

TECHNICAL RESOURCES

Detailing Resources Available for Download

AISC's ePubs detailing resources have been updated to include the very first detailer training CD collection. AISC and NISD jointly created a series of 12 detailer training CDs in 2000. These CDs contained instructional videos and PDFs of example drawings covering the basics of the structural steel industry as well as 2D detailing.

AISC members can now download the contents of these golden-oldie CDs from the ePubs page: www.aisc.org/epubs. (This page features free content—such as AISC's latest standards and specifications—as well as members-only content.)

NASCC

Facility and Site Tours at NASCC

In addition to the more than 100 technical sessions, extensive product showcase and plentiful networking opportunities that will take place at NASCC: The Steel Conference in Toronto, March 26-28, this year's conference also offers free tours of a local ironworker training facility and a highly anticipated adaptive reuse project in Toronto's Downtown West.

Ironworkers have a knack for building soaring towers and bridges spanning thousands of feet. But how does an ironworker go from an apprentice to a full-fledged journeyman? Join Iron Workers Local 721, Toronto, the Ironworker Management Progressive Action Cooperative Trust (IMPACT) and AISC on a tour of the Ironworkers Training Facility to get a behind-the-scenes look at how ironworkers become "cowboys of the sky," hoisting steel beams, tying rebar, welding and much more.

Or, you can tour the Queen Richmond Centre West. To accommodate an incredibly tight sight, the project called for an 11-story reinforced concrete office tower to be perched atop of three, 70-ft-tall architecturally exposed structural steel (AESS) "delta frames." This also allowed

for the adaptive reuse of two existing buildings.

The construction site tour and presentation will focus primarily on the design and construction of the delta frames, which feature the massive 17.5-ton cast steel nodes. Also to be discussed is the "table-top" steel platform, which was designed to integrate with the reinforced concrete tower above. The delta frames are primary elements of the gravity and lateral force resisting systems for the building. Due to the extreme magnitude of loading, the delta frame members and cast nodes are concrete filled for composite action.

Both tours are scheduled for the morning of March 26, the first day of the conference. The ironworker training facility tour will take place from 8:30 a.m. to 11:30 a.m. and includes a boxed lunch. The construction site tour will be held from 8:00 a.m. to 10:30 a.m.

There is no charge to take these tours. However, registration is required and capacity is limited, so be sure to sign up early via your conference registration form to secure your spot! To register for NASCC and to view the advance program, go to www.aisc.org/nascc.

CORRECTION

In the November 2013 article "Special Delivery" (p. 30), The Herrick Corporation was incorrectly listed as the steel detailer for the Sutter Heath Eden Medical Center project in Castro Valley, Calif. The detailer was actually Candraft Detailing, Inc. (an AISC member), which won Tekla North American and Global Awards for the project.

People and Firms

- **Autodesk, Inc.**, has signed a definitive agreement with the shareholders of **Graitec** (an AISC member) to acquire certain technology assets, including Graitec's Advance Steel and Advance Concrete product lines and associated employees.
- **Trimble** has acquired AISC member **CSC, Ltd.**, from **ISIS Equity Partners LLP**. CSC's products include software solutions for the analysis and design of steel and concrete buildings. The company will become part of the Trimble Buildings' Structures Division.
- **EVRAZ North America** (an AISC member) announced **Jerry Reed** as the company's new executive vice president of long products, a position formerly held by president and CEO **Conrad Winkler**. Reed originally joined EVRAZ in 2011 as senior vice president of business development for North America, and for the past year has served as chief commercial and business development officer for **EVRAZ Highveld Steel and Vanadium** in South Africa.



- **Tom Harrison, S.E., P.E., AIA, LEED AP**, has accepted the position of chief structural engineer at **Holabird & Root**. He has spent 25 years in the industry, cofounded the **American Society of Civil Engineers (ASCE)** Sustainability Committee and has served as chairman on ASCE's Committee on Aesthetics in Design.

STEEL TOOLS

There's a Steel App for That

This past summer AISC launched a mobile app contest, with a prize of \$5,000, that tasked entrants with creating an app that could potentially improve the workflow of designers or builders of steel structures.

The winning app? I-Search, a free Android app (available on Google Play) that allows users to determine which wide-flange sections meet their search criteria.

