How can we use cutting edge technologies to attract a new generation of workers who might not even be aware of the industry? Join us to find out!

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

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

**T8** Thursday 3:45 – 4:45 p.m.

Speaker: Andrew Mendelson, FAIA,  
Berkley Design Professional

Moderator: Ryan Brady, Westech

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 and technology, training, and 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.

Engineers 1.0 PDHs

## Cyber Threats in the Construction Industry

**T9** Wednesday 8:00 – 9:00 a.m.

Speaker: Gregg Bundschuh,  
Greyling Insurance Brokerage

Moderator: Brent Tobler, WesTech

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 it 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.

Engineers, Erectors, Fabricators 1.0 PDHs

## New Technology, Existing Spaces

**T10** Friday 9:15 – 10:15 a.m.

Speaker: Thad Wester, Clarity Scanning

Moderator: Ben Pitchford, New Millenium  
Building Systems

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.

Architects, Detailers, Engineers, Erectors 1.0 PDHs/LU/HSW

## A Visual Explanation of the IFC Standard

**T11** Friday 10:45 – 11:45 a.m.

Speaker: Alberto Boin, One All Services

We will combine VR, geometry, and the IFC standard to provide insight on what is actually stored inside an IFC file. If you typically view IFC as a black box, you'll definitely want to join us as we use a real-time interface to demystify what actually happens when an IFC file is created or manipulated. You'll get to see the visually compelling and easy-to-understand link between object creation and IFC content.

Detailers, Engineers, Fabricators 1.0 PDHs

## educator

### Integrating the Real World Into the Classroom

**J1** Wednesday 7:00 – 9:00 a.m.  
breakfast at 7:00 a.m., program at 7:30 a.m.

Speakers: Hannah Blum, PhD, University of Wisconsin–Madison; Ezra Hilton, SE, PE, Thornton Tomasetti; Matthew Fadden, PE, PhD, Wiss, Janney, Elstner Associates, Inc.

**Open to AISC educator members ONLY.**

See **PART 6** of the registration form on p. 63.

Join fellow educators for breakfast and presentations on how to expose students to the reality of steel construction as they learn about structural steel behavior in the classroom. Dr. Hannah Blum and Ezra Hilton present *Augmenting Classroom Instruction with Virtual Reality Field Trips*, and Matthew Fadden presents *If I Knew Then What I Know Now—a Former Academic's Guide to Teaching Steel Design*.

**note:** Full-time faculty members who teach at U.S. universities and attend the educator session can be eligible to receive **up to \$300 in travel assistance** from AISC. Travel reimbursement requests are submitted following the conference. Receipts are required for reimbursement. Registration is required for this complimentary session.

**Educators**

1.5 PDHs

## students connecting with industry sessions (SCIS)

### Career Session and Lunch

**J2** Thursday 12:30 – 2:15 p.m.

Speakers: Brad Dillman, PE, High Steel Structures LLC; Natalie Tse, SE, Tipping Structural Engineers

**Open to AISC student members ONLY.**

See **PART 6** of the registration form on p. 63.

Students will have the opportunity to hear career insights from two distinguished construction industry and design professionals. This two-part session will provide upcoming graduates with unique perspectives on the professional world they will soon enter. Students attending the SCIS Career Session will receive a complimentary lunch.

**Students**

### Direct Connect

**J3** Thursday 2:15 – 3:30 p.m.

**Open to AISC student members ONLY.**

See **PART 6** of the registration form on p. 63.

Ever wish you could grab a cup of coffee with the top designers of the leading SE firms? At this event, students will have the opportunity to connect and interact with leading industry experts from design and construction companies around North America in a relaxed setting. While not all firms at this event may be hiring, this is a great opportunity to meet significant designers and make key contacts at major firms.

**note:** AISC student members who are full-time students at U.S. universities and attend SCIS can be eligible to receive **up to \$175 in travel assistance** from AISC. Travel reimbursement requests are submitted following the Conference. Receipts are required for reimbursement. Additionally, AISC student members who attend SCIS can be eligible to join us at the block party. Tickets are distributed upon the close of SCIS. Registration is required for these complimentary student sessions.

**Students**



### Student Steel Bridge Competition Demonstration and Alumni Reunion

Wednesday 12:15 – 2:00 p.m.

Did you know that annually, students at nearly 200 universities across the nation get hands-on, practical experience by participating in AISC's Student Steel Bridge Competition? Join us Wednesday in the exhibit hall on our mock competition floor to see real competition bridges produced via thousands of hours of design, fabrication, and practice assembly. Meet some of this year's participants and get a firsthand look at a program that's been engaging students since 1987! Additionally, SSBC alumni will have the opportunity to connect and reminisce about past competition experiences.



## Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations

**B1** Wednesday 8:00 – 9:00 a.m.

Speakers: Amy Leland, SE, PE, Washington State Department of Transportation; Temple Overman and Ashley Cook, PE, HNTB

Moderator: Eric Myers, W&W/AFCO Steel

The use of Accelerated Bridge Construction (ABC) is becoming more common. We'll explore the use of ABC for a ferry landing in Washington State and a 125-year-old railroad bridge in Tennessee.

**Detailers, Engineers, Erectors, Fabricators 1.0 PDHs**

## Get to Know the NSBA Designer Resources for Faster Results

**B2** Wednesday 9:15 – 10:15 a.m.

Speakers: Mike Grubb, PE, M.A. Grubb & Associates; Chris Garrell, PE, NSBA; Domenic Coletti, HDR, Inc.

Moderator: Chris Garrell, PE, NSBA

Bridge designers are often faced with too much to do and too little time to do it, especially when it comes to design. NSBA has numerous free resources available 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.

**Detailers, Engineers 1.0 PDHs**

## Lions, and Tigers, and Bearings, Oh My!

**B3** Wednesday 1:45 – 3:15 p.m.

Speakers: Ronald Watson, RJ Watson, Inc.; Mike Culmo, CME Engineering; Francesco Russo, Michael Baker International

Moderator: Jeff Carlson, PE, NSBA

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.

**Detailers, Engineers, Erectors, Fabricators 1.5 PDHs**

## New and Proposed Changes to the Bridge Welding Code

**B4** Wednesday 3:30 – 4:30 p.m.

Speakers: Nina Choy, California Department of Transportation; Curtis Schroeder, PE, PhD, Wiss, Janney, Elstner Associates, Inc.

Moderator: William Collins, University of Kansas

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

**Engineers, Fabricators 1.0 PDHs**

## Typical Construction Techniques for Railroad Bridges: Accelerated Bridge Construction

**B5** Wednesday 4:45 – 5:45 p.m.

Speakers: Joshua Orton, PE, and Trey Ogle, PE, Brasfield & Gorrie, LLC; Raj Anand, Heath and Lineback Engineers, Inc.

Moderator: Tony Hunley, SE, PE, PhD, Stantec

Time is money. This old adage is especially true for railroads that cannot accept prolonged downtime of their rail lines. Good thing accelerated bridge construction (ABC) can often be used for these railroad bridge projects: Join us as we take a look at two railroad replacement projects where the construction time was measured in hours, not days.

**Engineers, Erectors, Fabricators 1.0 PDHs**

## Bayonne Bridge: 'Raise the Roadway' and Demolition of the Main Span

**B6** Thursday 8:00 – 9:00 a.m.

Speakers: Thomas Rabinko, PE, and Kevin O'Neill, PE, Siefert Associates

Moderator: Geoff Swett, SE, PE, WSDOT – Bridge and Structures Office

The Bayonne Bridge spans the Kill Van Kull and connects Bayonne, N.J., with Staten Island, N.Y. At the time of construction in 1931, it was the largest steel arch span bridge in the world. However, the clearance was only 151 ft above the water, which limited the size of container ships destined for the marine terminals of New York and New Jersey. Designers and builders had to overcome challenges to 'Raise the Roadway' by erecting new steel for the main span roadway through the existing arch while maintaining traffic on the bridge. We'll also talk about demolishing the original arch suspension roadway using conventional machinery to perform an unconventional demolition.

**Engineers, Erectors 1.0 PDHs**

1.0 PDH = 0.1 CEU  
(check with your state licensing board for eligibility for professional credits)

### Pricing Study of Recently Constructed Steel and Concrete Bridges

**B7** Thursday 9:15 – 10:15 a.m.

Speaker: Michael DiGregorio, PE, HDR, Inc.

Moderator: John Hastings, PE, NSBA

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.

**Detailers, Engineers, Erectors, Fabricators** 1.0 PDHs

### Analytical Modeling Technique and Systematic Calibration with Weigh-in-Motion Measurements

**B8** Thursday 2:00 – 3:30 p.m.

Speakers: Thomas Murphy, SE, PEng, PhD, Modjeski and Masters, Inc.; Tony Shkurti and Eric Stone, HNTB; Todd A. Helwig, University of Texas at Austin

Moderator: Dayi Wang, PE, PhD, FHWA Office of Bridges and Structures

Analytical modeling technique is extremely important for steel bridge design and analysis because different software packages have different strengths and limitations when it comes to structural analysis, design, and code checking abilities. The advancement in analytical technique and in our ability to better understand the real structural response calibrated with weigh-in-motion measurements will significantly improve future engineering practice. This workshop-style session will be extremely valuable to experienced engineers, young engineers, and software developers alike.

**Detailers, Engineers, Erectors, Fabricators** 1.5 PDHs

### Service Life Design for Steel Bridges

**B9** Thursday 3:45 – 4:45 p.m.

Speaker: Robert Kogler, Rampart, LLC

Moderator: Tony Hunley, SE, PE, PhD, Stantec Consulting Services Inc.

Many owners are requiring a transparent, documented approach to providing extended service lives (usually 100 years or more) for bridge projects during the design phase. This is especially true for large bridge projects that require a significant investment to build. Join us for information on recent approaches and techniques to evaluate and design for extended service-life requirements for new bridges.

**Detailers, Engineers, Fabricators** 1.0 PDHs

### Technology and the Bridge Industry: BrIM & Model Based Exchange

**B10** Thursday 5:00 – 6:00 p.m.

Speakers: Aaron Costin, University of Florida; Patrick Noble, Finley Engineering Group

Moderator: Steven Jacobi, PE, Oklahoma DOT

New technology is constantly emerging, and Bridge Information Modeling (BrIM) and Model Based Exchanges are just two of the recently introduced technologies for the bridge industry. We'll share everything you need to know to stay at the forefront of the industry with these new technologies.

**Detailers, Engineers, Fabricators** 1.0 PDHs

### Railroad Bridges: A Unique Experience (Part 2)

**B11** Friday 8:00 – 9:00 a.m.

Speakers: Stephen Dick, Purdue University Bowen Laboratory; Rick Floyd, Koppers Railroad Structures; Clay Greenwell, SE, PE, Stantec Consulting Services Inc.

Moderator: Tony Hunley, SE, PE, PhD, Stantec Consulting Services Inc.

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.

**Detailers, Engineers, Erectors, Fabricators** 1.0 PDHs

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

**B12** Friday 9:15 – 10:15 a.m.

Speakers: Kenneth Wright, PE, and Michael Martello, PE, HDR

Moderator: Geoff Swett, SE, PE, WSDOT – Bridge and Structures Office

The Governor Mario M. Cuomo Bridge was conceived as a replacement for the iconic Tappan Zee Bridge over the Hudson River. Join this exciting session to explore the unique challenges of New York's first design-build transportation project. We'll dive into the highly modularized solutions used for both the bridge superstructure and substructure, along with the use of steel for both the approach spans and the cable-stayed 1,200-ft-long main span, which ultimately provided an ideal solution for the site.

**Engineers, Erectors, Fabricators** 1.0 PDHs

### Unique Projects Near The Northern Border and a Complex Widening in a Major City

**B13** Friday 10:45 – 11:45 a.m.

Speakers: Vincent Gastoni, Parsons Transportation Group; Ruifen Liu, SE, PE, PhD, Michael Baker International

Moderator: Steven Jacobi, PE, Oklahoma DOT

We'll explore two unique bridge projects and their complexities, including a major bridge on the Canadian border and a widening with splayed girders on a Dallas bridge that has daily traffic of over 220,000 vehicles.

**Engineers, Erectors** 1.0 PDHs

## A Novel Alternative to Corrosion Resistance: A709 Grade 50CR

**B14** Wednesday 8:00 – 9:00 a.m.

Speakers: Jason Provines, Virginia Department of Transportation; Ronnie Medlock, High Steel Structures, LLC

Moderator: Ryan Slein, Georgia Institute of Technology

Over the past several years, a number of owners have implemented A709 Grade 50CR (commonly known as ASTM A1010) material on bridges in highly corrosive environments. Learn the differences in slip coefficient values for typical carbon steel, Grade 50CR steel, and dissimilar metal bolted connections. We'll also discuss the unique challenges fabricators face when working with stainless steel.

**Engineers, Fabricators** 1.0 PDHs

## Review of Tubs for Pedestrians and Improved Details for Tubs

**B15** Wednesday 9:15 – 10:15 a.m.

Speakers: Karthik Ramanathan, Annus Ahmed, PE, and Seng Sok, PE, Stantec; Todd A. Helwig, University of Texas at Austin

Moderator: Christian Crosby, PE, Cianbro Corporation

The first part of this session covers horizontally curved, variable depth trapezoidal tub girder bridges as part of a design-build/P3 project for TxDOT. One of the bridges serves as a gateway to the northern limit of the SH 288 toll lane project in a heavily traveled corridor in Houston. Various design requirements for horizontal curvature, fracture-critical, variable depth steel superstructures will be reviewed along with strength, frequency, fatigue, deflection, and clearance considerations. The second part of the session examines improved structural efficiency and economy possible with simple changes to tub girder geometry and bracing layout. We'll share results from full-scale experiments and computational studies along with design and detailing recommendations for more efficient designs.

**Engineers, Fabricators** 1.0 PDHs

## Redundancy of Steel Bridges

**B16** Wednesday 1:45 – 3:15 p.m.

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

Moderator: Sam Sherry, Virginia Tech

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.

**Engineers** 1.5 PDHs

## Railroad Bridges: A Unique Experience (Part 1)

**B17** Wednesday 3:30 – 4:30 p.m.

Speakers: Jonathan Winer, PE, HDR, Inc.; Jason Stith, PE, Michael Baker International

Moderator: Jeff Carlson, PE, NSBA

It's safe to say that bridges involving railroads usually pose unique challenges. We'll get up a good head of steam and highlight two fascinating bridge projects: the replacement of a 110-year-old bridge carrying rail traffic, and widening a vehicular bridge that carries 14 lanes of traffic over numerous rail lines and skews up to 60 degrees.

**Engineers, Erectors** 1.0 PDHs

## Complex Steel Bridge Load Rating

**B18** Wednesday 4:45 – 5:45 p.m.

Speakers: Sonia Lowry, Washington State Department of Transportation; Parker Thomson, PE, and Brett Mattas, PE, Michael Baker International

Moderator: Finn Hubbard, PE, Fickett Structural Solutions Inc.

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

**Engineers** 1.0 PDHs

## Common Steel Bridge Repairs to Extend Service Life

**B19** Thursday 8:00 – 9:00 a.m.

Speaker: Kyle Smith, SE, PE, GPI/Greenman-Pederson, Inc.; Jon Stratton, Eastern Steel Works, Inc.

Moderator: Jason Lloyd, NSBA

The AASHTO/NSBA Collaboration task group on repairs is currently developing a guide for the most common repairs for steel bridges including section loss, vehicular impacts, and beam end damage due to leaking joints. We'll also give an overview of what is planned for the guide and discuss what the task group deems the most important steel bridge repairs.

**Engineers, Erectors, Fabricators** 1.0 PDHs

## Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges

**B20** Thursday 9:15 – 10:15 a.m.

Speakers: Frank Artmont, Modjeski and Masters, Inc.; Dawn Lehman, University of Washington

Moderator: Michel Bruneau, PEng, PhD, University at Buffalo – SUNY

Learn about concrete-filled steel tubes (CFST) as experts discuss examples of experimental research and implementation in steel bridge applications. Through implementation, CFST provides the most feasible option (and aesthetic solution) to provide diagonal struts from the end of cap beams to pier edges. We'll discuss experimental research that provides sample test results on the flexural strength, shear strength, and connections of CFST in bridge piers, pile, and drilled shaft foundations.

