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April 2025



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ON THE COVER: Williams Crossing, a 1,440-ft pedestrian bridge made of weathering steel in Tulsa, Okla., p. 30. (Photo: High Caliber Captures) MODERN STEEL CONSTRUCTION (Volume 65, Number 4) ISSN (print) 0026-8445: ISSN (online) 1945-0737. Published monthly by the American Institute of Steel Construction (AISC), 130 E Randolph Street, Suite 2000, Chicago, IL 60601. Single issues \$8.00; 1 year, \$60. Periodicals postage paid at Chicago, IL and at additional mailing offices. Postmaster: Please send address changes to MODERN STEEL CONSTRUCTION, 130 E Randolph Street, Suite 2000, Chicago, IL 60601.

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editor's note



I was just in New York City this past weekend. Not my first rodeo in the Big Apple by a long shot, but one that involved some firsts for me while there.

These included my first basketball game at Madison Square Garden (on that note, see "Growing the Garden" in the July 2015 issue in the Archives section at **www.modernsteel.com**), my first walk across the Brooklyn Bridge (and back), my first visits to Astoria, Queens, and Red Hook, Brooklyn (I need to see more of both), my first time in what is advertised as the city's oldest continuously operating saloon, McSorley's Old Ale House (I tried both types of ale), and my first time *not* visiting Central Park when staying in Manhattan (kind of sad, but time flies when you're having too much fun).

Speaking of firsts, AISC has expanded its continuing education resources to include its first online Fabricator Education Training Program. Introduced in late 2024, the program is designed to provide AISC member fabricators with an easy way to introduce new concepts to employees. The mostly videobased, online training program covers basic topics like using a tape measure correctly to more complex processes like laying out and fitting up columns and beams.

"The new fabrication training program is designed to empower your employees, particularly those who are new to the industry, by providing them with the tools and knowledge they need to succeed," explained Stephanie Green, CEO of Atlas Iron Works, one of the program's early adopters. "By offering a clear understanding of expectations and the resources needed to meet them, the training helps employees not only excel in their current roles but also grow and evolve within their organization. We're excited to see the continued success and expansion of the program."

You can find out more about the program and how to become involved at **aisc.org/ fabricator-training**. You can also read about it in the October 2024 article "Workforce Development Win" (also in the Archives section at **www.modernsteel.com**).

Fabricators (as well as engineers, detailers, erectors, architects, contractors, and others) also have plenty of opportunities to further their education-and mingle with their peers-at NASCC: The Steel Conference April 2-4 in Louisville (aisc.org/nascc). This year's show includes dozens of educational sessions with fabricator-focused content, with topics ranging from "Ensuring the Safety of Employees Sent to Work in Customer Facilities" to "Workforce Development Turned Upside Down: An Educational Partnership Case Study" to "Inspection for Fabricators and Erectors: What Does the Building Code Require." (There's also my favorite in terms of session title: "Building Better Bourbon," a case study on an upgrade to the Buffalo Trace Distillery in Frankfort, Ky.)

And for those who aren't able to attend in person or view our online streaming sessions, recorded presentations of many educational sessions will be posted roughly 45 days after the conference at **aisc.org/learning**.

Gooto We-

Geoff Weisenberger Editor and Publisher



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steel interchange

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Failed Pre-Installation Verification Test

During a recent pre-installation verification procedure, one of the three bolts within a given lot did not reach the minimum bolt pretension value listed in Table 7.1 of the 2020 *RCSC Specification for Structural Connections Using High-Strength Bolts.* The final value was 4 kips less than the minimum value required. What does AISC recommend when no known issues are found?

Table 7.1 Minimum Bolt Pretension for Pre-Installation Verification						
Nominal Bolt Diameter, <i>d_b</i> , in.	Minimum Bolt Pretension for Pre-Installation Verification, kips					
	Group 120	Group 144 and Group 150				
1/2	13	16				
5%8	20	25				
3⁄4	29	37				
7⁄8	41	51				
1	54	67				
11⁄8	67	84				
1¼	85	107				
13%8	102	127				
1½	124	155				

The 2020 *RCSC Specification* (download for free at **aisc.org/ specifications**) is silent on what procedures to follow if a bolt fails during pre-installation verification (PIV) testing. First, note that PIV testing is only required for bolts to be installed in a slipcritical or pretensioned condition. Bolts installed in a snug-tight condition do not require PIV testing. Also note that the values of minimum bolt pretension for pre-installation verification listed in Table 7.1 are 5% higher than the required minimum bolt pretension, pretensioned, and slip-critical bolts listed in Table 5.2.

If PIV testing is required, ensure that the proper procedures outlined in Section 7 are followed and that the bolt tension measurement device has been properly calibrated. Other issues, such as the lubrication of the bolts, can also affect PIV testing.

If hex-headed bolts are being tested, a lubrication issue may affect the PIV testing. It is permitted to relubricate hex-headed bolts and perform the PIV testing on the relubricated bolts. If tension-controlled bolts are being tested, only the manufacturer is permitted to relubricate the bolts. Storage and lubrication of bolts are addressed in *RCSC* Section 2.10, where 2.10.4 states:

"Bolting components (including some bolting assemblies) may be field lubricated to help with installation as deemed practical or necessary, except that the following matched bolting assemblies shall not be relubricated by anyone other than the Manufacturer:

- (1) Spline end twist-off matched bolting assemblies;
- (2) Matched bolting assemblies when using the combined method and ASTM F3148 Grade 144 spline end fixed matched bolting assemblies; and
- (3) Alternative-design bolting components or matched bolting assemblies (see Section 2.12)."

ASTM F1470 Standard Sampling for Specified Mechanical Properties and Performance Inspection also provides helpful information. Section 8 is titled Disposition of Nonconforming Lots, and Section 8.2 lists the following:

"8.2 End User Options—The end-user shall choose one of the following options for the disposition of those fastener lots that have been rejected after delivery:

- 8.2.1 The end user considers the degree to which the characteristic(s) deviate(s) from specified requirements and the effect on their performance in the intended service application. The end user may authorize the release of the parts or fastener lots for use.
- 8.2.2 They may be scrapped.
- 8.2.3 They may be 100% sorted and nonconforming parts removed.
- 8.2.4 They may be reworked or reprocessed to correct the nonconforming characteristic(s)."

Larry Kruth, PE

Stiffener Plate Thickness Requirement per Section J10.8

Does Section J10.8 in the *Specification for Structural Steel Buildings* (ANSI/AISC 360-22) require a stiffener to be at least half the thickness of both the flange and the moment connection plate? Or is the requirement stating that if the stiffener is at least half the thickness of the flange, it does not need to be at least half the thickness of the moment plate? *Specification* Section J10.8 (b) reads, "The thickness of a stiffener shall not be less than one-half the thickness of the flange or moment connection plate delivering the concentrated load..."

Steel Interchange is a forum to exchange useful and practical professional ideas and information on all phases of steel building and bridge construction. Contact Steel Interchange with questions or responses via AISC's Steel Solutions Center: 866.ASK.AISC | solutions@aisc.org. The complete collection of Steel Interchange questions and answers is available online at www.modernsteel.com. The opinions expressed in Steel Interchange do not necessarily represent an official position of the American Institute of Steel Construction and have not been reviewed. It is recognized that the design of structures is within the scope and expertise of a competent licensed structural engineer, architect or other licensed professional for the application of principles to a particular structure.

steel interchange

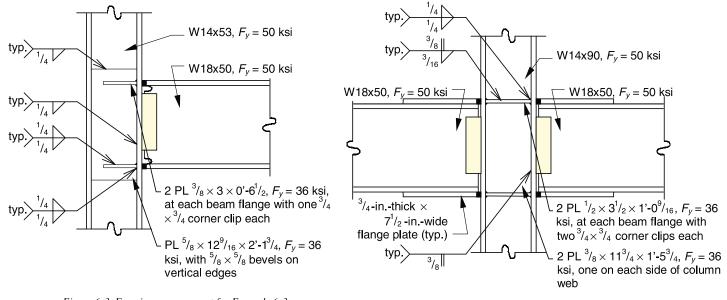
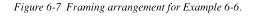


Figure 6-3 Framing arrangement for Example 6-3 (Solution A).





The intention of "... one-half the thickness of the flange or moment connection plate delivering the concentrated load ... " is to refer to either the flange thickness or the moment plate thickness, (whichever is delivering the concentrated force). This is illustrated in Examples 6-3 and 6-6 in AISC Design Guide 13: Stiffening of Wide-Flange Columns at Moment Connections: Wind and Seismic Applications (download or order at aisc.org/dg). Note that when this check (Equation 4.3-3) is done in Example 6-3, the thickness of the flange is used since the framing arrangement depicted in Figure 6-3 indicates that the beam flange is delivering the concentrated force. In contrast, when Equation 4.3-3 is used in Example 6-6, the thickness of the moment plate is used based on the framing arrangement depicted in Figure 6-7.

Heather Gathman



Heather Gathman (gathman@aisc.org) is a staff engineer in AISC's Steel Solutions Center. Larry Kruth is AISC's former vice president of engineering and research, and a consultant to AISC.



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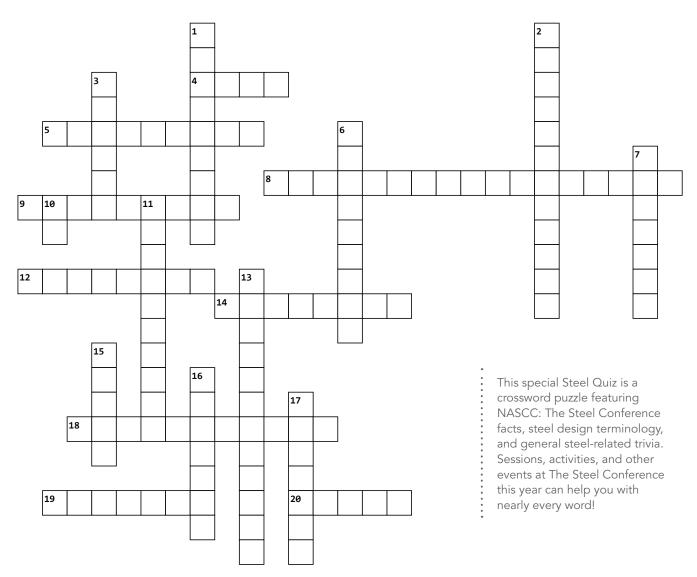


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NEW INNOVATION

steel quiz



Across

- 4 Registration for NASCC: The Steel Conference is _____ for AISC student members.
- 5 Another name for drag strut.
- 8 ANSI/AISC N690-24 is the 2024 edition of the Specification for Safety-Related Steel Structures for ____ (2 words).
- 9 One of the initiatives from the AISC Need for Speed program is the development of a prefabricated, modular, steel floor framing system called _____.
- 12 Strength for instability limit states: ______ strength.
- 14 Effective net area is the net area modified to account for the effect of _____ (2 words).
- 18 The Career ____ Program with Steel is a four-year project management development initiative that takes place at NASCC: The Steel Conference.

- 20 Lateral deflection of a structure.

Down

- 1 A special slate of sessions at NASCC: The Steel Conference designed to give fabricators and erectors practical guidance and useful tools to promote safety.
- 2 A connection that complies with the requirements of ANSI/AISC 358 is a ____ connection.
- **3** Weld of generally triangular cross section.
- 6 Oxide surface coating on steel formed by the hot rolling process (2 words).
- 7 The last name of this year's T.R. Higgins Lectureship Award recipient.

- 10 The development of _____-driven tools related to structural steel is becoming more common as technology continues to advance.
- 11 The 2025 NASCC: The Steel Conference is being held in this city.
- 13 Graphic and pictorial documents of the individual structural steel shipping pieces (2 words).
- 15 Longitudinal center-to-center spacing of fasteners.
- 16 The ____ Reception at NASCC: The Steel Conference brings together advocates for and allies of under-represented groups in AEC industries.
- 17 The ___ Community Hospital is a landmark project for the advancement of steel reuse in the U.S.

TURN TO PAGE 14 FOR ANSWERS

Float Like a Butterfly, Bend Like a Beam

Muhammad Ali Center

Louisville, Kentucky

Multiple W14 x 193 that were rolled the Easy Way to a 16'-8 5/8" CLR (tightest of the 3 radii) making up the structural support framing at the main entry.

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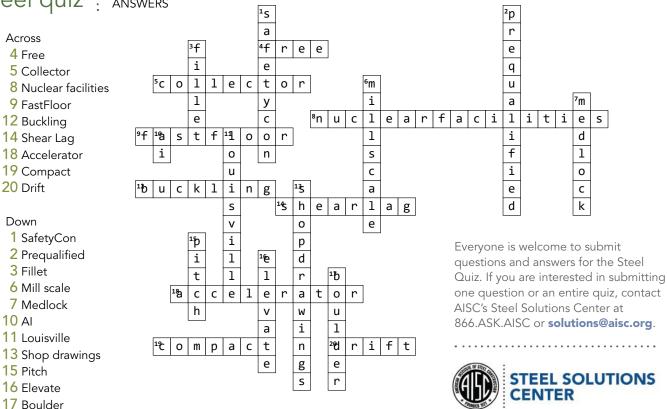
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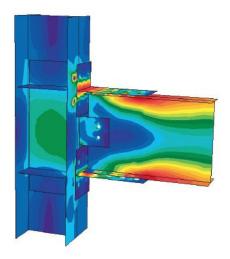


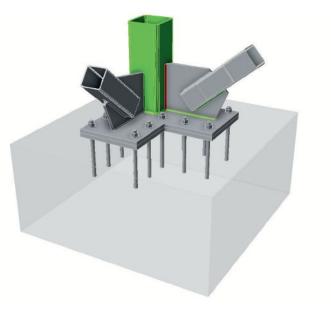
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Booth #801

Dynamic Duo

BY HANNAH VALENTINE, PE

Steel frames with wood floors maximize both materials and contribute to speedy and sustainable designs.

AN INDUSTRY-WIDE focus on sustainability and material efficiency has increasingly led designers to consider hybrid steel frames with mass timber floors for their buildings. From Los Angeles to Providence, R.I., hybrid steel-timber systems are found in office buildings, university dorms, and other structures.

AISC first recognized the trend in 2022 and published Design Guide 37: *Hybrid Steel Frames with Wood Floors*, the first known resource with guidance and best practices for designing hybrid systems (AISC members can download it for free at **aisc.org/dg**). This year, AISC published the Hybrid Steel-Timber Smart Reference, the first one-page breakdown of a design guide created just for architects (and engineers looking for qualitative design guidance).

Designed to be kept on your desk or in a computer folder, this Smart Reference is the first in a planned series of short references highlighting key takeaways from AISC's archive of design resources. The following excerpts will provide architects and engineers a starting point for their next (or first) hybrid steel-timber project.

.

When to Consider Hybrid Steel-Timber Systems

Hybrid steel-timber systems are composed of structural steel framing and panelized mass timber, typically cross-laminated timber (CLT). They capitalize on each material's strengths to maximize aesthetics and efficiency. The steel floor frame enables the spans to exceed the typical 20to 25-ft mass timber construction spans and achieve the typical 30- to 45-ft steel spans. Steel framing also reduces structural depth and column profiles, preserving floor-tofloor heights and leasable space. Hybrid systems that use steel framing are generally stiffer than all-timber buildings and more appropriate for vibration-sensitive spaces.

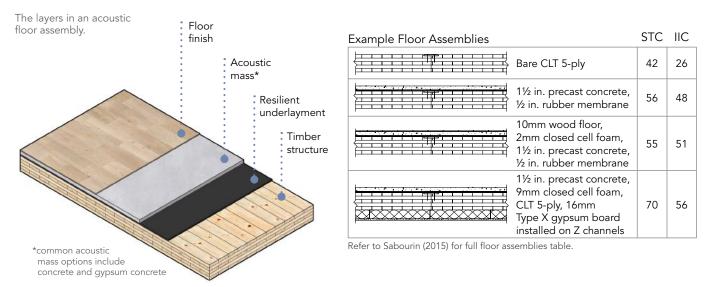
Acoustic Floor Assemblies

The acoustic performance of hybrid steel-timber floor assemblies will vary depending on the number of layers in the CLT panel, ply thickness, wood species, and other factors. The floor assembly may require an acoustic mass and resilient underlayment to meet specific STC or IIC criteria. The table shows some options for acoustic floor assemblies. For more, see section 4.3 in Design Guide 37 and *Mea*surement of Airborne Sound Insulation of 8 Wall Assemblies Measurement of Airborne and Impact Sound Insulation of 29 Floor Assemblies.

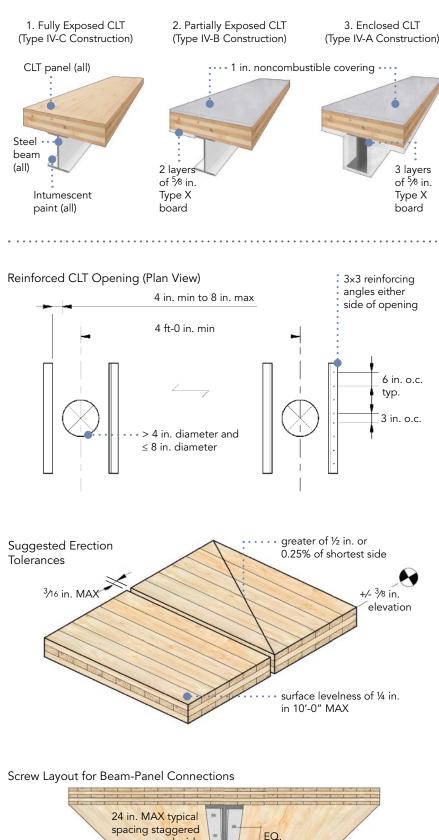
Building a Reliable LCA

A building life cycle assessment (LCA) compares its global warming potential (GWP) to a baseline value. Early LCAs for bay studies are useful for comparing hybrid systems to other options, but they will not capture impacts such as reduced foundation sizes due to lower structural weight or lowered embodied carbon due to the simplification of façade connections.

Steel and CLT environmental product declarations (EPDs) are necessary to calculate a hybrid steel-timber system's GWP. For steel, **aisc.org/epds** has thirdparty-vetted, industry-average EPDs for hot-rolled sections, plate, and hollow structural sections (HSS), plus productspecific EPDs from individual U.S. mills. Industry-average EPDs are not currently available. For CLT, contact manufacturers for product-specific EPD information.







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Fire Protection

Although structural steel is classified as a non-combustible material, timber is combustible and is subject to limitations that vary by jurisdiction. Check with local authorities for the latest on timber protection. Refer to *IBC* Type IV-A, IV-B, and IV-C for model building code fire protection requirements. The *Specification for Structural Steel Buildings* (ANSI/AISC 360-22) Appendix 4 and Design Guide 19: *Fire Resistance of Structural Steel Framing* provide more guidance on fire protection.

Constructability

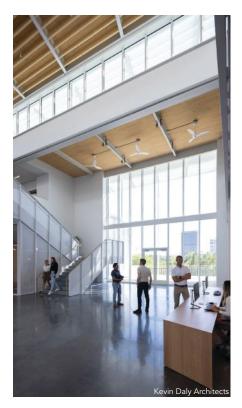
Design-assist collaboration strategies are well-suited to hybrid steel-timber projects. Early team involvement simplifies trade coordination during the design phase. See *Design Assist: Collaborative Design Approach Guidelines for the Fabricated Structural Steel Industry*, published by AISC and AIA Contract Documents in 2024, for further guidance at aisc.org/designassist.

As of now, there are no standardized tolerance definitions for CLT panels. The contracting team should establish mutually acceptable tolerances at the outset.

Offsite fabrication offers strategic advantages for speed and quality control. Shopfabricated castellated or cellular beams and openings in CLT panels can also ease integration of building systems while further reducing the weight of the structure.



steelwise



Proof of Concept

The Endowment, one of the largest philanthropic organizations in Houston, recently opened a two-story, 40,000-sq.-ft new headquarters that sits atop a parking garage and is topped with a steel-framed photovoltaic (PV) canopy. The design team originally planned the building in concrete, but switched to a hybrid system to reduce cost and schedule, reuse existing building foundations, and accommodate the feature PV canopy. The building uses steel framing to cantilever up to 15 ft from column lines, with a maximum bay size of about 30 ft by 30 ft. Three-ply CLT panels span approximately 10 ft between the steel beams.

Architects designing façade connections should avoid protruding plates, bolts, and other elements on the steel beam top flange that would prevent the mass timber panels from bearing firmly on the supporting steel framing. Refer to AISC Design Guide 22: *Façade Attachments to Steel-Framed Buildings* for more details.

Learn More

The Hybrid Steel-Timber Smart Reference is your multi-disciplinary resource for design considerations that impact hybrid steel-framed structures. Download a copy for free at **aisc.org/srhybriddesign** and email **architecture@aisc.org** with any hybrid steel-timber floor system questions. For an even more comprehensive resource, Design Guide 37 is available at **aisc.org/dg** (and free to members).



Hannah Valentine (valentine@aisc.org) is a program manager in AISC's building initiatives department.

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field notes

Finding Footing

INTERVIEW BY GEOFF WEISENBERGER

Kimberly Guzman has found her place in structural engineering after shifting gears to it during college and navigating early career challenges.

A SUGGESTION from a high school college placement counselor put **Kimberly Guzman** on the path to what's now a blossoming engineering career. Guzman was settled on a pre-med path until a late-in-the-process acceptance changed her course. Five years post-graduation, she's an associate engineer with Buehler in Los Angeles, a member of AISC's new Emerging Professionals Panel (a group of early career AEC professionals from across the country), and has leadership roles in multiple structural engineering organizations.

Guzman spoke with *Modern Steel Construction* about her path to the industry, her first few years in it, and more.

Where are you from and where did you grow up?

I was born in Tijuana, Mexico, and spent most of my childhood there. My family moved to the U.S. when I was in elementary school, settling in San Diego, specifically San Ysidro, which is right across the border. I often say I grew up in Tijuana, even though we lived in the U.S. After we moved, I spent most of my weekdays at school in the U.S., but I would spend weekends and summers in Mexico at my grandma's house. I grew up in both places, but Tijuana is where my heart is.

Were you set on engineering right away when you went to college, or did it take a little while to get there?

I went to Cal Poly-San Luis Obispo, and I definitely did not start on an



engineering track. When I was applying to colleges, my high school had a program called the Medical Pathway designed to connect students to local universities, which for me were San Diego State and UC San Diego. I was already planning to become a doctor and earn a biology degree. I was even working on my medical assistant license while in high school.

I was accepted to UCSD on a full ride, but one of my high school college placement counselors suggested I apply to one of the universities I was considering for a

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subject other than biology, since I was good at math. That subject was architecture, and I knew nothing about how architecture worked. But I applied to Cal Poly's architecture program and got in. Something inside me told me the medical path just wasn't right for me, so that's how I ended up there, starting in architecture.

I later switched to architectural engineering, which is Cal Poly's term for structural engineering, because I excelled in my structural classes. I was told structural engineering is tough and it was hard when I first made the switch, but that's how I ended up in engineering.

When you switched, were there structures that inspired you or set you on a specific path?

There was not a specific structure, because when I first entered the industry, I had no idea what structural engineering even was. I knew buildings, of course, but I didn't know that they were called structures. I was still learning all the terminology we use. No one in my family was part of the AEC community, so nobody ever talked about things like that. My high school counselor introduced me to it, and my architecture studio classes would discuss buildings.

However, my true passion for buildings came after learning about them and reflecting on my background. In Tijuana, many buildings are in poor condition, falling apart, incomplete, or built by the owners or inhabitants themselves. That's part of what motivated me to stay in structural engineering and, at some point, have my own company to give back to those communities. Alternatively, I want to work with a company that helps people in similar situations who don't have the resources to build safe structures. To answer your question, I guess there weren't any specific structures, beside maybe the unfinished ones.

What project is your most memorable so far?

I'm still early in my career, so I have not worked with steel too much, but I'm currently working on two steel projects that are not fully in construction. One is a courthouse, and the other is a museum. I think the museum will be my most memorable project. It's also a pretty complicated building with some curved elements. We're using round HSS columns that function as the column and the beam, and the building has a wave-like appearance.

It will be memorable because it's near where I grew up. When it's done, I tell my mom to see this building I helped bring to life. I love museums, so it's exciting to contribute to building one. It's a complex project, and it's testing me. A huge reason I wanted to work on it was that I wanted to push myself with steel and learn more about it. I wanted to step outside the typical code and see what is possible beyond prescriptive designs and square buildings.

We've had some interesting back-andforth with the architects about how they want to detail some things and where some columns will be placed. Of course, museums are meant to have open-floor plans, but that's not always feasible. We're still in the design phase, but we're already discussing things we'll need to address during construction.

I understand you're involved with the Structural Engineering Association of Southern California (SEAOSC), the Structural Engineering Association of California (SEAOC), the local NCSEA SE3 committee, and leadership for the SEAOC SE Pathways to the Profession. What's your role in those and what do those roles entail?

SE3 (Structural Engineering Engagement and Equity) works toward developing professionals, promoting diversity and inclusion programs, and improving management skills. My journey there began when I joined the diversity and inclusion committee. I started as a member and became chair after a year. As chair, I discussed with the SEAOC board and committee members the idea of rebranding the committee to the SE3 name. With the work SE3 does, I thought it would be great to have a local group that connects to the broader community and shares resources. I saw how the Structural Engineering Association of Northern California (SEA-ONC) and NCSEA had been doing great work in this area, and I wanted to bring that to Southern California. Changing to the committee's name to SE3 has more impact, as SE3 has already gained traction at the national level. My hope as SE3 chair is to raise more awareness and implement more diversity initiatives, because diversity can sometimes carry different meanings.

The SE Pathways committee was formed in response to the 2020 SEAOC Call to Action, which focuses on supporting underrepresented students in structural engineering and addressing the systemic barriers limiting their success. The program aims to increase diversity, retention, and leadership in our profession, with an emphasis on underrepresented groups.

I first got involved as part of the 2023 cohort, which completely changed my career. I was close to leaving the profession, and had I not been part of that program, I wouldn't be where I am today. Now, as vice chair, I want to raise awareness of the program so that people like me, who are struggling to find their way, can connect with others, find support, and know that our community is there to help them succeed. We want more engineers in our industry, and more diverse engineers. I'm passionate about diversity and inclusion because of my background. I've faced many challenges in my career so far and want to give back by helping others overcome the barriers that I faced.

What led you to AISC's Emerging Professionals Panel?

I was initially invited by AISC program manager Hannah Valentine, who lives in Southern California and is a mentor to me. She described it as an AISC initiative to get a younger perspective on its activities and get younger people involved with their committees and task groups. We had a kickoff meeting in October in Chicago where they introduced what AISC offers.

I think most people know AISC from the *Steel Construction Manual*, but there's a lot more to it that I didn't know. Being part of this group has been eye-opening, exposing me to all the resources available for steel and teaching me about fabrication. It's also helping me with the museum project. The group selected is also not just engineers, it also includes fabricators.

In your career and organizational work, has anyone given any advice that has stuck with you?

When I was part of the SE Pathways 2023 cohort, we attended the NCSEA summit in Anaheim, and a speaker there shared something impactful. She said that everyone experiences impostor syndrome at some point in their career. At that time, I was struggling and dealing with a lot of it. Hearing the steps she took to focus on accomplishments rather than on areas that need improvement really helped. It's easy to focus on the negative when you're going through something tough. She suggested that whenever I receive a certificate or a compliment, I put it in a mental file, a phone file, or write it down. I read those when I'm feeling down to remind myself that others see me positively.

That advice has been incredibly helpful, and I share it with young engineers too. Not everyone knows how to do everything. Impostor syndrome never fully goes away, but you can manage it by focusing on your achievements and accomplishments.

What have you enjoyed most about Los Angeles since moving there?

It's so central to a lot of things. You can reach a variety of landscapes in a short amount of time. I can get to the beach with just a 30-minute drive, and if I want to go to the desert, it's only a two-hour drive. The same goes for the national parks. I enjoy being close to nature and having it so accessible. There are so many things here, museums, great parks, amazing food, and beautiful homes.

This interview was excerpted from my conversation with Kimberly. To hear more from her, listen to the April Field Notes podcast at **modernsteel.com/podcasts**, Apple Podcasts, or Spotify.



Geoff Weisenberger (weisenberger @aisc.org) is the editor and publisher of Modern Steel Construction.



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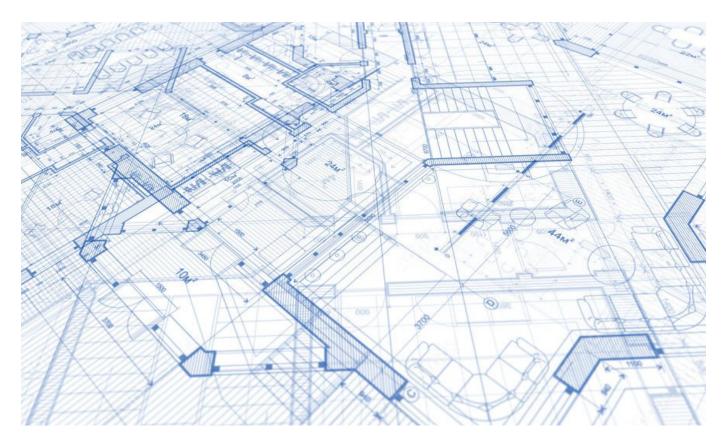
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Speaking the Same Language

BY NIMA BALASUBRAMANIAN, AIA

Consider these tips to foster effective collaboration between architects, engineers,

and fabricators on your next project.



IN MY ROLE as AISC's director of architecture, I often find myself translating between three worlds: the precision-driven world of steel fabricators and manufacturers, the analytical mindset of engineers, and the vision-led realm of architects. While the common goal—creating remarkable, enduring structures—unites all three, effective collaboration does not come without hurdles.

The key to harmony between the three parties lies in how they communicate with one another. For fabricators, engineers, and manufacturers, navigating conversations with architects requires a thoughtful, collaborative approach that respects architectural intent while offering the expertise and practicality of steel construction. Here are some strategies to foster stronger partnerships.

Frame Conversations Around Possibilities

Architects and engineers thrive on possibilities. Instead of approaching a discussion with a list of limitations, start by framing the conversation around structural steel's possibilities. For example, if a proposed design feature seems challenging, explain alternative solutions and why they might be advantageous. Use terms like "Let's explore..." or "What if we tried..." to keep the dialogue open and constructive.

By positioning yourself as a problemsolving partner rather than a gatekeeper, you encourage architects to see steel as a versatile, enabling material rather than a constraint. For engineers, this approach can also highlight how steel's inherent properties can simplify calculations or reduce redundancies in the design.

Sharing inspiring examples of recent steel design achievements can reinforce this message. Case studies of iconic buildings, such as high-performance sports venues, sleek corporate headquarters, or innovative cultural spaces, can showcase steel's adaptability and creativity. Tie these examples to the way the spaces feel and function for their users. For instance, discuss how steel allowed for vast, open interiors that foster collaboration or dynamic public spaces that enhance community engagement.

business issues

Understand Architectural and Engineering Priorities

Architects' primary drivers are aesthetics, functionality, and sustainability. On the other hand, engineers prioritize structural integrity, safety, efficiency, and precision. Before diving into the technicalities, take the time to understand each stakeholder's priorities. Ask questions like:

- "What inspired this design direction?"
- "Are there specific materials or finishes you're envisioning?"
- "How does sustainability factor into your goals for this project?"
- "What structural challenges are top of mind for this design?"

Demonstrating genuine interest in architectural and engineering perspectives builds trust and sets the groundwork for collaboration. By aligning your solutions with their broader goals, you show that you understand their work's artistic, environmental, and technical dimensions.

Additionally, encourage everyone involved to think beyond technical details

and focus on the impact of the space being created. How will the people using the building feel within it? How can steel's properties—such as its strength and versatility—enhance the experience of occupying the space? Shifting the conversation to the human element fosters alignment and shared purpose with architects.

Focus on Partnerships, Not Transactions

A successful collaboration between fabricators, engineers, and architects depends on seeing one another as partners rather than contractors fulfilling separate roles. This mindset shift encourages open communication and collective problem-solving instead of a transactional approach where each discipline operates in isolation.

For fabricators and manufacturers of architectural products, a partnership focus means being proactive in offering input early in the design process rather than waiting until details are finalized. For engineers, it means considering technical feasibility and how their designs align with the architect's vision. By establishing partnerships, the team can collectively deliver efficient, elegant, and impactful solutions.

Encourage regular meetings where all parties can exchange ideas and share feedback without judgment. For example, hold design charrettes where fabricators, engineers, and architects collaboratively brainstorm options. These interactions create an atmosphere of mutual respect and shared responsibility.

Avoid Overly Technical Jargon

While fabricators, engineers, and manufacturers are steeped in technical details, architects may not share the same level of familiarity with steel-specific terminology. Translating these concepts into clear, accessible language is crucial. Instead of saying, "This connection detail doesn't meet the required load path," try, "This joint might need to be adjusted to ensure it supports the building's weight effectively."



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Similarly, engineers often rely on complex calculations and formulas, but architects respond better to visuals and narratives. To bridge these gaps, use visual aids like diagrams, 3D models, or annotated sketches to illustrate your points. A visual and narrative approach helps demystify technical challenges and fosters a shared understanding of the project's goals.

When preparing for meetings, anticipate areas where terminology might create barriers and plan alternative ways to explain the same concepts. Proactive changes can make a significant impact on keeping the conversation productive.

Highlight Opportunities for Efficiency

Architects and engineers often juggle ambitious design goals with tight budgets and timelines. Fabricators can add tremendous value by identifying opportunities for efficiency without compromising design integrity. For instance:

- Suggest modular solutions that simplify construction.
- Highlight innovative techniques that reduce waste.
- Share examples of past projects where similar strategies led to cost or time savings.

If a steel solution can simplify construction sequencing or reduce the need for temporary supports, explain how these efficiencies translate into measurable benefits. Use data whenever possible to reinforce your points—metrics like cost reductions, shortened schedules, or sustainability gains resonate strongly with architects and engineers.

Additionally, sharing insights on steel's compatibility with other materials, such as timber or glass, can open new doors for hybrid construction methods that align with the architect's vision and the engineer's technical requirements.

Leverage AISC Resources

AISC offers a wealth of resources that help architects make informed decisions about steel. Fabricators and manufacturers can play a pivotal role by pointing them to these tools. Whether it's a design guide, a webinar, or a case study, providing actionable resources strengthens confidence in steel as a material—and many of them are free for AISC members. Additionally, share the AISC Architecture Center (aisc.org/architecture-center) as a go-to hub for architects to find answers to their questions. Its mission is to make steel resources accessible in a format that resonates with architects. The Architecture Center's tools include interactive specifications, sustainability data, and even design inspiration—all aimed at simplifying decision-making.

For example, if sustainability is a key concern, direct architects and engineers to AISC's life cycle assessment resources. These resources provide hard data on steel's environmental impact, empowering architects to make informed choices that align with their values.

Celebrate Shared Success

Collaboration thrives when all parties feel ownership of a project's success. As projects progress, celebrate milestones and acknowledge contributions from architects, engineers, and fabricators. Sharing credit fosters goodwill and reinforces the value of working together.

Consider hosting post-project debriefs where all stakeholders reflect on what worked well and identify areas for improvement. These conversations create opportunities for continuous learning and strengthen professional relationships.

The steel industry, architectural community, and engineering sector share a profound responsibility to create structures that stand the test of time. By approaching conversations with curiosity, respect, and a collaborative spirit, fabricators, engineers, and manufacturers can build stronger bridges to the architectural and engineering communities for today's projects and our industry's future.



Nima Balasubramanian (balasubramanian@aisc.org) is AISC's director of architecture.

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A steel pedestrian bridge in Oklahoma is the first of its kind in the U.S.