Created by winning submitter Structurx, I-Search references members listed in the 14th Edition AISC *Manual* and 2010 AISC *Specification*. If you're measuring wide-flange sections in the field, it lets you perform quick beam checks. If you have a damaged column, you can use it to determine the column section for analysis checks. It can even help you if you're sitting in a design meeting and need to run quick calculations to estimate member sizes.

"Since I am a design engineer by profession, most of my ideas come from thinking of things that would help me in what I do," said Kip Ping of Structurx, who designed the app. "I have had some other ideas but was waiting to see how successful our first app was before committing time, energy and money to them. Also, I think apps are better when they are simple, and at some point an app can become too complicated."

The main startup screen shows a wide-flange with four search criteria options: flange width and thickness and web depth and thickness. The search criteria are entered in grey boxes to conduct your search. The more information you enter, the more

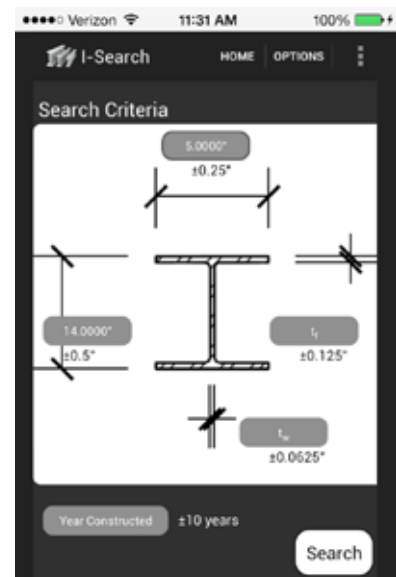
specific your search results become, and you can set tolerances for all search criteria. The database from which to select members includes current and historic I-shapes, back to 1873, for domestic rolling mills.

After providing your search criteria and hitting "Search," the wide-flange section(s) matching your criteria will appear in a list. You can then analyze one of the listed shapes as a column or beam with a user-specified applied load by entering the required information. For columns, this includes height, unbraced length in both weak and strong axes and material yield strength. For beams, it includes main span, top flange unbraced length, material yield strength, deflection limits and loads (dead and live only). You check the section as either a column or beam, then simply hit "Analyze" and the basic checks are completed. For columns, the checks include compactness, elastic buckling stress, critical stress and nominal capacity. For beams, they include shear, moment and deflection checks. You also have the option of designing with ASD or LRFD; this option is listed under the defaults along with the tolerances for the search criteria. In addition, the data is presented in basic text that can be copied and pasted and disseminated to other team members.

You can download the app at www.steeltools.org. It's free and can be modified to make improvements and incorporate new features. For example, I-Structure currently only lists domestically produced wide-flange sections, though

it could be modified to include angles, channels and HSS. Additionally, code checks per the 2010 AISC *Seismic Provisions* could be added. Another modification could be a check based on reduced sections by allowing the user to modify section properties. Applying metric conversions to the data is yet another possible modification. The coding for the app is available for modification at github.com/structurx/i_search and is licensed under GNU Public License.

AISC will post more mobile apps at www.steeltools.org as they are discovered or developed. If you have ideas or suggestions for new apps, visit www.aisc.org/steelapps or email solutions@aisc.org. To learn more about I-Search, visit www.structurx.com.



EVENTS

Steel Sessions at 2014 Structures Congress

Registration is now open for the 2014 ASCE/SEI Structures Congress, which will be held in Boston, April 3–5, at the Sheraton Boston Hotel and Hynes Convention Center.

The technical program features more than 120 technical sessions, including a track of steel-related topics:

- "New AISC Design Guides: AISC Design Guide 26, *Design of Blast Resistant Structures* and Design Guide 28, *Stability Design of Steel Build-*

ings," presented by the authors, provides an overview of these two new AISC Design Guides.

- "Steel Connection Innovations" features recent research and studies on various connection topics, such as partially restrained bolted beam-to-column connections, gusset plate stability and prediction of fracture of welded moment connections under cyclic loading.
- "Steel Braced Frame Innovations"

includes presentations on seismic design of multi-tiered braced frames and eccentrically braced frames.

- "Composite Construction" focuses on new analysis and design procedures for steel-concrete composite shear walls and composite frame systems.

