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incorporating the World Steel Bridge Symposium and the SSRC Annual Stability Conference

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Final Program



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Registration Desk and Tickets

Stop at the registration desk to pick up your conference badge and materials, to register or to purchase available tickets for events and guest tours. The registration desk is located on level 300 of the convention center (see map on foldout). You must wear your conference badge to all official conference events. The Conference Dinner, guest tours and short courses require a ticket for entry. The W, Th, Fr icons printed on your badge serve as your ticket to the lunches.



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Pre-Registered Attendees

Upon your arrival to The Steel Conference, please bring your registration confirmation, or your handheld device/mobile phone with the included barcode to the express-registration kiosks located in the registration area of 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.

Welcome Lounge

Join us in the welcome lounge for live music, games, tips from local experts and more! The welcome lounge is located next to the registration area on level 300 and will be open during registration desk hours (listed on the foldout).

Sponsored by: American Welding Society and GIZA

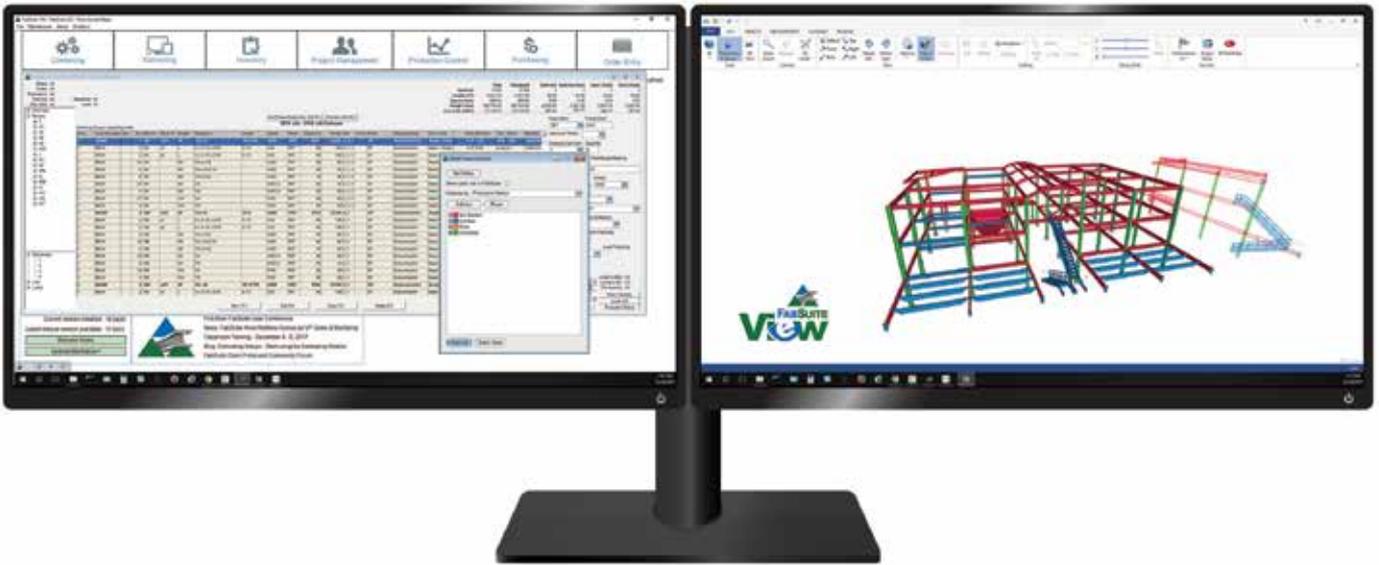
Continuing Education Credit

Participants earn one PDH for each hour of participation at a technical session at The Steel Conference. (One PDH is equivalent to 0.1 CEU). A numeric session-specific code will be given during each session so only those who participate will have access to the code. It is critical that you keep track of your session codes as this is the only way you will be able to obtain your PDH credit. For your convenience, you can keep track of the codes on the inside back cover of this final program or in The Steel Conference mobile app. Register your credit hours on the mobile app or at www.aisc.org/nasccpdh. Alternatively, there will be two computer terminals available on level 300 for you to use to enter this information after each session. Following submission of the corresponding codes, you can download or email a PDF of your certificate. If you're having trouble registering your PDHs, please find us at the registration desk or contact us at nascc@aisc.org.

Conference Proceedings

The Steel Conference does not offer a conventional proceedings. Instead, approximately 45 days after the conference, we post slideshows (complete with audio from the presentations) of most of the sessions to our education archives at www.aisc.org/educationarchives. Proceedings for the SSRC Conference and WSBS will be also be available in the archives.

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short courses

The 15th Edition *Steel Construction Manual* and the 2016 AISC *Specification for Structural Steel Buildings*

SC1 Tu 1:00 p.m. – 5:00 p.m. | **Room 349-350**

Speaker: Louis F. Geschwindner, PE, PhD

\$275 members* | \$400 non-members

*The following qualify for Member pricing:
AISC, CISC, NSBA, IMCA, SSRC, NISD

**Registration is required for this short course.
\$125 discounted 15th Ed. *Steel Construction Manual* available for additional purchase.**

The 2016 AISC *Specification for Structural Steel Buildings* and the 15th Edition *Steel Construction Manual* are both available now. You won't want to miss this half-day seminar where important changes and clarifications that have been incorporated into these documents will be explained. The seminar will examine the *Specification* chapter by chapter and highlight changes since the 2010 version. Design examples will be presented to demonstrate the changes in the *Specification* and how to apply useful design aides in the *Manual*.

The seminar will highlight changes to:

- Treatment of compression members with slender elements
- Treatment of tees and double angles in bending
- Shear provisions for built-up I-shapes
- Bolted connection provisions
- And more...

ENGINEERS

4.0 PDHs

SSRC Short Course Steel Fundamentals: Tools for Designing Members with Slender Elements

SC2 Tu 1:00 p.m. – 5:00 p.m. | **Room 327**

Speakers: Kara Peterman, PhD, University of Massachusetts Amherst; Christopher D. Moen, PE, PhD, NBM Technologies, Inc.

\$275 members* | \$400 non-members

*The following qualify for Member pricing:
AISC, CISC, NSBA, IMCA, SSRC, NISD

Registration is required for this short course.

Engineers consistently choose structural steel as a material for achieving efficient designs. Its high strength- and stiffness-to-weight properties propel increasingly slender members to the forefront of modern engineering practice. This course will begin with the fundamentals of stability design and progress towards the stability of slender members and cross-section elements. We will provide an overview of strength and stability limit states rooted in steel specifications for compact sections, gradually building towards non-compact and slender plate girders, and eventually thin-walled steel. Elastic and inelastic flexural, lateral-torsional, flexural-torsional, local, and distortional buckling will be discussed as the course dives deeper and deeper into slenderness. This will be a tool-driven course, and open access software will be emphasized as a means of robustly capturing behavior and aiding the design process.

ENGINEERS

4.0 PDHs

Protective Coating Specifications—Part 1

A1 Th 8:00 a.m. – 9:30 a.m. | **Room 339**

Speaker: Jim Kunkle, SSPC: The Society for Protective Coatings

Moderator: Eric Piotrowski, SSPC: The Society for Protective Coatings

Included with conference registration,
NO ADDITIONAL FEE or registration required.

This session focuses on how to prepare a coatings specification and explores the problems associated with prescriptive language and the advantages of using performance-based specification language. Part 1 of this two-part session includes examples of both prescriptive and performance-based language and the advantages and disadvantages of using these. The session also addresses worker safety and environmental protection in technical specifications.

ENGINEERS, FABRICATORS, DETAILERS

1.5 PDHs

Protective Coating Specifications—Part 2

A2 Th 3:00 p.m. – 4:30 p.m. | **Room 339**

Speaker: Jim Kunkle, SSPC: The Society for Protective Coatings

Moderator: Eric Piotrowski, SSPC: The Society for Protective Coatings

Included with conference registration,
NO ADDITIONAL FEE or registration required.

This session focuses on how to prepare a coatings specification and explores the problems associated with prescriptive language and the advantages of using performance-based specification language. Part 2 of this two-part session focuses on bridge projects including widening/adding lanes, phasing steel repairs, dealing with rust, and replacing rivets with high-strength bolts.

ENGINEERS, FABRICATORS, DETAILERS

1.5 PDHs



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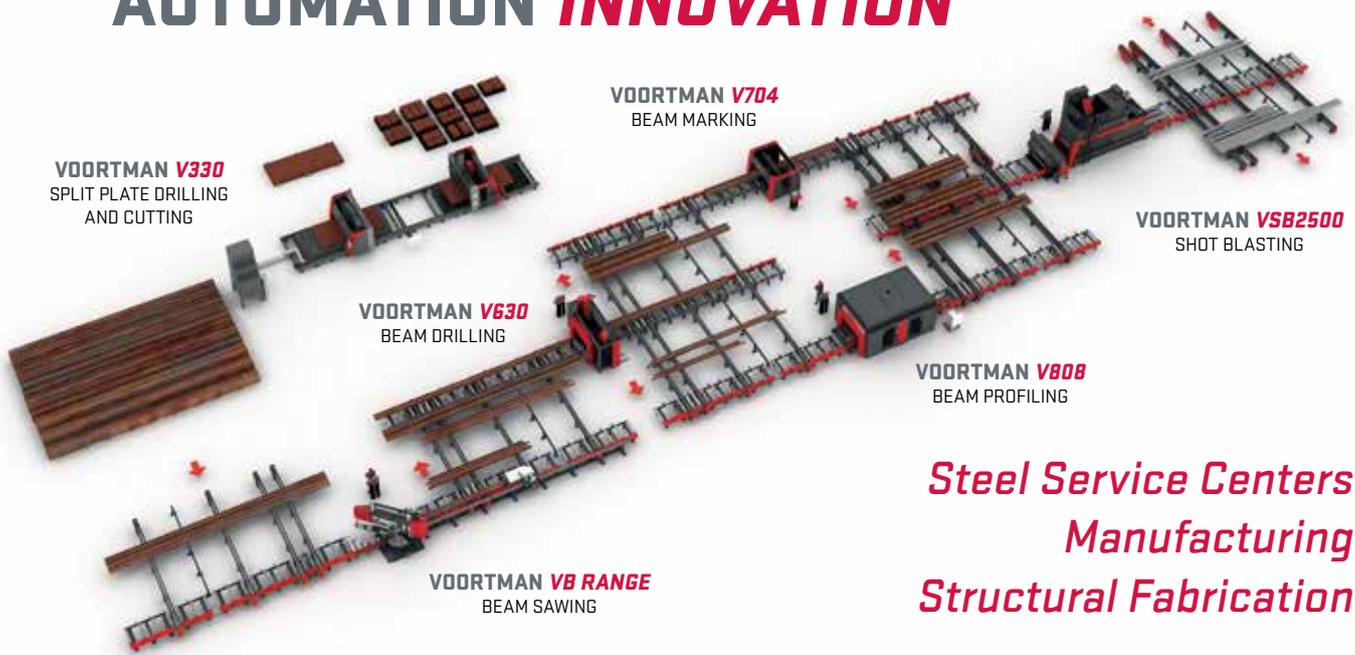
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keynote presentations



Seeing the Unseen

K1 W 9:15 a.m. – 11:00 a.m.

Ballroom I & II



Speaker: Dan Goods,
NASA Jet Propulsion Laboratory

Sponsored by: Atlas Tube

There are many things in the universe that exist but cannot be seen with human eyes. This applies to the physical world as well as it does to politics, your business or your personal future. These thoughts have made an impact on Dan Goods' life and work. Dan will share his remarkable artwork, which will bring you closer to an invisible world you never knew, while at the same time sharing his personal story of creating a career that did not formerly exist. With humor and grace, Dan distills complex and weighty concepts into stories that can be universally understood. Through his presentation, you will see that new technology sometimes is needed to see the invisible, but sometimes you just need a new perspective.

bio: Dan Goods was born in Palmer, Alaska, and was raised in Salem, Oregon. Growing up he had no interest in art or design, or much of anything else besides creating a newsletter for his fantasy football league. By a twist of fate, a friend could see Goods' artistic interest and suggested that he look into art schools, at which point Goods scoffed. However, when he got home, Goods found a postcard from an art school on his bed and decided he should look into the idea. A few years later, he graduated valedictorian from the prestigious Art Center College of Design in Pasadena, California—while at the same time preparing for a baby, right before his final semester. While studying at the Art Center, he received a fellowship to work at the California Institute of Technology, a science heavyweight and consistently rated as one of the top schools in the world. There, he developed a love for the big ideas and questions about humanity that scientists grapple with every day and decided that he wanted to work at a research center. After school, he had the amazing opportunity to create his own job at NASA's famed Jet Propulsion Laboratory, where he is now a visual strategist. He runs a creative studio, working on everything from art pieces that speak to the incredible discoveries that NASA makes, to working with their visionaries to help them brainstorm the missions of the future. His projects are seen in public spaces, art museums and even outer space. Goods has his own studio, where he collaborates on personal creative projects around the world. He won an International Design Excellence Award for his work on the eCLOUD, a 110-foot-long digital sculpture at the San Jose International Airport. He has worked on other large-scale art projects at the Atlanta International Airport, at SIAS International University in China and for BMW in Paris. His work has appeared in museums around the world. Goods was named "One of the Most Interesting People in Los Angeles" by *LA Weekly* and has been profiled in *The Los Angeles Times*, *FORTUNE* magazine, *Leonardo* magazine and the *National Endowment for the Arts* magazine. He is also on the board of the Caltech Management Association and ITACCUS (International Astronautical Federation's Technical Activities Committee for the Cultural Utilization of Space) and is an advisor to the Los Angeles County Museum of Art's Art and Technology program.

ALL

1.0 PDHs/LU



Important Lessons I've Learned During The Past 40 Years

K2 Th 10:00 a.m. – 11:15 a.m.

Ballroom I & II

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

What do you think of when you hear the name Duane Miller? If you've been to a previous NASCC: The Steel Conference, you probably know him as the top-rated speaker almost every year for the past two decades. If you've ever had a welding problem, you probably know him as the nation's leading authority on structural welding. (Or as structural engineer Kim Robinson once said: "I love welding, and Duane Miller is the one and only, the big cheese of welding.") Or you might know him as a recipient of not only an AISC T.R. Higgins Lectureship Award and an AISC Lifetime Achievement Award, but also a Robert P. Stupp Award for Excellence in Leadership (the only person to have won all three!). And he's also the inaugural recipient of the AISC/NASCC Speaker Award, which honors the greatest speakers at AISC events. His keynote address will cover a multitude of topics, ranging from the value of mentorship (both as a mentor and as a mentee of the renowned Omer Blodgett), leadership principles (there are three), welding and welded connections, steel and steel behavior, life lessons, troubleshooting and developing customers for life.

bio: Duane K. Miller is a recognized authority on the design and performance of welded connections. He is a popular speaker on the subject and has lectured around the world. He publishes frequently and on three occasions, has been awarded the Silver Quill Award of the American Welding Society (AWS) for the excellence of his published work. He also serves on the AWS Board as a Director-at-Large. He has authored or co-authored texts and chapters of many handbooks, including the AISC *Design Guide on Welding* and the *Mark's Handbook of Engineering*, 12th Edition. He has also appeared as a subject expert on the History Channel and Discovery Channel.

ALL

1.0 PDHs



T.R. Higgins Lecture: Towards an Integrated Fracture-Control Plan for Steel Bridges

K3 F 10:00 a.m. – 11:15 a.m.

Ballroom I & II

Speaker: Robert J. Connor, PhD
Purdue University

There has been considerable research and interest in the topic of fracture-critical members (FCMs) during the past decade. As a result, the entire concept of what constitutes an FCM is being revisited and many long-standing ideas and opinions related to this classification of members is being shown to be overly conservative. Significant advances in the understanding of fracture mechanics, material and structural behavior, fatigue crack initiation, fatigue crack growth, fabrication technology and inspection technology have allowed other industries to address fracture in a more integrated manner. After years of research, new stand-alone AASHTO-ready guide specifications that give codified direction on how to perform 3D system analysis to verify system redundancy, as well as guide specifications to evaluate internal member-level redundancy of mechanically fastened built-up members, have been proposed. Additional research demonstrating the benefits of exploiting the improved toughness of modern HPS grades of steel has been completed. Through these advances, it is now possible to create an integrated FCP, combining the original intent of the 1978 FCP with modern materials, design, fabrication and inspection methodologies. Further, an integrated FCP will provide economic benefits and improved safety to owners by allowing for a better allocation of resources by setting inspection intervals and scope based on sound engineering rather than based simply on the calendar. In summary, an integrated FCP encompassing material, design, fabrication and inspection can make fracture no more likely than any other limit state, ultimately allowing for a better allocation of owner resources and increased steel bridge safety.

bio: Robert J. Connor is a professor of Civil Engineering and the director of the S-BRITE Center at Purdue University. Connor has been working in the area of fatigue, fracture and other performance and durability issues related to steel bridges for over 20 years. He has published articles in conference proceedings and technical journals, mostly related to fatigue and fracture issues in steel structures, field inspection and failure investigations. Connor has been the principal investigator on a number of NCHRP Projects, having successfully completed five NCHRP Projects as PI and three as Co-PI. He was selected to receive the George S. Richardson Medal in 2016 and an AISC Special Achievement Award in 2012, and was the first recipient of the Robert J. Dexter Memorial Lecture Award in 2005.

ENGINEERS

1.0 PDHs

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alphabetical exhibitor list as of 3|14|18

Abrasive and Fastening Solutions Inc.	1540	Delta Structural Steel Services Group	1109	KMT Waterjet Systems	2340	RISA	2005
Acrow Bridge	909	Descon Plus	2001	Kobelco Welding of America, Inc.	1025	Ronstan Tensile Architecture	1005
Acument Global Technologies	1112	DFW Grating	1013	Koike Aronson, Inc.	2340	Royal Coatings, Inc.	809
Advance Tools LLC	908	DGS Technical Services, Inc.	1016	Kottler Metal Products, Inc.	513	SANRIA	1126
Advanced Fabricating Machinery	2637	Dlupal Software, Inc.	705	Kranendonk Production Systems BV	2138	SDS/2	1200 1203
AFF Design Services LLC	414	DOWCO Consultants Ltd.	1419	KTA-Tator	1011	SE University by SE Solutions	317
AGT Robotics	2242	Eastern Pneumatics & Hydraulics, Inc./ McCann Equipment Ltd.	308	LAP Laser LLC	605	S-Frame Software	811
Ajan Elektronik Servis San. Ve Tic. Ltd. Sti.	1838	EDSCO Fasteners	923	Lapeyre Stair	1120	Shangdong Hanpu Machinery Industrial Co., LTD	1023
AKYAPAK USA	2628	Electro-Mechanical Integrators, Inc.	2447	LARSA, Inc.	910	Sherwin-Williams Protective and Marine	816
Alliance for American Manufacturing	2403	Empowering Technologies	911	LeJeune Bolt Company	1310	Shop Data Systems, Inc.	1714
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American Crane & Equipment Corporation	2439	Ercolina – CML USA, Inc.	2300	Lindapter	1226	SidePlate Systems, Inc.	1003
American Galvanizers Association	104	ESAB Welding & Cutting	200	Linders Specialty Co., Inc.	512	Simpson Strong-Tie Co.	204
American Institute of Steel Construction (AISC)	419	Esskay Design and Structures Pvt. Ltd.	906	LINA Solutions	2000	Simsona Corporation	812
American Punch Company	1730	Exact Detailing	706	Lohr Structural Fasteners, Inc.	1712	Skidmore-Wilhelm	310
American Welding Society	7	Fabreeka International, Inc.	1012	LS Industries	703	SKM Industries, Inc.	1719
Anatomic Iron Steel Detailing	1124	Fabricators & Manufacturers Association, International	1543	LTC, Inc.	1803	SkyCiv Engineering	405
Applied Bolting Technology, Inc.	1422	FabSuite – Steel Management Software	1407	LUSAS	1006	SlipNOT Metal Safety Flooring	1019
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Autodesk, Inc.	1416	Galv-Pro Products	607	Metals USA	1806	Steel Erectors Association of America	4
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Behringer Saws, Inc.	1713	GIZA	1703	NASCC Exhibit Sales	12	Steel Tube Institute	2200
BendTec, Inc.	927	Graitec	1615	National Institute of Steel Detailing, Inc.	924	Steelmax Tools LLC	2142
Bentley Systems, Inc.	712	Grating Fasteners	114	National Steel Bridge Alliance	419	Strand7 Pty Ltd	916
Birmingham Fastener	1523	Greenbrook Engineering Services	504	NCERCAMP at The University of Akron	925	Structural Engineering Institute of ASCE	107
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Brown Consulting Services, Inc.	612	Hilti Inc.	609	Vulcraft Group	1404 1604	Torchmate, A Lincoln Electric Company	1622
Buckner Companies	1700	HI-Q Design & Detailing Pvt. Ltd.	409	Yamato Steel Co.	1400 1603	Totten Tubes, Inc.	413
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Chicago Clamp Company	603	Indiana Anchor Bolt	1631	Pacific Stair Corporation	406	Unibor	1
Chicago Metal Rolled Products	716	Infasco / Ifastgroupe	613	Pan Gulf Technologies Pvt. Ltd.	2202	United Rentals, Inc.	400 600
Cleveland City Forge	805	Informed Infrastructure	36	Pannier Corporation	1535	V&S Galvanizing	1619
Cleveland Punch & Die Co.	1720	InfoSight Corporation	1116	Paramount Roll and Forming, Inc.	820	Valmont Coatings	1110
CloudCalc, Inc.	2400	Infra-Metals Co.	1705	Peddinghaus Corporation	1808	Valmont Industries, Inc.	108
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COMEQ, Inc.	2302	International Design Services, Inc.	1606	PPG Protective & Marine Coatings	1224	Viking Blast & Wash Systems	506
ComSlab	2003	Ironworker Management Progressive Action Cooperative Trust (IMPACT)	822	Primo Automation Systems	1716	Voortman Steel Group	1828
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				Radley Corporation	1102		
				Ringers Gloves	102		

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exhibitor list by booth number as of 3|14|18

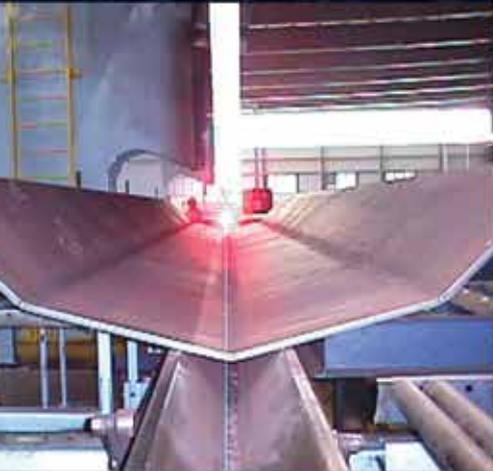
1	Unibor	706	Exact Detailing	1109	Delta Structural Steel Services Group	1622	VERNON Tool, A Lincoln Electric Company
3	Midwest Structural Products, LLC	707	ASTM International	1110	Valmont Coatings	1629	CoreBrace, LLC
4	Steel Erectors Association of America	712	Bentley Systems, Inc.	1112	Acument Global Technologies	1631	Indiana Anchor Bolt
5	VET Dessin Steel Detailing	716	Chicago Metal Rolled Products	1113	G.W.Y., Inc.	1633	Burnco Mfg Inc. – Prodevco Robotic Solutions
7	American Welding Society	800	Steel Studio, Inc.	1116	InfoSight Corporation	1643	Mid-Atlantic Steel Fabricators Association
9	BDS VirCon	802	AVEVA Inc.	1118	Techflow Inc.	1700	Buckner Companies
11	Steel Deck Institute	805	Cleveland City Forge	1120	Lapeyre Stair	1702	Bluearc Stud Welding
12	Modern Steel Construction magazine	807	HEXAGON PPM	1121	Hercules Bolt Company	1703	GIZA
12	NASCC Exhibit Sales	809	Royal Coatings, Inc.	1123	IDEA StatiCa	1705	Infra-Metals Co.
14	BJ Design Services	810	Holloway Steel Services	1124	Anatomic Iron Steel Detailing	1712	Lohr Structural Fasteners, Inc.
14	IdeaNet Solutions Inc.	811	S-Frame Software	1126	SANRIA	1713	Behringer Saws, Inc.
17	Qorex Ltd.	812	Simsona Corporation	1128	FARO Technologies Inc.	1714	Shop Data Systems, Inc.
17	Quality Emphasis Steel Solutions	816	Sherwin-Williams Protective and Marine	1129	Blair Corporation	1715	Allied Machine & Engineering
33	Mabey Inc.	818	Steel Joist Institute	1130	Taylor Devices, Inc.	1716	Primo Automation Systems
36	Informed Infrastructure	819	Tuttle Railing – A Dant Clayton Division	1200	SDS/2	1717	Hypertherm Inc.
101	Cerbacko Ltd.	820	Paramount Roll and Forming, Inc.	1203	SDS/2	1718	CAMBCO, Inc.
102	Ringers Gloves	822	Ironworker Management	1207	CADeploy, Inc.	1719	SKM Industries, Inc.
104	American Galvanizers Association	824	Progressive Action Cooperative Trust (IMPACT)	1210	ArcelorMittal International	1720	Cleveland Punch & Die Co.
105	Engineering Ministries International	825	C-BEAMS	1213	Canam Buildings	1729	J. B. Long, Inc.
107	Structural Engineering Institute of ASCE	825	Baco Enterprises Inc.	1216	Gerdau	1730	American Punch Company
108	Valmont Industries, Inc.	900	Gantrex, Inc.	1220	Atlas Tube, A Division of Zekelman Industries	1800	Girdler-Slab Technologies, LLC
110	Structural Stability Research Council	905	Pierresearch	1224	PPG Protective & Marine Coatings	1803	LTC, Inc.
111	HARSCO IKG	906	Esskay Design and Structures Pvt. Ltd.	1226	Lindapter	1804	TritonTek
113	Danny's Construction Company, LLC	908	Advance Tools LLC	1230	Qnect LLC	1805	Meyer Borgman Johnson Metals USA
114	Grating Fasteners	909	Acrow Bridge	1231	ITT Enidine	1806	Peddinghaus Corporation
200	ESAB Welding & Cutting	910	LARSA, Inc.	1232	Bull Moose Tube Company	1814	FICEP Corporation
204	Simpson Strong-Tie Co.	911	Empowering Technologies	1310	LeJeune Bolt Company	1814	Steel Projects Corp.
207	Bluebeam Inc.	916	Strand7 Pty Ltd	1323	Z Modular	1819	Controlled Automation, Inc.
209	Haselton Baker Risk Group, LLC	918	High Steel Structures LLC	1332	Steel Recycling Institute	1824	Ocean Machinery, Inc.
210	Peikko USA Inc.	918	Bridge Grid Flooring Manufacturers Association (BGFMA)	1333	Freedom Tools LLC	1828	Voortman Steel Group
216	Steel Founders Society of America	920	GRM Custom Products	1400	Nucor – Corporation	1832	Trilogy Machinery, Inc.
307	DACS, Inc.	921	Thermion	1400	Nucor – Fastener Division	1835	Combilift USA
308	Eastern Pneumatics & Hydraulics, Inc./ McCann Equipment Ltd.	922	EDSCO Fasteners	1400	Nucor – Plate Mill Group	1838	Ajan Elektronik Servis San. Ve Tic. Ltd. Sti.
310	Skidmore-Wilhelm	923	National Institute of Steel Detailing, Inc.	1400	Nucor – Yamato Steel Co.	1846	JLG Industries, Inc.
316	Armatherm	924	NCERCAMP at The University of Akron	1404	Nucor – Verco Decking, Inc.	1903	Atema Inc.
317	SE University by SE Solutions, LLC	925	SSPC: The Society for Protective Coatings	1407	Nucor – Vulcraft Group	1905	Metabo USA
400	United Rentals, Inc.	926	BendTec, Inc.	1412	FabSuite – Steel Management Software	2000	LNA Solutions
404	O'Donnell Metal Deck	1000	Hutchinson Industries, Inc.	1416	STRUMIS LLC	2001	Descon Plus
405	SkyCiv Engineering	1002	Hammett Technologies, LLC	1419	Autodesk, Inc.	2003	ComSlab
406	Pacific Stair Corporation	1003	SidePlate Systems, Inc.	1422	DOWCO Consultants Ltd.	2005	RISA
409	HI-Q Design & Detailing Pvt. Ltd.	1005	Ronstan Tensile Architecture	1423	Applied Bolting Technology, Inc.	2101	Nelson Stud Welding
410	Color Works Painting, Inc.	1006	LUSAS	1425	Triple S Steel Holdings	2102	G & J Hall Tools
412	QuickFrames USA	1007	Ohio Gratings, Inc.	1428	MOLD-TEK Technologies Inc.	2103	Black Rock Fire Proof Column
413	Totten Tubes, Inc.	1008	GERB Vibration Control Systems	1432	Steel Dynamics Structural and Rail Division	2132	Automated Layout Technology LLC
414	AFF Design Services LLC	1009	TUV Rheinland Industrial Solutions, Inc.	1435	New Millennium Building Systems	2138	Kranendonk Production Systems BV
416	Tectonix Steel, Inc.	1010	R.J. Watson, Inc.	1523	Birmingham Rail & Locomotive	2142	Steelmax Tools LLC
419	American Institute of Steel Construction (AISC)	1011	KTA-Tator	1524	Birmingham Fastener	2144	Soitaab USA Inc
419	National Steel Bridge Alliance	1012	Fabreeka International, Inc.	1535	Tennessee Galvanizing	2200	Steel Tube Institute
504	Greenbrook Engineering Services	1013	DFW Grating	1540	Pannier Corporation	2202	McLaren Engineering Group
506	Viking Blast & Wash Systems	1014	MDX Software	1542	Abrasive and Fastening Solutions Inc.	2224	Pan Gulf Technologies Pvt. Ltd.
507	Nitto Kohki U.S.A., Inc.	1016	DGS Technical Services, Inc.	1543	Gerard Daniel Worldwide Fabricators & Manufacturers Association, International	2244	AGT Robotics
512	Linders Specialty Company, Inc.	1018	HRV Conformance Verification Associates, Inc.	1545	Pacific Press Technologies	2246	BLM GROUP USA
513	Kottler Metal Products, Inc.	1019	SlipNOT Metal Safety Flooring	1600	Nucor Grating	2300	FlexArm Inc.
600	United Rentals, Inc.	1020	Short Span Steel Bridge Alliance	1601	Independence Tube Corp.	2302	Ercolina – CML USA, Inc.
603	Chicago Clamp Company	1021	Welder Training & Testing Institute	1603	Nucor – Corporation	2303	COMEQ, Inc.
604	CWB Group	1022	OpenBrIM Platform	1603	Nucor – Fastener Division	2332	Inovatech Engineering
605	LAP Laser LLC	1023	Shangdong Hanpu Machinery Industrial Co., LTD	1603	Nucor – Plate Mill Group	2339	Megalift Ltd.
606	ImageTek Mfg / ImageTek Labels	1024	Assignar	1604	Nucor – Yamato Steel Co.	2340	KMT Waterjet Systems
607	Galv-Pro Products	1025	Kobelco Welding of America, Inc.	1604	Nucor – Verco Decking, Inc.	2340	Koike Aronson, Inc.
609	Hilti Inc.	1026	Tnemec Company, Inc.	1606	Nucor – Vulcraft Group	2400	CloudCalc, Inc.
612	Brown Consulting Services, Inc.	1028	Weinstock Bros. Inc.	1606	International Design Services, Inc.	2401	Stainless Structurals America
613	Infasco / Ifastgroupe	1100	Wurth House of Threads	1608	Trimble	2403	Alliance for American Manufacturing
616	Max Weiss Co., LLC	1102	Integrous Steel Software Solutions	1612	St. Louis Screw & Bolt	2405	Ovation Services LLC
703	LS Industries	1105	Radley Corporation	1614	Haydon Bolts, Inc.	2439	American Crane & Equipment Corporation
704	Voss Engineering, Inc.	1107	AZZ Metal Coatings P2 Programs	1615	Graitec	2442	Kinetic Cutting Systems, Inc.
705	Dlubal Software, Inc.			1617	TurnaSure, LLC	2447	Electro-Mechanical Integrators, Inc.
				1619	V&S Galvanizing	2628	AKYAPAK USA
				1622	Lincoln Electric Company	2637	Advanced Fabricating Machinery
					PythonX, A Lincoln Electric Company	2639	Norman Machine Tool Ltd.
					Torchmate, A Lincoln Electric Company	2714	Davi, Inc.
						2716	Profile Cutting Systems USA Inc.
						2720	Daito Seiki Co., LTD