**Detailers, Engineers, Erectors, Fabricators** 1.0 PDHs

### Live Long Span and Prosper: The Benefits of Long Span Bridges

**B21** Thursday 2:00 – 3:30 p.m.

Speakers: Aaron Colorito, PE, Michael Baker International; Riccardo Zanon, Arcelor Mittal; David Marcic, PE, Hardesty & Hanover

Moderator: Christopher Higgins, Oregon State University

Steel lends itself well to long span-bridges because of its strength-to-weight advantages. We will explore the rehabilitation of two signature steel bridges that are over 85 years old and the worldwide emergence of network tied-arch bridges.

**Engineers**

1.5 PDHs

### The Latest Research on Shear Connector Placement in Bridge Design

**B22** Thursday 3:45 – 4:45 p.m.

Speakers: Scott Walbridge, PEng, PhD, University of Waterloo; Gary Prinz, University of Arkansas; Jason Provines, Virginia Department of Transportation

Moderator: Ed Miltner, PE, U.S. Department of Transportation Federal Highway Administration

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.

**Engineers**

1.0 PDHs

### Case Studies on Rehabilitating Large Steel Bridges

**B23** Thursday 5:00 – 6:00 p.m.

Speakers: Loai El-Gazairly, PE, PhD, Whitman, Requardt and Associates; Daniel Baxter, PE, Michael Baker International

Moderator: Japsimran Singh, Virginia Tech

Large steel bridge structures represent a significant investment by owners but must allow versatility for damage repair and rehabilitation to meet increased demand. We'll discuss two case studies of large structures that were rehabilitated to provide significant additional service life.

**Engineers**

1.0 PDHs

### Holy Beams, Batman! Evaluating Capacity of Corroded Steel Beams

**B24** Friday 8:00 – 9:00 a.m.

Speakers: George Tzortzinis, University of Massachusetts Amherst; Joel Javier, Virginia Tech

Moderator: Julie Whitehead, Burns & McDonnell

We know it can be a real challenge to analyze beams with corrosion section loss for remaining capacity, which is why we have the latest info for you! We'll take a look at current research that improves the ability to predict the appropriate capacity of corroded beam-ends based on full-scale testing.

**Engineers**

1.0 PDHs

### Current Information on Constraint-Induced Fractures and Intersecting Welds

**B25** Friday 9:15 – 10:15 a.m.

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

Moderator: Finn Hubbard, PE, Fickett Structural Solutions, Inc.

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.

**Engineers**

1.0 PDHs

### Walk This Way: Pedestrian Bridges—Unique Design and Analysis

**B26** Friday 10:45 – 11:45 a.m.

Speakers: Kenneth Price, SE, PE, PEng, and Joseph Smith, WSP

Moderator: John Hastings, PE, NSBA

Pedestrian bridges sometimes take a back-burner to vehicular bridges. Utah Valley University's unique pedestrian bridge will span Interstate 15 and connect the east and west sides of the campus. This project used a CM/GC approach for design and delivery. The two-girder, horizontally curved pedestrian bridge required a system redundancy fracture analysis. Join us to discuss this unique and fascinating project, along with special considerations for pedestrian bridges.

**Detailers, Engineers, Erectors, Fabricators**

1.0 PDHs

### Certification Forum

**Q1** Wednesday 8:00 – 9:00 a.m.

Speakers: Mark Trimble and Todd Alwood, AISC;  
Larry Martof, QMC

Moderator: Lisa Patel, AISC

- Join us to kick-off QualityCon and learn about the new
- developments in AISC Certification, including the new
- scheduling initiative, revisions to the Certification Standard,
- updates to our Governing Requirements, and more! Get
- answers to all your questions about certification and audit-
- related topics.
- **Erectors, Fabricators** 1.0 PDHs

### Quick Methods for Quality Assurance Reviews

**Q2** Wednesday 9:15 – 10:15 a.m.

Speaker: Larry Martof, QMC

Moderator: Max Puchtel, QMC

- Do you know how fabricators or erectors can conduct spot
- checks or reviews of their quality assurance programs?
- We'll take a close look at some approaches, including mini-
- audits, targeted audits, and product audits.
- **Erectors, Fabricators** 1.0 PDHs

### Demystifying Chapter N and the Building Code: What Everyone Should Know

**Q3** Wednesday 1:45 – 3:15 p.m.

Speaker: Lawrence F. Kruth, PE, AISC

Moderator: Todd Alwood, AISC

- Join us for an A to Z look at chapter N of the AISC
- *Specification*, including quality requirements for fabrication
- and erection, the difference between quality control and
- quality assurance, and how they relate to the *International*
- *Building Code*. We'll also review structural steel tolerances
- and how they relate to inspection.
- **Erectors, Fabricators** 1.5 PDHs

### Technology: It's Going to Make You Better!

**Q4** Wednesday 3:30 – 4:30 p.m.

Speakers: Jake Thomas, Thomas Steel, Inc.; Alan Henry,  
ASPE-South; Rich Steffens, Douglas Steel

Moderator: Luke Faulkner, AISC

- What is the latest on technology and fabrication and
- erection? What's the next big thing? Hear all about it from
- industry leaders on the cutting edge. They'll share how
- their current practices and new ideas can affect your quality
- and bottom line.
- **Erectors, Fabricators** 1.0 PDHs

### Specs to Receiving: The Whole Nine Yards

**Q5** Wednesday 4:45 – 5:45 p.m.

Speaker: Dennis Haight, QMC

Moderator: Lisa Patel, AISC

- Contract review. Purchasing. Receiving. These are all things
- that start at the beginning of a project, but if something
- goes wrong, a mistake could haunt you through the rest of
- it. Come find out how to avoid common pitfalls of purchase
- orders, receiving, and receipt inspection, along with the
- importance of MTRs.
- **Erectors, Fabricators** 1.0 PDHs

### A QMS Isn't a Burden... It's a Benefit!

**Q6** Thursday 8:00 – 9:00 a.m.

Speaker: Vaughn Bauer, Realine Steel, LLC

Moderator: Lisa Patel, AISC

- Every quality and certification journey is different, and
- Realine is here to share theirs. They have been ISO-certified
- and recently became AISC-certified. What did they learn
- through the process? How did the journey make them a
- better fabricator? Come find out!
- **Erectors, Fabricators** 1.0 PDHs

### Root Cause Analysis: Let's Improve It

**Q7** Thursday 9:15:00 – 10:15 a.m.

Speakers: Russell Stephen, AAA Technical  
Associates, LLC; David Webb, QMC

Moderator: Linda Hale, QMC

- Everyone should be doing root cause analysis when a cor-
- rective action is identified, but how can we do it better? This
- session will talk about the why, how, and what but will also
- give real-life examples and walk you through the process.
- Like Dateline the TV show, sometimes the true cause of the
- crime isn't the simplest thing to analyze and determine.
- **Erectors, Fabricators** 1.0 PDHs

### Lessons Learned from Fabricator's and Erector's Views on Inspection

**Q8** Thursday 2:00 – 3:30 p.m.

Speakers: Tim Duke, Williams Erection Company;  
Christian Crosby, PE, Cianbro Corporation

Moderator: Todd Alwood, AISC

- Some fabricators and erectors are only responsible for QC,
- while others are responsible for both QC and QA. Discover
- some of the challenges theyve faced and how theyve
- solved them. We'll have a lively discussion about lessons
- learned and common sense solutions to issues weve all run
- into both in the shop and the field.
- **Erectors, Fabricators** 1.5 PDHs

### The Hidden Shop: Nonconformances and Corrective Actions (Part 1)

**Q9** Thursday 3:45 – 4:45 p.m.

Speaker: Paul Palmes, Business Standards Architects, Inc.

Moderator: Art Bustos, AISC

It's human nature to view most nonconformances and corrective actions as nuisances, but what are you actually doing with them? Are you struggling to use them effectively in your company? Are you routinely under-reporting? Do you work within a culture of fear or protection? Sometimes the terms can be confusing or may be used in the wrong context. We'll clarify their differences and show you the basics of implementing them in your own quality management system.

**Erectors, Fabricators** 1.0 PDHs

### The Learning Shop: Effective Use and Management of Nonconformances and Corrective Actions (Part 2)

**Q10** Thursday 5:00 – 6:00 p.m.

Speaker: Paul Palmes, Business Standards Architects, Inc.

Moderator: Art Bustos, AISC

No one likes nonconformances, but they are expected QMS inputs that require a dedicated team, common-sense filters, and a defined process to manage significant issues such as corrective actions. Along the way, the entire NC/CA chain has to prove itself to top management as a valuable, necessary improvement tool. We'll give you useful approaches, tools, and techniques for clarifying and expanding your NC/CA program to improve methods, speed, and appreciation throughout the company.

**Erectors, Fabricators** 1.0 PDHs

### The Whys of Job Descriptions, Organization Charts, and Biographies

**Q11** Friday 9:15 – 10:15 a.m.

Speaker: Dennis Haight, QMC

Moderator: David Webb, QMC

Pop quiz: Where do your quality staff fit into your organization? What precisely do they do? To whom do they report? What are their qualifications? You need effective documentation to define how your staff best works together. We'll review best practices and real-life examples to show you how to write clear, effective job descriptions, organization charts, and biographies.

**Erectors, Fabricators** 1.0 PDHs

### Do You Have Bolting Questions? AISC's Steel Solutions Center Has the Answers!

**Q12** Friday 10:45 – 11:45 a.m.

Speakers: Carlo Lini, SE, PE, AISC;  
Heath Mitchell, SE, PE, GWY, Inc.

Moderator: Todd Alwood, AISC

The AISC Steel Solutions Center (SSC) is for anyone who needs technical assistance, innovative solutions, or tools to make structural steel design even easier. Join the SSC as we highlight some of the most commonly asked questions about bolting—and of course, we'll share the answers with you, because its what we do! We'll also have some live bolting demonstrations. You certainly won't want to miss it!

**Erectors, Fabricators** 1.0 PDHs

### How to Use Business Case Writing to Establish a Measurable Goal

**Q13** Wednesday 9:15 – 10:15 a.m.

Speaker: Zane Keniston, Structural Steel Parts, Inc.

Moderator: Lisa Patel, AISC

Sometimes it can be difficult to set goals for your company and quality management system. Join us to get an immersive look at how business case writing can help you create realistic goals that are clear and concise.

**Erectors, Fabricators** 1.0 PDHs

### How To: A Paint Primer

**Q14** Wednesday 1:45 – 3:15 p.m.

Speaker: Zane Keniston, Structural Steel Parts, Inc.

Moderator: Loren Thomas, AISC

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.

**Erectors, Fabricators** 1.5 PDHs

### How to Write Clear, Simple, and Effective Quality Procedures

**Q15** Wednesday 3:30 – 4:30 p.m.

Speaker: John Edwards, JE, LCC

Moderator: Dennis Haight, QMC

Writing an effective procedure can be a challenge, and making them easy to understand can sometimes seem impossible. Fortunately, we have some tricks to help you quickly learn how to write clear and simple quality procedures that employees will pay attention to and can easily understand. We'll use a simple three-step process to help get you to the next level of procedure writing and simplify your quality manual.

**Erectors, Fabricators** 1.0 PDHs

### How to Set Up an Effective Training Program

**Q16** Thursday 3:45 – 4:45 p.m.

Speaker: Christian Crosby, PE, Cianbro Corporation

Moderator: Todd Alwood, AISC

It seems increasingly difficult to find highly skilled employees in our industry—not just in craft positions, but in office positions, too. How can we overcome this deficiency of accomplished team members? We'll explore one solution together: how managers can use effective training programs to help fill these gaps.

**Engineers, Erectors, Fabricators**

1.0 PDHs

### How to Perform an Effective Internal Audit

**Q17** Thursday 8:00 – 9:00 a.m.

Speaker: Anna Petroski, Atema, Inc.

Moderator: Larry Martof, QMC

Want to know what it takes to perform an effective internal audit? Great, because we want to show you! Join us for an interactive look at how to conduct a meaningful internal audit by reviewing the minimum requirements stated in the AISC *Certification Governing Requirements and Standard*. We'll give you the tools to move your internal audit to the next level!

**Erectors, Fabricators**

1.0 PDHs

### How to Perform an Effective Management Review

**Q18** Thursday 9:15 – 10:15a.m.

Speaker: Anna Petroski, Atema, Inc.

Moderator: Larry Martof, QMC

Want to know what it takes to perform an effective management review? Join us for an interactive look at how to conduct a meaningful management review for erectors and fabricators. You'll also discover the minimum requirements for conducting management reviews as required by the AISC *Certification Program Requirements and Standard*. This will continue the conversation started in the previous session "How to Perform an Effective Internal Audit."

**Erectors, Fabricators**

1.0 PDHs

### How To: The Secret of Calibration

**Q19** Thursday 2:00 – 3:30 p.m.

Speaker: Larry Martof, QMC

Moderator: Todd Alwood, AISC

AISC and QMC have recently heard chatter about all sorts of calibration issues. But worry not! This session is here to get everyone lined up properly. Join us to learn some tricks and tips to streamline the process at your shop or erection site. Bring along any questions you may have for us and we'll be happy to answer them!

**Erectors, Fabricators**

1.5 PDHs

### How to Incorporate Risk-Based Thinking

**Q20** Wednesday 4:45 – 5:45 p.m.

Speaker: Denise Robitaille, Robitaille Associates

Moderator: Loren Thomas, AISC

Risk-based thinking permeates most current management system standards. Safety-related risks should, of course, be prominent, but many other aspects of any organization should have consideration for risks, too. These varied risks may relate to contract errors, diminished efficiencies, scrap, erosion of market share, decreased customer confidence, or loss of qualified staff, just to name a few. It is possible to establish a culture of risk-based thinking that creates value without a burdensome risk management scheme. We'll present the concept of risk-based thinking and provide tips for efficient and effective implementation.

**Erectors, Fabricators**

1.0 PDHs

### How Can a Steel Erector Effectively Train Its Supervisors and Workforce on Quality?

**Q21** Thursday 5:00 – 6:00 p.m.

Speaker: Tim Duke, Williams Erection Company

Moderator: Harvey C. Swift, IMPACT

Erectors face multiple challenges on job sites—don't let quality be one of them! We will focus on establishing metrics, tailored training, and tips to help companies identify and educate personnel in all aspects of job quality. Whether you are management or you work in the field, bring your pen and notepad and prepare to get down to business in this one-hour session devoted to doing it right the first time!

**Erectors, Fabricators**

1.0 PDHs

### How to Use 5S Methodology in the Office, Shop, and Field to Increase Speed!

**Q22** Friday 9:15 – 10:15 a.m.

Speakers: Trish Martof, Process Improvement Solutions; Larry Martof, QMC

Moderator: Mark Trimble, AISC

Are you up to speed on 5S methodology? Sssspoiler alert: It stands for Sort, Set in order, Shine, Standardize, and Sustain for speed. 5S methodology is a framework that will help you organize and manage your workplace to operate more efficiently. Whether it's in the office, boardroom, shop, jobsite, or storage areas, if something needs to be organized, you need 5S. We'll help you understand the benefits and implementation process of this lean manufacturing practice and how it can increase the overall speed of your organization.

**Erectors, Fabricators**

1.0 PDHs

### How and Why to Quantify Quality Data

**Q23** Friday 10:45 – 11:45 a.m.

Speaker: Robert Zaykoski, Technology Business Solutions

Moderator: Max Puchtel, QMC

It sounds simple enough, but is it true that stats + quality = increased overall productivity? We'll give you some simple ideas to increase your overall productivity. You'll can to take these exciting new concepts back to your own company and implement them immediately with successful results!