BY MICHAEL STEIN, PE, STEPHAN HOLLINGER, SE, PE, TONY DIEBOLD, PE, RYAN SCHROEDER, AND BRUCE BURT, PE

CITY OFFICIALS IN TULSA, OKLA., had a vision for developing the Zink Dam area that included a pedestrian bridge across the Arkansas River. At the time, though, they didn't realize their vision would include a structural first for the U.S.

Bridge design and engineering company schlaich bergermann partner (sbp) was asked to design a new pedestrian bridge that provided a safe and modern crossing and replaced a structurally unsound bridge that needed major repair. Williams Crossing, a 1,440-ft bridge built from weathering steel plate, is the first U.S. deck-stiffened plate-arch structure. It's also the first multi-span, plate-arch bridge in the country.

The innovative structure was designed to complement its surroundings and seamlessly connect to Gathering Place, a new 66¹/₂-acre park designed by landscape architect Michael Van Valkenburg Associates (MVVA). It was also designed in homage to Robert Maillart's 1933 Schwandbach Bridge near Bern, Switzerland, a curved, deck-stiffened reinforced concrete arch bridge. Over the years, sbp has continued to refine Maillart's elegant deck-stiffened arch concept, first with the 2003 concrete Auerbachstrasse Bridge in Stuttgart, Germany, and again with the 2013 hybrid concrete and steel half-arch Footbridge Josenbrücke in Schwäbisch Gmünd, Germany. Williams Crossing's extremely slender deck-stiffened steel arches take the typology further: steel's superior strength allows the arches to be even more delicate in relation to the concrete deck and emphasize their structural efficiency.

The entire bridge structure was fabricated with structural steel specified according to ASTM A709, and the pedestrian bridge design followed the *AASHTO LRFD Bridge Design Specifications*. Parts of the vertical spandrels use ASTM A709 HPS100W steel, totaling 14 tons. The rest of the steel structure uses 967 tons of ASTM A709 Grade 50W steel.

Williams Crossing opened in September 2024.

HIP

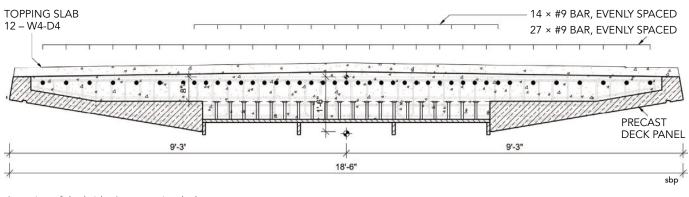
Choosing steel instead of concrete as the primary material for the superstructure created thinner, more elegant cross sections at the arches, while also providing the flexibility needed in the spandrels. Steel also allowed the team to prefabricate the bridge off-site—minimizing the need for complicated concrete formwork in the Arkansas River and avoiding installation and transportation concerns that heavyweight concrete elements would pose.

The structure has 12 equal 120-ft-long spans, and the curved deck is 18 ft wide. The first span on the west side of the Arkansas River represents a typical column-supported approach span, followed by 11 120-ft-long symmetrical arch spans. The outermost arch spans have 11½-ft lower arch rises to keep the steel arches out of the required design floodplain. The remaining arches are designed with 13½-ft arch rises to balance the arch thrust on top of the concrete piers. In plan, the bridge geometry has a continuous curvature with a 2,000-ft radius.

The deck geometry follows the curvature in plan, while the individual arch spans are facetted, resulting in a 1.72° kink at the concrete piers and a lateral thrust from the kink. In addition to the kink, the arch and the deck centerlines are not aligned in plan, and the vertical spandrels needed to balance the resulting offset. The offset created a unique architectural opportunity that created a lateral wave when looking alongside the bridge structure.

Splendid Spandrels

Concrete deck-stiffened arches, like those designed by Maillart in Switzerland, do not have much bending stiffness in the arch itself and can only carry uniformly distributed loads due to their dimensions. The deck carries uneven loads, which means it stiffens the relatively weak arch against buckling. sbp took this system one step further and replaced the concrete arches and spandrels with weathering steel. sbp designed the deck to carry



A section of the bridge's composite deck.

the unbalanced loads on the separate load path, thereby protecting the arches from bending. The steel arches and spandrels only need to resist compression forces and do not need to provide overall stability against unbalanced loading of the structure. The result is an impressively robust structure composed of slender steel plates that gives the illusion of being too delicate to carry a bridge across the Arkansas River.

Williams Crossing falls in the structural category of semiintegral bridges. The bridge deck is monolithic over the arch spans' length and does not need expansion joints. The superstructure is rigidly connected to the concrete piers and the bridge abutments. Expansion joints and sliding bearings are placed at the ends of the semi-integral bridge, allowing the deck to expand and contract under temperature loads.

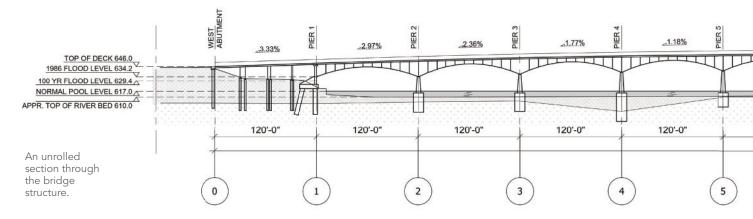
The vertical spandrel design required the consideration of various loading scenarios, with temperature being the most governing factor. During extreme temperature events, the spandrels must be stiff enough to provide stability to the overall bridge structure and flexible enough to allow the deck to expand and contract freely without resulting in high restraining forces. The spandrels' plate thickness varies from 1 in. to 3¹/₂ in. to achieve the desired behavior. Higher-grade steel ASTM A709 HPS70W was used for the shorter spandrels near the abutments, while ASTM A709 Grade 50W comprises the remaining spandrels' steel. During temperature changes and considering creep and shrinkage effects, the bridge needs to expand 3¹/₂ in. and contract 1³/₄ in. at the ends.

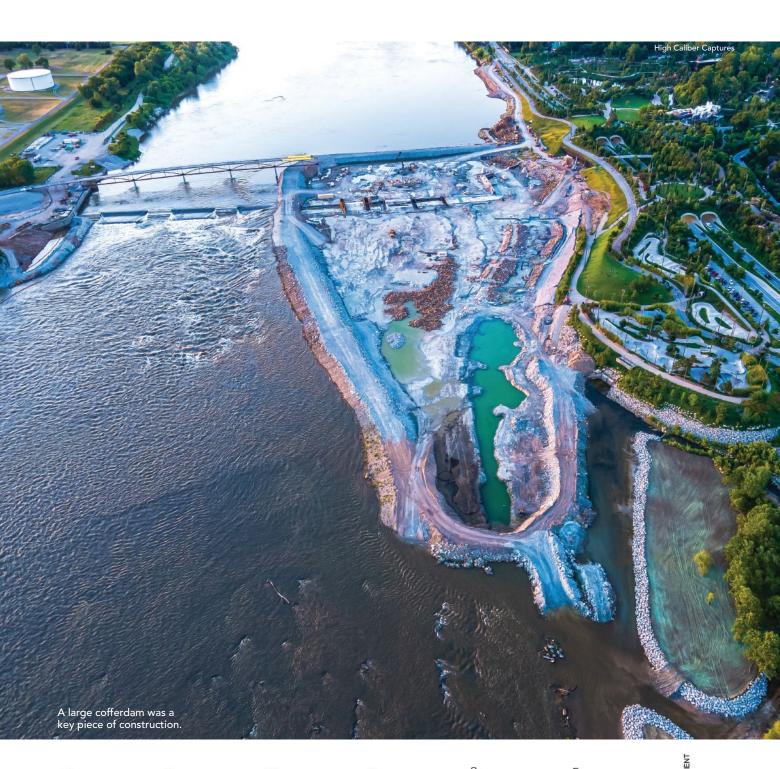
The bridge deck is composite, using a bottom flange plate with vertical stiffeners to provide sufficient stiffness during construction. The concrete portion of the deck consists of semi-precast elements that eliminate the need for shoring and formwork to create the final deck geometry. The semi-precast elements are 5½ ft long and incorporate structural reinforcement for the bridge deck. At each element end, the reinforcement is hooked to reduce the required splice length for proper force transfer within the reinforcement.

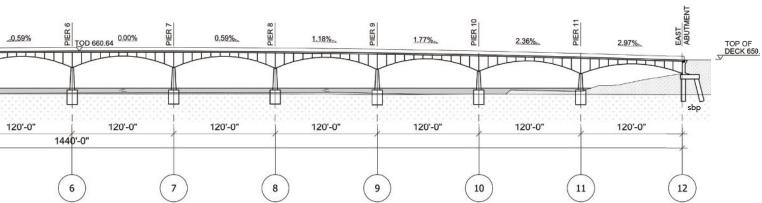
The arch ribs consist of a continuous 3¹/4-in.-thick ASTM A709 Grade 50W plate bent at each spandrel and locally stiffened with an additional plate. Depending on the arch forces, additional plates (2 in. and 2¹/₄ in.) were used to improve the deck-stiffened arch structure's global and local buckling stability. The arch ribs' slenderness is only possible through the contribution of the stiff concrete deck that distributes patterned live loads and prevents the arch ribs from unbalanced load distributions.

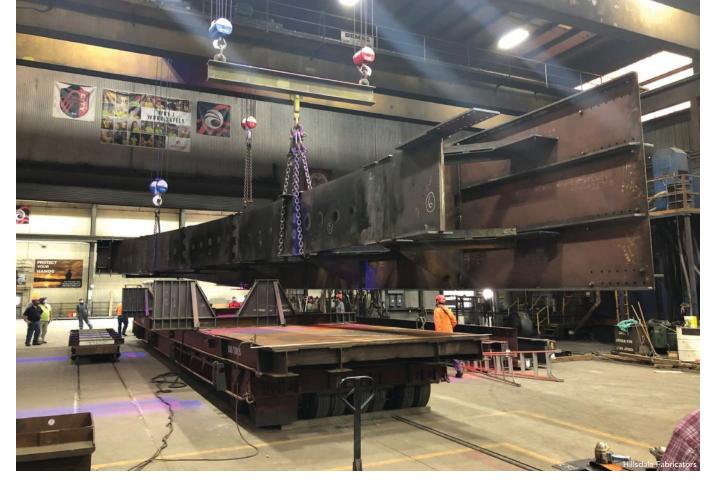
Weathering steel was chosen for the entire bridge structure, and due to its exposed finish, future painting work is not required. Because of the semi-integral bridge approach, the entire structure has only two locations with expansion joints and bearings that will require maintenance.

Given weathering steel's tendency to stain adjoining surfaces if not drained properly, special attention was given to the design and detailing of the structure's drainage system. Water visors are integrated on the arch plate to redirect water away from the arch spandrel connections. At the bridge abutments, drain holes are located at the center of the arch plate to allow for controlled drainage. At the concrete piers, an additional curb prevents stained water from running down the surface. A reveal along the side of each pier allows the stained water to drain downward and creates an architectural feature.



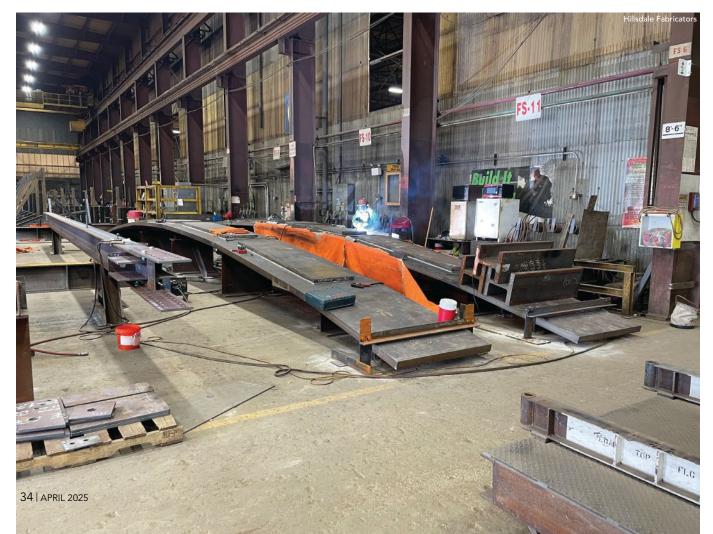


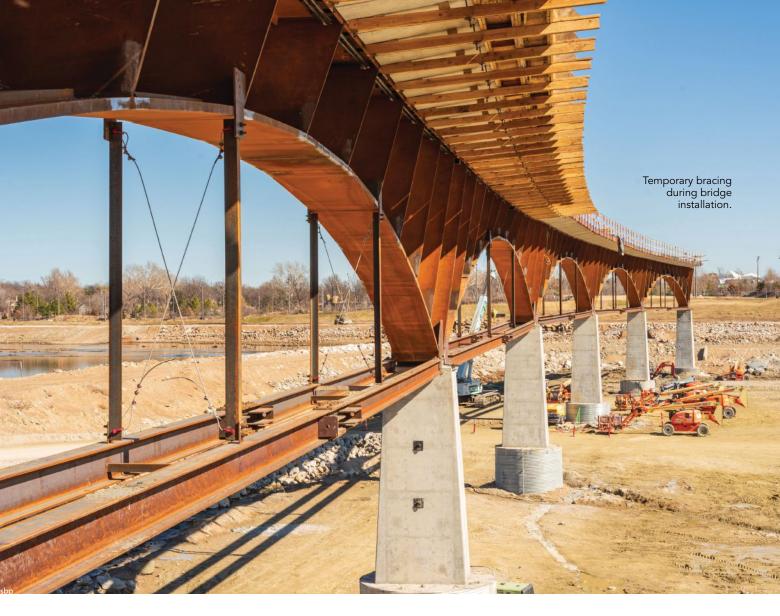




above: A half-arch segment before shipment to the jobsite.

below: The 3¼-in.-thick, 48-in.-wide, and 30-ft-long arch plates were bent with heat introduction and gravity assistance.





Shop Steps

The 3¼-in.-thick, 48-in.-wide, 30-ft-long arch plates created some challenges in the fabrication process. Steel fabricator Hillsdale Fabricators created custom fixtures to bend the arch plates with heat introduction and gravity assistance. The custom fixture helped maintain geometry control and meet stringent tolerance requirements.

During the construction phase, the geometry and fabrication of the steel knuckles located at the arch/spandrel interface at the top of the piers were modified. The original design considered cast weathering steel nodes conforming to ASTM A709 Grade 50W. In the final design, though, the knuckles were machined from forged steel blocks primarily due to lead time concerns.

The design team requested a 33-ft-long mockup to ensure fabrication quality and architectural demands met Architecturally Exposed Structural Steel (AESS) standards in the *Specification for Structural Steel Buildings* (ANSI/AISC 360-22). The mockup showed several key details:

- Arch kink at spandrels
- Arch knuckle geometry
- Welds along the arch rib and spandrels specified to AESS Category 2 (featured elements not in close view)
- · Conduit routing through vertical spandrels

The mockup verified the craftsmanship quality during fabrication and to test the assembly of the semi-precast elements, which are supported by the tie-plate during construction.

To fulfill the requirements for shop assembly, Hillsdale Fabricators created an adjustable shop fixture that allowed for the shop assembly of two half-spans as a full span to ensure proper field fit-up. The fixture also ensured Hillsdale Fabricators could quickly adjust the layout when transitioning from span to span without fully disassembling. Fabrication and installation tolerances were specified according to AESS requirements, limiting the tolerance to half of the limits per the standard specifications.

The steel segments were transported from the Hillsdale Fabricators' shop in St. Louis to Tulsa by road. Shipping 20 ft by 60 ft by 8 ft half-spans through multiple states influenced transportation equipment selection, though delivering them to the riverbed within the cofferdams contributed to transportation methods and load orientation. Flatbed trucks transported the half-arches, which were flipped on their sides.

Though the opposing spans were mirror images of each other, the geometry of the bridge had several challenging aspects in the detailing, fabrication, and erection to overcome. For example, camber is built into each span, plus camber between each spandrel. The arch plate was not designed with sweep, but the deck plate was, and each span segment had a different slope configuration.

Raising the Spans

Steel erection began at each abutment and progressed towards the center because the cofferdam occupied only half the river during each construction phase. There were no expansion joints except at each abutment, and the superstructure was rigidly connected to the concrete piers. The erection approach necessitated a keystone piece to ensure the proper fitment of the final middle span.

The erection of the bridge superstructure consisted of the following steps:

- Placement of braced half spans onto shore towers
- Installation of temporary arch tie to balance arch thrust on piers
- Installation of semi-precast elements
- Concrete deck cast
- Removal of temporary arch bracing

Like the bridge design, temperature and geometry considerations for constructing semi-integral and integral bridges are a key factor for successful installation. In their completed state, the arches develop thrusts at each pier and at the abutments. To maintain the arch geometry during erection, a temporary tension tie was installed to connect the ends of each arch span. However, adding the tension tie created the potential for developing a large tension force at the abutments at low temperatures, which the embedments could not sustain. The embedment issue was resolved by installing temporary shores at each abutment to support the end arches vertically but allow for thermal movement in the longitudinal direction.

Another erection challenge was maintaining vertical alignment of the spandrel plates. The bridge design assumed the spandrel plates were vertical at an ambient temperature of 60 °F, which allowed the plates to rotate inward or outward as the length of the continuous deck plate contracted and expanded with temperature fluctuations without overstressing the spandrel plates. But because each span would likely be installed at a temperature other than 60 °F, vertically misaligned spandrel plates during construction were a potential obstacle.

As each span was erected, a complex analysis determined the appropriate force required in the tension tie to correct for ambient temperature. A hydraulic cylinder was incorporated into each tension tie. Once a span was erected and the appropriate force attained in the tension tie, a slotted connection was fixed in place by fully pretensioning a bolt group, and the jacking apparatus was removed for re-use on the next span.

Steel erection was completed in February 2023, and Williams Crossing opened to the public in September 2024. It's a new symbol for Tulsa that offers ample public space for pedestrians and bicyclists to enjoy dramatic river views from its curved deck.

Owner

River Parks Authority, City of Tulsa

Bridge Designer and Engineer of Record schlaich bergermann partner (sbp)

Erection Engineer Ruby+Associates, a Degenkolb Company

Landscape Architect Michael Van Valkenburgh Associates

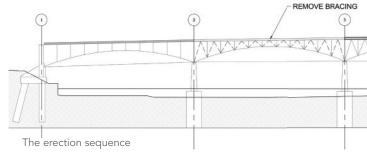
General Contractor

Crossland Construction

Steel Team

Fabricator Hillsdale Fabricators I AISC CERTIFIC CERTIFICATOR

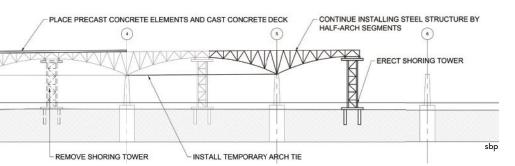
Detailer Esskay Structures

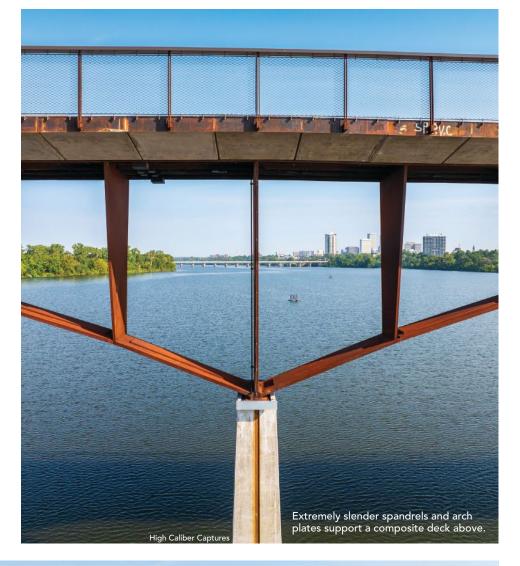




The bridge offers dramatic river views.



















Michael Stein (m.stein@sbp.de) is the North American managing director and board member and Stephan Hollinger (s.hollinger@sbp.de) is a director, both at sbp; Tony Diebold (tdiebold@alberici.com) is the chief structural engineer and Ryan Schroeder (rschroeder@alberici.com) is a senior project manager, both at Hillsdale Fabricators; and Bruce Burt (bburt@degenkolb.com) is a senior principal at Ruby+Associates, a Degenkolb Company.

Keeping It Light

BY ERIC REINSCH, SE, PE

Libraries have hefty live loads, but creative design and detailing decisions gave one <u>a stunning slender structure</u>.

All photos courtesy of Nels Akerlund Photography + Video unless otherwise noted

The new Rockford Public Library opened in June 2024.

THE NEW ROCKFORD PUBLIC LIBRARY in Rockford, Ill., features bold two-story cantilevers and stepping structure that, at first glance, portend large live loads and make a light, airy structure tricky to envision. Steel framing and creative steel details, though, helped bring the vision for an open, expressive structure to life.

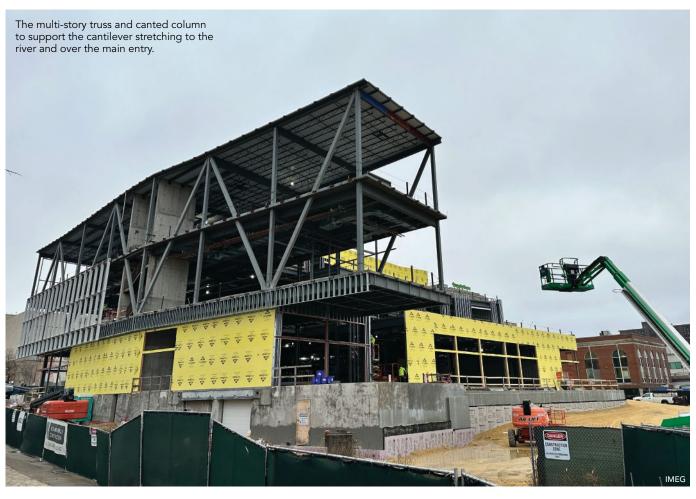
The library is on a remediated site along the Rock River, and the key component of the project's success is structural steel, chosen for its versatility and strength. IMEG structural engineers initially explored using cast-in-place concrete, but steel offered several advantages, particularly structural slenderness and the ability to support the large cantilevers that were integral to the design.

Two stories in the library cantilever approximately 28 ft from the main building face and bear on inset columns and secondary cantilevers to create a floating glass box. The owner and architect envisioned sleek, thin floors and expansive glass walls, and in response, the engineers crafted a unique canted column and two-story truss system to support those striking features.

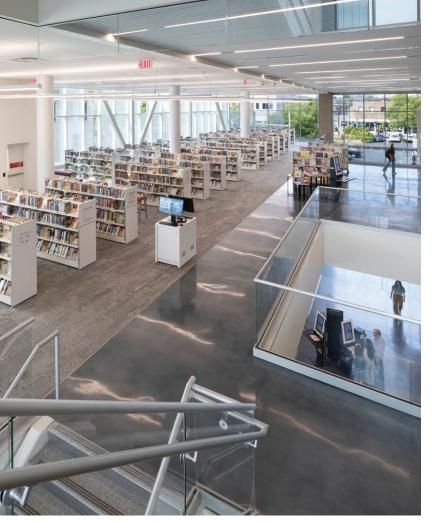
The truss system, comprised of architecturally exposed structural steel (AESS) specified to Level 3 (feature elements in close view), is visible throughout the building's interior and exterior and helps support the cantilevered portions. Exposing the steel provided an aesthetic benefit, allowing for an impressive visual effect while reducing the need for bulky supports.

The structure was designed with a rhythmic bay system, which extends across the building and integrates seamlessly with the parking below. The desired open layout made steel the ideal choice because it provided more flexibility for coped steel elements, reducing structural depth for insulation and pavers on the building's terraces. A Revit model showing the steel framing, precast podium, and combination of driven H-piles and micropiles through belowgrade grout plugs.

П



IMEG



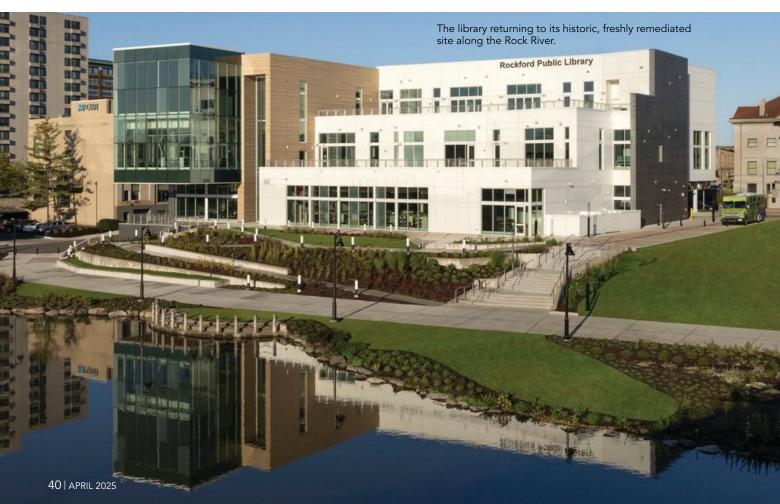


above: Coped floor beams supporting roof framing at terraces created a thinner structure.

left: The book stacks are full of natural light.

below: The children's play area.





Roof terraces that invite the public outdoors for river views were significant programming elements for the project. However, to fit with the internal program layout, terraces with depressed slab elevations did not align with column spacing. Coped beams were designed to balance structure depths while maintaining high ceilings for the maker labs and children's play area below. IMEG consulted inhouse tools and AISC Design Guide 11: Vibrations of Steel-Framed Structural Systems Due to Human Activity (order or download at aisc.org/dg) to review the coped members' natural frequency and ensure occupant comfort for vibration.

Additionally, steel allowed for lighter loads on the foundation and consequently reduced quantity of piles in the soil, a key consideration given the site's soil remediation challenges. Steel reduced the structure's mass, helping mitigate the cost and complexity of the foundation system, which included driven steel piles and micropiles.

Offset floor plate elevations with large openings required collectors throughout the floor plate to transfer the lateral loads to the concrete shear walls located around the elevators and stairs. The design team used a combination of reinforcing in the concrete slabs along with wide-flange steel beams welded to embed plates to transfer the load throughout the system. Moment frames were considered, but the reinforcing and welded beams approach kept columns slender and allowed for a thin floor at the exposed exterior.

Canted Columns and Curtainwall Systems

The design team had to find a way to extend the cantilevers while minimizing structural depth and controlling floor vibrations. Several options were presented to the architectural team for consideration. The solution was to blend the originally proposed canted columns at the cantilevers into a two-story truss element along the south elevation. The architect fell in love with the steel because it expressed through the glass box and could also be exposed in the interior. IMEG strategically located foundation elements at the basement level to support the basement walls and anticipated construction shoring towers, plus developed a pour sequence with the construction manager that balances construction loading and deflections of the floors.

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The multi-story truss extends from the second level to the roof while cantilevering 28 ft towards the river and supporting the intermediate third floor. The trusses are enclosed in a two-story curtainwall glazing system, enhancing the lightness and openness. The first-floor walls were inset from the upper glass façade. At the second level, secondary cantilevers extend over first-floor columns to support the multi-story truss bottom chords. This double-cantilevered system accommodates the offset in the façade and maintains the illusion of a floating structure. The wide-flange chords of the multi-story truss have high axial loads, so IMEG chose to keep those chord elements continuous along the length of the truss and develop connections from the second-floor inset cantilever members with the full penetration groove welds between chord web stiffeners and the supporting member web and doubler plates.

With a substantial glass expanse, a multi-story curtainwall glazing system would typically require support at each level with expansion joints in the mullions. Given the goal of keeping a light and thin floor plate at the third level (large, cantilevered slab edge), the design team opted to support the curtainwall system vertically from only the second floor and bypass the third floor entirely for gravity load. Thus, the third-floor slab on deck could be designed as thin as possible. The bypass approach required meticulous coordination of detailing and construction, especially during the concrete pour, to ensure radiant heating pipes are within the exposed slab and the movements between the various floor and roof framing were properly accommodated.

Vision Realized

Structural steel allowed for the expressive, open, floating, and thin design the architects envisioned while also providing a practical solution to the historic site's challenges. The Rockford Public Library stands as a beacon for the community, embodying engineering innovation and resilience in transforming a brownfield site into a vibrant public space.

Owner

City of Rockford, Rockford Public Library

Construction Manager Scandroli Construction Co.

Architects

Studio GWA Architects, Engberg Anderson Architects Structural Engineer

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Eric Reinsch (eric.j.reinsch @imegcorp.com) is a senior principal and senior client executive at IMEG.

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A test bridge built for lab experiments was part of crucial seismic design discoveries. It's now in service in a New York town.

Research to Reuse

BY PATRICK ENGEL

IF THE STEEL BRIDGE SPECIMEN custom-built for a research project at the University at Buffalo was immediately recycled upon project completion, its brief service life would have been considered an undeniable success.

The project tested the specimen, a low-cost seismic resilient bridge design concept, to see how it responded when subjected to simulated earthquakes. Its superstructure remained intact and structurally sound following more than 100 seismic activity tests on the university's shake table—a potentially major development in resilient structure design.

The bridge's usefulness, though, did not expire there. It was not ticketed for a furnace. It found a second use in the real world, an initially unforeseen afterlife that solved a persistent infrastructure problem in a nearby town and emphasized that structural steel is easily reusable, especially with some creative thinking. The Town of Kent, N.Y., located about 70 miles north of New York City, set the 40-ft-long steel bridge in October as a pedestrian crossing over a small section of Lake Carmel. Steel industry donors contributed to test specimen fabrication and transportation to the University at Buffalo with research as the only intended use. But upon project completion and success, the university put the bridge up for donation.

The town's need arose after summer 2018 storms washed out two 6-ft culvert pipes, the sixth time in about 40 years the culverts were ruined. The culverts were not rebuilt, and if they had been, a July 2023 storm would have ruined them again.

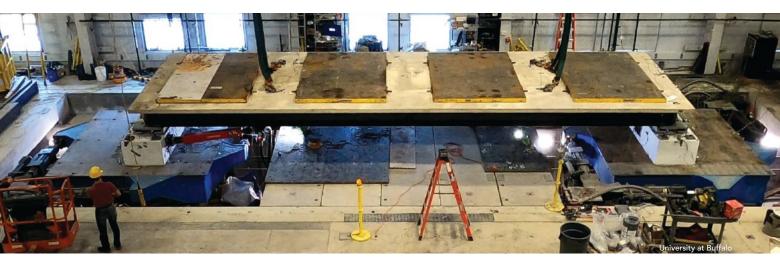
"It fit like a glove," said Richie Othmer, the Town of Kent highway superintendent.

A bridge dedication is scheduled for Memorial Day 2025 and will include a plaque recognizing the university, the research



above: Homero Carrion-Cabrera (left) and Michel Bruneau led the project. opposite page: The test bridge's new home in the Town of Kent.

below: The test bridge on shake tables in the University at Buffalo research laboratory.



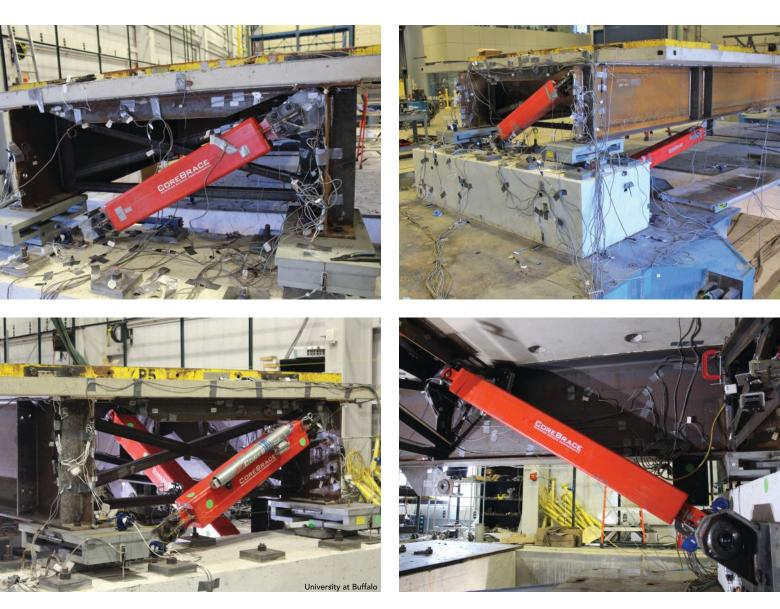
project, and companies who donated services to make its second life possible. Its most direct impact is found in the Town of Kent, where officials see it as a reliable and durable crossing in a busy pedestrian area. The research team and the steel bridge industry hope its successful performance throughout experimentation will make an even bigger impact on existing and future bridges in high-seismic areas.

"Existing bridge design specifications generally focus on safety as a design objective, but with this project, we were also targeting immediate functionality following an earthquake," said project lead investigator Michel Bruneau, SUNY distinguished professor in the University at Buffalo Department of Civil, Structural and Environmental Engineering. "Resilient design is a new and welcomed development in earthquake engineering, and our proposed bridge design concept definitely achieved resiliency."

Braced For Impact

Historically, seismic design in ordinary bridges has focused on preventing collapses and ensuring safety; it has not considered preserving the bridge's functionality. Seismic design of ordinary multi-span bridges has generally entailed putting a plastic hinge in the columns to dissipate earthquake energy. Hinging implies damage to the gravity-carrying columns that will need to be repaired. Alternatively, base isolation avoids damage but requires special bearings and special expansion joints to accommodate large displacements in severe seismic regions.

Bruneau's curiosity about pushing seismic design boundaries to eliminate damage dates to the 1990s, when he would drive under steel bridges and wonder about the diaphragm's ability to transfer seismic inertia forces from the deck (where most of the mass is) to the substructure.



One BRB configuration has BRBs in the transverse direction (top left) connecting to the superstructure at a point close to the top flange with bolted connections, while longitudinal BRBs are installed almost horizontally (top right). Another has transverse BRBs in same setup (bottom left), but with longitudinal BRBs connected close to the top flange of the girder and installed 30° from horizontal (bottom right).

"What if we could use a diaphragm to dissipate the earthquake's energy instead?" Bruneau said.

His question eventually led to this research project, which helped create the bidirectional ductile end diaphragm concept. It uses inexpensive buckling restrained braces (BRBs) that can provide resilient bridges with damage-free columns at a low cost while minimizing displacement demands to manageable levels. The system aims to shift damage to the BRBs instead of the superstructure and substructure, which will keep bridges operational after earthquakes and avoid the significant economic toll that comes with closures and replacements.

BRBs are special braces capable to yield in axial tension and compression. They were developed in the early 1980s and are widely used today, and the *Seismic Provisions for Structural Steel Buildings* (ANSI/AISC 341-22) specifies design requirements for them. They became popular in buildings by the early 2000s, but their use in bridges is infrequent.

The bidirectional ductile end diaphragm concept uses BRBs and sliding bearings located on the bridge supports. Those work together to protect the bridge columns during an earthquake and bear the damage themselves. The ductile end diaphragms are intended to dissipate seismic energy and prevent damage in the substructure by limiting the magnitude of transmitted forces. Bruneau has helped advance the concept for more than two decades and pioneered it in the late 1990s, when it was developed and tested with various hysteretic devices for seismic forces in the transverse direction. He formulated a design procedure that was implemented in the 1st Edition of the AASHTO Guide Specifications for LRFD Seismic Bridge Design.

Bruneau and University at Buffalo PhD student Homero Carrion-Cabrera wanted to test if the system could be effective in multi-span simply supported bridges under complete 3D earthquake excitations. Their research project, "Achieving Resilient Multi-Span Bridges by Using Buckling-Restrained Braces," sought the combination of BRBs and end-connection details that performed best during an earthquake. They designed a 2.5-scale model of a 100-ft bridge span: a 40-ft-long, 12-ft-wide, slab-on-girder bridge with 6-ft girder spacing between W27×84 sections with 26.7-in. depth.