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Chicago Heights
800.772.2762

7:00 a.m.		ROOM	FOR
J11	Teaching Steel Design—New Ideas from New Educators 7:00 a.m. – 9:00 a.m.	318-320	J
EW1a*	Nonlinear Analysis in the 2016 AISC Specification 7:00 a.m. – 7:45 a.m.	341	—

8:00 a.m. – 9:00 a.m.		ROOM	FOR
B1	NSBA Symposium Welcome and 2018 Prize Bridge Awards	Ballroom I & II	E FRD
C2a	Stiffeners, Doublers, Web Plates—Oh My!	321-323	E F D
E4	Bolt it Right the First Time: Teaching Quality is Easier than You Think	339	E FR
N3a	Steel Framed Stairway Design	331-332	E F D
N12a	Creative Use of Structural Steel in Tall Buildings of the Future	337-338	ALL
N18a	Diaphragm Analysis, Design and Connection Considerations in Steel Seismic Force Resisting Systems	349-350	E
N21a	Building with Weathering Steel	324-326	E F D A
P5	Project Management—Your Life in Jeopardy	340	E
T2	The Changing Business Climate: How Global Modeling is Affecting Our World	327	E F D A
U1a	Design of Steel Deck For Concentrated and Non-Uniform Loading	347-348	E FR
Z2	U.S. Construction Market Update	328-329	ALL
Q1	Certification is More than Just a Standard	342	FR
S1	Stability of Built-Up Girders	343-344	E
EW2*	Advancements in Structural Engineering and BIM Collaboration	336	—
EW3*	Industry 4.0 solutions for Fabricators and Steel Service Centers	341	—

1.0 PDHs/0.10 CEUs

9:15 a.m. – 11:00 a.m.		ROOM	FOR
K1	KEYNOTE: Seeing the Unseen	Ballroom I & II	ALL

1.0 PDHs/0.10 CEUs

11:15 a.m. – 12:15 p.m.		ROOM	FOR
B2	Unique Details for Steel Bridges	314-315	E FR
B3	Major Spans—Part 1	316-317	E
C3a	Delegation and Collaboration on Connections: Case Study	349-350	E F D A
E5	Don't Leave them Hanging! (a Review of ANSI Z359.2 and Rescue)	339	E FR
G3a	AISC Research: Design for Deconstruction: Sustainable Composite Floor Systems with Deconstructable Clamping Connectors	345-346	E F R A
N13a	Delegated Connection Design—Best Practices to Promote the Steel Industry	328-329	E
N20a	Mitigating Thermal Bridging in Steel Construction	321-323	E A
N36a	The Development of Off-Site Applied Intumescent Coatings in the UK: History and Lessons	324-326	E F
P8	Shop and Field Inspection of Bolted and Welded Connections	340	E A
T3	Simple Things for Better Model Export	327	E F D
U3a	Building the Smithsonian: The National Museum of African American History and Culture	347-348	E FRD
Y5	Case Study of Daily's Place at EverBank Field	331-332	ALL
Y7	Cool Steel: A Close-Up Look at This Year's IDEAS ² Winners—Part 1	337-338	ALL
Q2	The New Certification Program Requirements and Standard: What Do They Mean for You?	342	FR
S2	Stability Under Seismic Loading	343-344	E
EW4*	Lasertube: A New Way of Making Architecture	341	—
EW5*	FabSuite: Industry Panel Discussion on "Why I chose the industry leader in structural steel management software."	336	—

1.0 PDHs/0.10 CEUs

12:15 p.m. – 2:15 p.m.
Welcome Lunch (in Exhibit Hall)
 EXHIBIT HALL OPENS

Must have
 **icon**
on badge.

2:30 p.m. – 3:30 p.m.		ROOM	FOR
B4	Research and Application of Steel Orthotropic Bridge Decks	314-315	E FRD
B5	Making Gains in the Short-Span Market	316-317	E FRD
E6	Erection Engineering Basics 101	339	E FRD
G2	Myths and Realities of Sustainable Design	345-346	E A
N7a	Diagrid and Mega-Braced Structures—Stability and Design Approaches	327	E F A
N9a	Truss Design and Construction: Did I Consider Everything?	321-323	ALL
N14a	Successful Detailing for Hot-Dip Galvanizing	331-332	ALL
N16a	Advancements in the Design of Steel Shipping Containers in Retail and Multi-Story Residential and Commercial Structures	336	E
N19a	Steel Specifications Unraveled	337-338	E A
N29a	Tips for Validating the Results of Structural Engineering Software	328-329	E
N30	Insidious Thermal Forces in Steel Structures: What You Need to Know	347-348	E
N34a	Column Design: Past, Present, Future	349-350	E D
U6	It Fits!!	324-326	ALL
Y8	Cool Steel: A Close-Up Look at This Year's IDEAS ² Winners—Part 2	340	ALL
Q3	The New Certification Requirements and Standard: Additional Update for Bridge and Hydraulic Fabricators	342	F
S3	Stability of Flexural Members	343-344	E
EW6*	Complete Steel Building Design in RISAs	341	—

1.0 PDHs/0.10 CEUs

3:45 p.m. – 5:15 p.m.		ROOM	FOR
B6	Challenging Projects and Mitigating Risk	314-315	E F
B7	Stainless Steel Use in Bridges—A Solution for Long-Term Service and Durability	316-317	E F
C1	Introducing Design Guide 21 Welded Connections, Second Ed.	349-350	E FRD
C4a	New Developments in Connection Design	321-323	E
N4	The National Fire Research Lab: Advances in Structural Fire Engineering	328-329	E D
N23a	Whats New in the 2017 AIST Tech Report #13	336	E
N24a	Roof Design Using Iterative Analysis For Ponding Loads	337-338	E A
N28a	Solutions for Vibration Issues—Evaluation and Retrofits	339	E A
P7	Quality Assurance for Structural Engineering Firms	340	E A
T1	Real-Time 3D Model Review	327	E F D A
U5a	Innovative Composite Coupled Core Walls for High-Rise Construction	324-326	E FRD
U7	Simple Connections Simplified	347-348	E FRD
V2a	The AISC 3rd Edition <i>Seismic Design Manual</i>	345-346	E FR
Z1	Negotiating for Results	331-332	ALL
Q4	The New Certification Requirements and Standard: Additional Update for Building Fabricators and Component Manufacturers	342	F
S4	Presentation Session for Beedle and McGuire Awards	343-344	E
EW7*	Latest Topics/Trends in Steel Detailing and Fabrication	341	—

1.5 PDHs/0.15 CEUs

more wednesday

Bolded sessions are streamed.
 *Exhibitor Workshops do not provide PDH/CEU credits.

more wednesday

Bolded sessions are streamed.
*Exhibitor Workshops do not provide PDH/CEU credits.

5:30 p.m. – 6:30 p.m.		ROOM	FOR
B8	Reducing Errors in Bridge Drawings—What You Can do Today and Look to in the Future	314-315	E F R D
B9	Pedestrian Bridges—Invigorate Design Creativity	316-317	E F R
C6a	AISC 360-16 Chapter K Design Examples	349-350	E
G3b	AISC Research: Design for Deconstruction: Sustainable Composite Floor Systems with Deconstructable Clamping Connectors	345-346	E F R A
N6a	Alternate Load Paths in High-Rise Towers—Practical Approaches to Prevent Progressive Collapse	321-323	ALL
N15a	10 Seismic Lessons from the Design of Large and Complex Structures	328-329	E
N21b	Building with Weathering Steel	347-348	E F D A
N33a	Is it Likely My Design Will Fail? Current Views from Past Higgins Award Winners	324-326	E D
N36b	The Development of Off-Site Applied Intumescent Coatings in the UK: History and Lessons	337-338	E F
O2	What You Can Do to Automate Your Shop Now	340	F
T4	BIM Execution Plans—What You Need to Know	327	ALL
X1	Legal Consequences of Acting Ethically	331-332	ALL
Y9	Cool Steel: A Close-Up Look at This Year's IDEAS ² Winners—Part 3	336	ALL
Q5	How do You, as a Manager, Drive Results?	342	F R
S5	Special Topics in Structural Stability	343-344	E
EW8*	Eight Ways Connection Design Could Be Done Differently	341	—
EW9*	FabSuite: See What's New with the Industry Leader in Structural Steel Management Software	339	—

1.0 PDHs/0.10 CEUs

exhibitor product demos

HALL D	TIME
PD1	GIZA Software: Improving the Connection Design Process Presented by: Giza
PD3	Tekla Structures Presented by: Trimble
PD5	FabSuite Overview Presented by: FabSuite
PD7	Designing Connections in Your RISA Model Presented by: RISA Tech
PD9	LUSAS V16 Bridge and Structural Analysis Software: Simplify, Collaborate and Design Presented by: LUSAS
PD2	Using Qnet for Value Engineering and Project Optimization Presented by: Qnet
PD4	Torque and Angle Fastening: Installation Method Options and Best Practices Presented by: LeJeune Bolt Company
PD6	Structural Analysis and Design in RFEM Presented by: Dlubal Software, Inc.
PD8	Automatic Connection Design: Links Between SCS and Tekla, SAP2000, STAAD and More Presented by: Steel Studio Inc.
PD10	Economic Steel Design: RAM Structural System Presented by: Bentley Systems

thursday

multi-session courses

off-site tour | N4 Part 2

7:30 a.m. – 12:30 p.m.		LOCATION	FOR
N4	Hands-On Tour of the National Fire Research Lab	100 Bureau Drive Gaithersburg, MD off-site tour	E D

1.5 PDHs/0.15 CEUs

7:00 a.m. – 7:45 a.m.		ROOM	FOR
EW10*	Vibration Analysis and Serviceability Design of Steel Frames and Concrete Foundations	336	—
EW11*	Fluor and RISA Case Study on Structural Software Integration	339	—
EW12a*	Automatic Connection Design: Links Between SCS and Tekla, SAP2000, STAAD and More	340	—
EW13*	Bar Grating Fabrication	331-332	—
EW14*	Stress-Free Lateral Design in Tekla Structural Designer	341	—

8:00 a.m. – 9:30 p.m.		ROOM	FOR
B10	AASHTO Updates: What's New in the 8th Edition <i>Steel Specification</i>	314-315	ED
B11	Major Spans—Part 2	316-317	EFR
A1	Protective Coating Specifications—Part 1	339	EFD
C4b	New Developments in Connection Design	349-350	E
L2	You Never Give Me Your Money: How to Avoid "Bet the Company" Mistakes	331-332	ALL
N1a	Resiliency and Repairability of Steel Systems	321-323	EA
N22a	Research on Low Ductility Concentrically Braced Frames	340	E
N26a	Nothing Flat About Steel Joists and Steel Deck On a Pitched Roof	324-326	ERDA
N28b	Solutions for Vibration Issues—Evaluation and Retrofits	337-338	EA
N32a	Frequently Misunderstood Wind and Seismic Provisions	345-346	E
R2	Fabricator Roundtable	318-320	F
U4	Best Structural Steel Engineering	347-348	EFR
U5b	Innovative Composite Coupled Core Walls for High-Rise Construction	328-329	EFRD
Y4	Structural Steel Cubed—The New United States Courthouse	336	ALL
Q6	Making Sense of Welding Procedures and Requirements: Common Welding Questions Answered	342	FR
S6	Stability During Construction	343-344	E
EW15*	Increase Your Estimating Accuracy with AVEVA FabTrol	341	—

1.5 PDHs/0.15 CEUs

9:30 a.m. – 10:00 a.m.
Coffee Break (in Exhibit Hall)

EXHIBIT HALL OPENS

10:00 a.m. – 11:15 a.m.		ROOM	FOR
K2	KEYNOTE: Important Lessons I've Learned During The Past 40 Years	Ballroom I & II	ALL

1.0 PDHs/0.10 CEUs

students connecting with industry sessions (SCIS)

11:30 a.m. – 2:45 p.m.		ROOM
J2	Morning Session and Lunch (11:30 a.m. – 1:30 p.m.)	Holiday Ballroom (Hilton Hotel)
J3	Direct Connect (1:30 p.m. – 2:45 p.m.)	

11:30 a.m. – 12:30 p.m.		ROOM	FOR
B12	Innovative Material Solutions for Prefabricated Steel Bridge Elements	314-315	EFD
B13	Accelerated Bridge Construction by Example	316-317	ER
C7a	Connection Design Efficiency Loss	349-350	EFRD
L1	Living on a Prayer: What Due Diligence Do You Need to Do Before You Bid or Start Work?	331-332	ALL
N6b	Alternate Load Paths in High-Rise Towers—Practical Approaches to Prevent Progressive Collapse	337-338	ALL
N8a	Design Guide 30: <i>Sound Isolation and Noise Control in Steel Buildings</i>	345-346	EFA
N11a	Buyer Beware: Choosing the Right Architecturally Exposed Structural Steel Category	324-326	ALL
N18b	Diaphragm Analysis, Design and Connection Considerations in Steel Seismic Force Resisting Systems	328-329	E
N31a	Let's Talk Seismic—In Language We Can All Understand	321-323	EA
N35a	The Good and the Bad with Delegated Design	347-348	EFD
P9	Effective Communication for Project Managers	340	EFRD
T5	2017 LOD: What You Need to Know	327	ALL
Y2	Ethical Best Practices in Project Planning and Development	318-320	ALL
Y2	Restoration of the World's Second Largest Cast Iron Dome	336	ALL
Q7	Forging Values: Transforming Companies from Good to Great	342	FR
S7	Stability of Thin-Walled Members	343-344	E
EW16*	ASCE 2000 ksi Bolts—Application CANCELLED	—	—
EW17*	How to Leverage Tekla and Qnet for "Esti-modeling"	339	—

1.0 PDHs/0.10 CEUs

12:30 p.m. – 1:45 p.m.

Boxed Lunch (in Exhibit Hall) **Must have Th icon on badge.**

1:45 p.m. – 2:45 p.m.		ROOM	FOR
B14	Evaluating Internal Redundancy of Existing Built-Up Steel Members to Set Hands-On Inspection Intervals—Part 1	314-315	E
B15	Improving Inspection and Traceability in the Fabrication Shop	316-317	F
C2b	Stiffeners, Doublers, Web Plates—Oh My!	349-350	EFD
C6b	AISC 360-16 Chapter K Design Examples	339	E
D1	The Myth of the Ladder Effect and Other Railing Code Issues	318-320	ALL
L3	Lawyers, Guns and Money: What You Need to Know About Defending and Prosecuting Claims Before You Get into a Dispute	331-332	ALL
N7b	Diagrid and Mega-Braced Structures—Stability and Design Approaches	321-323	EFA
N10	ATFP Retrofits for Unconventional Building Systems	336	ALL
N12b	Creative Use of Structural Steel in Tall Buildings of the Future	328-329	ALL
N13b	Delegated Connection Design—Best Practices to Promote the Steel Industry	337-338	E
N19b	Steel Specifications Unraveled	324-326	EA
N34b	Column Design: Past, Present, Future	345-346	ED
P2	Fundamentals of Project Scheduling for Steel Fabrication	340	ALL
T6	Technology vs. Management Solutions	327	F
U1b	Design of Steel Deck For Concentrated and Non-Uniform Loading	347-348	EFR
Q8	Understanding Erector Non-Conformances	342	R
S8	Stability of Lateral Systems	343-344	E
EW18*	Quantify the Performance of Structural Steel Moment Frames Using Seismic Loss Assessment Tool	341	—

1.0 PDHs/0.10 CEUs

schedule at-a-glance

key

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

Bolded sessions are streamed.

*Exhibitor Workshops do not provide PDH/CEU credits.

3:00 p.m. – 4:00 p.m.		ROOM	FOR
B16	Evaluating Internal Redundancy of Existing Built-Up Steel Members to Set Hands-On Inspection Intervals—Part 2	314-315	E
B17	Rail Bridges—Part 1	316-317	EFR
A2*	Protective Coating Specifications—Part 2 3:00 p.m. – 4:30 p.m.	339	EFD
C3b	Delegation and Collaboration on Connections: Case Study	349-350	EFD A
E1	Crane and Lift Planning	340	ER
L5	Every Rose Has Its Thorn: It's Time to Take Another Look at Your Subcontracts	331-332	ALL
N2a	AISC Research: Development of a Design Methodology for Steel Strongback Braced Frames	345-346	E
N8b	Design Guide 30: <i>Sound Isolation and Noise Control in Steel Buildings</i>	347-348	EFA
N14b	Successful Detailing for Hot-Dip Galvanizing	337-338	ALL
N16b	Advancements in the Design of Steel Shipping Containers in Retail and Multi-Story Residential and Commercial Structures	324-326	E
N29b	Tips for Validating the Results of Structural Engineering Software	328-329	E
P3	Fundamental Principles of Project Management and Tools for Project Success	321-323	ALL
Z5	Managing a Remote Workforce	336	E
Q9	Typical Corrective Action Requests for Erectors	342	R
S9	Advances in the Direct Strength Method	343-344	E
EW19*	The Changing Role of the Engineer: How a Constructable Model Can Improve Construction Services	341	—

1.0 PDHs/0.10 CEUs

4:00 p.m. – 4:45 p.m. Coffee Break (in Exhibit Hall)

4:45 p.m. – 5:45 p.m.		ROOM	FOR
B18	Cracking the Problem of Fatigue and Fracture	314-315	E F
B19	Guidelines and Resources for Designers	316-317	E
E2	Bolting for the Masses	339	FR
L6	Use of Dispute Resolution Boards on Fabricated Structural Steel Projects	336	ALL
N3b	Steel Framed Stairway Design	321-323	EFD
N9b	Truss Design and Construction: Did I Consider Everything?	328-329	ALL
N15b	10 Seismic Lessons from the Design of Large and Complex Structures	337-338	E
N17a	Calculation of the Rotational Stiffness and Moment Capacity of Pinned Column Baseplate Connections	347-348	E
N20b	Mitigating Thermal Bridging in Steel Construction	349-350	EA
P6	Best Coating Practices—How to Avoid Costly Coating Failures	340	EFA
R1	A Designer and Fabricator Dialogue	318-320	EA
T8	Industry Lift: A Vision of the Future of the Steel Industry Workforce	327	EFRD
U3b	Building the Smithsonian: The National Museum of African American History and Culture	324-326	EFRD
Q10	Quality Control Inspector—What's Required?	342	FR
S10	Stability of Connections and Assemblages	343-344	E
EW20*	AISC Advanced Steel Design in RFEM	341	—
EW21*	GIZA Software: Connection Design for Tekla Structures	331-332	—

1.0 PDHs/0.10 CEUs

7:00 p.m. – 10:00 p.m. Conference Dinner—Power Plant Live!

Power Plant Live! is a 15-minute walk from the convention center. Round-trip transportation will be available from the center and select hotels. Please reference the app for detailed information. **Cost: \$85 on-site**

friday

7:00 a.m. – 7:45 a.m.		ROOM	FOR
EW1b*	Nonlinear Analysis in the 2016 AISC <i>Specification</i>	336	—
EW12b*	Automatic Connection Design: Links Between SCS and Tekla, SAP2000, STAAD and More	339	—
EW22*	Seamless Structural Analysis Utilizing RFEM and Revit/Tekla	341	—

8:00 a.m. – 9:30 p.m.		ROOM	FOR
B20	Stability Considerations for Long-Span Bridges	314-315	ER
B21	Special Sites Require Special Solutions	316-317	EFR
L4	I Can't Make It on Time: How to Defend and Prosecute Delay Claims	331-332	EFRD
N5a	Design of Curved Members with the new AISC Design Guide	321-323	EFR
N24b	Roof Design Using Iterative Analysis For Ponding Loads	337-338	EA
N25a	Open Web Steel Joist Composite Floor System	324-326	EA
N26b	Nothing Flat About Steel Joists and Steel Deck On a Pitched Roof	345-346	ERDA
N32b	Frequently Misunderstood Wind and Seismic Provisions	349-350	E
R3	Industry Roundtable	318-320	FRD
U2	Eliminating Costly Fit-Up Issues	347-348	FD
V1	Blind Prediction of Cyclic Response of Deep Wide-Flange Columns for Special Moment Frame Applications	339	E
Y1	Amazon Biospheres: Understanding the Complex Geometry, Analysis, Fabrication and Erection	328-329	ALL
Y6	Smart Model Transfer: Using the Digital Superhighway	327	EFD
Z4	Solutions for Equity in the Workplace	336	ALL
Q11	How Does a Fabricator Perform Their Own Documentation Audit?	342	F
S11	Stability at Elevated Temperatures	343-344	E
EW23*	Computing Seismic Loads Using Dynamic Analysis	341	—

1.5 PDHs/0.15 CEUs

9:30 a.m. – 10:00 a.m.

Coffee Break (in Exhibit Hall)

EXHIBIT HALL OPENS

10:00 a.m. – 11:15 a.m.		ROOM	FOR
K3	KEYNOTE: T.R. Higgins Lecture: Towards an Integrated Fracture-Control Plan for Steel Bridges	Ballroom I & II	ALL

1.0 PDHs/0.10 CEUs

11:30 a.m. – 12:30 p.m.		ROOM	FOR
B22	Rail Bridges—Part 2	314-315	EFR
B23	Heat Straightening and Repair of Damaged Steel Bridges	316-317	EFD
C7b	Connection Design Efficiency Loss	321-323	EFRD
E3	What an Engineer Needs to Know about Steel Erection	339	EFR
G1	Structural Steel and Whole Building Life Cycle Assessments	345-346	ALL
N2b	AISC Research: Development of a Design Methodology for Steel Strongback Braced Frames	331-332	E
N11b	Buyer Beware: Choosing the Right Architecturally Exposed Structural Steel Category	328-329	ALL
N17b	Calculation of the Rotational Stiffness and Moment Capacity of Pinned Column Baseplate Connections	347-348	E
N31b	Let's Talk Seismic—In Language We Can All Understand	337-338	EA
N33b	Is it Likely My Design Will Fail? Current Views from Past Higgins Award Winners	349-350	E D
N35b	The Good and the Bad with Delegated Design	324-326	EFD
P4	Change Order Request Process	318-320	ALL
T7	Compare and Contrast BIM Contract Documents	327	ALL
Y3	Bargaining In—Modular Construction on New York's East River	336	ALL
Q12	Bolt it Right the First Time: Teaching Quality is Easier than You Think	342	EFR
S12	Stability of Tubular Sections	343-344	E
EW24*	Guidelines for Resilient Design on CoreBrace Buckling Restrained Brace Frames (BRBFs)	341	—

1.0 PDHs/0.10 CEUs

12:30 p.m. – 1:45 p.m. Boxed Lunch (in Exhibit Hall) **Must have F icon on badge.**

1:45 p.m. – 3:15 p.m.		ROOM	FOR
B24	The Delaware River Bridge Fracture	314-315	EFD
B25	Advanced Coating Systems	316-317	EFD
C5	How do HSS Fit into the Seismic Design World?	321-323	E
N1b	Resiliency and Repairability of Steel Systems	328-329	EA
N5b	Design of Curved Members with the new AISC Design Guide	339	EFR
N22b	Research on Low Ductility Concentrically Braced Frames	337-338	E
N23b	Whats New in the 2017 AIST Tech Report #13	345-346	E
N25b	Open Web Steel Joist Composite Floor System	349-350	EA
N27	Welding In, On and Around Steel Joists	324-326	ER
O1	The First Trump Year—The Effect of the Administration on		

meeting rooms level 300

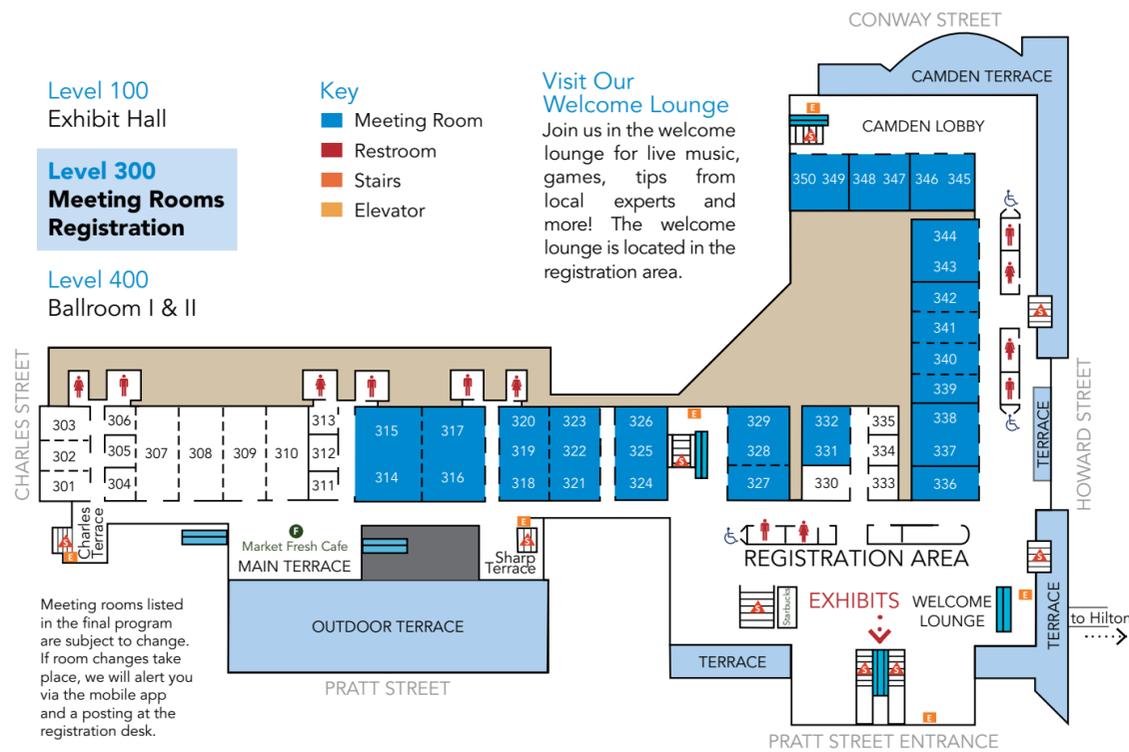
Level 100
Exhibit Hall

Level 300
Meeting Rooms
Registration

Level 400
Ballroom I & II

Key
■ Meeting Room
■ Restroom
■ Stairs
■ Elevator

Visit Our Welcome Lounge
 Join us in the welcome lounge for live music, games, tips from local experts and more! The welcome lounge is located in the registration area.