**Erectors, Fabricators**

1.0 PDHs

# 2020 SSRC annual meeting schedule

Welcome Tuesday 1:00 – 1:10 p.m. | Daniel Linzell, University of Nebraska-Lincoln

## Stability of Beams and Girders

**SS1** Tuesday 1:10 – 2:30 p.m.

Moderator: Anthony Battistini,  
Angelo State University

- **Experimental Study on Steel Tub Girders with Modified Cross-Section Details**  
Stalin Armijos-Moya, Todd Helwig, Michael Engelhardt, Patricia Clayton, and Eric Williamson The University of Texas at Austin, Austin, Texas; Yang Wang, Stress Engineering Services, Houston, Texas
  - **Design of Steel Beams Affected by Local/Global Coupled Instabilities**  
Lucile Gérard and Nicolas Boissonnade, Laval University, Quebec City, Canada
  - **Shear Strength of Cold-Formed Steel Flexural Members Connected Using Clip Angles**  
Cheng Yu and Zhishan Yang, University of North Texas, Denton, Texas; Yu Tian, Beijing University of Technology, Beijing, China
- Engineers 1.0 PDHs

## Stability at Elevated Temperatures

**SS2** Tuesday 3:00 – 4:20 p.m.

Moderator: Erica Fischer,  
Oregon State University

- **Stability of Composite Axial Members Under Fire Loading**  
Preshit Wazalwar, Ataollah Taghipour Anvari, and Amit H. Varma, Purdue University, West Lafayette, Ind.; Saahastranshu R. Bhardwaj, The University of Alabama, Tuscaloosa, Ala.
  - **Local/Global Coupled Instabilities of Steel Hollow Section Columns under Fire**  
Jeanne Paquet, Tristan Coderre, and Nicolas Boissonnade, Laval University, Quebec City, Canada; Carlos Couto and Paulo Vila Real, RISCO – University of Aveiro, Aveiro, Portugal
  - **Role of Transient Creep in Fire Induced Progressive Collapse of Steel Framed Buildings**  
Venkatachari S. and Kodur V. K. R., Michigan State University, East Lansing, Mich.
  - **Effect of Boundary Conditions on the Creep Buckling of Steel Plates in Fire**  
Mohammed A. Morovat, Michael D. Engelhardt, and Todd A. Helwig, University of Texas at Austin, Austin, Texas
  - **Stability of SpeedCore Walls under Fire Loading: Summary of Numerical Analyses**  
Ataollah Taghipour Anvari, Saahastaranshu R. Bhardwaj, and Amit H. Varma, Purdue University, West Lafayette, Ind.
- Engineers 1.0 PDHs

Overview of Task Group Objectives Tuesday 4:20 – 4:30 p.m. | Daniel Linzell, University of Nebraska-Lincoln

International Liaison Committee Meeting Tuesday 4:30 – 4:45 p.m.

## Task Group Meetings

(parallel breakout sessions for task groups)

**SS3** Tuesday 4:45 – 5:15 p.m.

- **TG02** Members: Stability of Steel Members  
Chair: Anthony Battistini, Angelo State University, San Angelo, Texas
- **TG04** Stability of Metal Bridges and Bridge Components  
Chair: T. Andrés Sánchez, ADSTREN, Quito, Ecuador
- **TG06** Extreme Loads: Stability under Extreme Loads  
Chair: Mina Seif, National Institute of Standards and Technology, Gaithersburg, Md.

## Task Group Meetings

(parallel breakout sessions for task groups)

**SS4** Tuesday 5:30 – 6:00 p.m.

- **TG03** Systems: Stability of Steel Systems, Especially Frames  
Chair: Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.
- **TG05** Thin-Walled Structures  
Chair: Kara Peterman, University of Massachusetts Amherst, Amherst, Mass.

## SSRC Annual Business Meeting

**SS5** Tuesday 6:00 – 6:30 p.m.

- SSRC Business Meeting
- Presentation of the 2020 Yoon Duk Kim Young Researcher Award
- Presentation of the 2020 Vinnakota Award
- Presentation of the 2019 MAJR Medal
- Presentation of the 2020 Beedle Award

## SSRC Social Hour

**SS6** Tuesday 6:30 – 8:30 p.m.



# SSRC ANNUAL STABILITY CONFERENCE

## Stability of Wall and Roofing Systems

**S1** Wednesday 8:00 – 9:00 a.m.

Moderator: Dinar Camotim,  
University of Lisbon, Portugal

## Advances in Stability Analysis

**S2** Wednesday 9:15 – 10:15 a.m.

Moderator: Donald Sherman Retired,  
University of Wisconsin–Milwaukee

Moderator: Bernard Frankl, HDR Inc.

### **Moment-Rotation Characterization of Cold-Formed Steel Joist-to-Ledger Connections with Variable Sheathing**

Hernan Castaned and Kara D. Peterman,  
University of Massachusetts Amherst,  
Amherst, Mass.

### **Sheathing Bracing Requirements for Cold-formed Steel Members Subjected to Bending**

Sivaganesh Selvaraj and Mahendrakumar  
Madhavan, Indian Institute of Technology  
Hyderabad, Hyderabad, India

### **Investigations on Buckling Behavior of Intermittently Fastened Cold-Formed Steel**

### **Built-Up Columns Using Spline Finite Strip Method**

Akshay Mangal Mahar and Arul Jayachandran S.,  
Indian Institute of Technology Madras,  
Chennai, India

### **Experimental Response of Cold-Formed Steel Walls with Bridging and Sheathing**

Benjamin W. Schafer, Boyu Qian, and Akhil Nayyar,  
Johns Hopkins University, Baltimore, Md.;  
Shahab Torabian, Simpson Gumpertz & Heger, Inc.,  
Washington, DC

Engineers

1.0 PDHs

### **A Geometrically Exact Curved Thin-Walled Beam Finite Element Accounting for Cross-Section Deformation**

Nuno Peres and Rodrigo Gonçalves, Universidade  
Nova de Lisboa, Caparica, Portugal; Dinar  
Camotim, Universidade de Lisboa, Lisbon, Portugal

### **An Assessment of the Eurocode 3 Provisions for Lateral-Torsional Buckling of I-Sections under Uniaxial and Biaxial Bending**

Rodrigo Gonçalves, Universidade Nova de Lisboa,  
Caparica, Portugal

### **Constrained Shell Finite Element Method for Stability Analysis of Thin-Walled Steel Members with Tapered Sections**

Sheng Jin, Shuang Xu, and Fang Huang,  
Chongqing University, Chongqing, China;  
Zhanjie Li, SUNY Polytechnic Institute, Utica, N.Y.

Engineers

1.0 PDHs

## Stability of Columns

**S3** Wednesday 1:45 – 3:15 p.m.

Moderator: Todd A. Helwig,  
University of Texas at Austin

## Special Topics in Structural Stability

**S4** Wednesday 3:30 – 4:30 p.m.

Moderator: Craig E. Quadrato,  
Wiss, Janney, Elstner Associates, Inc.

## Stability of Structural Systems

**S5** Wednesday 4:45 – 5:45 p.m.

Moderator: Patricia Clayton,  
University of Texas at Austin

Moderator: Benjamin W. Schafer,  
Johns Hopkins University

### **The Effect of Transverse Stiffeners on the Torsional Buckling of Thin-Walled Columns**

Trung Hoang and Sandor Adany, Budapest University of Technology and Economics, Budapest, Hungary

### **The Interaction of Section and Member Slenderness on the Behavior of High Strength Composite Filled Tube (CFT) Members**

Abdullah M. Alghossoon and Amit H. Varma, Purdue University, West Lafayette, Ind.

### **Global-Global Interaction in Cold-Formed Steel Channel Columns:**

#### **Relevance, Post-Buckling Behavior, Strength and DSM Design**

Pedro B. Dinis, Dinar Camotim, and André D. Martins, Universidade de Lisboa, Lisbon, Portugal; Alexandre Landesmann, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

### **Axial Strength and Stability Behaviour of Cold-Formed Steel Battened Closed Section Columns**

M. Adil Dar, Dipti Ranjan Sahoo, and Arvind K. Jain, Indian Institute of Technology Delhi, New Delhi, India

### **Experimental Investigation on Cold-Formed Steel Stiffened Lipped Channel Columns Undergoing Local-Distortional Interaction**

Man-Tai Chen, The University of Hong Kong, Hong Kong, China; Ben Young, The Hong Kong Polytechnic University, Hong Kong, China; André D. Martins, Dinar Camotim, and Pedro B. Dinis, Universidade de Lisboa, Lisbon, Portugal

### **Stub Column Response in Light of Local vs Distortional Buckling**

Shahabeddin Torabian, Gaurav Chobe, and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Jim Crews, UNARCO RACK, Springfield, Tenn.

Engineers

1.5 PDHs

### **Buckling Mode Characterization for High-Strength Cold-Formed Steel with In-Situ 3D Scanning**

Yu Xia and Hannah B. Blum, University of Wisconsin-Madison, Madison, Wis.; Oliver Friis, Aarhus University, Aarhus, Denmark

### **Computational Study of Elastic Buckling and Post-Buckling Strength of Steel Decks in Bending**

Vitaliy V. Degtyarev, New Millennium Building Systems, Columbia, S.C.

### **Stability of Steel Columns Subjected to Near-Field Detonations**

Yongwook Kim and Jarett Rooney, Manhattan College, Riverdale, N.Y.

### **Post-Buckling Strength and Ductility Evaluation of Thin-Walled Steel Tubular Columns with Graded Thickness under Cyclic Lateral Loading**

Iraj H. P. Mamaghani, University of North Dakota, Grand Forks, N.D.

Engineers

1.0 PDHs

### **Structural Stability Assessment of the Gerber System**

Vahab Esmaeili, Yasaman Balazadeh Minouei, Ali Imanpour, and Robert Driver, University of Alberta, Edmonton, Canada

### **The Effect of Shear Coexistent with Axial Compression on Transverse Stiffeners in Longitudinally Stiffened Plates**

Charles M. King, COWI North America, Florham Park, N.J.

### **Strength and Stiffness Requirements for Beam Torsional Bracing**

Yangqing Liu, Tongji University, Shanghai, China; Balázs Kövesdi, Budapest University of Technology and Economics, Budapest, Hungary; Todd A. Helwig, University of Texas at Austin, Austin, Texas

### **Bracing Requirements to Improve System Buckling of Narrow Girder Systems**

Balázs Kövesdi, Budapest University of Technology and Economics, Budapest, Hungary; Yangqing Liu, Tongji University, Shanghai, China; Todd A. Helwig, University of Texas at Austin, Austin, Texas

Engineers

1.0 PDHs

## Stability under Seismic Loading

**S6** Thursday 8:00 – 9:00 a.m.

Moderator: Hannah Blum,  
University of Wisconsin-Madison

## Presentation Session for Beedle and McGuire Awards

**S7** Thursday 9:15 – 10:15 a.m.

Moderator: Larry A. Fahnestock,  
University of Illinois at Urbana-Champaign



### Seismic Response of Steel Multi-Story and Multi-Tiered Ordinary Concentrically-Braced Frames

Aradhana Agarwal and Larry A. Fahnestock, University of Illinois at Urbana-Champaign, Champaign, Ill.

### Seismic Response and Design of Low-Ductile Steel Multi-Tiered Concentrically Braced Frames

Eshagh Derakhshan and Ali Imanpour, University of Alberta, Edmonton, Canada

### Study of Story Drift Limits in Steel Buildings Subjected to Seismic Forces

Andres F. Robalino, Santiago R. Zaruma, and Telmo A. Sanchez, ADSTREN, Quito, Ecuador

### Seismic Response Predictions From 3D Steel Braced Frame Building Simulations

Hamid Foroughi, Shahab Torabian, and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Gengrui Wei and Matt R. Eatherton, Virginia Tech, Blacksburg, Va.

Engineers

1.0 PDHs

### Beedle Award Presentation: The Mechanics of Built-Up Sections—Flexural Buckling

#### Kim Rasmussen, The University of Sydney, Sydney, Australia

Kim Rasmussen and Mani Khezri, The University of Sydney, Sydney, Australia;  
Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.;  
Hao Zhang, Northwestern University, Evanston, Ill.

Kim Rasmussen, MScEng, PhD, DEng, is full Professor and Chairman of the Centre for Advanced Structural Engineering in the School of Civil Engineering at the University of Sydney. He is also Deputy Dean and Associate Dean Research in the Faculty of Engineering at the University of Sydney. His main research interests are theoretical and experimental structural mechanics and structural stability analysis with particular application to steel structural members and systems, cold-formed steel structures, stainless steel structures, and aluminium structures. His current research activities involve the testing, analysis, and design of steel storage rack structures and built-up cold-formed steel structures, as well as the development of analysis-based design methods and associated system reliability analysis. He also leads projects related to full-range behaviour of connections including fracture analysis and buckling-induced morphing of structural elements. Kim Rasmussen has published 400 journal and conference papers and presented numerous keynote and invited papers at leading conferences for research on steel structures. His publications have been cited more than 3,000 times. His current h-index (Scopus) is 32, which places him among the top 5% of cited researchers in the field of steel structures. He has received continuous support from the Australian Research Council over the last 20 years. Kim Rasmussen is chair or member of numerous national and international standards committees related to Steel Structures, Stainless Steel Structures, Aluminium Structures, Scaffolding Structures, and Steel Storage Racks. He has undertaken numerous consultancies for industry and remains an active consultant advising on structural analysis, design, and collapse.

*This award has been established in honor of the late Lynn S. Beedle, an international authority on stability and the development of code criteria for steel and composite structures.*

### MAJR Medal Presentation: Generalized Beam Theory: Moving from Isolated Members to Structural Systems

#### Cilmar Basaglia, University of Campinas, Campinas, Brazil

Cilmar Basaglia, University of Campinas, Campinas, Brazil;  
Dinar Camotim, Universidade de Lisboa, Lisbon, Portugal

Cilmar Basaglia is an Assistant Professor at the School of Civil Engineering, Architecture and Urban Design of the University of Campinas, Brazil, where he teaches graduate and undergraduate courses on Behavior and Design of Steel Structures and Numerical Methods of Structural Analysis. He holds a MAsc degree in Structural Engineering from the University of São Paulo (2004) and a PhD degree in Civil Engineering from the University of Lisbon (2010)—his thesis dealt with the application of Generalized Beam Theory (GBT) to structural systems. He is an active researcher in the fields of Steel Structures, Structural Stability, and Non-Linear Behavior of Thin-Walled Structures, focusing on GBT-based solutions. He has co-authored two book chapters, 22 international journal papers, and 74 international and national conference papers.

*This award has been established in honor of the late William “Bill” McGuire to recognize promising young researchers in structural stability.*

Engineers

1.0 PDHs

### Stability of Members under Combined Axial and Flexural Loads

**S8** Thursday 2:00 – 3:30 p.m.

Moderator: Daniel Linzell,  
University of Nebraska-Lincoln

### Stability of Wall and Roofing Systems

**S9** Thursday 3:45 – 4:45 p.m.

Moderator: Kara D. Peterman,  
University of Massachusetts Amherst

Moderator: Dinar Camotim,  
University of Lisbon, Portugal

### Advances in Stability Analysis

**S10** Thursday 5:00 – 6:00 p.m.

Moderator: Daniel Linzell,  
University of Nebraska-Lincoln

Moderator: Bernard Frankl, HDR Inc.

### Interaction Strength of Steel-Concrete Composite Beam-Columns Including the Balance Point

Mark D. Denavit, University of Tennessee, Knoxville, Knoxville, Tenn.

### Strength of Cold-Formed Sections Subjected to Axial Compressive Force and Bending Moments

M. T. Hanna and Mohamed Massoud, Housing and Building National Research Center, Cairo, Egypt; E. E. Amoush, Higher Technological Institute, Cairo, Egypt

### Study on the Influence of Measured Geometric Shape Deviations on the Deformation Capacity and Post-Buckling Behavior of Hollow Sections Loaded in Compression and Bending

Andreas Müller and Andreas Taras, ETH Zürich, Zürich, Switzerland

### Investigation on the Stability Behaviour of Cold-Formed Steel Beam-Column Members under Biaxial Bending

Sevugan Rajkannu J. and Arul Jayachandran S., Indian Institute of Technology Madras, Chennai, India

### Development of a Generalized Slenderness-Based Resistance Method for the Design of High-Strength Steel Hollow Section Beam-Columns

Andreas Taras, ETH Zürich, Zürich, Switzerland; Andrea Toffolon, Institute of Structural Engineering, Bundeswehr University Munich, Neubiberg, Germany

Engineers

1.5 PDHs

### Stiffness Based Design Method for Sheathed Cold-Formed Steel Members Subjected to Torsional Buckling

Sivaganesh Selvaraj, PhD, and Mahendrakumar Madhavan, Indian Institute of Technology, Hyderabad, Hyderabad, India

### Seismic Performance of Cold-Formed Shear Wall with Window and Door Hole in a Prefabricated Structural Frame

Xue Chun Liu and Guan Po Chen, Beijing University of Technology, Beijing, China; Cheng Yu, University of North Texas, Denton, Texas

### Seismic Performance of Double-Skin Composite Walls with Recycled Aggregate Concrete Infill and Corrugated Faceplates

QiuHong Zhao and Yikang Li, Tianjin University, Tianjin, China; Ying Tian, University of Nevada, Las Vegas, Nev.