AISC is a Gold sponsor of the Congress. To register for the Congress or view a Preliminary Program, visit content.asce.org/conferences/structures2014.

EVENTS

FABTECH Shines Optimistic Light on Future of U.S. Manufacturing

November's FABTECH conference and expo set records for the highest number of attendees, exhibitors and floor space in the show's history. Show organizers reported that 40,667 people attended and 1,573 exhibitors displayed their products and technologies across 650,000 sq. ft of floor space at Chicago's McCormick Place—all signs that U.S. manufacturing may have a bright future.

Featured panelists at the conference's State of the Industry—Executive Outlook Roundtable session agreed that the U.S. is in a "manufacturing renaissance."

Jeff Oravitz, president and CEO at MetroKote Corporation in Lima, Ohio, said the U.S. manufacturing sector renaissance is being driven by a surge in low-cost energy production. He explained that many American companies that survived the 2009 downturn ratcheted up productivity and made themselves more competitive, and he believes that growth is sustainable as long as the U.S. addresses the skilled labor shortage and the country's infrastructure needs.

Bill Adler, president of Stripmatic Products in Cleveland and chairman of the Pre-

cision Metalforming Association (PMA), believes there is certainly a manufacturing renaissance in many areas, thanks in part to the creation of new technologies. However, he is more cautious. Using a baseball analogy, he said that since the 2009 recession, manufacturing has "hit a single and is at first base." But we need to be careful "not to get picked off trying to go to second." Manufacturing must still figure out how to be globally competitive.

The session moderator, Alan Beaulieu, president of ITR Economics, commented that the manufacturing renaissance is helped by companies moving production back to the U.S., not because of patriotism but rather because costs are competitive. Oravitz agreed, saying that it bodes well for U.S. manufacturing that supply chains are getting shorter and there is a growing emphasis on quality.

The panel agreed that one factor that can slow the manufacturing renaissance is the shortage of skilled labor in the U.S., which was also the main topic of discussion at the conference's Solutions for a Qualified Workforce Pipeline panel session. A common theme in both sessions

was that the sector must do a better job promoting manufacturing as a career and work with educators and parents to expose the younger generation to today's modern technologies, innovations and current opportunities available in the industry.

"Manufacturing is an exciting field that offers good jobs with good wages and benefits making cutting edge products using new technologies," said Oravitz.

The economic session ended with Beaulieu asking the audience for a show of hands of those who are optimistic about the future of manufacturing; more than half raised their hands.

Next year's FABTECH will take place November 11–13 in Atlanta as well as internationally. FABTECH Canada will take place March 18–20 at the Toronto Congress Centre. On April 10–12, the inaugural FABTECH India, co-located with the India Institute of Welding's Weld India Exhibition, will take place in New Delhi. And FABTECH Mexico will be held on May 6–8 at the Centro Banamex in Mexico City.

For more information on FABTECH, visit www.fabtechexpo.com.

REGIONAL NEWS

AISC Has a New Face in the Upper Midwest

Matthew D. Brady, P.E., LEED Green Associate, has been promoted to Upper Midwest Regional Engineer in AISC's Market Development department, replacing Monica Shripka. He represents AISC in the states of Illinois, Indiana, Ohio, Michigan and Wisconsin, educating project



decision makers on the advantages of designing and building in structural steel. Most recently, he worked as an advisor

in AISC's Steel Solutions Center, developing conceptual solutions for a variety of steel structures including parking garages and multi-story residential, office, industrial, educational and healthcare buildings.

Prior to joining AISC, Matt worked in a variety of roles including construction, forensics and design, both as a consulting engineer and an internal designer for A/E firms. He has worked on the design of bridges, buildings and non-building structures, many of which involved steel design, detailing, fabrication and erection. He earned his bachelor's and master's degrees from the University of Illinois at Urbana-Champaign, and for the past 10 years he has served in the Illinois Army National Guard, including a tour to Afghanistan in 2008–2009.

"Matt has been with AISC for nearly

three years as a Steel Solutions Center Advisor and is very qualified to take on the role and challenges this new position brings," said Tabitha Stine, S.E., P.E., LEED AP, AISC's director of technical marketing. "He brings strong interpersonal skills, a broad background in the steel industry, experience with our members and vast technical knowledge to educate decision makers on the benefits and expertise in using structural steel. Matt will be a great asset to our field staff team, and we look forward to him helping increase the market share of fabricated structural steel in the region."