Meeting rooms listed in the final program are subject to change. If room changes take place, we will alert you via the mobile app and a posting at the registration desk.

exhibit hall floor plan level 100

Level 100
Exhibit Hall

Level 300
Meeting Rooms
Registration

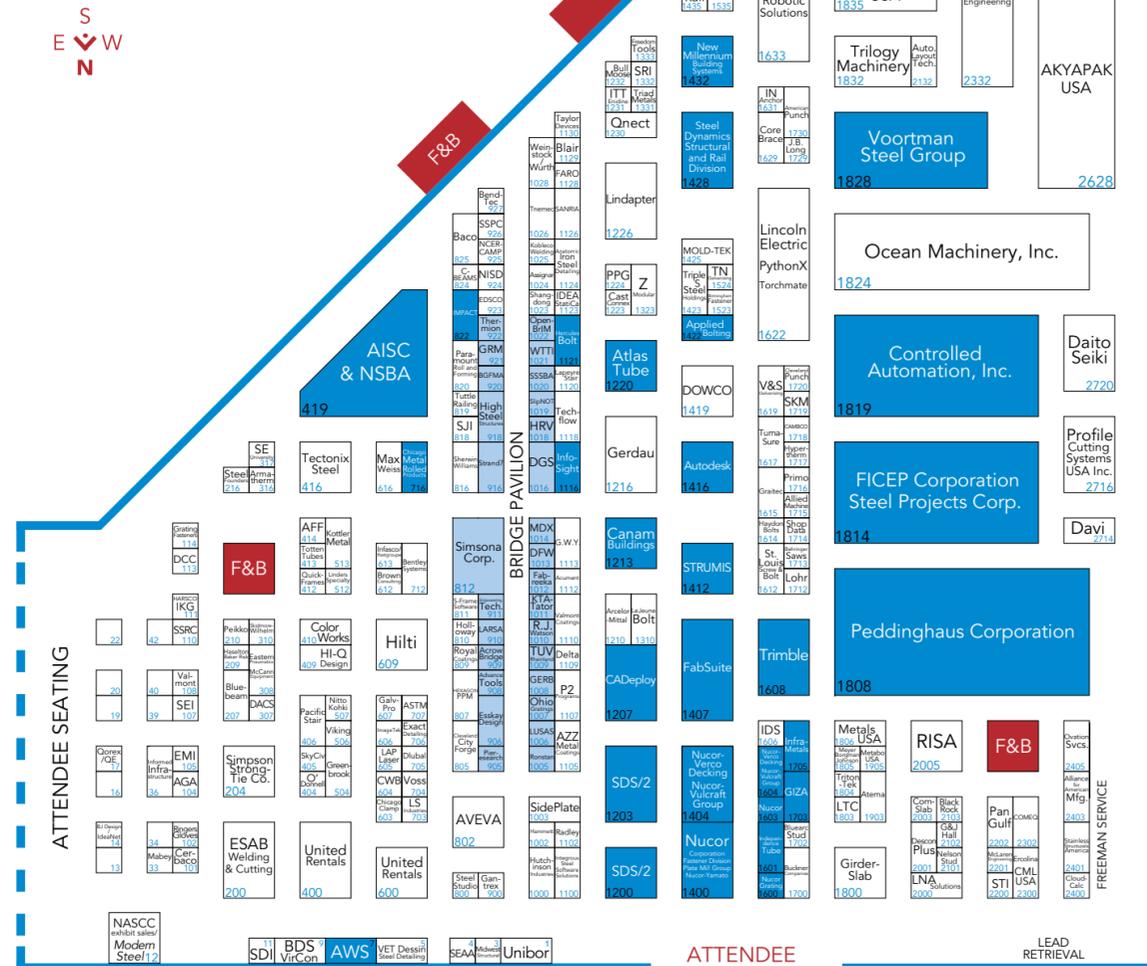
Level 400
Ballroom I & II

Key
■ Bridge Pavilion
■ Sponsor
■ Food & Beverage

Level 100
Exhibit Hall

Level 300
Meeting Rooms
Registration

Level 400
Ballroom I & II



ATTENDEE
ENTRANCE
SWING HALL

LEAD
RETRIEVAL

conference tips

Registration Desk Hours

Stop at the registration desk to pick up your conference registration package, to register on site, or to purchase extra tickets (when available) to events and guest tours. The registration desk is located on the level 300 of the convention center.

Tu | 4.10.18 noon – 5:00 p.m.
 W | 4.11.18 7:00 a.m. – 5:30 p.m.
 Th | 4.12.18 7:00 a.m. – 5:00 p.m.
 F | 4.13.18 7:30 a.m. – 2:00 p.m.

Exhibit Hall Hours

Wednesday | 4.11.18
 Welcome Lunch
 12:15 p.m. – 6:30 p.m.
 12:15 p.m. – 2:15 p.m.

Thursday | 4.12.18
 Coffee Break
 Lunch
 Coffee Break
 9:30 a.m. – 5:00 p.m.
 9:30 a.m. – 10:00 a.m.
 12:30 p.m. – 1:45 p.m.
 4:00 p.m. – 4:45 p.m.

Friday | 4.13.18
 Coffee Break
 Lunch
 9:30 a.m. – 2:00 p.m.
 9:30 a.m. – 10:00 a.m.
 12:30 p.m. – 1:45 p.m.

Plan Your Conference

Use the chart on the inside back cover or The Steel Conference mobile app to create your personalized schedule for the week and record important PDH codes.

Welcome Lounge

Visit the welcome lounge during registration hours.

Photography Release

Conference attendees grant permission to the NASCC: The Steel Conference and their agents to utilize the attendee's image or likeness in an effort to promote the annual NASCC: The Steel Conference. Attendees waive any right to inspect or approve the finished product or products and the advertising copy or other matter that may be used in connection therewith or the use to which it may be applied.

Guest Tour Information

All guest tours depart and drop off from the convention center's designated bus lane, which is located outside of the Pratt Street entrance. See your tickets for specific departure times. More information about guest tours and ticket availability is available at the registration desk. Registration desk hours are listed on the foldout. AISC reserves the right to cancel or modify tours based on attendance.

Policy on Children

The nature and amount of equipment on display at NASCC makes the exhibit floor potentially dangerous for children. Children 12 and under are not permitted on the exhibit floor.

hall D—level 100



Welcome Lunch
 W 12:15 p.m. – 2:15 p.m.

National Student Steel Bridge Competition on Display

W 12:15 p.m. – 2:15 p.m.

Did you know that annually, students at over 200 universities across the nation get hands-on, practical experience by participating in the ASCE/AISC National Student Steel Bridge Competition? Join us in the exhibit hall on our mock competition floor and 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 first-hand look at this program that's been engaging students since 1987!

Exhibitor Product Demos

W 2:15 p.m. – 6:20 p.m.

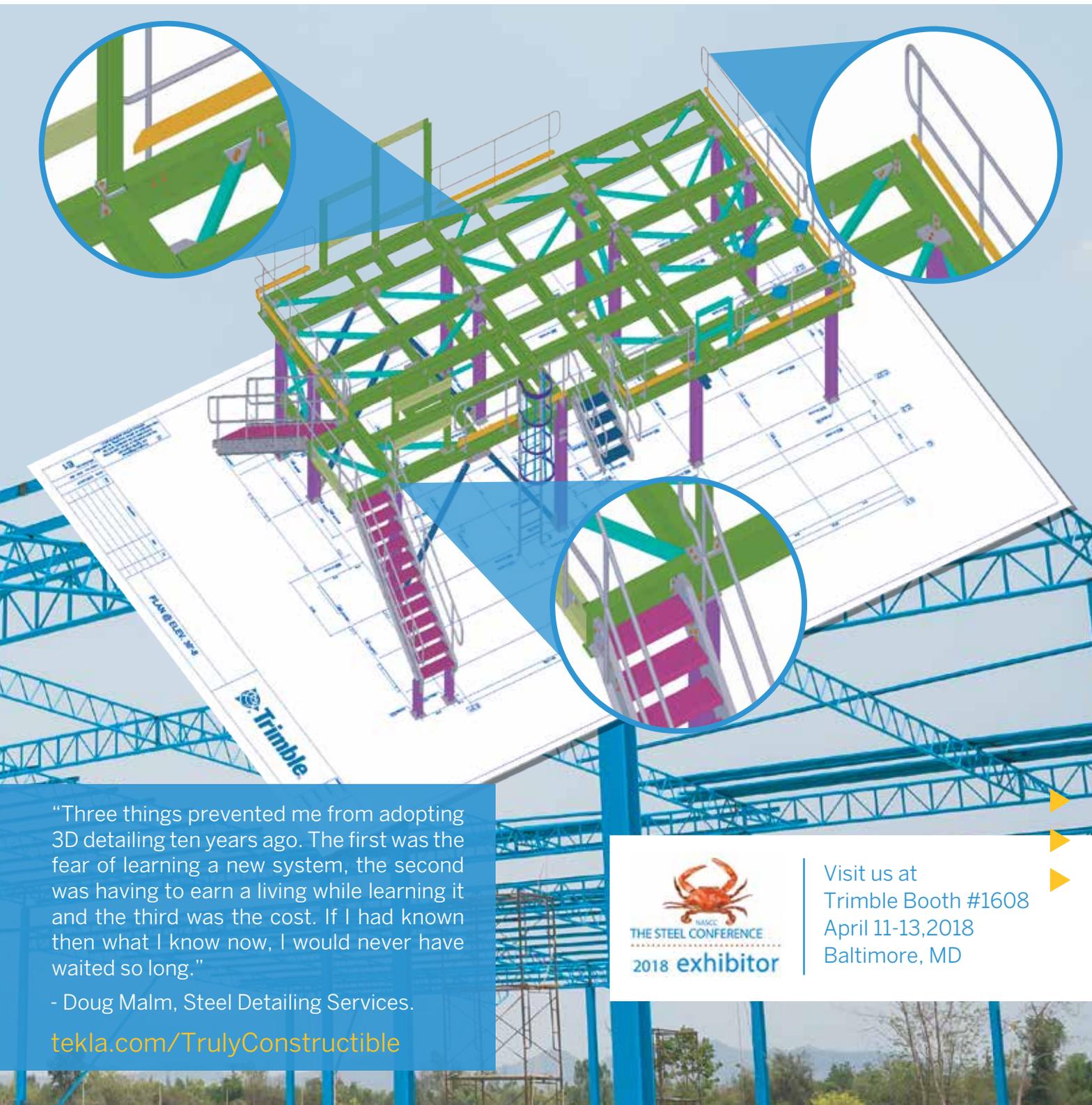
Don't miss our exhibitor Product Demos in the exhibit hall on Wednesday afternoon. Join your colleagues in the theaters, located prominently in the Hall D of the exhibit hall, as each presenting company shares the latest trends and developments in steel with 30-minute product demonstrations. Seating is limited. See the Wednesday Schedule-at-a-Glance on the reverse side of this foldout to view the full schedule.





Truly Constructible Models

Detail, Fabricate and Erect from a Single Source



“Three things prevented me from adopting 3D detailing ten years ago. The first was the fear of learning a new system, the second was having to earn a living while learning it and the third was the cost. If I had known then what I know now, I would never have waited so long.”

- Doug Malm, Steel Detailing Services.

tekla.com/TrulyConstructible



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NASCC: THE STEEL CONFERENCE

sessions

connections

Introducing Design Guide 21 Welded Connections, Second Edition

C1 W 3:45 p.m. – 5:15 p.m. | **Room 349-350**

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

Moderator: Margaret Matthew, AISC

The second edition of AISC's Design Guide 21: *Welded Connections: A Primer for Engineers* has been recently released. This updated edition references provisions in AISC 360-16, AISC 341-16 and AWS D1.1:2015. The Guide contains new chapters dealing with seismic considerations and fracture mechanics as applied to welded connections, and the chapter on fatigue has been expanded. The popular first edition chapter on "special welding applications" has been divided and expanded: more special applications are addressed and a new chapter on "problems and fixes" addresses commonly encountered problems with practical advice to solve the problem. This session will focus on four new topics discussed in the new Design Guide 21 as follows: a) Special Welding Applications, b) Problems and Fixes, c) Seismic and d) Fracture Mechanics.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.5 PDHs

Stiffeners, Doublers, Web Plates— Oh My!

C2a* W 8:00 a.m. – 9:00 a.m. | **Room 321-323**

C2b Th 1:45 p.m. – 2:45 p.m. | **Room 349-350**

Speakers: Carol Drucker, SE, PE, PEng
and Michael Herriges, Drucker Zajdel
Structural Engineers

Tips for avoiding costly detailing. Show examples of "saved" connections—specific designs with and without costly added plates and reinforcing, to help reinforce how a little good engineering can make a big difference.

ENGINEERS, FABRICATORS, DETAILERS

1.0 PDHs

Delegation and Collaboration on Connections: Case Study

C3a W 11:15 a.m. – 12:15 p.m. | **Room 349-350**

C3b Th 3:00 p.m. – 4:00 p.m. | **Room 349-350**

Speakers: Carol Drucker, SE, PE, PEng,
Drucker Zajdel Structural Engineers;
Randall Herbstman, SE, WSP

Share best practices and lessons learned for successful EOR and Contractor collaboration. Session will highlight good details to communicate design intent while allowing contractor to optimize connections for their shop preferences and to reduce cost.

**ENGINEERS, FABRICATORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

*streamed session

the steel conference sessions

New Developments in Connection Design

C4a* W 3:45 p.m. – 5:15 p.m. | **Room 321-323**

C4b Th 8:00 a.m. – 9:30 a.m. | **Room 349-350**

Speaker: Bo Dowswell, PE, PhD,
ARC International

Moderator: Jules Van de Pas, SE, PE,
CSD Structural Engineers

Based on the latest research, new design methods have been developed for several connection types. This session will provide background information and example problems for coped beams, wrap-around gusset plates and torsional analysis of connection elements. The revised *Manual* design procedures for single- and double-coped beams will be discussed, as well as a recently-published design methods for wrap-around gusset plates. Because the current methods for the torsional analysis of connections can be extremely conservative, various factors affecting their torsional strength will be discussed. This session will show that the true torsional behavior of connection elements can be predicted with rational analysis models.

ENGINEERS

1.5 PDHs

How do HSS Fit into the Seismic Design World?

C5* F 1:45 p.m. – 3:15 p.m. | **Room 321-323**

Speaker: Jason McCormick, PhD,
University of Michigan

Moderator: Kim Olson, PE,
FORSE Consulting

Engineers often have an interest in using hollow structural sections (HSS) in the design of buildings in seismic regions due to their beneficial properties, but do not necessarily know how to best utilize them. Gaining an understanding of where HSS can fit into the seismic design world and how to properly connect them for seismic loads will facilitate their use in future projects. This will be accomplished through an overview of the current state of seismic connections with HSS, consideration of HSS braced frame connections, discussion of rigid wide flange beam connections to HSS columns, and on-going research into HSS-to-HSS moment connections.

ENGINEERS

1.5 PDHs

AISC 360-16 Chapter K Design Examples

C6a W 5:30 p.m. – 6:30 p.m. | **Room 349-350**

C6b Th 1:45 p.m. – 2:45 p.m. | **Room 339**

Speaker: Kim Olson, PE, FORSE Consulting

“Chapter K looks different!” “Where are my equations?” Keep Calm and Carry On doing your HSS Connections. Not alot has changed. This session will point out what has changed and guide you through two common calculations using the new format for HSS connection design. Slides will be available to use as a future resource.

ENGINEERS

1.0 PDHs

Connection Design Efficiency Loss

C7a Th 11:30 a.m. – 12:30 p.m. | **Room 349-350**

C7b* F 11:30 a.m. – 12:30 p.m. | **Room 321-323**

Speakers: David C. McBride, McGill Engineering;
David R. Wright, Carpenter Wright Engineers;
Robert D. Johnson, McGill Engineering

Moderators: Sam Boykin, Steelfab of Alabama;
Max Puchtel, AISC

Prior to the detailing process begins, many projects with Delegated Connection Design, hit road blocks that derail the schedule early in the process. The connection design engineer is forced to send RFI's requesting essential information from the EOR so they can complete their design, which in turn, delays the detailing schedule and possibly the project. The end result is a project that is behind schedule with significant efficiency loss.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS

1.0 PDHs

detailing

The Myth of the Ladder Effect and Other Railing Code Issues

D1 Th 1:45 p.m. – 2:45 p.m. | **Room 318-320**

Speaker: Tony Leto,
The Wagner Companies

Moderator: Joel Hicks, NISD

This program will differentiate between handrails and guardrails, and make participants aware of building codes related to the design and installation of railings. Participants will gain knowledge of available resources to answer code-related questions.

ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

*streamed session

Crane and Lift Planning

E1 Th 3:00 p.m. – 4:00 p.m. | **Room 340**

Speaker: Jim Jatho, Buckner Companies

Moderator: Alan Henry,
Buckner Steel Erectors

A presentation of what is required to make a successful steel erection project in regards to crane and lift planning. What information must be provide to the erector and what the erector should provide to the customer.

ENGINEERS, ERECTORS

1.0 PDHs

Bolting for the Masses

E2 Th 4:45 p.m. – 5:45 p.m. | **Room 339**

Speaker: Dave Webb, American Steel
& Precast Erectors

Moderator: Alan Henry,
Buckner Steel Erectors

The ins and outs of bolting including ordering, receiving, protecting, pre-installation, tightening and inspection.

FABRICATORS, ERECTORS

1.0 PDHs

What an Engineer Needs to Know about Steel Erection

E3 F 11:30 a.m. – 12:30 p.m. | **Room 339**

Speaker: Curtis Mayes, PE,
LPR Construction Co.

With some early planning and interaction with the erector during the design phase, engineers may find that projects run more smoothly during construction. Having a basic understanding of what is advantageous and challenging to the steel erector can help facilitate such planning and constructability integration by the engineer into his or her drawings. In this webinar, participants will learn what an engineer needs to know about steel erection. Topics will include:

- Erector (and fabricator) friendly connections
- Field welding guidelines
- Construction stability issues to consider
- Items in the specifications for the erector that may need clarification
- Examples of the use of Building Information Modeling (BIM) in erection planning

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

Bolt it Right the First Time: Teaching Quality is Easier than You Think

E4 W 8:00 a.m. – 9:00 a.m. | **Room 339**

Speakers: John O'Brien and Larry Housel, Tungsten Capital Partners and Skidmore Wilhelm

Moderator: Kenny Waugh, IMPACT

Structural Bolting requires no certification. No standard training on bolting has been developed and provided to Ironworkers/Inspectors/erectors, ect. The result of this is a wide variety of "local rules" and unfortunately to many of them are based on incorrect information and erroneous assumptions. The purpose of the course is to teach the basics of the torque/tension relationship and to develop a foundation upon which the participant can begin to teach others in their organizations to achieve safer structures at a reduced labor cost.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

Don't Leave them Hanging! (a Review of ANSI Z359.2 and Rescue)

E5 W 11:15 a.m. – 12:15 p.m. | **Room 339**

Speaker: Troy Clark, MSC Safety Solutions

Moderator: Mark Yerke, S&R Enterprises

In this session we will review roles, responsibilities and training requirements for fall protection and fall rescue. Many General Contractors and Government entities have adopted ANSI Z359 requirements. If you plan to work USACE, Navy or any other Department of Defense project, you need understand this standard. Fall rescue needs to be a key part of your Fall Protection Program and not take a backseat to protection. Do your people have the training that meets the ANSI Z359 standards? Is your trainer Qualified to conduct the training? Competent and Authorized Rescuers must have instruction and performance assessments. In today's competitive market, your safety program is a key component to your success.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs



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The AVEVA logo, consisting of the word "AVEVA" in a bold, white, sans-serif font with a small trademark symbol (TM) to the right. The logo is positioned at the bottom right of the page, partially overlapping a large blue triangular graphic that contains a faint image of a steel fabrication plant.

AVEVA™

the steel conference sessions

Erection Engineering Basics 101

E6 W 2:30 p.m. – 3:30 p.m. | **Room 339**

Speaker: Will Jacobs, IV, Stanley D. Lindsey & Assoc.

Moderator: Sam Boykin, SteelFab Inc.

Focus on the engineering aspects on how to SAFELY erect simple and complex steel structures. Session includes a review of construction wind loading (shield/hurricane plans), advanced analysis techniques (ghost modeling & use of load combinations in staged construction), design issues (buckling of beams), EOR coordination, logistics (beams erected in a day), and hoisting (limits of lift).

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.0 PDHs

sustainability

Structural Steel and Whole Building Life Cycle Assessments

G1 F 11:30 a.m. – 12:30 p.m. | **Room 345-346**

Speakers: John Cross, PE, AISC; Kishore Mahbubani, Steel Recycling Institute; Mark Thimons, PE, Steel Market Development Institute

Green design and construction has quietly transitioned from the hot topic of the day to a more analytic, design based approach to building construction. This session will investigate how the switch from a focus on material attributes to Whole Building Life Cycle Assessments impacts design decisions related to structural steel and what designers need to consider when selecting a structural framing system.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU/CE GBCI

Myths and Realities of Sustainable Design

G2 W 2:30 p.m. – 3:30 p.m. | **Room 345-346**

Speakers: John Cross, PE and Tabitha Stine, SE, PE, AISC



This session will explore some of the common myths surrounding the sustainable choice of construction materials and allow the attendee to gain a broader perspective on the selection of construction materials.

ENGINEERS, ARCHITECTS 1.0 PDHs/LU/HSW/CE GBCI

AISC Research: Design for Deconstruction: Sustainable Composite Floor Systems with Deconstructable Clamping Connectors

G3a W 11:15 a.m. – 12:15 p.m. | **Room 345-346**

G3b W 5:30 p.m. – 6:30 p.m. | **Room 345-346**

Speaker: Jerry Hajjar, Northeastern University

Moderator: Rex Buchanan, AISC

A sustainable composite steel-concrete floor system for building structures is proposed to enable disassembly and reuse of the structural components, thereby reducing the environmental impacts associated with material extraction, production, fabrication, and waste disposal. In this system, deconstructable clamping connectors are utilized to attach precast concrete planks to steel beams. The load-slip behavior of the clamping connectors was studied in pushout tests. The results show that the clamping connectors have excellent slip capacity as well as shear strength comparable to that of traditional shear studs. Four full-scale beam tests were then conducted to investigate the flexural behavior of the deconstructable composite beams under gravity loading. The flexural strengths of the composite beam test specimens closely match the strengths predicted by AISC design provisions. All the beams behaved in a ductile manner.

ENGINEERS, FABRICATORS, ERECTORS, ARCHITECTS 1.0 PDHs/LU/HSW/CE GBCI

legal

Living on a Prayer: What Due Diligence Do You Need to Do Before You Bid or Start Work?

L1 Th 11:30 a.m. – 12:30 p.m. | **Room 331-332**

Speakers: Angela Richie, Gordon Rees Scully Mansukhani, LLP; David Ratterman, Stites & Harbison PLLC

Moderator: Glenn Tabolt, STS Steel, Inc.

Disputes often occur because the parties did not take the time to ensure their front end documents, such as bid documents, plans, specifications, and contracts were balanced or reflected the true intent of the parties. This session will cover the importance of evaluating your front end documents and how to best manage such evaluation in today's fast-track construction environment.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU/HSW

You Never Give Me Your Money: How to Avoid “Bet the Company” Mistakes

L2 Th 8:00 a.m. – 9:30 a.m. | **Room 331-332**

Speakers: Joe Hardesty, Stites & Harbison PLLC; Angela Richie, Gordon Rees Scully Mansukhani, LLP

Moderator: Glenn Tabolt, STS Steel, Inc.

Once you have signed a contract with a “bet the company clause,” any dispute you enter becomes a salvage operation, and even the best and most creative construction lawyer may not be able to undo what you have signed. This session will provide an overview of those bet the company clauses and what you can do to eliminate or mitigate them.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.5 PDHs/LU/HSW

Lawyers, Guns and Money: What You Need to Know About Defending and Prosecuting Claims Before You Get into a Dispute

L3 Th 1:45 p.m. – 2:45 p.m. | **Room 331-332**

Speakers: Joe Hardesty, Stites & Harbison PLLC; Angela Richie, Gordon Rees Scully Mansukhani, LLP

Moderator: Glenn Tabolt, STS Steel, Inc.

What do you do when you are faced with the need to pursue payment for work you have performed? What do you do when someone says, “Steel Does Not Work?”

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

I Can’t Make It on Time: How to Defend and Prosecute Delay Claims

L4 F 8:00 a.m. – 9:30 a.m. | **Room 331-332**

Speakers: Angela Richie, Gordon Rees Scully Mansukhani, LLP; Bradford Bright, Veritas Advisory Group, Inc.

Moderator: Glenn Tabolt, STS Steel, Inc.

Have you ever had a project where the design changed or was late? Did the late design or design change push your fabrication schedule into a period in which you already had other work scheduled? Did you know that you may be entitled to compensation for such changes? Have you ever been accused of delaying project? Do you know how to defend yourself against such claims?

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS

1.5 PDHs

Every Rose Has Its Thorn: It’s Time to Take Another Look at Your Subcontracts

L5 Th 3:00 p.m. – 4:00 p.m. | **Room 331-332**

Speakers: Angela Richie, Gordon Rees Scully Mansukhani, LLP; Joe Hardesty, Stites & Harbison, PLLC

Moderator: Glenn Tabolt, STS Steel, Inc.

When was the last time you looked at your subcontracts to downstream vendors? Your subcontracts may be the most important document your issue or negotiate if a problem occurs. What would happen if your erector’s lack of job site supervision resulted in a significant job-site accident? What would happen if your structural engineer that designed the connection made a significant error resulting in a partial collapse of a structure? What would happen if after the steel was erected, fireproofing applied to the structure started to fall off?

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

Use of Dispute Resolution Boards on Fabricated Structural Steel Projects

L6 Th 4:45 p.m. – 5:45 p.m. | **Room 336**

Speakers: David Ratterman, Stites & Harbison PLLC; Deborah Mastin, Law Office of Deborah Mastin PLLC; Roger E. Ferch, Ferch Consulting; Thomas Peterson, Hoffman Construction Company

Moderator: David Ratterman, Stites & Harbison PLLC

The Dispute Resolution Board (DRB) process utilizes industry professionals to solve jobsite problems before they escalate into formal claims and disputes. In North America DRBs have been employed on over 1,200 projects, aggregating some \$90 billion in construction cost. Roughly 1,500 DRB recommendations have been issued. Of these, all but a handful have been adopted by the parties, and costly litigation or arbitration has thereby been avoided. The DRB process is not the same as arbitration or mediation. This session will explain the DRB process from the perspective of construction owners and contractors who have experienced success from its use and explore whether, and how, the process can be applied to fabricated structural steel projects.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

the steel conference sessions

design & analysis

Resiliency and Repairability of Steel Systems

N1a* Th 8:00 a.m. – 9:30 a.m. | **Room 321-323**

N1b F 1:45 p.m. – 3:15 p.m. | **Room 328-329**

Speakers: Hussam Mahmoud, PhD, Colorado State University; Patrick McManus, SE, PE, PhD, Martin/Martin, Inc.

Moderator: Jules Van de Pas, SE, PE, CSD Structural Engineers

This session introduces the concept of multi-hazard resiliency and discusses the resiliency of various steel systems. Systems, details, and products that promote repairability and enhance resiliency will be addressed.

ENGINEERS, ARCHITECTS

1.5 PDHs/LU/HSW

AISC Research: Development of a Design Methodology for Steel Strongback Braced Frames

N2a Th 3:00 p.m. – 4:00 p.m. | **Room 345-346**

N2b F 11:30 a.m. – 12:30 p.m. | **Room 331-332**

Speaker: Barbara G. Simpson, doctoral candidate at UC Berkeley

Moderator: Tom Schlafly, AISC

Conventional steel braced frames have a tendency to concentrate damage in one or a few stories during large earthquakes, indicative of “weak” story behavior. Recently, there have been a number of studies involving the “strongback” system—a modification of the conventional braced frame that utilizes a vertical steel truss to delay or prevent weak stories. The remainder of the braced frame is then designed and detailed to yield, thereby controlling the system's energy dissipation under seismic excitation. A recent experimental test and past numerical studies have shown that the strongback system can be successful at mitigating weak story behavior. However, the behavior of this system has not been systematically assessed or evaluated. Nor is there a coherent and robust design methodology for strongback system. The objective of this research was to develop a generalizable and practical design method for the strongback system using the linear design methods traditionally used in current building codes. The behavior of several strongback archetype designs were compared to conventional braced frames in OpenSEES. The reliability of these design methods were evaluated using the minimum acceptable design criteria from FEMA P695. These nonlinear analysis methods validated the ability of the strongback designs to achieve the basic seismic performance objectives for standard code-approved seismic-force-resisting systems while successfully mitigating a weak story response.

ENGINEERS

1.0 PDH

Steel Framed Stairway Design

N3a W 8:00 a.m. – 9:00 a.m. | **Room 331-332**

N3b* Th 4:45 p.m. – 5:45 p.m. | **Room 321-323**

Adam Friedman, SE, PE,
CSD Structural Engineers

Moderator: Margaret Matthew, AISC

This session provides guidance for the design and layout of steel elements for steel framed stairways, guards, handrail and related components. Background information regarding stairways, code requirements, design methods, guard/handrail design, special considerations, delegated design and design examples will be presented.

Topics will include:

- Common issues related to the design and construction of steel framed stairways
- Understanding of stair types, members, and components
- General overview of code requirements specific to stairways
- Structural engineering for steel stairway members and connections
- Delegated design considerations
- Coordination between stair designer and architect, engineer of record, detailer, fabricator and erector

ENGINEERS, FABRICATORS, DETAILERS

1.0 PDHs

*streamed session

The National Fire Research Lab:
Advances in Structural Fire Engineering

N4p1 W 3:45 p.m. – 5:15 p.m. | **Room 328-329**
N4p2* Th 7:30 a.m. – 12:30 p.m. | **Off-site Tour**

Speakers: Mina Seif, PE, PhD, Matthew Bundy, PhD, Lisa Choe, PE, PhD, and Matthew Hoehler, PE, PhD, NIST; Fahim Sadek, PhD

Moderator: Jie Zue, PE, Walter P Moore

*** Registration required—space is limited!**

Part 1 will introduce the audience to the National Fire Research Laboratory (NFRL) facility, with emphasis on a recent experimental study of a series of 42 ft span composite beams under combined gravity and fire loading scenarios. Presentation will include: overview of laboratory's capabilities, advances in metrology, temperature-dependent material models for structural-steel and high-strength bolts, experimental results from the composite beam tests, and related thermal-structural analyses.

Part 2 will introduce the audience to NIST's historical role in structural-fire research, through a hands-on tour to the NFRL facility. Detailed test setups, advanced measurements, and results from recently conducted experimental studies will be presented and discussed.