### Lateral Performance of Steel-Plate Concrete Shear Walls with Nonlinear Fuses under the Wind Load

Seyed Mohammad Reza Emrani and Siamak Epackachi, Amirkabir University of Technology, Tehran, Iran; Ali Imanpour, University of Alberta, Edmonton, Canada

Engineers

1.0 PDHs

### Flexural-Torsional Failure and DSM Design of Cold-Formed Steel Columns at Elevated Temperatures

Antonio Renato Albuquerque Bicelli and Alexandre Landesmann, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; Dinar Camotim, Universidade de Lisboa, Lisbon, Portugal

### Modeling the Nominal Flexural Strength of W-Shape Beams Using a New Inelastic Model

Barry T. Rosson, Florida Atlantic University, Boca Raton, Fla.; Matthew F. Fadden, Wiss, Janney, Elstner Associates, Inc., Boca Raton, Fla.

### Analysis of Non-Symmetric Cross-Sections Relative to the Provisions of AISC 360-10

Edward J. Sippel and Hannah B. Blum, University of Wisconsin-Madison, Madison, WI; Ronald D. Ziemian, Bucknell University, Lewisburg, Pa.

### New Formulations for the Cross-Sectional Strength of High-Strength Rectangular and Square Hollow Sections Using a Generalized Slenderness-Based Resistance Method

Andrea Toffolon, Bundeswehr University Munich, Munich, Germany; Andreas Taras, ETH Zurich, Zürich, Switzerland

Engineers

1.0 PDHs

## Topics in Local Stability

**S11** Friday 8:00 – 9:00 a.m.

Moderator: Telmo Sanchez,  
ADSTREN Cia. Ltda.

### • **Buckling and Distortion Induced Fatigue of Curved Steel Plate Girders with Slender Webs**

• Mehran Jalali, Justin D. Marshall, and James S. Davidson, Auburn University, Auburn, Ala.

### • **A Continuation on the Influence of Loaded Width on Web Compression Buckling**

• Jacob Witte, Lynch, Harrison, & Brumleve, Inc., Indianapolis, Ind.; Kadir Sener, Auburn University, Auburn, Ala.; Amit Varma, Purdue University, West Lafayette, Ind.

### • **A Nondestructive Method to Find the Buckling Capacity for Thin Shells**

• Kshitij Kumar Yadav and Simos Gerasimidis, University of Massachusetts Amherst, Amherst, Mass.

### • **Local Buckling Analysis of Multi-Sided Steel Tube Sections**

• Zannatul M. Dalia and Anjan Bhowmick, Concordia University, Montreal, Canada

• Engineers

1.0 PDHs

## Stability of Structural Systems

**S12** Friday 9:15 – 10:15 a.m.

Moderator: Benjamin W. Schafer,  
Johns Hopkins University

### • **Post Buckling Strength of Single Layer Domes under Distributed Loading**

• Prahlad Dara, Raghavan Ramalingam, and Gorripotu Kishorekumar, National Institute of Technology, Tiruchirappalli, India

### • **Second-Order Stability Analysis of Cold-Formed Steel Pallet Racks**

• Arul Jayachandran Sanjeevi, Indian Institute of Technology Madras, Chennai, India

### • **Lateral Bracing of Beams Provided by Standing Seam Roof System: Concepts and Case Study**

• Gengrui Wei and Matthew R. Eatherton, Virginia Polytechnic Institute and State University, Blacksburg, VA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Michael Seek, Old Dominion University, Norfolk, Va.

• Engineers

1.0 PDHs

## Topics in Lateral-Torsional Buckling

**S13** Friday 10:45 – 11:45 a.m.

Moderator: Perry Green,  
Bechtel Corporation

### • **Lateral-Torsional Deformations of C-Section and Z-Section Beams with Continuous Bracing**

• Raymond H. Plaut, Virginia Tech, Blacksburg, VA; Cristopher D. Moen, RUNTOSOLVE, LLC, Baltimore, Md.

### • **Simplified Solutions for Estimating the Lateral-Torsional Buckling Resistance of Nonprismatic Girders**

• Matthew C. Reichenbach, Todd A. Helwig, and Michael D. Engelhardt, University of Texas at Austin, Austin, Texas

### • **Strength and Stability of Point-Symmetric Cold-Formed Steel Members Undergoing Lateral-Torsional Buckling**

• Shuo Wang and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Robert Glauz, RSG Software, Lee's Summit, Mo.

### • **Large Scale Experimental Lateral Torsional Buckling Tests of Welded I-Section Members**

• Ryan Slein, Joshua S. Buth, Wajahat Latif, Ammar A. Alshannaq, Ajit M. Kamath, Fredrick B. Chung, and Donald W. White, Georgia Institute of Technology, Atlanta, Ga.; David W. Scott, Georgia Southern University, Statesboro, Ga.

• Engineers

1.0 PDHs

## Detailing and Coordinating Steel Deck

**D1** Wednesday 8:00 – 9:00 a.m.

Speakers: Kyle Van Duzer, Canam Group, Inc.; Sam Milhoan, Nucor Vulcraft-CCG

Detailing metal deck is a very specialized process. Typically only steel deck detailers are intimately familiar with the SDI requirements and special conditions required to coordinate and provide an error-free project with no field problems. The designs are not always clear, and many times the gray areas lead to delays, RFIs, and field issues. We will explain the basics of metal deck placement and coordination and discuss the flow of information to help identify the common pitfalls associated with steel deck.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Detailing Contracts with Your Domestic and Offshore Partners—What’s in Yours?

**D2** Wednesday 9:15 – 10:15 a.m.

Speakers: David Henegar, SDI, Inc.; Ravi Meesala, Banker Steel Co., LLC

Moderator: James Stever, Virtual Steel Technologies, Inc.

What’s in your detailing contract? Clear and concise contract language is critical to a successful project and a prosperous relationship with your subcontracted detailing services. Meanwhile, new and emerging digital technologies and processes can blur the lines of responsibility for each project team member. We’ll focus on the terms and definitions that lead to a successful project in an integrated and digitally collaborative environment.

Detailers, Engineers, Fabricators 1.0 PDHs

## Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III

**D3** Wednesday 1:45 – 2:45 p.m.

Speaker: David Deem, Deem Structural Services, LLC

The steel detailer is one of the first participants in a steel project and is often the first to interpret the architect’s and engineer’s drawings and design. Meanwhile, the erector is one of the last participants in a steel project and has to bring all of the pieces together while keeping the safety of the ironworkers as the first priority. Not only should the detailer and erector communicate with each other but the other players must also be involved. The *Detailers’ Guide for Erection Safety* has been updated and revised. Join us to review the best practices for accomplishing a safe, successful, and economical project as outlined in the document. OSHA-mandated connection types as well as recommended good practice connections and processes will be reviewed.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Detailing for Metal Bar Grating

**D4** Wednesday 3:30 – 4:30 p.m.

Speakers: Scott Wilbur and Tony McHugh, Nucor Grating

We’ll present information on the best practices for detailing of metal bar grating to save time and result in a properly coordinated and error-free project. Join us to learn the basics of grating plans and typical coordination requirements, how to create alignment between structural steel detailing and steel grating detailing, and how to identify common coordination pitfalls.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Detailing for Steel Joists and Joist Girders

**D5** Wednesday 4:45 – 5:45 p.m.

Speakers: Rich Sellers, New Millennium Building Systems; Maribel Fernandez, Canam Group, Inc.

Detailing joists and joist girders is very specialized and often structural detailers aren’t familiar with the SJI code, the joist fabrication and erection processes, and the requirements. This creates difficulties and blurred lines of responsibility in coordination between structural details and joist details. With the increase in offshore detailing, this is even more prevalent. We’ll provide the basics of joist placement plans and coordination requirements and help promote harmony between structural and joist erection drawings. We’ll also review best practices for the flow of information and coordination.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Managing Offshore Detailing

**D6** Thursday 8:00– 9:00 a.m.

Speakers: Prashant Khaitan, Sanrachna Steel; Dominic Mazza, Barton Steel and Supply

It is likely that the majority of detailing for U.S. projects is done offshore. Whether you are a fabricator working with offshore detailers or managing a detailing company in the U.S. that uses an offshore workforce, the objective is the same: to provide timely and correct detailing and data within a competitive budget. Join us as we provide some insight from both the detailer’s and the fabricator’s perspective.

Detailers, Engineers, Fabricators 1.0 PDHs

## Quality Procedures in the Detailing Office

**D7** Thursday 9:15 – 10:15 a.m.

Speaker: David Merrifield, Blackstone Group

One of the first and most important steps in producing a steel project is detailing. The single most important thing in detailing, as with any other step in the process, is quality. How can you know that your company or your detailing subcontractor is producing quality work? What is their program and procedures? How can you ensure quality in your own detailing company? We'll provide a map and guidelines to help provide quality detailing work.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Successful Detailing for Hot-Dip Galvanizing

**D8** Thursday 2:00 – 3:00 p.m.

Speaker: Alana Hochstein,  
American Galvanizers Association

Hot-dip galvanizing has been used to combat steel corrosion for over 100 years. However, the specification and best practices continue to evolve constantly as markets emerge and change. Batch hot-dip galvanizing is now specified to cover a variety of needs including corrosion protection, low initial cost, durability, longevity, availability, versatility, sustainability, and aesthetics. We'll review the most up-to-date steel design details and best practices to improve the quality and performance of hot-dip galvanized coatings, whether specified for long-term corrosion protection, painting or powder coating after hot-dip galvanizing, architecturally exposed structural steel (AESS), fireproofing, and more.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## The Benefits of the Individual Detailer Certification Program

**D9** Thursday 3:45 – 4:45 p.m.

Speaker: Fred Tinker, Pacific Drafting Inc.;  
Kerri Olsen, NISD

The Individual Detailer Certification Program strengthens client confidence by knowing that the steel detailer has the necessary skills and knowledge for steel detailing, inclusive of service longevity, the caliber of quality, and the ability to perform within all codes, specifications, and contract documents.

Detailers, Engineers, Fabricators 1.0 PDHs

## The NISD Industry Standard

**D10** Thursday 5:00 – 6:00 p.m.

Speaker: Greg Brawley, DBM Vircon

The NISD Industry Standard should be the guide and basis for setting up and managing your detailing business. It defines the business, technical, and professional principles and practices of the steel detailing industry. It provides a basis for evaluating services provided by steel detailing firms that will assist both those firms and others within the construction industry. During this session, we will review the NISD *Industry Standard* in detail and provide insight into the future of steel detailing and the industry standards.

Detailers, Fabricators 1.0 PDHs

## The Steel Detailer and Client Steel Management Software

**D11** Friday 8:00 – 9:00 a.m.

Speakers: Chris Randolph, Tekla;  
Charles Todd, Aveva

Steel detailers need to know the particulars of how their CAD program data exports facilitate and affect imports to steel management software and equipment software. Many steel detailers have not seen how this works and do not know what questions to ask their clients on how to best facilitate their steel management and equipment software needs. Learn what questions to ask and how to best configure data exports for this data transfer for KSS, XML, and NC1 files to enable fault-free imports for your clients, thus preventing last-minute configuration changes.

Detailers, Fabricators 1.0 PDHs

## Weld Details, Welding Code Requirements, Symbols, Processes, and Joints

**D12** Friday 9:15 – 10:15 a.m.

Speakers: George Rolla and Mariana Ludmer,  
Advanced Weldtec, Inc.

We will share best practices for detailing welds, understanding the American Welding Society (AWS) Standards for Welding Symbols, and AWS D1.1:2015 *Structural Welding Code—Steel* for joint designs.

Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Working with BIM XPs in the Detailing Office

**D13** Friday 10:45 – 11:45 a.m.

Speaker: David Merrifield, Blackstone Group

What is a BIM XP? It's a BIM Execution Plan and more and more projects are including them in contract documents. As a detailer, you need to know not only what a BIM XP is, but also what your individual role is. What is your client expecting of you? What is LOD? What does it mean to you and your deliverables? We will provide some baseline education about working with BIM XPs and will give you resources for educating your staff via the CD-Bim program.

Architects, Detailers, Engineers, Erectors, Fabricators 1.0 PDHs

## Shaping Structures: The Case for Cast Steel

**A1** Wednesday 8:00 – 9:00 a.m.

Speaker: Michael Stein,  
Schlaich Bergermann Partner

Moderator: David Eckmann, SE, PE,  
FAIA, Magnusson Klemencic Associates

- Shortly after the Industrial Revolution, cast iron proved to be a
- groundbreaking material. However, steel soon largely replaced it,
- providing great improvement in terms of ductility but replacing
- much of the artfully creative casting with standardized rolled
- shapes. Cast steel, the best of both worlds, is increasingly an
- effective and attractive option for innovative structural design,
- as the casting combines the optimal material properties of steel
- and creative freedom to shape components and direct the flow
- of forces in complex structures. Join us for a short history of cast
- steel and an introduction to the material itself. We'll explore some
- real-world examples of cast steel, such as in slender footbridges
- and long-span, lightweight stadium roofs.
- **Architects, Detailers, Engineers,**
- **Erectors, Fabricators** 1.0 PDHs/LU/HSW

## What Fabricators Wish Architects Knew About Optimizing Their Designs

**A2** Wednesday 9:15 – 10:15 a.m.

Speakers: Mike Marian, PVS Structures;  
Shane Krohn, Drake-Williams Steel, Inc.;  
Nick Miller, LPR Construction Co.;  
Eric Moe, Puma Steel

- This session is a must for everyone who wants to reduce the cost
- and time of building their next project. Four industry leaders
- will offer advice on everything from which beams should (and
- shouldn't) be primed to recommendations for AESS specification
- and answer all your questions.
- **Architects, Fabricators** 1.0 PDHs/LU/HSW

## Sustained in Steel

**A3** Wednesday 1:45 – 3:15 p.m.

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

Moderator: Dennis Pilarczyk, PE, AISC

- 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.
- **Architects, Engineers,**
- **Fabricators** 1.5 PDHs/LU/HSW/GBCI\*

## Performance-Based Structural Fire Engineering for Steel Buildings

**A4** Wednesday 3:30 – 4:30 p.m.

Speakers: Bevan Jones, PE, and  
Mikko Salminen, PE, 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.
- **Architects, Engineers** 1.0 PDHs/LU/HSW

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

**A5** Friday 8:00 – 9:00 a.m.

Speaker: Terri Meyer Boake,  
University of Waterloo

Moderator: Jacinda Collins, AISC

- 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 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.
- **Architects, Detailers, Engineers,**
- **Fabricators** 1.0 PDHs/LU/HSW



## Working With New Materials and New Techniques

**A6** Thursday 8:00 – 9:00 a.m.

Speaker: Shaina Saporta, PE, Arup

Moderator: Jennifer Traut-Todaro, AISC

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.

**Architects, Engineers** 1.0 PDHs/LU/HSW

## Insane in the Membrane

**A7** Thursday 9:15 – 10:15 a.m.

Speakers: Jeff Thompson, PE, and Sanjeev Tankha, AIA, LEED, Walter P Moore

Moderator: Brian Ward, AISC

We'll provide an overview of the analysis, design, and fabrication of membrane structures. We will also discuss form-finding to generate the geometry of a membrane structure. Join us as we explore design assumptions and fabrication of a membrane's structure, patterning, welding, and some typical connections. This immersive session is geared towards the collaboration of architects with structural engineers to accomplish the successful design of membrane structures.