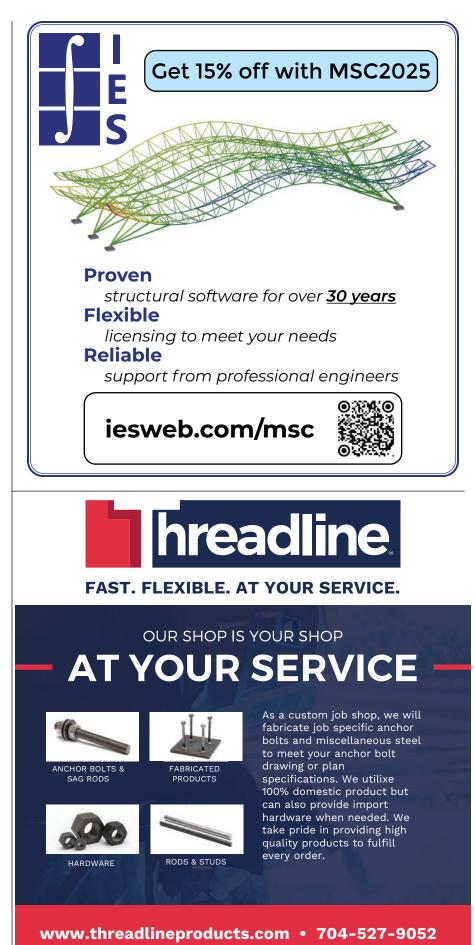
Steel industry partners saw value in the project and donated all the material needed to build the test bridge. CoreBrace supplied BRBs, RJ Watson, Inc. donated sliding bearings, High Steel Structures donated fabrication time, High Concrete Group gifted the deck, and AISC provided the steel. The project also received \$100,000 from the National Cooperative Highway Research Program and \$50,000 from the California Department of Transportation.

"The experimental part would not have been possible without all this tremendous support we received from the industry," Bruneau said.

From February to March 2022, Bruneau and Carrion-Cabrera subjected the bridge specimen to more than 100 earthquakes using the dual shake tables in the University at Buffalo's Structural Engineering and Earthquake Simulation Laboratory. They developed and tested four BRB configurations, four BRB to gusset plate connections, eight BRB to slab connections (six for a new structure, two for retrofitting an existing one), and four BRB to girder connections. Each configuration was tested with one temperature sequence (representing 75 years of variation, because the longitudinal BRBs crossed the expansion joints), four spectral-matched ground motions (representing the design spectrum), and seven historical motions to induce large demands.

The tests measured the connections' ability to allow the BRBs to perform as intended while accommodating the 3D relative displacements that develop during the seismic response. They established that the bridge could withstand multiple earth-quakes before the BRBs need replacing. The BRB configurations were designed based on a simplified nonlinear numerical model that Bruneau and Carrion-Cabrera developed earlier.

One configuration has BRBs in the transverse direction connecting to the superstructure at a point close to the top flange, while longitudinal BRBs are installed almost horizontally. In another configuration, the longitudinal BRBs are connected close to the top flange of





above: Homero Carrion-Cabrera working on the test bridge. below: The test bridge before modifications.

girder. In the other two, the BRBs are installed in a V-configuration, with each BRB simultaneously resisting transverse and longitudinal earthquake excitations.

The BRB configurations performed similarly and were deemed acceptable and functional designs. The design procedure is simple, and the design had predicted demands larger than those observed during testing. The BRBs could develop core ductilities above 20 when pushed to failure, and all connection types tested provided sufficient strength and stability support for the BRBs. The cycles applied to the BRB by the displacements simulating years of temperature fluctuations were observed to have an insignificant effect on their low-cycle fatigue life compared to the seismic motion demands.

"We were pretty confident it would work, but the unknown was how many earthquakes these BRBs could resist before they broke and needed replacing," Bruneau said. "The mode of failure is low-cycle fatigue. We know if we subject those to an earthquake, they're fine afterward. Our question was whether we needed to replace them with new ones or if we could leave them in place for another earthquake. It was great to see they took multiple earthquakes before they failed."

All told, the findings are significant. These BRB designs might not become commonplace for several years, though. Their use in buildings took off once they appeared in the *Seismic Provisions*. Similarly, Bruneau expects a surge in seismic bridge design with BRBs when the *AASHTO Guide Specifications for LRFD Seismic Bridge Design* incorporates the project's findings.



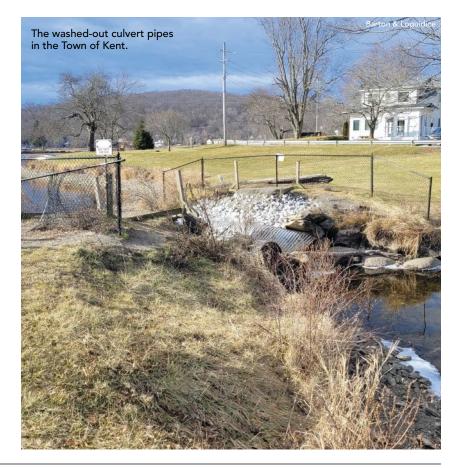
In the meantime, he will enjoy a career first. "It's not every day you can take a live specimen and give it a second life," Bruneau said. "We usually destroy everything during testing, but this time, the point was to show this concept won't destroy anything in the superstructure."

Fixing a Flooding Issue

Othmer had barely finished reading the email when he sprang into action.

In early 2022, the New York State Highway Superintendents Association emailed all members about a fit-for-reuse test specimen bridge from the University at Buffalo. Any interested communities needed to write a pitch detailing their need for the bridge and why they should be awarded it. Othmer saw the bridge as a permanent fix to the town's repeated washouts. He notified his town board almost immediately and earned swift approval.

The wiped-out culverts and bridge cross a cove on the edge of Lake Carmel. Several streams feed into the cove, which narrows at the bridge. During storms, the water influx in the cove and the resulting hydraulic pressure repeatedly mangled the culverts and eroded the banks under the bridge. The 2018 and 2023 storms led to state of emergency declarations.





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When the 2018 storm brought tornadoes and left the culverts in ruins, Othmer estimated a \$40,000 cost to construct new culverts, which he deemed a waste because severe weather would likely delete them again soon. He recalled a lesson from his time in the U.S. Marine Corps in the 1970s and did not rebuild the old bridge design.

"Never reinforce defeat," Othmer said.

Instead, the Buffalo test bridge had abutments and would widen the opening, allowing more room for storm runoff to pass through without harming the banks. The bridge carries a popular walking trail around Lake Carmel, but it's also secondary egress and vital emergency access for a neighborhood in a frequent flood zone. Othmer felt he had a compelling pitch: several culvert pipe losses, the location's importance, the Buffalo bridge's ability to withstand the conditions, and the low probability of securing funding to build a bridge like the test specimen.

"About 70% of the whole Town of Kent is in the New York City watershed and therefore undevelopable," Othmer said. "We don't have commercial and industrial development for a tax base, so any project for our town is hard to do. I emphasized the financial need, our restrictions, and our repetitive loss that made it known as "The Broken Bridge' around here...I put the human factor into it. I didn't just use an engineering angle."

The damage history and the crossing's importance during potential floods made new bridge transportation and installation eligible for FEMA funding, which Town of Kent supervisor Jaime above: The bridge provides 287 sq. ft of hydraulic opening.

left: Protective rails and composite decking were added to the bridge after it left the lab.

McGlasson secured. Barton & Loguidice, the engineer for the reuse and installation part, made only minor structural adjustments before setting the bridge. The tested-to-failure BRBs had no field reuse value and were removed before the bridge arrived in Kent.

Barton & Loguidice added composite decking and designed new elastomeric bearings and abutments to support the bridge in its new location. The bridge's girders were painted, adding about 15 to 20 years of life expectancy and providing protection from deicing salts annually spread in the area. Corrugated steel driven into the soil and attached with shear studs to the abutment footings' front face offers better soil protection during large storms.

The new bridge provides about 287 sq. ft of hydraulic opening, ample space for water surface elevation and storm surge to decrease through the new structure. That's nearly eight times as large as the old culvert pipes' 36-sq.-ft hydraulic opening—and a big enough increase to convince Othmer the site's storm issues are over.

"I've contracted for 47 years, mostly on small jobs, and even I have seen a lot of disasters," Othmer said. "This one went perfectly."

The test specimen built to help seismic-region bridges remain useful for decades after an earthquake appears poised to live for decades itself.

To learn more about resiliency from Michel Bruneau, listen to his presentation from the 2024 NASCC: The Steel Conference at aisc.org/ bruneau-resiliency.



Patrick Engel (engel@aisc.org) is the associate editor of Modern Steel Construction.

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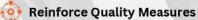
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Fabricator-Specific EPDs: Worthwhile?

BY JOHN CROSS, PE

To conduct the best evaluation of a fabricator's sustainability efforts, avoid fabricator-specific EPDs and focus on fabricator operations.

ONE OF THE MOST FREQUENT sustainability-related requests from engineers, architects, and building owners is for an environmental product declaration (EPD) from a specific steel fabricator. Fabricator-specific EPDs are not readily available, and the information in them would be of little or no real value when comparing fabricators' relative environmental performance.

Fabricators are capable of collecting the information required for a life-cycle assessment (LCA) and publishing an EPD based on it, but AISC does not recommend it. Clearly, fabricating structural steel products contributes to the final embodied environmental impacts, including the embodied carbon of the structural steel being used on a project. But typically, fabrication represents less than 10% of the total embodied carbon of one ton of fabricated structural steel, with the other 90% coming from the mill product. That 10% may be a small portion, but it is still important.

As an alternative to fabricator-specific EPDs, AISC has established a Sustainability Partner Program to assist fabricators and project decision-makers in supporting and identifying fabricators actively engaged in reducing their environmental impact footprint.

Project Type and Design Impact

The fabrication process is unlike the process for creating a mill product (produced at a steel mill for use in a project) or a manufactured product (like HSS) manufactured from hot-rolled coil. Fabrication does not create a new steel construction product. Rather, an existing steel product is being prepared for installation in a project according to the specific plans and specifications for that project. Fabrication is unique to every discreet construction project where the fabricated product will be installed, and every fabricated component is unique in its fabrication and the impacts associated with fabrication.

A developer or owner wishing to reduce the embodied carbon of a project would logically want to select a fabricator contributing the lowest level of embodied carbon on a per-ton basis. The structural steel industry is committed to transparency and availability of environmental information. But that information must be meaningful and supportive of the decisions being made based on it.

Every project is different. The members and design are different, as are the bay sizes, weld requirements, the connections, and the fabrication process. Environmental impacts from fabrication on a per-ton basis for a project are impacted more by the design than by the fabricator. The fabricator does not control the nature of the project, and most importantly, does not control the project's structural steel system design.

The environmental impacts associated with a complex project will be higher than those of a simple project. The fabrication effort and number of hours required on a thousand-ton warehouse will be much lower than for a thousand-ton stadium project, because the spans will be longer and the connections simpler for the warehouse. The embodied carbon on a per-ton basis will be higher for the stadium than the warehouse.

An EPD published by a fabricator fabricating a series of warehouses during the data collection period (typically one year) will show a much lower level of embodied carbon on a per-ton basis than a stadium fabricator. Yet during the EPD's period of validity (typically 5 years), the warehouse fabricator may compete for stadium projects and the stadium fabricator may compete for several warehouses. Comparing the embodied carbon reported on their



FRAMES

EPDs based on a ton of fabricated structure steel would be meaningless within the context of a future project. The embodied environmental impacts related to fabrication, just like the cost of fabrication, are more related to fabrication hours than the tons of steel fabricated.

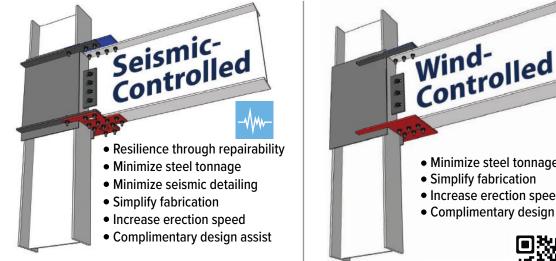
Measuring Fabrication Impacts

Fabrication impacts should be included in LCAs that quantify the environmental impacts of an entire structure, a whole-building life-cycle assessment (WBLCA). AISC conducts a regular survey of member fabricators to determine an inventory of materials, supplies, energy, and waste generated over the period of a year, and that figure is useful in WBLCAs. The inventory represents a broad range of projects from a multitude of different designers and provides the basis for an industry average of the impacts associated with fabrication on a per-ton basis. It is an average across all project types; complex projects will have impacts above the average, while more straightforward projects will have impacts below it.

It is important to recognize that even if the impacts were to vary by 30% in either direction, the overall impact when the mill material-related impacts are included would only vary plus or minus 3%.

At the fabricator level, the only meaningful impact results would be on a project basis where the material, supplies, and energy associated with the fabrication processes could be captured as the project is being fabricated. The

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collection of that data would be challenging, because fabricators often work on more than one project simultaneously.

Partner Program

Fabricator-specific EPDs' limitations do not mean there is no basis for assessing the embodied environmental impact performance of a fabricator. But basis for those assessments needs to be more qualitative than quantitative. Fabricators can reduce embodied environmental impacts-including embodied carbon-by implementing processes to minimize material overages on projects, purchasing more energy efficient equipment, increasing their sourcing of renewable energy, conducting energy audits on their operations, and volunteering to work closely with designers early in projects to suggest design alternatives with less complex fabrication.

AISC's newly established Sustainability Partner Program helps fabricators and project decision makers support and identify those who are actively engaged in reducing their environmental impacts associated with fabrication activity. Program members participate in a training program and identify possible areas for improvement, submit goals, and track their progress toward those goals. At the same time, they collect the data necessary to support AISC's determination of industry average fabrication impacts.

The partner program provides a meaningful alternative to the misleading quantitative approach of fabricator-specific EPDs and allows project owners and developers a path for selecting structural steel fabricators actively reducing the environmental impacts. A list of more than 60 AISC full-member fabricators participating in the AISC Sustainability Partner Program and ready to support your next project's sustainability goals is available at aisc.org/partnerprogram.



John Cross (cross@aisc.org) is a former vice president at AISC, a consultant to AISC, and the owner of Crosswind Consulting LLC.



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NSBA RECEPTION

Atlas Tube/Zekelman Industries | High Steel | Stupp Bridge Company Danny's Construction Company | DeLong's Steel | Veritas Steel | Wabash Steel





3D Engineering Global LLC booth 874 Houston ph: 346.459.6499 www.3deglobal.com

3DE Global provides world class structural design, steel detailing, rebar detailing, precast concrete detailing, 3D laser scan point cloud data processing, and BIM services. We use an array of licensed software and the latest cutting edge technology to provide turnkey solutions for our clients. We are a one-stop subcontractor for all of your engineering needs. Our team has extensive knowledge in residential, commercial, and industrial projects. With branch offices around the globe and an experienced team of 126+ resources at our disposal, no job is too big or complicated for us to execute.

AA Anchor Bolt, Inc.

booth 175 Northville, Mich. ph: 248.349.6565 | toll free: 800.929.3845 www.aaanchorbolt.com

AA Anchor Bolt, Inc. a family-operated business founded in 1979. We manufacture a multitude of quality products for a global customer base, selling directly to the end user. The company produces anchor bolts, custom fasteners, bent and threaded products from ¼ to 5 in. diameter, in various finishes and grades of steel, DOT, pulling irons, plates, manhole steps, barrier pins, round/square bent U-bolts, bracing rods, single/double-ended studs, etc. We carry a wide range of products within our in-house facility and can create custom orders based on customer demand. Our motto is: "Impossibilities we do immediately. Miracles take a little longer."

Abrafast.com/The Blind Bolt Co. **booth 669** Yorkville, III.

ph: 630.882.9010 www.abrafast.com

The Blind Bolt master distribution center. Manufacturer of anchor bolts, all thread rod and tie rod assemblies. Stocking domestic Grade 55 and 105 material. Our abrasive line is quite extensive! Doesn't matter if you're grinding a weld or need a mirror finish, we have the abrasives to get the job done right the first time. Products distributed: structural bolts, concrete anchoring systems, weld studs, self drilling screws, annular cutter, magnetic drills, grinding wheels, cutting wheels, flap discs, sanding discs, sanding belts, and much more!

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

Accurate Perforating booth 279 Chicago ph: 800.621.0273



Since 1942, family-owned and operated Accurate Perforating has grown from a small machine shop into a 210,000-sq.-ft full-service perforated sheet metal supplier offering complete perforating, fabricating, and finishing solutions. Whether you need perforated aluminum, carbon steel, galvanized, stainless steel, brass, or copper in perforated sheets, coils, blanks, parts, finished components, or architectural metal, decorative metal, railings, facades, or sunscreens—with the broadest range of thickness, hole size, or pattern—we're the perforated sheet manufacturer you can trust. We specialize in custom and complex work. Made in Chicago.

accurate

Acrow Bridge

booth 632

Parsippany, N.J. **ph:** 973.244.0080 | **toll free:** 800.524.1363 **www.acrow.com**

Acrow has been serving the transportation and construction industries for more than 70 years with a wide range of modular steel bridging solutions for permanent, temporary and emergency use. Acrow's prefabricated modular solutions are designed and manufactured in the U.S. to the highest quality assurance standards in the world. Our versatile modular technology is engineered to accommodate a wide range of customizable lengths, widths and loads and our bridging components are hot-dip zinc galvanized, offering a service life of more than 100 years.

Action Stainless

booth 259

Carrollton, Texas ph: 972.466.1500 | toll free: 800.749.2523 www.actionstainless.com

Action Stainless & Alloys is a full-line fabrication center. We're stocked with a diverse inventory of stainless steel and aluminum products. From plate to pipe and everything in between, we specialize in being able to provide all the items on a Bill of Materials. Housing multiple cutting processes under the same roof means there isn't a cut or order request Action Stainless can't fill. Stop by to learn all of the capabilities of Action Stainless and discuss how we can help take your project to the next level!

AFF Design Services Inc. booth 683 Dallas ph: 559.567.3969 www.affsteel.com

AFF started in 2008 with the goal of becoming a premier detailing and connection design company in Dallas. We're connoisseurs in detailing and connection design and work tenaciously to deliver efficient results. With an ideology to succeed, our team of project managers, detailers, and connection design engineers circles their guidelines around the requirements of our customers. Our innovative and comprehensive detailing procedures help us identify issues; this enables us to maintain the project schedule. Our methods have been tested and are proven to give effective outcomes.

AGT Robotics

booth 1128 Trois-Rivieres, Quebec Canada **ph:** 819.693.9682

www.agtrobotics.com

AGT Robotics is an automation and robotics expert specialized in the metal industry. They also manufacture the BeamMaster Weld, a robotic welding line specially engineered to answer all the welding needs of structural steel fabricators. Beam-Master features a small footprint, complete robotic automation, and integration with dedicated software. With its attractive prices, all sizes of fabrication shops can now consider solving their welding production issues with robotic welding.

AISC Bookstore and Education Foundation **booth 2**

Chicago

ph: 800.644.2400 | ph: 312.758.7802 aisc.org/publications

aisc.org/giving

The AISC Bookstore is your one-stop shop for AISC's manuals, codes, standards, and design guides. If you purchased a manual with your registration and selected the pick-up option, come see us! All conference attendees receive AISC-member pricing during the conference! The AISC Education Foundation's sole mission is to invest in the people who will drive the future of design, fabrication, and construction of structural steel. Shop 'til you drop for a great cause! The AISC Education Foundation offers a range of AISC-branded merchandise for sale, with all proceeds supporting AISC Education Foundation programs. Even better, our donor partners will DOUBLE the funds raised so your dollars go twice as far. Quantities are limited-stop by today!

exhibitor list NASCC: THE STEEL CONFERENCE

AKS Cutting Systems

booths 991 & 1089 Cleveland **ph:** 216.267.1818 **akscutting.com**

AKS Cutting Systems manufactures CNC cutting machines including plasma cutters, waterjet cutting systems and oxy-fuel burning tables for the sheet metal, plate metal, and fabricating industries. AKS has introduced two revolutionary cutting table features exclusive to our products: robo-kut robotic plasma and waterjet beveling system tube-kut pipe and tube cutting systems AKS Cutting Systems and our products have a reputation for durability, accuracy and reliability, with thousands of machine installations worldwide.

AKYAPAK USA

booth 1136 Bursa, Bursa Türkiye ph: 813.351.7100 www.akyapak.com

Proudly serving American industries, we deliver our machinery and provide excellent after-sales service, fostering trust and reliability with our valued customers across the continental U.S. Akyapak USA is the North American subsidiary of Akyapak based in Bursa, Türkiye. Conveniently located in Tampa, Fla., our warehouse is fully stocked with advanced machinery, ready for immediate delivery. Our wide dealer network also ensures fast and reliable deliveries directly to your doorstep.

Albina Co. Inc. **booth 668**

Tualatin, Ore. **ph:** 503.692.6010 **www.albinaco.com**

www.aibinaco.con

A trusted leader in precision steel bending and fabrication, offering expertise in curving structural steel, plate, and other metals to meet the diverse needs of industries worldwide. Founded on a commitment to quality and innovation, Albina delivers cutting-edge solutions for complex architectural, industrial, and infrastructure projects. With decades of experience, Albina specializes in custom bending and rolling services, including rotary draw, roll, induction and incremental bending. From small-scale artistic projects to massive structural applications, Albina excels in crafting precise radii and unique shapes with tight tolerances.

Allfasteners

booth 842 Medina, Ohio ph: 888.859.6060 allfasteners.com

We supply quality fasteners of any type to a variety of industries. With decades of first hand experience in the field, our knowledge provides a unique experience for our customers, every time—making us the place for all things fastening. We are not just fastener experts, though; our steel fabrication capabilities have positioned us as a leader in the industry. Along with an extensive list of onsite, virtual, and consumer based services, Allfasteners has cemented itself as a one stop shop for all industry needs. No matter the project, our goal is to find the solution to help you complete the job.

Allied Machine & Engineering

booth 1301

Dover, Ohio

ph: 330.343.4282 | toll free: 800.321.5536 www.alliedmachine.com

Allied Machine & Engineering is a leading manufacturer of holemaking and finishing tooling systems. Allied devotes its advanced engineering and manufacturing capabilities to creating the widest selection of value-added tooling available to metal-cutting industries around the world. Our tooling solutions deliver the lowest cost-per-hole in a wide range of drilling, reaming, threading, boring, and burnishing applications. Precision engineering and expert application support make Allied the first and best choice for solving complex metal-cutting challenges.

Altair

booth 673 Troy, Mich. **ph:** 248.614.2400 **altair.com**

Altair is a global leader in computational science and artificial intelligence (AI) that provides software and cloud solutions in simulation, highperformance computing (HPC), data analytics, and AI. Altair enables organizations in the AEC industry to compete more effectively and drive smarter decisions in an increasingly connected world—all while creating a greener, more sustainable future. For more information, visit www.altair.com/architecture-engineering-construction.

American Galvanizers Association **booth K11** in our Partner Pavilion

Centennial, Colo. ph: 720.554.0900 galvanizeit.org

The American Galvanizers Association (AGA), headquartered in Centennial, Colo., is a notfor-profit trade association dedicated to serving the needs of specifiers, architects, engineers, contractors, fabricators, and after-fabrication hot-dip galvanizers throughout North America. Since 1933, the AGA has provided information on the most innovative applications and state-ofthe-art technological developments in hot-dip galvanizing for corrosion protection.

American Institute of Steel

Construction (AISC) booth 189 Chicago ph: 312.670.2400 www.aisc.org

The American Institute of Steel Construction (AISC) is a non-partisan, not-for-profit technical institute and trade association whose mission is to make structural steel the material of choice by being the leader in structural-steelrelated technical and market-building activities, including specification and code development, research, education, technical assistance, quality certification, standardization, market development, and advocacy. AISC represents the total experience, judgment, and strength of the entire domestic industry of steel fabricators, distributors, and producers.

American Punch Company booth 822 Euclid, Ohio

ph: 216.731.4501 | toll free: 800.243.1492 americanpunchco.com

The American Punch Company is the leading manufacturer of high-quality punches, dies, and shear blades for metalworking and structural steel fabrication. In addition, the company supplies precision tooling and custom die components to the stamping, roll forming and metalforming industries. American Punch is proud to be ISO-certified, demonstrating a high level of commitment to quality in manufacturing and customer service. Quality tooling combined with superior customer service make American Punch the right choice for your tooling needs.

American Society for Nondestructive Testing (ASNT) **booth K14** in our Partner Pavilion

Columbus, Ohio

ph: 614.274.6003 | toll free: 800.222.2768

ASNT is the association for nondestructive testing (NDT) professionals committed to making the world a safer place. NDT professionals detect irregularities, flaws, and defects in materials, components, and structures that could compromise the safety, reliability, or functionality of an object or structure. ASNT supports members with certifications, professional development, industry insights, advocacy, events, publications, and networking opportunities and by fostering the growth of future generations of NDT professionals through the ASNT Foundation. ASNT is based in Columbus, Ohio, with offices in Houston and Chennai, India.

American Steel Detailing, LLC

Medina, Ohio

ph: 330.241.4130

www.americansteeldetailing.com

American Steel Detailing is an all U.S. structural and misc. steel detailing firm. ASD does projects all over the U.S. With a team of 15+ detailers, checkers, and project managers, they are capable of completing projects large and small.

American Welding Society

booth K13 in our Partner Pavilion Miami

ph: 305.443.9353 | toll free: 800.443.9353

Founded in 1919, the American Welding Society is a nonprofit organization with a global mission: to advance the science, technology, and application of welding and allied joining and cutting processes worldwide, including brazing, soldering, and thermal spraying. By fostering knowledge, embracing change, and providing real-world opportunities through scholarships, fellowships, and workforce development, AWS provides the tools to help members succeed—and to inspire future generations of welding professionals.

AMPP

booth K3 in our Partner Pavilion Houston **ph:** 281.228.6278

ampp.org/home The Association for Materials Protection and

Performance, AMPP, is the world's leading organization focused on the protection of assets and performance of materials. AMPP was created when NACE International and SSPC united after more than 145 combined years of corrosion control and protective coatings expertise, and service to members worldwide. AMPP is active in more than 130 countries and has more than 40,000 members.

Anatomic Iron Steel Detailing

booth 448

North Vancouver, British Columbia Canada ph: 604.841.0555 www.anatomiciron.com



Anatomic Iron Steel Detailing specializes in complex structural steel detailing, design-detailing, connection design, design consulting and 3D modeling. We operate both Tekla and SDS2. We also complete steel erection animations and 3D rendering. Our team oriented approach with our staff and clients has resulted in an outstanding track record of completing high profile complex projects accurately and on time. With over 300 staff, we can detail over 10,000 tons of structural steel per month. Please review our website at www.anatomiciron.com or call 510.984.4425 to discuss our project history.

Applied Bolting Technology, Inc. booth 421 Bellows Falls, Vt. Applied

bolting

Bellows Falls, Vt. **ph:** 802.460.3100 **toll free:** 800.552.1999

www.appliedbolting.com

We make Squirter DTIs, i.e., load cells, that assure compliance with bolting standards and specs. Torque, Turn-of-Nut, and TCs can all produce false positive tension, and regularly do: Torque scatter is ±40%, for new bolts, and worse for weathered. Relying on torque is optimism, at best. TCs are torque bolts that are adversely affected by cold or wet weather. Turn-of-Nut can be defeated by mispresenting turn angle, regardless of turn applied. DTIs read load. If a bolt is tight, a Squirter DTI will show it, independent of weather, torque, angle, tool, or skill.

ArcelorMittal International **booth 440** Chicago

ph: 312.874.1748

ami.arcelormittal.com/structural-shapes

ArcelorMittal is the leading supplier of quality steel products in all major steel markets, including construction. Signature products, like our HIS-TAR® (ASTM A913) steel, have been integral to numerous iconic structures, including One World Trade Center, 150 North Riverside, and BMO Tower. Through our world-class R&D team and outstanding distribution network, we offer innovative, competitive, and sustainable solutions that have led to several industry firsts, such as A913 80 ksi rolled steel shapes and the W14×1000.

ARISE: Assembly and Robotics Innovation in Steel Building Erection

booth K7 in our Partner Pavilion Brooklyn, N.Y. www.nyu.edu

Armatherm Thermal Bridging Solutions **booth 577**

Acushnet, Mass. **ph:** 844.360.1036 | **toll free:** 800.580.3983 **www.armatherm.com**

Armatherm[™] thermal break materials provide a combination of low thermal conductivity and high compressive strength. The range has been designed and tested to prevent thermal bridging. Armatherm[™] solutions can be used anywhere a penetration or transition exists in the building envelope creating a thermal bridge. Solutions to minimize heat loss include balcony, canopy, parapet, masonry shelf angle, cladding/Z-girt connections. Armatherm[™] has been proven through three dimensional modeling to reduce heat loss in wall assemblies, transitions and structural connections throughout the building.

Arteras Inc.

booth 745 Duluth, Ga. **ph:** 214.666.5167 ×101 **arteras-inc.com**

Arteras Inc. is a comprehensive structural steel detailing and engineering services company established by steel detailing professionals with more than 18 years experience. Our business model focus on developing your structure with precision and quickness using intelligent resources such as Tekla Structures, AutoCAD, and SDS2. Arteras provides connection design services with in-house PE for all types of structural steel and miscellaneous steel.

ASC Steel Deck

booth 186

West Sacramento, Calif. ph: 916.202.4391 ascsd.com

ASC Steel Deck is a leading structural steel roof and floor deck manufacturer servicing the western U.S. As the only manufacturer on the west coast to offer a full line of light-gauge structural products, ASC Steel Deck's extensive product offer meets the needs of the most complex conditions and demands for structural performance and design. ASC Steel Deck has been focused on developing resources for engineers and architects. We have more resources and products to offer than ever before. Stop by and learn more.

Association of Women in the Metal Industries

booth K5 in our Partner Pavilion Mt. Royal, N.J. ph: 856.423.3201 www.awmi.org

The Association of Women in the Metal Industries (AWMI) was founded in 1981 to promote the advancement of women in the metal industries. With 20 chapters across the U.S. and Canada, AWMI offers opportunities for professional growth, networking, and education. AWMI's

NASCC: THE STEEL exhibitor list

programs and events enhance skills, address industry challenges, and support career development, with the goal of increasing women's representation in the metal industries. Membership is open to all professionals, regardless of gender. Learn more about AWMI and its four cornerstones—Network, Grow, Educate, and Mentor—at awmi.org.

Atema Inc.

booth 762 Chicago **ph:** 312.861.3000

www.atema.com

Atema specializes in building tailored AISCcompliant quality management systems for fabricators and erectors, while also offering quality assurance oversight on large bridge fabrication projects. We deliver specialized training and management assistance, guiding companies toward meeting the certification requirements of various infrastructure industry sector programs.

ATF WORLD Inc.

booth 683 Dallas www.atfworld.com

Atlas Tube

booth 225

Chicago ph: 800.733.5682 | toll free: 800.733.5682 www.atlastube.com

Atlas Tube, a Zekelman Company, is the leading manufacturer of steel hollow structural sections (HSS) and ERW straight-seam piling with seven manufacturing locations in North America. We provide an industry-leading size range with sizes up to 22 in. square, 28 in. round, and 34×10 in. rectangle, all with wall thicknesses up to 1 in. Our engineering team provides product education, connection insights, and answers to project-specific questions. Atlas products are readily available in industry standard and custom lengths, and extra-long lengths. Count on Atlas Tube for the products, services, and support you need to make your next project a success.

Autodesk

booth 111

San Francisco ph: 415.507.5000 www.autodesk.com/solutions/aec/bim/

structural-engineering

Autodesk is changing how the world is designed and made. Our technology spans architecture, engineering, construction, product design, manufacturing, media and entertainment, empowering innovators everywhere to solve challenges big and small. From greener buildings to smarter products to more mesmerizing blockbusters, Autodesk software helps our customers to design and make a better world for all. For more information, visit autodesk.com or follow @autodesk. #MakeAnything

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Automated Layout Technology LLC **booth 1147**

Hudson, N.H. **ph:** 603.402.3055

www.automatedlayout.com Automated Layout Technology is the maker of

Automated Layout feelinology is the maker of the Lightning Rail, the first automated marking machine created specifically for the layout of stairs and hand rails. The Lightning Rail works with DXF files to quickly and accurately print an entire stair stringer or rail in minutes saving hours of labor. The fully automated CNC machine takes your design and prints the entire work piece on a rigid steel frame table in any configuration including rails, pickets, hangers and more. Easily place channels on the table for the automatic layout of stair stringers.

AZZ Metal Coatings

booth 810 Fort Worth, Texas **ph:** 817.810.0095 **www.azz.com**

AZZ's Metal Coatings Segment includes hot-dip galvanizing, spin galvanizing, powder coating, anodizing, and plating to the post-fabrication steel markets. As North America's leading provider of galvanizing for pre-fabricated steel, AZZ operates 41 galvanizing and six powder coating facilities located across the continent. Our plants maintain many of the largest galvanizing kettles in the U.S., enabling us to efficiently service components up to 62 ft long and weighing up to 60,000 lb.

Baco Enterprises Inc. booth 628 Bronx, N.Y. ph: 71.589.6225 www.bacoent.com

Baco Enterprises Inc. stands proudly as the only bolt manufacturer in New York City. The premier supplier of high quality structural bolts, fasteners, and related materials that bring structures to life. We also supply steel shapes, plate, threaded rod and anchor bolts, misc. steel fabrication, safety, and related products.

Badger Products USA booth 159 Fort Worth, Texas

ph: 682.707.9344 badgerproductsusa.com

Badger Products USA is an industry-leading abrasive and glove manufacturer. Based out of Fort Worth, Texas, Badger Products offers a full line of products for grinding, cutting, and sanding metals and other surfaces. We also offer a full line of welding gloves, jackets, and consumables. NOTHING BITES LIKE A BADGER.

Bamal Fastener Corporation booth 734 Charlotte, N.C. ph: 317.440.4286

www.bamal.com

Founded in 2008 formerly as Midwest Structural Products, Bamal Fastener's structural division is a full-line distributor of fasteners to the structural, solar, and industrial manufacturing markets. We proudly offer the finest structural product manufactured by our partners in the U.S. and abroad. Bamal Fastener prides itself on its expertise and attention to detail in quality, cost, and customer service. Our structural division is based out of Indianapolis and corporate is located in Charlotte, N.C. The company has a network of eight locations throughout the U.S. and Mexico, strategically located for your needs.

Baumann USA

booth 1283 Brookville, Ohio

ph: 855.334.2909 | toll free: 855.334.2909 www.baumannusa.com

Baumann USA is the exclusive North American distributor for Baumann sideloaders, a global leader in diesel and electric two-way models with lifting capacities from 6,600 to 132,000 lb. With over 50 years of innovation, Baumann sets the industry standard in design, performance, and productivity. Recognized worldwide for safety and productivity, Baumann customizes sideloaders to meet unique needs and offers top-quality materials and dependable after-sales support, ensuring high productivity and excellent return on investment.

Bay Standard Manufacturing **booth 1375** Kendallville, Ind.

www.baystandard.com

Ben Hur Construction Co. booth 381 St. Louis www.benhurconstruction.com

Bend-Tech booth 1289 Osceola, Wisc. ph: 651.257.8715 www.bend-tech.com

Bend-Tech is a leading provider of productionready technology for tube and pipe processing to structural steel fabrication shops, and small to large manufacturers. Bend-Tech's A400 and A250 CNC plasma cutters and integrated software are versatile by design to fabricate a wide range of material length and profiles. For more than 20 years, Bend-Tech has improved the accuracy and efficiency of tube and pipe production for more than 30,000 fabricators and manufacturers around the world. Headquartered in Osceola, Wisc., the company is a member of SEMA, PRI, NOMMA, AISC, and NATM.