ENGINEERS, DETAILERS

1.5 PDHs

Design of Curved Members with the new AISC Design Guide

N5a* F 8:00 a.m. – 9:30 a.m. | **Room 321-323**
N5b F 1:45 p.m. – 3:15 p.m. | **Room 339**

Speaker: Bo Dowswell, PE, PhD, ARC International

Moderator: Margaret Matthew, AISC

The new AISC Design Guide for curved members is now available. This session will provide an overview of the design guide, with detailed design information on vertically-curved members and a brief discussion of horizontally-curved members. This session will also address connection design for curved members and the effects of cross-sectional distortion caused bending in the plane of curvature.

Although the structural behavior of curved members can be much different from their straight counterparts, the Design Guide provides recommendations for using the AISC *Specification* equations for straight members to design curved members. This "equivalent straight member" method will allow the use of existing commercial software for curved member design by modifying effective length factors and lateral-torsional buckling modification factors to account for the curvature.

ENGINEERS, FABRICATORS, ERECTORS

1.5 PDHs

Alternate Load Paths in High-Rise Towers—Practical Approaches to Prevent Progressive Collapse

N6a* W 5:30 p.m. – 6:30 p.m. | **Room 321-323**
N6b Th 11:30 a.m. – 12:30 p.m. | **Room 337-338**

Speaker: Jeffrey Smilow, PE, F.ASCE, WSP

Moderator: Joe Dardis, AISC

Structural measures to mitigate progressive collapse are being required in a growing number of buildings, beyond just government and critical facilities. For many high rise and large structures, building owners and occupants as well as local jurisdictions are now mandating such design considerations. Alternate load paths are one option to provide resistance to progressive collapse from unforeseen events. This presentation will share types of alternate load path systems from range of steel high rise projects (maintaining confidentiality). In addition, the session will review applicable design procedures, load combinations, connection design requirements, codes and more.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

Diagrid and Mega-Braced Structures—Stability and Design Approaches

N7a W 2:30 p.m. – 3:30 p.m. | **Room 327**
N7b* Th 1:45 p.m. – 2:45 p.m. | **Room 321-323**

Speakers: Ahmad Rahimian, PhD, and Yoram Eilon, PE, WSP

Moderator: Jacinda Collins, AISC

Diagrid and mega-braced structures—and indeed any braced structural systems where diagonals are resolved over multiple levels—warrant special attention for stability and unbraced length. This presentation will examine diagrid and multi-story braced systems for these concerns, along with the role of a secondary bracing system to stabilize and economize their designs. A proposed design approach for these secondary systems is provided, with case studies including Hearst Tower in New York.

ENGINEERS, FABRICATORS, ARCHITECTS

1.0 PDHs/LU/HSW

Design Guide 30: Sound Isolation and Noise Control in Steel Buildings

N8a Th 11:30 a.m. – 12:30 p.m. | **Room 345-346**
N8b Th 3:00 p.m. – 4:00 p.m. | **Room 347-348**

Speaker: Benjamin Marham, Acentech Inc.

Moderator: Brian Ward, AISC

Many have the perception that acoustics qualities of steel structures are not as robust as those of other major building materials. This presentation will shed light on the acoustical qualities of steel structures, as described in AISC Design Guide 30. Practical design applications will be incorporated.

ENGINEERS, FABRICATORS, ARCHITECTS

1.0 PDHs/LU/HSW

*streamed session

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the steel conference sessions

Truss Design and Construction: Did I Consider Everything?

N9a* W 2:30 p.m. – 3:30 p.m. | **Room 321-323**

N9b Th 4:45 p.m. – 5:45 p.m. | **Room 328-329**

Speaker: Thomas Meyer, SE, PE,
Magnusson Klemencic Associates

Steel truss design and construction involves more than simply resisting the imposed loads. This session will provide insights into the design and construction of floor and roof trusses, covering unique load considerations like rigging, operable partitions and maintenance vehicles that are often required in facilities with long-span framing. Truss deflection and vibration considerations will also be discussed.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

ATFP Retrofits for Unconventional Building Systems

N10 Th 1:45 p.m. – 2:45 p.m. | **Room 336**

Speaker: Scott Wood, Thornton
Tomasetti-Weidlinger Protective Design

Moderator: Peggy Van Eepoel, Thornton
Tomasetti-Weidlinger Protective Design

Many federal buildings are being updated and expanded to meet the needs of agencies and departments across the country. This course will explore how blast engineers and structural engineers collaborate together to renovate existing buildings to meet the Department of Defense's Anti-terrorism Force Protection and progressive collapse standards. Challenges such as building use changes, lack of original building drawings, and short design/construction schedules will also be discussed.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

Buyer Beware: Choosing the Right Architecturally Exposed Structural Steel Category

N11a* Th 11:30 a.m. – 12:30 p.m. | **Room 324-326**

N11b F 11:30 a.m. – 12:30 p.m. | **Room 328-329**

Speakers: Jacinda Collins, PE, AISC;
David Weaver, PE, Mold-Tek Technologies

The new architecturally exposed structural steel (AESS) categories are great; however, buyer beware to the extra labor and cost when specifying higher categories. AISC, the Structural Engineers Association of Colorado, and the Rocky Mountain Steel Construction Association will provide insight, guidance, fabrication alternatives, and project tools for designers who are seeking high quality finishes without overburdening the project budget.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

Creative Use of Structural Steel in Tall Buildings of the Future

N12a W 8:00 a.m. – 9:00 a.m. | **Room 337-338**

N12b Th 1:45 p.m. – 2:45 p.m. | **Room 328-329**

Speaker: Eric Long, SE, PE, LEED AP,
Skidmore, Owings & Merrill LLP

Moderator: Jerod Hoffman, PE,
Meyer, Borgman and Johnson

Many of the tallest and most complex projects ever built have been constructed out of structural steel. Today, structural steel plays a unique role in construction with projects not only developed out of steel alone, but those designed and built from combinations of materials, most specifically composite buildings mixing steel and concrete. With the heightened focus on the environment, steel structures are not only being built with large recycled contents but are being designed to increase a structure's life in adverse environmental conditions.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

Delegated Connection Design—Best Practices to Promote the Steel Industry

N13a W 11:15 a.m. – 12:15 p.m. | **Room 328-329**

N13b Th 1:45 p.m. – 2:45 p.m. | **Room 337-338**

Speaker: Matt Huber, PE,
Meyer Borgman Johnson

Moderator: Jerod Hoffman, PE,
Meyer Borgman Johnson

Delegated connection design is a widely accepted and encouraged design practice in the steel design industry. Used skillfully, it results in a deliverable that benefits all parties by giving EORs control over the final structural product and fabricators the flexibility they need to deliver an efficient, cost-effective package. This discussion will analyze common pitfalls in the use of delegated connection design, which lead to more expensive structures, difficulties in construction, and delays in schedule. Further examination will focus on best delegated connection design practices that combat these perils and ultimately bring the greatest value to the steel industry. EORs will learn best practices for presenting design requirements to the connection engineer, such as transfer forces, as well as reasonable and practical design load criteria.

ENGINEERS

1.0 PDHs

*streamed session

Successful Detailing for Hot-Dip Galvanizing

N14a W 2:30 p.m. – 3:30 p.m. | **Room 331-332**

N14b Th 3:00 p.m. – 4:00 p.m. | **Room 337-338**

Speaker: Kevin Irving, AZZ Metal Coatings

Moderator: Alana Hochstein,
American Galvanizers Association

Hot-dip galvanizing is gaining popularity as more project owners search for sustainable ways to fight infrastructure corrosion. This session will explain the basic yet critical design details necessary for a successful hot-dip galvanized project that are not taught in school. Several examples of proper design will be compared with the results of improper design. Come see how proper planning and design up front can lead to less stress on the job site.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

10 Seismic Lessons from the Design of Large and Complex Structures

N15a W 5:30 p.m. – 6:30 p.m. | **Room 328-329**

N15b Th 4:45 p.m. – 5:45 p.m. | **Room 337-338**

Speakers: Rafael Sabelli, SE, Walter P Moore
Engineers and Consultants; Laura Whitehurst,
SE, Holmes Consulting

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

Published building codes and design examples provide a sound fundamental framework for seismic design, but they do not necessarily prepare you for everything. This session covers lessons learned from the design of stadiums, arenas, and other large and complex structures in high seismic areas.

ENGINEERS

1.0 PDHs

Advancements in the Design of Steel Shipping Containers in Retail and Multi-Story Residential and Commercial Structures

N16a W 2:30 p.m. – 3:30 p.m. | **Room 336**

N16b* Th 3:00 p.m. – 4:00 p.m. | **Room 324-326**

Speaker: Socrates Ioannides, SE, PhD,
Structural Affiliates International, Inc.

Moderator: Alex Kladiva, SE,
Burns & McDonnell Engineering

This session will present advanced design techniques, seismic analysis, reinforcing methods, diaphragm modeling, and connection detailing for projects which make use of repurposed, modified steel shipping containers as modular “building blocks” for retail and multi-story residential and commercial buildings.

ENGINEERS

1.0 PDHs

Calculation of the Rotational Stiffness and Moment Capacity of Pinned Column Baseplate Connections

N17a Th 4:45 p.m. – 5:45 p.m. | **Room 347-348**

N17b F 11:30 a.m. – 12:30 p.m. | **Room 347-348**

Florentia Kavoura, PhD, AG&E
Structural Engenuity; Bora Gencturk, PhD,
University of Southern California

Moderator: Alex Kladiva, SE,
Burns & McDonnell Engineering

Past studies have indicated that base connections, which are designed as pinned supports (anchor rods are placed inside column flanges), exhibit a non-negligible level of rotational stiffness. Neglecting the rotational stiffness of the base connection may result in a significant overestimation of the story drift. This additional story drift is addressed by increasing the flexural stiffness of the frame members thereby unnecessarily increasing the cost of the building. The current AISC and AISC Design Guide 1 provisions do not provide design guidelines and experimental data to support the use of rotational stiffness and moment capacity of the so-called pinned column base-plate connections. To bridge this gap, this study has evaluated the rotational stiffness and moment capacity of different pinned column base-plate connections. This presentation will focus on methods to predict the moment capacity of the pinned column base-plate connections based on AISC code equations. In parallel, the comparison between the results of the computed moment capacity and the moment capacity measured during the experiments of this research program will be presented. Last, due to limited design procedures in the current AISC provisions to estimate the base-plate rotational stiffness, Eurocode design procedures have been employed to compute this quantity. This presentation will conclude with a comparison of the measured rotational stiffness and the computed rotational stiffness based on Eurocode. The results presented are considered as a thorough evaluation of the exiting design practices for pinned column base-plate connections.

ENGINEERS

1.0 PDHs

*streamed session

the steel conference sessions

Diaphragm Analysis, Design and Connection Considerations in Steel Seismic Force Resisting Systems

N18a W 8:00 a.m. – 9:00 a.m. | **Room 349-350**
N18b Th 11:30 a.m. – 12:30 p.m. | **Room 328-329**

Speaker: John Kennedy, SE,
Structural Affiliates International, Inc.

Diaphragm design in high-seismic areas can be complex—this session covers the code provisions for diaphragm force derivation, load paths, and the design of the diaphragm system, including connections to seismic-force resisting elements.

ENGINEERS

1.0 PDHs

Steel Specifications Unveiled

N19a W 2:30 p.m. – 3:30 p.m. | **Room 337-338**
N19b* Th 1:45 p.m. – 2:45 p.m. | **Room 324-326**

Speaker: Jon Beier, PE, SMBH, Inc.

Moderator: Alex Morales, AISC

Most steel construction projects include drawings and specifications. This session will review a typical steel specification and describe the various items that could be included in a steel specification. Throughout the specification, there are numerous choices that need to be made which all relate to the specific project. Several of the choices will be discussed and information will be provided that will assist specifiers in determining which choices are right for their projects.

ENGINEERS, ARCHITECTS

1.0 PDHs/LU/HSW

Mitigating Thermal Bridging in Steel Construction

N20a* W 11:15 a.m. – 12:15 p.m. | **Room 321-323**
N20b Th 4:45 p.m. – 5:45 p.m. | **Room 349-350**

Speaker: Neil Norris, PE, PEng, MAsC, CPHD,
Morrison Hershfield

Moderator: Brent Chancellor, PhD,
Schock USA Inc.

Current trends in energy codes are pushing the building construction industry towards greater energy efficiency. A big part of this shift is through reducing heat loss through the building envelope by minimizing thermal bridging. However, steel construction often dictates thermal bridging through the envelope due to structural requirements. There are a growing number of solutions, whether they are proprietary or on site approaches, that can help mitigate these heat loss impacts. In this session, we will discuss how thermal bridging impacts building energy performance in steel construction and how it can be mitigated, through cases and worked examples.

ENGINEERS, ARCHITECTS

1.0 PDHs/LU/HSW/CE GBCI

Building with Weathering Steel

N21a* W 8:00 a.m. – 9:00 a.m. | **Room 324-326**
N21b W 5:30 p.m. – 6:30 p.m. | **Room 347-348**

Speaker: Ralph Pridgen, Berlin Construction Co.

Moderator: Greg Barsch, PE, SMBH, Inc.

Weathering steels contain elements that allow them to form a protective patina or coating when properly exposed to the atmosphere. This session will explore a few projects, both current and historic, that have used weathering steel. The performance, economical and environmental benefits as well as the challenges associated with weathering steel will be discussed.

ENGINEERS, FABRICATORS,
DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

Research on Low Ductility Concentrically Braced Frames

N22a Th 8:00 a.m. – 9:30 a.m. | **Room 340**
N22b F 1:45 p.m. – 3:15 p.m. | **Room 337-338**

Speakers: Larry Fahnstock, PE, PhD,
University of Illinois; Eric M. Hines, PE, PhD,
LeMessurier Consultants, Inc.

Moderator: Peter Cheever,
LeMessurier Consultants, Inc.

A presentation of the latest research in the ductility and post buckling behavior of low ductility type seismic force resisting systems. This research illustrates how many commonly held opinions regarding the behavior of these systems is actually incorrect.

ENGINEERS

1.5 PDHs

*streamed session

Whats New in the 2017 AIST Tech Report #13

N23a W 3:45 p.m. – 5:15 p.m. | **Room 336**
N23b F 1:45 p.m. – 3:15 p.m. | **Room 345-346**

Speakers: Tim Bickel, PE, and John Rolfes, SE,
PE, CSD Structural Engineers

Moderator: Steve Bohm,
The JNE Group of Companies

Building codes provide limited guidance on the design of industrial buildings, especially heavy industrial buildings with overhead crane runways. AIST Technical Report #13 – *Guide for the Design and Construction of Mill Buildings* exists to provide designers and contractors guidance on the unique design and construction considerations for these structures. In the first revision in over a decade, the guide has been updated to incorporate current Building Code provisions, updated design recommendations and additional information. This session will summarize the changes and provide guidance on how to use this document.

ENGINEERS

1.5 PDHs

Roof Design Using Iterative Analysis For Ponding Loads

N24a W 3:45 p.m. – 5:15 p.m. | **Room 337-338**
N24b F 8:00 a.m. – 9:30 a.m. | **Room 337-338**

Speakers: Jim Fisher, PE, PhD, Dist.M.ASCE,
CSD Structural Engineers; Mark Denavit, PE,
PhD, University of Tennessee, Knoxville

Moderator: Eric Siew, PE,
Gooder-Henrichsen

In this session roof ponding requirements in the SJI 2015 *Specifications*, IBC 2015, ASCE 7-16, the *International Plumbing Code* (2015), FM Global and the AISC 2016 *Specification* are reviewed. The recently improved SJI Roof Bay Analysis Tool is also discussed. This tool assists the engineer in selecting the most economical joist bay configuration and now also determines the stability of the bay for roof ponding. The ponding analysis method implemented in the tool, in which loads are computed based on the deformed shape of the roof, are introduced and compared to traditional methods of assessment defined within the AISC *Specification*. Several analysis examples of roofs constructed with joists and Joist Girders are presented. The presentation also includes photographs of roof failures with discussion as to why the collapses occurred.

ENGINEERS, ARCHITECTS

1.5 PDHs/LU/HSW

Open Web Steel Joist Composite Floor System

N25a* F 8:00 a.m. – 9:30 a.m. | **Room 324-326**
N25b F 1:45 p.m. – 3:15 p.m. | **Room 349-350**

Speakers: Dave Samuelson, PE, Nucor Vulcraft/
Verco Group; Sam Fares, SE, PE, PEng,
New Millennium Building Systems

Moderator: Tim Holtermann, PE, Canam

This presentation will outline potential advantages associated with SJI's CJ-Series composite joists. Computational aspects of composite steel joist behavior per SJI's new 2nd Edition *Specifications* will be shown. Guidelines for installing welded shear studs onto the chords of CJ-Series joists and serviceability considerations will be discussed along with optimal CJ-Series joist spacing and available UL fire ratings. The presentation will demonstrate how one can readily estimate the vibrational characteristics of CJ-Series joist floor systems utilizing SJI's TD5, AISC's DG 11, and FloorVibe. Preliminary estimating of CJ-Series costs can readily be completed utilizing SJI's new Floor Bay Analysis Tool. Technical details surrounding SJI's CJ-Series joists are described in greater detail within SJI's new TD13 on Composite Steel Joists. The session will conclude with a review of typical projects utilizing SJI's CJ-Series Joists.

ENGINEERS, ARCHITECTS

1.5 PDHs/LU/HSW

Nothing Flat About Steel Joists and Steel Deck On a Pitched Roof

N26a* Th 8:00 a.m. – 9:30 a.m. | **Room 324-326**
N26b F 8:00 a.m. – 9:30 a.m. | **Room 345-346**

Speakers: Tom Sputo, SE, PE, PhD, Sputo and
Lammert Engineering, LLC; Ben Pitchford, PE,
New Millennium Building Systems

Moderator: Michael Whittle, PE, Vulcraft - SC

Steel joists and steel deck are used to construct economical pitched roofs. This session will provide designers with details and design guidance to help with this situation. Included will be guidance on designing and detailing pitched diaphragms, and economical hip roof framing details.

ENGINEERS, ERECTORS,
DETAILERS, ARCHITECTS

1.5 PDHs/LU/HSW

*streamed session

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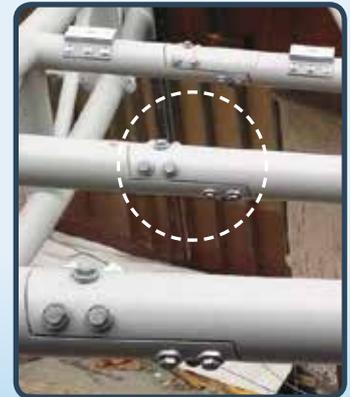


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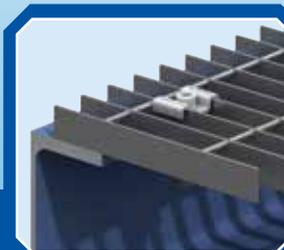
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Welding In, On and Around Steel Joists

N27* F 1:45 p.m. – 3:15 p.m. | **Room 324-326**

Speakers: Duane Miller, PE, ScD,
The Lincoln Electric Co.; Joe Pote, PE,
New Millennium Building Systems

Moderator: Ben Pitchford, PE,
New Millennium Building Systems

Contained in the Steel Joist Institute's 2015 combined standard for all series steel joists and joist girders, SJI 100 – 2015, are new welding criteria. In cooperation with leading welding experts, the SJI has adapted its welding standards to comply with AWS D1.1 and D1.3, with some exceptions. This presentation will explore those changes. Also, included will be field welding at bearing points, bridging attachments, splices.

ENGINEERS, ERECTORS

1.5 PDHs

Solutions for Vibration Issues—Evaluation and Retrofits

N28a W 3:45 p.m. – 5:15 p.m. | **Room 339**

N28b Th 8:00 a.m. – 9:30 a.m. | **Room 337-338**

Speakers: Thomas M. Murray, PE, PhD,
Virginia Tech; Brad Davis, SE, PhD,
University of Kentucky

Moderator: Matthew Kawczenski, SE, PE,
McLaren Engineering Group

Building occupants occasionally report annoying floor vibration due to human activity. Similarly, human-induced vibration levels occasionally exceed the tolerance limit of sensitive equipment that will be on the floor. In such cases, a retrofit solution is necessary.

The dynamic properties and vibration levels of the problem area should preferably be measured using dynamic testing techniques. These values serve as the starting point for a retrofit solution design, which usually involves a combination of finite element analysis and AISC Design Guide 11 calculations. This process is illustrated using several case studies.

ENGINEERS, ARCHITECTS

1.5 PDHs/LU/HSW

Tips for Validating the Results of Structural Engineering Software

N29a W 2:30 p.m. – 3:30 p.m. | **Room 328-329**

N29b Th 3:00 p.m. – 4:00 p.m. | **Room 328-329**

Speaker: Clifford Schwinger, PE,
The Harman Group

Moderator: Jon Skinner, PE,
McLaren Engineering Group

Knowing how to use structural engineering analysis and design software is an essential skill required of all practicing engineers. Equally important but seldom discussed however is the need for designers to be able to manually validate the results produced by their computer analysis. This seminar will discuss easy ways of validating the computer-generated analysis and design. Included will be a discussion on the limitations of computer analysis as well as examples of common problems associated such analysis.

ENGINEERS

1.0 PDHs

Insidious Thermal Forces in Steel Structures: What You Need to Know

N30 W 2:30 p.m. – 3:30 p.m. | **Room 347-348**

Speaker: Barry Arnold, SE, PE,
ARW Engineers

Moderator: Troy Dye, SE, ARW Engineers

Expand the attendee's knowledge of how changes in temperatures and structural detailing of members and systems adversely affect individual members and entire buildings. The attendee will have a better understanding about how damage and failures from thermal forces can be minimized and how the damage can be economically repaired.

ENGINEERS

1.0 PDHs

Let's Talk Seismic—In Language We Can All Understand

N31a* Th 11:30 a.m. – 12:30 p.m. | **Room 321-323**

N31b F 11:30 a.m. – 12:30 p.m. | **Room 337-338**

Speaker: Brent Maxfield, SE, Church of Jesus
Christ of Latter-day Saints

Moderator: McKay Parrish, SE, ARW Engineers

There is a seismic communication gap, and the intent of this session is to help bridge the gap. This session, intended for both a nontechnical and technical audience, will help engineers explain seismic concepts to a nontechnical audience, and help the nontechnical audience better grasp the intent of modern seismic design. An understanding of these concepts will help facilitate informed decisions regarding earthquake risk.

ENGINEERS, ARCHITECTS

1.0 PDHs/LU/HSW

*streamed session

Frequently Misunderstood Wind and Seismic Provisions

N32a Th 8:00 a.m. – 9:30 a.m. | **Room 345-346**

N32b F 8:00 a.m. – 9:30 a.m. | **Room 349-350**

Speaker: Emily Guglielmo, SE, PE, CE,
Martin/Martin, Inc.

Moderator: Steve Ericksen, SE,
ARW Engineers

This session identifies common misunderstandings of how to apply wind and seismic provisions to steel structures. Topics will include:

- Wind: Enclosure Classification, Wind Load Methods, Including advantages and limitations, Torsional Wind Design Requirements, Canopies, Corner Zones, Rooftop Solar/PV
- Seismic: Review of seismic inelastic methodology and relationship to R , C_d , and Ω , Redundancy, ρ , Bearing Wall or Building Frame, Analysis Procedures.

ENGINEERS

1.5 PDHs

Is it Likely My Design Will Fail? Current Views from Past Higgins Award Winners

N33a* W 5:30 p.m. – 6:30 p.m. | **Room 324-326**

N33b F 11:30 a.m. – 12:30 p.m. | **Room 349-350**

Speaker: Ronald Hamburger, SE,
Simpson Gumpertz & Heger

Moderator: Larry Kruth, AISC

Over the past 15 years the use of LRFD in steel design has become almost universal and at the same time, performance-based design approaches have become more mainstream. Both approaches, LRFD implicitly, and PBD explicitly, seek to limit the probability our designs will fail. ASCE 7-16 adopted specific criteria for failure probabilities and reliability. This presentation will explore how these can be applied and used to advantage in design practice.

ENGINEERS, DETAILERS

1.0 PDHs

Column Design: Past, Present, Future

N34a W 2:30 p.m. – 3:30 p.m. | **Room 349-350**

N34b Th 1:45 p.m. – 2:45 p.m. | **Room 345-346**

Speaker: Joseph Yura, PE, PhD,
University of Texas

Moderator: Ron Ziemian, PE, PhD,
Bucknell University

The literature on column design has been studied and evaluated in the context of current specifications, analysis capabilities, steel product production and fabrication practices. Landmark breakthroughs are noted and their influence on design recommendations discussed. While much of the experimental and analytical research on column stability has improved our understanding and prediction of column strength, column design in the U.S. has essentially remained unchanged for the past 100 years. The movement toward multiple column curves has not been followed by U.S. specifications. The changes since 1970 in steel production toward higher strength steels, continuous cold straightening (rotarizing) and steel fabrication practices all have diminished the residual stress effects that drove the multiple column curve movement.

Lessons learned (and not learned) in experimental methods, evaluation of test results, analytical methods and development of design recommendations for columns are emphasized. Out-of-straightness, yield strength (up to 140 ksi) and slenderness ratio continue to be the main variables affecting column strength. The recent research on columns with higher strength steels compare favorably with the AISC column design equations.

ENGINEERS, DETAILERS

1.0 PDHs

The Good and the Bad with Delegated Design

N35a Th 11:30 a.m. – 12:30 p.m. | **Room 347-348**

N35b* F 11:30 a.m. – 12:30 p.m. | **Room 324-326**

Speaker: Kevin Chamberlain,
DeStefano & Chamberlain, Inc.

Deferring the structural design of certain parts of a building to a specialty structural engineer (SSE) is a reality in today's complex projects with tight schedules, aggressive budgets, non-traditional project delivery methods, and proprietary components. However, whether you are the structural engineer of record (SER) or the specialty structural engineer, it is crucial that you be aware of the pitfalls facing each party when delegated design is employed. *(Special presentation by the Council of American Structural Engineers.)*

ENGINEERS, FABRICATORS, DETAILERS

1.0 PDHs

*streamed session

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the steel conference sessions

The Development of Off-Site Applied Intumescent Coatings in the UK: History and Lessons

N36a* W 11:15 a.m. – 12:15 p.m. | **Room 324-326**
N36b W 5:30 p.m. – 6:30 p.m. | **Room 337-338**

Speaker: John Dowling, retired from Tata Steel

Intumescent coatings are much more popular in the United Kingdom than in the U.S. This session will explore what intumescent coatings are, how they work, when to use them, and whether to apply the coatings off-site or on-site. Attendees will also learn about using intumescent coatings to actually reduce costs as well as key information on the repair and restoration of intumescent coatings.

ENGINEERS, FABRICATORS

1.0 PDHs

shop operations

The First Trump Year—The Effect of the Administration on Industry Labor

O1 F 1:45 p.m. – 3:15 p.m. | **Room 318-320**

Speaker: Ed Foulke, Fisher Phillips

Moderator: Kathi Dobson, Alberici

Mr. Foulke will provide an informed view of the Trump administration impact on both general industry and construction industry particularly with regard to Department of Labor regulation and enforcement. He will tell us if we will end up with less regulation and less citations or simply more noise. He will provide tales from the front and clues about what to watch for.

FABRICATORS, ERECTORS

1.5 PDHs

What You Can Do to Automate Your Shop Now

O2 W 5:30 p.m. – 6:30 p.m. | **Room 340**

Speakers: Jeff Dave, PE, Dave Steel Company, Inc.; Chris Moor; FabSuite LLC

Moderator: Jeff Dave, PE, Dave Steel Company, Inc.

An exploration of what technology is currently available to automate your shop, what considerations need to be made and what pitfalls to be aware of. Learn about even the smallest of automated ideas shops are currently using.

FABRICATORS

1.0 PDHs

project management

Applying “Value Stream Mapping” to Improve your Processes

P1 F 1:45 p.m. – 3:15 p.m. | **Room 331-332**

Speakers: Michael Senneway, PMP, MBA; James Caldwell

Moderator: Ted Sheppard, PE

Obsolete, difficult to use or non-existent processes and procedures within organizations are a chronic problem impeding efficiency and customer satisfaction. Session attendees will learn the fundamentals of “Value Stream Mapping” (VSM) so that they can become competent in applying VSM as a tool/methodology to improve processes and procedures at their work place. The VSM methodology presented will incorporate LEAN principles which, when applied properly, will effectively reduce waste and increase customer satisfaction, thereby increasing profits.

FABRICATORS, ERECTORS

1.5 PDHs

Fundamentals of Project Scheduling for Steel Fabrication

P2 Th 1:45 p.m. – 2:45 p.m. | **Room 340**

Speaker: Mark Holland, Paxton & Vierling Steel Co.

Moderator: Glenn Tabolt, STS Steel, Inc.

This session will provide basic concepts necessary to plan and schedule the steel fabrication and erection process from award to final billing. Attendees will learn the fundamentals of Critical Path Scheduling (CPM) and how to determine the level of detail required to predict outcome but still enable efficient updates to the schedule. The speaker will emphasize the importance of the project schedule at bid and use examples to show how the schedule evolves with time. Concepts of baseline, resource management, and presentation of the schedule in different forms to provide tools to manage the shop and customer demands will be taught.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU

*streamed session

Fundamental Principles of Project Management and Tools for Project Success

P3* Th 3:00 p.m. – 4:00 p.m. | **Room 321-323**

Speaker: Brandy Jones, PMI Baltimore

Moderator: Mark Yerke, S&R Enterprises

Through utilization of key project management principles, project managers can build a foundation that promotes success. With success being measured by three primary factors, cost, schedule, and scope, the successful project manager must balance all three to ensure a quality product. Whether the product at the end of the project is a white paper, a new deck for your home, an apartment building, a safe escape software program for a new aircraft, or a sports arena, the project management fundamentals are the same. They may be customized and scaled appropriately; but, the fundamental principles remain constant. Topics will include:

- Basic Phases of Project Management
- Project Baseline
- Project Scheduling
- Project Budget
- The 'Three-Legged Stool' Model

ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS

1.0 PDHs/LU

Change Order Request Process

P4 F 11:30 a.m. – 12:30 p.m. | **Room 318-320**

Speaker: Bill Zanow, SteelFab Inc.