**Architects, Engineers, Fabricators** 1.0 PDHs/LU/HSW

## Designing Buildings for Safety and Security

**A9** Thursday 3:45 – 4:45 p.m.

Speakers: John Fallon and Elizabeth Pacheco, AIA, LEED, Fallon + Pacheco Architects

It seems that no building occupancy type is immune to the threat of targeted violent incidents these days, and that creates a real challenge for designers: how to create a safe environment with inspiring and welcoming design solutions. Achieving this balance starts with an effective design and security measures that will deter, detect, address, respond to, and interdict such threats and risks. Figuring out how to achieve this does not have to be an overwhelming challenge. Our goal as designers is to address these important issues and still create spaces that do not feel overbearing. Join us as we find the solution.

**Architects, Engineers** 1.0 PDHs/LU/HSW

## Non-Euclidean Façades

**A10** Thursday 5:00 – 6:00 p.m.

Speaker: Anthony Birchler, PE, A. Zahner Co.

This program discusses the evolution of the concept, design, fabrication, and installation of façades that involve non-Euclidean geometry with steel as the main structural element. It includes case studies of proven collaborative means and methods of delivering such projects. This can only be achieved by an early integration of the specialty contractor as an integral member of the design team. The program presents specific data and design concepts for each project, as well as issues and solutions encountered during the entire process.

**Architects, Detailer, Engineers, Erectors, Fabricators** 1.0 PDHs/LU/HSW

## Innovations in Steel for Architects

**A11** Friday 8:00 – 9:00 a.m.

Speaker: Tabitha Stine, AISC

Moderator: Jerod Rudolf, PE, 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.

**Architects, Engineers, Erectors, Fabricators** 1.0 PDHs/LU/HSW

## Self-Assembly and Programmable Materials

**A12** Wednesday 4:45 – 5:45 p.m.

Speaker: Skylar Tibbits, Massachusetts Institute of Technology

We'll provide an overview of the Self-Assembly Lab at MIT and take a look at its research on self-assembly, programmable materials, and phase-change systems. We'll highlight the history as well as how and why this research was developed. Then we'll explore the details of the Lab's work, including various industry applications and future directions.

**Architects, Engineers, Erectors, Fabricators** 1.0 PDHs/LU/HSW

\* submitted for GBCI credit

1.0 PDH = 0.1 CEU (check with your state licensing board for eligibility for professional credits)

# exhibitor listing

as of November 2019

Orange companies  
are part of the  
Bridge Pavilion.

Abrafast.com /  
The Blind Bolt Co.  
**Acrow Bridge**  
Acument Global Technologies  
**Advance Tools LLC**  
AFF Design Services Inc  
AGT Robotics  
Ajan Elektronik Servis San.  
Ve Tic. Ltd. Sti.  
AKYAPAK USA  
Allied Machine & Engineering  
American Galvanizers Association  
American Institute of  
Steel Construction (AISC)  
American Punch Company  
American Welding Society  
Anatomic Iron Steel Detailing  
Applied Bolting Technology, Inc.  
ArcelorMittal International  
Armatherm  
Atema Inc.  
Atlas Tube, A Division of  
Zekelman Industries  
**Autodesk, Inc.**  
Automated Layout  
Technology LLC  
**AVEVA Inc.**  
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AZZ Metal Coatings  
Baco Enterprises Inc.  
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**SlipNOT Metal Safety Flooring**  
SNC Engineering, Inc.  
Soitaab USA Inc.  
Southern Association of  
Steel Fabricators (SASF)  
SRG Onesource LLC  
SSPC: The Society for  
Protective Coatings  
St. Louis Screw & Bolt  
Stainless Structural America  
Steel Deck Institute  
Steel Dynamics Structural and  
Rail Division  
Steel Erection Bid Wizard  
Steel Erectors Association  
of America  
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of America  
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Terracon  
Tnemec Company, Inc.  
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A Lincoln Electric Company  
Trilogy Machinery, Inc.  
Trimble  
Triple S Steel Holdings  
**TurnaSure, LLC**  
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# sessions of special interest to **DETAILERS**

## Wednesday, April 22

8:00 – 9:00 a.m.

- C6** Expanding the Georgia World Congress Center and More!
- E1** Meeting Tolerances Where Steel and Façade Collide
- I1** SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments
- O1** Shear Connections 101
- W1** Work is Making Me Sick!
- Z5** Strengthen Your Impact as a People Manager
- B1** Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations
- D1** Detailing and Coordinating Steel Deck
- A1** Shaping Structures: The Case for Cast Steel

9:15 – 10:15 a.m.

- E2** Structural Steel in Exterior Applications
- I2** Lessons from the First SpeedCore Project
- T2** Legal Lessons Learned with Building Information Modeling (BIM)
- W2** Fundamentals of Project Scheduling for Steel Fabrication
- Z6** Understand Your Assets as a Manager
- B2** Get to Know the NSBA Designer Resources for Faster Results
- D2** Detailing Contracts with Your Domestic and Offshore Partners—What's in Yours?

10:30 a.m. – 12:15 p.m.

- K1** What Big Brands Know!

1:45 – 3:15 p.m.

- T3** Artificial Intelligence: The New Frontier in Structural Design
- Z4** Effectively Influence Others to Optimize Results
- Z11** Navigating Marijuana in the Workplace
- B3** Lions, and Tigers, and Bearings, Oh My!
- D3** Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III

3:30 – 4:30 p.m.

- I3** The World's First Metal 3D-Printed Bridge
- T4** New and Evolving Applications for Virtual Reality and Augmented Reality
- U2** Movement Joints: What Are They and When Are They Needed?
- W3** Walk Before You Run: The Importance of Pre-Planning Meetings
- Y4** Rebuilding the Big Box
- Z3** Build Teamwork That Works to Win
- Z16** Engaging Workplace: Don't Throw Away That Training Investment
- D4** Detailing for Metal Bar Grating

4:45 – 5:45 p.m.

- O5** Strategies for Managing Projects with Delegated Design
- O13** Economic Design of SMF Connection Continuity Plate Welds
- T5** Mind the Gap: Addressing the Tech Disparity in Construction
- W4** The *Code of Standard Practice for Steel Buildings and Bridges* as a Handbook for Project Management
- Y5** What's Wrong with This Picture?
- Z12** Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center
- D5** Detailing for Steel Joists and Joist Girders

## Thursday, April 23

8:00 – 9:00 a.m.

- L1** Change Orders: How to Avoid Making Their Problems Your Problems
- T6** Robotic Assembly and Fabrication
- Y11** Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them
- D6** Managing Offshore Detailing

9:15 – 10:15 a.m.

- L2** Manage the Risk in Your Contract Provisions
- O7** The Impact of Connection Design and Detailing on Cost and Productivity in Fabrication and Erection
- T7** Using Technology to Attract a New Generation of Shop Labor
- Y6** Listen Up: Sound Isolation and Noise Control in Steel Buildings
- B7** Pricing Study of Recently Constructed Steel and Concrete Bridges
- B20** Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges
- D7** Quality Procedures in the Detailing Office

11:00 a.m. – 12:30 p.m.

- K2** Jim Fisher's Keys for Successful Designs: Quips & Myths

2:00 – 3:30 p.m.

- E9** The Stability Game Show—2nd Edition
- L3** The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?
- RT2** Industry Roundtable
- B8** Analytical Modeling Technique and Systematic Calibration with Weigh-in-Motion Measurements
- D8** Successful Detailing for Hot-Dip Galvanizing

3:45 – 4:45 p.m.

- E11** Get Ahead of the Curve
- L4** Aligning Your Contracts with the *Code of Standard Practice for Steel Buildings and Bridges*
- O6** Hidden Gems: Connection Structural Integrity Code Changes and More
- O9** The Bottom Line: The Impact of 30 Years of Material and Code Changes on Connection Costs
- Y8** Improvements to Stud Welding
- B9** Service Life Design for Steel Bridges
- D9** The Benefits of the Individual Detailer Certification Program

5:00 – 6:00 p.m.

- L5** Understanding Commercial General Liability and Builders' Risk Policies: What Covers What?
- O10** Economical Exposed Steel Connections
- Z13** The People Side of Change: An Introduction to the ADKAR Method of Change Management
- Z14** A Job Site Built for Tomorrow
- Z15** The Crystal Ball: Construction Market Conditions and Forecasting for Buildings and Bridges
- B10** Technology and the Bridge Industry: BrIM & Model Based Exchange
- D10** The NISD Industry Standard
- A10** Non-Euclidean Façades

## Friday, April 24

8:00 – 9:00 a.m.

- C7** State Farm Arena Renovation—Panel Discussion on Project Challenges
- E7** Lean On Me: Contemporary Railing Systems Will Help You Carry On
- T1** Yes, You Scan! Laser Scanning and Steel
- Z7** Don't Be Scared! Learn How to Manage Conflict
- B11** Railroad Bridges: A Unique Experience (Part 2)
- D11** The Steel Detailer and Client Steel Management Software
- A5** Architecturally EXPOSED! From High-Tech Architecture to Today's Best Practices in Architecturally Exposed Structural Steel

9:15 – 10:15 a.m.

- C4** 425 Park Avenue—A New Building Built inside an Existing Building
- L6** The Formula for a Project Train Wreck
- O12** Connections: Art, Science, and Information in the Quest for Economy and Safety
- T10** New Technology, Existing Spaces
- Y9** How Varying Tolerances and Lack of Coordination Can Cause Constructability, Quality, and Cost Issues
- D12** Weld Details, Welding Code Requirements, Symbols, Processes, and Joints

10:45 – 11:45 a.m.

- C5** A Tale of Two Cities: Assessment of Existing Iron and Steel Structures
- E16** Recent Developments in Seismic Performance of Composite Buildings
- T11** A Visual Explanation of the IFC Standard
- Y10** Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications
- Z8** Negotiating with Confidence
- B26** Walk This Way: Pedestrian Bridges—Unique Design and Analysis
- D13** Working with BIM XPs in the Detailing Office

noon – 1:30 p.m.

- K3** T.R. Higgins Lecture: Gusset Plates: The Evolution of Simplified Design Models

# sessions of special interest to **ENGINEERS**

## Wednesday, April 22

8:00 – 9:00 a.m.

- C6** Expanding the Georgia World Congress Center and More!
- E1** Meeting Tolerances Where Steel and Façade Collide
- I1** SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments
- M1** From the Mill to Topping Out  
Session 1: Introduction  
(8:00 – 9:30 a.m.)
- O1** Shear Connections 101
- T9** Cyber Threats in the Construction Industry
- U1** Structural Inspections for Seismic Design Structures
- W1** Work is Making Me Sick!
- Z5** Strengthen Your Impact as a People Manager
- B1** Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations
- B14** A Novel Alternative to Corrosion Resistance: A709 Grade 50CR
- S1** Stability of Wall and Roofing Systems
- D1** Detailing and Coordinating Steel Deck
- A1** Shaping Structures: The Case for Cast Steel

9:15 – 10:15 a.m.

- E2** Structural Steel in Exterior Applications
- I2** Lessons from the First SpeedCore Project
- T2** Legal Lessons Learned with Building Information Modeling (BIM)
- W2** Fundamentals of Project Scheduling for Steel Fabrication
- Y1** Technology Meets Constructability
- Z2** Building Relationships of Trust
- Z6** Understand Your Assets as a Manager
- B2** Get to Know the NSBA Designer Resources for Faster Results
- B15** Review of Tubs for Pedestrians and Improved Details for Tubs
- S2** Advances in Stability Analysis
- D2** Detailing Contracts with Your Domestic and Offshore Partners—What's in Yours?

10:30 a.m. – 12:15 p.m.

- K1** What Big Brands Know!

1:45 – 3:15 p.m.

- E4** Fast and Efficient Design for Stability
- E8** Principles and Practice Related to the Direct Analysis Method
- E14** Composite Construction  
101: Fundamentals, Practical Implementation, and New Thrust Areas
- O3** WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors
- T3** Artificial Intelligence: The New Frontier in Structural Design
- U6** Principles and Practice in Seismic Design
- Y2** Best Practices for Steel Joist, Joist Girder, and Steel Deck Construction
- Y3** Challenges for Designers of Crane-Supporting Steel Structures
- Z4** Effectively Influence Others to Optimize Results
- Z11** Navigating Marijuana in the Workplace

- B3** Lions, and Tigers, and Bearings, Oh My!
- B16** Redundancy of Steel Bridges
- S3** Stability of Columns
- D3** Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III  
(1:45 – 2:45 p.m.)
- A3** Sustained in Steel

2:00 – 3:30 p.m.

- M2** From the Mill to Topping Out  
Session 2: The Manufacturing of Structural Steel Shapes

3:30 – 4:30 p.m.

- E5** Introduction to Software Development for Structural Engineers
- I3** The World's First Metal 3D-Printed Bridge
- O4** Delegating Connection Design
- T4** New and Evolving Applications for Virtual Reality and Augmented Reality
- U2** Movement Joints: What Are They and When Are They Needed?
- W3** Walk Before You Run: The Importance of Pre-Planning Meetings
- Y4** Rebuilding the Big Box
- Z3** Build Teamwork That Works to Win
- Z16** Engaging Workplace: Don't Throw Away That Training Investment
- B4** New and Proposed Changes to the *Bridge Welding Code*
- B17** Railroad Bridges: A Unique Experience (Part 1)
  - S4** Special Topics in Structural Stability
  - D4** Detailing for Metal Bar Grating
  - A4** Performance-Based Structural Fire Engineering for Steel Buildings

4:00 – 5:30 p.m.

- M3** From the Mill to Topping Out  
Session 3: Steel Fabrication

4:45 – 5:45 p.m.

- E6** Industrial Crane Runway Capacity Upgrades
- O5** Strategies for Managing Projects with Delegated Design
- O13** Economic Design of SMF Connection Continuity Plate Welds
- T5** Mind the Gap: Addressing the Tech Disparity in Construction
- U4** Design of Building Structures with Fluid Viscous Dampers for Seismic Energy Dissipation using ASCE 7 Alternative Procedures
- W4** *The Code of Standard Practice for Steel Buildings and Bridges* as a Handbook for Project Management
- Y5** What's Wrong with This Picture?
- Z12** Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center
- B5** Typical Construction Techniques for Railroad Bridges: Accelerated Bridge Construction
- B18** Complex Steel Bridge Load Rating
- S5** Stability of Structural Systems
- D5** Detailing for Steel Joists and Joist Girders
- A12** Self-Assembly and Programmable Materials

## Thursday, April 23

8:00 – 9:00 a.m.

- E13** Resistance and Resilience of Composite Floor Systems to Fire: Experiments, Modeling, and Design
- L1** Change Orders: How to Avoid Making Their Problems Your Problems
- M4** From the Mill to Topping Out  
Session 4: Connection Design as a Fabricator's Representative  
(8:00 – 9:30 a.m.)
- O2** A Soup to Nuts Look at Nuts and Bolts
- P2** *Your Code of Standard Practice—An Engineer's Perspective*
- R1** The Importance of Temporary Bracing
- T6** Robotic Assembly and Fabrication
- Y11** Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them
- B6** Bayonne Bridge: 'Raise the Roadway' and Demolition of the Main Span
- B19** Common Steel Bridge Repairs to Extend Service Life
- S6** Stability under Seismic Loading
- D6** Managing Offshore Detailing
- A6** Working With New Materials and New Techniques

9:15 – 10:15 a.m.

- E10** A Primer on Lateral Load-Resisting Frames Using Steel Joists and Joist Girders
- L2** Manage the Risk in Your Contract Provisions
- O7** The Impact of Connection Design and Detailing on Cost and Productivity in Fabrication and Erection
- R2** You Lift Me Up: Critical Lift Planning Basics 101
- T7** Using Technology to Attract a New Generation of Shop Labor
- Y6** Listen Up: Sound Isolation and Noise Control in Steel Buildings
- B7** Pricing Study of Recently Constructed Steel and Concrete Bridges
- B20** Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges
- S7** Presentation Session for Beedle and McGuire Awards
- D7** Quality Procedures in the Detailing Office
- A7** Insane in the Membrane

11:00 a.m. – 12:30 p.m.

- K2** Jim Fisher's Keys for Successful Designs: Quips & Myths

## Thursday, April 23

2:00 – 3:30 p.m.