You can follow Matt on his AISC "My Region" Upper Midwest page or on Twitter (@UpperMidwestRE). To learn more about AISC's regional engineers and to see who's in your region, visit www.aisc.org/myregion.

BOARD OF DIRECTORS

AISC Elects Three New Board Members

AISC elected three new members to its Board of Directors at its recent Annual Meeting of the Members of the Institute in Cape Elizabeth, Maine.

Stan Baucum, director of structural products at Gerdau Long Steel North America in Midlothian, Texas; Dan Kadrmaz, president of TrueNorth Steel in West Fargo, N.D.; and John O'Quinn, executive vice president of Hirschfeld Industries' Bridge Division in Greensboro, N.C., will immediately begin serving on the AISC Board, assisting with the organization's planning and leadership in the steel construction industry.

"I am pleased to welcome Stan, Dan and John to the AISC Board," commented AISC Chair Jeffrey Dave of Dave Steel Company, Inc., Asheville, N.C. "This is a very experienced group, and their knowledge of our industry and experience with the activities of AISC will allow each of them to have an immediate positive impact on the Board. I thank them for their commitment of both time and resources while further serving our industry."

Baucum has nearly 30 years of experience in the steel and construction industry. His employment history with long steel production has included positions in quality control, sales and sales management, as well as serving as a director of engineered products. He also worked within the construction industry at one of the country's largest

general contracting firms. Previously, he served as a board member for the North American Steel Sheet Piling Association (NASSPA), participated in the European Committee for Iron and Steel Standardization in Brussels for the Structural Steels - Sheet Piling (ECISS/TC 10SC 4 Standardization) and has served on the MSCI Plates and Shapes Council since 2008.

Kadrmaz has served as president of TrueNorth Steel since 2005 and has also been the president of FTC Transport, Minnkota Windows and Rommesmo Companies; previously, he served as chief financial officer for six years for these companies. He has also served as president of Cornerstone Holding Company since 2009 and as a board member since 2006. He recently completed his two-year term as president of

the Central Fabricators Association, and before that he served for two years as vice president.

O'Quinn has 33 years of experience in the structural steel fabrication industry. As executive vice president of Hirschfeld Industries' Bridge Division, he's responsible for all management aspects of four steel fabrication plants in the eastern U.S. as well as two in San Angelo, Texas, and oversees a total of 650 employees. Previously, he served for four years as senior vice president of sales and operations for the company's East Coast Bridge Division; he joined the company in 2006 as its vice president of sales. He has also served on the Executive Council of the National Steel Bridge Alliance, AISC's bridge division, for the past three years.

You can view a full list of AISC's Officers and Board Members at www.aisc.org.



Baucum



Kadrmaz



O'Quinn

MARKET NEWS

One Billion Tons of Steel Recycled over Past Quarter Century

More than one billion tons of steel have been recycled by the North American steel industry since 1988, according to the Steel Recycling Institute (SRI), a business unit of the American Iron and Steel Institute (AISI). SRI marked its 25th anniversary in 2013 with this milestone achievement and the release of the 2012 steel recycling rates.

For 2012, the overall recycling rate for steel was 88% with nearly 84 million tons of steel recycled. This included rates on appliance and construction products, which are based on industry estimates of

retail and scrap collections.

On the structural side, based on construction and demolition industry estimates, about 98% of out-of-service structural plates and beams are recycled every year.

The steel industry's recycling accomplishments are also at the core of other environmental advances by the North American steel industry. Since 1990, the steel industry has improved its energy efficiency per ton by 27% and has decreased its CO₂ emissions per ton by 33%.

"The steel industry's internationally

recognized energy efficiency, coupled with the recycling rate that is the highest of any material, proves our commitment to sustainability and resource conservation," said Thomas J. Gibson, president and CEO of AISI. "For 25 years, steel's recycling successes have been spearheaded by the SRI and we look forward to another quarter century, where steel leads social, economic and environmental advances."

You can learn more about structural steel and sustainability on AISC's website at www.aisc.org/sustainability.