

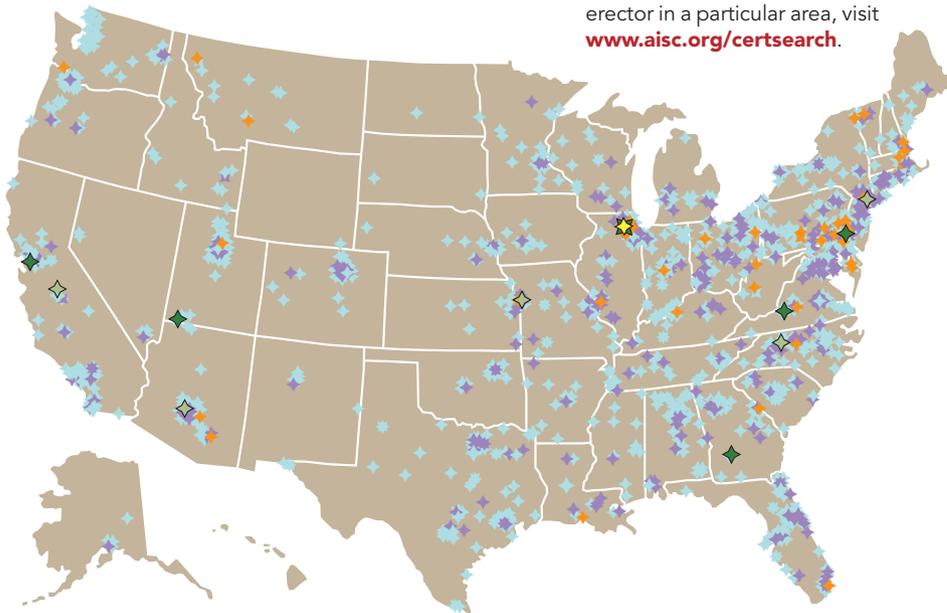
FEBRUARY 2011

## This Month in MSC

- ▶ When your building design has to work with a “missing” floor, then accommodate its addition years down the road, you have to plan ahead. Find out how Fluhrer Reed engineers met that challenge in the article on page 38.
- ▶ Registration is now open for the 2011 NASCC: The Steel Conference at [www.aisc.org/nascc](http://www.aisc.org/nascc), and there could hardly be a better place for this year’s event than downtown Pittsburgh. Read about some of the things you won’t want to miss beginning on page 42.
- ▶ The Steel Joist Institute’s new *Specification and Code of Standard Practice*, which have been incorporated into the *IBC*, contain newly defined “Add-Load” and “Bend-Check Load” provisions. You can learn how to apply them beginning on page 48.
- ▶ Have a favorite prize-winning steel bridge from years gone by? Next month you can vote for it in this year’s NSBA Prize Bridge Awards Competition. Details are on page 56.

## Newly Certified Facilities: December 1–31, 2010

To find a certified fabricator or erector in a particular area, visit [www.aisc.org/certsearch](http://www.aisc.org/certsearch).



Existing Certified Fabricator Facilities

Existing Certified Erector Facilities

Existing Certified Bridge Component Facilities

Newly Certified Fabricator Facilities

Newly Certified Erector Facilities

Newly Certified Bridge Component Facilities

### Newly Certified Fabricator Facilities

B & B Steel Fabrication, Washington, Utah  
 Canatal Steel USA, Roanoke, Va.  
 Commercial Fabricators, Inc., Bridgeview, Ill.  
 Gerdau Ameristeel, Albany, Ga.  
 Glazier Iron Works, Inc., Hayward, Calif.  
 Rhoads Industries, Inc., Philadelphia, Pa.

### Newly Certified Erector Facilities

DS Duggins Welding, Inc., Winston-Salem, N.C.  
 Liberty Erection Inc., Kansas City, Mo.  
 M.S. Iron Works, Inc., Ossining, N.Y.  
 Parker & Sons Steel Erecting Inc., Phoenix, Ariz.  
 Steelcon, Inc., Fresno, Calif.