Moderator: Sam Boykin, Steelfab of Alabama

Throughout the life of a project, there are opportunities to request compensation for changes or revisions to the scope of work that the fabricator is responsible for providing. When these changes occur, the decision needs to be made, if warranted, to increase/decrease the contract amount. The process utilized is to ensure that the person reviewing the change order request fully understands the integrity of the scope revision, and what the extra cost being justified is representing. Once the person who is reviewing, acknowledges the change order, the fabricator project manager must ensure that the reimbursement is made in a reasonable amount of time for billing purposes.

ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS

1.0 PDHs/LU

Project Management—Your Life in Jeopardy

P5 W 8:00 a.m. – 9:00 a.m. | **Room 340**

Speaker: Carol Post, SE, PE, LEED AP

Moderator: Scott Roche, SE,
Ensign Engineering

Come join us for this interactive exchange of answers and questions on Project Management topics—learn a little, laugh a little, leave with a fresh perspective on the Structural Engineer's role in Project Management.

ENGINEERS

1.0 PDHs

Best Coating Practices—How to Avoid Costly Coating Failures

P6 Th 4:45 p.m. – 5:45 p.m. | **Room 340**

Speakers: Jeff Dave, PE, Dave Steel Company, Inc.; Jeff Schmucker, The Carboline Company

Moderator: Jeff Dave, PE,
Dave Steel Company, Inc.

It is not just paint. Sophisticated coatings require sophisticated processes, process control, and an understanding of how coatings work. Various surveys have identified and ranked the reasons for premature coating failure as; 1) Improper surface preparation or material application. 2) Confusing or incomplete specifications 3) Incorrect Material Selection 4) Defective or Inconsistent Coating Material. Participants will be given real-world examples of best practices versus incorrect practices so that they can be applied on future coating projects, and learn about actual shop processes to avoid problems.

ENGINEERS, FABRICATORS, ARCHITECTS

1.0 PDHs/LU/HSW

*streamed session

the steel conference sessions

Quality Assurance for Structural Engineering Firms

P7 W 3:45 p.m. – 5:15 p.m. | **Room 340**

Speaker: Clifford Schwinger, PE,
The Harman Group

Moderator: Todd Gerhart, SE, PE,
Babcock & Wilcox

Fast schedules, BIM modeling, sophisticated analysis and design software, increasingly complex building codes and young engineers taking on more responsibility earlier in their careers has made essential the need for every structural engineering firm to have a formal in-house Quality Assurance program. Adoption of a Quality Assurance program will result in better design, better contract documents with fewer errors, fewer RFI's and change orders, increased profits and an enhanced reputation for your firm. This seminar reviews the components of a model Quality Assurance program and reviews the procedures and methodologies for performing in-house Quality Assurance reviews. Much has changed in the structural engineering profession since 2008 when this seminar was presented at the NASCC. The presentation has been revised to address the challenges that every structural engineering office faces in 2018.

ENGINEERS, ARCHITECTS

1.5 PDHs/LU

Shop and Field Inspection of Bolted and Welded Connections

P8 W 11:15 a.m. – 12:15 p.m. | **Room 340**

Speaker: Mike Gase, SCWI, ASNT LIII,
Midwest Steel

Moderator: David McLaren, PE,
McLaren Engineering Group

Engineers specify and QC/QA inspects bolted and weld connections. Are the inspections being performed as expected and in conformance with contract documents? This session will provide an overview of the inspection criterion, certifications, inspection activities, and reporting.

ENGINEERS, ARCHITECTS

1.0 PDHs/LU/HSW

Effective Communication for Project Managers

P9 Th 11:30 a.m. – 12:30 p.m. | **Room 340**

Speaker: Jim Fossa, Cives Steel

Moderator: Mark Yerke, S&R Enterprises

Effective communication is key to successful project management. In this session you will learn how to improve your communication skills. You will learn when to use an e-mail, a letter, or meet face to face. The session will focus on how to communicate with the shop, the customer, the engineer, the detailer, your owner and others involved in project execution.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS

1.0 PDHs

roundtables

A Designer and Fabricator Dialogue

R1 Th 4:45 p.m. – 5:45 p.m. | **Room 318-320**

Speakers: Tabitha Stine, SE, PE, and
Jacinda Collins, PE, AISC

A unique opportunity for designers to talk openly with the heart of the structural steel supply chain, the structural steel fabricator, in a non-contractual setting. This workshop enables architects and structural engineers to interact with steel fabricators from across the country to discuss innovations, project challenge solutions, and economic best practices.

ENGINEERS, ARCHITECTS

1.0 PDHs/LU/HSW

Fabricator Roundtable

R2 Th 8:00 a.m. – 9:30 a.m. | **Room 318-320**

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 ONLY

0.0 PDHs

Industry Roundtable

R3 F 8:00 a.m. – 9:30 a.m. | **Room 318-320**

A unique opportunity for fabricators, erectors, detailers, service centers and producers—those typically included in the fabricator’s contract—to talk openly with each other in a non-competitive setting. Expanding on the hugely popular fabricator roundtable, this workshop enables fabricators, erectors, detailers, service centers and producers from across the country to sit down in small groups and discuss the issues they meet when working together as the face of the structural steel industry. Each group will be moderated and discussions will range from contractual issues to improving communication and working with BIM. Take advantage of this opportunity to learn and explore ideas with your peers, customers and vendors.

FABRICATORS, ERECTORS, DETAILERS

0.0 PDHs

technology

Real-Time 3D Model Review

T1 W 3:45 p.m. – 5:15 p.m. | **Room 327**

Speakers: Greg Davenport, PE, LEED AP and Pilar Jones, LEED AP BD+C, HKS, Inc.; Doug Fitzpatrick, PE, LEED AP, Fitzpatrick Engineering Group, PLLC; Gregory Sain, CM Steel; James Schwartz, Design Data; Brett Hart, SidePlate Systems

Moderator: James Stever, Virtual Steel Technologies, Inc.

This session will present the next evolution of last year’s Technology T3 session “3D Model and Review Really Works.” Learn how a customer driven complete redesign of The Hospitals of Providence—Transmountain Campus in El Paso Texas, forced innovative solutions to be applied to recapture critical cycle time. A moderated panel will discuss how the design team, contractor, fabricator and detailer conceived and developed a pioneering technological new solution that has allowed approval, by multiple approving authorities, to take place in a real-time cloud based solution. Come see how new internet technologies along with industry software solutions providers were utilized to cut approval cycles times from weeks to days and sometime hours.

ENGINEERS, FABRICATORS, DETAILERS, ARCHITECTS

1.5 PDHs PDHs/LU/HSW

The Changing Business Climate: How Global Modeling is Affecting Our World

T2 W 8:00 a.m. – 9:00 a.m. | **Room 327**

Speakers: John Ottinger, AIA Associate, VMDO Architects; Andrew Ruffin, PE, Britt, Peters, & Associates; James Schwartz, Design Data - A Nemetschek Company

Moderator: James Stever, Virtual Steel Technologies

It is not business as usual! We need to take advantage of the technologies that are available. We are dealing with not only a new workforce, but we need to generate better solutions that make us more attractive to the owners and make steel the building material of choice. Some may say that they have tried it before and it failed, but we need to reevaluate utilization of the latest modeling technologies. As Thomas Edison stated; “I have not failed. I’ve just found 10,000 ways that won’t work.” This session will focus on how the Architectural and Structural Revit Models along with Product models from Precast and Joist became the primary or governing tools to develop the manufacturing/detailing model on the Liberty School of Music (SOM) and the Jerry Richardson Stadium. See how model collaboration and cloud base methods were used to accelerate portion of the design and the approval.

ENGINEERS, FABRICATORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU

Simple Things for Better Model Export

T3 W 11:15 a.m. – 12:15 p.m. | **Room 327**

Speaker: Brian Cobb, PE, Structural Detailing, LLC

Moderator: Luke Faulkner, AISC

There are many simple steps that can be taken to improve downstream models and increase their value to a fabricator/engineer. This session will demonstrate simple actions that don’t have a negative impact on practice and help every member of the project team.

ENGINEERS, FABRICATORS, DETAILERS

1.0 PDHs

BIM Execution Plans—What You Need to Know

T4 W 5:30 p.m. – 6:30 p.m. | **Room 327**

Speaker: Will Ikerd, CM-BIM, LEED AP, IKERD Consulting

This session will describe the importance and purpose of BIM Execution Plans (BxP). It will Compare/contrast various BxPs as well explain what to look out for and what needs to be included. Update on the newly updated and available BxPs.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU

the steel conference sessions

2017 LOD: What You Need to Know

T5 Th 11:30 a.m. – 12:30 p.m. | **Room 327**

Speakers: Will Ikerd, CM-BIM, LEED AP, IKERD Consulting; David Merrifield, Steelfab of Texas

If you use or exchange models at any point, it's going to become increasingly important to have a full and firm understanding of Levels of Development. This session will introduce attendees to the concept and format of LOD and demonstrate how it will impact model exchange practice on a day to day basis. This session will additionally update attendees already familiar with LOD on the changes to the specification 2018.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU

Technology vs. Management Solutions

T6 Th 1:45 p.m. – 2:45 p.m. | **Room 327**

Speakers: Brian Cobb, PE, Structural Detailing, LLC; Jeff Dave, PE, Dave Steel Company, Inc.

Moderator: Luke Faulkner, AISC

Incorporating new technology can be a frustrating challenge. Often new technology and software packages don't seem to deliver what was promised, other times it may seem not to work at all. Many times though, this isn't an issue of technology not working, but failures at the management level. This session will explore how to sort out issues and determine if you really have a technology problem or a problem with managing new technology.

FABRICATORS

1.0 PDHs

Compare and Contrast BIM Contract Documents

T7 F 11:30 a.m. – 12:30 p.m. | **Room 327**

Speaker: Angela Richie, Gordon Rees Scully Mansukhani, LLP

Moderator: Luke Faulkner, AISC

If you're not familiar with BIM contract documents this session will introduce you to two of the most prominent standard BIM contract addendums; AIA E202-203 and ConsensusDOCS 301. This session will explore, compare and contrast these contract documents and familiarize attendees with the various nuances of each.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

Industry Lift: A Vision of the Future of the Steel Industry Workforce

T8 Th 4:45 p.m. – 5:45 p.m. | **Room 327**

Speakers: Bill Issler, FabSuite LLC

Moderator: Luke Faulkner, AISC

Recruiting, training and retaining a skilled workforce is one of the many challenges facing the steel industry today. This session will provide a historical perspective as well as examine how the technology impacts recruitment and training. This session will look at the future of the steel workforce and discuss its part in lifting the entire industry.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.0 PDHs

Smart Model Transfer: Collaboration to Reduce Schedule and Cost

T9 F 1:45 p.m. – 3:15 p.m. | **Room 327**

Speakers: Scott Cameron, North American Steel Erectors; Mark Lasby, PEng, Canadian Institute of Steel Construction (CISC)

Transfer of digital models from the engineer to the fabricator is not a new concept. Building Information Modeling (BIM) is intended to drive process change. We need to shift our collective focus from transferring models toward process improvement and collaboration. The 2016 CISC *Code of Standard Practice* has been re-written to provide the ground rules for project teams to work collaboratively within the BIM environment. Is your company benefiting from BIM enabling technology to its full potential? This presentation team will share how their international BIM award winning process and workflow improvements enabled the project team to openly share project data, automate connection detailing, simMarply the approval process, progressively release fabrication work packages, participate pro-actively in clash detection, and deliver complete steel design and fabrication with 0 RFI's, minimal engineering drawings and no review of printed shop drawings.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.5 PDHs

Design of Steel Deck For Concentrated and Non-Uniform Loading

U1a W 8:00 a.m. – 9:00 a.m. | **Room 347-348**
U1b Th 1:45 p.m. – 2:45 p.m. | **Room 347-348**

Speakers: Michael Martignetti, PE, Canam Buildings; Mike Antici, PE, Vulcraft/Verco
 Moderator: Bob Paul, PE, Steel Deck Institute

Steel floor and roof deck manufacturers provide load tables for uniform loading, but how should concentrated and nonuniform loads be considered in design? This session will provide designers with the tools needed to handle these situations, including concentrated loads from rack systems, scissor lifts, mechanical equipment, forklifts, and rooftop equipment.
ENGINEERS, FABRICATORS, ERECTORS 1.0 PDHs

Eliminating Costly Fit-Up Issues

U2 F 8:00 a.m. – 9:30 a.m. | **Room 347-348**

Speaker: Ken Pecho, Chicago Metal Rolled Products

The fit up and connection of rolled/curved structural steel members of differing thickness/weights and radial geometries must be considered by the construction team prior to rolling, fabrication, and erection. As architects and engineers continue to produce radical designs using curved steel members; the fit up and connections of these members will continue to be an issues and will become more prevalent and more costly to the fabricator. This is due to the ungoverned consequential cross sectional distortion of curved/rolled members within the industry. After attending the session, structural steel fabricators will be armed with the knowledge they need to identify these connection/fit up issues within the pre-construction contractual drawings, and be better suited to enter their bids without fear of running into costly connection/fit up issues of curved members in their shops or in the field.
FABRICATORS, DETAILERS 1.5 PDHs

Building the Smithsonian: The National Museum of African American History and Culture

U3a W 11:15 a.m. – 12:15 p.m. | **Room 347-348**
U3b* Th 4:45 p.m. – 5:45 p.m. | **Room 324-326**

Speakers: David Smith, SteelFab Inc.; Vince Bosworth, Bosworth Steel Erectors
 Moderator: Sam Boykin

Certain projects are inherently more difficult than others based on design, location, access, schedule, weather, or a mix of these items. This session will discuss the fabrication and erection challenges of building the newest Smithsonian Museum on what is described as the “last develop-able piece of property” on the National Mall in Washington, DC. This seminar will break the structure down into into four different components: The History Gallery Roof, The Cruciform, The Cantilevers, and The Porch, and how logistics and erection played a major role.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.0 PDHs

Best Structural Steel Engineering

U4 Th 8:00 a.m. – 9:30 a.m. | **Room 347-348**

Speakers: Harvey C. Swift, IMPACT; Nyckey W. Heath, PE, MCE, Bennett Steel Inc.
 Moderator: Kenneth Waugh, IMPACT

Bennett Steel Inc., a fabricator, erector shares their firms experience and explains how the design engineer can directly and indirectly affect Safety, Quality and Cost Control.
ENGINEERS, FABRICATORS, ERECTORS 1.5 PDHs

Innovative Composite Coupled Core Walls for High-Rise Construction

U5a* W 3:45 p.m. – 5:15 p.m. | **Room 324-326**
U5b Th 8:00 a.m. – 9:30 a.m. | **Room 328-329**

Speakers: Ron Klemencic, SE, PE, Hon. AIA, MKA; Amit Varma, PhD, Purdue University
 Moderator: Larry Kruth, AISC

This session will focus on the latest and most promising innovation in steel structures; namely, the use of composite coupled core walls in lieu of conventional reinforced concrete coupled core walls in high-rise construction. Composite coupled core walls consist of composite plate shear walls—concrete filled (CF-CPSW) coupled together using steel beams or composite filled tubes (CFTs). This session will showcase the new signature building (Rainier Square) being constructed in downtown Seattle using this innovative technology. The discussion will highlight various innovative solutions used to improve the design, fabrication, and constructability of this structure. Additionally, the session will present the findings from recent research and testing performed to evaluate the design and performance of CF-CPSWs. The focus will be on the cyclic lateral load-displacement behavior of CF-CPSWs, and the effects of axial load level and section detailing on the response including stiffness, strength, and deformation capacity.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.5 PDHs

*streamed session

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the steel conference sessions

It Fits!!

U6* W 2:30 p.m. – 3:30 p.m. | **Room 324-326**

Speaker: Mike West, PE, F.ASCE,
CSD Structural Engineers

Moderator: Glenn Tabolt, STS Steel, Inc.

As the exclamation point in the presentation title indicates, “It Fits” is good news. A critical aspect of the design and construction of structural steel frames is the accommodation of follow on trades, including the structural steel frame as a follow on to the foundations and follow on trades to the frame such as the façade/curtain wall. The tolerances for the fabrication and erection listed in the *AISC Code of Standard Practice* are an essential element in this process, but other elements are also very important for success. These other elements are tolerance coordination among systems and adjustment at system interfaces. The presentation includes: Review of the *AISC Code of Standard Practice* and its general role in the design and construction process. Review of relevant provisions of the *AISC Code of Standard Practice*. Review of related documents published by AISC, e.g., the *Steel Construction Manual*, Design Guide 22 and Design Guide 33. Review of other notable codes and standards published by AAMA, ACI and PCI. Review of how adjustment provisions can be employed accommodate the work of follow on trades. Recommendations for specifications, e.g., Section 051200. Review an example of how the code was used to determine interface tolerances.

**ENGINEERS, FABRICATORS, ERECTORS,
DETAILERS, ARCHITECTS**

1.0 PDHs/LU/HSW

Simple Connections Simplified

U7 W 3:45 p.m. – 5:15 p.m. | **Room 347-348**

Speakers: Jeff Martin, PE, Vulcraft-Verco;
Tim Holtermann, Canam – Buildings

Moderator: Bruce Brothersen, PE,
Vulcraft - UT

Best connections for all things joist and deck. This first half of the presentation will explore the attachment of joists to their supports and deck to joists or beams. The second half of the talk will involve all of the stuff that ends up being attached to the joists and deck. Everything from sprinklers, duct work, conduit, bracing for walls below, light fixtures and many other trades. Welding, drilling, clamping, etc. This will be suited for engineers, connection designers, erectors.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS

1.5 PDHs

seismic

Blind Prediction of Cyclic Response of Deep Wide-Flange Columns for Special Moment Frame Applications

V1 F 8:00 a.m. – 9:30 a.m. | **Room 339**

Speaker: Chia-Ming Uang,
University of California, San Diego

Moderator: James O. Malley, SE,
Degenkolb Engineers

Deep wide-flange columns are frequently used in the seismic design of steel Special Moment Frame (SMF) because the large moment of inertia for strong-axis bending is very effective in meeting the code-specified drift limit. But current knowledge of these members under axial compression and cyclic lateral drifts lags behind that of shallow (e.g. W14) columns. A long-range experimental and analytical research project funded by the National Institute of Standards and Technology (NIST) and managed by the Applied Technology Council (ATC) addresses deep column design and modeling issues. Dr. Chia-Ming Uang at the University of California, San Diego (UCSD) was contracted by ATC to provide the testing services. The ATC-106 and ATC-106-1 projects, with Mr. James O. Malley chairing the Project Technical Committee, include cyclic testing of more than forty full-scale columns in the W18 to W30 range with varying slenderness ratios, boundary conditions, and axial load demand at UCSD, and the research results are expected to impact future editions of the *AISC Seismic Provisions*. This project also carried out a parallel blind prediction contest to advance knowledge on design and modelling of deep wide-flange columns. Top contest participants will discuss the modeling techniques used, challenges involved, quality assurance techniques used and engineering decisions made. The session will conclude with a panel discussion on the design and modeling of deep columns in steel SMF.

ENGINEERS

1.5 PDHs

*streamed session

The AISC 3rd Edition Seismic Design Manual

V2a W 3:45 p.m. – 5:15 p.m. | **Room 345-346**
V2b F 1:45 p.m. – 3:15 p.m. | **Room 347-348**

Speakers: James O. Malley, SE, Degenkolb Engineers; Michael Gannon SE, PE, AISC
 Moderator: Cynthia Duncan, AISC

Available in mid-2018, the 3rd Edition of the *Seismic Design Manual* will address new design provisions with new and updated tables, examples and aids for steel building design and construction in seismic regions. This session will provide an overview of the most important new information contained in the *Seismic Design Manual*. The new design provisions will be summarized, including some discussion of the rationale behind the revisions and the resulting benefits. Design examples will be presented.
ENGINEERS, FABRICATORS, ERECTORS 1.5 PDHs

ethics

Legal Consequences of Acting Ethically

X1 W 5:30 p.m. – 6:30 p.m. | **Room 331-332**

Speaker: Bruce Demeter, Esq., Delaware DoT
 Moderator: Matthew Kawczenski, SE, PE, McLaren Engineering Group

Acting ethically is not always easy to do. Serious ramifications can arise from acting ethically. These ramifications often stifle an individual's desire to act in an ethical manner. This program focuses on the potential practical and legal implications of acting ethically while stressing the need to always act ethically. Through the review of actual ethical situations, attendees will gain a greater understanding of how acting ethically can impact themselves, their companies and the construction industry. Attendees will also learn how to anticipate and mitigate potential contract, insurance and legal consequences from acting ethically. This program highly encourages attendee participation.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU/HSW

Ethical Best Practices in Project Planning and Development

X2 Th 11:30 a.m. – 12:30 p.m. | **Room 318-320**

Speaker: Ralph Ferguson, PhD, Texas Tech University Ethics Center
 Moderator: Jon Beier

Participants will increase their knowledge about ethical challenges that arise during project development associated with cost, supply chain, organizational behavior, and planning. The knowledge gained from the presentation will prepare project managers to address process across team members. More rigorous structural design in the planning phase prior to field start-up may uncover where risk resides in the project. This best practices course reinforces the professional code of ethics principle that professionalism matters from inception to completion.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU/HSW

case study

Amazon Biospheres: Understanding the Complex Geometry, Analysis, Fabrication and Erection

Y1 F 8:00 a.m. – 9:30 a.m. | **Room 328-329**

Speakers: Jon D. Magnusson, SE, PE, Hon. AIA, NAE, MKA; Mike Eckstein, CWCI
 Moderator: Larry Flynn, AISC

This session is a case-study of the engineering and fabrication behind the new Amazon Biospheres project, which consists of three intersecting glass-and-steel spheres enclosing five freestanding floors, totaling 65,000 ft² and functioning as the centerpiece and gathering spot for a new, 3.5 million-ft² urban corporate headquarters.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.5 PDHs/LU/HSW

Restoration of the World's Second Largest Cast Iron Dome

Y2 Th 11:30 a.m. – 12:30 p.m. | **Room 336**

Speaker: Christopher Pinto, PE, Thornton Tomasetti
 Moderator: David McLaren, PE, McLaren Engineering Group

The wooden dome of the United States Capitol Building was completely replaced with a taller, more imposing cast iron dome in the 1860's. Though the building has been maintained, including a major restoration after 100 years of service, not all of the repairs had fared well over time. The latest restoration effort was the culmination of years of planning and research on the most appropriate ways to repair damage to cast iron. This session will discuss historical cast iron construction techniques, describe the damage observed, review unsuccessful cast-iron repair techniques, and the final types of repairs selected and implemented for the project. Additionally, the challenges of creating access to the work locations will be discussed.
ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS 1.0 PDHs/LU/HSW

the steel conference sessions

Barging In—Modular Construction on New York's East River

Y3 F 11:30 a.m. – 12:30 p.m. | **Room 336**

Speakers: Darren Hartman, PE, Thornton Tomasetti; Jason Taylor, Banker Steel; Gregory Vidgop, NYC Constructors

Moderator: Katherine Quigg, AISC

Located in a scenic but difficult-to-access site on the East River in Manhattan, Rockefeller University's new lab facility incorporated modular construction delivered by barges to come together piece by massive piece. The project team will discuss how modular design, vibration control, a retrofitted barge, and tide schedule all come together to complete one of the largest steel expansion projects in Manhattan.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

Structural Steel Cubed—The New United States Courthouse

Y4 Th 8:00 a.m. – 9:30 a.m. | **Room 336**

Speakers: Eric Long, SE, PE, LEED AP, SOM; Tom Kuznik, Herrick Steel; Brad McDermott, Clark Construction; Andrew Krebs and Jose Palacios, AIA, SOM

Moderator: Lorena Arce, AISC

Completed in 2016 the new United States Courthouse in downtown Los Angeles is both modern in spirit and rooted in classic principles of federal architecture. Join the project's design and construction team as they discuss how the "Cube" used structural steel to meet the Federal Government's blast, setback, and sustainability requirements.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.5 PDHs/LU/HSW

Case Study of Daily's Place at EverBank Field

Y5 W 11:15 a.m. – 12:15 p.m. | **Room 331-332**

Speakers: Randall Braun, PE, and Stephen Blumenbaum, PE, Walter P Moore; Kevin Rogers, Banker Steel; John Callahan, Midwest Steel

Moderator: Jerod Hoffman, PE, Meyer Borgman Johnson

This significant steel project posed incredible challenges with geometry, tensioned fabric integration and an extremely compressed design and construction schedule. The Design Team (Lead by Populous) and Hunt-Danis (CM) chose an integrated steel delivery method to help compress schedule while at the same time minimize potential change orders and field work. To realize this integration WPM (EOR) and BDS (Tekla/Detailing) delivered a fully-connected Tekla model for the primary and secondary long-span roof steel to Hunt-Danis prior to the selection of Banker Steel (Fabricator). The Banker Steel team also consisted of Midwest Steel (Erector), Ruby+Associates (Erection Engineer) and LTC (Detailer). The Roof and Wall Fabric supplier and installer is StructureFlex LLC who also hired WPM as their Fabric EOR on the construction side of the team. The session panel will walk participants through the integrated design, procurement and construction of the primary steel structure that resulted in a project completed in record time with minimal change orders.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs/LU/HSW

Smart Model Transfer: Using the Digital Superhighway

Y6 F 8:00 a.m. – 9:30 a.m. | **Room 327**

Speakers: Sayle Lewis, PE, and Katelyn O'Donnell, FLUOR; Tim Heffner, PE, Dave Steel Company, Inc.

Moderator: Jeffrey Dave, PE, Dave Steel Company, Inc.

Transfer of digital models from the engineer to the fabricator is not a new concept. The 2016 AISC *Code of Standard Practice* recognizes the use of and provides guidance on the use of digital models as a design document. How much information can be transferred using a digital model? What are the advantages and disadvantages of using this methodology given today's technology? This presentation will provide a project case study on how the digital model was used as a design document, how the digital model was professionally sealed, how connection design forces were provided, how design model revisions were identified/tracked, some valuable lessons learned, and how both teams dealt with a new "business model."

ENGINEERS, FABRICATORS, DETAILERS

1.5 PDHs

Cool Steel: A Close-Up Look at This Year's IDEAS2 Winners—Part 1

Y7 W 11:15 a.m. – 12:15 p.m. | **Room 337-338**

Speakers: Joachim Schuessler, Goettsch Partners; Charles Besjak, SE, PE, FAIA, Skidmore, Owings & Merrill LLP

Moderator: Joe Dardis, AISC

Structural steel is a material that engineers and architects are using in multitudes of creative and innovative ways to design amazing buildings throughout the U.S. AISC's annual building design awards competition, the Innovative Design in Engineering and Architecture with Structural Steel (IDEAS²) Awards, recognizes the nation's top buildings using structural steel with the highest award the steel industry bestows for excellence in design—the IDEAS² Award. Join recipients of the 2018 IDEAS² Awards competition as they discuss the challenges and design solutions that made their projects winning IDEAS in steel-frame building design.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs

Cool Steel: A Close-Up Look at This Year's IDEAS2 Winners—Part 2

Y8 W 2:30 p.m. – 3:30 p.m. | **Room 340**

Speakers: David Ruby, SE, PE, SECB, FASCE, and Bruce Burt, PE, SECB, Ruby + Associates; John Aniol, SE, PE, Thornton Tomasetti

Moderator: Brian Ward, AISC

Structural steel is a material that engineers and architects are using in multitudes of creative and innovative ways to design amazing buildings throughout the U.S. AISC's annual building design awards competition, the Innovative Design in Engineering and Architecture with Structural Steel (IDEAS²) Awards, recognizes the nation's top buildings using structural steel with the highest award the steel industry bestows for excellence in design—the IDEAS² Award. Join recipients of the 2018 IDEAS² Awards competition as they discuss the challenges and design solutions that made their projects winning IDEAS in steel-frame building design.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs

Cool Steel: A Close-Up Look at This Year's IDEAS2 Winners—Part 3

Y9 W 5:30 p.m. – 6:30 p.m. | **Room 336**

Speakers: Clint Nash, SE, PE, LEED AP, HKS, Inc.; Ignasius Seilie, SE, PE, Integrated Design Engineers LLC

Moderator: Larry Flynn, AISC

Structural steel is a material that engineers and architects are using in multitudes of creative and innovative ways to design amazing buildings throughout the U.S. AISC's annual building design awards competition, the Innovative Design in Engineering and Architecture with Structural Steel (IDEAS²) Awards, recognizes the nation's top buildings using structural steel with the highest award the steel industry bestows for excellence in design—the IDEAS² Award. Join recipients of the 2018 IDEAS² Awards competition as they discuss the challenges and design solutions that made their projects winning IDEAS in steel-frame building design.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs

business

Negotiating for Results

Z1 W 3:45 p.m. – 5:15 p.m. | **Room 331-332**

Speaker: Jim Reeves, ClearBridge Consulting, LLC

Moderator: Glenn Tabolt, STS Steel, Inc.

Negotiating in a high-stakes, fast paced industry is tough and can be stressful. This session will provide tips on how to negotiate effectively, get 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 styles and approaches, the importance of preparation, and specific table tactics that will help you become a more effective negotiator.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.5 PDHs/LU/HSW

U.S. Construction Market Update

Z2 W 8:00 a.m. – 9:00 a.m. | **Room 328-329**

Speakers: John Cross, PE, AISC; Timothy Gill, American Iron and Steel Institute

The current U.S. economic conditions have a great impact on the construction market. By focusing efforts on developing markets, businesses can be greater prepared for possible slowdowns in certain geographic areas or by types of projects. Attendees will gain knowledge of the current construction conditions and a sense of design and construction trends to expect to aid them in their businesses.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.0 PDHs

the steel conference sessions

Delivering the Message of Steel

Q3 F 1:45 p.m. – 3:15 p.m. | **Room 336**

Speakers: John Cross, PE, Tabitha Stine, SE, PE, Brad Lange and Tim Bradshaw, PE, AISC

Structural steel is the superior framing material for buildings and bridges. We believe it, but do the decision makers who specify framing systems believe it? Do they recognize the benefits that domestically produced and fabricated structural steel bring to their projects? Do they even hear us when we talk about those benefits? And how does talking about those benefits translate to work for my firm? This session will focus on how industry members can best integrate that message with their own company's marketing messages to influence more projects to structural steel.