Bentley Systems, Incorporated **booth 507**

Exton, Pa.

ph: 610.458.5000 | toll free: 800.BENTLEY www.bentley.com

Bentley Systems (Nasdaq: BSY) is the infrastructure engineering software company. We provide innovative software to advance the world's infrastructure—sustaining both the global economy and environment. Our industry-leading software solutions are used by professionals and organizations of every size, for the design, construction, and operations of roads and bridges, rail and transit, water and wastewater, public works and utilities, buildings and campuses, mining, and industrial facilities. Bentley Systems employs more than 4,500 colleagues in 186 countries.

Birmingham Fastener **booth 145**

Birmingham, Ala.

ph: 205.595.3511 | toll free: 800.695.3511 www.bhamfast.com

Birmingham Fastener, Inc. is a full-line distributor of structural fasteners for the domestic and international makers. We are proud to be the largest distributor of A325 and A490 bolts in the nation and offer fast turnaround to our customers. With manufacturing facilities in Birmingham, Ala., Lavonia, Ga., Houston, Santa Fe Springs, Calif., and Katy, Texas, we can provide you with non-standard structural bolting and any type of welded assembly, threaded rod, or bent anchor bolt you may need.

Blackstone Group Technologies **booth 790** Chicago

ph: 312.419.0400

The Blackstone Group Technologies is a leading engineering and detailing company headquartered in Chicago. We have 30+ years in the industry, are ISO and NISD–QPP certified, and have a strong 300-person team. Serving our customers in the U.S. and Canada by delivering quality, error-free detailing work using Tekla, SDS2, Advance steel, and Autodesk Inventor.

Blair Corporation

booth 468 Oak Ridge North, Texas ph: 832.928.9655

www.blairwirerope.com

Blair Corporation specializes in the fabrication of stainless steel cables for hand rails in cable railing projects. We supply high performance wire ropes, Casar and Bridon, as well as aircraft cable, cable rail and accessories, cable clamps, and turnbuckles used in safety.

Bluebeam Inc.

booth 210

Pasadena, Calif. **ph:** 626.788.4100 | **toll free:** 866.496.2140 **www.bluebeam.com**

Bluebeam is the leading provider of digital productivity and collaboration solutions for industries that build our world. Founded in 2002 and with over 3 million users across 160 countries, Bluebeam empowers professionals to make their mark, adapt to change, and deliver projects successfully. Known for its user-friendly tools and dedication to customer delight, Bluebeam is committed to making innovation accessible for those who design and build our world. Headquartered in Pasadena, Calif., Bluebeam has grown to seven offices globally. Bluebeam is part of the Nemetschek Group.

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Brainstorm Infotech

booth 391 Bengaluru, Karnataka India **ph:** 91.9980.822911

www.brainstorminfotech.co.in

Brainstorm Infotech is headquartered in Bengaluru, the start-up capital of India. It has carved a niche for itself in the field of structural steel detailing and allied services with a credit of completing close to 3,500 projects so far. Their expertise lies in structural steel detailing and connection design as per AISC, CISC, IS, BS, and Australian standards for commercial and industrial structures with 2D and 3D advanced modeling software. Our dedication and commitment signify the trust and respect that we have from our clients and we continue to passionately collaborate with prestigious clients from North America and build a better future.

Brown Strauss Steel booth 363

Aurora, Colo. ph: 303.371.2200 | toll free: 800.274.0359 www.brownstrauss.com

Brown Strauss is the premier structural steel service center in the U.S. We have the deepest inventory for your wide flange beam, structural tube, pipe, structural channel, structural angle, and your other structural needs. Brown Strauss has over 120,000 tons of structural steel on the floor ready for next day delivery. Since our founding in 1905, we've grown to ten locations serving 24 states, and we're proud to be 100% employee-owned.

Bryzos booth 356 St. Louis

ph: 844.427.9967 www.bryzos.com

Bryzos is the fastest growing digital marketplace in the metals industry with an extensive network of buyers and sellers. Bryzos has built the first instant pricing and procurement tool for the industry, facilitating the instant trade of carbon, stainless, and aluminum products. Aptly named the Gone In Sixty Seconds[™] application, you can purchase or sell your commodity metals in sixty seconds or less using our free desktop or mobile application. This is the fastest metal trading experience ever made... and we can prove it. Don't believe us? Download it for free and check it out.

Bull Moose Tube Company booth 457

Chesterfield, Mo. ph: 636.537.2600 | toll free: 800.325.4467 www.bullmoosetube.com

Bull Moose Tube produces Hollow Structural Sections (HSS) ranging from 1-14 in. square (and rectangular equivalents) in wall thicknesses up to 0.750 in.-creating value for a wide range of applications. Through our jumbo HSS partnership with Mitsui & Co. (U.S.A.), Inc., MM&KENZAI Corporation, and Nippon Steel Metal Products Co., Ltd., we can offer HSS up to 22 in. square and 0.875 in. thick. As one of North America's largest HSS producers, we're able to offer products that meet a variety of specifications including ASTM A500, A847, Á1076, A1085, A1110, A1112 (up to 110 KSI), CSA G40, and EN 10219.



By combining high-speed 4G acceleration with high-power (12 KW to 60KW), Fiber PRIME S Laser sets a new standard for cutting Mild Steel up to 4 inches thick. Manufacturers and fabricators can count on a laser cutting machine that delivers reliable and efficient 24/7 operation, while providing rapid processing high-end performance for a wide range of heavy-duty applications.

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C.M. Mockbee Co.

booth 818 Cincinnati **ph:** 513.621.3864

mockbee.com

C.M. Mockbee was founded in 1909 with a focus on and reputation for quality threaded products and outstanding on-time service. Its manufacturing capabilities include custom threaded products such as anchor bolts, sag rods, and turnbuckle assemblies. It also specializes in lifting and rigging solutions, structural fasteners, mechanical anchors, industrial (HVLS) fans, and energy LED lighting solutions.

CADeploy, Inc.

booth 800

Danville, Calif. **ph:** 408.375.9200 | **toll free:** 855.444.9497 **www.cadeploy.com**

CADeploy, Inc. is a California corporation and member of AISC, NISD, MBMA, and ACI. We offer steel engineering, steel detailing, estimation services (structural steel/PEMB/rebar), and as-built services and HSE studies (oil and gas) to 400+ clients spread across the globe. Our team of 750+ engineers/personnel specializes in structural and miscellaneous projects across industrial, commercial, residential, and other industries. We work on TEKLA, SDS2, Advance Steel, AutoCAD, RebarCAD, Revit, PDS, PDMS, and other widely used platforms. We have completed 3,200+ projects on time with 100% quality.

CAI Software

booth 240 Lincoln, R.I. ph: 800.422.4782 caisoft.com/products/radley-materialtraceability

CAI Software was purpose-built to create actionable information for steel fabricators of all sizes across North America. Whether you're looking for visibility throughout your manufacturing, processing, or distribution environment or just want to streamline specific processes to improve your business, CAI can help. CAI's Radley software integrates seamlessly with Trimble Tekla PowerFab, providing essential functionality to automate processes and eliminate errors and inefficiences.

CAMBCO, Inc.

booth 610 Houston **ph:** 713.781.9702

www.cambcoinc.com

CAMBCO—The original cambering machine since 1984! Cambco offers eight cambering machine models to fulfill any cambering requirement from small commercial buildings to highway bridges. We offer the complete cambering machine as well as a "Do it Yourself Hydraulics Kit" for each model. Conveyor fed and powered Kit" for each model. Conveyor fed and powered rollers also available on most models. Contact us for additional information. We are looking forward to hearing from you!



Milford, Mass. **ph:** 866.466.8769 **www.canam.com**

With over 60 years of experience and more than 300,000 projects, Canam's expertise is rivaled only by its ambitions. We specialize in designing and manufacturing steel joists and decks for the North American construction industry. Our distinctive BuildMaster collaborative approach is transforming on site deliveries, offering up to a 20% reduction in erection time. Backed by a robust team comprising over 100 engineers and more than 650 structural steel detailers and drafters, Canam goes beyond being a mere supplier; we emerge as your ideal partner for achieving success.

Cano Steel

booth 348 El Paso, Texas ph: 915.383.4518 www.canosteel.com

Since 2017, Cano Steel has been a leading exporter to the American soil in the steel industry, producing 3,500 tons of steel monthly, plus 2,500 tons of joist from its specialized plants. Dedicated to high-quality, industry-certified products, (SJI, SDI, AISC, AWS, ISO) Cano Steel ensures timely delivery and customized solutions for large construction projects. With strong partnerships and a focus on innovation, the company meets the evolving needs of North America's construction industry.

Carboline booth 163 St. Louis ph: 314.644.1000 www.carboline.com

Carboline manufactures high-performance coatings that extend the life of steel assets and passive fire protection materials that protect people and preserve structural integrity. Scientists in our world-class research, development, and innovation lab advance asset protection, and premier technical experts guide owners, engineers, and coating contractors to material solutions that accelerate construction schedules and deliver the best overall project value.

Cascade Nut and Bolt Company **booth 256**

Salem, Ore.

ph: 503.375.6445 | toll free: 888.511.1005 www.cascadenutandbolt.com

Cascade Nut and Bolt Company is a full line fastener distributor specializing in structural bolting and anchors to steel fabricators around the country. We stock domestic, North American, and import structural bolts. We manufacture anchor bolts in house. We job pack for field bolt orders and excel at our paper work package. We are a stocking distributor of Infasco's INF 3013 coated bolts. We are a member of AISC.

Cast Connex

booth 510 Toronto, Ontario Canada ph: 416.806.3521 | toll free: 888.681.8786 www.castconnex.com

CAST CONNEX[®] is the industry leader in the architectural and structural use of cast steel components in the design and construction of building and bridge structures. Our products include pre-engineered connectors that simplify the design and enhance the performance of structures. We also offer design-build services for custom cast steel nodes and components.

Cerbaco Ltd.

booth 640 Warrington, Pa. **ph:** 908.996.1333 ×1

www.cerbaco.com

Cerbacos line of 500+ configurations of nonmetallic weld backings permit finished-quality, full-penetration welds from one side. For use with structural steel, shipbuilding, pipeline, pressure vessel, and tank manufacturing. Backings work with MIG, TIG, Stick Electrode, Sub Arc, and Flux Core welding processes to weld carbon and alloy steel, stainless, and aluminum. Where one-sided welding is not desirable, backings eliminate arc gouging or heavy grinding prior to second-side welding.

Charlie Irwin Painting, LLC (CIP) **booth 1339**

Franklin, Tenn. **ph:** 615.790.8822 **www.cipaint.com**

CIP is one of the top commercial/industrial painting and fireproofing contractors Nashville has to offer. In business since 1984, CIP serves our clients in Nashville and across the Southeast. We are committed to being the best commercial/ industrial painting contractor in the industry. We are a locally owned and operated business with the ability to handle any size painting project.

Chicago Clamp Company **booth 123**

Broadview, III. **ph:** 708.343.8311

www.chicagoclampcompany.com

Chicago Clamp Company provides an innovative method for framing roof openings and supporting rooftop loads with no welding or drilling. This standardized method for connecting joists and beams allows structural engineers to focus on load distribution rather than attachment apparatus or welding concerns. With up to 4,000 lb capacity per system, it is ideal for the safe and economical framing and installation of rooftop units, sky lights, exhaust fans, and vents.

Chicago Jack Service, Inc.

booth 280 Alsip, Ill. www.chicagojack.com

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Chicago Metal Rolled Products **booth 226** Chicago

ph: 773.523.5757 | toll free: 800.798.4504

Family-run since 1908, we work with our customers to bend and roll all steel grades, sizes, and shapes including angles, bars, beams, channels, pipes, tubes, rail, sheet, and plate. With two plants, 60+ rolling machines, and over 120 years of experience, our highly trained workforce and state-of-the-art equipment handle the most challenging jobs quickly with precision and accuracy. We have earned the respect of over 10,000 satisfied customers delivering 99% error-free tight bends holding minimal tolerances even for shapes with very complex geometries.



Cleveland City Forge **booth 120**

Wellington, Ohio **ph:** 440.647.5400 | **toll free:** 800.431.4350 **www.clevelandcityforge.com**

Cleveland City Forge, an innovative American manufacturing and engineering company, combines product development with production to produce standard and custom structural steel components that include forging, machining and distribution. Along with custom components, standard products include: clevises, clevis pins and recessed pins, turnbuckles, turnbuckles with fittings, threaded rods, rod ends, eyenuts, eyebolts, yokes, swage: sockets, sleeves, buttons and studs, and heavy hex nuts. Our products can also be grouped to create complete assemblies ready for installation.

Cleveland Punch & Die Co. **booth 814**

Ravenna, Ohio

ph: 330.296.4342 | **toll free:** 800.451.4342 **www.clevelandpunch.com**

Cleveland Punch & Die Company is the world leader in manufacturing and stocking punches, dies, and shear blades in the structural and steel industry. All of our products are proudly manufacturers continue to trust and recommend our products to meet and surpass our customers expectations for all steel applications. Our customers continue to trust and rely on the most experienced and friendly engineering and customer service support team in the industry. We are proud of our 145 Years of quality, experience and tradition. Customer service hours: 7:00 a.m.-6:00 p.m. EDT; sales@clevelandpunch.com

Cleveland Steel Tool **booth 724**

Cleveland toll free: 800.446.4402

www.clevelandsteeltool.com

Cleveland Steel Tool is the world leader in the manufacturing of punches, dies, shear blades, and specialty tooling. Our punches, dies, shear blades, and specialty tools are supplied daily to the structural steel, railroad (track and cars), farm equipment, truck frame, shipbuilding and grader blade industries, as well as serving all manner of fabricators and ornamental iron shops. In addition to the above, we also supply annular cutters, magnetic drills, portable punching units, steel saws, and steel saw blades to the metal fabrication industry.

ClimaSpec booth 487 San Francisco ph: 888.376.6756

climaspec.com

ClimaSpec specializes in manufacturing quality structural thermal breaks to reduce thermal bridging. All ClimaSpec structural thermal break products are manufactured in the U.S. The ClimaSpec ethos is to provide thermal bridging solutions for a wide range of steel connection designs with dependable lead times. ClimaSpec also provides market leading design assistance for structural engineers, architects, and contractors.

Color Works Painting, Inc. **booth 480** New Castle, Del.

ph: 302.324.8411



www.ColorWorksPainting.com Color Works is an AMPP-QP3 Certified coatings shop featuring climate control capability. Over 30 years of experience and knowledge in blasting and high-performance coatings (duplex systems, intumescent/fire proofing, AESS 4-6/C and glass bead). Capable of handling massive structures (bridges, vessels, cranes, DOT). What's more, they staff AMPP Level 3 QC inspectors, guaranteeing your project meets specifications. Impeccable safety record—receiving over 10 consecutive National Pinnacle Awards! No downtime keeps projects progressing with ease. Moreover, CWP offers their own fleet delivery services and access to nearby port and rail services.

Columbia Safety and Supply **booth 151**

Columbia, Mo.

ph: 800.969.5035 www.colsafety.com

Columbia Safety and Supply is North America's premier outfitter of safety gear, contractor equipment, and supplies. We are fall protection experts and we're here to help you find exactly what you need to be safe and productive. Our gear experts combine industry knowledge with professional experience. We service a variety of industries, including steel erection and fabrication, verticle concrete, building enclosement, road and bridge, and more. We carry thousands of products from the world's best manufacturers. Be Safe, Do More, with Columbia Safety and Supply!

Combilift

booth 882

Monaghan, Co. Monahan Ireland **ph:** 336.378.8884 | **toll free:** 877.266.2456 **www.combilift.com**

As a specialist forklift and straddle carrier manufacturer, Combilift produces a wide range of customized handling solutions, all of which are designed for the safe, space saving, and very productive handling of the long and bulky loads like those handled in the steel industry. The fourdirectional Combilifts work as counterbalance, sideloader, and narrow-aisle forklifts, with the Combi-SC (Straddle Carrier) being the cost effective solution for the handling of containers and oversized loads. Capacities across the Combilift range are from 3,200 lb. to 180,000 lb.

COMSLAB

booth 114 Concord, Ontario Canada ph: 905.738.9267 www.comslab-usa.com

COMSLAB is a long-span and shallow composite floor system that helps structural steel compete with the low floor-to-floor concrete designs. COMSLAB is a lightweight assembly that has UL listed exposed and unrestrained ratings of one, two, and three hours for spans of 30+ feet! It's ideal for all elevated floor construction such as hotels, schools, office, high-rise, multiresidential, and medical buildings. COMSLAB products are in compliance for NYC high-rise and LA RR approvals.

Con-Serv Inc.

booth 653 Georgetown, S.C. **ph:** 843.546.1044

www.con-servinc.com

Your All-American structural bearing solution/ structural support bearing systems for all industries. Con-Slide[™] support bearing systems: type CSA and CSB, type CHP, high temperature bearings: bronze, Meehanite[®], graphite; elastomeric bearings: Neoprene[®], fabric reinforced; high load multi-rotational: pot, disc, spherical, radial, and self aligning, rocker bearings and other specialty fabrications. Designed and fabricated to accommodate: thermal expansion, end-beam rotation, vibration isolation, and seismic acceleration.

Consolidated Pipe & Supply Company **booth 748**

Birmingham, Ala.

ph: 205.323.7261 | toll free: 800.467.7261 www.consolidatedpipe.com

Consolidated Pipe & Supply is a distributor of a full line of steel pipe products including structural, piling, line pipe, and utilities products. We are headquartered in Birmingham, Ala., and operate over 60 branches with the capability to ship anywhere in the U.S. We also operate our own industrial and specialty coatings facility where we can coat all of the pipe and structural materials we sell.

Controlled Automation, Inc. **booth 813**

Bauxite, Ark.

ph: 501.557.5109

www.controlledautomation.com

Controlled Automation is a customer-driven company specializing in the design and manufacture of superior fabricating equipment. Our mission, as a team, is to strengthen and grow through the success of our customers while offering them constant respect, gratitude, and a quality product. Along with new machinery, we offer material handling systems to compliment each of our machines. All machines, software, and controls are designed, manufactured, and supported entirely in the U.S.



Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

Copper State Bolt & Nut Co. booth 477 Phoenix

ph: 602.272.2384 | toll free: 800.603.6887 www.copperstate.com

Copper State supports fabricators and erectors throughout the U.S. with product that ranges from structural fasteners, hex bolts, TC bolts, anchor bolts, double-end studs, and other manufactured specials. We support fabricators in their shop with tools and accessories, cutting tools, abrasives, safety products, and other industrial supplies. Copper State has 30+ locations in the western U.S. providing local support, and we are stocked heavily with structural inventory in Phoenix, Denver, Reno, Nev., Salt Lake City, and Spokane, Wash. Site support includes sequencing and logistics, product labeling and identification, online cert management, and VMI.

CoreBrace

booth 515 West Jordan, Utah **ph:** 801.280.0701

www.corebrace.com

CoreBrace buckling-restrained braces (BRBs) are a cost-effective solution to improve the seismic performance of structures. This highly ductile system has been used in thousands of projects worldwide for earthquake risk mitigation. Core-Brace's expert staff works closely with owners, architects, engineers, fabricators, and erectors to meet their design and construction requirements and is committed to providing braces to the highest level of quality. Our extensive research program focuses on sustainable and resilient designs of structures in high seismic zones.



CSC – Canam Steel Corporation booth 215

Point Of Rocks, Md. ph: $301.874.5141 \mid$ toll free: 833.888.0545cscsteelusa.com

Canam Steel Corporation (CSC) is a service-oriented manufacturer of open web steel joists and steel deck that services the entire U.S. via our six manufacturing facilities. We are a company that prioritizes safety and efficiency of the entire process for both our employees and our customers. We believe in the power of partnerships and the need for flexibility throughout the process for all of our partners. Our projects range from the small retail store at a local strip mall to some of the largest distribution centers, high-rises, schools and stadiums. We are a participating member of both the SJI and SDI.

Cutting Edge Steel & Stair booth 720

Dacono, Colo. **ph:** 303.651.3180 cesteel.com

At Cutting Edge Steel, we have the knowledge and expertise to provide an affordable solution to all of your project stair and rail needs. We are your one-stop solution. Our specialty includes work across North America of architectural, commercial service, and industrial class stair and rail products. CES offers "pre-engineered" systems when applicable or can work with clients who envision a one off product for true uniqueness of ornamental design. Depending on scope and location CES can also provide a complete miscellaneous steel packages. Please call to discuss the needs of your next project.

CWB Group

booth 576 Milton, Ontario Canada **ph:** 800.844.6790 www.cwbgroup.org

CWB Group is an Ontario, Canada-based, industry-supported private sector not-for-profit organization that provides comprehensive, integrated services to nearly 10,000 companies and 100,000 professionals across the welding and joining industry in nearly 50 countries worldwide. CWB affiliate EWI provides industrial manufacturers with advanced engineering services in materials joining, forming, testing, and modelling to create effective solutions in product design, fabrication, and production. EWI is based in Columbus, Ohio, and Buffalo, N.Y. Visit us at ewi.org.

D.S. Brown booth 626

North Baltimore, Ohio **ph:** 419.257.3561 dsbrown.com

Founded in 1890, The D.S. Brown Company is a leading worldwide designer, supplier, and manufacturer of engineered products for the bridge, airport and highway industries. As technology has evolved and influenced our means of transportation, D.S. Brown too has evolved to meet the needs of the current times. From our humble beginnings to our current focus on the manufacturing of high-quality infrastructure construction products under Gibraltar Industries, D.S. Brown has been there for over a century to help the world move forward.

DACS, Inc.

booth 126 Portsmouth, Va. ph: 757.337.5111 www.dacsinc.com

DACS, Inc., with a plant strategically located in Portsmouth, Va., manufactures roof and floor decking. Since 1987, DACS has been providing the construction industry with affordable products and quality services. Our continued growth is fueled by loyal customers and innovative products. With a full line of roof products, including deep decks and cellular decks, as well as composite and non-composite floor decks, DACS is sure to satisfy all your decking needs. Please note we also offer our products in carbon steel, stainless steel, and aluminum!

Daito Seiki Co., Ltd. booth 875 East Dundee, III. ph: 847.437.6788 www.daitousa.com

Daito is focused on metal cutting, drilling, and plasma cutting machines and has become the most technologically advanced machine producer in its field. Along with being the world's top manufacturer in its field, Daito is geared toward customer satisfaction by supporting our customers with our knowledgeable and responsive sales, applications, and our sales personnel.

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Danny's Construction Company, LLC booth 452

Shakopee, Minn. **ph:** 952.445.4143 www.dannysconstruction.com



Since 1970, Danny's Construction Company has been an industry leader in complex and schedule-demanding steel erection projects. We have substantial experience in building bridges, sports and events facilities, hospital and medical facilities, as well as a variety of industrial and commercial structures. With this experience, we have built a reputation for surpassing rugged industry standards for quality, safety, and productivity. Strategic office locations across the country provide us the resources available to take on projects regardless of size, location, complexity, or demanding scheduling parameters.

DAVI, Inc.

booth 848

Addison, Texas ph: 972.661.0288 | toll free: 888.282.3284 www.davi.com

More than ever, applied technology is being called upon to solve manufacturing's quest for global competitiveness. The challenge is to locate the best technology and to gather them in one place for consultation. DAVI, unique in plate roll and angle roll industry, makes this available at our own U.S. customer support center, located in Dallas.

DBM Vircon booth 479

Tempe, Ariz.

ph: 480.225.4490

www.dbmvircon.com

We make design constructible. DBM Vircon is a premier construction modeling, detailing, and digital engineering company. With our vast experience, we help our market leader customers including owners, engineers, EPCM firms, general contractors, and fabricators build with confidence across the globe. Our proven methods and preconstruction collaboration platforms help our clients compress schedules and mitigate cost overruns by proving the design constructible and complete.

Delta Steel

booth 801

Houston toll free: 800.324.0220

www.deltasteel.com

Delta Steel is a customer oriented company, striving to build long lasting and mutually profitable customer relationships. We are committed to continuous improvement in our service, in our products, in safety, and in our personnel. We emphasize professional and ethical business dealings with customers, suppliers, and employees. Formed in 1963, Delta Steel is a subsidiary of Reliance, Inc. and a member of The Infra Group. Delta Steel is one of the largest steel service centers in the southwest U.S. serving industrial, commercial, and OEM markets.





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For more than 60 years, BULL MOOSE has been North America's most formidable supplier of steel pipe and tube. Specializing in HSS, sprinkler pipe, mechanical steel tube, and pipe pile, we provide the AEC industry with material for any project. Our capabilities encompass one of the industry's largest size ranges (up to 14" square, 18" round, and 0.750" wall)–with a new facility boasting the lowest carbon footprint for steel pipe & tube in North America.

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DGS Technical Services, Inc. **booth 551**

Elgin, Ill. toll free: 630.539.8200 ×5202 www.dgsts.com

DGS Group is a client-centric and performancedriven organization offering end-to-end solutions in engineering, design, and structural domains, headquartered in Elgin, Ill. Our global footprint includes offices in the U.S., Canada, U.K., and the Gulf. With certified American PE and technical project managers boasting over 40+ years of experience, we leverage smart software like Tekla and SDS2. Our production team comprises highly skilled engineering squads dedicated to structural engineering, steel detailing, bridge detailing, connection design, estimation, and estimodeling.

Dlubal Software, Inc.

booth 125 Philadelphia ph: 267.702.2815 www.dlubal.com/en

Dlubal Software provides advanced tools for structural and dynamic analysis, with a strong emphasis on steel design, including cold-formed steel and steel connections, among other material types. Our flagship 3D FEA program, RFEM 6, efficiently performs non-linear analyses of members, plates, and solids, ensuring precise results for even the most complex steel structures. Renowned for its intuitive workflow, RFEM is both highly sophisticated and user-friendly, making it ideal for engineers new to FEA. Trusted by more than 5,000 companies and universities worldwide, Dlubal Software is your partner for innovative and reliable steel design solutions.

Doerken Coatings

booth 157

Grass Lake, Mich. **ph:** 517.522.4600

www.doerken.com/us/en/doerken-coatings

Doerken Coating systems are an alternative to hot dipped galvanizing and provide long-term corrosion protection for the fasteners used in bridges and other steel structures. Approved for application to A490 high-strength fasteners, the zinc-flake coating systems from Doerken are available through a network of licensed coating applicators located in the U.S., Canada, and all over the world. Our products are designed to fulfill rigorous performance requirements and are free of all environmentally regulated substances—including PFAS. In business for more than 130 years, we have the knowledge and expertise to provide lasting solutions for you.

Drivensteel Inc.

booth 258 Folsom, Calif. **ph:** 213.354.9730

drivensteel.com

Drivensteel Inc. company has formed by group of young enthusiastic engineers, who have vivid experience in the construction and infrastructure industries. We designed and built our capabilities with most experienced steel detailing team in this industry. Our innovative approach and continual learning ensures quality and timely delivered outputs to our clients. We have 350+ detailers on board who are highly experienced in structural and miscellaneous projects throughout commercial, industrial, and residential sectors. We have latest software of SDS2, TEKLA, and AutoCAD.

DuraFuse Frames booth 411 West Jordan, Utah

ph: 801.727.4060 www.durafuseframes.com

The DuraFuse Frames difference is adding resilience and economy to steel moment frame structures. Working with our engineering team and our prequalified field-bolted connection will reduce construction cost and add value for all project stakeholders. Utilize our complimentary design assist services to reduce the steel tonnage, simplify fabrication, shorten erection, and add seismic resilience through repairability.

Eastern Pneumatics & Hydraulics, Inc./McCann Equipment Ltd. **booth 565**

Salem, N.H. **ph:** 603.893.7662 | **toll free:** 800.356.5624 **www.ephtools.com**

EPH specializes in steel erector and torque tools such as: tone, electric; TorqFusion, pneumatic, electric; and battery; Torcup, SPX Power Team hydraulic wrenches, cylinders, and pumps; Skidmore-Wilhelm bolt tension calibrator; Kabo torque wrenches and torque testers; Klein drift pins up to $1\%_{16}$ in., structural wrenches, and accessories. We operate an ISO 17025:2017 accredited calibration facility for repair, calibration and certification with NIST traceability. We also have the capability to service virtually any make and model torque tool.

EHS Momentum, LLC **booth 858**

Dallas

ph: 469.999.2500

www.ehsmomentum.com

We make life easier for safety teams by helping you integrate safety management into operations. Our state-of-the-art safety management software and industry-leading consulting will help you increase productivity. At EHS Momentum, our goal is to deliver simple, affordable, and proven environmental, health, and safety best practices to any size business.

EMI

booth 1055 Green Lane, Pa.

ph: 610.287.4240 | toll free: 877.445.4292 www.emiworks.com

Electro-Mechanical Integrators, Inc. is a manufacturer of CNC Plasma equipment specializing in miscellaneous metals for the fabrication industry. We have been committed to providing cost-effective solutions through quality machines and unparalleled service for 25 years. Contact us today to see how our machines can save you time and make you money.

ENERCALC

booth 582 Missoula, Mont. ph: 949.645.0151 | toll free: 800.424.2252 enercalc.com

ENERCALC is a proven, powerful, widely-used design program consisting of 40+ structural cal-

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culation modules, ranging from simple component designs (steel beam, concrete column, etc.) to analysis (i.e., rigid diaphragm torsion), earth retention, and full 3D FEM analysis. ENER-CALC's powerful capabilities and simple intuitive interface make it ideal for complete design of small and medium-sized structures, as well as for spot checks, verifications, and design of miscellaneous components on large-scale projects. NEW! Load linking for steel beams—create dynamic relationships between steel beam calculations in your project files.

Engineered Rigging

booth 856

Valparaiso, Ind.

toll free: 844.474.4448 engineeredrigginggroup.com

Engineered Rigging specializes in heavy lifting and machine moving projects by providing equipment rental, sales and service, engineering expertise, custom solutions and technical support. By delivering a collection of cross-functional capabilities beyond bare rental, we offer clients cost-saving synergies and timely solutions when unexpected situations arise during a project. Our fleet features hydraulic gantries; strand jacks; jacking systems; cylinders; skidding systems; skates, synchronous lift systems, SPMTs and more. Put our gear and knowledge to work for your next plant upgrade, maintenance, or civil construction project.

Enidine

booth 624

Orchard Park, N.Y. **ph:** 716.662.1900 | toll free: 800.852.8508

www.itt-infrastructure.com

Our highly engineered structure protection components and custom solutions are built to take on whatever Mother Nature can dish out. With over 20-plus years of experience, Enidine offers a diversified portfolio of energy absorption products for infrastructure and equipment protection. Enidine offers the fastest service in the industry, the highest quality of testing around and in-house product development. No matter what seismic protection solutions you need, we get the job done.

EPAcoat, Inc. booth 177 Richmond, Va. ph: 804.521.9921

epacoat.com

EPAcoat, Inc. is a family-owned and operated metal finishing and coating contractor established in 2001. Located in Richmond, Va., near the RIC Airport, EPAcoat specializes in highquality surface preparation and protective coatings. Our fully equipped, AMPP QP-3 certified enclosed facility allows us to efficiently handle multiple projects simultaneously with minimal turnaround time. Our team, consisting of highly trained coating applicators and AMPPcertified coating inspectors, ensures that every project meets the highest standards of quality and durability.



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EVER Seismic

booth 358 Sandy, Utah **ph:** 385.380.EVER

www.everseismic.com

Not just another buckling-restrained brace manufacturer! These are BRBs with strain control technology and robotic-level precision manufacturing. All-steel, lightweight, smaller BRBs that are easier to erect and can downsize your crane. BRBs and next level customer service and connection optimization that you can see. Contact us today for assistance on your next project!

Exact Detailing Ltd.

booth 347 Victoria, British Columbia Canada ph: 250.590.5244

www.exactdetailing.com

Exact Detailing is Canada's premier specialist in providing steel detailing, 3D modeling, BIM, and 3D scanning services to the North American steel industry. Our five offices across North America employ high-quality detailers trained in the most recent programs and processes to provide the best AISC and CISC compliant shop drawings on all varieties of steel projects. Need services beyond steel detailing? Ask us about our project management/coordination, connection design, data management, and surveying services. We pride ourselves the quality of our work and look forward to working with you!

Fabreeka International, Inc. **booth 606**

Stoughton, Mass.

ph: 781.341.3655 | toll free: 800.322.7352 www.fabreeka.com

For over a century, Fabreeka has proudly partnered with structural steel designers and builders, delivering unmatched engineering expertise, superior customer service, and highperformed fabric and random-oriented fiber pads, slide bearings, and thermal breaks—solutions designed to meet the unique demands of the steel industry. We collaborate closely with our partners to develop effective strategies for minimizing structure-borne noise, mitigating thermal bridging, and controlling vibration in steel applications, including buildings, bridges, rail systems, and more!

Fabricating & Metalworking Magazine **booth K1** in our Partner Pavilion Helena, Ala. **ph:** 866.832.8473

www.fabricatingandmetalworking.com

Fabrication & Metalworking publishes 10 issues per year. Fabrication & Metalworking covers every aspect of metal forming and fabricating, welding, metal cutting, tooling and workholding, measurement and inspection, material handling, maintenance, and environment, health, and safety. Rely on us for cutting-edge product news and competitive operating solutions to help improve processes and product quality, equipment reliability, operator safety, and business profitability.

Fabricators & Manufacturers Association

booth K4 in our Partner Pavilion Elgin, III.

ph: 815.399.8700 | toll free: 888.394.4362

The Fabricators & Manufacturers Association, International[®], (FMA) is a professional organization with more than 2,500 individual and company members from North America and 20 other countries who work together to advance the metal processing, forming, and fabricating industry. Founded in 1970, FMA brings fabricators, metal producers, equipment manufacturers, and service providers together through professional development programs, industry-exclusive networking events, market-leading publications, meaningful volunteer opportunities, and FABTECH.

FabStation

booth 750

Colwood, British Columbia Canada

ph: 778.557.8571 | toll free: 866.979.0453 fabstation.com

FabStation, started by fabricators, is bringing constructable 3D data to the shop floor. With our augmented reality tools, production reporting and QC systems, you can modernize your production and see real savings in both time and money. Utilizing tablets and AR headsets, you compare your 3D model to your workpiece to simply spot the difference and reduce rework by 85%, preventing costly errors from going to site and bring accountability to your processes. All this packaged with an advanced QC module that will allow you to streamline your current processes. Check out our product videos or fabstation.com to see the future of production.

FACCIN USA, Inc.

booth 775 Addison, Texas **ph:** 251.929.9300

www.faccingroup.com

The Faccin Group, a leading manufacturer with more than 17,000 successfully installed machines for rolling, bending, and forming metal, will attend NASCC to showcase its solutions and innovations. Faccin Group excels in manufacturing cutting-edge plate rolls, angle rolls, head forming lines, and special machines. We operate with three leading brands Faccin, Roundo, and Boldrini. We are a global key player in metal bending machine manufacturing, boasting a unique a complete product portfolio. A mix capable of addressing a wide range of end markets, such as pressure vessels, job shop, metal construction, tank heads, storage tanks, and many others.

FATZER AG

booth 663 Pine Knoll Shores, N.C. ph: 252.904.6986 www.fatzer.com

FATZER produces uncompromising steel wire rope assemblies. Founded in 1836 as a rope-making factory on Lake Constance in the Swiss town of Romanshorn, FATZER has

been manufacturing top-quality ropes for generations. In the early stages, hemp ropes were produced, with steel rope manufacturing starting around 1900. Today, FATZER specializes in developing, manufacturing, and globally distributing high-quality steel wire ropes for structural, ropeway, and other applications. With a long history of meeting specific market needs, FATZER is recognized as a leading rope manufacturer for stadium roofs, facades, bridges, and other applications.