- E3** Designing Built-Up Flexural Members
- E9** The Stability Game Show—2nd Edition
- L3** The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?
- M5** From the Mill to Topping Out Session 5: Steel Erection: It Doesn't Get Built Without the Erector
- O8** Solving the Puzzle of Delegated Connection Design
- U5** AISC Research: Understanding and Improving the Seismic Performance of Chevron-Configured Special Concentrically Braced Frames
- Y7** Is This Floor Moving? Vibration Analysis of Steel Joist Concrete Slab Floors
- B8** Analytical Modeling Technique and Systematic Calibration with Weigh-in-Motion Measurements
- B21** Live Long Span and Prosper: The Benefits of Long Span Bridges
- S8** Stability of Members under Combined Axial and Flexural Loads
- D8** Successful Detailing for Hot-Dip Galvanizing (2:00 – 3:00 p.m.)

3:45 – 4:45 p.m.

- C3** A New Base for Willis Tower
- E11** Get Ahead of the Curve
- L4** Aligning Your Contracts with the *Code of Standard Practice for Steel Buildings and Bridges*
- O6** Hidden Gems: Connection Structural Integrity Code Changes and More
- O9** The Bottom Line: The Impact of 30 Years of Material and Code Changes on Connection Costs
- T8** Managing the Legal and Practice Issues of Building Information Modeling (BIM)
- Y8** Improvements to Stud Welding
- B9** Service Life Design for Steel Bridges
- B22** The Latest Research on Shear Connector Placement in Bridge Design
- Q16** How to Set Up an Effective Training Program
- S9** Stability of Wall and Roofing Systems
- D9** The Benefits of the Individual Detailer Certification Program
- A9** Designing Buildings for Safety and Security

4:00 – 5:30 p.m.

- M6** From the Mill to Topping Out Session 6: Stability During Construction

5:00 – 6:00 p.m.

- E12** Shear Connection Beam Reinforcement
- L5** Understanding Commercial General Liability and Builders' Risk Policies: What Covers What?
- O10** Economical Exposed Steel Connections
- R4** Advances in Erection Engineering for High-Rise Steel Structures
- Z13** The People Side of Change: An Introduction to the ADKAR Method of Change Management
- Z14** A Job Site Built for Tomorrow
- Z15** The Crystal Ball: Construction Market Conditions and Forecasting for Buildings and Bridges
- B10** Technology and the Bridge Industry: BrIM & Model Based Exchange
- B23** Case Studies on Rehabilitating Large Steel Bridges
- S10** Advances in Stability Analysis
- A10** Non-Euclidean Façades

## Friday, April 24

8:00 – 9:00 a.m.

- C7** State Farm Arena Renovation—Panel Discussion on Project Challenges
- E7** Lean On Me: Contemporary Railing Systems Will Help You Carry On
- M7** From the Mill to Topping Out Session 7: Field Fixes and Solutions (8:00 – 9:30 a.m.)
- O11** Connection Design Using Advanced Finite Element Analysis: Why, When, and How
- R5** Design Guide 10: *Erection Bracing of Low-Rise Structural Steel Buildings*
- T1** Yes, You Scan! Laser Scanning and Steel
- Y13** Serviceability Considerations for the Practicing Engineer
- Z7** Don't Be Scared! Learn How to Manage Conflict
- B11** Railroad Bridges: A Unique Experience (Part 2)
- B24** Holy Beams, Batman! Evaluating Capacity of Corroded Steel Beams
- S11** Topics in Local Stability
- A5** Architecturally EXPOSED! From High-Tech Architecture to Today's Best Practices in Architecturally Exposed Structural Steel
- A11** Innovations in Steel for Architects

9:15 – 10:15 a.m.

- C4** 425 Park Avenue—A New Building Built inside an Existing Building
- E15** Update from 2019: Lateral Load Transfer From Diaphragms to Resisting Elements
- L6** The Formula for a Project Train Wreck
- O12** Connections: Art, Science, and Information in the Quest for Economy and Safety
- T10** New Technology, Existing Spaces
- Y9** How Varying Tolerances and Lack of Coordination Can Cause Constructability, Quality, and Cost Issues

9:15 – 10:15 a.m.

- B12** Design and Construction Challenges of the Governor Mario M. Cuomo Bridge Replacement of the Iconic Tappan Zee Bridge
- B25** Current Information on Constraint-Induced Fractures and Intersecting Welds
- S12** Stability of Structural Systems
- D12** Weld Details, Welding Code Requirements, Symbols, Processes, and Joints

10:00 – 11:30 a.m.

- M8** From the Mill to Topping Out Session 8: Quality Control and Quality Assurance

10:45 – 11:45 a.m.

- C5** A Tale of Two Cities: Assessment of Existing Iron and Steel Structures
- E16** Recent Developments in Seismic Performance of Composite Buildings
- R7** What a Steel Erection Engineer Wishes Steel Erection Engineers Knew About Steel Erection
- T11** A Visual Explanation of the IFC Standard
- Y10** Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications
- Y12** Welding to Unknown Steels
- Z8** Negotiating with Confidence
- B13** Unique Projects Near The Northern Border and a Complex Widening in a Major City
- B26** Walk This Way: Pedestrian Bridges—Unique Design and Analysis
- S13** Topics in Lateral-Torsional Buckling
- D13** Working with BIM XPs in the Detailing Office

noon – 1:30 p.m.

- K3** T.R. Higgins Lecture: Gusset Plates: The Evolution of Simplified Design Models

sessions  
of special interest to **ERECTORS**

## Wednesday, April 22

8:00 – 9:00 a.m.

- C6** Expanding the Georgia World Congress Center and More!
- E1** Meeting Tolerances Where Steel and Façade Collide
- I1** SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments
- M1** From the Mill to Topping Out Session 1: Introduction (8:00 – 9:30 a.m.)
- O1** Shear Connections 101
- T9** Cyber Threats in the Construction Industry
- W1** Work is Making Me Sick!
- Z1** Succession Planning for the Steel Industry
- Z5** Strengthen Your Impact as a People Manager
- B1** Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations
- Q1** Certification Forum
- D1** Detailing and Coordinating Steel Deck
- A1** Shaping Structures: The Case for Cast Steel

9:15 – 10:15 a.m.

- I2** Lessons from the First SpeedCore Project
- Z2** Building Relationships of Trust
- Z6** Understand Your Assets as a Manager
- Q2** Quick Methods for Quality Assurance Reviews
- Q13** How to Use Business Case Writing to Establish a Measurable Goal

10:30 a.m. – 12:15 p.m.

- K1** What Big Brands Know!

1:45 – 3:15 p.m.

- O3** WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors
- Z4** Effectively Influence Others to Optimize Results
- Z11** Navigating Marijuana in the Workplace
- B3** Lions, and Tigers, and Bearings, Oh My!
- Q3** Demystifying Chapter N and the Building Code: What Everyone Should Know
- Q14** How To: A Paint Primer
- D3** Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III (1:45 – 2:45 p.m.)

2:00 – 3:30 p.m.

- M2** From the Mill to Topping Out Session 2: The Manufacturing of Structural Steel Shapes

3:30 – 4:30 p.m.

- I3** The World's First Metal 3D-Printed Bridge
- U2** Movement Joints: What Are They and When Are They Needed?
- W3** Walk Before You Run: The Importance of Pre-Planning Meetings
- Y4** Rebuilding the Big Box
- Z3** Build Teamwork That Works to Win
- Z16** Engaging Workplace: Don't Throw Away That Training Investment
- B17** Railroad Bridges: A Unique Experience (Part 1)
- Q4** Technology: It's Going to Make You Better!
- Q15** How to Write Clear, Simple, and Effective Quality Procedures
- D4** Detailing for Metal Bar Grating

4:00 – 5:30 p.m.

- M3** From the Mill to Topping Out Session 3: Steel Fabrication

4:45 – 5:45 p.m.

- W4** *The Code of Standard Practice for Steel Buildings and Bridges* as a Handbook for Project Management
- Y5** What's Wrong with This Picture?
- Z12** Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center
- B5** Typical Construction Techniques for Railroad Bridges: Accelerated Bridge Construction
- Q5** Specs to Receiving: The Whole Nine Yards
- Q20** How to Incorporate Risk-Based Thinking
- D5** Detailing for Steel Joists and Joist Girders
- A12** Self-Assembly and Programmable Materials

## Thursday, April 23

8:00 – 9:00 a.m.

- L1** Change Orders: How to Avoid Making Their Problems Your Problems
- M4** From the Mill to Topping Out Session 4: Connection Design as a Fabricator's Representative (8:00 – 9:30 a.m.)
- O2** A Soup to Nuts Look at Nuts and Bolts
- R1** The Importance of Temporary Bracing
- Z9** Closing the Deal on Major Projects (Part 1): The Fabricator's Point of View
- B6** Bayonne Bridge: 'Raise the Roadway' and Demolition of the Main Span
- B19** Common Steel Bridge Repairs to Extend Service Life
- Q6** A QMS Isn't a Burden... It's a Benefit!
- Q17** How to Perform an Effective Internal Audit

9:15 – 10:15 a.m.

- L2** Manage the Risk in Your Contract Provisions
- R2** You Lift Me Up: Critical Lift Planning Basics 101
- T7** Using Technology to Attract a New Generation of Shop Labor
- Y6** Listen Up: Sound Isolation and Noise Control in Steel Buildings
- Z10** Closing the Deal on Major Projects (Part 2): The Owner's Point of View
- B7** Pricing Study of Recently Constructed Steel and Concrete Bridges
- B20** Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges
- Q7** Root Cause Analysis: Let's Improve It
- Q18** How to Perform an Effective Management Review
- D7** Quality Procedures in the Detailing Office

11:00 a.m. – 12:30 p.m.

- K2** Jim Fisher's Keys for Successful Designs: Quips & Myths

# sessions of special interest to **ERECTORS**

## Thursday, April 23

2:00 – 3:30 p.m.

- E9** The Stability Game Show—2nd Edition
- L3** The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?
- M5** From the Mill to Topping Out Session 5: Steel Erection: It Doesn't Get Built Without the Erector
- RT2** Industry Roundtable
- B8** Analytical Modeling Technique and Systematic Calibration with Weigh-in-Motion Measurements
- Q8** Lessons Learned from Fabricator's and Erector's Views on Inspection
- Q19** How To: The Secret of Calibration
- D8** Successful Detailing for Hot-Dip Galvanizing (2:00 – 3:00 p.m.)

3:45 – 4:45 p.m.

- E11** Get Ahead of the Curve
- L4** Aligning Your Contracts with the *Code of Standard Practice for Steel Buildings and Bridges*
- R3** Cranes: More Than Just Erection
- Y8** Improvements to Stud Welding
- Q9** The Hidden Shop: Nonconformances and Corrective Actions (Part 1)
- Q16** How to Set Up an Effective Training Program

4:00 – 5:30 p.m.

- M6** From the Mill to Topping Out Session 6: Stability During Construction

5:00 – 6:00 p.m.

- L5** Understanding Commercial General Liability and Builders' Risk Policies: What Covers What?
- O10** Economical Exposed Steel Connections
- R4** Advances in Erection Engineering for High-Rise Steel Structures
- Z13** The People Side of Change: An Introduction to the ADKAR Method of Change Management
- Z14** A Job Site Built for Tomorrow
- Z15** The Crystal Ball: Construction Market Conditions and Forecasting for Buildings and Bridges
- Q10** The Learning Shop: Effective Use and Management of Nonconformances and Corrective Actions (Part 2)
- Q21** How Can a Steel Erector Effectively Train Its Supervisors and Workforce on Quality?
- A10** Non-Euclidean Façades

## Friday, April 24

8:00 – 9:00 a.m.

- C7** State Farm Arena Renovation—Panel Discussion on Project Challenges
- M7** From the Mill to Topping Out Session 7: Field Fixes and Solutions (8:00 – 9:30 a.m.)
- P3** Your *Code of Standard Practice*—An Erector's Perspective
- R5** Design Guide 10: *Erection Bracing of Low-Rise Structural Steel Buildings*
- Z7** Don't Be Scared! Learn How to Manage Conflict
- B11** Railroad Bridges: A Unique Experience (Part 2)
- A11** Innovations in Steel for Architects

9:15 – 10:15 a.m.

- C4** 425 Park Avenue—A New Building Built inside an Existing Building
- L6** The Formula for a Project Train Wreck
- O12** Connections: Art, Science, and Information in the Quest for Economy and Safety
- R6** Erection Planning Made Easy!
- T10** New Technology, Existing Spaces
- Y9** How Varying Tolerances and Lack of Coordination Can Cause Constructability, Quality, and Cost Issues
- B12** Design and Construction Challenges of the Governor Mario M. Cuomo Bridge Replacement of the Iconic Tappan Zee Bridge
- Q11** The Whys of Job Descriptions, Organization Charts, and Biographies
- Q22** How to Use 5S Methodology in the Office, Shop, and Field to Increase Speed!
- D12** Weld Details, Welding Code Requirements, Symbols, Processes, and Joints

10:00 – 11:30 a.m.

- M8** From the Mill to Topping Out Session 8: Quality Control and Quality Assurance

10:45 – 11:45 a.m.

- C5** A Tale of Two Cities: Assessment of Existing Iron and Steel Structures
- E16** Recent Developments in Seismic Performance of Composite Buildings
- R7** What a Steel Erection Engineer Wishes Steel Erection Engineers Knew About Steel Erection
- Y10** Structural Stainless Steel for Corrosive Environments, Resilience, and Aesthetic Applications
- Y12** Welding to Unknown Steels
- Z8** Negotiating with Confidence
- B13** Unique Projects Near The Northern Border and a Complex Widening in a Major City
- B26** Walk This Way: Pedestrian Bridges—Unique Design and Analysis
- Q12** Do You Have Bolting Questions? AISC's Steel Solutions Center Has the Answers!
- Q23** How and Why to Quantify Quality Data
- D13** Working with BIM XPs in the Detailing Office

noon – 1:30 p.m.

- K3** T.R. Higgins Lecture: Gusset Plates: The Evolution of Simplified Design Models

# sessions of special interest to **FABRICATORS**

## Wednesday, April 22

8:00 – 9:00 a.m.

- C6** Expanding the Georgia World Congress Center and More!
- E1** Meeting Tolerances Where Steel and Façade Collide
- I1** SpeedCore and Composite Plate Shear Walls: Cutting-Edge Research and Developments
- M1** From the Mill to Topping Out Session 1: Introduction (8:00 – 9:30 a.m.)
- O1** Shear Connections 101
- P1** Your *Code of Standard Practice*—A Fabricator's Perspective
- T9** Cyber Threats in the Construction Industry
- W1** Work is Making Me Sick!
- Z1** Succession Planning for the Steel Industry
- Z5** Strengthen Your Impact as a People Manager
- B1** Now I Know My ABCs: Applying Accelerated Bridge Construction (ABC) to Unique Situations
- B14** A Novel Alternative to Corrosion Resistance: A709 Grade 50CR
  - Q1** Certification Forum
  - D1** Detailing and Coordinating Steel Deck
  - A1** Shaping Structures: The Case for Cast Steel

9:15 – 10:15 a.m.

- E2** Structural Steel in Exterior Applications
  - I2** Lessons from the First SpeedCore Project
  - T2** Legal Lessons Learned with Building Information Modeling (BIM)
- W2** Fundamentals of Project Scheduling for Steel Fabrication
  - Z2** Building Relationships of Trust
  - Z6** Understand Your Assets as a Manager
- B15** Review of Tubs for Pedestrians and Improved Details for Tubs
  - Q2** Quick Methods for Quality Assurance Reviews
  - Q13** How to Use Business Case Writing to Establish a Measurable Goal
  - D2** Detailing Contracts with Your Domestic and Offshore Partners—What's in Yours?
  - A2** What Fabricators Wish Architects Knew About Optimizing Their Designs

10:30 a.m. – 12:15 p.m.

- K1** What Big Brands Know!

1:45 – 3:15 p.m.