### Newly Certified Bridge Component Facilities

Commercial Fabricators, Inc., Bridgeview, Ill.

## People and Firms

- The American Institute of Architects has appointed **Robert Ivy**, a Fellow of the AIA, as its new executive vice president and chief executive officer, effective February 1, 2011. Ivy has been the editor-in-chief of McGraw-Hill’s *Architectural Record* since 1996. Among other accomplishments, he led the magazine to a 2003 National Magazine Award for General Excellence. Prior to joining McGraw-Hill, he was a principal with Ivy Architects and the managing partner with Jackson, Miss.-based Dean/Dale, Dean and Ivy for nearly 14 years. More information is available on the AIA website, [www.aia.org](http://www.aia.org).



- **Joseph Ralph Warlick, Jr.** of Tampa, Fla., died November 10, 2010. He was 76. Warlick served as an AISC regional engineer in Atlanta from 1964 to 1972. He subsequently worked for Musselman Steel and Florida Steel, and in 1983 founded Warlick Engineering, Inc.
- **Carol Benassi** has joined Thornton Tomasetti’s building performance practice as vice president in the Irvine, Calif., office. An architect with more than 26 years of design, construction and project management experience, Benassi brings a broad background to her new position in forensic analysis, litigation support, project design and construction, and has provided expert witness



testimony on building envelope and construction issues. She previously founded C Benassi Architecture, an independent forensic consulting firm in Irvine, Calif., where she participated in all aspects of forensic investigation. She was also one of the first women to own and operate a general contracting company in Utah called Birch Construction, Inc. She is a licensed architect in California and Utah, and a commissioner for the State of California Division of Architectural Examiners.

## NASCC: THE STEEL CONFERENCE

## The Steel Conference Comes to the Steel City

The 2011 NASCC: The Steel Conference convenes this year on May 11–14 at the David L. Lawrence Convention Center in Pittsburgh. This annual gathering is presented by the American Institute of Steel Construction (AISC) and this year features more than 90 technical sessions and practical seminars on the latest design and construction techniques. The concurrent trade show will feature products and services from nearly 200 exhibitors ranging from engineering software to the newest fabrication equipment, as well as networking and educational opportunities.

NASCC is the premier educational event for structural engineers, fabricators, detailers, educators, and others involved in the design and construction of fabricated steel buildings and bridges. In addition to conference seminars, attendees have many opportunities to exchange ideas with their peers at networking events including the annual Fabricator Roundtable and newly added Steel Industry Roundtable. Conference attendees can earn up to 28 PDHs (Professional Development Hours) while learning from leaders in the design and construction industry such as Lawrence Griffis from Walter P Moore and Duane Miller from The Lincoln Electric Company.

## The Program

You won't want to miss the keynote sessions. David J. Vater, RA, trustee at the Pittsburgh History & Landmarks Foundation, will present Wednesday's opening keynote with a visual tour of Pittsburgh's architecture and engineering heritage. He will highlight the area's historic iron and steel industry and some of the country's remarkable places built with Pittsburgh steel, engineering expertise, and technology.

Another keynote session expected to draw a large crowd is the 2011 T.R. Higgins Lecture presented by Charles W. Roeder, P.E., Ph.D., on Friday. Roeder will discuss his research on concentrically braced steel frames and why they are a practical and economical structural system for controlling damage during seismic events.

Descriptions and a schedule of sessions and seminars offered throughout the week are described in the Advance Program for the 2011 NASCC: The Steel Conference, available online at <http://bit.ly/fqtyyt> or as a PDF download at [www.aisc.org/nascc](http://www.aisc.org/nascc).

For the 10th consecutive year the Struc-

tural Stability Research Council's Annual Stability Conference is being held in conjunction with the 2011 NASCC. New to the show this year is the Sustainable Steel Conference focusing on a wide range of issues ranging from thermal bridging to LEED requirements to legal issues with green design and construction. This conference is sponsored by AISC, and, like the Stability Conference, attendance at all of the sessions is included with NASCC registration.