FICEP Corporation

booth 829

Forest Hill, Md. **ph:** 410.588.5800

www.ficepcorp.com

FICEP Corporation is currently the largest manufacturer of structural steel and plate fabrication systems and software. FICEP offers over 150 different CNC systems to achieve the optimum solution to any specific fabricators application. In addition to the different CNC work centers, FICEP totally integrates custom designed material handling systems for Intelligent Steel Fabrication without the requirement for multiple operator involvement.

Fickett Structural Solutions

booth 285

Middleton, Wis. **ph:** 608.831.3238

www.fickettinc.com

Since 2001, Fickett Structural Solutions has served public and private clients in the AEC industry in the building, transportation, and infrastructure markets by providing structural inspections and evaluations, nondestructive testing, steel fabrication quality assurance inspections, welding and fabrication consultation, and technical training. Our projects range from large civil infrastructure, such as bridges and locks and dams, to major commercial, industrial, and institutional buildings, parking structures, stadiums, arenas, and ancillary support structures for lighting and signage.

Flame On, Inc. booth 249 Monroe, Wash.

ph: 425.397.7039 flameoninc.com

Flame On, Inc. is an experienced heat straightening company that offers professional service, quality repairs, competitive pricing, and, most importantly, dependability. Flame On is confident that we can help you with all of your heat straightening needs.

Fontana Fasteners, Inc.

booth 376

Frankfort, Ind. **ph:** 765.654.0477

www.fontanagruppoagtna.com

Fontana Fasteners, Inc., a Fontana Gruppo company, produces LE USA® fasteners and provides customers with high-quality cold-formed fasteners produced from steel melted and rolled exclusively in the U.S. In fact, Fontana Fasteners Inc. is the only North American full-service manufacturer and provider of structural bolts, nuts, washers, and TC assemblies.

GEKA USA

booth 1265 Abingdon, Md. ph: 410.319.2900 | toll free: 443.955.1007 ekaus.com

GEKA USA produces CNC lines and solutions for steel and metal working. Geka offers a large range of CNC solutions for structural steel and plate fabrication systems. These include ironworkers, CNC positioners and feeders, CNC solutions for drilling, and CNC solutions for punching. Angles processing CNC punching solutions (GAMMA Series); flat bars processing CNC punching solutions (ALFA series); beams processing CNC drilling solutions (SIGMA); beams processing CNC punching solutions; CNC vertical drilling and milling machining center (GK DRILL); high quality bandsaws for your work (GK SAW).

Gerdau

booth 433 Tampa, Fla. ph: 800.367.8144 | toll free: 800.237.0230

www.gerdau.com

Gerdau Long Steel North America (GLN) manufactures merchant bar, structural steel, piling, special bar quality, and rebar products for the agricultural, automotive, civil construction, distribution, energy, industrial, and mining markets. GLN operates six mills in the U.S. and three in Canada, and is a wholly owned subsidiary of Gerdau S.A.

GH Cranes & Components booth 263 Terrell, Texas **ph:** 972.563.8333 www.ghcranes.com

GH Cranes & Components is a family-owned business established in 1958 manufacturing overhead material handling such as cranes, hoists, gantry cranes, RTGs, and jib cranes. Since then, we have installed more than 125,000 pieces of equipment worldwide. Our manufacturing capabilities in Texas, as well as a full inventory of spare parts and well-trained service crew, assure your total satisfaction and performance.

GIZA booth 333

St. Louis **ph:** 314.656.4615 www.gizasteel.com

GIZA is a connection design software that covers more than 400 connection types in the shear, moment, vertical brace, horizontal brace, and splice categories. Compliant to the AISC Steel Construction Manual 14th and 15th editions ASD and LRFD methods, GIZA provides a comprehensive set of calculations with references to all applied codes. GIZA offers integration with Tekla Structures and Tekla Structural Designer, but can be used as a standalone option. GIZA has been in use for over 10 years and has successfully designed thousands of connections on thousands of projects. Try it free for 15 days!

Gonza Joist

booth 276 Navolato, Sinaloa Mexico ph: 52.614.220.1562 gonzaglobal.com/en/gonza-joist Design and fabrication of joist and joist girders, certified by the SJI.

Graitec

booth 521 Atlanta toll free: 800.724.5678

www.graitec.com

GRAITEC (1986), Autodesk partner and authorized training center, is a long-standing software developer of design, simulation, fabrication, and management solutions for the steel industry. Our extensive range of CAD, BIM, and analysis software combined with the Autodesk portfolio (Advance Steel, Revit) are used by structural engineers and detailers worldwide. With 50 offices in 13 countries, North American customers can count on us for all their needs: implementation, customization, training, workflow optimization, and technical support. Ask about Advance Steel drawing styles, our PowerPacks, Advance Workshop, and Opentree.

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Grating Fasteners

booth 678

Harvey, La. **ph:** 504.361.3471 | **toll free:** 800.227.9013 **www.gclips.com**

Grating Fasteners specializes in producing the G-Clip line of grating fasteners. G-Clips are used to attach grating to structural members using simple hand tools. The entire G-Clip line of fasteners are noted industry-wide as being a cost-effective, fast, and dependable way to fasten grating.

Great River Economic Development Foundation **booth 174** Blytheville, Ark. **ph:** 870.532.6084

www.cottontosteel.com

The Great River Economic Development Foundation (GREDF) is the organization behind the Cotton to Steel brand. GREDF was formed in 2002 to provide cohesive economic development for Mississippi County, Ark., and serves as the lead organization for business recruitment and expansion in Mississippi County. GREDF is fully funded by a county-wide ½ cent sales tax for economic development, overseen by the Mississippi County Quorum Court.

Greenbrook Engineering Services **booth 238** Middlesex, N.J.

ph: 732.412.8000

www.greenbrookengineering.com Focus on quality—deliver on time. Greenbrook Engineering is an MBE-certified company specializing in connection design, structural steel, miscellaneous steel, model estimating, and BIM coordination services for the steel industry. With our head office in New Jersey, and production centers in Bangalore, Nashik, and Chennai, India, we serve structural engineers and steel fabricators.



GRM Custom Products

booth 688 Conroe, Texas

ph: 936.441.5910 **www.grmcp.com**

For over 60 years, GRM Custom Products has worked with engineers, steel fabricators, and contractors to provide customized high-quality products. The exclusive fabricator of Fluorogold Slide Plates in North America, we manufacture to meet your project's exacting specifications and expedited timelines, providing you with high quality products and consistent deliveries. We have grown our custom material offerings across bearing and thermal break pads. Now offering you a full line of plastics and FRP composite options, please stop by and visit us, we look forward to talking with you.

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Gsource Technologies LLC

booth 251

Hollywood, Fla. **ph:** 786.747.0941 | **toll free:** 888.322.9925 **www.gsourcedata.com**

Gsource is a steel modeling, detailing, architectural, MEP design, and mechanical modeling company based in Florida, serving over 280 active clients in North America for over a decade now helping the AEC industry and more to complete their projects in a more effective and collaborative way. Our expertise includes 2D detailing, 3D modeling, shop drawings, erection drawings, IFC models, and NC and DXF files. We specialize in detailing for structural steel such as beams, columns, trusses, and column sets. Additionally, we are experts in miscellaneous steel, including stairs, handrails, ladders, platform railings, gratings, bollards, gates, and more.

GWY, LLC booth 423



Greenfield, N.H. **ABBOLUTE ACCURACY ph:** 603.547.3800 | **toll free:** 888.838.6500 **www.gwyinc.com**

Since 1975, GWY has been a global leader specializing in the sales, rental, repair, and calibration of installation tools for structural bolts. Our Turn-of-Nut (TN) wrenches are custom designed in partnership with the global leader in electric tool companies, TONE. Combining our decades of experience in bolt fastening with TONE's years of quality wrench manufacturing, we have created a wrench that meets the high standards of the federal government for structural fastening. Our other product lines include the popular shear wrenches for TC bolts, torque wrenches, bolt tension calibrators, hydraulic products, and safety equipment.

Harbor Fab

booth 870 Fort Worth, Texas ph: 682.350.3550 www.harborfab.com

Since 1972, we have served industrial and commercial markets with miscellaneous metal fabrications. Harbor Fab now offers pre-engineered stairs, rails, ladders, and platforms nationwide in addition to our custom designed products.

Haydon Bolts, Inc.

booth 501

Philadelphia ph: 215.537.8700 www.haydonbolts.com

Haydon Bolts manufactures headed bolts, threaded rods, anchor bolts, U-bolts, and swedge bolts, in plain and galvanized finish, with full mill cert traceablity. Haydon also carries the largest inventory of A325 and A490 Heavy Hex Head, Tension Control (TC) bolts, weld studs, and wrenches on the east coast.

Hercules Bolt Company **booth 609**

Madison, Tenn.

ph: 615.321.5020 | toll free: 877.321.5020 www.herculesbolt.com

Hercules Bolt & MFG, is a veteran-owned, certified "VOSB" company that is an industry leader in the manufacturing of structural anchor rods (bolts), sag rods, square plate washers, all-thread rod, and embeds; which are all proudly made with domestic material of all grades, alloys, and sizes (bent or straight). Our strong distribution stock of structural bolts makes Hercules Bolt a one source stop for any job that needs on time delivery with quality products. No job is too big or too small for Hercules Bolt & MFG.

Hexagon

booth 586 Madison, Ala. ph: 281.890.4566 hexagon.com

Hexagon is a global leader in software, design, project performance, and autonomous solutions that boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. We empower our clients to transform unstructured information into a smart digital asset to visualize, build, and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

HGG Profiling Equipment BV **booth 890**

Houston

ph: 833.444.4872

hgg-group.com

Specializing in 3D profiling since 1984, we are globally known as the market leader in plasma and oxyfuel CNC cutting machines. Send your CAD design straight to our profiling machines with our seamless in-house built software integration.

Hilti Inc.

booth 1313 Dallas **toll free:** 800.879.8000

www.hilti.com

Hilti is a world-leading manufacturer and supplier of quality, innovative, and specialized tools and fastening systems for the professional user. With more than 1,350 highly trained Hilti account managers and engineers throughout North America and an additional 1,100 Hilti employees nationwide, Hilti expertise covers the areas of powder actuated fastening, drilling and demolition, diamond coring and cutting, measuring, firestopping, screw fastening, adhesive and mechanical anchoring, and strut and hanger systems.

HI-Q DESIGN Inc.

booth 639

Mesa, Ariz. **ph:** 347.615.6505

www.hiqdesigninc.com

Established in 2004, HI-Q is a global structural steel and mechanical design and detailing service that has passionately executed projects across the globe. Every small, medium, and large project receives our undivided attention, making us the favored designed services company by many international customers. Our passion for excellence is matched by our team: highly motivated, qualified, and experienced engineers and detailers who specialize in structural steel design and detailing, connection design, mechanical design, and piping design. With more than a decade of experience, we are well qualified to handle all your projects.

Holemaker Technology HMT booth 879 Clearwater, Fla.

toll free: 833.642.2872 www.holemaker-technology.com

Holemaker Technology is the specialist manufacturer of the patented VersaDrive® metal drilling accessory system. Combining our pioneering, impact rated and now patented VersaDrive® system with the latest generation of high-torque cordless power tools has created a revolutionary level of drilling speed and performance, never before possible with portable tools. With a wide customer base across the U.S. in industries spanning construction, defense, manufacturing, MRO, transportation and infrastructure, and energy-HMT is sure to have timesaving solutions available for your application.

Holloway Houston, Inc. booth 757 Houston **ph:** 713.674.5631 www.hhilifting.com

Holloway is the foremost single-location sling shop and testing complex in the U.S. We boast a vast inventory of rigging products and a dedicated rental department tailored to your rigging needs. Here, you'll find a comprehensive array to meet your industrial lifting requirements, seamlessly merging premium products with stateof-the-art testing services, all accessible at our world-class testing facility.

HRV Conformance Verification Associates, Inc.

booth 658 Moon Township, Pa. **ph:** 412.299.2000

www.hrvinc.com

Leading experts in materials QA/QC inspection, coatings inspection, NDT, and CM/CI focused on transportation, rail and transit, oil and gas, power, commercial, water/wastewater, and aviation markets, with the capacity to provide AWS CWI, NACE, SSPC, ACI, PCI, and API inspections in materials fabrication plants and on project sites. We excel by maintaining high standards of technical training, leveraging deep industry knowledge and experience, practicing ethical conduct, applying innovative technologies, and communicating openly with our clients. We are Quality. Assured.

HYTORC

booth 753 Mahwah, N.J. ph: 201.512.9500 www.hytorc.com

HYTORC makes industrial bolting safer and simpler. With over 50 years of experience focused entirely on developing the highest quality industrial bolting systems, HYTORC is the most trusted name in the industry. From steel mills and mining equipment to refineries, power plants, and wind turbines; we have developed solutions for every bolting application imaginable. For custom projects, our highly experienced engineering team is at your service to design the most efficient solution for your job with simple operation and economical pricing in mind.

IAPMO Uniform Evaluation Service

booth 559

Ontario, Calif. ph: 909.472.4100 | toll free: 877.443.7778 www.uniform-es.org

IAPMO Uniform Evaluation Services (UES) provides summary reports specifically for the steel industry. These documents demonstrate product/material/system/design compliance to applicable codes and standards, expediting approvals within the building industry. Current steel-related activities include steel deck, steel wall, and roof cladding, structural steel members, cold-formed steel framing, steel connectors, steel fasteners, and fabrication. We offer true turnkey service from product testing by IBT, to uniform evaluation reports, through ongoing manufacturing audits from quality control consultants.

IDEA StatiCa US LLC

booth 106 Mount Laurel, N.J. **ph:** 856.642.4070 www.ideastatica.com

IDEA StatiCa Connection is a revolutionary software for structural design of steel connections/joints. It allows structural engineers to design and check connections of all configurations in minutes. IDEA StatiCa is improving workflow of engineers all around the world by linking to the analysis, BIM, and detailing software they use.

IES, Inc. booth 744

Bozeman, Mont. ph: 406.586.8988 | toll free: 800.707.0816 www.iesweb.com

For over 30 years, Integrated Engineering Software (IES) has been developing user-friendly structural software that helps you efficiently solve a wide range of real-world problems. Our most versatile product, VisualAnalysis, can analyze and design almost any three-dimensional structure. In addition, we offer a variety of task-specific programs such as ShapeBuilder, VisualFoundation, ConcreteBending, ConcreteSection, VAConnect, and more. Discover why thousands of engineers worldwide depend on Integrated Engineering Software.

IKG

booth 351

Houston ph: 281.452.0709 | toll free: 800.324.8417 ikg.com

With over 100 years of experience, IKG® continues to lead the bar grating industry with high-quality products, unmatched expertise, and innovative solutions. Our skilled network of sales personnel and engineering staff provide consultative services and solutions to customers in a wide range of industries. For quick delivery, IKG manufactures high-quality bar grating with several plants throughout the U.S. and Mexico. Through consistent, competitive, and dependable customer care, Forging Partnerships[™] has become synonymous to IKG.

Indiana Gratings Pvt. Ltd.

booth 674 Mumbai, Maharashtra India

ph: 91.9820.032565 www.indianagroup.com

Indiana Gratings Private Limited (IGPL)-INDIA is the flagship company of Indiana Group. IGPL is an ISO 9001, ISO 14001, and ISO 45001 certified company. IGPL is one of the largest fabricators of gratings in the world and has established an impeccable reputation and carved a permanent niche with clients in India and abroad. IGPL has an installed capacity to produce 250 MT bar gratings panels per day. Since 2002, IGPL is regularly supplying grating panels to various steel service centers in the U.S.

Infasco

booth 633 Marieville, Quebec Canada ph: 450.658.8741 | toll free: 800.876.9473 www.infasco.com

Infasco designs, manufactures, and distributes threaded fasteners and forged steel parts to various industries, including construction and infrastructure, heavy trucks and equipment, automotive, and agriculture. With over 60 years of experience, Infasco collaborates with customers to develop tailor-made products that enhance their current fastener solutions. Operating from a manufacturing facility in Marieville, Ouebec, and five distribution centers across the U.S. and Canada, Infasco's 400 employees are equipped to serve customers worldwide. Ask for our new product 1¼ F2280 (Coated A490 TC).

Informed Infrastructure

booths 192, K2 in our Partner Pavilion West Allis, Wis.

ph: 312.771.9818

informedinfrastructure.com

Informed Infrastructure is the leading media outlet for civil and structural engineers. We reach 40,000 readers via our magazine, weekly eNewsletter, web site, video content, surveys, and our industry leading continuing education platform.

InfoSight Corporation

booth 809

Chillicothe, Ohio ph: 740.642.3600 | toll free: 800.642.3600 www.infosight.com

InfoSight is a leader in identification technology specializing in creating innovative identification solutions for harsh environments, improving safety outcomes, and enabling traceability. Our equipment comes with dedicated 360° support and unparalleled durability. InfoSight offers tags specifically designed for fabricators and galvanizers that survive hot dip galvanizing, shot blasting, painting, and powder coating, leaving your asset with a scannable barcode or readable serial number. Our tags can be customized with a variety of alphanumeric characters, graphics, logos and barcodes printed with our LabeLase® Printers.



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Infra-Metals Co.

booth 801

Newtown, Pa. **ph:** 215.741.1000 | **toll free:** 800.899.3432 **www.infra-metals.com**

Infra-Metals Co., a wholly owned subsidiary of Reliance, Inc., is a leading structural steel service center strategically positioned to serve customers throughout New England, the Mid-Atlantic, Midwest, South, and Southwest regions of the U.S. With a deep-rooted commitment to steel distribution and processing, Infra-Metals provides unparalleled service, including on-time delivery and a comprehensive range of processing capabilities. While others may quote a price, Infra-Metals quotes from stock. We are customer satisfaction built with steel.



Innovatech booth 1071 Kanarraville, Utah ph: 435.590.9757 www.innova.tech

Working hand-in-hand with BZI as an erection and fabrication partner has provided our team a unique and seamless feedback and testing environment. Our relationship allows Innovatech to continuously improve our products and look for new opportunities to make steelwork safer, simpler, and more efficient. Construction, Technology, Solutions.

Innovative Transport Solutions (ITS) **booth 749**

Chicago

ph: 708.205.0412

www.InnovativeTransportSolutions.com Manufacturer and distributor of the Mobile

Transport Tray (MTT) for loading and unloading long, heavy steel cargo safely and efficiently in/from enclosed dry van trailers and containers. Innovative thinking...bottom line results!

International Design Services, Inc. **booth 333** St. Louis

ph: 314.872.1791 www.ids-inc.net

IDS is committed to delivering the highest quality of detailing and connection design services. Our over 500 team members, including connection design engineers, detailers, and supporting staff provide ample manpower to support any project type and schedule. Our shop drawings and calculations are produced under the direct supervision of licensed professional engineers using our proprietary connection design software, Giza. In addition to 3D and BIM Models in SDS2 or Tekla, IDS provides NC1, CNC, DXF, DSTV, and other production file formats.

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International Zinc Association

booth K6 in our Partner Pavilion Durham, N.C. ph: 919.287.1877 www.zinc.org

IZA's mission: provide global leadership, coordination, and value on strategic issues for the zinc industry, including market development, license to operate, communications, and sustainability.

Interstate Gratings booth 578 Lindon, Utah

ph: 801.922.4700 | toll free: 888.499.8494 www.interstategratings.com

Interstate Gratings operates in a 120,000-sq.-ft fully-integrated manufacturing and fabricating facility, ideally located in the hub of the west. We have a highly experienced in-house detailing and project management team. Our custom automated CAD solutions provide seamless integration with our shop processes and our advanced CRM solution accurately tracks jobs from start to finish. With an expert team of grating professionals, state-of-the-art equipment and integrated technology, Interstate Gratings is prepared to take on jobs of any scope or schedule.

Inventory Sales Company booth 169 St. Louis

ph: 314.776.6200 | toll free: 800.272.7883

Inventory Sales Company is an industry leader for fasteners, weld studs, sign hardware, frames, strut, and steel fabrication. As a division of EFC International, we have strategic partnerships with world-class manufacturers to offer you engineered solutions in industrial applications.

Ironworkers / IMPACT

booth 180

Washington, D.C. **ph:** 202.393.1147 | **toll free:** 800.545.4921 **www.impact-net.org**

IMPACT is a labor management partnership designed to provide a forum for union ironworkers and their signatory contractors to address mutual concerns and encourage reasonable, balanced solutions. Our primary mission is to expand job opportunities through progressive and innovative labor management cooperative programs, providing expertise in ironworker and contractor training, construction certifications, safety, marketing and construction project tracking and bidding.

IRyS Global Inc.

booth 168

Rodney, Ontario Canada

ph: 519.652.6625 | toll free: 800.711.IRYS www.irysglobal.com

Your desktop without limits. bring SDS2 detailer, management, engineers, and fabricators together in one place with IRyS Global's remote desktop solution. IRyS utilizes premium hardware and is a fast, reliable solution capable of hosting your entire desktop on the cloud. Feel secure with 24-hour support, multiple points of data backup and no contracts. Low monthly fee. No data limits. Cancel any time. Access your data effortlessly from anywhere in the world, at any time, on any device. Request a demo at our website.

ISD Group USA

booth 253 Cornelius, N.C. ph: 704.519.2498 www.isdgroup.us

ISD Group is a provider of 2D/3D CAD software that offers innovative solutions for the structural engineering sector. With over 45 years of experience in the steel, metal, and facade sector, the company is an expert for 2D/3D modeling software with automation to production output and integrated project/drawing management. Conceptualize your ideas at high speed with the extensive solution for engineering.

J.B. Long, Inc.

booth 704 Fleetwood, Pa. ph: 610.944.8840 www.jblong.com

Cheap detailing ain't cheap! Save money on detailing only to spend much more on fabrication and erection. J.B. Long, Inc. has supplied quality structural steel and miscellaneous iron detailing to the fabrication industry since 1985.

JH Botts LLC

booth 501

Joliet, III. **ph:** 815.726.5885 | **toll free:** 800.888.5885

www.jhbotts.com

As specialists in manufacturing anchor bolts from raw material emphasizing ASTM F1554 and ASTM A449 material, we stock ½-in. to 3½-in. diameter round bars in 20 ft to 40 ft lengths. Additionally, we can manufacture using many different grades of material including ASTM A615 rebar, stainless steel rods and other assorted carbon steel grades. Our ability to produce within the tolerances prescribed by the American National Standards Institute (ANSI) make us a valuable asset to our customers.

Jinan Acme CNC Equipment Co., Ltd.

booth 1363 Jinan, Shandong China

www.acme-laser.com

JMT Consultants Inc. **booth 726**

Brentwood, Tenn. **ph:** 204.510.1547

www.jmtconsultants.com

JMT Consultants was founded in 2008 to provide quality and reliable steel and concrete design and detailing services to the construction industry. Working directly for developers, engineering firms, general contractors and fabricators, operating with integrity and loyalty and treating each customer how we would want to be treated. These principles have led JMT Consultants to become an award-winning industry leader. We believe in a collaborative, organized and efficient process to complete projects both on schedule and on budget.

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John A. Papalas & Co.

booth 593 Lincoln Park, Mich.

ph: 313.388.3000

www.johnapapalasco.com

A versatile multi-trade subcontractor, offering a comprehensive range of services, including but not limited to industrial/commercial painting, intumescent fireproof coatings, cementitious fireproofing, industrial and architectural metal panels, and pre-engineered building solutions. John A. Papalas & Co. has been in business for over 80 years and is dedicated to providing quality workmanship while maintaining a safe and hazard-free environment. Our goal is to build successful relationships through trust, while exceeding expectations to promote excellence.

JPW Engineering Services booth 713 League City, Texas ph: 713.589.4577

jpwespl.com

JPW specializes in structural and miscellaneous steel detailing. Along with detailing, JPW provides model-based estimation, connection design, and stamping for the U.S. and Canada. We follow the triangular approach to build a sustainable and long-term partnership with the clients. This includes effective communication, quality work, and scheduled deliverables. The core strength of JPW's success is its checking process. The two layers method has helped to achieve mostly error-free drawings. When it comes to quality, JPW appears at the top of the list.

KALTENBACH

booth 990

Newnan, Ga. **ph:** 678.340.9933

www.kaltenbach.com/en

With over 135 years of experience and 120,000 machines delivered worldwide, KALTENBACH is one of the leading suppliers of reliable, highquality steel processing and preservation systems. The portfolio includes machines for sawing, drilling, thermal cutting, blasting and painting steel. With 300 employees at two production sites, nine subsidiaries and representatives worldwide, KALTENBACH offers its customers excellent local service. KALTENBACH belongs to Codymag, a strategic investor from Germany, which represents an established, large industrial group in mechanical and plant engineering.

Kinetic Cutting Systems, Inc. **booth 837**

West Burlington, Iowa **ph:** 319.754.5040 | **toll free:** 800.606.2954 **www.kineticusa.com**

Kinetic manufactures a variety of precision CNC plasma and flame cutting machinery, as well as multi-process machines that combine machining operations such as drilling, tapping, milling and interpolation with cutting operations. One Machine—Complete Parts—Start to Finish. Kinetic offers a complete solution for the structural steel industry.

King Steel Corporation

booth 257 Grand Blanc, Mich. toll free: 800.638.2530 www.kingsteelcorp.com

King Steel supplies hot-rolled and cold-finished carbon, alloy, and stainless steel coil, bar, and wire in a wide variety of qualities, grades, and shapes. King Steel also specializes in quench and tempering carbon and alloy steel bars from 1–4 in. in diameter up to 60 ft in length. Saw cutting bar stock form 0.625–4 in. is available.

Kloeckner Metals **booth 852**

Roswell, Ga. ph: 678.259.8800 www.kloecknermetals.com

Founded in 1906, Kloeckner Metals Corpora-

tion is one of the largest metals manufacturing, supply, and service companies in North America. With over 40 branches in the U.S. and over 200 worldwide, Kloeckner is committed to providing customers with the latest fabrication and processing technologies and the most innovative customer service solutions. Boasting one of the most extensive product portfolios in North America, our promise is unparalleled quality of both product and service.

Kobelco Welding of America, Inc. **booth 855**

Stafford, Texas ph: 281.240.5600 www.kobelcowelding.com

Kobelco is your best partner for structural steel fabrication, including seismic application. We are proud to be one of the few companies that develops all of its own original welding materials, welding robots, and welding power sources.

Kottler Metal Products, Inc. **booth 627**

Willoughby, Ohio **ph:** 440.946.7473 | **toll free:** 800.678.0808 **www.kottlermetal.com**

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KTA-Tator booth 634 Pittsburgh toll free: 800.245.6379 kta.com

KTA provides government, facility owners, engineers, and contractors peace of mind that the integrity of steel and concrete structures are properly assessed and protected. KTA provides professional consultation and support during any phase of a project—design, construction, post-construction, and maintenance. KTA's specialties include steel and concrete fabrication inspection, NDT, coatings and corrosion engineering and inspection, field and lab coatings failure analysis, and coatings training. KTA also distributes a complete line of field inspection instrumentation.

LAP Laser LLC

booth 1381 Bonyton Beach, Fla. ph: 561.416.9250 www.lap-laser.com

LAP is one of the world's leading suppliers of systems that increase quality and efficiency through laser projection, laser measurement, and other processes. Every year, LAP supplies 15,000 units to customers in industries as diverse as radiation therapy, steel production, and composite processing. LAP has 300 employees at eight locations in Europe, America, and Asia.

LARSA, Inc.

booth 656 Melville, N.Y. ph: 212.736.4326 | toll free: 800.LARSA.01 www.larsa4d.com

LARSA develops advanced 3D finite-element analysis software for bridges. Engineers rely on LARSA as the only software capable of advanced modeling techniques with the essential tools needed to handle complex geometries and elaborate staging. Backed by the industry's most responsive support team, engineers rapidly receive personalized assistance informed by our decades of experience advancing structural analysis software. Visit us to learn why LARSA's Steel Bridge Module leads the way for the design and rating of steel girder bridges at the nation's leading firms and State DOTS.

Larson Engineering, Inc.

booth 281 Naperville, Ill. ph: 630.357.0540 www.larsonengr.com Mutli-discipline engineering fi

Mutli-discipline engineering firm who has experience in steel building design as well as connection and miscellaneous steel design.

LECGI Structural Engineering & Detailing booth 283

Louisville, Ky. ph: 502.425.1647

ph: 502.425.164 lecgi.us

Providing structural design and steel detailing services for a wide array of commercial and industrial clients is our mission at LECGI. We are a well-established and respected structural engineering firm offering unique building and design services. We use state-of-the-art computer technology and 3D modeling software that allows us to create the best possible models with minimal errors. With the skill and expertise of our team, LECGI is known for being on time and cost-effective with 3D BIM using Tekla Structures and SDS2.

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

LeJeune Bolt Company **booth 222**

Burnsville, Minn.

ph: 952.890.7700 | toll free: 800.872.2658 www.lejeunebolt.com

LeJeune Bolt is the leading international supplier of structural fasteners and tools as well as your source for the ASTM F3148 TNA Fastening System. With the approval of F3148 and the combined method by RCSC and upcoming publication by AISC and AREMA F3148 TNA bolt assemblies and torque and angle installation can be specified with confidence. Contact LeJeune Bolt Company to learn more about how our TNA Fastening System can provide improved efficiency, quality control, and cost savings for your next project.

Lichtgitter USA

booth 691 Houston toll free: 844.548.7911 www.lichtgitterusa.com

Based in Houston, Lichtgitter USA manufactures and fabricates grating products using state of the art technologies. Lichtgitter's production procedures and machinery, many protected by patent, were specially designed for the Lichtgitter production process. Gratings for normal and special loading requirements are produced with highly integrated welding and fabrication processes, and our sales and service departments technical expertise are geared to address each of our customer's specific job needs.

Lincoln Electric booth 1013 Cleveland ph: 216.481.8100

www.lincolnelectric.com/en Lincoln Electric is the world leader in arc welding, robotic welding systems, plasma and oxyfuel cutting equipment and brazing and soldering alloys. Headquartered in Cleveland, Ohio, Lin-

alloys. Headquartered in Cleveland, Ohio, Lincoln has a worldwide network of manufacturing, distribution, sales and technical support covering more than 160 countries. For more information about Lincoln Electric and its products and services, visit our website.

Lindapter

booth 545 Leander, Texas ph: 866.566.2658 www.Lindapter.com

Over 90 years, Lindapter has pioneered the design and manufacture of structural steel clamping systems and HSS blind fasteners, enabling faster steel construction. Products include the Hollo-Bolt, the HSS expansion bolt approved by ICC-ES for all seismic design categories (A through F); while the girder clamp is approved for quickly connecting W- and S-beams. Lindapter connections eliminate the need for time-consuming drilling or welding in the field and reduce time and labor costs.

LS Industries **booth 621**

Wichita, Kan. **ph:** 316.265.7997 ×323 | **toll free:** 800.835.0218 ×323

www.lsindustries.com

LS Industries engineers, designs, and manufactures surface preparation equipment, including shot blasters, washers, and vibratory tubs. Our ability to engineer and manufacture custom solutions allows us to provide the full line of finishing equipment. We are a fully integrated manufacture of airless shot blast cabinets using conveyor and monorail systems. LS Industries has solutions for cleaning rebar, pipe and tubing, and structural steel. Solutions can range from fully automated to manual, economical solutions all designed to improve quality and reduce labor.

LTC Software Solutions booth 427 Onalaska, Wis. ph: 608.786.0893 Itsoftwaresolutions.com

LTC Software Solutions is a leading custom software development company and registered Tekla Development Partner focused on improving business efficiency. We offer tailored solutions, including custom reporting, productivity tools, applications, and system integrations, specifically designed for the steel industry and Tekla PowerFab and Tekla Structures.

LTC Virtual Design and Construction booth 427 Onalaska, Wis. ph: 608.786.0893 www.LTCvdc.com

LTC is a leading virtual design and construction (VDC) firm, providing world class preconstruction through project turnover services to architects, engineers, contractors, and fabrication shops across North America. From its founding as a steel detailing company, to its evolution as a BIM solutions provider, to its most recent expansion into VDC, LTC has always put clients first. With continuous investment into software customization and development, LTC's clients receive service and products that are specific to their individual needs, and efficiently produced in a timely manner.

LUSAS

Kingston upon Thames, Surrey United Kingdom **ph:** 646.837.8756 | **toll free:** 800.97.LUSAS

www.lusas.com

LUSAS finite element analysis software provides accurate and cost-effective analysis, design and load rating of steel and concrete bridges. Used widely by consultants and DOTs for frequency, seismic, dynamic, nonlinear, buckling, fatigue, staged construction, creep and shrinkage, prestress/post-tensioning, soil-structure and rail track-structure interaction modeling, and many other forms of analysis. Vehicle-load optimization facilities provides worst-case traffic and rail loading patterns. AASHTO and other design codes supported. Extensive results viewing and reporting options.

Machitech

booth 865 Deerfield Beach, Fla. toll free: 888.988.7220 www.machitech.com

For over 20 years, Machitech has offered fully customizable cutting systems of the highest quality. Choosing Machitech means gaining free lifetime access to our team of experts, specialized assistance, and prompt technical support. Join us at booth #865 to see our Beamcut, an industryleading robotic plasma cutting system that integrates advanced FANUC robotics and easy-touse 3D simulation software with Hypertherm's XPR460 plasma systems. We will also show our Diamond Cut 5-axis CNC plasma table, equipped with a Hypertherm XPR460 plasma system.



Magni Telescopic Handlers **booth 269**

Kenilworth, N.J. **ph:** 908.280.8899 ×00110 | **toll free:** 833.624.6487

www.MagniTH.com

Magni Telescopic Handlers is the world leader in rotating, fixed boom, and heavy lift telehandlers. Eliminate the need to rent a crane! Magni offers 16 rotating models with lift heights from 57–167 ft and lifting capacities from 8,800–28,600 lb. There are 100 attachments, which allow the machine to serve as a telescopic forklift, RT Crane, aerial work platform and more. Magni's are the safest, most productive, and efficient machines in their class. Check out our new line of fixed boom 10K and 12K machines with safety no one has. We offer nine heavy lift models with lifting capacities from 22,000–110,000 lb.

Magnum Consulting

Novi, Mich. **ph:** 248.773.8055

www.4magnum.com

Magnum Consulting is based outside of Detroit and provides a wide array of engineering and design services including: mechanical conveyor and material handling systems, structural steel engineering and detailing, production tooling design, project management services, and conveyor/structural steel health assessments.

MARKO Metal Systems

booth 491

Houston

ph: 901.648.8866

With over 45 years of know-how in the segment, Marko has established itself as an industry providing solutions in metal systems for the construction market, which perform more than just the functions satisfactorily, but offer the end user, architects, construction companies, and distributor network, fast, economical, and efficient processes. Exclusive manufacturer of the roll-on metal roofing system, MARKO joists, and the Joist in Time system, the company has the ideal solution for small, medium, or large buildings.

Maruichi Leavitt Pipe And Tube **booth 272**

Chicago

ph: 773.239.7700 | toll free: 800.532.8488 www.maruichi-leavitt.com

Maruichi Leavitt Pipe and Tube is an industry leader, operating four tube mills, with one of the broadest size ranges of structural (ASTM A500) tube, mechanical (ASTM A513) tube, standard pipe (ASTM A53) and automotive (JIS G3445) in the industry. Based in Chicago.