- O3** WPSs and WPS Qualification: Guidance for Engineers, Fabricators, and Erectors
- RT1** Fabricator Roundtable
- T3** Artificial Intelligence: The New Frontier in Structural Design
- Y3** Challenges for Designers of Crane-Supporting Steel Structures

- Z4** Effectively Influence Others to Optimize Results
- Z11** Navigating Marijuana in the Workplace
  - B3** Lions, and Tigers, and Bearings, Oh My!
  - Q3** Demystifying Chapter N and the Building Code: What Everyone Should Know
  - Q14** How To: A Paint Primer
  - D3** Detailing for Erector Safety: Review of NISD-SEAA Detailing Guide Vol. III (1:45 – 2:45 p.m.)
  - A3** Sustained in Steel

2:00 – 3:30 p.m.

- M2** From the Mill to Topping Out Session 2: The Manufacturing of Structural Steel Shapes

3:30 – 4:30 p.m.

- I3** The World's First Metal 3D-Printed Bridge
- O4** Delegating Connection Design
- T4** New and Evolving Applications for Virtual Reality and Augmented Reality
- U2** Movement Joints: What Are They and When Are They Needed?
- W3** Walk Before You Run: The Importance of Pre-Planning Meetings
- Y4** Rebuilding the Big Box
- Z3** Build Teamwork That Works to Win
- Z16** Engaging Workplace: Don't Throw Away That Training Investment
  - B4** New and Proposed Changes to the *Bridge Welding Code*
  - Q4** Technology: It's Going to Make You Better!
  - Q15** How to Write Clear, Simple, and Effective Quality Procedures
  - D4** Detailing for Metal Bar Grating

4:00 – 5:30 p.m.

- M3** From the Mill to Topping Out Session 3: Steel Fabrication

4:45 – 5:45 p.m.

- O5** Strategies for Managing Projects with Delegated Design
- O13** Economic Design of SMF Connection Continuity Plate Welds
  - T5** Mind the Gap: Addressing the Tech Disparity in Construction
- W4** The *Code of Standard Practice for Steel Buildings and Bridges* as a Handbook for Project Management
  - Y5** What's Wrong with This Picture?
- Z12** Transforming the Diversity Paradigm: The Lakeside Alliance, Builder of the Obama Presidential Center
  - B5** Typical Construction Techniques for Railroad Bridges: Accelerated Bridge Construction
  - Q5** Specs to Receiving: The Whole Nine Yards
  - Q20** How to Incorporate Risk-Based Thinking
    - D5** Detailing for Steel Joists and Joist Girders
  - A12** Self-Assembly and Programmable Materials

## Thursday, April 23

8:00 – 9:00 a.m.

- L1** Change Orders: How to Avoid Making Their Problems Your Problems
- M4** From the Mill to Topping Out Session 4: Connection Design as a Fabricator's Representative (8:00 – 9:30 a.m.)
  - O2** A Soup to Nuts Look at Nuts and Bolts
  - T6** Robotic Assembly and Fabrication
- Y11** Design and Detail Issues That Add Cost to Structural Steel Projects—and How to Avoid Them
  - Z9** Closing the Deal on Major Projects (Part 1): The Fabricator's Point of View
  - B19** Common Steel Bridge Repairs to Extend Service Life
    - Q6** A QMS Isn't a Burden... It's a Benefit!
  - Q17** How to Perform an Effective Internal Audit
    - D6** Managing Offshore Detailing

9:15 – 10:15 a.m.

- L2** Manage the Risk in Your Contract Provisions
- O7** The Impact of Connection Design and Detailing on Cost and Productivity in Fabrication and Erection
  - T7** Using Technology to Attract a New Generation of Shop Labor
  - Y6** Listen Up: Sound Isolation and Noise Control in Steel Buildings
- Z10** Closing the Deal on Major Projects (Part 2): The Owner's Point of View
  - B7** Pricing Study of Recently Constructed Steel and Concrete Bridges
  - B20** Concrete-Filled Steel Tubes (CFSTs) Above and Below Ground: Research and Implementation Examples for Steel Bridges
    - Q7** Root Cause Analysis: Let's Improve It
  - Q18** How to Perform an Effective Management Review
    - D7** Quality Procedures in the Detailing Office
    - A7** Insane in the Membrane

11:00 a.m. – 12:30 p.m.

- K2** Jim Fisher's Keys for Successful Designs: Quips & Myths

2:00 – 3:30 p.m.

- E9** The Stability Game Show—2nd Edition
- L3** The State of Design-Assist: Ground-Breaking Collaborative Project Delivery Method or Wolf in Sheep's Clothing?



sessions  
of special interest to

# FABRICATORS

## Thursday, April 23

2:00 – 3:30 p.m.

- M5** From the Mill to Topping Out  
Session 5: Steel Erection:  
It Doesn't Get Built Without the Erector
- O8** Solving the Puzzle of Delegated  
Connection Design
- RT2** Industry Roundtable
- B8** Analytical Modeling Technique and  
Systematic Calibration with Weigh-in-Motion  
Measurements
- Q8** Lessons Learned from Fabricator's and  
Erector's Views on Inspection
- Q19** How To: The Secret of Calibration
- D8** Successful Detailing for Hot-Dip Galvanizing  
(2:00 – 3:00 p.m.)

3:45 – 4:45 p.m.

- E11** Get Ahead of the Curve
- L4** Aligning Your Contracts with the  
*Code of Standard Practice for Steel  
Buildings and Bridges*
- O6** Hidden Gems: Connection Structural  
Integrity Code Changes and More
- O9** The Bottom Line: The Impact of 30  
Years of Material and Code Changes on  
Connection Costs
- Y8** Improvements to Stud Welding
- B9** Service Life Design for Steel Bridges
- Q9** The Hidden Shop: Nonconformances and  
Corrective Actions (Part 1)
- Q16** How to Set Up an Effective Training Program
- D9** The Benefits of the Individual Detailer  
Certification Program

4:00 – 5:30 p.m.

- M6** From the Mill to Topping Out Session 6:  
Stability During Construction

5:00 – 6:00 p.m.

- L5** Understanding Commercial General  
Liability and Builders' Risk Policies:  
What Covers What?
- O10** Economical Exposed Steel Connections
- R4** Advances in Erection Engineering for High-  
Rise Steel Structures
- Z13** The People Side of Change: An Introduction  
to the ADKAR Method of Change  
Management
- Z14** A Job Site Built for Tomorrow
- Z15** The Crystal Ball: Construction Market  
Conditions and Forecasting for Buildings  
and Bridges
- B10** Technology and the Bridge Industry:  
BIM & Model Based Exchange
- Q10** The Learning Shop: Effective Use and  
Management of Nonconformances and  
Corrective Actions (Part 2)
- Q21** How Can a Steel Erector Effectively Train Its  
Supervisors and Workforce on Quality?
- D10** The NISD Industry Standard
- A10** Non-Euclidean Façades

## Friday, April 24

8:00 – 9:00 a.m.

- C7** State Farm Arena  
Renovation—Panel Discussion  
on Project Challenges
- E7** Lean On Me:  
Contemporary Railing Systems  
Will Help You Carry On
- M7** From the Mill to Topping Out  
Session 7: Field Fixes  
and Solutions  
(8:00 – 9:30 a.m.)
- R5** Design Guide 10: *Erection  
Bracing of Low-Rise Structural  
Steel Buildings*
- T1** Yes, You Scan! Laser Scanning  
and Steel
- Z7** Don't Be Scared! Learn How to  
Manage Conflict
- B11** Railroad Bridges: A Unique  
Experience (Part 2)
- D11** The Steel Detailer and Client  
Steel Management Software
- A5** Architecturally EXPOSED!  
From High-Tech Architecture  
to Today's Best Practices  
in Architecturally Exposed  
Structural Steel
- A11** Innovations in Steel for  
Architects

9:15 – 10:15 a.m.

- C4** 425 Park Avenue—  
A New Building Built inside  
an Existing Building
- L6** The Formula for a Project  
Train Wreck
- O12** Connections: Art, Science, and  
Information in the Quest for  
Economy and Safety
- Y9** How Varying Tolerances and  
Lack of Coordination Can  
Cause Constructability, Quality,  
and Cost Issues
- B12** Design and Construction  
Challenges of the Governor  
Mario M. Cuomo Bridge  
Replacement of the Iconic  
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- Q11** The Whys of Job Descriptions,  
Organization Charts, and  
Biographies
- Q22** How to Use 5S Methodology in  
the Office, Shop, and Field to  
Increase Speed!
- D12** Weld Details, Welding Code  
Requirements, Symbols,  
Processes, and Joints

10:00 – 11:30 a.m.

- M8** From the Mill to Topping Out  
Session 8: Quality Control and  
Quality Assurance

10:45 – 11:45 a.m.

- C5** A Tale of Two Cities:  
Assessment of Existing Iron  
and Steel Structures
- R7** What a Steel Erection Engineer  
Wishes Steel Erection  
Engineers Knew About Steel  
Erection
- T11** A Visual Explanation of the IFC  
Standard
- Y10** Structural Stainless Steel  
for Corrosive Environments,  
Resilience, and Aesthetic  
Applications
- Y12** Welding to Unknown Steels
- Z8** Negotiating with Confidence
- B26** Walk This Way:  
Pedestrian Bridges—  
Unique Design and Analysis
- Q12** Do You Have Bolting  
Questions? AISC's Steel  
Solutions Center Has  
the Answers!
- Q23** How and Why to Quantify  
Quality Data
- D13** Working with BIM XPs in the  
Detailing Office

noon – 1:30 p.m.

- K3** T.R. Higgins Lecture: Gusset  
Plates: The Evolution of  
Simplified Design Models

# NASCC: THE STEEL CONFERENCE

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## hotel reservations

Our official registration and housing partner is MCI USA.

If you have questions about an unauthorized solicitation, the online system or housing in general, please contact MCI USA.  
[nascc@mcievents.com](mailto:nascc@mcievents.com) | p: 800.830.5812 (within U.S.) 972.349.5930 (outside U.S.) | fax: 972.349.7715

### Advantages of Booking with The Steel Conference

- **Location.** All our hotels are located within a 10-minute walk of the convention center. See housing map on page 59.
- **Deep discounts.** Buy-in-bulk rates, with savings passed on to you.
- **Best rate package.** We comparison shop to ensure our rates remain the lowest.
- **Hotel reward points.** Add to your hotel loyalty program.
- **Support the industry.** Our group buying allows us to keep convention costs down and pass savings along to you with lower registration rates.

Reserve your room as soon as possible and secure the hotel room of your choice!

**Deadline for reservations: Friday, March 27, 2020**

### Room Deposit Guarantee

All housing requests require a first night's stay plus tax deposit guarantee in the form of a credit card. Checks will not be accepted. If you are mailing a housing request, the deposit guarantee must accompany the housing request form. If the deposit guarantee does not accompany the form, your reservation will not be processed until the deposit guarantee is received. This delay could mean the loss of your hotel choice. Deposit guarantees may be made with one of the following credit cards: MasterCard, Visa or American Express.

### Four Easy Ways to Reserve Your Hotel Room

- **Internet.\*** [aisc.org/nascc/housing](http://aisc.org/nascc/housing)
- **Mail.** Mail a completed reservation form to our official registration and housing partner, MCI USA:  
6100 West Plano Parkway, Suite 3500, Plano, Texas 75093
- **Fax.\*** Fax a completed reservation form to 972.349.7715
- **Phone.\*** 800.830.5812 (within U.S.) or  
972.349.5930 (outside U.S.)

Visit [aisc.org/nasccregister](http://aisc.org/nasccregister) to download a registration form.  
\*credit card only

### Hotel Room Cancellations

All hotel room cancellations can be submitted online or in writing by email, fax, or mail to MCI USA. The cancellation policy will be stated on your confirmation per the hotel's contracted cancellation policy. For all groups (10 or more rooms), please contact MCI USA to receive information regarding your hotel cancellation policy.

### Hotel Room Changes

Contact MCI USA directly with any hotel room changes prior to **Tuesday, April 7, 2020**. Changes after the deadline should be made directly with the hotel. Please give the hotels at least 72 hours to input the final rooming list from MCI USA. Hotels may apply an early departure fee equal to one night's stay for changes made on-site. Please contact your hotel directly for early departure policies.

### The Fine Print for Hotels

All hotel rates are per room night, and are subject to a **16%** tax per room per night depending on the property, which can change without notice plus any applicable occupancy taxes, tourism fees, or assessment fees will be added to your folio upon check out. Please check the housing website for details. When making a reservation, please provide room and bedding preferences. The hotel will assign specific room types based upon availability upon check-in. Room type, bed type, and special requests are not guaranteed until check-in.

### Confirmations

The Steel Conference will send you a reservation confirmation immediately after your reservation has been processed. Fax and mailed reservation acknowledgements will be sent within 14 days. If you do not receive your acknowledgment within two weeks, please contact MCI USA.

# ATLANTA Housing Map

## HEADQUARTER HOTEL

### Omni Hotel @CNN Center

100 CNN Center NW  
Adjacent | \$229.00

## The American Hotel Atlanta Downtown a DoubleTree Hotel by Hilton

160 Spring St (Ted Turner Dr) NW  
4 blocks | \$209.00

## Embassy Suites Atlanta Centennial Park

267 Marietta St  
1 block | \$234.00

## AC Hotel by Marriott Atlanta Downtown

101 Andrew Young  
International Blvd NW  
4 blocks | \$209.00

## Hotel Indigo Atlanta Downtown

230 Peachtree St NE  
5 blocks | \$209.00

## Hilton Garden Inn Atlanta Downtown

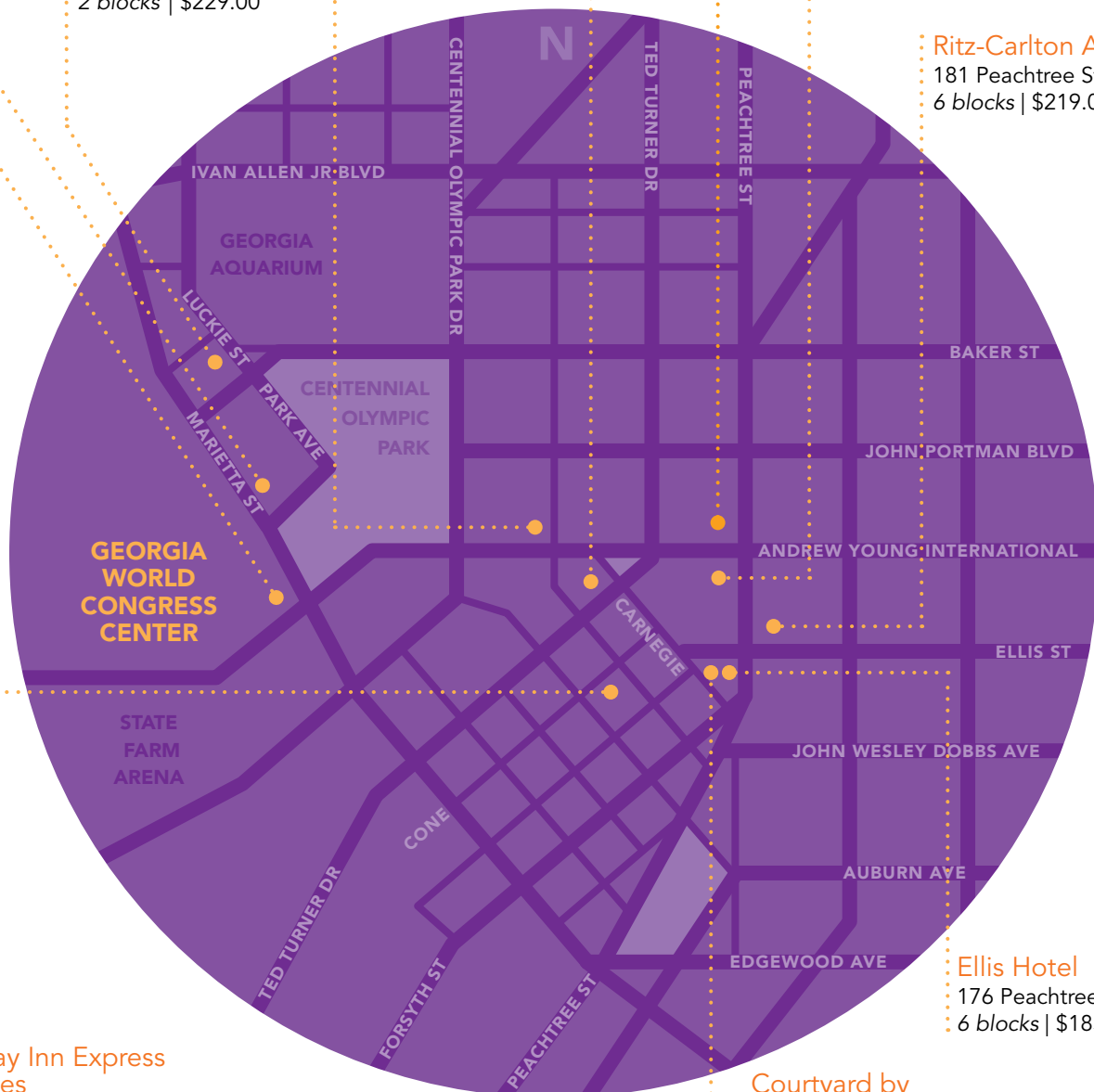
275 Baker St  
2 blocks | \$229.00

## The Westin Peachtree Plaza

210 Peachtree St NW  
5 blocks | \$249.00

## Ritz-Carlton Atlanta

181 Peachtree Street NE  
6 blocks | \$219.00



## Holiday Inn Express & Suites Atlanta Downtown

111 Cone St NW  
6 blocks | \$170.00

## Courtyard by Marriott Atlanta Downtown

133 Carnegie Way NW  
5 blocks | \$189.00

## Ellis Hotel

176 Peachtree St NW  
6 blocks | \$185.00

# NASCC: THE STEEL CONFERENCE

## conference extras

### tuesday extras

#### WSBS Workshop: The Basics of Steel Bridge Design

Tuesday, 1:00 – 6:00 p.m.