## The Exhibition

The exhibit hall opens on Wednesday at 3 p.m. and is also the location of the Welcome Reception that evening from 6 to 8 p.m. The exhibits are also open from 9 a.m. to 5:30 p.m. on Thursday and from 7:30 a.m. to 2 p.m. on Friday. Below is a small sample of the kind of things to be shown.

Shuttlelift's new SB Series rubber-tired gantry crane provides users with a highly economic solution in a competitive marketplace. Designed to handle loads from 30 to 100 tons, the single-beam gantry crane puts the load directly under the frame of the crane, eliminating potential stability issues that might arise using a rough-terrain crane, crawler crane, reach stacker or forklift. Learn more at **NASCC Booth 1015** or [www.shuttlelift.com](http://www.shuttlelift.com).

Trilogy Machinery Inc. will show the Sunrise Fluid Power line of ironworking and

punching machines, for which it is the U.S. distributor. Designed to perform multiple functions, Sunrise Ironworkers are offered in single-cylinder and dual-cylinder configurations. Learn more at **NASCC Booth 904** or [www.trilogymachinery.com](http://www.trilogymachinery.com).



ASTM International offers around-the-clock access to technical standards and related information through its Standards and Engineering Digital Library. For a demonstration of what's available, stop at **NASCC**

*Continued on page 18.*



Continued from page 17.

**Booth 1610**, or go to [www.astm.org](http://www.astm.org).

American Punch Company will be displaying its full product line of punches, dies, shear blades, annular cutters and structural steel drills, including the new SHO punch, which offers higher strength and greater toughness. Visit American Punch at **NASCC Booth 511** or online at [www.americanpunchco.com](http://www.americanpunchco.com).



[americanpunchco.com](http://www.americanpunchco.com).

New Millennium Building Systems will reveal what's new in "flexible-to-the-finish" steel joists and metal decking supply, along with a project-based demonstration of the company's latest Dynamic Joist digital steel joist design component. The component is an add-on to Tekla Structures 16.1. Full copies will be given away free to support 3D steel joist design and BIM-based project collaboration. Also showcased will be special profile joists, metal decking and castellated beams, all available nationwide. Visit **NASCC Booth 905** or [www.newmill.com](http://www.newmill.com).

Applied Bolting Technology will feature its Squirter Direct Tension Indicator, a mechanical load cell that measures bolt tension independently of torque. Bright orange silicon appears around the edges of the Squirter DTI when the bolt has been properly tensioned. The company will show its new detailed training videos, produced by the crew of the Discovery Channel's "Build

it Bigger." These free videos show how the Squirter DTI works and how to use it efficiently in the field. See them at **NASCC Booth 1328** or download them by visiting [www.appliedbolting.com](http://www.appliedbolting.com).

### The Venue

Those attending the 2011 NASCC: The Steel Conference will find themselves within just a few steps of numerous significant steel structures, as well as a variety of cultural treasures.

Walk about four blocks into the downtown area, heading away from the Allegheny River, to visit the U.S. Steel Tower. Completed in 1970, the triangular 64-story structure was a demonstration project for the use of weathering steel for buildings and was the first building to use liquid in the steel columns as fire protection. Its name changed to the USX Tower for a time, but in 2009 reverted to being the U.S. Steel Tower.

While you're there, go downstairs into the Steel Plaza "T" station to see tile and mosaic murals depicting the steel heritage of the area.

Head back toward the Allegheny River and the Point (which marks the beginning of the Ohio River) to see the beautiful and historic 6th, 7th and 9th Street Bridges. Just a short walk from the convention center, these nearly identical bridges have now been rechristened to honor baseball great Roberto Clemente, pop artist Andy Warhol, and naturalist Rachel Carson. In 1928 the 6th Street Bridge was the winner of AISC's first Prize Bridge Awards. It also is in an ad that frequently appears in *MSC*.