Max Weiss Co., LLC

booth 700

Milwaukee

ph: 414.208.5089 | **toll free:** 888.649.3477 **www.maxweiss.com**

Our unique structural rolling/forming process and skilled craftsmen provide exceptional quality and tight radius bending with very minimal distortion or marring. We have the capability of rolling and forming a wide variety of sizes of structural steel sections and tubing easy way, hard way, and off-axis to accommodate the most difficult and unique projects. We also offer many value-added fabrication services including splitting, notching, straightening, trimming, drilling, certified welding and much more.

McLaren, a Division of KCI **booth 569**

Woodcliff Lake, N.J. **ph:** 201.775.6000 | **toll free:** 800.420.6401 **www.mgmclaren.com**

As the Northeast Division of KCI, McLaren is a leading full-service engineering firm renowned for its trusted, high quality, and innovative approach to solving complex challenges. With industry experts in multiple technical disciplines, our team provides customized solutions for projects through consultation, design, inspection, and construction management. We address every project's specific needs with technical excellence and creative innovation.

Messer Cutting Systems

booth 1083 Menomonee Falls, Wis. **ph:** 262.255.5520

ph: 262.255.5520 Cutting Systems us.messer-cutting.com

MESSER

Messer Cutting Systems is a global supplier of cutting solutions for the metal-working industry. With our reliable cutting innovations and technologies, superior service, and intelligent software solutions, we are setting standards of solutions, services, and support worldwide. As the leader in the thermal cutting industry, we are working on smarter, faster, and more reliable solutions as an added value for our customers. This is what motivates our nearly 1,000 experienced employees in five main locations every day. Messer Cutting Systems is actively supporting our customers in more than 50 countries.

Metals USA

Langhorne, Pa.

ph: 267.580.2100 | toll free: 800.523.3340 www.metalsusa.com

Metals USA is America's preeminent steel service center. Steel consumers across numerous industries trust and rely on Metals USA for all of their stock and processed steel requirements. Metals USA boasts an extensive inventory and state-of-the-art processing capabilities which includes plate burning/drilling, blasting and painting, press brake forming, plate rolling, tee splitting, cambering, deflanging, angle punching/slotting, structural rolling, and much more. Learn more about our wide range of product offerings to find out how we can help you achieve greater bottom-line results and how Metals USA is "Building America's Future."



BUILDING AMERICA'S FUTURE

MetFin Shotblast Systems

booth 771 Suffield, Conn.

ph: 860.668.1050 | toll free: 800.537.8966 www.metfin.com

MetFin Shotblast Systems is a 40+ year old American manufacturer of industry leading, heavy-duty, automated shotblast equipment. Built on a lead team having hundreds of years of combined experience, we meet the unique production requirements of each customer by providing flexible and innovative solutions. Met-Fin tailors systems to integrate seamlessly into new or existing operations and provide years of dependable service in this demanding industrial environment. We take pride in building durable, easy-to-maintain blast equipment with a focus on our customers' long term satisfaction.

Meyer Borgman Johnson booth 533 Minneapolis ph: 612.338.0713 www.mbjeng.com

Meyer Borgman Johnson provides PE-licensed steel connection design, connected model delivery, erection engineering, stair and rail engineering, and related services to the structural steel community. We have one of the largest connection teams servicing the U.S. and Canadian markets. Providing consistent quality services, economic solutions, and timely results are our top priorities. These services are a subset of our broad structural engineering services for the built environment. We have 80+ structural engineers and are licensed throughout the U.S. and Canada.

Mid Atlantic Global booth 1054 Harrisburg, Pa. ph: 717.541.1633

www.midatlanticglobal.com

At Mid Atlantic Global, we live and breathe fabrication technology. That's just one of the reasons businesses who process metal to make parts and products turn to us when they need new equipment. Our team has decades of experience working with small job shops and international manufacturers alike, and can specify, design, procure, and install the perfect machine for just about any application.

Miller Electric Mfg. LLC **booth 469**

Appleton, Wis.

ph: 920.734.9821 | toll free: 800.426.4553 www.millerwelds.com

Miller[®] is about building things that matter. We lead the welding industry in building advanced,

solution-focused products and meeting crucial needs for welding safety and health. We're about the partnership and the work. Our products are designed with our users for manufacturing, fabrication, construction, aviation, motorsports, education, agriculture, and marine applications. Miller Electric Mfg. LLC, is headquartered in Appleton, Wis., and wholly owned by Illinois Tool Works (NYSE: ITW). The company maintains its industry leadership by setting the standard for reliability, quality, and responsiveness. Our tagline, "The Power of Blue[®]"

Miner Grating Systems, a Powerbrace Company **booth 605** Dallas

ph: 214.630.0033

www.minergrating.com

Miner Grating Systems is North America's leading manufacturer and fabricator of grating products. Our lines consist of bar grating (Premier Grate), diamond safety grating (Premier Diamond), and round hole safety grating (Premier Grip). Our mission is to provide the highest quality grating products and be the most cost effective solution provider. We welcome the opportunity to partner on any projects requiring grating for steps, platforms, or walkways for use on OEM equipment or in plant maintenance.

Mold-Tek Technologies, Inc. **booth 221**

Cumming, Ga. **ph:** 330.294.4746

www.moldtekengineering.com

Mold-Tek Technologies, Inc. is a part of a 100 million group and stands as one of the foremost engineering and technology solutions partners for major players in the market. Our core expertise lies in delivering structural steel detailing and engineering services, as well as connection design certification and sealing with BIM coordination for steel fabricators across the U.S. and Canada. Adhering to ISO9001:2015 certification quality processes, we have consistently fostered enduring partnerships with our clients since our establishment. Our commitment is reflected in substantial internal investments in software development, QC, and training.



NASCC Exhibit Sales

booth 1401 Traverse City, Mich. **ph:** 231.995.0637

aisc.org/nascc/exhibit

NASCC: The Steel Conference is an affordable and easy way to reach your target customer. As an exhibitor, you can count on The Steel Conference to deliver more than 6,000 industry professionals; more than any other industry event of its kind. The Steel Conference exhibit hall is your chance to personally interact with key decision-makers in the structural steel industry. When it comes to steel design and construction, these key industry players come to find out what's new, who's got it, and how it can work for them. Don't be left out. Join other top suppliers and manufacturers today!

National Institute of Steel Detailing, Inc.

booth K12 in our Partner Pavilion Shelton, Wash. **ph:** 925.294.9626

www.nisd.org

The National Institute of Steel Detailing (NISD) is an international association that advocates, promotes and serves the interests of the steel detailing industry. We are comprised of company owners and professionals in the steel industry and offer membership to steel detailing firms and associated companies and individuals. By fostering a professional approach to business and advocating improved quality through member networking, education and certification, our members are highly regarded by fabricators, architects, engineers and contractors.

National Steel Bridge Alliance booth 189 Chicago

ph: 312.670.2400 aisc.org/nsba

The National Steel Bridge Alliance (NSBA), a division of AISC, is a national, non-profit organization dedicated to the advancement of steel bridge design and construction. NSBA functions as the voice of the bridge fabricators and steel mills while also partnering with the bridge design and construction community. NSBA's partners include AASHTO, FHWA, state DOTs, design consultants, contractors, and academia. With these resources, NSBA is uniquely positioned to find solutions to the toughest bridge challenges, including those related to cost, sustainability, and performance.

New Millennium booths 325, 761 Fort Wayne, Ind.

ph: 260.321.8080

Control project costs, enhance project performance and ensure project success with New Millennium. From steel joists and joist girders to steel roof and floor deck, we engineer and manufacture cost-efficient, high-performance building solutions for a range of commercial applications. Our specialists assist you in specifying and engineering the steel joists and steel deck best suited for your project, whether it's in the education, multi-family, multi-story office, warehouse, or large-venue market. With manufacturing facilities across North America, we're built for collaborative, expedited project delivery.



Detailing, Inc. booth 573 Naperville, III. ph: 779.703.5626 www.nexus-es.com



Nexus, with a highly experienced staff, provides connection design and steel detailing services for industrial and commercial steel structural projects. Detailing services include 3D modeling using Trimble Tekla software, generation of erection drawings, detail drawings, gather sheets, NC, DXF, KSS, EJE, SDNF IFC files, and customized reports per customer requirements. Connection design services include design of connections per AISC standards in ASD or LRFD. We have the capability to design all connection types and the expertise to produce unique and complex designs in Excel or Mathcad. We maintain PE licensure in several states in the U.S.

Nitto Kohki U.S.A., Inc.

booth 732

Roselle, Ill.

ph: 630.924.9393 | toll free: 800.323.8828 www.nittokohki.com

We manufacture the automatic feed magnetic base drills that self-regulate feed speed for optimum cutting with a number of safety features. These machines with JetBroach carbide-tipped cutters can significantly increase production while reducing labor hours and hazardous work. We also manufacture many other metalworking tools including portable hydraulic punches, bevelers, pneumatic, and electric power tools.

North Shore Steel booth 486 Houston ph: 713.453.3533

nssco.com

North Shore Steel is a leading metal service center based in Houston. The company specializes in a wide range of structural steel and metal processing services, including steel plate rolling, forming, burning, structural steel processing, CNC machining, and welding. With a commitment to precision, reliability, and value, North Shore Steel ensures the highest quality standards through ISO 9001:2015-certified processes. The company serves various industries, including aerospace, military, oil and gas, commercial and offshore fabrication, heat exchangers, mining, pressure vessels, and refinery and chemical plants.

Nucor – Beam Mill Group booths 101, 201, 301

Charlotte, N.C. **ph:** 704.366.7000 www.nucoryamato.com

Nucor has two beam steel mills: Nucor-Yamato Steel Company in Blytheville, Ark. and Nucor Steel Berkeley in Huger, S.C. Both mills manufacture a wide range of structural steel shapes, H-piles, sheet piling, angles and channels. The Nucor-Yamato mill is the only domestic producer of Aeos[™] ASTM A913 high-strength structural steel.

Nucor – Corporation booths 101, 201, 301 Charlotte, N.C. ph: 704.366.7000 www.nucor.com

www.nucor.com

Nucor is North America's largest steel producer and recycler with 300+ facilities. For over 50 years, Nucor has been pioneering sustainable steelmaking with electric arc furnace (EAF) technology and offer one of the most diverse breadths of steel and steel products, with operating facilities in the U.S., Canada, and Mexico.

NASCC: THE STEEL exhibitor list

Steel products produced: bar, beam, sheet, plate, HSS, conduit, sprinkler pipe, grating, joists, deck, racking, piling, rebar fabrication and installation, fasteners, metal building systems, data center systems, insulated metal panels, overhead and high-performance doors, wire products, and utility structures.

Nucor – Fastener Division

booths 101, 201, 301 Charlotte, N.C. **ph:** 704.366.7000

www.nucor-fastener.com

Nucor Fastener manufactures high-quality hex head cap screws, finished hex nuts, structural bolts, nuts, assemblies and flange bolts, but we have also expanded our product lines to include build-to-print fasteners. Head styles, dimensions, grades, and finishes can be customized to meet individual specifications. And through strategic alliances with processors, we are able to accommodate special finishes, patches, adhesives, and other secondary processing requests.

Nucor – Plate Mill Group

booths 101, 201, 301 Charlotte, N.C.

ph: 704.366.7000

nucor.com/products/steel/plate

Nucor's steel plate mills can produce steel plate in a wide range of grades, gauges, sizes, to meet precise specifications. Production capabilities include TMCP (with accelerated cooling), normalized and quenched and tempered (QST). Nucor produces industry-leading plate sizes to reduce shop splicing for efficient fabrication and construction suitable for long-span bridges and SpeedCore designs.

Nucor Skyline

booths 101, 201, 301

Charlotte, N.C.

ph: 704.366.7000

www.nucorskyline.com

As the premier leader of steel pile systems and solutions, Nucor Skyline's extensive catalog of steel products includes hot and cold rolled sheet piles, pipe piles, H-piles, combined wall systems and geostructural products. With strategic stocking locations throughout the Americas, Nucor Skyline has established a material delivery network that is primed for immediate response offering barge, rail and truck transportation options for cost effectiveness and on-time delivery. In addition, Nucor Skyline offers engineering support in project design and construction.

Nucor Tubular Products

booths 101, 201, 301 Charlotte, N.C.

ph: 708.496.0380 | toll free: 800.376.6000 www.nucortubular.com

With seven locations located across the United States and a vast array of sizes and products produced, Nucor Tubular Products can meet any specification your project requires. Their product offerings include hollow structural sections (HSS), standard pipe, mechanical tubing, conduit, fire protection sprinkler pipe and sprinkler pipe. Their steel tube products are produced with Nucor's circular, electric arc furnace (EAF) steel, making their products some of the lowest embodied carbon material options in the market.

Nucor Vulcraft/Verco Group

booths 101, 201, 301 Charlotte, N.C. **ph:** 402.844.2400

www.vulcraft.com

Nucor Vulcraft-Verco group is one of North America's leading manufacturers of engineered steel joists, decking and steel bar grating. Our core values prioritize quality, innovation and service, with a firm commitment to provide low-embodied carbon steel products to help you meet your project's sustainability goals. We offer specialty design tools to help you select the type of joist, deck and grating that will work best for your project.

NuWave Laser Cleaning booth 1183 Converse, Texas

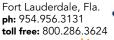
ph: 210.987.5671

www.nuwavelaser.com

Laser cleaning is a non-contact method of removing surface contaminants, such as rust, dirt, dust, and oxidation, from a variety of materials. It uses a focused beam of light energy to vaporize and remove the contaminants without causing damage to the underlying substrate. Laser cleaning does not produce any chemical waste, making it an environmentally friendly option. One of the main benefits of laser cleaning is that it is highly precise and can target specific areas without affecting surrounding areas. Additionally, it is a fast and efficient process that can save time and labor costs compared to traditional cleaning methods.

Ocean Machinery, Inc.

booth 1121



ocean

www.oceanmachinery.com

Ocean Machinery offers versatile and affordable solutions for the small to medium fabricator. Including: Ocean Avenger and Avenger Plus—the world's best-selling CNC beam drill lines; Ocean Clipper II—the most compact CNC angle line; Ocean Liberator—the most affordable CNC beam coping machine; Ocean Blaster—the smallest footprint shot blasting solution; Ocean Challenger—a compact, automated welding robot, and Ocean Slinger—the most compact and affordable beam weld positioner/rotator. Plus, several other game changing solutions that improve the efficiency and profitability of fabricators worldwide!

Ohio Gratings, Inc. **booth 625**

Canton, Ohio ph: 330.477.6707 | toll free: 800.321.9800 www.ohiogratings.com

Ohio Gratings is a leading manufacturer of aluminum, carbon, and stainless-steel bar grating products—all proudly made in the U.S. We deliver a blend of artistry, safety and innovation that's unmatched. From design and

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area manufacturing to custom fabrication, our grating experts partner with you to find the complete solution to meet your needs. Our traction safety products—ALGRIP® and OnGrip® provide increased traction on grating and metal flooring applications meeting ADA and OSHA requirements. It's this search for the unexpected that helps us repeatedly surprise and satisfy customers, keeping them "A Step Ahead."

OpenBrIM Platform

booth 651 New York, N.Y. **ph:** 212.991.8956

openbrim.org

Taking complexity out of digital/brim delivery! OpenBrIM is the world's first and only on-cloud, collaborative parametric information modeling platform that combines 3D modeling, FEA, CAD, code check, load rating, inspection, asset management, and more in your web browser. Not only do we provide high ROI on resources by automation, reusability, and interoperability, but we also provide flexibility by customized workflows and dedicated engineering support. Having industry-leading customers and the OpenBrIM community, we are the pioneers of digital transformation and innovation. Try for free in your web browser!

OTH Pioneer Rigging

booth 364

Montréal, Quebec Canada **ph:** 514.274.7554 **othrigging.com**

Our remote controlled hooks are designed to enable working teams to release the rigging from a safe distance and perform more lifts in a workday.

Ovation Services LLC booth 357 Copley, Ohio

ph: 330.730.7433 www.4ovation.com

Ovation Services is a leading provider of engineering services. Combining experience, technology, and a client-centric approach, Ovation Services provides structural steel detailing, connection design, and BIM Services across the U.S. The acquisition of MMW, Inc. a detailing firm with over 30 years experience in the steel industry, gives Ovation Services a talented project management team to ensure a quality product. Strong leadership, global resources, and U.S.based checking uniquely qualify Ovation to be your preferred partner.

P2 Programs booth 341 Dripping Springs, Texas

Dripping Springs, Texas ph: 512.858.2007 toll free: 800.563.6737 www.p2programs.com



P2 Programs means state of the art barcoding and tracking. We set the industry standard for quality barcoding and efficient tracking of structural steel from raw material receipt to erection on site. Employing P2 Programs' web-based product—STSX—you get instant, real-time information accessible from virtually any device. Since 1986, we've used Auto-ID technology to improve manufacturing process tracking. With our realtime update capabilities, we offer you the technological expertise and on-the-job experience needed for an affordable and successful solution to the challenges of manufacturing operations.

Pacific Stair Corporation **booth 127**

Salem, Ore. **ph:** 503.390.8305 | **toll free:** 800.477.8247 **www.pacificstair.com**

Pacific Stair Corporation, a leader in advanced stair system technology, has been located in Salem, Ore. for over thirty years. Pacific Stair develops, manufactures, and provides a stair system that meets or exceeds current international building codes. Our stair systems are engineered to make the most efficient use of materials and labor, reducing costs and improving delivery times. Our customers know that we care about their schedule and required delivery dates.

Pan Gulf Technologies **booth 721**

Thane West, Maharashtra India

ph: 91.9870.222581

www.pangulftech.com

Pan Gulf Technologies is an ISO 9001:2015 certified multi-disciplinary engineering solutions company with specialization in structural and misc. steel detailing as well as connection design. As one of the top steel detailing companies globally, we use Tekla and SDS2 (350+ licenses) to produce 3D models and detailed fabrication and erection drawings for industrial, commercial, and infrastructure projects worldwide. Our strengths: 5,000+ projects delivered, size ranging from 50–50,000 tonnes; 600+ expert engineers; 20+ years of proven track record; six offices/ delivery centers worldwide.

Paramount Roll and Forming, Inc. **booth 711**

Bellflower, Calif.

ph: 562.944.6151 | toll free: 888.400.3883 www.paramountroll.com

Celebrating 60 years of outstanding service and unparalleled capacity. Paramount Roll & Forming, Inc. specializes in the fields of aerospace, architectural, commercial, construction, entertainment, food, industrial, oil, public art, and pharmaceutical. We also specialize in curved staircases including installation, heat induction bending, rolling for heavy plates, angles, tubes, pipes, and beams.

Peddinghaus Corporation

booth 901

Bradley, Ill. **ph:** 815.937.3800

www.peddinghaus.com

Peddinghaus Corporation produces the toughest steel fabrication technology in the world. Every hand-assembled machine is the gold standard for what structural steel fabrication equipment should be. We understand that our machines are more than just a tool for our customers, it's the lifeblood of their company. We dedicate ourselves to working closely with fabricators throughout every step of their Peddinghaus experience—because when they succeed, we succeed together.



Pioneer Machine Sales booth 1273 Rosenberg, Texas ph: 832.509.1089

www.pioneermachinesales.com

Pioneer Machine Sales represents the global leaders in metals fabrication and machining for manufacturing processes. We distribute machinery in Texas, Arkansas, Louisiana, and Oklahoma. With more than 20 years of experience in custom metal fabrication, our goal is to offer the newest innovations in machinery and manufacturing practices from around the world with the highest quality and lowest cost per part. We offer top of the line brands from world class leaders in the industry, specializing in all types of products, from small scale to large production manufacturing facilities.

Portland Bolt & Manufacturing Company booth 162 Portland, Ore.

ph: 503.227.4634 | **toll free:** 800.547.6758 www.portlandbolt.com

Portland Bolt is a manufacturer and distributor of anchor bolts and construction fasteners. Established in 1912, Portland Bolt manufactures and galvanizes a variety of large, nonstandard fasteners in both the Portland, Ore. and North Augusta, S.C. locations. The 137,000-squarefoot Portland, Ore. facility offers bolt manufacturing, plasma plate processing, and in-house hot-dip galvanizing. We are in the process of adding equipment to enhance the manufacturing capabilities of our new Southeast location. We offer short lead times, on-time deliveries, quality products, and outstanding service provided by an experienced sales team.

Power of Design Group, LLC booth 689 Akron, Ohio

ph: 330.961.7440 www.podgrp.com

Power of Design Group, LLC (POD) is a consulting engineering firm supporting the private and public sectors. Our team of engineers and professionals design, analyze, and maintain new and existing infrastructure. We design retrofits to steel and reinforced concrete systems nationwide and have experience in the analysis of truss and moment frame structures. POD is also involved in connection detailing, fabrication review, and building design and alterations.

PPG Protective & Marine Coatings booth 527 Pittsburgh

toll free: 888.9PP.GPMC www.ppgpmc.com

PPG delivers protective coating solutions for a wide range of industries. Whether our customers need proven protection from corrosion, high temperatures and fire, or want to ensure durability and aesthetic performance that will protect valuable assets, we have the advanced coating systems that can meet the specific needs of any environment.

THE PROVEN TEEL BRIDGE **GN SOLUTION**



The leading software package for designing and rating curved and straight steel girder bridges.

Used by Many State DOTs and Top Design Firms

(573) 446-3221 **www.mdxsoftware.com** info@mdxsoftware.com



Precision Steel Systems

booth 982

Lincoln, Neb. **ph:** 402.413.7747 www.precisionsteelsystems.com

Precision Steel Systems would like to introduce the PLS-624. A miscellaneous metal layout table for quick and accurate layout for railings, ladders, stair stringers, and more. With its ergonomic design for workers, simple programming, and economic price point, the PLS-624 will show quick return on investment for any shop looking for alternatives to making up for the skilled labor shortage.

Prodevco Robotic Solutions Inc. booth 847

Concord, Ontario Canada **ph:** 905.761.6155

ww.prodevcoind.com

Prodevco Robotic Solutions offers advanced robotic plasma steel cutting sytems. There are three models-PCR42, PCR41, and PCR 31that will process standard structural steel profiles, and round tubes from 4 to 26 in., cuts copes, notches, holes and weld preps, splits beams, and scribes and marks on all four faces of H-beams, channels, angles, HSS and plates using automated robotic technology. All-in-one system reduces fabrication time, manpower and materials to meet everyone's goal: lower manufacturing costs.



Project + Quality Solutions booth 285

Portland, Ore. ph: 503.550.9918

www.projectqualitysolutions.com

At any stage of a project, PQS represents the project owner, contractor and fabricator to provide third-party representation, interpret project specifications, deliver reasonable solutions, maintain project schedule, train and certify personnel, provide expert witness services, and maintain project schedule. For quality assurance, process planning and evaluation, quality control inspections, project management and engineering, count on industry experts from PQS. We offer scalable resources, value engineering, project management/engineering, nondestructive testing, and dispute resolution.

Qnect LLC booth 401 Hadley, Mass. **ph:** 413.387.4375 www.qnect.com

Qnect partners with project teams to create early connected steel models. These early connected models contain more information than typical 3D models used for bidding. The supplemental information in an early connected model results in lower and tighter bids, helps reduce project schedules and cost overruns, and ultimately aids in expediting the process of designing, fabricating and erecting structural steel. Please visit: www.qnect.com/customer-success-stories to learn more about how structural steel project teams use Qnect.

Qualis Solutions, LLC

booth 525 Highlands Ranch, Colo. ph: 303.493.5400 www.qualissolutions.com

The team at Qualis Solutions has over 30 years experience detailing structures thoughout the U.S. using AISC standards. Over the years, we've created drawings for a wide range of projects including office buildings, hospitals, schools, warehouses, and airports. Qualis is best known for our focus on miscellaneous metal detailing. Our team of 18 detailers have mastered the art of stairs, railing, canopies, balconies, and many other miscellaneous designs. You'll find us easy to work with and a reliable part of your project.

Qubatic Steel Detailing LLC booth 860 Charleston, W.V. **ph:** 704.516.7074 www.qubatic.com

Qubatic is a progressive firm offering comprehensive steel detailing, connection design, estimation and BIM modeling services. We recognize the importance of delivering great value and experience to our clients in every project. To meet these performance standards, we have worked hard over these 12 years to develop a technical expert team of detailers and checkers along with the cutting-edge technology required for modern-day needs with all required infrastructure in a spacious office space. Qubatic is an ISO 9001:2015 certified by TUV and an associate member of AISC and NISD.

R.J. Watson, Inc. booth 623 Alden, N.Y. **ph:** 716.901.7020 www.rjwatson.com

R. J. Watson, Inc. delivers a diverse and custom range of products and services to customers around the world, providing high-load, multirotational bearings, seismic isolation devices, and expansion joint systems to the bridge, highway and heavy construction industry.

Raken

booth 277 Carlsbad, Calif. ph: 858.290.4477 www.rakenapp.com

Raken streamlines field operations and provides jobsite data in real time. Built for the field, our mobile and web apps are easy to use, so field crews document progress and keep the office updated-no extra effort or training required. Increase communication and project visibility with daily reports, time cards, production tracking, toolbox talks, safety & quality checklists, and more. Trusted by more than 39,000 contractors including Level 10 Construction, J.W. Danforth, Sundt, and Opus Mechanical.

RBC Lubron Bearing Systems Inc. booth 380 Santa Fe Springs, Calif.

ph: 714.841.3007 www.rbcbearings.com

We design and custom manufacture self-lubricating bearings for demanding applications and tough operating conditions. Our products are used in some of the largest projects and most critical applications on the planet, including: power generation, bridge building, subsea oil production, missile defense systems, and earthquake seismic isolation.

Red Cedar Steel

booth 382

Menomonie, Wis. **ph:** 602.919.0214

www.redcedarsteel.com

We build our people, our future, and our world by erecting steel nationwide.

Research Council on Structural Connections

booth K19 in our Partner Pavilion Chicago ph: 734.878.9560

www.boltcouncil.org

The Research Council on Structural Connections (RCSC) advances the science and technology of bolted structural connections in steel construction. It develops specifications and guidelines for the design, fabrication, and installation of these connections, prioritizing safety, reliability, and efficiency. RCSC brings together engineers, researchers, and industry professionals to tackle challenges, promote innovation, and support education and research. Its work is widely recognized, shaping codes and practices in the construction and engineering industries globally.

RISA

booth 211 Foothill Ranch, Calif. ph: 949.951.5815 | toll free: 800.332.7472 www.risa.com

RISA has been developing leading-edge structural design and optimization software for over 30 years. Our products are used by 24 of the top 25 U.S. design firms in over 70 countries around the world for towers, skyscrapers, airports, stadiums, petrochemical facilities, bridges, roller coasters, and everything in between. The seamless integration of RISAFloor, RISA-3D, RISAFoundation, and RISAConnection creates a powerful, versatile, and intuitive structural design environment, ready to tackle almost any design challenge.

Rolling Plains Construction, Inc. booth 139 Phoenix

ph: 480.895.8813 | toll free: 480.895.8813 www.rollingplains.com

Founded in 1984, we are the largest fireproofing contractor in the nation. We specialize in intumescent fireproofing, spray applied fireproofing, shop applied fireproofing, shop applied coatings, lightweight insulated concrete roofing, gypsum underlayment, spray foam insulation, spray applied insulation, and firestopping. Our array of services is available in all 50 states as well as worldwide. Our company has over 700 employees across offices in Phoenix, Denver, Dallas, and Tampa, Fla. Our bond limit is \$700 million, and our EMR stands at .63. Our depth and breadth of expertise are unparalleled in the fireproofing industry.

SCHULLER&Company

booth 378 Eschborn, Hessen Germany ph: 49.6196.700.8301 www.bocad.com



Since 1983, bocad, now part of SCHULLER&Company branded as SC bocad, has been setting standards in steel construction and supports companies in the building industry on their journey towards digitalization. It is used by renowned companies worldwide, with over 500,000 successfully completed projects. SC bocad is a leading detailing software. It includes 3D and 2D modeling as well as highly modulated deliverables creation. Our customers highlight efficiency and reduced rework on a regular basis. SCHULLER&Company is a proud member of AISC and NISD. We are looking forward to presenting our latest pioneering version of SC bocad 2025.

SDS2 by ALLPLAN

booth 311

Lincoln, Neb. **ph:** 402.441.4000 | **toll free:** 800.443.0782 **www.sds2.com**

SDS2 is a leading provider of steel design software. A product of ALLPLAN, we support steel projects in the BIM cycle from design to construction and empower our users to deliver at the highest levels of quality and efficiency.

SE Careers

booth K17 in our Partner Pavilion Holland, Mich. ph: 616.836.1702 www.secareers.us

A unique job posting and career site for structural engineers.

Seismic Bracing Company

booth 788 Salt Lake City ph: 801.550.7745 www.thesbclic.com

We are makers of buckling restrained braces (BRBs). The state of the art braces for bracing buildings and other structures during earthquakes. As the name implies, BRBs do not buckle. They smash and stretch axially absorbing seismic energy. We have patented a simple, easy, and repeatable methods to manufacture BRBs, which brings better value to projects. Our methods have been fully tested and exceed governing building code requirements. All our projects to date have been a great success for our clients and us.

Serviacero USA **booth 647**

Houston ph: 713.304.4012 www.serviacero.com

At Serviacero USA, we specialize in manufacturing steel bar grating, as well as round, square, and rectangular tubing. We provide cutting and welding services for bar grating used in light and heavy traffic, perimeter fences, architectural elements, and stair treads across various sectors. As active members of the NAAMM, we adhere to manufacturing standards and innovate in engineering designs. Our high-precision services for tubular products, including high precision tubing cut-to-length, high precision electronic tube bending, and laser cutting, underscore our commitment to delivering superior results on every project.

Service Steel Warehouse booth 759 Houston

ph: 713.675.2631 | toll free: 800.675.9929 www.servicesteel.org

Service Steel Warehouse is a full-service, independent, structural carbon steel distributor serving customers in the U.S. and internationally. Located next to the Houston Ship Channel with rail access to the Port of Houston and the mainland, Service Steel uses its efficient transportation system to ship steel around the globe. Our expansive inventory, competitive pricing, and intense commitment to customer satisfaction form the foundation of our growth as an industry leader since 1965. By focusing on our customers' individualized steel needs, we provide them with high-quality products and services at a competitive price.

SERVO-ROBOT

booth 274 St-Bruno, Quebec Canada ph: 450.653.7868

www.servorobot.com

Servo-Robot is the leading manufacturer of 3D robot-vision systems and software dedicated to real-time intelligent control and monitoring of industrial robots. We provide reliable, innovative, high-performance products that are adapted to customers' specific welding applications and needs, and we support them with superior customer service. Servo-Robot's systems are designed to perform 3D joint tracking, joint finding, robotic weld inspection, intelligent process control, and monitoring in applications such as robotic arc and laser welding, laser brazing, and robotic dispensing in various fields.

SEU by SE Solutions, LLC

booth K17 in our Partner Pavilion Holland, Mich. **ph:** 616.836.1702

www.LearnWithSEU.com

SEU helps structural engineers get high-quality continuing education via web seminars in a format that is economical and easy to use. Every subscription includes access to both live sessions, as well as past session recordings through the SEU Learning Portal. In addition, subscribers get access to the "EIT Ramp Up" series to help younger engineers become productive faster. Provide the benefit of ongoing education to your engineers by participating in SEU!

Shandong Hanpu Machinery Industrial Co., Ltd. **booth 638**

Jinan City, Shangdong China

ph: 86.531.8353.0737 www.hanpuindustrial.com

China's most professional electric torque wrench and shear wrench manufacturer for high-strength bolts. Small, lightweight, efficent

NASCC: THE STEEL exhibitor list

Sherwin-Williams Protective and Marine

booth 601 Cleveland

ph: 216.566.2000 | toll free: 800.524.5979 protective.sherwin.com

Sherwin-Williams Protective & Marine coatings are ideal for shop application and available through its over 4,700 distribution locations. Our Sherwin-Williams NACE and SSPCcertified corrosion experts ensure that your projects use technologies that reduce the critical planned timeline and achieves its expected service life. For more information, contact us at swprotective@sherwin.com.

Shop Data Systems, Inc.

booth 265

Richardson, Texas **ph:** 972.494.2719

www.shopdata.com

Shop Data Systems (SDS) has been servicing the steel fabrication industry for more than 30 plus years with CAD/CAM software solutions. The system will import flat plate components directly from your structural design software. System features: imports file-embedded quantity and material; import multiple files in seconds; import DSTV or DXF files; machine tool paths are applied automatically; tools with or without piece mark; automatic shape nesting; chain cutting; common line cutting; automatic plate trim; personalized training and support; and remnant inventory tracking.

Short Span Steel Bridge Alliance

booth K16 in our Partner Pavilion

Washington, D.C. **ph:** 202.452.7100

www.shortspansteelbridges.org

The Short Span Steel Bridge Alliance (SSSBA) is a group of bridge and buried soil steel structure industry leaders who have joined together to provide educational information on the design and construction of short span steel bridges in installations up to 140 ft.

SidePlate/MiTek

booth 117 St. Louis **ph:** 949.238.8900 **www.mii.com**

SidePlate[™] Connection Designs and engineering services are now part of the MiTek[®] portfolio of solutions. MiTek is a platform innovator and enabler that exists to transform the building industry with better building solutions. Our software, services, engineered products, and automation enable our customers and partners to transform the way they design, make, and build. SidePlate Connection Designs put steel where a building needs it to reduce the overall tonnage, minimize required connections, and accelerate erection times.

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

Simpson Strong-Tie Co.

booth 441 Pleasanton, C

Pleasanton, Calif. ph: 925.560.9000 toll free: 800.999.5099 www.strongtie.com



Simpson Strong-Tie, one of the largest suppliers of structural building products and technology in the world, is dedicated to helping build safer and stronger structures. We offer the commercial steel industry a suite of products backed by research, development, and rigorous testing, combined with our software offerings and services.

Skidmore-Wilhelm

booth 557 Solon, Ohio ph: 216.577.5930 www.skidmore-wilhelm.com

For more than 70 years, Skidmore-Wilhelm been the standard tool to verify bolting methods (pre-installation verification). Recently we have developed an online training program to save time and help ironworkers to safely do their jobs. Please visit our training site at www.skidmoretraining.com. We are also the world's leading supplier of devices to test impact wrenches.

SkyCiv Engineering **booth 591**

Sydney, NSW Australia **ph:** 800.838.0899 **skyciv.com**

SkyCiv helps engineers and businesses design and analyze structures easily with powerful tools you can access from any browser. It needs no IT setup and has a minimal learning curve, so your team can get started right away with no downtime. With most tools you need in one place, switching between software is no longer necessary, making it quicker for you to clear engineering bottlenecks and get work done. Our pricing is flexible and cost-effective, designed to grow with your team. You can easily add seats or customize plans to pay only for what you need. Simply reach out to us! Get a free trial and see how we transform your workflow.

Soitaab USA Inc.

booth 878 Warrenville, III. **ph:** 312.856.6970

www.soitaabusa.com

Since 1938, Soitaab has been a world leader in the manufacture of CNC plasma, flame, laser and water jet cutting machines. Soitaab's equipment offerings range from simple plug-and-play machines to highly engineered all-in-one heavy fabrication lines. Our machines can be equipped with several accessories such as drilling and taping units, surface and hole milling, bevel heads for welding prep, countersinking, marking, pipe and dome cutting, sophisticated handling systems, and many others.

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

South Atlantic Galvanizing

booth 537 Wilmington, N.C. ph: 910.332.1900 www.southatlanticllc.com

We provide hot dip galvanizing per ASTM A123 to fabricators and OEMs all over the country. We have nine strategically located galvanizing plants throughout the southeast U.S. Please make an appointment, or look at our brochure to learn more.