FABRICATORS, ERECTORS

1.5 PDHs

Solutions for Equity in the Workplace

Z4 F 8:00 a.m. – 9:30 a.m. | **Room 336**

Speakers: Tricia Ruby, PE, Ruby+Associates, Inc.; Dani Paxson, SE, KPFF Consulting Engineers; Saskia Dennis-van Dijk, Cameron MacAllister Group

Moderator: Jennifer M. Traut-Todaro, AISC

The building and construction industry is on the forefront of progressing towards a more diverse and collaborative workplace as individuals advance change in their own environments. This year's unique panel will share their experiences in changing a company's culture to help increase equity and diversity. Changes in healthcare, salary transparency, and equitable recruitment are just a few of the culture shifts that will be discussed.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS, ARCHITECTS

1.5 PDHs

Managing a Remote Workforce

Z5 T 3:00 p.m. – 4:00 p.m. | **Room 336**

Speakers: Sam Rubenzer, SE, PE, FORSE Consulting; Dan Huntington, SE, PE, IMEG Corporation; Emily Guglielmo, SE, PE, Martin/Martin, Inc.

Moderator: Kim Olson, PE, FORSE Consulting

Virtual employees are becoming more and more a part of the general workforce, whether they are located in the next town over or the next continent over. This panel discussion will explore the upside and downside to having remote employees and survey whether it is possible to effectively have virtual employees in our business. The panel will consist of three office managers/business owners who have experienced the ups and downs of a remote workforce.

ENGINEERS

1.0 PDHs

quality

Certification is More than Just a Standard

Q1 W 8:00 a.m. – 9:00 a.m. | **Room 342**

Speaker: Larry Martof, Quality Management Company

The "Standard" is just one part of the audit criteria. Program Requirements govern each certification program which engages other normative references that become part of the audit criteria and need to be met (AISC 360 Chapter N, AISC 341 Chapter J, AWS, RCSC, AASHTO/NSBA). We will explore and explain the hierarchy of criteria and how they become a part of the audit criteria.

FABRICATORS, ERECTORS

1.0 PDHs

The New Certification Program Requirements and Standard: What Do They Mean for You?

Q2 W 11:15 a.m. – 12:15 p.m. | **Room 342**

Speakers: Mark Trimble, PE, AISC; Mike West, PE, F.ASCE, CSD Structural Engineers

Moderator: Max Puchtel, SE, Quality Management Company

This session will explore the new Certification Standard for Steel Fabrication and Erection, and Manufacturing of Metal Components (AISC 207-16). This Standard brings together provisions from the four individual predecessor standards relating to the four industry segments: steel building fabrication, steel bridge fabrication, steel erection, and metal component manufacturing. The goal of the new standard is to provide consistency and transparency across all industry programs. Also, AISC Certification will discuss the implementation process for fabrication and manufacturing participants, which will begin in 2018.

FABRICATORS, ERECTORS

1.0 PDHs

The New Certification Requirements and Standard: Additional Update for Bridge and Hydraulic Fabricators

Q3 W 2:30 p.m. – 3:30 p.m. | **Room 342**

Speakers: Linda Hale, Quality Management Company; Zane Keniston, Structural Steel Parts, Inc.

Moderator: Max Puchtel, SE,
Quality Management Company

This session acts as a continuation to Session Q2 and will focus specifically on the bridge and hydraulic fabricators. It will provide an overview of the new certification program requirements and will also outline the supplemental criteria within the standard for each group. Attendees will learn about the differences between the new and current program criteria, and the speakers will offer guidance and helpful tips about the transition between the two.

FABRICATORS

1.0 PDHs

The New Certification Requirements and Standard: Additional Update for Building Fabricators and Component Manufacturers

Q4 W 3:45 p.m. – 5:15 p.m. | **Room 342**

Speakers: Dennis Haight, Quality Management Company; Lee Patza, EQS Services

Moderator: Max Puchtel, SE,
Quality Management Company

This session acts as a continuation to Session Q2 and will focus specifically on building fabricators and component manufacturers. It will provide an overview of the new certification program requirements and will also outline the supplemental criteria within the standard for each group. Attendees will learn about the differences between the new and current program criteria, and the speakers will offer guidance and helpful tips about the transition between the two.

FABRICATORS

1.5 PDHs

How do You, as a Manager, Drive Results?

Q5 W 5:30 p.m. – 6:30 p.m. | **Room 342**

Speaker: Chris Crosby, PE,
Industrial Steel Construction

Moderator: Todd Alwood, AISC

We hear it all the time... "Business is driven by results." As business managers, how do we drive results? Are we intentional about our methodology? Is our business model for driving results sustainable over a longer period of time? How do we evaluate our model? This session will cover these topics and push attendees to adopt these principles into their day-to-day practices.

FABRICATORS, ERECTORS

1.0 PDHs

Making Sense of Welding Procedures and Requirements: Common Welding Questions Answered

Q6 Th 8:00 a.m. – 9:30 a.m. | **Room 342**

Speaker: Phillip Torchio,
Williams Erection Company

Moderator: Art Bustos, AISC

Fabricators and erectors alike face different welding challenges and choices. The session will provide attendees with an overview of AWS requirements and answer welding questions that often arise during AISC Certification site audits. Topics discussed include welding procedures—prequalified vs. qualified (PQR); proper documentation of WPS variables; welding process—prohibitions, comparisons, and modes of transfer; the interaction of AWS D1.1 and AWS D1.8; and much more.

FABRICATORS, ERECTORS

1.5 PDHs

Forging Values: Transforming Companies from Good to Great

Q7 Th 11:30 a.m. – 12:30 p.m. | **Room 342**

Speaker: Robert Ferguson,
FergusonValues.com

Moderator: Larry Martof,
Quality Management Company

The people you hire determine your company's brand experience. The secret to creating a great brand experience is in forging a few key values into the DNA of your organization. Come and learn how you can transform your company from good to great by Forging Values that make a difference. Find out the 17 common values shared across Fortune 500 companies, and why these values do NOT make a difference. And learn how to identify differentiating values that set strategic direction and create competitive advantage.

FABRICATORS, ERECTORS

1.0 PDHs

the steel conference sessions

Understanding Erector Non-Conformances

Q8 Th 1:45 p.m. – 2:45 p.m. | **Room 342**

Speakers: David Webb, Quality Management Company; Vince Bosworth, Bosworth Steel Erectors, Inc.

Moderator: Mark Yerke, S&R Enterprises, LLC

Have you wondered what accounts for a nonconformance? This session will take an in-depth look at that and the best practices surrounding them. It will offer practical ideas on when and how you should record and track them. Plus, it'll review the differences between non-conformances and corrective actions, and how you should address each in your quality management system.

ERECTORS

1.0 PDHs

Typical Corrective Action Requests for Erectors

Q9 Th 3:00 p.m. – 4:00 p.m. | **Room 342**

Speakers: Dennis Hought, Quality Management Company; Art Bustos, AISC

This session will explore AISC Certification's past corrective action requests (CARs), their common issues, and practical fixes. It will deal with the most frequent CARs arising during the documentation and site audits. Topics will include site pre-installation verification testing, quality control inspector qualifications, SMAW electrode storage, along with others.

ERECTORS

1.0 PDHs

Quality Control Inspector—What's Required?

Q10 Th 4:45 p.m. – 5:45 p.m. | **Room 342**

Speakers: Larry Martof, Quality Management Company; Mark Holland, SE, PE, Paxton & Vierling Steel Co.

Moderator: Todd Alwood, AISC

How do fabricators and erectors meet the qualification requirements for quality control welding and bolting inspection personnel in Chapter N of AISC 360, Chapter J of AISC 341, or AWS D1.1? What training and qualification tests should be required? And what are the implementations if you are being audited by a quality assurance certification program? All these questions will be answered and with additional time for Q&A.

FABRICATORS, ERECTORS

1.0 PDHs

How Does a Fabricator Perform Their Own Documentation Audit?

Q11 F 8:00 a.m. – 9:30 a.m. | **Room 342**

Speakers: Ted Sheppard, PE, IMPACT consultant; Steven Russell, PE

Moderator: Teresa Lipsey, AISC

Fabricators usually do an internal audit every year, but what about your documents? What about your quality manual and associated procedures? When is the last time you audited them? Are they up to date with how you actually do things? Or up to date with current references? This session will provide an overview of how to perform this yourself, and it will offer practical, common sense tips from two speakers who have performed hundreds of documentation audits.

FABRICATORS

1.5 PDHs

Bolt it Right the First Time: Teaching Quality is Easier than You Think

Q12 F 11:30 a.m. – 12:30 p.m. | **Room 342**

Speakers: John O'Brien and Larry Housel, Skidmore Wilhelm

Moderator: Kenny Waugh, IMPACT

Structural Bolting requires no certification. No standard training on bolting has been developed and provided to Ironworkers/Inspectors/erectors, ect. The result of this is a wide variety of "local rules" and unfortunately to many of them are based on incorrect information and erroneous assumptions. The purpose of the course is to teach the basics of the torque/tension relationship and to develop a foundation upon which the participant can begin to teach others in their organizations to achieve safer structures at a reduced labor cost.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

Typical Corrective Action Requests for Fabricators

Q13 F 1:45 p.m. – 3:15 p.m. | **Room 342**

Speakers: Linda Hale, Quality Management Company; Art Bustos, AISC

This session will explore AISC Certification's past corrective action requests (CARs), their common issues, and practical fixes. It will deal with the most frequent CARs arising during the documentation and site audits. Topics will include measurable quality goals, WPS's compliance to codes, WPS not matching process in use, internal audits, management reviews, and others.

FABRICATORS

1.5 PDHs

Teaching Steel Design—
New Ideas from New Educators

J1 W 7:00 a.m. – 9:00 a.m. | **Room 318-320**
breakfast at 7:00 a.m., program at 7:30 a.m.

Speakers: Mark Denavit, University of Tennessee, Knoxville; Patricia Clayton, University of Texas at Austin

Open to AISC educator members ONLY.

Join fellow educators for a breakfast and roundtable discussion on two new ideas from new educators. Discuss fresh ideas that can be used in teaching steel design after brief presentations by Dr. Mark Denavit on Teaching Chapter C: Perspectives on Stability from a Young Faculty Member and Dr. Patricia Clayton on #RealSteel: Exciting Students About Structural Engineering.

note: Full-time faculty members who teach at U.S. universities that 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.

students connecting with industry sessions

Morning Session and Lunch

J2 Th 11:30 a.m. – 1:30 p.m.
Holiday Ballroom* (Hilton Hotel)

Speakers: James O. Malley, Degenkolb Engineers; Kim Olson, FORSE Consulting

Open to AISC student members ONLY.

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 Morning Session will receive a complimentary lunch.

See note below regarding travel assistance.

Direct Connect

J3 Th 1:30 p.m. – 2:45 p.m.
Holiday Ballroom* (Hilton Hotel)

Open to AISC student members ONLY.

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 most firms at this event may not 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 that 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 that attend SCIS can be eligible to join us at the Conference Dinner. Tickets are distributed upon the close of SCIS. Registration is required for these complimentary student sessions.

*The Holiday Ballroom is easily accessible via the sky bridge that connects the convention center to the Hilton Hotel. The entrance is located on level 300 near the northwest corner of the center.

...so many
crabulous sessions!

Don't miss our National Student Steel Bridge Competition demonstration taking place during the Welcome Lunch on Wednesday afternoon! See the back of the foldout page for details.



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WEDNESDAY KEYNOTE SPEAKER

Atlas Tube

THURSDAY a.m. COFFEE BREAK

Controlled Automation, Inc.

WELCOME LUNCH

Canam-Buildings

FabSuite—Steel Management Software

WELCOME LOUNGE

American Welding Society

Giza

Haydon Bolts

SILVER

American Metal Market

Applied Bolting Technology, Inc.

BRONZE

Chicago Metal Rolled Products

Ficep Corporation

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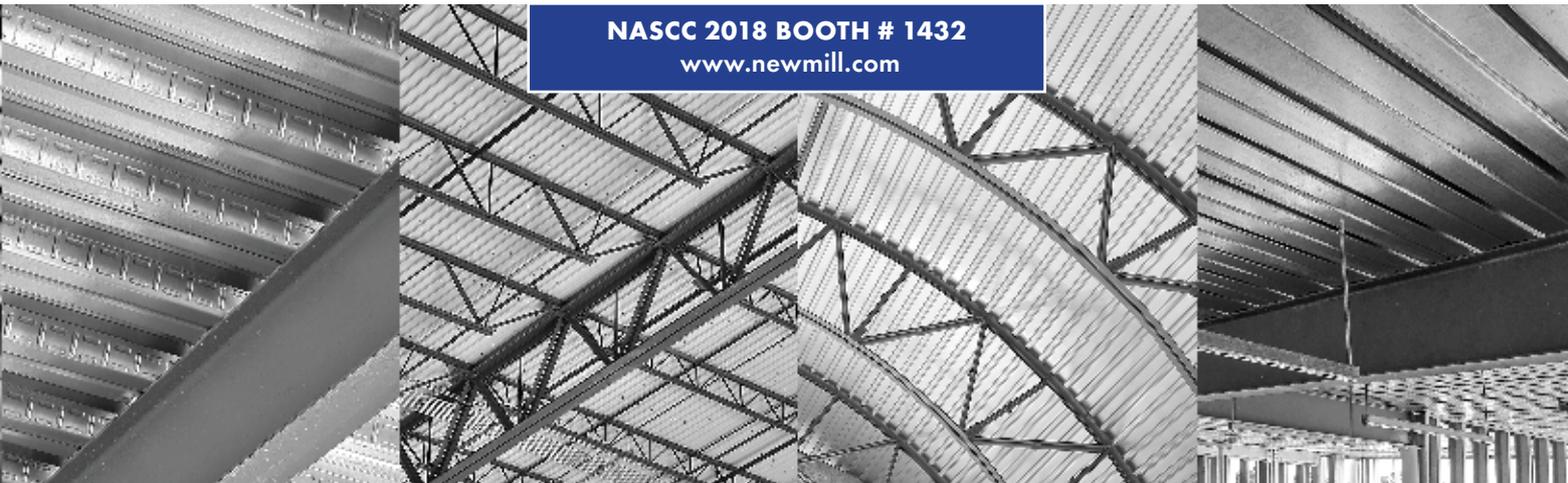
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2018 NSBA

world steel bridge symposium



NSBA Symposium Welcome and 2018 Prize Bridge Awards

B1 W 8:00 a.m. – 9:00 a.m. | **Ballroom I & II**

Speakers: Jeff Carlson, PE, NSBA;
Gregory Slater, Maryland DOT

A welcome from the National Steel Bridge Alliance and the host state of Maryland. This session will include an overview of this year's Symposium and also be a time to publically recognize this year's Prize Bridge Award winners.

**ENGINEERS, FABRICATORS,
ERECTORS, DETAILERS**

1.0 PDHs

Unique Details for Steel Bridges

B2 W 11:15 a.m. – 12:15 p.m. | **Room 314-315**

Speakers: Edward Wasserman, PE,
Modjeski and Masters; Ajinkya Lokhande,
Georgia Institute of Technology

Moderator: Michael Cronin, SE, PE, Jacobs

This session will present design details for steel box and I-girder bridges with the goal of improving the efficiency, economy and overall competitiveness of your design.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

Major Spans—Part 1

B3 W 11:15 a.m. – 12:15 p.m. | **Room 316-317**

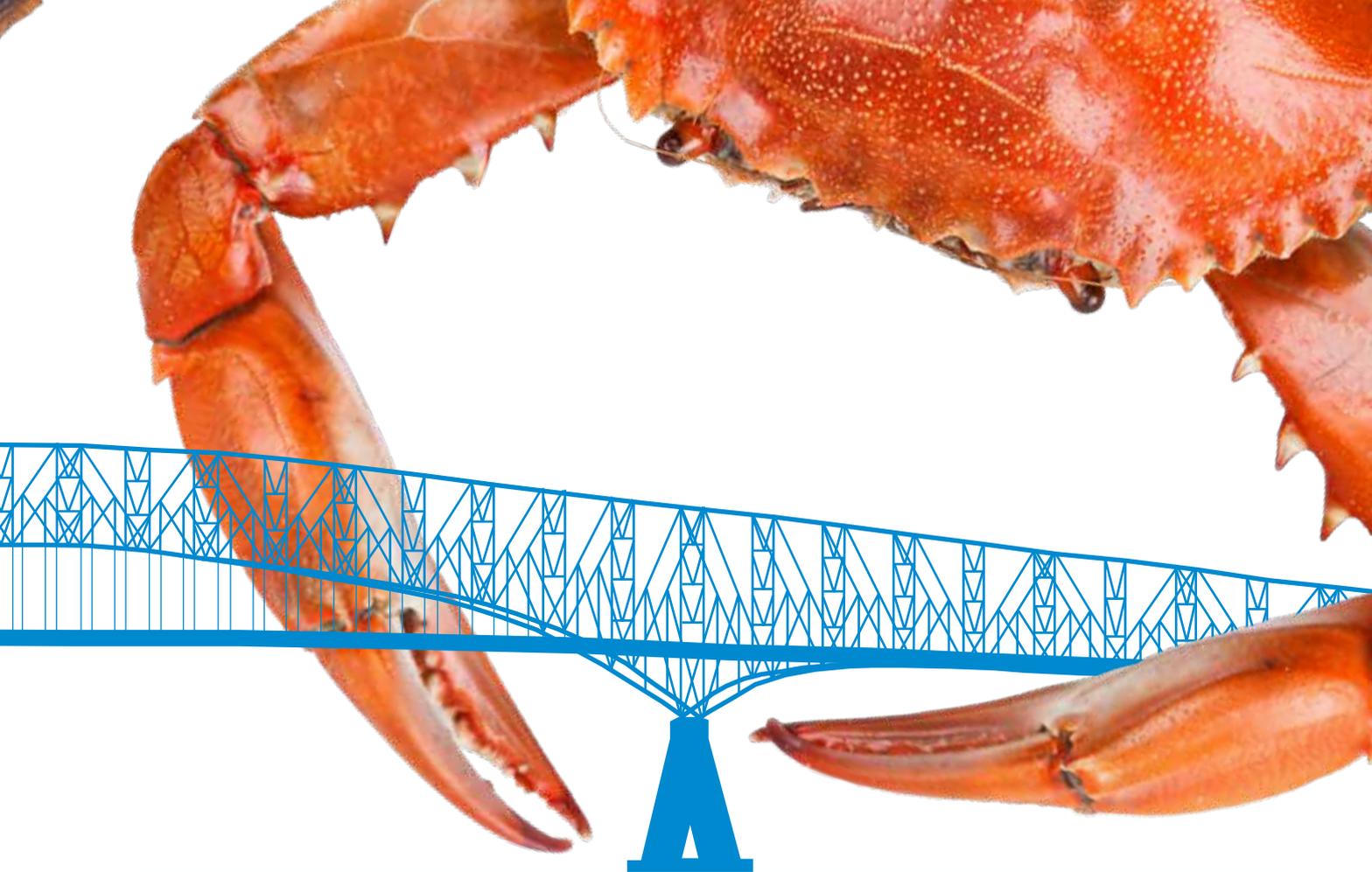
Speakers: Greg Hasbrouck, PE, Parsons;
Natalie McCombs, PE, HNTB

Moderator: David Goodyear, SE, PE,
T.Y. Lin International

For major span bridges, steel is the first choice because of its superior strength-to-weight ratio which not only allows longer spans, but also lower overall costs. This session will present two case studies in the use of steel for tied arches where careful planning and consideration early on resulted in more economical and durable structures.

ENGINEERS

1.0 PDHs



Research and Application of Steel Orthotropic Bridge Decks

B4 W 2:30 p.m. – 3:30 p.m. | **Room 314-315**

Speakers: Thomas Hickman, Vigor Industrial, LLC;
Sougata Roy, PhD, Sougata Roy, LLC

Moderator: Duncan Paterson, PE, PhD, HDR, Inc.

Prefabricated modular steel orthotropic decks can provide life-cycle cost-effective solution for steel bridges. These decks are ideal for accelerated bridge construction and is the only deck system likely to ensure a service life exceeding 100 years with minimum maintenance. This session will present an overview of steel orthotropic decks, lessons learned from service performance and research. Additionally, an overview of the fabrication and construction of the new Wittpenn Bridge will be presented.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.0 PDHs

Making Gains in the Short-Span Market

B5 W 2:30 p.m. – 3:30 p.m. | **Room 316-317**

Speakers: Matthew Macey, PE, CDR Bridge Systems, LLC; Atorod Azizinamini, PE, PhD, Florida International University

Moderator: Robert Magliola, PE, Parsons

The short-span bridge market, up to 140-ft span, is a very competitive place to do business, with several material alternatives available to bridge owners. The Folded Steel Plate Girder System (FSPG) is a new approach which is already making gains in states like Pennsylvania. This session will look at the recent developments and future enhancements to this new short span solution in steel.

ENGINEERS, FABRICATORS, ERECTORS, DETAILERS 1.0 PDHs

Challenging Projects and Mitigating Risk

B6 W 3:45 p.m. – 5:15 p.m. | **Room 314-315**

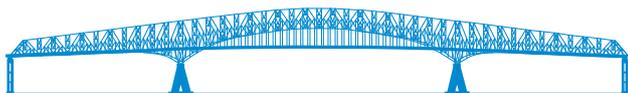
Speakers: Keith Griesing, PE, Hardesty & Hanover; Stephanie Brandenberger, MDT Bridge Bureau; Dustin Hirose, PE, HDR; Tony Hunley, SE, PE, PhD, and Taylor Perkins, PE, Stantec Consulting Services Inc.

Moderator: Matthew Hebdon, PhD, Virginia Tech

Often during the course of project specific constraints and risks present themselves that require special attention from a design and risk-assessment perspective. This session will address a bascule bridge in a seismic region, a particularly challenging navigational clearance in KY, as well as uncertainties related to the replacement of two bridges in MT over the Montana Rail Link station.

ENGINEERS, FABRICATORS

1.5 PDHs



Stainless Steel Use in Bridges— A Solution for Long-Term Service and Durability

B7 W 3:45 p.m. – 5:15 p.m. | **Room 316-317**

Speakers: Isaac Groshek, AECOM; Jason Provines, PE, Virginia DOT; Juan A. Sobrino, PE, PEng, PhD, PEDELTA

Moderator: Dusten Olds, PE, HDR, Inc.

With limited budgets and resources for maintenance, bridge owners are continually looking to extend the useful life out of their assets. This session presents the latest developments and research in the design of steel bridges and steel components for long-term service life and durability—specifically in the use of Grade 50CR and stainless steels.

ENGINEERS, FABRICATORS

1.5 PDHs

Reducing Errors in Bridge Drawings—What You Can do Today and Look to in the Future

B8 W 5:30 p.m. – 6:30 p.m. | **Room 314-315**

Speakers: Brad Dillman, PE, High Steel Structures; Aaron Costin, PhD, University of Florida; Jason Stith, PE, PhD, Michael Baker International

Moderator: Ken Wright, PE, HDR, Inc.

As project delivery methods continue to change and evolve and as project delivery schedules continue to accelerate, clear communication of design intent and design requirements in contract documents becomes increasingly important. This session will offer some insight into the common design issues facing steel bridge fabricators that can lead to questions or delays in the structural steel delivery process. Additionally, this session will present the initial steps towards digital interoperability (BIM) who's end goal is to improve communication and reduce errors.

ENGINEERS, FABRICATORS,
ERECTORS, DETAILERS

1.0 PDHs

Pedestrian Bridges— Invigorate Design Creativity

B9 W 5:30 p.m. – 6:30 p.m. | **Room 316-317**

Speakers: Patrick Gallagher, Parsons; Terri Meyer Boake, LEED AP, University of Waterloo

Moderator: Ryan Sherman, PhD, University of Nevada at Las Vegas

Designing a bridge for “people only” seems to invigorate design creativity. However, along with this opportunity comes the challenge to deliver a project that meets public expectation. This session will provide some insight into how two projects do just that.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

AASHTO Updates: What's New in the 8th Edition *Steel Specification*

B10 Th 8:00 a.m. – 9:30 a.m. | **Room 314-315**

Speakers: Michael Grubb, PE, M. A. Grubb and Associates; Karl Frank, PE, PhD, NSBA Consultant

Moderator: Allan Berry, PE, RS&H

With each update to the AASHTO *Design Specification* come changes that can sometimes be misinterpreted, not understood or missed entirely. This session will focus on the upcoming changes to the Steel Design section of the next AASHTO LRFD *Design Specification* which will hopefully make the update more seamless. This session will be an overview of what is new in the Steel Design section of the new 8th Edition AASHTO LRFD *Design Specification*.

ENGINEERS, DETAILERS

1.5 PDHs

Major Spans—Part 2

B11 Th 8:00 a.m. – 9:30 a.m. | **Room 316-317**

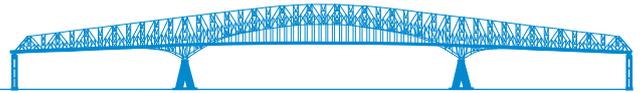
Speakers: Marcos Loizias, PE, JACOBS; Eric Rau, PE, and Marwan Nader, PE, PhD, T.Y. Lin International

Moderator: Eric Myers, Nucor

This session is a continuation of Major Spans—Part 1. Part 2 utilizes case studies to focus on the erection challenges overcome in the construction of the Lewis and Clark cable-stayed bridge over the Ohio River and the Sellwood arch bridge over the Willamette River.

ENGINEERS, FABRICATORS, ERECTORS

1.5 PDHs



Innovative Material Solutions for Prefabricated Steel Bridge Elements

B12 Th 11:30 a.m. – 12:30 p.m. | **Room 314-315**

Speakers: Riccardo Zanon, SE, MBA, ArcelorMittal Europe; Rolando Moreau, MEng, PEng, SPS North America

Moderator: Colin Moran, PE, Olsson Associates

Innovations in the use of steel, particularly in combination with other materials for prefabricated elements, has been a recent focus in ABC applications. Two steel innovations will be presented, each of which has been applied to short-span bridge projects. The Sandwich Plate System (SPS) has been used in two domestic projects and the Precobeam concept has been used in Europe to speed construction times.

ENGINEERS, FABRICATORS, DETAILERS 1.0 PDHs

Accelerated Bridge Construction by Example

B13 Th 11:30 a.m. – 12:30 p.m. | **Room 316-317**

Speakers: Finn Hubbard, PE, Fickett Structural Solutions; Karl Svaty, SE, PE, MKEC Engr. Consl., Inc.

Moderator: Greg Hasbrouck, SE, PE, Parsons

Accelerated Bridge Construction (ABC) replaces or rehabilitates bridges in days, much to the delight of owners and the traveling public. This session will look at specific case studies where structural steel played an integral role in the overall project success.

ENGINEERS, ERECTORS 1.0 PDHs

Evaluating Internal Redundancy of Existing Built-Up Steel Members to Set Hands-On Inspection Intervals—Part 1

B14 Th 1:45 p.m. – 2:45 p.m. | **Room 314-315**

Speakers: Rob Connor, PhD, Purdue University; Matt Hebdon, PhD, Virginia Tech; Francesco Russo, PE, PhD, Michael Baker International

Moderator: Jason Lloyd, SE, PE, Purdue University

This is the first part of a two part session that will familiarize bridge engineers with newly developed provisions on how to exploit the internal redundancy of existing or new built-up steel members presently classified as FCMs in order to establish a rational hands-on inspection interval. Built-up members meeting the provisions are internally redundant and therefore should not be classified as FCMs. The supporting research (TPF-5(253)) and specifications/commentary with detailed examples, including setting the hands-on inspection interval, will be presented.

ENGINEERS 1.0 PDHs

Improving Inspection and Traceability in the Fabrication Shop

B15 Th 1:45 p.m. – 2:45 p.m. | **Room 316-317**

Speakers: Timothy McCullough, Florida DOT; Gary Prinz, PhD, University of Arkansas

Moderator: Ronnie Medlock, PE, High Steel Structures

Hear about technologies and techniques that could allow steel bridge fabricators to save man-hours in the shop. This session will look at research and present day application of such innovations for the steel bridge industry such as the use of thermography and phased array for weld inspection along with piece marking for improved traceability within the shop.

FABRICATORS 1.0 PDHs

Evaluating Internal Redundancy of Existing Built-Up Steel Members to Set Hands-On Inspection Intervals—Part 2

B16 Th 3:00 p.m. – 4:00 p.m. | **Room 314-315**

Speakers: Rob Connor, PhD, Purdue University; Matt Hebdon, PhD, Virginia Tech; Francesco Russo, PE, PhD, Michael Baker International

Moderator: Robert Turton, SE, PE, TranSystems

This is the second part of a two part session that will familiarize bridge engineers with newly developed provisions on how to exploit the internal redundancy of existing or new built-up steel members presently classified as FCMs in order to establish a rational hands-on inspection interval. Built-up members meeting the provisions are internally redundant and therefore should not be classified as FCMs. The supporting research (TPF-5(253)) and specifications/commentary with detailed examples, including setting the hands-on inspection interval, will be presented.

ENGINEERS 1.0 PDHs

Rail Bridges—Part 1

B17 Th 3:00 p.m. – 4:00 p.m. | **Room 316-317**

Speakers: Martin Furrer, SE, PE, Parsons; Dennis Noernberg, W&W/AFCO Steel; Sue Tryon, PE, Benham Design, LLC

Moderator: Michael LaViolette, PE, HDR, Inc.

