

DESIGN GUIDES

New Guide for Castellated and Cellular Beam Design Available

Building designers now have a valuable resource for the design of castellated and cellular beams in AISC's Design Guide 31: *Castellated and Cellular Beam Design*. This latest addition to AISC's design guide series provides technical guidance for the design of steel buildings using castellated and cellular beams.

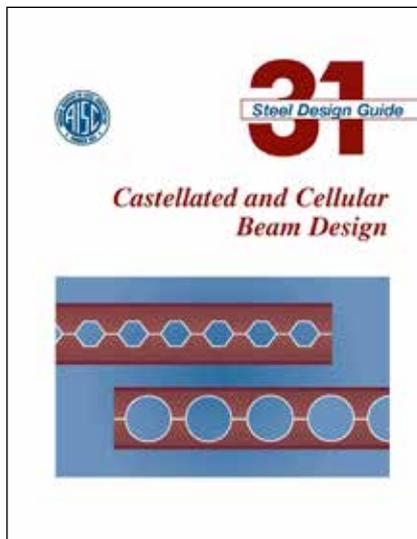
"Castellated and cellular beams offer some great benefits in steel construction," said David Dinehart, PhD, professor with the department of civil and environmental engineering at Villanova University, and coauthor of the guide. "Longer spans and the ability to run utilities through the web openings are just two advantages as compared to conventional sections. There are numerous research opportunities to further understand how to gain additional efficiencies from these beams."

The guide reviews the current state of practice of the design of castellated and cellular beams, including differences in failure modes with traditional beams. Detailed design examples, both composite and non-composite, are also included.

"This guide provides designers with a comprehensive resource for a state-of-the-art practice that adheres to the 2016 AISC *Specification for Structural Steel Buildings*," added Sameer Fares, SE, PE,

research and development structural engineer at New Millennium Building Systems and coauthor of the guide. "The web openings in these beams introduce new limit states and unique design considerations."

A PDF of the guide is available for free to AISC members (and \$60 for non-members) at www.aisc.org/dg. A printed version is also available for purchase at the link; the cost is \$40 for members and \$80 for nonmembers. A full article on the guide will appear in an upcoming issue of *Modern Steel Construction*.



BOOKS

New Book Offers Intriguing View of Notable American Structural Engineer

A new book, *The Structure of Design: An Engineer's Extraordinary Life in Architecture*, is a firsthand account of Leslie Earl Robertson's storied career in structural engineering—which has generated some of the most innovative and formally daring buildings of the modern era—as well as his extensive collaborations with several titans of the practice.

As a restless student from modest origins, Robertson's first encounters with engineering were almost accidental, yet he would go on to be lead engineer of the

landmark IBM buildings in Pittsburgh and Seattle while still in his early 30s. Immediately thereafter, he embarked on what would become his most renowned project, the World Trade Center, to be followed by scores of major buildings around the world.

The book provides a look at how the key discipline of engineering influences design, as told by a genius and poet of structure.

Visit www.monacellipress.com for purchasing information.

People and Firms

The Steel Erectors Association of America (SEAA) recently announced that its network of Ironworker Training Units has expanded from coast to coast with the addition of Orland, Calif.-based Rackley Company, Inc. (an AISC member and Certified erector).

"With continued steady growth from year to year and with many employees with 20-plus years [on the job] heading to retirement, Rackley faces the dilemma of maintaining a knowledgeable workforce," said Scott Rackley, president. "It was for this reason the company decided to establish SEAA/NCCER Ironworker Craft Training, with a future goal of offering Ironworker Apprenticeship." Currently, two other SEAA members have successfully established Ironworker Apprenticeships in Texas and Florida.

SEAA partnered with the National Center for Construction Education and Research (NCCER) to develop and initiate the Ironworker Craft Training Program in March 2014. Since then the program has grown to a network of training units in 11 states and the District of Columbia. The program also meets the U.S. Department of Labor's requirements for apprenticeships.

"The SEAA/NCCER Ironworker Craft Training Program will attract a desirable pool of qualified applicants and help new hires reach their full potential," Rackley added. "This will help us grow the next generation of great ironworkers and steel erectors."

To learn more about the program, visit www.seaa.net/Craft_Training. SEAA is also endorsed by NCCER for Rigger, Signal Person and Mobile Crane Operator certifications and credentials. For more information on becoming an SEAA-sponsored training unit or assessment site, contact Tim Eldridge at 980.722.9373 or craffttraining@seaa.net.

BRIDGES

NSBA Releases New Resources for Bolted Field Splice Design

NSBA has released a new document, *Bolted Field Splices for Steel Bridge Flexural Members*, which provides guidance on bolted field splice connections and corresponds with changes made in the 8th Edition AASHTO LRFD *Design Specification*. In the specification, the design of bolted field splices has been simplified to generate more efficient and economical bolted connections. NSBA's document provides a walk-through of the updated design procedure as well as three complete design examples for typical plate girders, deep plate girders and tub girders.

Additionally, NSBA Splice has been retooled. NSBA Splice is a free design tool for plate girder bridges and allows the designer to analyze various bolted splice connections to determine the most efficient

bolt quantity and configuration. It removes the time-consuming task of designing and checking a bolted splice connection and simplifies the process with input and output pages, and also allows the user to explore the effects of bolt spacing, bolt size, strength and connection dimensions on the overall splice design. The new version is presented in a Microsoft Excel spreadsheet format, allowing users with Microsoft Excel 2010 or newer to access and use.

The Splice download includes a design spreadsheet as well as two complete examples. The examples are the inputs and solutions for Examples 1 and 2 presented in *Bolted Field Splices for Steel Bridge Flexural Members*. To download both the document and the tool, visit www.steelbridges.org and click "NSBA Splice."