St. Louis Screw & Bolt **booth 501** Madison, Ill.

ph: 314.389.7500 | toll free: 800.237.7059 slbolt.com

Selling direct to structural steel fabricators, St. Louis Screw & Bolt is one of the oldest structural bolt manufacturers in the U.S. Specializing in ASTM F3125 heavy hex and tension control structural bolts in grades A325/F1852/120ksi and A490/F2280/150ksi, types I and III, plain, mechanically galvanized, hot dip galvanized, and F1136 and F2833 coatings. St. Louis Screw & Bolt also has a very large inventory of other construction fasteners including anchor bolts, weld studs, and concrete anchors, just to name a few.

Stainless Structurals

booth 462

Conroe, Texas **ph:** 936.538.7600

www.stainless-structurals.com

Stainless Structurals is a global producer and supplier of sharp cornered stainless steel and carbon steel structural shapes and special custom profiles. Our standard stainless steel sections replicate the dimensions of the A6 carbon steel platform. Through a multitude of production technologies, including laser welding and extruding, we continue to be a world leader in stainless steel structural shapes and steel profiles. Our value added services include customizations, fabrication, polishing, and more. No matter the size and scope of your project, we can provide the best steel solutions for your project's designs and demands.

Steel and Pipe Supply **booth 444** Manhattan, Kan.

www.SteelAndPipe.com

Steel and Pipe Supply Company, Inc. distributes high-quality carbon steel to customers across the Midwest. We keep a large inventory in multiple warehouses, provide value-added processing services, and maintain a strong distribution network—all to help our customers get the steel they need quickly, efficiently, and at a competitve price. We have warehouses and processing facilities optimally located in and around: Houston, Longview, Texas, Tulsa, Okla., St. Louis, and Kansas City, Kan.

Steel Deck Institute **booth 385** Florence, S.C.

ph: 412.487.3325

Founded in 1939, the Steel Deck Institute (SDI) is a trade association representing steel deck manufacturers and those manufacturing products used in conjunction with steel deck. The SDI actively publishes design manuals, develops standards for steel roof and floor deck, offers website tools, provides an industry standard EPD, offers educational opportunities, and supports research related to steel deck. Our most recent publications are the 2022 ANSI Standards. These include the new and combined ANSI/SDI SD-2022, and the renewed ANSI/SDI T-CD-2022 and ANSI/ SDI QA/QC-2022.

Steel Dynamics Long Products Group **booth 317**

Columbia City, Ind.

ph: 260.625.8100 | toll free: 866.740.8700 lpg.steeldynamics.com

Steel Dynamics, Inc. is one of the largest domestic steel producers and metals recyclers in the U.S., based on estimated annual steelmaking and metals recycling capability, with facilities located throughout the U.S. and in Mexico. Steel Dynamics produces steel products, including hot roll, cold roll, and coated sheet steel, structural steel beams and shapes, rail, engineered specialbar-quality steel, cold finished steel, merchant bar products, specialty steel sections, and steel joists and deck.

Steel Erectors Association of America

booth 746

Winston-Salem, N.C. **ph:** 336.294.8880

www.seaa.net

The Steel Erectors Association of America (SEAA) is dedicated to advancing the common interests and needs of all engaged in building with steel. Objectives include the promotion of safety, education and training programs for steel erector trades; development and promotion of standards; and cooperation with others in activities which impact the commercial construction business. SEAA develops strategic partnerships and works closely with industry groups to provide members with industry representation steel design, engineering, fabrication, labor, safety, and training groups.

Steel Founders' Society of America

booth 1369 Crystal Lake, III. **ph:** 815.455.8240

www.sfsa.org

SFSA, akin to AISC, is a technical association. Members of SFSA are steel foundries that supply a range of cast steel products for demanding environments such as railroad, mining, construction, military, and nuclear. SFSA can assist you in utilizing steel castings for building construction. Steel castings offer performance, aesthetics, design freedom, and green manufacturing. SFSA leads the Steel Performance Initiative (SPI) program, a collaborative structure of steelmakers (mills, forge, cast), researchers, and end-users to advance steel technology development for commercial and defense applications.

Steel Joist Institute booth 387 Florence, S.C. ph: 843.407.4091 www.steeljoist.org

The Steel Joist Institute (SJI), a nonprofit organization of active joist manufacturers and other organizations and companies connected to the industry, was founded in 1928 to address the need for uniform joist standards within the industry. Today, the institute continues to maintain the standards for steel joist construction. In addition, the SJI provides educational opportunities for construction professionals utilizing a library of printed publications and both live and recorded webinars. We also offer assistance in identifying existing joists in buildings undergoing retrofit.

Steel Plate booth 832

Pendergrass, Ga. ph: 888.894.8818 www.steelplate.us

Steel Plate Ohio is located in Streetsboro, Ohio, right outside of Cleveland. This location offers (4) oxy-fuel machines, (1) plasma machines, and (6) overhead cranes with up to 35-ton capacity and the capability to burn plates up to 20 in. thick. Steel Plate Geor-

gia currently offers (7) oxy-fuel machines, (1) plasma machine, (2) Quickmill Intimidators, (2) Quickmill Annihilators, 5 overhead cranes with up to 40-ton capacity, and railcar access. Our oxy-fuel machines offer table space ranging from 10 ft to 20 ft wide and up to 60 ft long, while our plasma machine offers a 24 ft by 83 ft table, making no job too big to handle!

Steel Plus Network

booth 262 Irishtown, New Brunswick

Canada **ph:** 902.956.8335

www.steelplus.com

Steel Plus Network has traditionally organized meetings for members to provide opportunities for improvement to each of their operations through educational presentations, motivational messages, and industry expert reports. These meetings also fulfill our mission to coordinate our purchasing programs and networking opportunities. The regional meetings conducted by SPN, along with the Annual General Meeting, are deemed vital to the health and welfare of SPN's members and are considered an integral part of our operation.

EXHIBITOR

2025

NASCC: THE STEEL exhibitor list

Steel Projects Corp.

booth 829

Forest Hill, Md. **ph:** 813.425.2345

www.steelprojects.com

Steel Projects is a company that has been editing software solutions for steel fabricators since 1994. We offer a complete, digitalized, and optimized management of steel fabricators' shop floors, including both CNC machines and manual workstations. Our main features include: project and production management, section and plate nesting, automatic CNC programming, live production monitoring, stock and purchasing management, and traceability management. Some of them are available on a dedicated Android mobile application. Today, our ambition is to remain one of the world leaders in the field.

Steel Tek Unlimited

booth 535

Eden Prairie, Minn. **ph:** 612.258.7531

www.steelteku.com

Steel Tek Unlimited is a leading-edge company in the steel industry that specializes in customizing CAD programs and offers steel detailing to fit your needs. We are proud to say that all of our work is done in the U.S. with an experienced team of people from the bridge, industrial, and commercial industries who understand today's construction market.

For the fabricator looking to

maximize their production time and profits, the Lightning Rail is a smart decision.

Eliminate the countless manual labor hours involved in laying out handrails, stair stringers, trusses, and more!

- ✓ Cut fabrication time by more than 50%
- Ensure the highest level of accuracy
- Boost your profit margins
- Lay out complex geometry in seconds
- Designed to replace your existing fabrication table

"The guys love it. They jumped right in on it and have been working to make the most use of it. Great purchase."

Nat Killpatrick Basden Steel Corporation

"I think it's fair to say that this machine continues to exceed our expectations. We are very happy with it."

Chief Operating Officer Koenig Iron Works



603-402-3055 AutomatedLayout.com



by Automated Layout Technology™

Patent No. US 10,576,588 B2 Patent No. US 11,426,826 B2

Steel Tube Institute

booth 268 Chicago ph: 847.461.1701 www.steeltubeinstitute.org

The Steel Tube Institute is the leading technical resource in North America for all steel tube/HSS products. STI's programs include continuing education, technical resources, technical assistance, and safety programs as we promote best practices in engineering design, environmental concerns, manufacturing techniques, industry safety, and the overall steel industry. Our main goal is to increase utilization of HSS and other tubular products in construction and other industries, and to reveal the wealth of possibilities afforded by designing with HSS.

Structural Bolt and Manufacturing, Inc. **booth 690**

Nashville, Tenn.

ph: 615.255.2540 | toll free: 800.423.1730

Since 1985, Structural Bolt & Manufacturing has been providing the finest products and services in the structural fastener industry. We specialize in heavy construction fasteners and anchoring products for the structural steel industry.



Structural Engineering Institute of ASCE

Booth K18 in our Partner Pavilion Reston, Va. ph: 703.295.6195 www.asce.org/SEI

Join more than 30,000 members to advance your career and build the future of the structural engineering profession. Learn about the latest standards including ASCE 24 *Flood Resistant Design and Construction*, the upcoming Zero Carbon Bootcamp, and ASCE AMPLIFY: Expanding Knowledge Into Practice—featuring interactive functionality that makes it easier to put ASCE standards into practice: amplify.asce.org. Join or Renew your ASCE/SEI Membership Today! asce.org/SEIMembership. Students: apply for scholarship to Electrical Transmission & Substation Structures Conference, September 14–18 in Dallas: www.etsconference.org.

Structural Stability Research Council Booth 181 Chicago ph: 312.670.7015 www.ssrcweb.org

The Structural Stability Research Council (SSRC) is a technical organization that focuses on the state-of-the-art understanding of the impact of stability related issues on the analysis, design, and behavior of metal structures. SSRC is comprised of engineers, educators, and industry members with an interest in stability-related issues.

Structures Online

booth 373 Tempe, Ariz. ph: 602.563.5958 www.structures.online

Established in 2000, Structures Online (SOL) is the oldest AISC steel detailing and structural engineering firm operating out of India. At more than 700 members strong, SOL is also one of the largest in the industry. Through our decades of experience, we have built up an unmatched wealth of knowledge capital. Our senior leadership has seen just about everything there is to see. And because of our high retention of top and experienced talent, along with recording of all technical information to train new staff, that knowledge is preserved at SOL to be effectively used when the need arises.



STRUMIS LLC

booth 405 Collegeville, Pa. ph: 610.280.9840 www.strumis.com

Strumis LLC is the world's leading developer of steel fabrication management software. We offer the most comprehensive and powerful end-toend solution available for fabricators globally, currently operating in over 70 countries. Our products include steel estimating, fabrication information, and production management, as well as project collaboration tools. These tools work seamlessly with third-party software and have consistently transformed our customers' businesses within the structural steel construction supply chain. Strumis connects, streamlines, and simplifies all of your steel fabrication projects and resources.

Struzon Technologies Inc. booth 660 New York ph: 646.992.3826 struzon.com

Struzon is a trusted structural steel detailing/ engineering service partner to the construction industry, and we are an organization that wears numerous caps. From being market pioneers of structural detailing, engineering, design, and research, to do well architectural results in both residential and industrial divisions, we are enlisting our company in different arenas.

Sugar Steel **booth 801**

Chicago Heights, Ill. ph: 708.757.9500 www.sugarsteel.com



Sugar Steel has been in business since 1966, serving our customers with exceptional service. Here at Sugar Steel, we pride ourselves in our own ability to develop and establish long lasting partnerships with our customers. Our ability to save you time and money is something we pride ourselves on each and every day. Supplying stock material is easy and is what all service centers do daily. At Sugar Steel, we can also supply stock material, but we believe in first stage processing. First stage processing has been the key to our continued growth and success since 1966. Sugar Steel is a subsidiary of Reliance, Inc. and a member of The Infra Group.

Sumter Coatings, Inc., an Ergon Company booth 589

Sumter, S.C. ph: 803.481.3400 toll free: 888.471.3400 www.sumtercoatings.com



Sumter Coatings is a manufacturer of premium industrial and specialty coatings, with a strong emphasis on corrosion resistant primers, intermediates, and topcoats for structural and miscellaneous steel. Sumter Coatings is dedicated to producing coatings that protect, beautify, renew, and extend the life of our customer's assets while meeting or exceeding the stringent specifications required by today's architects and engineers.

Superior Glove

booth 751 Acton, Ontario Canada

ph: 800.265.7617 superiorglove.com

Superior Glove is a leading innovator in the design and manufacture of safety gloves and sleeves. Their products protect workers across the globe in many major industries, including construction, oil and gas, mining, and manufacturing.

Swisher Tools, LLC

booth 369 Battle Ground, Ind. **ph:** 630.203.7818

www.swishertools.com

We are a family-owned company that specializes in innovative rigging tools for the steel industry. Our products are safer, and more efficient; making your project more profitable.

SY Stairs

booth 483 Louisville, Ky. ph: 502.361.5445 www.systairs.com

TDS Industrial Services Ltd.

booth 541 Surrey, British Columbia Canada

ph: 604.599.1570 ×10 www.tdsindustrial.com

TDS—where better is our standard. TDS has been in the steel detailing business for over 40 years and continues to service our steel fabrication customers by providing exceptional value with certainty and confidence. Being an ISO 0001/2015, perfide compare up dependent

9001:2015 certified company, we understand the need to manage and mitigate risks associated with offshore detailing and have developed a system and procedures to have 100% control over all aspects of projects. From the smallest miscellaneous projects to the heavy industrial, we have the team to do it all.

Team Detailing Solutions LLC booth 769 Jackson, N.J.

ph: 913.674.4485 teamdetailing.com

For more than 18 yearsm Team Detailing Solutions (TDS) specializes in structural steel detailing, connection design and estimodeling. We operate SDS2 and Tekla Structure, Autodesk, Descon, and Mathcad (90+ Licenses) to produce 3D models and detailed fabrication and erection drawings for industrial, commercial, and infrastructure projects in AISC/CISC standards with a team of 180+ detailers, checkers, and project managers. They are capable of completing small and large projects and complex structures. We provide connection/delegated miscellaneous design calculations with certified PE stamps.

Techflow Inc. **booth 463**

Duluth, Ga. ph: 205.228.0960 www.techflowengg.com

Techflow Inc., based in Duluth Ga. with support staff in our India offices, offers the best in 3D steel detailing, BIM coordination, connection design, pre-detailing setup, and estimating. With project management/coordination in Duluth coupled with 400 detailers and checkers in India, we provide the best in US quality and competitive pricing, using Tekla, SDS2, and bocad. Techflow holds both AISC and NISD memberships, with NISD IDC-certified detailers on staff. Techflow is a QPP-certified company as recognized by the NISD ensuring quality detailing to your standards, on time.

Tecoi USA booth 1189

Longview, Texas **ph:** 833.878.3264 **tecoiusa.com**

Tecoi is a globally recognized company specializing in designing and manufacturing advanced metal processing systems. We cater to industries like metal service centers, steel construction, and heavy steel fabrication. Our systems incorporate advanced technologies such as laser, oxyfuel, and plasma cutting, along with machining and milling, to achieve top productivity levels. We specialize in large format and customized solutions, providing unmatched productivity and innovation unique to Tecoi.

Tectonix Steel, Inc. booth 677 Mesa, Ariz. ph: 801.377.0315 www.tectonixsteel.com

Tectonix Steel offers over 30 years of experience providing the highest quality steel detailing using the latest technology. We are an established detailing firm with the ability to handle virtually any size job. We specialize in structural and industrial projects ranging from 200 tons to 3,000 tons.

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

Terracon Consultants, Inc.

booth 561

Olathe, Kan.

ph: 913.599.6886 | toll free: 800.593.7777 www.terracon.com

Terracon's materials testing and inspection professionals are ready to journey with you and help you reach your goal. Since our founding in 1965, Terracon has become a thriving, employee-owned, multidiscipline engineering consulting firm. Our real-time data-driven insights and innovations create an unmatched client experience that spans the lifecycle of any project from earth to sky.

The Walsh Group

booth 484

Chicago **ph:** 312.563.5400

www.walshgroup.com

Founded in 1898, The Walsh Group is a fourthgeneration family-owned business providing design, build, finance, and operation services for a wide variety of construction projects. We are consistently listed among the largest contractors in the U.S., operating out of 21 strategically located regional offices across North America. Since 2009, Walsh has been an AISC certified steel erector with bridge endorsement. Walsh Kokosing is currently designing and will soon begin construction of the Brent Spence Bridge Corridor Project in Cincinnati. Visit www.walshkokosing.com/bsb for more information on Brent Spence.

Threaded Fasteners, Inc. booth 672 Mobile, Ala. toll free: 800.345.4976 threadedfasteners.com

Threaded Fasteners Inc. is 100% employee owned and specializes in the manufacturing, custom packaging, and distribution of steel fasteners including A325 structural bolts, anchor bolts, nuts, washers, and more. Our manufacturing capabilities include bent anchor bolts, J-bolts, structural bolts, single and double end studs, and more in both plain and galvanized. We can even provide parts that are 100% melted and manufactured in the U.S. With over 350 dedicated employee owners, \$14 million in inventory, and 16 locations in Alabama, Mississippi, Florida, Oklahoma, Tennessee, Georgia, and Texas, we can meet the global needs of our customers.

Threadline Products, Inc.

booth 743

Charlotte, N.C. **ph:** 704.527.9052 **threadlineproducts.com**

FAST. FLEXIBLE. AT YOUR SERVICE. Threadline Products, Inc. has supplied threaded products and miscellaneous steel to the construction industry since 1984. We can furnish any bolt or fastener for commercial building construction and concrete; F1554 anchor bolts, A325 structural connection bolts, grade $\frac{1}{8}$ bolt, socket headed bolts, rebar and more. Threadline has carbon, stainless and alloy material in stock ready to fabricate and meet your custom requirements with expert welders on our fabrication team. With 1–2 day shipping available to over half the U.S., our speed is unmatched. We are D.B.E/HUB certified.

Trilogy Machinery, Inc.

booth 1065

Belcamp, Md. ph: 410.272.3600 | toll free: 888.988.ROLL www.TrilogyMachinery.com

Trilogy Machinery, Inc. is the exclusive distributor for SWEBEND Bending Rolls; SUN-RISE Ironworkers, Horizontal Benders, and Structural Processing Systems; LEMAS Plate Bending Rolls; BSP Tube Punching Systems; and Synergy Bending Rolls. Trilogy offers sales, service, and parts support from their Maryland headquarters as well as local dealers around the country.

Trimble

booth 233

Wesminster, Colo. ph: 770.426.5105 | toll free: 877.TEKLA.OK

www.trimble.com/en/products/tekla

Tekla software solutions from Trimble power the construction industry by providing technology needed to increase performance, reduce costly errors and promote greater collaboration on projects. Users can produce high-quality 3D models and construction documentation—as well as create and manage structural analysis, design, detailing and fabrication data. Designed with a commitment to improve digital construction information workflows, Tekla software gives a true competitive edge to construction industry professionals.

Triple-S Steel / Intsel Steel **booth 243**

Houston **ph:** 713.697.7105 | **toll free:** 800.231.1034

www.sss-steel.com

Triple-S Steel Holdings is a family of steel service centers. You know us through our structural steel brands: Triple-S Steel Supply and Intsel Steel Distributors. Our full line service centers keep over 200,000 tons of inventory in stock. Beams, plate, and other structural are our stock in trade, and the fabricator is our partner to get more steel into buildings every day. We are proud to support AISC in its mission of promoting the use of steel! Triple-S is helping our customers by modernizing our equipment and how we process materials before it leaves our facility. Give us a call to find out more!

Tru-Fit Products

booth 171

Medina, Ohio **ph:** 330.725.7741

tfpcorp.com

Tru-Fit Products manufactures a full line of stud welding equipment, weld studs, specialty fasteners, anchor bolts, and plate washers for the structural, manufacturing, and construction industries. Based out of Ohio and with nearly 100 years of fastener manufacturing experience, Tru-Fit Products has the capabilities to take care of your company's fastener needs. Visit www.truweldstudwelding.com to learn more.

United Structure Detailing Inc.

booth 183

Los Angeles

ph: 480.409.1500

unitedstructuredetailing.com

Quality assurance, on-time delivery, effective coordination. United Structure Detailing Inc. (USD Inc.) offers steel structure and miscellaneous detailing and connection design with PE-stamped (all states) services. We specialize in crafting detailed shop drawings, 3D models, BIM, erection plans, etc. USD Inc. also provides NC1, IFC, CNC, DXF, DSTV, ENC, KSS, reports, and other supporting production files. USD Inc. holds both AISC and NISD memberships. Our team of seasoned professionals (detailers, checkers, and project managers) are equipped with advanced software and technologies, ensuring to meet the quality and schedule.

V&S Galvanizing

booth 715 Columbus, Ohio **ph:** 800.801.3648

www.hotdipgalvanizing.com

V&S Galvanizing is a leader in the hot-dip galvanizing industry, with eight locations on the East Coast and Midwest. Specializing in corrosion protection of steel with zinc by hot-dip galvanizing. We offer the DUROZINQ system of galvanizing, packaging, tagging, and guaranteed service. We also offer our COLORZINQ system (paint over galvanizing) that adds brilliant color to a base of corrosion protection. V&S offers trucking and many other value added services. V&S Galvanizing is part of Voigt & Schweitzer LLC, a holding of Hill & Smith Holdings, PLC.

Valmont Coatings

booth 620

Omaha, Neb. **ph:** 651.233.0627

www.valmontcoatings.com

As a full-service coatings company, Valmont Coatings provides quality surface finishes that extend the service life and improve the appearance of metal products throughout the country. In fact, Valmont Coatings is one of the largest custom galvanizers in North America. Our processes and transportation capacities are designed to efficiently handle steel products of all shapes and sizes for customers anywhere in the country.

Vectis Automation booth 1354 Loveland, Colo. ph: 970.852.5201 www.VectisAutomation.com

Vectis Automation designs and integrates cobot metal fabrication solutions to help structural steel fabricators boost productivity amid the skilled labor shortage. Come see our easy-touse, affordable, and versatile Cobot Welding Tool and Cobot Plasma Cutting Tools that let you quickly start automating simple, repetitive parts—freeing up your team for more complex weldments or other value-add tasks. We look forward to meeting you and starting a conversation. We always begin by taking an in-depth look at your application(s) to make sure they are a good fit for automation.

Vegazva Technologies **booth 770**

Rolling Meadows, Ill. **ph:** 630.883.4354 **www.vegazva.com**

Vegazva (ISO 9001:2015) is an Illinois-based engineering design and detailing company and member of NISD and AISC. With PE stamping capabilities in all states, we provide services for estimation, main and misc. steel, commercial and industrial projects across the country through our steel detailing division. Our plant design division caters to mineral, chemical, water and wastewater, oil and gas, petrochemical, and pharma industries. With over 250 resources, 4.5 man hours of completed detailing work, and over 1,200 medium to large projects delivered successfully, Vegazva is the right detailer for you.

Viking Wheel Blast Systems booth 671 Rose Hill, Kan.

ph: 316.634.6699 | toll free: 800.835.1096 www.vikingcorporation.com

Viking Wheel Blast Systems offers structural/ plate wheel blast machines specifically designed for the structural/plate industry. Whether you have specific production requirements or budget constraints, our equipment effectively cleans large plates and I-beams, leaving you with a surface ready for finishing.

Virtek Vision

booth 1062 Waterloo, Ontario Canada ph: 519.746.7190 | toll free: 800.684.7835 www.virtekvision.com

Virtek Vision provides laser templating solutions for steel assembly. Visit us to see how laser projection has increased efficiencies in the layout and assembly of steel products including handrails, trusses and stair stringers.

VIRTUELE

booth 765 San Jose, Calif. **ph:** 415.800.5995 **www.virtuele.us**

VIRTUELE is a cloud-based software platform for the steel industry. Our applications make your work easy and change the way you work. With our data-rich 3D model based workflows, you will find your project management a lot easier and more streamlined. Our applications address the existing gaps in BIM implementation and reuse the design BIM models at every stage of your project. Our products are customizable to meet your specific needs. We provide on-premise or cloud options for running your customized workflows and applications.

voestalpine Tubulars

booth 354 Kindberg-Aumuehl, Styria Austria

ph: 43.50304.23.0

www.voestalpine.com/tubulars/en/ voestalpine Tubulars, an Austria-based company, produces seamless steel pipes up to 7⁵/₈ in., used as casing or tubing in the oil and gas sector, available

in API or proprietary grades with API or propri-

etary connections (e.g. VAtitan[®]-TC). In addition to the products used in the in the drilling and completion of oil and gas wells, voestalpine Tubulars has also a production line for industrial pipes and has now supplemented its product range by seamless square and rectangular hollow sections that are primarily used in agriculture, constructions, mechanical engineering, and mobility.

Voortman Steel Machinery

booth 821 Monee, Ill.

ph: 708.885.4900

www.voortman.net

Voortman Steel Machinery is the leading global manufacturer of highly automated steel processing machinery. From compact processing lines to large, fully automated systems with everything connected. More than 50 years of experience means that Voortman can offer solutions for every type of project. Voortman is continuously developing new machinery and software solutions to meet increasing industry demands. Voortman works with you to identify the best solution, tailoring systems to ensure you can exceed your processing goals.



Voss Engineering, Inc. **booth 128**

Lincolnwood, Ill. **ph:** 847.673.8900 | **toll free:** 800.323.3935 **www.vossengineering.com**

Voss Engineering, Inc. provides expansion/ slide bearing assemblies, bearing pads, and isolation materials for highway bridges, industrial structures, machines, process piping, and commercial buildings. Voss' product line includes the following structural bearing pad materials: SORBTEX (preformed fabric pad/cotton duck pad/CDP), VSB Slide Bearings (PTFE and steel plate), VTB (thermal break pad), NEOSORB [AASHTO grade neoprene (polychloroprene)], and FIBERLAST or VOSSCO (random oriented fiber pads).

Whiteboard Technologies LLC **booth 657**

Corcoran, Minn. **ph:** 612.605.5833

www.whiteboardtec.com

For over two decades, Whiteboard has perfected the delivery of professional steel detailing with an unwavering focus on quality and design-based thinking in all structural steel and PEMB projects. We invest organically in having the right people who understand steel fabrication and erection from a value perspective and deliver quality solutions to a diverse range of construction projects. Our hybrid-delivery model offers onsite and offshore to ensure that there is maximum utilization of our detailing teams round the clock. We use 3D BIM software such as SDS2 and Tekla to detail the steel projects ranging from 50 to 15,000 tons.

Color Key: Bridge Pavilion Exhibitor Heavy Machinery Area

NASCC: THE STEEL exhibitor list

Willbanks Metals Inc. booth 692 Fort Worth, Texas

ph: 817.625.6161 www.willbanksmetals.com

Celebrating our 50th anniversary, Willbanks Metals is your premier partner in steel solutions. For over four decades, we've delivered topquality products and exceptional service, earning trust through reliability and expertise. As a trusted industry leader, we're committed to your success, offering a wide range of steel products to meet your project needs. Visit us at our booth or www.willbanksmetals.com to discover why we're the preferred choice for quality steel solutions.

Wrought Washer

booth 282

Milwaukee ph: 414.744.0771 | toll free: 800.558.5217 www.wroughtwasher.com

Wrought Washer Mfg., Inc. is the world's largest washer manufacturer and the dominant supplier of structural washers in the U.S. Wrought Washer acquired TurnaSure with the world's most comprehensive line of Direct Tension Indicating washers (DTIs) for bolts, studs, and anchors. This includes the award-winning View-Tite visual indicating DTI. Its two-step compression process sees extremely reliable appearance of the colored elastomer when the bolt has reached the correct tension. They are more durable, and predictable, and no need for washers underneath for expanded holes. All Wrought Washer's products are made in the U.S. with union labor.

Wurth Industry USA booth 665

Birmingham, Ala. **ph:** 800.336.3494 www.wurthindustry.com/construction Würth Industry USA is your one-stop shop

solution for the construction industry. We supply structural fasteners, anchor bolts, double end studs, tools, PPE and safety, sealants and chemicals, abrasives, pipe clamps and hangers, electrical products, and more.

Wuxi Zhouxiang Laser Machinery Co., Ltd. booth 1305 Wuxi, Jiangsu

China ph: 86.510.8879.4887 www.wxzhouxiang.com

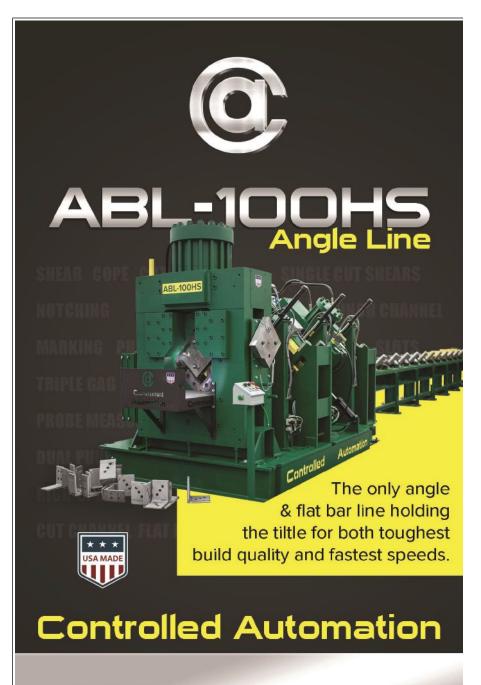
China Zhouxiang Group was established in 1991 and has fixed assets of CNY200 million and more than 400 staff. Zhouxiang is a high-tech enterprise which combines science, technology, industry production, and trade into one. Our products mainly include H-beam welding lines, CNC cutting machines, laser cutting machines, H-beam assembly machines, H-beam welding machines, H-beam straightening machines, shot-blasting machines, box beam production lines, pipe fabrication equipment, welding positioners, edge milling machines, CNC drilling machines, and plate rolling machines.

X SERIES USA booth 975

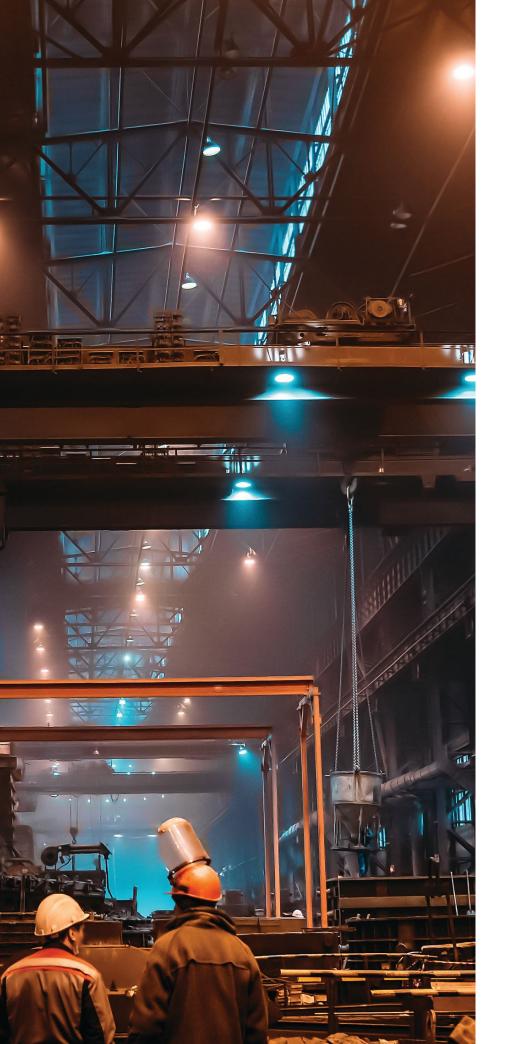
Bozeman, Mont. **ph:** 909.265.5400 vww.xseriesusa.com



X-Series Inc. offers a comprehensive range of advanced metal fabrication machine tools, including laser cutting, robotic beam welding, beam coping and drilling, and metal forming solutions. With a focus on high-performance without the high price tag, X-Series empowers metal fabricators with versatile equipment that enhances productivity, while maintaining a high level of REAL local service and support. Known for driving innovation and customer success, X-Series supports fabricators in structural and miscellaneous metals by providing equipment without compromise.



501.557.5109 | www.controlledautomation.com



Quality Management Company, LLC (QMC) is seeking qualified

INDEPENDENT CONTRACT AUDITORS

to conduct site audits for the American Institute of Steel Construction (AISC) Certified Fabricators and Certified Erector Programs.

This contract requires travel throughout North America and limited International travel. This is not a regionally based contract and a minimum of 75% travel should be expected.

Contract auditors must have knowledge of quality management systems, audit principles and techniques. Knowledge of the structural steel construction industry quality management systems is preferred but not required as is certifications for CWI, CQA, or NDT. Prior or current auditing experience or auditing certifications are preferred but not required.

Interested contractors should submit a statement of interest and resume to **contractor@qmcauditing.com**. Exhibitors in this list are divided by category to make it easier to find companies you'd like to connect with in Louisville.

NASCC: THE STEEL CONFERENCE CONNECT BY CATEGORY (As of February 17, 2025)



Armatherm Thermal Bridging Solutions CAI Software EHS Momentum, LLC InfoSight Corporation P2 Programs STRUMIS LLC



AKYAPAK USA Albina Co. Inc. Armatherm Thermal Bridging Solutions Baco Enterprises Inc. Bend-Tech CAMBCO, Inc. Chicago Metal Rolled Products DAVI, Inc. FACCIN USA, Inc. Kottler Metal Products, Inc. Max Weiss Co., LLC Paramount Roll and Forming, Inc. Trilogy Machinery, Inc.



Research Council on Structural Connections Shandong Hanpu Machinery Industrial

Co., Ltd. St. Louis Screw & Bolt Structural Bolt and Manufacturing, Inc. Threaded Fasteners, Inc. Threadline Products, Inc. TRU-FIT PRODUCTS Wrought Washer Wurth Industry USA

4 Bridge Components & Systems

AA Anchor Bolt, Inc. Acrow Bridge ALTAIR Applied Bolting Technology, Inc. Armatherm Thermal **Bridging Solutions** CAST ČOŇNEX **Cleveland City Forge** Con-Serv Inc. Consolidated Pipe & Supply Company Controlled Automation, Inc. D.S. Brown DGS Technical Services, Inc. Fabreeka International, Inc. FATZER AG **FICEP** Corporation Flame On, Inc. GEKA USÁ Graitec GRM Custom Products Haydon Bolts, Inc. Inventory Sales Company National Steel Bridge Alliance Nucor - Corporation Nucor Skyline R.J. Watson, Inc. **RBC** Lubron Bearing Systems Inc. Short Span Steel Bridge Alliance Threaded Fasteners, Inc. Valmont Coatings Voss Engineering, Inc. Wrought Washer Wuxi Zhouxiang Laser Machinery Co., Ltd.



American Society for Nondestructive Testing (ASNT) American Welding Society Fabricators & Manufacturers Assoc. SE Careers Vegazva Technologies



AMPP Carboline Charlie Irwin Painting, LLC (CIP) Color Works Painting, Inc. **Doerken Coatings** EPAcoat, Inc. International Zinc Association John A. Papalas & Co. PPG Protective & Marine Coatings Rolling Plains Construction, Inc. Sherwin-Williams Protective and Marine Sumter Coatings, Inc., an Ergon Company Valmont Coatings Wurth Industry ŬSA

7 Construction & Project Management

Acrow Bridge American Galvanizers Association ARISE: Assembly & Robotics Innovation in Steel Building Erection ATF WORLD Inc. Ben Hur Construction Co. Cano Steel DBM VirCon EPAcoat, Inc. Flame On, Inc. Haydon Bolts, Inc. ISD Group USA KTA-Tator Wuxi Zhouxiang Laser Machinery Co.