Working with railroads presents unique challenges, especially when site constraints play a large role. This session presents two case studies for the design and construction of railroad truss bridges utilizing ABC techniques to minimize railroad closure times and impact on highway traffic flow.

ENGINEERS, FABRICATORS, ERECTORS 1.0 PDHs

Cracking the Problem of Fatigue and Fracture

B18 Th 4:45 p.m. – 5:45 p.m. | **Room 314-315**

Speakers: Ryan Sherman, PhD, University of Nevada, Las Vegas; Hussam Mahmoud, PhD, Colorado State University

Moderator: Roger Stanley, PE, WSP

The current criteria that bridge designers and owners use for determining the fracture critical status of a steel bridge design are fundamentally based on assessing redundancy of the structure and its resistance to failure. This session will present on-going research which will hopefully lead to fewer bridges being deemed fracture critical and thereby reducing the in-service inspection demand on bridge owners.

ENGINEERS, FABRICATORS 1.0 PDHs

Guidelines and Resources for Designers

B19 Th 4:45 p.m. – 5:45 p.m. | **Room 316-317**

Speakers: Brandon Chavel, PE, PhD, and Domenic Coletti, PE, HDR, Inc.

Moderator: Calvin Schrage, NSBA

A bridge designer is faced with many decisions and questions as they proceed through a steel-girder bridge superstructure design—especially if the designer is embarking on such a design for the first time. Fortunately, there are several published references that can be used to aid in the development of efficient and economical steel-girder bridge superstructure designs. This session is intended to help attendees identify documents and design references that can be appropriately implemented during the design of a steel bridge superstructure. Additionally, guidelines supporting the development of improved design, detailing and erection guidelines to ensure reliable fit-up of skewed and/or curved steel I-girder bridges will be presented.

ENGINEERS 1.0 PDHs

Stability Considerations for Long-Span Bridges

B20 F 8:00 a.m. – 9:30 a.m. | **Room 314-315**

Speakers: Paul Biju-Duval and Todd Helwig, PhD, The University of Texas at Austin; Kevin Sear, PE, AECOM; Susan Steele, PE, High Steel Structures

Moderator: Francisco Bonachera Martin, PhD, Purdue University

A critical design consideration of long span bridges is structural adequacy and stability in the temporary conditions that exist during erection. Selection of the appropriate erection method is key for the engineer to understand during design. This session will look at the stability at different stages of erection and the methods are available to ensure that stability.

ENGINEERS, ERECTORS 1.5 PDHs

Special Sites Require Special Solutions

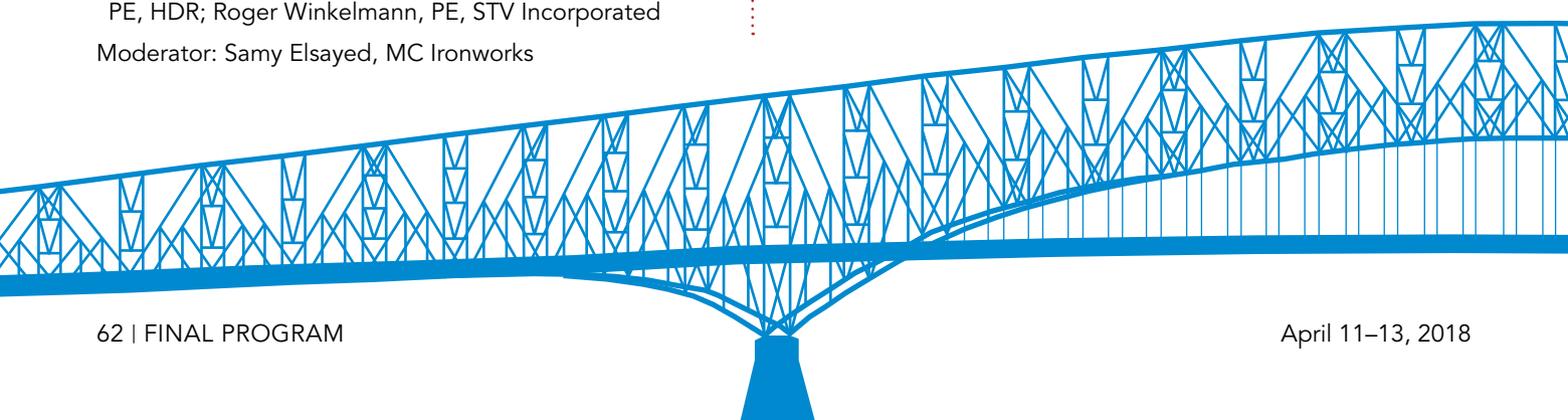
B21 F 8:00 a.m. – 9:30 a.m. | **Room 316-317**

Speakers: Murray Johnson, PE, COWI North America; William Beining, PE, and Anthony Ream, PE, HDR; Roger Winkelmann, PE, STV Incorporated

Moderator: Samy Elsayed, MC Ironworks

Site constraints can challenge the design team and significantly increase construction costs. This session will discuss how a careful design process, in collaboration with the contractor, yielded positive results during construction.

ENGINEERS, FABRICATORS, ERECTORS 1.5 PDHs



world steel bridge symposium sessions

Rail Bridges—Part 2

B22 F 11:30 a.m. – 12:30 p.m. | **Room 314-315**

Speakers: Phineas Fowler, PE, Louis Berger;
Ross Burhouse, PE, Dewberry; Gregory Shafer,
PE, Parsons

Moderator: Christopher Whitfield, PE,
Crawford, Murphy & Tilly

Rail Bridges—Part 2 continues the discussion related to challenges when designing and constructing bridges to carry rail traffic. The session's presentations consider the use of through-girder structures in congested areas to meet site constraints and provide flexibility for future widening and reconfigurations.

ENGINEERS, FABRICATORS, ERECTORS

1.0 PDHs

Heat Straightening and Repair of Damaged Steel Bridges

B23 F 11:30 a.m. – 12:30 p.m. | **Room 316-317**

Speakers: Tyler Thomas, Flame-on, Inc.;
Alireza Hedayati, PE, WSP|Parsons Brinckerhoff

Moderator: Christopher Higgins, PE, PhD,
Oregon State University

Faced with aging bridge inventories, limited budgets and increased truck loadings, owners are often interested in repairing and strengthening existing bridges. Steel is known as the resilient solution for bridges because of the ability to be refurbished and repaired when damaged. This session will present case studies to illustrate repair and strengthening strategies fabricators, engineers and owners can use for in-service steel bridges.

ENGINEERS, FABRICATORS, DETAILERS

1.0 PDHs

The Delaware River Bridge Fracture

B24 F 1:45 p.m. – 3:15 p.m. | **Room 314-315**

Speakers: Richard Schaefer, PE, and
Theodore Zoli, PE, HNTB Corporation;
Frank Corso, PE, New Jersey Turnpike
Authority; Thomas Murphy, PE, PhD,
Modjeski and Masters; Francesco Russo, PE,
PhD, Michael Baker International; Ashley
Thrall, PhD, University of Notre Dame

Moderator: Karl Frank, PE, PhD,
NSBA Consultant

On Friday, January 20, the Pennsylvania Turnpike Commission (PTC) faced an emergency. The top chord member of a large steel truss supporting one of the approach spans to the Delaware River Turnpike Bridge was fractured in two. While the team of engineers and contractors worked diligently to repair the fracture on this important bridge, they also needed to understand why it had fractured in the first place. In this session you will hear from those that were working to open this important bridge and what was learned in the process.

ENGINEERS, FABRICATORS, DETAILERS

1.5 PDHs

Advanced Coating Systems

B25 F 1:45 p.m. – 3:15 p.m. | **Room 316-317**

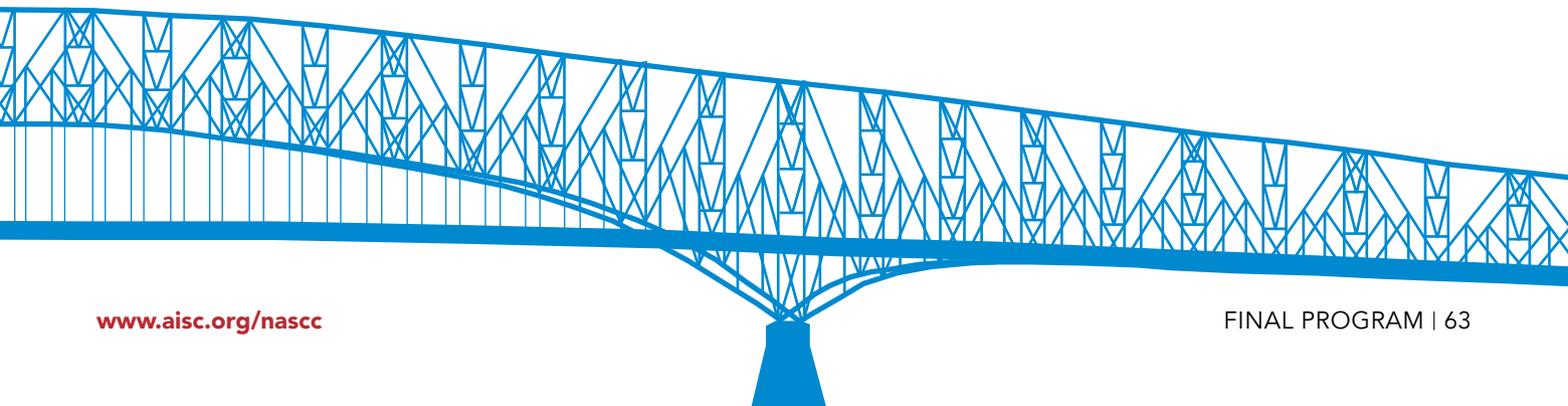
Speakers: Caroline Bennett, PhD, University
of Kansas; Winn Darden, AGC Chemicals
Americas; Ronnie Medlock, PE, High Steel
Structures; Ahren Olson, Covestro LLC

Moderator: Jeff Carlson, PE, NSBA

As the long-term performance of steel bridge coating systems has become more important to owners, several corrosion control technology options have become popular and successful choices for bridge owners. These technologies, when correctly executed, provide long term, economical protection in even the harshest environments. The session is intended to provide attendees with perspective on steel bridge corrosion protection using solutions such as polyaspartic coatings, fluoropolymer resins and hot dip galvanizing.

ENGINEERS, FABRICATORS, DETAILERS

1.5 PDHs





2018 SSRC annual stability conference

sessions

Tuesday's annual
meeting schedule can
be found on pages 68–69.

Stability of Built-Up Girders

S1 W 8:00 a.m. – 9:00 a.m.

Room 343-344

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

Welcome to the 2018 SSRC Annual Stability Conference

Todd A. Helwig, University of Texas at Austin, Austin, TX

Flange Buckling Behavior of Trapezoidally Corrugated Web Girders Subjected to Bending and Shear Interaction

Bence Jáger and László Dunai, Budapest University of Technology and Economics, Budapest, Hungary

Improved Characterization of the Flexural and Axial Compressive Resistance of Noncomposite Longitudinally Stiffened Rectangular Welded Steel Box Section Members

Ajinkya M. Lokhande and Donald W. White, Georgia Institute of Technology, Atlanta, GA; Charles M. King, COWI North America, North Vancouver, BC, Canada; Michael A. Grubb, M.A. Grubb & Associates, LLC, Wexford, PA

Lateral-Torsional Buckling Response of Welded Wide Flange Girders

Xiao Lin Ji, Robert G. Driver and Ali Imanpour, University of Alberta, Edmonton, AB, Canada

ENGINEERS

1.0 PDHs

Stability Under Seismic Loading

S2 W 11:15 a.m. – 12:15 p.m.

Room 343-344

Moderator: Telmo Andrés Sánchez,
ADSTREN, Quito, Ecuador

Seismic Performance Evaluation of Cold-Formed Steel Framed Shear Walls using In-Frame Corrugated Steel Sheets

Xing Lan, Mako Steel, Inc., Carlsbad, CA; Cheng Yu, University of North Texas, Denton, TX; Wenying Zhang, Tongji University, Shanghai, China; Mahsa Mahdavian, Verco Decking, Fremont, CA

Seismic Performance Assessment of Steel Multi-Tiered Ordinary Concentrically-Braced Frames

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

Evaluation of Seismic Design Methods for Steel Multi-Tiered Special Concentrically Braced Frames

Pablo A. Cano and Ali Imanpour, University of Alberta, Edmonton, AB, Canada

ENGINEERS

1.0 PDHs

SSRC sessions

Stability of Flexural Members

S3 W 2:30 p.m. – 3:30 p.m. | **Room 343-344**

Moderator: Perry S. Green, Bechtel Power Corporation, Waynesboro, GA

Strength Requirements for Shear Diaphragms Used for Stability Bracing of Steel Beams

O. Ozgur Egilmez, Yasar University, Izmir, Turkey and Mustafa Vardaroglu, University of Campania Luigi Vanvitelli, Caserta, Italy

Development of a Computational Model to Estimate the Rollover Resistance of Open Web Steel Joist Seats

Jean C. Batista Abreu and Ronald D. Ziemian, Bucknell University, Lewisburg, PA

Parametric Study of Hole Pattern Influence on Average Bending Stiffness

Bob Glauz, RSG Software, Inc., Lee's Summit, MO

ENGINEERS

1.0 PDHs

Presentation Session for Beedle and McGuire Awards

see sidebar on pages 70–71 for award details

S4 W 3:45 p.m. – 5:15 p.m. | **Room 343-344**

Moderator: Ronald D. Ziemian, Bucknell University, Lewisburg, PA

Beedle Award Presentation: Looking Back at a Career Shaped by SSRC: Stimulating Stability Research Challenges

Dinar Camotim, University of Lisbon, Lisbon, Portugal

MAJR Medal Presentation: Ten Years of Research on Stability of Thin-Walled Members Revisited

Rodrigo Gonçalves, NOVA University Lisbon, Lisbon, Portugal

ENGINEERS

1.5 PDHs

Special Topics in Structural Stability

S5 W 5:30 p.m. – 6:30 p.m. | **Room 343-344**

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

A Reappraisal of the Reliability of Local Buckling Rules Based on the Winter Curve

Andreas Taras, Bundeswehr University Munich, Neubiberg, Germany; Nicole Schillo, Ingenieurgruppe Bauen, Karlsruhe, Germany

Tests on Bolted Steel Angles in Compression with Varying End Support Conditions

Markus Kettler, Gerit Lichtl and Harald Unterweger, Graz University of Technology, Graz, Austria

Cyclic Fracture Simulation Framework for Stability and Collapse Simulation in Steel Structures

David A. Padilla-Llano and Jerome F. Hajjar, Northeastern University, Boston, MA; Matthew R. Eatherton and W. Samuel Easterling, Virginia Polytechnic Institute and State University, Blacksburg, VA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD

ENGINEERS

1.0 PDHs

Stability During Construction

S6 Th 8:00 a.m. – 9:30 a.m. | **Room 343-344**

Moderator: Michael W. Seek, Old Dominion University, Norfolk, VA

Stability Considerations for Concrete Forming Support Systems

Cliff D. Bishop and Morgan Griffith, Exponent, Inc., Menlo Park, CA; William Trono, Exponent, Inc., Oakland, CA

Interaction Between Patch Loading, Bending, and Shear in Steel Girder Bridges Erected with the Incremental Launching Method

Telmo Andrés Sánchez and Andrés F. Robalino, ADSTREN, Quito, Ecuador; Carlos Graciano, Universidad Nacional de Colombia, Medellín, Colombia

Load Tests of Common Shoring Towers: Typical Detailing and Resulting Capacity Reduction

Aaron K. Larosche, Randall W. Poston and Keaton Munsterman, Pivot Engineers, Austin, TX; Stalin Armijos M., Michael D. Engelhardt and Todd A. Helwig, University of Texas at Austin, Austin, TX

Stability of Steel Modules During Construction

Soheil Shafaei, April Wang and Amit Varma, Purdue University, West Lafayette, IN; Brian Morgen, Magnusson Klemencic Associates, Seattle, WA

ENGINEERS

1.5 PDHs

Stability of Thin-Walled Members

S7 Th 11:30 a.m. – 12:30 p.m.

Room 343-344

Moderator: Dinar Camotim,
University of Lisbon, Lisbon, Portugal

Direct Strength Approach to Predict the Flexural Strength of Cold-Formed Z-Section Purlins on Slope Roofs

Ali Parva and Michael W. Seek, Old Dominion University, Norfolk, VA

Signature Curve for General Thin-Walled Members

Sandor Ádány, Budapest University of Technology and Economics,
Budapest, Hungary

Modal Interaction in Design of Improved Stiffened Trapezoidal Profiled Sheeting: Shape Grammar, Elastic Stability and Strength Analysis

Juarez M.S. Franco, Federal Rural University of Rio de Janeiro,
Seropédica, Brazil; João P.M. Garcia and Eduardo M. Batista, Federal
University of Rio de Janeiro, Rio de Janeiro, Brazil

ENGINEERS

1.0 PDHs

Stability of Lateral Systems

S8 Th 1:45 p.m. – 2:45 p.m.

Room 343-344

Moderator: Hannah Blum,
The University of Sydney,
Sydney, NSW, Australia

Modeling the Influence of Residual Stress on the Ultimate Load Conditions of Steel Frames

Barry T. Rosson, Florida Atlantic University, Boca Raton, FL

A Partial-Distributed Damage Method for Progressive Collapse of 3D Steel Composite Buildings

Fani Derveni, Panos Pantidis, Simos Gerasimidis and Kara D.

Peterman, University of Massachusetts Amherst, Amherst, MA

Shear Resistance Mechanisms of Steel Sheet Walls with Burring Holes and the Effect of Wall Widths with Vertical Slits

Yoshimichi Kawai and Shigeaki Tohnai, Nippon Steel & Sumitomo
Metal Corporation, Tokyo, Japan; Kazunori Fujihashi, NS Hi-Parts
Corporation, Tokyo, Japan; Atsushi Sato and Tetsuro Ono, Nagoya
Institute of Technology, Nagoya, Aichi Prefecture, Japan

ENGINEERS

1.0 PDHs

Advances in the Direct Strength Method

S9 Th 3:00 p.m. – 4:00 p.m.

Room 343-344

Moderator: Cliff D. Bishop,
Exponent Inc., Menlo Park, CA

On the Accuracy of the Current Direct Strength Method (DSM) Design Curve for Columns Failing in Global Modes

Pedro B. Dinis, Dinar Camotim and André D. Martins,
University of Lisbon, Lisbon, Portugal

Distortional Failure and DSM Design of Cold-Formed Steel Lipped Channel Beams under Non-Uniform Bending

Isis Cler Depolli and Alexandre Landesmann, Federal University of
Rio de Janeiro, Rio de Janeiro, Brazil; Dinar Camotim and André Dias
Martins, University of Lisbon, Lisbon, Portugal

Direct Strength Prediction of Cold-Formed Z-Section Purlins with Support Torsion Braces Combined with Span Lateral Braces

Michael W. Seek and Ali Parva, Old Dominion University, Norfolk, VA

ENGINEERS

1.0 PDHs

Stability of Connections and Assemblages

S10 Th 4:45 p.m. – 5:45 p.m.

Room 343-344

Moderator: Matthew R. Eatherton,
Virginia Polytechnic Institute and
State University, Blacksburg, VA

Warping and Deformations in Profiled Steel Deck under Shear

Astrid Winther Fischer and Benjamin William Schafer, Johns Hopkins
University, Baltimore, MD; Guanbo Bian, Fannie Mae, Washington, DC

Stability of Wall-Diaphragm Connections in Cold-Formed Steel Framed Buildings

Hernan Castaneda and Kara D. Peterman, University of Massachusetts
Amherst, Amherst, MA; Deniz Ayhan and Benjamin W. Schafer, Johns
Hopkins University, Baltimore, MD

The Impact of Gravity Connections on the Progressive Collapse Response of Steel-Framed and Concrete Composite Buildings

Panos Pantidis, Thomas Hill, and Simos Gerasimidis, University of
Massachusetts Amherst, Amherst, MA

ENGINEERS

1.0 PDHs

SSRC sessions

Stability at Elevated Temperatures

S11 F 8:00 a.m. – 9:30 a.m.

Room 343-344

Moderator: Simos Gerasimidis,
University of Massachusetts
Amherst, Amherst, MA

Application of the Direct Strength Method to Functionally-Graded-Material-Sheathed Cold-Formed Steel Beam Channel Members under Non-Uniform Elevated Temperature

Elias Y. Ali and Yared Shifferaw, Drexel University, Philadelphia, PA

Stability of Steel Structures at Elevated Temperatures: A Hybrid Fire Testing Approach

Ana Sauca, Chao Zhang and Mina Seif, National Institute of Standards and Technology, Gaithersburg, MD

Modal Identification of Thin-Walled Steel Studs under Non-Uniform Temperature

Jean C. Batista Abreu, Bucknell University, Lewisburg, PA; Zhanjie Li, SUNY Polytechnic Institute, Utica, NY

Creep Buckling of Steel Beam-Columns Subjected to Fire

Ali Morovat, Michael D. Engelhardt and Todd A. Helwig, University of Texas at Austin, Austin, TX

ENGINEERS

1.5 PDHs

Stability of Tubular Sections

S12 F 11:30 a.m. – 12:30 p.m.

Room 343-344

Moderator: Ali Morovat, University
of Texas at Austin, Austin, TX

Numerical and Experimental Studies for the Development of Direct Strength Design Rules for Locally and Globally Slender Hollow Sections

Andrea Toffolon and Andreas Taras, Bundeswehr University Munich, Neubiberg, Germany

Determination of the Buckling Critical Load for Composite Concrete-Filled Steel Tube Columns from Partial Experimental Data: A Review of the Southwell Plot Technique

Tiziano Perea, Universidad Autónoma Metropolitana Azcapotzalco, Mexico City, Mexico; Roberto T. Leon, Virginia Polytechnic Institute and State University, Blacksburg, VA; Mark D. Denavit, University of Tennessee, Knoxville, TN; Jerome F. Hajjar, Northeastern University, Boston, MA

ENGINEERS

1.0 PDHs

Residual Stress and Imperfection Effects on Stability

S13 F 1:45 p.m. – 3:15 p.m.

Room 343-344

Moderator: Jean C. Batista Abreu,
Bucknell University, Lewisburg, PA

Using Photogrammetry-Based Imperfection Measurement Tools to Determine the Impact of Corner Radii Imperfection on Cold-Formed Steel Member Strength

Abbas Joorabchian and Kara D. Peterman, University of Massachusetts Amherst, Amherst, MA

Geometric Imperfection Models in Shell Finite Element Models of CFS Members—A Review of Current State of Practice

Shafee Farzarian, Arghavan Louhghalam and Mazdak Tootkaboni, University of Massachusetts Dartmouth, North Dartmouth, MA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD

The Influence of Geometrical and Material Imperfections on the Stability and Resistance of I and H Sections

Lucile Gérard, Caroline Arsenaault and Nicolas Boissonnade, Université Laval, Québec City, QC, Canada; Markus Kettler, Graz University of Technology, Graz, Austria

Modeling Out-of-Flatness and Residual Stresses in Steel Plate Girders

Mahdi Asadnia and W.M. Kim Roddis, The George Washington University, Washington, DC

ENGINEERS

1.5 PDHs

Welcome Tuesday 1:00 p.m. – 1:10 p.m. | Larry A. Fahnestock, University of Illinois, Urbana, IL

Technical Presentations: Local Member Stability

SS1 Tu 1:10 p.m. – 2:30 p.m.
Room 343-344

Moderator: Nicolas Boissonnade,
Université Laval, Québec City, QC,
Canada

Local Buckling Limit States in Rod-Braced Metal Building Frames

Hamid Foroughi, Chengda Ji and Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD; Cristopher D. Moen, NBM Technologies, Inc., Blacksburg, VA

Toward the Recognition of Unaccounted for Flange Local Buckling and Tension Flange Yielding Resistances in the ANSI/AISC 360 Specification

Oguzhan Togay and Donald W. White, Georgia Institute of Technology, Atlanta, GA

Computational Study of Tension Field Action in Gable Frame Panel Zones

Gengrui Wei, Ioannis Koutromanos, Thomas M. Murray and Matthew R. Eatherton, Virginia Polytechnic Institute and State University, Blacksburg, VA

Reference Resistance Design of Spirally Welded Tapered Tubes

Abdullah Mahmoud, Shahabeddin Torabian and Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD; Angelina Jay, Fariborz Mirzaie and Andrew T. Myers, Northeastern University, Boston, MA

ENGINEERS

1.0 PDHs

Technical Presentations: Stability of Bridges

SS2 Tu 3:00 p.m. – 4:20 p.m.
Room 343-344

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

Horizontal Curvature Impacts on Steel Plate Girder Shear Buckling

Bernard A. Frankl, HDR, Lincoln, NE; Daniel G. Linzell, University of Nebraska-Lincoln, Lincoln, NE

Stability Analyses for a Multi-Span Tied Steel Arch Bridge: AASHTO Effective Length Method, Eigenvalue Analysis and AISC Direct Analysis Method

Jonathan Eberle and Soham Mukherjee, AECOM, Mechanicsburg, PA; Paul Kettleson, Minnesota Department of Transportation, Oakdale, MN; Daniel Baxter and Alexandra Willoughby, Michael Baker International, Minneapolis, MN

Flexural Resistance of Longitudinally Stiffened Curved I-Girders

Lakshmi P. Subramanian, Indian Institute of Technology Madras, Chennai, India; Donald W. White, Georgia Institute of Technology, Atlanta, GA

Experimental Study on the Interaction of Partial Top Lateral and K-Frame Bracing on Tub Girders

Stalin V. Armijos Moya, Yang Wang, Todd A. Helwig, Michael D. Engelhardt, Patricia Clayton and Eric Williamson, University of Texas at Austin, Austin, TX

ENGINEERS

1.0 PDHs

award details from session S4

McGuire Award for Junior Researchers (MAJR Medal)

The award has been established in honor of the late William "Bill" McGuire to recognize promising young researchers in structural stability. Bill was a long-term member of SSRC who always emphasized that state-of-the-art research is instrumental to improve the quality of stability design. Having served on the faculty at Cornell University for over fifty years, he was the author of the well-known textbooks *Steel Structures* and *Matrix Structural Analysis*. In recognition of his many research and educational contributions to the structural engineering profession, Bill was elected to the U.S. National Academy of Engineering. Recipients of the MAJR Medal must meet the following criteria:

- Member of SSRC.
- Holder of a PhD degree in a stability-related topic obtained within the past ten years.
- Have presented at least one paper at an SSRC Annual Stability Conference after obtaining their PhD degree.
- Have not previously received the MAJR Medal.

The award committee is appointed by the SSRC Executive Committee. The award is presented at the SSRC Annual Stability Conference. It consists of a bronze medal with the SSRC logo and the lettering "MAJR Medal" engraved on the front side. The back side will show the year of the award and the name of the awardee. The award committee may decide to also recognize an "Honorable Mention," which will consist of a certificate signed by the SSRC Chair.

Rodrigo Gonçalves is an Assistant Professor at the Civil Engineering Department of the Faculty of Sciences and Technology, NOVA University Lisbon, Portugal. He holds a PhD degree in Civil Engineering (2007), an MS degree in Structural Engineering (2000) and a "Licenciatura" degree in Civil Engineering (5-year higher education course, 1996), all from the Instituto Superior Técnico of the Lisbon University. His research interests lie in the fields of steel and steel-concrete composite structures, structural stability and thin-walled members, focusing on Generalized Beam Theory methods and geometrically exact beam finite elements including cross-section deformation. Prior to embracing an academic career, he worked in one of the top Portuguese structural engineering companies.

SSRC annual meeting

Overview of Task Group Objectives

Tuesday 4:20 p.m. – 4:30 p.m.

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

Task Group Meetings

*parallel breakout sessions
for task groups*

SS3 Tu 4:45 p.m. – 5:30 p.m.

TG02 Members: Stability of Steel Members | Room 342

Chair: Craig E. Quadrato, Wiss, Janney, Elstner Associates, Inc., Austin, TX

TG03 Systems: Stability of Steel Systems, Especially Frames | Room 340

Chair: Graham Cranston, Simpson Gumpertz & Heger, Inc., Waltham, MA

Task Group Meetings

*parallel breakout sessions
for task groups*

SS4 Tu 5:45 p.m. – 6:30 p.m.

TG04 Stability of Metal Bridges and Bridge Components | Room 340

Chair: T. Andrés Sánchez, ADSTREN, Quito, Ecuador

TG05 Thin-Walled Structures | Room 342

Chair: Kara Peterman, University of Massachusetts Amherst, Amherst, MA

TG06 Extreme Loads: Stability under Extreme Loads | Room 339

Chair: Mina Seif, National Institute of Standards and Technology, Gaithersburg, MD

SSRC Annual Business Meeting

SS5 Tu 6:30 p.m. – 7:00 p.m.

Room 343-344

- SSRC Business Meeting
 - Presentation of the 2018 Vinnakota Award
 - Presentation of the 2017 MAJR Medal
 - Presentation of the 2018 Beedle Award
-

SSRC Social Hour

SS6 Tu 7:00 p.m. – 8:00 p.m.