Cost: Included in all full registration options.

See **PART 6** of the registration form on page 63.

From calculating loads to best practices for detailing, this workshop aims to take attendees through the complete design of a 3-span continuous plate girder bridge. Whether you are a novice just starting out or an expert in need of a refresher, this workshop will offer something for all levels of experience. Additionally, attendees from federal and state transportation departments will be eligible for complimentary registration and travel expense reimbursement.

#### Tour an Ironworkers Training Center!

Tuesday, noon – 4:30 p.m.

Cost: \$10 (all proceeds are donated to the AISC Education Foundation)

**Space is limited to the first 55 registrants!**

See **PART 6** of the registration form on page 63.

Have you ever wondered how apprentice ironworkers are trained? One of the best training centers in the country is located just half an hour from downtown Atlanta, and a limited number of NASCC attendees have the opportunity to see Atlanta Ironworkers Training Center firsthand! The tour includes hands-on demonstrations of welding, burning, rigging, and column-climbing.

### networking events

#### Welcome Reception

Wednesday, 5:30 – 7:00 p.m.

Location: Exhibit Hall

Cost: Included in all full registration options. Single ticket option also available.

See **PART 6** of the registration form on page 63.

Don't miss this valuable networking opportunity in the exhibit hall! The Steel Conference Welcome Reception is a great way to kick off the conference and get a special preview of what exhibitors will offer at the show. Stroll through the aisles and experience the industry's latest trends in structural software, coatings, connection products, and more! Live demonstrations from equipment manufacturers will be ongoing. Mingle with your peers while you enjoy drinks, hors-d'oeuvres, and the excitement of the exhibit hall.

#### Block Party— Peach, love, and steel: Join us for a night out on the town!

# BLOCK PARTY

Thursday, 7:00 – 9:00 p.m.

Location: STATS Brewpub, Der Biergarten, Max's Pizzeria, and Twin Smokers BBQ

Cost: Included in all full registration options.

**note:** Attendees and guests of all ages are welcome to register for the event! Single ticket option also available.

See **PART 6** of the registration form on page 63.

We've drawn up detailed plans for a perfect night in Atlanta: AISC's very own Steel Conference block party. That's right—we'll have part of the Centennial Park District all to ourselves Thursday night! Forge new connections over a cold drink at STATS Brewpub or Der Biergarten. Grab a slice at Max's Coal Oven Pizzeria, or pig out at Twin Smokers BBQ. Take a stroll and enjoy a stunning view of the downtown skyline. The block party at NASCC: The Steel Conference promises to be a fab-ulous evening that will leave you beaming!

# registration information

## Register for the Conference

Register early! Please note registration fees increase each week.

- **Internet:** [aisc.org/nasccregister](http://aisc.org/nasccregister)
- **Fax or Mail:** Complete the registration form on pages 62–63 (or download one from [aisc.org/nasccregister](http://aisc.org/nasccregister)). Fax or mail the completed form (see **PART 10** of the form) no later than Friday, March 27, 2020.
- **On-site:** You may register in person at the convention center. See page 11 for registration hours and page 62–63 for rates.

## Badges and Tickets

Upon your arrival to The Steel Conference, please bring your registration confirmation, or your handheld device/mobile phone with the included barcode, to the Badge Print station located at the registration area within the convention center. There you will be provided with all of your badge materials, as well as your complimentary conference bag.

**note:** Badges will not be mailed in advance of the conference.

## Cancellation Policy

Requests for registration cancellation must be received no later than Friday, March 27, 2020 in order to receive a refund, less a \$25 processing fee. Please send cancellation requests to [nascc@mcievents.com](mailto:nascc@mcievents.com). Attendee substitutions will be accepted at any time.

## Exhibitors

Exhibitor registration is handled differently than the registration of participants. Visit [aisc.org/nascc/exhibitors](http://aisc.org/nascc/exhibitors) for more information.

## Special Needs

Please contact the AISC Meetings Department if you have special needs or dietary restrictions for the conference. All requests should be emailed to [nascc@aisc.org](mailto:nascc@aisc.org).

## Our Official Registration and Housing Partner, MCI USA

For questions about registration please contact MCI USA:

- p: 800.830.5812 (within U.S.)  
972.349.5930 (outside U.S.)
- f: 972.349.7715
- [nascc@mcievents.com](mailto:nascc@mcievents.com)

## What's Included in Your Registration Type?

REGISTRATION TYPE	FULL REGISTRATION Also includes architect, educator, public agency employee, and recent grad registration types	STUDENT	FULL DAY W	FULL DAY TH	FULL DAY F	EXHIBIT HALL W TH F	EXHIBIT HALL W	EXHIBIT HALL TH	EXHIBIT HALL F	GUEST
All Technical Sessions (W–F)	✓	✓	W	Th	F	N/A	N/A	N/A	N/A	N/A
Entrance to Exhibit Hall (W–F)	✓	✓	W	Th	F	✓	✓	Th	F	✓
Exhibit Hall Coffee Breaks	✓	✓	W	Th	F	✓	W	Th	F	✓
Wednesday Lunch (in Exhibit Hall)	✓	✓	✓	N/A	N/A	\$	\$	N/A	N/A	✓
Wednesday's Welcome Reception	✓	✓	✓	N/A	N/A	✓	✓	N/A	N/A	✓
Thursday Lunch (in Exhibit Hall)	✓	\$*	N/A	✓	N/A	\$	N/A	\$	N/A	\$
Thursday Conference Dinner	✓	\$*	\$	✓	\$	\$	\$	\$	\$	\$
Online access to NASCC presentations following the conference	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A

\*Students receive complimentary block party tickets if they attend SCIS. SCIS will provide lunch on Thursday.

### Key

✓ | Included in Registration

\$ | Sold Separately (see page 62–63)

W | On Wednesday ONLY

Th | On Thursday ONLY

F | On Friday ONLY

N/A | Unavailable with Registration Category

Attendee Information

1

First Name \_\_\_\_\_ Last Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Mailing Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_  
 Phone \_\_\_\_\_ Cell\* \_\_\_\_\_  
 Email\*\* \_\_\_\_\_

\*For on-site use, only if necessary. \*\*PDH certificates will be sent via email following the conference. Please print clearly.

- By attending this event, I grant the American Institute of Steel Construction ("AISC") and its agents and assigns the right to record my appearance and participation on digital recordings, photography, or any other medium and to use, publish, reproduce, modify, distribute, and publicly exhibit these recordings in whole or in part. I further consent to AISC's use of my name, likeness, voice, and other identifying information in connection with such recordings.
- Please remove my email address from the list of attendees that is distributed to exhibitors for pre-show marketing. I understand, however, that my mailing address will be shared in the advance and post-show mailing list.
- Please remove my name and contact information from the list of attendees shared with those who have registered for the conference.
- I am a first-time attendee.  I am interested in being a mentor to a first-time attendee.

Guest Registration  
i.e., significant other

2

Guest Name \_\_\_\_\_ \$50 = \$

\$55 on-site (USD)

Registration Fees (USD)

**THE SOONER YOU REGISTER, THE MORE YOU SAVE!**

Registration prices increase each week. Please refer to your registration type and date in the grid on the right to calculate your registration price.

3

Please see chart on previous page to see what is included for each registration type.

Mailed registration forms will receive the price that corresponds with the postmarked date on the envelope.

Please **circle** the fee that applies in the chart below. **Weekly prices valid from 12:00 a.m. CST Monday through 11:59 p.m. CST Sunday.** (i.e., 12:00 a.m. CST Monday, 1.20.20 – 11:59 p.m. Sunday, 1.26.20)

		Date Purchased by	1.20.20	1.27.20	2.3.20	2.10.20	2.17.20	2.24.20	3.2.20	3.9.20	3.16.20	3.23.20	3.30.20	4.6.20	4.13.20	on-site
MEMBER* (price per person)	1st and 2nd registrant from firm	<b>\$420</b>	\$430	\$440	\$450	\$460	\$470	\$480	\$490	\$500	\$510	\$520	\$530	\$540	\$560	
	3rd or more registrant from firm	<b>\$270</b>	\$280	\$290	\$300	\$310	\$320	\$330	\$340	\$350	\$360	\$370	\$380	\$390	\$410	
NON-MEMBER (price per person)	1st and 2nd registrant from firm	<b>\$605</b>	\$620	\$635	\$650	\$665	\$680	\$695	\$710	\$725	\$740	\$775	\$770	\$785	\$815	
	3rd or more registrant from firm	<b>\$455</b>	\$470	\$485	\$500	\$515	\$530	\$545	\$560	\$575	\$590	\$605	\$620	\$635	\$665	
RECENT GRADS obtained degree in last 5 years	Member*	<b>\$270</b>	\$280	\$290	\$300	\$310	\$320	\$330	\$340	\$350	\$360	\$370	\$380	\$390	\$410	
	Non-member	<b>\$455</b>	\$470	\$485	\$500	\$515	\$530	\$545	\$560	\$575	\$590	\$605	\$620	\$635	\$665	

\*Members of the following organizations qualify for a member rate: AISC, NSBA, SSRC, NISD. Member Number: \_\_\_\_\_

The following registration types offer the flat rate below for pre-registration with an increased on-site registration fee.

Public Agency Employee (e.g. DOT)	# tickets _____	× \$225 = \$	<input style="width: 50px;" type="text"/>	\$225 on-site
Student Member	# tickets _____	× \$0 = \$	<input style="width: 50px;" type="text"/>	\$0 on-site
Student Non-Member	# tickets _____	× \$225 = \$	<input style="width: 50px;" type="text"/>	\$225 on-site
Educator	# tickets _____	× \$225 = \$	<input style="width: 50px;" type="text"/>	\$225 on-site
Full Day Wednesday	# tickets _____	× \$375 = \$	<input style="width: 50px;" type="text"/>	\$395 on-site
Full Day Thursday	# tickets _____	× \$375 = \$	<input style="width: 50px;" type="text"/>	\$395 on-site
Full Day Friday	# tickets _____	× \$125 = \$	<input style="width: 50px;" type="text"/>	\$150 on-site
Exhibit Hall Only Wednesday	# tickets _____	× \$50 = \$	<input style="width: 50px;" type="text"/>	\$60 on-site
Exhibit Hall Only Thursday	# tickets _____	× \$25 = \$	<input style="width: 50px;" type="text"/>	\$35 on-site
Exhibit Hall Only Friday	# tickets _____	× \$15 = \$	<input style="width: 50px;" type="text"/>	\$25 on-site
Exhibit Hall Only: W, Th, F	# tickets _____	× \$75 = \$	<input style="width: 50px;" type="text"/>	\$85 on-site

PAGE 1 SUBTOTAL: Registration Fees (2, 3)

\$

Name \_\_\_\_\_

**Primary Type of Business**  
Please select only one.

- Structural Engineer
- Civil Engineer
- Building Owner/Developer
- Educator
- Detailer
- General Contractor/CM
- Architect
- Steel Product Manufacturer
- Student
- Erector
- Other \_\_\_\_\_
- Steel Mill
- Public Agency Employee (e.g., DOT)
- Fabricator
- Service Center
- Exhibitor

**Short Courses (USD)**

- SC1** Design of Fatigue-Resistant Welded Connections  
Tuesday 1:00 p.m. – 5:00 p.m.  
 Member \$275 **\$325 on-site**    Non-member \$400 **\$450 on-site**
  - SC2** SSRC Short Course: Nonlinear Structural Analysis Methods Used in Modern Steel Design  
Tuesday 1:00 p.m. – 5:00 p.m.  
 Member \$275 **\$325 on-site**    Non-member \$400 **\$450 on-site**
- \*Members of the following organizations qualify for a member rate: AISC, NSBA, SSRC, NISD.

**À la Carte Pricing (USD)**

SCIS Sessions	# tickets _____	× \$0 = \$	
Educator Session*	# tickets _____	× \$0 = \$	
Wednesday Welcome Reception	# tickets _____	× \$0 = \$	
Tuesday WSBS Workshop	# tickets _____	× \$0 = \$	
Tuesday Ironworkers Training Center Tour	# tickets _____	× \$10 = \$	
Wednesday Lunch**	# tickets _____	× \$30 = \$	<b>\$45 on-site</b>
Thursday Lunch**	# tickets _____	× \$30 = \$	<b>\$45 on-site</b>
Block Party	# tickets _____	× \$60 = \$	<b>\$85 on-site</b>

\*Limited to AISC educator members ONLY      \*\*Located in Exhibit Hall. Lunch tickets are included in some registration types—see page 61 for details.

**Optional Entries**

- AISC Education Foundation Donation**  
I would like to make a donation to the AISC Education Foundation scholarship program in the amount of:  
 \$5    \$10    \$20    Other \_\_\_\_\_
- The AISC Education Foundation sponsors an educational scholarship program to assist qualified students and to further creativity, interest, and proficiency in the fabricated structural steel and engineering design industries.  
For information, visit [aisc.org/scholarships](http://aisc.org/scholarships).

PAGE 2 SUBTOTAL: Short Courses | À La Carte | Optional (5, 6, 7)      \$

**TOTAL AMOUNT ENCLOSED** (add totals of shaded boxes)      \$

**Emergency Contact Information**  
For on-site use, only if needed.

Contact Name \_\_\_\_\_  
Relationship \_\_\_\_\_ Phone \_\_\_\_\_

**Payment Information**  
NS-9  
When complete, please submit pages 62 and 63 of this form.

- Check, money order, Visa, MasterCard and American Express are the only payment methods accepted.
  - 1. If paying by check, mail payment (U.S. funds only; payable to AISC) and completed registration form to: American Institute of Steel Construction LLC, P.O. Box 8761, Carol Stream, IL 60197-8761
  - 2. If paying by credit card, fax completed registration form to 972.349.7715.  
 Visa    MasterCard    American Express
- |                    |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |                 |   |   |   |               |   |   |   |
|--------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|-----------------|---|---|---|---------------|---|---|---|
| Credit Card Number |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | Expiration Date |   |   |   | Security Code |   |   |   |
| 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | M               | M | Y | Y | 1             | 2 | 3 | 4 |
- Billing Address of Card Holder \_\_\_\_\_ Zip \_\_\_\_\_  
Name of Card Holder \_\_\_\_\_ Signature \_\_\_\_\_  
I authorize charges to my credit card as indicated.

# NASCC: THE STEEL CONFERENCE

incorporating: **Architecture in Steel** **World Steel Bridge Symposium** **QualityCon**  
**SSRC Annual Stability Conference** **NISD Conference on Steel Detailing**

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For the most up-to-date program,  
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