Baumann USA Chicago Jack Service, Inc. Combilift Engineered Rigging GH Cranes & Components Holloway Houston, Inc. Magni Telescopic Handlers OTH Pioneer Rigging Swisher Tools, LLC



3D Engineering Global LLC AFF Design Services Inc. American Steel Detailing, LLC Anatomic Iron Steel Detailing ARISE: Assembly and Robotics Innovation in Steel Building Erection Arteras Inc. Blackstone Group Technologies Brainstorm Infotech CADeploy, Inc. Canam DGS Technical Services, Inc. Drivensteel Inc. Exact Detailing Ltd. GIZA Greenbrook Engineering Services Gsource Technologies LLC HI-Q DESIGN Inc. International Design Services, Inc. IRyS Global Inc. J. B. Long, Inc. JMT Consultants Inc. JPW Engineering Services LECGI Structural Engineering & Detailing LTC Virtual Design and Construction Magnum Consulting McLaren, a Division of KCI MOLD-TEK Technologies Inc. National Institute of Steel Detailing, Inc. New Millennium Nexus Steel Detailing, Inc. Ovation Services LLC Pan Gulf Technologies Qualis Solutions, LLC **Qubatic Steel Detailing LLC** SCHULLER&Company SDS2 by ALLPLAN Steel Tek Unlimited Structures Online STRUZON TECHNOLOGIES Inc. TDS Industrial Services Ltd. Team Detailing Solutions LLC Techflow Inc. Tectonix Steel, Inc. Trimble United Structure Detailing Inc. Vegazva Technologies VIRTUELE Whiteboard Technologies LLC

connect by category E CONFERENCE



Engineering

3D Engineering Global LLC Acrow Bridge AFF Design Services Inc. Allied Machine & Engineering Anatomic Iron Steel Detailing Atema Inc. ATF WORLD Inc. CADeploy, Inc. CWB Group DGS Technical Services, Inc. DuraFuse Frames Engineered Rigging Exact Detailing Ltd GI7A Graitec Greenbrook Engineering Services GRM Custom Products Gsource Technologies LLC HI-Q DESIGN Inc. **HRV** Conformance Verification Associates, Inc. IAPMO Uniform **Evaluation Service** Infasco International Design Services, Inc. IRyS Global Inc. ISD Group USA JMT Consultants Inc. JPW Engineering Services KTA-Tator Larson Engineering, Inc. LECGI Structural Engineering & Detailing LUSAS Magnum Consulting McLaren, a Division of KCI Meyer Borgman Johnson MOLD-TEK Technologies Inc. New Millennium **Ovation Services LLC** Pan Gulf Technologies Power of Design Group, LLC Qubatic Steel Detailing LLC SidePlate / MiTek Steel Founders' Society of America Steel Tube Institute Team Detailing Solutions LLC Terracon Consultants, Inc. United Structure Detailing Inc.



Vegazva Technologies

AFF Design Services Inc ARISE: Assembly and Robotics Innovation in Steel **Building Erection** Ben Hur Construction Co. Danny's Construction Company, LLC GWY, LĹC Ironworkers / IMPACT Red Cedar Steel Swisher Tools, LLC The Walsh Group Trimble

Galvanizers American Galvanizers

NASCC: THE STEEL

15

16

Atlas Tube

HSS

Bull Moose Tube Company

Cutting Edge Steel & Stair

Nucor Tubular Products

Steel Founders' Society

Serviacero USA

of America

Steel Tube Institute

Maruichi Leavitt Pipe And Tube

Joists & Deck

Manufacturers

Association AZZ Metal Coatings Doerken Coatings Infasco Portland Bolt &

Manufacturing Co. South Atlantic Galvanizing Threaded Fasteners, Inc. V&S Galvanizing Valmont Coatings

Grating 13) & Grating

Fasteners Grating Fasteners IKG Indiana Grating Pvt. Ltd. Interstate Gratings Lichtgitter USA Miner Grating Systems, a Powerbrace Company Ohio Gratings, Inc. Serviacero USA Soitaab USA Inc.

Hand Tools/ Portable **Equipment &** Accessories

Abrafast.com/ The Blind Bolt Co. Allied Machine & Engineering American Punch Company **Badger Products USA** Chicago Jack Service, Inc. Cleveland Punch & Die Co. **Cleveland Steel Tool** Columbia Safety and Supply Eastern Pneumatics & Hydraulics, Inc./McCann Equipment Ltd. GH Cranes & Components **GRM** Custom Products GWY, LLC Hilti Inc. Holemaker Technology HMT HYTORC Innovative Transport Solutions (ITS) Inventory Sales Company KTA-Tator LS Industries NuWave Laser Cleaning OTH Pioneer Rigging Shandong Hanpu Machinery Industrial Co., Ltd. Structural Bolt and Manufacturing, Inc. Swisher Tools, LLC TRU-FIT PRODUCTS Vectis Automation Virtek Vision Wurth Industry USA

AFF Design Services Inc ASC Steel Deck ATF WORLD Inc. Canam Cano Steel Cleveland Punch & Die Co. COMSLAB CSC – Canam Steel Corporation DACS, Inc. **GEKA USA** Gonza Joist IAPMO Uniform Evaluation Service MARKO Metal Systems New Millennium Nucor – Corporation Nucor Vulcraft/Verco Group Steel Deck Institute Steel Joist Institute Swisher Tools, LLC Team Detailing Solutions LLC

Marking & 17 Traceability

Daito Seiki Co., Ltd. Messer Cutting Systems NuWave Laser Cleaning Soitaab USA Inc. STRUMIS LLC

Materials/ Engineering/ 18 **Testing &** Inspection

Accurate Perforating American Galvanizers Assoc. American Society for Nondestructive Testing (ASNT) American Welding Society AMPP Carboline ClimaSpec CWB Group Doerken Coatings Engineered Rigging **Fickett Structural Solutions** Holloway Houston, Inc. HRV Conformance Verification Associates, Inc. IAPMO Uniform Evaluation Service KTA-Tator Project + Quality Solutions Steel Founders' Society of America Terracon Consultants, Inc. Wrought Washer



ArcelorMittal International Gerdau Nucor – Beam Mill Group Nucor – Plate Mill Group Stainless Structurals Steel Dynamics Long Products Group voestalpine Tubulars



AA Anchor Bolt, Inc. Accurate Perforating AISC Education Foundation & Bookstore AKYAPAK USA Allied Machine & Engineering American Institute of Steel Construction American Punch Company American Society for Nondestructive Testing (ASNT) American Welding Society Anatomic Iron Steel Detailing Assoc. of Women in the Metal Industries **Badger Products USA** Baumann USA Blair Corporation C.M. Mockbee Co. Cleveland Punch & Die Co. ClimaSpec Columbia Safety and Supply Consolidated Pipe & Supply Co. CWB Group Daito Seiki Co., LTD Enidine Fabreeka International, Inc. Fabricating & Metalworking Magazine Fabricators & Manufacturers Assoc. Graitec Great River Economic Development Foundation Holloway Houston, Inc. Informed Infrastructure Ironworkers / IMPACT IRyS Global Inc. Jinan Acme CNC Equipment Co., Ltd. John A. Papalas & Ćo. JPW Engineering Services LAP Laser LLC MetFin Shotblast Systems NASCC Exhibit Sales National Steel Bridge Alliance Nitto Kohki U.S.A., Inc. NuWave Laser Cleaning OTH Pioneer Rigging Research Council on Structural Connections SERVO-ROBOT SEU by SE Solutions, LLC Simpson Strong-Tie Co. Steel Erectors Association of America Steel Plate Steel Plus Network Structural Engineering Institute of ASCE Structural Stability Research Council Superior Glove Tecoi USA Viking Wheel Blast Systems Virtek Vision Voss Engineering, Inc. Whiteboard Technologies LLC X SERIES USA



NASCC: THE STEEL connect by category



Applied Bolting Technology, Inc. Badger Products USA Chicago Clamp Company Chicago Jack Service, Inc. Columbia Safety and Supply EHS Momentum, LLC GWY, LLC **HYTORC** Innovative Transport Solutions (ITS) Ohio Gratings, Inc. OTH Pioneer Rigging Skidmore-Wilhelm Wurth Industry USA



ALTAIR Autodesk Bend-Tech Bentley Systems, Incorporated Bluebeam Inc. Brvzos CAI Software Controlled Automation, Inc. Dlubal Software, Inc. EHS Momentum, LLC **ENERCALC** FabStation **FICEP** Corporation GIZA Graitec Gsource Technologies LLC HEXAGON IDEA StatiCa US LLC IFS Inc. International Design Services, Inc. IRyS Global Inc. ISD Group USA LARSA, Inc. LTC Software Solutions 111545 Machitech Messer Cutting Systems OpenBrIM Platform **Ovation Services LLC** P2 Programs Pan Gulf Technologies Prodevco Robotic Solutions Inc. Qnect LLC Raken RISA SCHULLER&Company SDS2 by ALLPLAN Shop Data Systems, Inc. Simpson Strong-Tie Co. SkyCiv Engineering Steel Projects Corp Steel Tek Unlimited STRUMIS LLC Trilogy Machinery, Inc. Trimble Virtek Vision Voortman Steel Machinery

Stairs/Railings & Misc. Steel

Accurate Perforating **Action Stainless** Cano Steel Cutting Edge Steel & Stair Daito Seiki Co., Ltd. IKG Innovative Transport Solutions (ITS) ISD Group USA JPW Engineering Services KALTENBACH Kottler Metal Products, Inc. Ohio Gratings, Inc. **Ovation Services LLC** Pacific Stair Corporation SCHULLER&Company SY Stairs Team Detailing Solutions LLC Techflow Inc. Trimble Vegazva Technologies Virtek Vision **X SERIES USA**

Stationary 24 Fabrication Equipment

AGT Robotics AKS Cutting Systems Automated Layout Technology LLC Bend-Tech Cleveland Punch & Die Co. Cleveland Steel Tool Controlled Automation, Inc. Daito Seiki Co., Ltd. DAVI, Inc. Eastern Pneumatics & Hydraulics, Inc./ McCann Equipment Ltd. FMI **FICEP** Corporation GEKA USA HGG Profiling Equipment BV Innovatech Jinan Acme CNC Equipment Co., Ltd. KALTENBACH Kinetic Cutting Systems, Inc. Lincoln Electric LS Industries Machitech Messer Cutting Systems MetFin Shotblast Systems Ocean Machinery, Inc. Peddinghaus Corporation Pioneer Machine Sales Precision Steel Systems Prodevco Robotic Solutions Inc. Soitaab USA Inc. Tecoi USA Trilogy Machinery, Inc. Vectis Automation Viking Wheel Blast Systems Voortman Steel Machinery Wuxi Zhouxiang Laser Machinery Co., Ltd. X SERIES USA



Baco Enterprises Inc. Brown Strauss Steel Consolidated Pipe & Supply Company Delta Steel Infra-Metals Co. KALTENBACH King Steel Corporation Kloeckner Metals Metals USA North Shore Steel Serviacero USA Service Steel Warehouse Soitaab USA Inc. Steel and Pipe Supply Steel Founders' Society of America Steel Plate Sugar Steel Triple-S Steel / Intsel Steel Willbanks Metals Inc.

Structural Systems & Components

Abrafast.com/The Blind Bolt Co. Acrow Bridge Action Stainless AKYAPAK USA Allied Machine & Engineering AITAIR Anatomic Iron Steel Detailing Applied Bolting Technology, Inc. ARISE: Assembly and Robotics Innovation in Steel Building Erection C.M. Mockbee Co. Cano Steel CAST CONNEX Chicago Clamp Company Cleveland City Forge ClimaSpec Con-Serv Inc. Controlled Automation, Inc. CoreBrace Cutting Edge Steel & Stair DGS Technical Services, Inc. Doerken Coatings DuraFuse Frames Enidine **EVER** Seismic Fabreeka International, Inc. FATZER AG FICEP Corporation Fontana Fasteners, Inc. GEKA USA **GRM** Custom Products Gsource Technologies LLC Harbor Fab Haydon Bolts, Inc. Hercules Bolt Company **HYTORC** IAPMO Uniform **Evaluation Service** Infasco Innovative Transport Solutions (ITS)

Inventory Sales Company John A. Papalas & Co. KALTENBACH Kobelco Welding of America, Inc. Kottler Metal Products, Inc. LS Industries Messer Cutting Systems MetFin Shotblast Systems Mid Atlantic Global New Millennium Nexus Steel Detailing, Inc. Nucor - Corporation Nucor Skyline Nucor Vulcraft/Verco Group Ohio Gratings, Inc. Pacific Stair Corporation Peddinghaus Corporation SCHULLER&Company Seismic Bracing Company Serviacero USA SidePlate / MiTek Simpson Strong-Tie Co. Steel Deck Institute Steel Joist Institute Steel Tube Institute Trilogy Machinery, Inc. TRU-FIT PRODUCTS Vectis Automation Viking Wheel Blast Systems Voss Engineering, Inc. Wrought Washer Wuxi Zhouxiang Laser Machinery Co., Ltd. X SERIES USA



AA Anchor Bolt, Inc. Abrafast.com/The Blind Bolt Co. Action Stainless AGT Robotics AKYAPAK USA American Welding Society Atlas Tube Badger Products USA Cerbaco Ltd. Cutting Edge Steel & Stair CWB Group Haydon Bolts, Inc. Hercules Bolt Company Inventory Sales Company Lincoln Electric Miller Electric Mfg. LLC TRU-FIT PRODUČTS Vectis Automation Voortman Steel Machinery

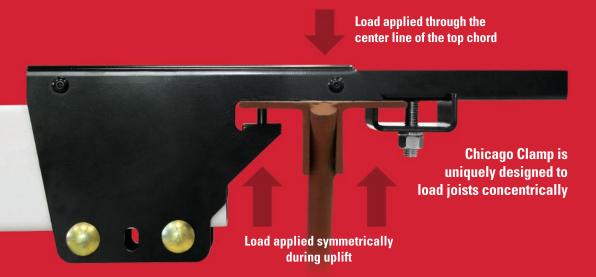
Exhibitors in this list are divided by category to make it easier to find companies you'd like to connect with in Louisville.

A Steel Joist Is A Beautiful Thing. Why Not Treat It Right?

"The design of open web steel joists is based on concentric loading. Asymmetrical loading can reduce joist strength."

- Steel Joist Institute

Treating a steel joist right requires loading joists in accordance with their design criteria. Loads must be applied to both chord angles without creating a torsional moment. With that fact in mind, Chicago Clamp Company has designed and tested their Tube Framing Clamp System.



- The clamp's strength and stiffness transfer the load vertically to the center of the joist's top chord in download and transfer symmetrically during uplift.
- Testing was performed using rocker end-attachments to avoid reliance on torsional strength of the joist chord.
- Clamping to joists avoids possible detrimental effects of welding to joists that are under stress due to loading.
- Clamping has the economic benefits of reducing labor costs, reducing installation mistakes, and reducing job delays (associated with locating and sizing curbs and openings prior to steel joist installation).





Meticulously Engineered. Rigorously Tested. **HICAGO CLAMP CO**

www.chicagoclampcompany.com

Phone: 708.343.8311 Email: info@chicagoclampcompany.com Location: Broadview, IL







new products

This month's new products include a load transfer solution, a method for erecting deck panels safely and efficiently, and a new floor bay comparison tool.

Chicago Clamp Company Panel Point Bridge

Often, specifiers instruct steel joist manufacturers to design their joists for uniform roof loads applied to the joist top chord, which frequently includes extra uniform loading to account for anticipated utility point loads that may hang from the joist. Since it is often unknown where these loads will occur during design, building contractors are limited to where they can apply these loads.

The Chicago Clamp Company Panel Point Bridge was designed to correctly transfer midspan lower chord loads to the lower chord panel points, the most common acceptable point of load application. It saves time and money by load-sharing with the bottom chord and quickly transfering the many sprinkler and piping loads to their acceptable locations. Try the Panel Point Bridge on your next project to suspend HVAC equipment, conveyors or other ceiling fixtures safely without welding or drilling. Visit www.chicagoclampcompany.com to learn more.



SJI Floor Bay Comparison Tool

The Steel Joist Institute's Floor Bay Comparison Tool—With Vibration assists engineers with comparing weights, costs, and floor depths for selected bay sizes and framing configurations. It can make comparisons using composite and non-composite designs for open web steel joists, wide-flange beams, and wide-flange girders, though only non-composite joist girders are currently available. It provides several input options, allowing for customization based on project criteria, designer preference, and owner and code requirements. Floor vibration criteria is checked for each framing system.

Floor Bay Comparison Tool Version 1.1 is available for free download at **www.steeljoist.com/ resources**. Complete the form or log in to your SJI account to access this tool.



BZI Panel Table

BZI's Panel Table has revolutionized construction by enabling panels to be assembled at ground level and lifted into place. Traditionally, stick-building had involved high-risk work at significant heights and substantial labor costs. BZI developed the Panel Table to address these concerns focusing on improving the safety and efficiency of projects.

The Panel Table is a transportable, self-contained table system consisting of two work platforms below 6 ft that allow workers to assemble joists, bridging, frames and deck into modules that can be transported or lifted into place to complete a structure. It has evolved through iterative improvements, adapting to rugged terrains, adverse weather, and heavier panels while surpassing industry safety and efficiency standards.

To complement the Panel Table solution, BZI created the MezzMaster to advance construction logistics further by enabling joists to be handled from below using a forklift. This eliminated the need for cranes at certain heights, reduced material movement and allowed the Panel Table to remain stationary during assembly. Together, these solutions are redefining job site logistics and delivering unmatched flexibility and speed. To learn more about BZI's innovative construction solutions, visit www.bzi.com.

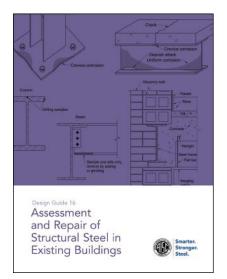


news & events

PUBLICATIONS AISC Design Guide 16 Now Available

AISC has released its latest design guide for purchase and download. Design Guide 16: Assessment and Repair of Structural Steel in Existing Buildings is available via free download for AISC members at **aisc.org/dg**. Nonmembers can visit the same website to download it for \$60.

As buildings age, the need for effective structural evaluation and maintenance becomes increasingly critical. Design Guide 16, written by Simpson Gumpertz & Heger associate principal Christopher Hewitt, SE, PE, discusses common considerations for initial assessments as well as methods for detailed inspection, evaluation, and nondestructive examination. It also explores several types of damage or deterioration commonly found in existing steel buildings and approaches for evaluating their structural effects. The guide offers practical advice for planning and executing repairs and is a complement to Design Guide 15: Rehabilitation and Retrofit (Second Ed.)



People & Companies

Severud Associates has promoted J. Benjamin Alper to senior associate principal, the firm announced in February. Since joining Severud Associates' engineering staff in 2005, Alper has taken on increasingly challenging projects and expanded his knowledge of structural systems, including the use of specialized materials such as fiber-reinforced polymers. He currently serves as a voting member of the Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE/SEI 7) main committee and its seismic loads subcommittee. He is also active with NCSEA, NYC Buildings, and the Structural Engineers Association of New York. His portfolio of significant projects includes TSX Broadway in Manhattan, Terminal 6 at JFK International Airport in Queens, Weeksville Heritage Center in Brooklyn, and the LA Forum renovation in Inglewood, California.

The Steel Erectors Association of America (SEAA) has added AISC member and AISC certified steel erector EZARC Building Solutions, based in Lindon, Utah, to its network of SEAA/NCCER Ironworker Training Units and Assessment Sites. EZARC is one of the fastest-growing companies in Utah and upholds an exceptional commitment to safety, with an impressive EMR of 0.67 and a TRIR of 0.35.

The SEAA/NCCER Ironworker Training program provides members with premier craft training options, including Ironworker Levels 1, 2, and 3; reinforcement Ironworker Levels 1 and 2; rigger; signal person; crane operator; and SEAA's custom fabricator curriculum. SEAA also offers members access to its online SteelPros Training Portal, developed in partnership with Industrial Training International (ITI), which features exclusive ironworker training videos.

CERTIFICATION CORNER

AISC certification sets the quality standard for the structural steel industry and is the most recognized national quality certification program. It aims to confirm to owners, the design community, the construction industry, and public officials that certified participants, who adhere to program criteria, have the personnel, organization, experience, documented procedures, knowledge, equipment, and commitment to quality to perform fabrication, manufacturing, and/or erection. Find a certified company at **aisc.org/certification**.

The following U.S.-based companies were newly certified or renewed certification in at least one category from January 1 to 31, 2025.

Newly Certified Companies (January 2025)

Archer Day Inc. Avenel, N.J. Boston Bridge Services Inc.,

West Bridgwater, Mass. Diamond S Steel, Queen Creek, Ariz. EMCO Metal Products, Twin City, Ga. Georgia Specialty Metal Supply, Tyrone, Ga. J&M Steel Solutions, Inc., Lehi, Utah Lear West Fabrication, East Dublin, Ga. The Middlesex Corporation, Littleton, Mass. Timberland Inc, Vancouver, Wash.

Certification Renewals (January 2025)

A&D Welding, Winston, Ga. Accelerated Construction & Metal, LLC, Turlock, Calif. Ackerman and Baynes LLC, Baltimore

Ahlborn Structural Steel, Santa Rosa, Calif. Amber Steel Fabrication, Inc., Chandler, Ariz. American Steel & Aluminum Co., Inc.,

Grand Prairie, Texas

Amfab Incorporated, Bernalillo, N.M.

Anderson Charnesky Structural Steel, Inc., Beaumont, Calif.

Anderson Industrial Contracting, Baltimore Arcosa Telecom Structures, Muskogee, Okla. Arcosa Traffic Structures, Sumterville, Fla. Atlas Steel Erectors LLC,

Amelia Courthouse, Va. Baltimore Fabrication, Baltimore Barnett Steel Erection Inc., Thomasville, N.C. Barone Steel Fabricators, Brooklyn, N.Y. Ben Parker Company, Inc., Chattanooga, Tenn.

Certification Renewals (January 2025)

Black Cat Erectors, Fort Collins, Colo. Black Swamp Steel, Inc., Cincinnati Buckeye Steel, Inc., Barnesville, Ohio C&F Steel Company, Inc., Hamilton, Texas CAID Industries, a Division of Samuel,

Son & Co. (USA), Inc, Tucson, Ariz. cHc Fabricating Corp., Cincinnati Chesapeake Machining and Fabrication, Inc., Baltimore Clark Machine Corp., Baltimore Cooper Steel, Monroe, Va. Curry Steel, Inc., Polk City, Fla. Custom Metals, Little Rock, Ark. Cutting Edge Fabrication, Tucson, Ariz. Daunch & Hirschi Construction, Cleveland, Ga. Dixie Metal Products, Inc., Ocala, Fla. Dixie Southern Industrial, Inc., Polk City, Fla. Donner Steel Works, Inc., Lincoln, Neb. Dreicor, Inc., Erwin, Tenn. DSE Erectors, Inc., Jackson, Tenn. Eagle Fabricators, Inc., Houston Electronics Research, Inc., Chandler, Ind. Fabricraft, Inc., Briston, Tenn. Federal Steel & Erection Co., East Alton, Ill. Flores Welding, Inc., Spring Hope, N.C. Fowler General Construction, Richland, Wash. Fresno Fab-Tech, Inc., Sanger, Calif. Gibson Industrial Inc, Richmond, Va. Glenridge Fabricators, Inc., Glendale, N.Y. Grinder Fabricators & Erectors, Inc., Millington, Tenn. Hall Manufacturing Technology, Grove City, Pa. Harris Steel Erectors, Inc., Goldsboro, N.C. Hernandez Steel, Charlotte Hodge Fabrication, Inc., North Little Rock, Ark. IMMEC, Inc., Social Circle, Ga. Indiana Steel & Engineering Corp., Bedford, Ind. Industrial Fabricators, Inc., Chattanooga, Tenn. Inline Steel Fabricators, Yakima, Wash. J. C. MacElroy Company, Inc., Piscataway, N.J. Jacksonville Steel, Inc., Beebe, Ark. Jesse Engineering Company, Tacoma, Wash. Johnson Machine Works, Inc., Chariton, Iowa Joiner & Associates, Inc., Louisville, Ga. Jonquil Steel & Construction Co., Inc., Austell, Ga. Kennedy Fabricating, LLC, Splendora, Texas King Steel, Inc., Winder, Ga.

Klute, Inc., York, Neb.

Kully Pipe and Steel Supply, Hastings, Neb. KW Industries, Inc., East Bernard, Texas KW Industries, Inc., Sugar Land, Texas L&D Steel USA Inc., Largo, Fla. Larco Industries, Inc., Beaumont, Texas Lehigh Utility Associates, Inc., South Plainfield, N.J. Lexicon, Inc., Little Rock, Ark. LLS Steel Erectors, Jacksonville, Fla. Lubrite Technologies, LLC, Meadville, Pa. Martin's Metal Fabrication & Welding, Inc., Vacavilla, Calif. Matrix North American Construction, Inc., Pittsburgh Mazzella Welding & Fabrication Inc, Wellsburg, W.V. McMahon Steel Co., Inc., Chula Vista, Calif. Met-Con, Inc., Cocoa, Fla. Metro Steel, Inc., Warrenton, Wash. Metropolitan Steel, Inc., Lansing, Ill. Midsouth Steel, LLC, College Park, Ga. Midwestern Steel Fabricators LLC, Hammond, Ind. Minestone Construction LLC, Hillsborough, N.J. Mission Steel Fabrication, Montclair, Calif. Modern Shade, LLC, Austin Morrow Steel Erectors, Inc., Zephyrhills, Fla. Morrow Steel Fabricators, Inc., Zephyrhills, Fla. Nix Structural Fabrication, Rockport, Ind. Nuno Iron & Mfg. Inc., King City, Calif. Olson Steel, Fresno, Calif. Orizon Industries, Inc., Brookshire, Texas OWS Enterprises Inc., Wheeling, Ill. Ozark Steel, LLC, Farmington, Mo. Pace Metals, Albuquerque, N.M. Panel Steel, Inc., Loganville, Ga. PDM Precast, Carlisle, Iowa Performance Solutions LLC, Smyrna, Tenn. Phat Steel Inc., Bernalillo, N.M. Pioneer Erectors, Grand Rapids, Mich. Pioneer Steel, Inc., New Castle, Colo. Powers Construction & Engineering, Inc., Fresno, Calif. Precision Build Solutions, Gibsonton, Fla. Precision Build Solutions, Tampa, Fla. Prospect Steel Company, Little Rock, Ark. Prospect Steel, Armorel, Ark. Quality Iron And Steel LLC, Selmer, Tenn. Quality Machine & Welding Co., Inc., Knoxville, Tenn. Rainier Welding, Anacortes, Wash. Revolution Industrial, LLC, Chandler, Ariz.

CERTIFICATION CORNER

Rose Fabricating & Industrial Solutions, Covington, Tenn. Russellville Steel Company, Inc., Russellville, Ark. S&S Steel Fabrication, Inc., Hurricane, Utah S.T. Metal Works, Inc., Marietta, Ga. S.W. Funk Industrial Contractors, Inc., Chester, Va. San Joaquin Steel Co., Inc., Stockton, Calif. Scott Steel Services, Inc., Crown Point, Ind. Seiko Iron Works, Inc., Glendale, N.Y. Shickel Corporation, Bridgewater, Va. Skanska Koch, Inc., Carteret, N.J. Snyder Construction, LLC, Albuquerque, N.M. Southwest Steel Fabrication, LLC, Bonner Springs, Kan. ST Fabrication/Jabez Construction, Orting, Wash. St. George Steel LLC., St. George, Utah. State Steelworks, Marietta, Ga. Steel Fab, Inc., Jackson, Tenn. Steel Masters L.P., Houston Steelcon US LLC, New Waterford, Ohio Steelwind Industries, Inc., Oak Creek, Wisc. Stehl Corporation, Phoenix Structural Steel LLC, Wolcott, Conn. Structural Steel Services, Inc., Marion, Ind. Sturdisteel Company, Hewitt, Texas SunSteel LLC, Sunnyside, Wash. Superior Steel, Inc., Knoxville, Tenn. Superior Steel, LLC, Denham Springs, La. Suwannee Iron Works and Fence Inc, O'Brien, Fla. Swager Communications, Inc., Fremont, Ind. T.W.S. Fabricators, Inc., Pembroke Pines, Fla. Talley Metal Products, Inc., Hagerstown, Md. Tampa Steel Erecting Company, Tampa, Fla. TEC Industrial Maintenance & Construction, Kingsport, Tenn. Two State Construction Company, Inc., Thomson, Ga. Unique Metal Fabrication, LLC, Pittsburg, Kan. US Erectors, Inc., Pleasant Hill, Iowa W&W | AFCO Steel, Lubbock, Texas W&W | AFCO Steel, Abilene, Texas Walbridge Equipment Installations Inc. LLC, Detroit Walsh Construction II, Chicago Wayne Manufacturing, Zanesville, Ohio Weldforce Fabricators, LLC., Houston, Texas Weldway Steel Fabrication Inc., Oakdale, Calif. Wheelblast, Inc., Zephyrhills, Fla. White Hawk Inc., Marietta, Ga.

news & events

AWARDS

Weld Engineering Researcher to Receive \$300,000 Milek Fellowship



What if steel could be preheated to a lower temperature for welding, creating a safer working environment, cutting costs and emissions, and improving efficiency? University of California San Diego professor Machel Morrison, PhD aims to find out, and AISC is aiding his research with a fouryear, \$300,000 Milek Fellowship.

"This research may lead to lower preheat requirements for some of the most common steel shapes and plate—which would have huge benefits," said AISC Director of Research Devin Huber, PE, PhD. "This is precisely the kind of forward-thinking research that keeps structural steel at the forefront of efficiency, cost-effectiveness, and sustainability."

In the project, titled "Improving Efficiency and Sustainability of Steel Construction via Reductions in Preheat Temperatures for Welding," Morrison and his team will create a validated model to identify ideal temperature reduction conditions for a substantial number of weld joints that are routinely used for structural steel fabrication in the U.S. They will use small- and large-scale testing to verify the accuracy of that model.

As the 2025 Milek Fellow, Morrison will receive \$75,000 in annual funding (at

least half of which is intended to support a promising doctoral candidate), as well as free registration to the NASCC: The Steel Conference during the fellowship.

In 2024, Morrison earned an AISC Terry Peshia Early Career Faculty Award for his exceptional promise and continued excellence in structural steel research, teaching and service. His career, background, and more are detailed in the September 2024 Field Notes column (modernsteel.com/archives) and in the September 2024 Field Notes podcast (modernsteel.com/podcasts).

AISC introduced its Faculty Fellowship Award in 2004 and in 2011 renamed it the Milek Fellowship after William A. Milek Jr., former AISC Vice President of Engineering and Research, to recognize his invaluable contributions to AISC and the structural steel industry.

2024 Milek Fellow Mohannad Zeyad (M.Z.) Naser, PE, PhD, of Clemson University, is currently working to develop an AI design assistant dubbed "SteelGPT" that will flag potential improper designs or assumptions and offer engineers and fabricators suggestions to improve their designs. It's intended as a resource to help design engineers develop an optimized and safe design while speeding up the overall process.

SCHOLARSHIPS AISC Scholarship Applications Remain Open

The AISC Education Foundation and its partners will award more than \$189,000 for the 2025–2026 academic year to fulltime juniors, seniors, and master's students enrolled in architecture, engineering, and construction-related programs within the U.S. AISC is accepting applications for these scholarships through May 1.

- To be eligible, students must be:
- a full-time junior, senior, or masterslevel student at a U.S. university during the 2025–2026 academic year,
- majoring in civil engineering, architectural engineering, construction engineering, construction management, materials/metallurgical engineering, or architecture, and
- a U.S citizen or lawful permanent resident.

AISC Scholarships funded by AISC's structural steel industry partners have further eligibility requirements. To learn about eligibility requirements for each scholarship, visit **aisc.org/aisc-scholarships**.

GRANTS

AISC Campus Connection Grants Remain Available for 2025 Terms

AISC offers an exciting opportunity to bring high-quality speaking engagements to your campus. The AISC Education Foundation provides reimbursement grants—called AISC Campus Connection grants—to encourage university faculty and AISC student clubs to hold on-campus, in-person speaking engagements with inspiring leaders in the structural steel industry. They're still available for spring and fall 2025 terms.

A Campus Connection grant reimburses up to \$1,200. Bringing an industry leader to your campus can help students explore careers in design, research, and/ or construction management; learn about the latest innovations in structural steel; and expand the network of speakers, visitors, and industry guests to your school. Visit **aisc.org/campusconnection** to find instructions for how to apply and the application form.

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marketplace & employment



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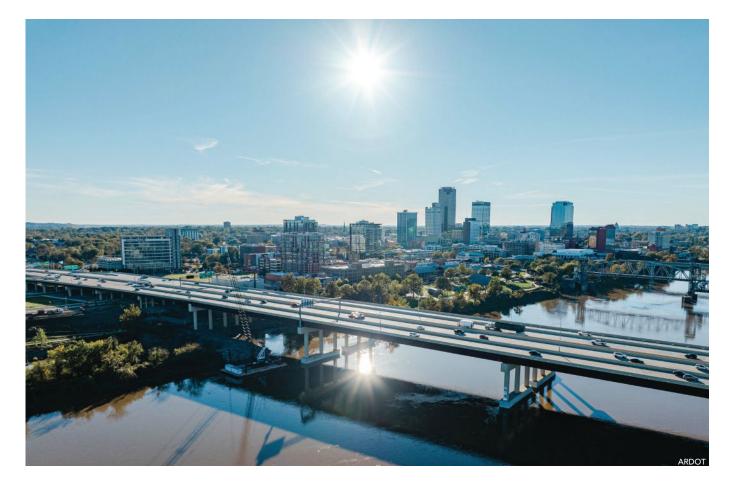
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structurally sound



Crossing Into New Territory

THE ARKANSAS DEPARTMENT OF TRANSPORTATION'S (ARDOT)

first design-build project was an undeniable success. The project, called I-30 Corridor Reconstruction Project (30 Crossing), reached substantial completion in December, months ahead of the originally projected summer 2025 timeline.

A crucial part of ARDOT's Connecting Arkansas Program, 30 Crossing replaced a 3,360-ft steel bridge over the Arkansas River, upgraded other Interstate 30 bridges, and widened I-30 through Little Rock and North Little Rock.

The joint venture's Kiewit Corp. and Massman Construction Team chose AISC full member W&W | AFCO Steel in 2019 to fabricate two new river bridges, plus 11 new overpass bridges. As the busiest route in Arkansas, carrying over 120,000 vehicles per day over the Central Arkansas portion of I-30 alone, the \$634 million 30 Crossing represents the largest project in ARDOT's history.

Now, following three years of fabricating more than 23,000 tons of steel, the largest bridges—the two spanning the Arkansas River—have continuous plate girders reaching 140 ft long and 144 in. deep. Additionally, the 11 new overpass bridges feature 27-in. to 96-in. continuous plate girders and 30-in. to 66-in. simplespan plate girders.

W&W | AFCO Steel's shops in Montgomery, Ala., Van Buren, Ark., and Little Rock fabricated the steel on the bridges and were crucial in helping the Kiewit-Massman team finish the project six months ahead of schedule.

Ironworkers.

In the U.S. and Canada: 4,000 Contractors 130,000 Ironworkers 157 Training Centers 6,736 Certifications in 2024 20,000 Apprentices and Trainees 21,198 Certified Ironworker Welders \$90 Million invested annually in training Billions in contracts for the most recognizable projects PUT YOUR TRUST IN SAFE AND PROFESSIONAL IRONWORKERS TO GET THE JOB DONE

*Stop by booth #180 at the NASCC steel conference!

ATLAS TUBE EXPANDS ITS



When Las Vegas' most iconic entertainment venue required difficult-to-source HSS to meet its lofty goals, Atlas Tube rose to the occasion. Since its debut in September 2023, Las Vegas' Sphere at the Venetian Resort has drawn audiences from around the world seeking an immersive experience that engages all senses.





atlastube.com

Scan for a downloadable copy of the project highlight. More on the design and engineering of Las Vegas' Sphere is covered in <u>Modern Steel</u> <u>Construction</u> and <u>Informed Infrastructure</u>. To learn more about Atlas or to discuss your design ambitions, call 800.733.5683 or visit <u>atlastube.com</u>