Room 343-344

Beedle Award

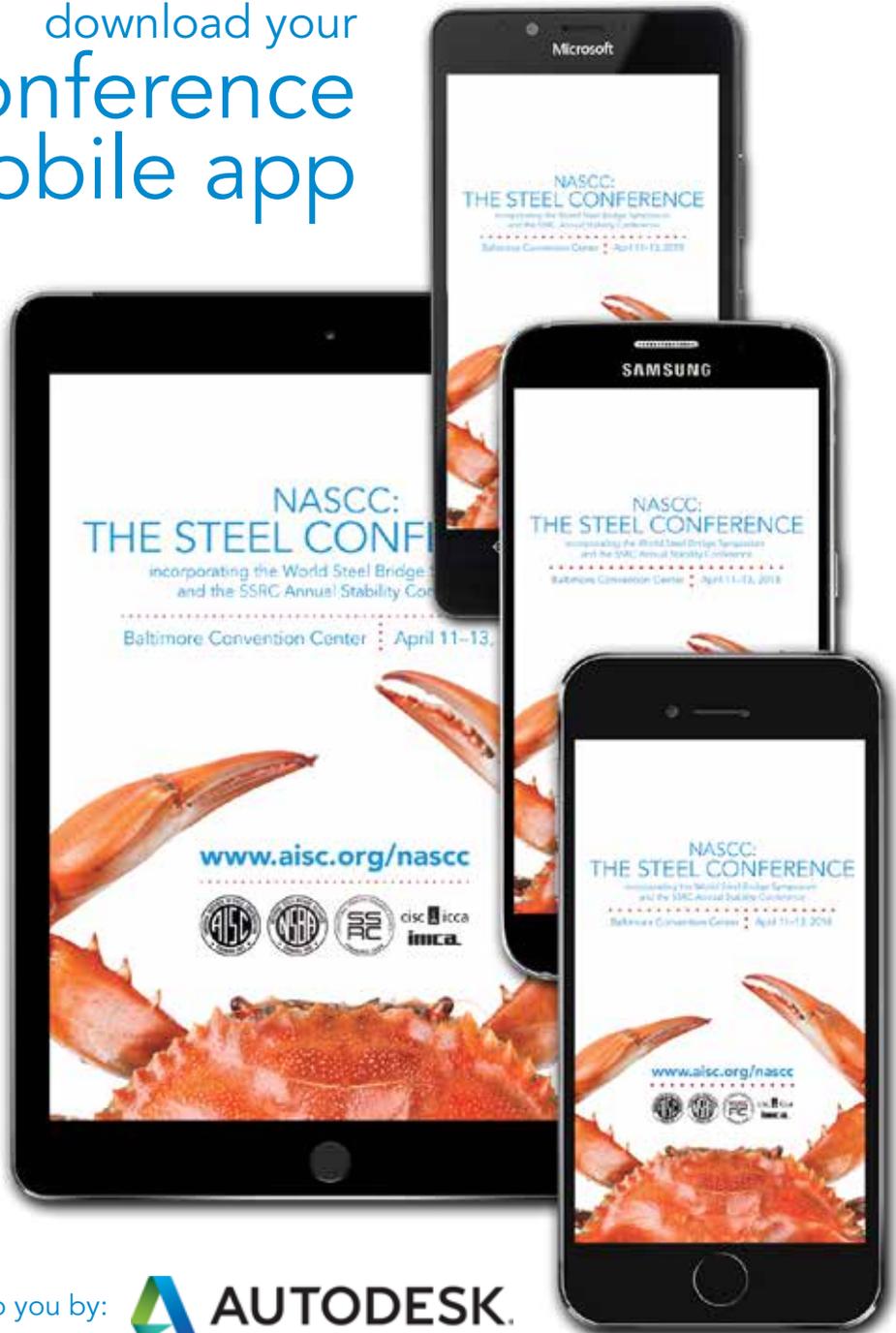
The award is the top award given by SSRC and has been established in honor of the late Lynn S. Beedle, an international authority on stability and the development of code criteria for steel and composite structures. He was a leader and outstanding contributor to the work of the Structural Stability Research Council for a period of more than 50 years, establishing the council as the preeminent organization worldwide in the area of structural stability. Through Lynn Beedle's dedicated work and leadership in the national and international arenas, the structural engineering profession has seen advanced concepts developed into practical engineering tools. He consistently and successfully endeavored to advance collaboration between researchers, engineers and code writers worldwide. The SSRC Executive Committee serves as the award committee.

Dinar Camotim is Professor of Structural Engineering at the University of Lisbon, Portugal, where he teaches and conducts research on structural stability. He has been in this position for the past 30 years, after receiving MS and PhD degrees from the University of Waterloo. He: (i) supervised 5 Post-Doctoral, 23 PhD and 28 MS students, (ii) co-authored two books on structural stability, seven book chapters and 620 papers (170 in journals), (iii) delivered 20 keynote lectures in international conferences, (iv) is Associate Editor of the ASCE Journals of Engineering Mechanics and Structural Engineering, and Editorial Board Member of several other journals, (v) is a ASCE-EMI Stability Committee past chair and Member of the ECCS Technical Committees for Stability and Cold-Formed Structures, and (vi) received the ASCE Shortridge Hardesty Award in 2010. He joined SSRC in 1997 and has been an Executive Committee Member since 2008. He also has supervised four Vinnakota Award winners.



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exhibitor workshops

Nonlinear Analysis in the 2016 AISC Specification

EW1a W 7:00 a.m. – 7:45 a.m. | **Room 341**
EW1b F 7:00 a.m. – 7:45 a.m. | **Room 336**

Presented by: Hexagon PPM

In today's production environment engineers utilize available tools to quickly get projects completed. With this recent code requirement, engineers should step back to see the "why," "where," "how," and "what" before applying these complex procedures. This presentation explains the lateral stability requirements up to the current 2016 *Specification*, as found in the 15th Ed. *AISC Steel Construction Manual* to help you use nonlinear analysis with more confidence without needing to do complicated and elaborate hand verification calculations.

Advancements in Structural Engineering and BIM Collaboration

EW2 W 8:00 a.m. – 9:00 a.m. | **Room 336**

Presented by: Bentley Systems

Adopting the BIM workflow is easier than ever with integrated physical and analytical modeling in the new STAAD.Pro CONNECT Edition. Extend the life of your data beyond just the analytical model and reuse your data throughout the lifecycle of your project. STAAD models can now easily be incorporated into Revit, AECOsim, and more.

Industry 4.0 solutions for Fabricators and Steel Service Centers

EW3 W 8:00 a.m. – 9:00 a.m. | **Room 341**

Presented by: Hexagon PPM

Remaining competitive requires continuous improvement in productivity, quality, agility and service levels. Combining Industry 4.0 and lean manufacturing philosophies, Smart[®] Production enables fabricators and service centers to control and schedule steel fabrication on the shop floor from digital design until completion of assembled structures. Smart[®] Production provides capabilities to shorten throughput times, save material and use resources (manpower/machines) efficiently. Real-time information leads to intelligent reporting and full traceability of materials, logistics and smart fabrication.

Lasertube: A New Way of Making Architecture

EW4 W 11:15 a.m. – 12:15 p.m. | **Room 341**

Presented by: BLM Group USA

Lasertube cutting technology is an exciting advancement in the production of steel structures. Thanks to the wide range of possible cutting geometries, 3D laser cutting allows for the discovery of new junction shapes between structural elements—empowering architects to create innovative, cost-effective designs in structural steel.

FabSuite: Industry Panel Discussion on "Why I chose the industry leader in structural steel management software."

EW5 W 11:15 a.m. – 12:15 p.m. | **Room 336**

Presented by: FabSuite

This is not your typical software demo. Instead, come get an in-depth perspective about FabSuite straight from not only the developers and product managers, but from current FabSuite users. Ask questions, engage with industry experts, and gain insights not available in typical presentations. You'll hear directly from our users and learn why they chose FabSuite not just as a software solution, but also for the culture that defines our company. Come find out why FabSuite is the industry leader in structural steel management software solutions!

Complete Steel Building Design in RISA

EW6 W 2:30 p.m. – 3:30 p.m. | **Room 341**

Presented by: RISA Tech

Learn to optimize your multi-story steel building design using RISA. The automated tools in RISA software will streamline your workflow by using one model for the entire building design. Learn how to round-trip your model by designing the gravity system with RISAFloor, the lateral system for wind and seismic loads with RISA-3D and the connections in RISAConnection.

Latest Topics/Trends in Steel Detailing and Fabrication

EW7 W 3:45 p.m. – 5:15 p.m. | **Room 341**

Presented by: Trimble

Within this session, we will take a look at combining many of the tools in Tekla Structures to illustrate different ways to use the Tekla model for structural steel estimating. Then, we'll discuss how to seamlessly share status information, link documents and export project organization data from Tekla Structures to our cloud-based platform, Trimble Connect. We'll conclude the session discussing the extensive miscellaneous steel modeling, drawing and CNC capabilities of Tekla Structures, including revision handling.

Eight Ways Connection Design Could Be Done Differently

EW8 W 5:30 p.m. – 6:30 p.m. | **Room 341**

Presented by: Descon Plus

Whether you work with structural steel connections every day or just once in a while, Descon 8 offers the tools for designing connections differently with time-saving features and a new user interface that are designed by structural engineers. This workshop will discuss eight ways that connection design could be done differently. Attendees will learn the basics of how to use Descon 8 software, as well as hearing the latest insider news about what's still-to-come with Descon.

FabSuite: See What's New with the Industry Leader in Structural Steel Management Software

EW9 W 5:30 p.m. – 6:30 p.m. | **Room 339**

Presented by: FabSuite

Are you wondering what makes FabSuite, LLC the industry leader in structural steel software solutions? Are you looking for a powerful, easy to learn, and even easier to use solution for your structural steel fabrication operations? Join us for a comprehensive overview of the many features that FabSuite has to offer, and how they can be leveraged to benefit your structural steel fabrication operations. You'll learn how our software can solve your biggest challenges and improve your bottom line. This session is designed for people wondering if they need to be considering a software solution, and also for those looking to take their current system to the next level. Come find out what why others have chosen the industry leader to improve their bottom line.

Vibration Analysis and Serviceability Design of Steel Frames and Concrete Foundations

EW10 Th 7:00 a.m. – 7:45 a.m. | **Room 336**

Presented by: Hexagon PPM

Structures need to be designed for strength, but serviceability criteria may govern the design as many engineers start optimizing their members and foundations in a very tight market. Learn how vibration of steel structures can be resolved during design. Unintended structure and foundation vibration is not just a minor nuisance, and in some cases can cause safety issues which could lead to costly repairs and project delays.

Fluor and RISA Case Study on Structural Software Integration

EW11 Th 7:00 a.m. – 7:45 a.m. | **Room 339**

Presented by: RISA Tech

This session serves as a case-study for the modeling and data transfer workflow that exists within projects at Fluor with an emphasis on the utilization of RISA-3D, with a focus on the implementation of "best practices" for model setup and data transfer, knowledge of direct links between software (such as the RISA-Revit Link) and how revisions can be tracked throughout the "Smart Model Transfer" process.

Automatic Connection Design: Links Between SCS and Tekla, SAP2000, STAAD and More

EW12a Th 7:00 a.m. – 7:45 a.m. | **Room 340**

EW12b F 7:00 a.m. – 7:45 a.m. | **Room 339**

Presented by: Steel Studio Inc.

This workshop will demonstrate the flexible connection design tools typical of Steel Connection Studio. SCS can be effectively applied to automatically import the joints of a Tekla model with an indication of the maximum forces that the connections can withstand. When working with design software like SAP2000, ETABS, STAAD or others the automatic design will instead take care of sizing the connections. Come and see this live demo!

exhibitor workshops

Bar Grating Fabrication

EW13 Th 7:00 a.m. – 7:45 a.m. | **Room 331-332**

Presented by: NUCOR Grating

Bar grating may be found in industrial sectors such as oil and gas production, mining, water and wastewater treatment, power generation, as well as a wide variety of architectural applications. Join us as we dive deeper into fabricated bar grating (carbon, stainless, and aluminum). From press-locked to riveted to standard bar grating, we will discuss the ins and outs of fabricated grating including a focused discussion on BIM.

Stress-Free Lateral Design in Tekla Structural Designer

EW14 Th 7:00 a.m. – 7:45 a.m. | **Room 341**

Presented by: Trimble

Remove the stress of calculating forces, applying loads correctly, determining load paths and figuring out the results. With our automated features and easy to use interface, Tekla Structural Designer will help you complete your project on time and with confidence. We'll run through the load automation for wind and seismic forces and focus on getting information out of this 3D building solution. Come see how Tekla Structural Designer can help simplify your lateral designs.

Increase Your Estimating Accuracy with AVEVA FabTrol

EW15 Th 8:00 a.m. – 9:00 a.m. | **Room 341**

Presented by: AVEVA

This presentation will begin by providing an example workflow for advanced, model-based estimating using AVEVA Bocad, the most powerful, productive and complete structural steel detailing solution, and AVEVA FabTrol, the global market-leading information and production management system for steel fabrication.

ASTM F3043 and F3111 200 ksi Bolts—Applications and Economies

EW16 Th 11:30 a.m. – 12:30 p.m. | **Room 341**

Presented by: Marubeni-Itochu Steel America, Inc. (MISA)

CANCELLED

With the new AISC 360-16 specification, ASTM 3043 twist-off type tension control structural bolt assemblies and ASTM 3111 heavy hex structural bolt assemblies offer cost- and time-savings in heavy connections. With 200 ksi tensile strength and 1 to 1¼ inch, they can be the superior choice over large diameter A325 and A490 bolts for your building projects. Your connections will be more compact with reduced connection material, hole-making and installation costs.

How to Leverage Tekla and Qnect for “Esti-modeling”

EW17 Th 11:30 a.m. – 12:30 p.m. | **Room 339**

Presented by: Qnect

It's all about early data. By leveraging your Tekla software with Qnect's connection modeling capabilities, you will estimate faster, more accurately and with more insight into optimization opportunities. Come see how easy and quick it is to build a stick model, connect it, and analyze the data so you can create accurate bids using Tekla + Qnect. Transfer data to your cost analysis software (FabTrol, FabSuite, STRUMIS) for accurate reporting.

Quantify the Performance of Structural Steel Moment Frames Using Seismic Loss Assessment Tool

EW18 Th 1:45 p.m. – 2:45 p.m. | **Room 341**

Presented by: Haselton Baker Risk Group, LLC

Seismically resilient building design may be achieved through damage prevention or directing damage into replaceable fuse components, allowing energy dissipation and rapid repair. While many structural steel systems do the former, other new technologies do the latter. One example is the Simpson Strong-Tie Strong Frame® Special Moment Frame with their Yield-Link® structural fuse technology. This session examines the performance of other structural steel construction and the Simpson Strong-Tie Strong Frame® SMF using the Seismic Performance Prediction Program.

The Changing Role of the Engineer: How a Constructable Model Can Improve Construction Services

EW19 Th 3:00 p.m. – 4:00 p.m. | **Room 341**

Presented by: Trimble

As the trend to incorporate construction services into the structural engineering repertoire becomes more popular, more engineers are looking for a solution that complements their existing workflow, while allowing them to easily work further downstream. Come learn how using a constructable model will allow you to work more closely downstream by allowing you to use point clouds, create high level of detail structural models and create consistent, data driven deliverables.

AISC Advanced Steel Design in RFEM

EW20 Th 4:45 p.m. – 5:45 p.m. | **Room 341**

Presented by: Dlubal Software, Inc.

Experience RFEM, the most powerful FEA structural analysis software, via a steel design example using AISC 360-16. View the efficient analysis and design process from start to finish with the intuitive user interface and CAD-like modeling tools. Comprehensive member design ratios, equations, and variables with code references provide full program transparency. See first-hand how RFEM takes you beyond your current design software.

GIZA Software: Connection Design for Tekla Structures

EW21 Th 4:45 p.m. – 5:45 p.m. | **Room 331/332**

Presented by: Giza

Join the GIZA team as we highlight our advanced connection design software. Our integration with Tekla Structures will be the key focus as we demonstrate a proven process that will save you time and money on your connection design scope. We will be joined by our integration partner, Tekla, as they share their experience about this connection design process for Tekla Structures.

Seamless Structural Analysis Utilizing RFEM and Revit/Tekla

EW22 F 7:00 a.m. – 7:45 a.m. | **Room 341**

Presented by: Dlubal Software, Inc.

In the design phase of a project, multiple models are typically used for construction drawings and structural analysis. These isolated models may cause planning and communication errors and can double the time and effort. Integrated interfaces between RFEM, Revit, and Tekla Structures allow for bidirectional exchange of information to eliminate these sharing issues. The direct connection between BIM and structural analysis ensures powerful, efficient and reliable planning.

Computing Seismic Loads Using Dynamic Analysis

EW23 F 8:00 a.m. – 9:30 a.m. | **Room 341**

Presented by: Bentley Systems

Computing seismic loads using dynamic analysis raises questions as to which is the most appropriate seismic analysis method to use. Join structural expert Sye Chakraborty to learn more about how to select the right seismic analysis method and the various IBC/ASCE requirements related to seismic analysis.

Guidelines for Resilient Design on CoreBrace Buckling Restrained Brace Frames (BRBFs)

EW24 F 11:30 a.m. – 12:30 p.m. | **Room 341**

Presented by: Haselton Baker Risk Group, LLC & CoreBrace

BRBF buildings have been popular in seismic regions for some time due to their ductility and energy dissipation. Now we look forward into an age where we ask more of our buildings: total building resilience. Resilience not only includes safety, but also limits damage, repair cost and business disruption. To achieve resilient performance, peak drift, peak floor acceleration and residual drift must be controlled. In this session we will examine the design of resilient BRBF buildings.

BeamMaster Weld: Robotic Welding for Unique Parts, or "How you can weld structural steel beams with a donut and a coffee."

EW25 F 1:45 p.m. – 3:15 p.m. | **Room 341**

Presented by: AGT Robotics

Robotics and Industry 4.0 principles are already revolutionizing all aspects of manufacturing. With our BeamMaster Weld, we will demonstrate how it is now possible to tackle one of the biggest challenges that robotics had to face with the structural steel industry: how to weld unique parts. We will show you how Cortex operates to automatically generate welds, robot paths and can even help you plan your production.

STAGE ONE	STAGE TWO
<p>GIZA Software: Improving the Connection Design Process</p> <p>PD1 2:15 p.m. – 2:45 p.m. Presented by: Giza</p> <p>Join GIZA for a quick overview demonstration of our connection design software. Whether used as a stand-alone system or with our Tekla Structures integration, GIZA can improve the connection design process for your projects or estimates.</p>	<p>Using Qnect for Value Engineering and Project Optimization</p> <p>PD2 2:30 p.m. – 3:00 p.m. Presented by: Qnect</p> <p>Leverage your Tekla investment with Qnect’s software service. We will demonstrate the ease of connecting your Tekla model nine times simultaneously using nine different sets of parameters with buttons 1 and 2. We will demonstrate how to reduce the number of bolts on project by 20% or more using QuickQnect’s Bolt Optimization radio button. We will show you how early data will identify the location of beams requiring reinforcement doublers and how our doubler report will help you eliminate them.</p>
<p>Tekla Structures</p> <p>PD3 3:05 p.m. – 3:35 p.m. Presented by: Trimble</p> <p>Is your engineering software stuck in the last century? Tekla Structural Designer was developed with cutting edge technology to meet the demands of today’s fast-paced environment. Join our session as we design a composite steel building from start to finish and show how quickly you can model, load, analyze and design a building with Tekla Structural Designer. Come see the “next generation” of engineering software.</p>	<p>Torque and Angle Fastening: Installation Method Options and Best Practices</p> <p>PD4 3:20 p.m. – 3:50 p.m. Presented by: LeJeune Bolt Company</p> <p>The torque and angle installation method has been used worldwide for decades and is now gaining prominence in the U.S. construction market. With the introduction of LeJeune’s TNA® Fastening System and the inclusion of ASTM F3148 spline drive bolts, understanding the method is critical to the industry moving forward. This product demonstration will cover how the installation method works, product options, and best practices when using the torque and angle method.</p>
<p>FabSuite Overview</p> <p>PD5 3:55 p.m. – 4:25 p.m. Presented by: FabSuite</p> <p>This is not your typical software demo. Instead, come get an in-depth perspective about FabSuite straight from not only the developers and product managers, but from current FabSuite users. Ask questions, engage with industry experts, and gain insights not available in typical presentations. You’ll hear directly from our users and learn why they chose FabSuite not just as a software solution, but also for the culture that defines our company. Come find out why FabSuite is the industry leader in structural steel management software solutions!</p>	<p>Structural Analysis and Design in RFEM</p> <p>PD6 4:10 p.m. – 4:40 p.m. Presented by: Dlubal Software, Inc.</p> <p>Experience RFEM, the most powerful FEA structural analysis software, via a steel design example using AISC 360-16. View the efficient analysis and design process from start to finish with the intuitive user interface and CAD-like modeling tools. Comprehensive member design ratios, equations, and variables with code references provide full program transparency. See first-hand how RFEM takes you beyond your current design software.</p>
<p>Designing Connections in Your RISA Model</p> <p>PD7 4:45 p.m. – 5:15 p.m. Presented by: RISA Tech</p> <p>Learn how to design steel connections in an easy to use and intuitive program. See how integration with RISA-3D and RISAFloor gives you the full power of design with multiple load combinations.</p>	<p>Automatic Connection Design: Links Between SCS and Tekla, SAP2000, STAAD and More</p> <p>PD8 5:00 p.m. – 5:30 p.m. Presented by: Steel Studio Inc.</p> <p>This workshop will demonstrate the flexible connection design tools typical of Steel Connection Studio. SCS can be effectively applied to automatically import the joints of a Tekla model with an indication of the maximum forces that the connections can withstand. When working with design software like SAP2000, ETABS, STAAD or others the automatic design will instead take care of sizing the connections. Come and see this live demo!</p>
<p>LUSAS V16 Bridge and Structural Analysis Software: Simplify, Collaborate and Design</p> <p>PD9 5:35 p.m. – 6:05 p.m. Presented by: LUSAS</p> <p>LUSAS is celebrating 35 years of helping its clients to analyze, design and assess all types of infrastructure projects with our finite element analysis software. The recent release of LUSAS version 16 marks a new era: it includes comprehensive design tools for steelwork and many other new features and enhancements that simplify and improve usability while making collaboration between design teams easier. Attend this presentation to see the benefits of using LUSAS on your project.</p>	<p>Economic Steel Design: RAM Structural System</p> <p>PD10 5:50 p.m. – 6:20 p.m. Presented by: Bentley Systems</p> <p>Design with steel in the most economical way using the RAM Structural System. Allen Adams, Chief Structural Engineer at Bentley Systems, will show you tips for designing economical structures with Bentley’s premier RAM Structural System, a powerful suite of applications.</p>

networking events

Welcome Reception Lunch

Wednesday 12:15 p.m. – 2:15 p.m.

Cost: Included in all full registration options.

Single ticket option also available.

Let's do lunch! After feeding your mind at the opening keynote on Wednesday, join us in the exhibit hall to feed your belly and kick off of the conference! More than 240 exhibitors will be displaying a wide array of products and services at the show, and you won't want to miss this exciting opportunity to see what they're offering. You'll find detailing software, connection products, safety equipment, engineering software and coatings, and see live fabrication equipment demonstrations while meeting other conference participants and visiting various food stations throughout the hall.

Conference Dinner— Power Plant Live!

Thursday 7:00 p.m. – 10:00 p.m.

Cost: \$85

Registration is required for the Conference Dinner. *Space is limited!*

Sponsored by:



Step up your networking game and enjoy a fun-filled evening at Power Plant Live! The Steel Conference is taking over Baltimore's premier dining and entertainment district, located just one block from the World Famous Downtown Inner Harbor. Once the historical location of Baltimore's Centre Market of the early 1900s, which supplied everything one needed from produce to seafood, it is now home to an exciting collection of bars and restaurants like Leinenkugel's Beer Garden, MEX, Luckie's Tavern and Mosaic. Each venue will host a variety of local cuisine and live entertainment to match its diverse backdrops. Baltimore is known for its laid-back fun, its food scene, its sports, and all can be experienced in this one evening at one amazing location!

committee information

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formerly with Huntington Steel & Supply Co.
Todd Alwood, AISC
Jon T. Beier, PE, SMBH, Inc.
Sylvie Boulanger, formerly with the
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J. Kenneth Charles, Steel Joist Institute
Jacinda Collins, AISC
Stephanie D'Addese, MEng, PEng, formerly with CISC
Troy Dye, ARW Engineers
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Joel T. Hicks, Techflow, Inc.

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Jerod Hoffman, PE, Meyer Borgman Johnson
Ross Jones, Delta Structural Steel Services Group
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WEDNESDAY 4/11	SESSION	SESSION TITLE	ROOM	PDHS*	PDH CODE**
8:00 a.m. – 9:00 a.m.				1.0	
9:15 a.m. – 11:00 a.m.	K1	KEYNOTE: Seeing the Unseen	Ballroom I & II	1.0	
11:15 a.m. – 12:15 p.m.				1.0	
12:15 p.m. – 2:15 p.m.	—	Welcome Lunch (must have W icon on badge) Exhibit Hall Opens	Exhibit Hall	—	—
2:30 p.m. – 3:30 p.m.				1.0	
3:45 p.m. – 5:15 p.m.				1.5	
5:30 p.m. – 6:30 p.m.				1.0	

THURSDAY 4/12	SESSION	SESSION TITLE	ROOM	PDHS*	PDH CODE**
8:00 a.m. – 9:30 a.m.				1.5	
9:30 a.m. – 10:00 a.m.	—	Coffee Break	Exhibit Hall	—	—
10:00 a.m. – 11:15 a.m.	K2	KEYNOTE: Important Lessons I've Learned During The Past 40 Years	Ballroom I & II	1.0	
11:30 a.m. – 12:30 p.m.				1.0	
12:30 p.m. – 1:45 p.m.	—	Boxed Lunch (must have Th icon on badge)	Exhibit Hall	—	—
1:45 p.m. – 2:45 p.m.				1.0	
3:00 p.m. – 4:00 p.m.				1.0	
4:00 p.m. – 4:45 p.m.	—	Coffee Break	Exhibit Hall	—	—
4:45 p.m. – 5:45 p.m.				1.0	

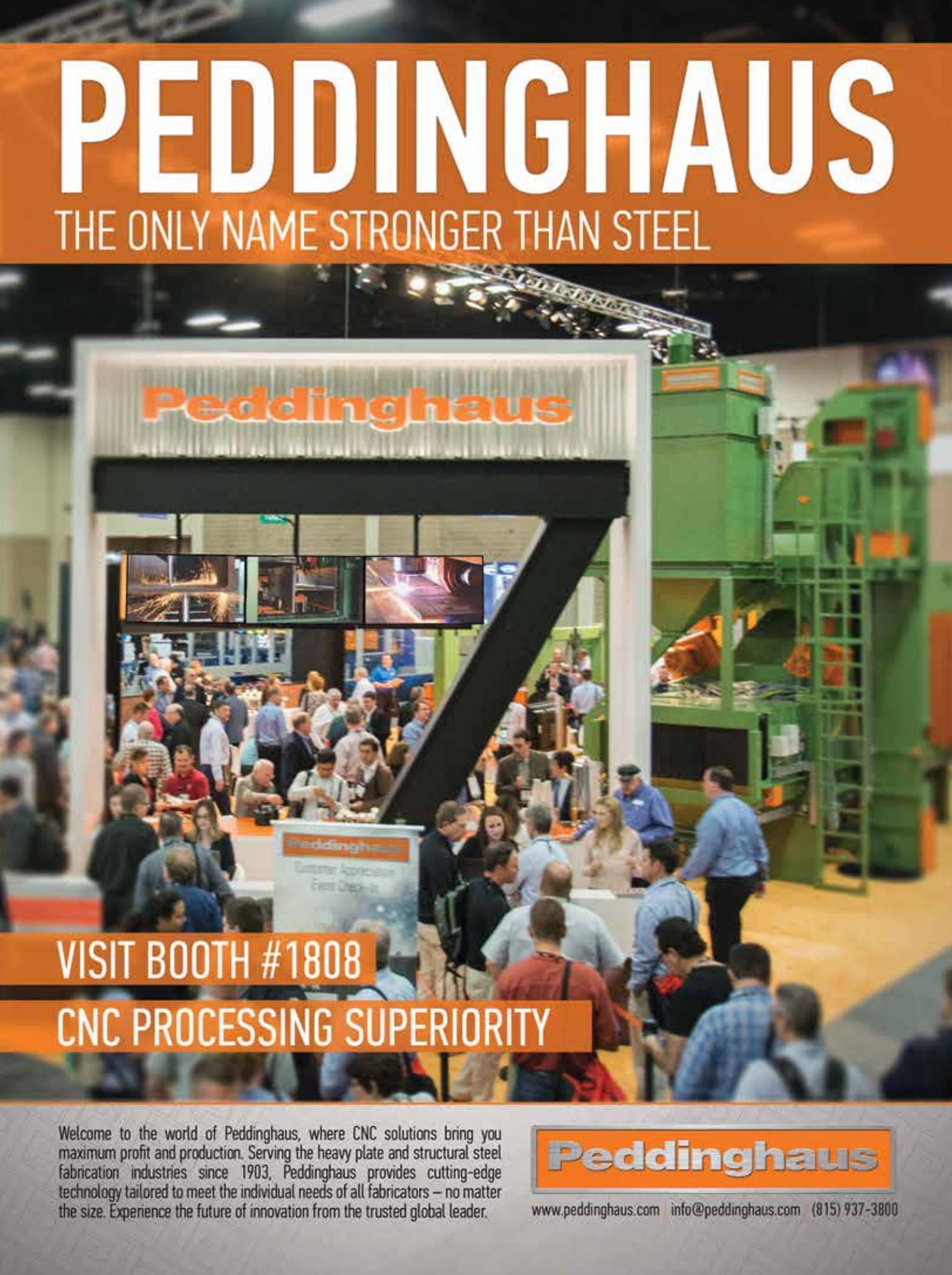
FRIDAY 4/13	SESSION	SESSION TITLE	ROOM	PDHS*	PDH CODE**
8:00 a.m. – 9:30 a.m.				1.5	
9:30 a.m. – 10:00 a.m.	—	Coffee Break	Exhibit Hall	—	—
10:00 a.m. – 11:15 a.m.	K3	KEYNOTE: T.R. Higgins Lecture: Towards an Integrated Fracture-Control Plan for Steel Bridges	Ballroom I & II	1.0	
11:30 a.m. – 12:30 p.m.				1.0	
12:30 p.m. – 1:45 p.m.	—	Boxed Lunch (must have F icon on badge)	Exhibit Hall	—	—
1:45 p.m. – 3:15 p.m.				1.5	

*1.0 PDHs = 0.10 CEUs

**PDH codes are session specific and given by speakers during individual sessions.

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