BRIDGES

New Steel Bridge Collaboration Guides Now Available

In conjunction with AASHTO, NSBA has released two Steel Bridge Collaboration documents, both available as free downloads. The documents join a growing list of AASHTO-approved guide and specification documents for use as references during the design, fabrication and erection processes.

G12.1 – 2016 *Guidelines to Design for Constructability* is an update to the 2003

document of the same title. G12.1 is intended for engineers, contractors and fabricators as a reference document to ensure efficient and economical girder design and construction. It features numerous changes that reflect the advancement of the industry over the past decade.

G2.2 – 2016 *Guidelines for Resolution of Steel Bridge Fabrication Errors* is a new document that addresses common

issues during the fabrication process, from a misaligned bolt hole to a mis-cut member, and provides the necessary guidance to ensure an economical fix that preserves the long-term resilience of steel girders.

To view the new documents and to learn more about the AASHTO/NSBA Collaboration, visit www.steelbridges.org/collaborationstandards.

ERECTOR NEWS

Ironworkers Announce Paid Maternity Leave Benefit

The Iron Workers (IW) and the Ironworker Management Progressive Action Cooperative Trust (IMPACT) announced a new paid maternity leave benefit at the recent 2017 Iron Workers/IMPACT Conference in San Diego. The organization is reportedly the first to introduce a generous paid maternity leave benefit in the building trades, and the announcement was made after a panel of ironworker women on safety

and diversity discussed the role of female ironworkers and unique challenges they face on the job site.

"We are very proud to be the first to introduce a paid maternity program in the building trades," said General President of IW, Eric Dean. "It's about time we make our industry a level playing field for women and make diversity and inclusion a priority."

The new IW paid maternity leave

benefit includes six months of pre-delivery and six to eight weeks of post-delivery paid leave.

"When we first started talking about it, I wasn't sure how we'd pull it off and what it would cost, but we realized that it's an investment because we want our well-trained ironworker women to come back to work," added CEO of Ben Hur Construction Co. and co-chair of IMPACT, Bill Brown.

CERTIFICATION

AISC Issues New Certification Program Requirements

AISC has issued new requirements for its Certified Building Fabricator Program and its new Hydraulic Steel Structures Program, which are now available at www.aisc.org/certification.

“We’re happy to introduce these improvements to our AISC Certification program,” said Charlie Carter, AISC’s president. “We are simplifying and strengthening the process for steel fabricators who participate, and providing even greater peace of mind for owners, engineers, regulators and others who specify our program.”

The requirements for the Certified Building Fabricator Program are the new governing criteria for the program and reference the *Standard for Steel Building Structures* (AISC 201-06, available at www.aisc.org/standards), which describes the essential elements of the quality management system for structural steel building fabrication.

The Hydraulic Structures Program is the newest addition to AISC’s current set of certification programs, which include building fabrication, bridge fabrication, component manufacturing and erection.

AISC developed the new program and requirements at the request of the United States Army Corps of Engineers and the needs of the marketplace. The requirements are the governing criteria for this program.

Applicants and participants can now apply for the Hydraulic Structures Program, and audits for building fabricator participants must now meet the new Building Fabricator Requirements. For questions, please contact AISC Certification at certification@aisc.org or 312.670.7520.

HIGGINS AWARD

Nominations Sought for 2018 Higgins Lectureship Award

Nominations are being accepted through August 1, 2017, for the prestigious T.R. Higgins Lectureship Award, which includes a \$15,000 cash prize. Presented annually by AISC, the award recognizes a lecturer-author whose technical paper(s) are considered an outstanding contribution to engineering literature on fabricated structural steel. The winner will be recognized at the 2018 NASCC: The Steel Conference, April 11–13 in Baltimore, and will also present their lecture, upon request, at various professional association events throughout the year.

Nominations should be emailed to AISC’s Janet Cummins at cummins@aisc.org. Or, if you’d prefer to mail your nomination, contact Janet for mailing information. Nominations must include the following information:

- Name and affiliation of the individual nominated (past winners are not eligible to be nominated again)
- Title of the paper(s) for which the individual is nominated, including publication citation
- If the paper has multiple authors, identify the principal author
- Reasons for nomination
- A copy of the paper(s), as well as any published discussion

The author must be a permanent resident of the U.S. and available to fulfill the commitments of the award. The paper(s) must have been published in a professional journal between January 1, 2012 and January 1, 2017. In addition, the winner is required to attend and present at the 2018 Steel Conference and also give a minimum of six presentations of their lecture on selected occasions during the year.

The award will be given to a nominated individual based on their reputation as a lecturer and the jury’s evaluation of the paper(s) named in the nomination. Papers will be judged for originality, clarity of presentation, contribution to engineering knowledge, future significance and value to the fabricated structural steel industry.

The current T.R. Higgins Lecturer is Todd A. Helwig, PhD, professor of civil engineering at the University of Texas at Austin, who received the award for his paper “Stiffness Behavior of Cross Frames in Steel Bridge Systems” and other papers related to stability bracing, as well as for his outstanding reputation as an engineer and lecturer. If your organization is interested in hosting a T.R. Higgins lecture, please contact Nancy Gavlin, AISC’s director of education, at gavlin@aisc.org.

The award is named for Theodore R. Higgins, former AISC director of engineering and research, who was widely acclaimed for his many contributions to the advancement of engineering technology related to fabricated structural steel. The award honors Higgins for his innovative engineering, timely technical papers and distinguished lectures. For more information about the award, visit www.aisc.org/TRHigginsAward.



Todd Helwig, current T.R. Higgins lecturer.