Crossing the river brings you to the Andy Warhol Museum. One of the four Carnegie Museums of Pittsburgh, it is housed in a historic old structure on San-

dusky Street that for years was the region's premiere source for music and musical instruments. Warhol was born and raised in Pittsburgh and the museum collection includes more than 8,000 of his works.

Just two blocks down the river is PNC Park, home of Pittsburgh Pirates Baseball. This beautiful stadium, which opened in 2001, was designed specifically to provide a stunning view of the city skyline (which it does). The Pirates play at home most of the second week in May, just in case you were wondering.

Thinking about arriving the weekend before the conference? Set aside an afternoon for an excursion to Kennywood Park, perched atop the hillside across the Monongahela River from U.S. Steel's Edgar Thompson Works, which has been operating in the Mon Valley since 1875. The park is home to many of the world's great rollercoasters, among them the Steel Phantom. Opened in 1991 with a drop of more than 220 ft and a peak speed of 85 mph, the Steel Phantom was overhauled in 2000 and in 2001 reopened as the Phantom's Revenge. Kennywood is open only on weekends in early May, so it shouldn't interfere with any sessions on your schedule.

### Register Now

Registration for the 2011 NASCC: The Steel Conference is now open at [www.aisc.org/nascc](http://www.aisc.org/nascc), where you can also arrange for hotel reservations. Pre-registration offers a substantial discount over on-site registration, but must be completed by May 5, 2011.

### EDUCATION

## Addressing Fatigue and Fracture

John W. Fisher, P.E., Ph.D., will present the 2011 Landis-Epic Lecture in the Frick Fine Arts Auditorium at the University of Pittsburgh. The title of his talk is "Fatigue and Fracture: A Challenge for Existing and Future Steel Bridge." It is scheduled for 4:30 p.m. on March 17. There is no charge for admission and attendees will receive one PDH.

Fisher is professor emeritus of civil engineering at Lehigh University and director of its ATLSS Engineering Research Center. For more information, call Monica Davis at University of Pittsburgh, 412.624.6814.



# news

## PUBLICATIONS

### Engineering Journal: "Go green!" or "Paper, please!"

Effective immediately electronic distribution is the default for AISC's *Engineering Journal*. Although subscribers still have the option to receive a printed copy, they must opt in to do so.

AISC has a tradition of embracing technology when it makes sense. For example, AISC offices feature motion-sensing light switches, its membership renewal process is via email, and all AISC codes and standards are available for free online. In 2010, *Engineering Journal* continued that tradition with the creation of a digital version of the journal to reach more of AISC's membership.

While there are no plans to discontinue the paper version of *EJ*, the change making paper subscriptions to *EJ* "by request only" is significant.

"We are not eliminating the paper version," said *EJ* editor Keith A. Grubb, P.E., S.E., "and we are not going to charge you more. We simply want to be cost-conscious and environmentally friendly. We want to send you something that you want to receive."

Grubb suggests trying out the digital edition at [www.aisc.org/ej](http://www.aisc.org/ej). "If the digital edition meets your needs, great! But we realize that electronic journals are not for everyone," he said. However, to continue to receive your paper version, you must send an email including your name and AISC member number to [paperplease@aisc.org](mailto:paperplease@aisc.org). Requests for the paper edition should be sent as soon as possible.

Questions and concerns can be directed to [grubb@aisc.org](mailto:grubb@aisc.org).

## TECHNOLOGY

### Tower Design Software Under New Ownership

RISATower has been acquired by Peter Chojnacki and his new company Tower Numerics, Inc. Chojnacki has been managing the program since 2005 when it became part of the RISA group of products. Going forward, the program will be known as *tnxTower*.

Tower Numerics reports it will continue its partnership with RISA Technologies and the interoperability of *tnxTower* with RISA-3D.

For more information, visit the Tower Numerics website, [www.towernx.com](http://www.towernx.com).

## PUBLICATIONS

### Spring Reading for the Steel Industry

The newly published *Stolen Dreams*, written by Tracy Totten, is "a novel about the steel industry for the steel industry." The subject matter is no surprise, seeing as Totten is the president of Azusa, Calif.-based Totten Tubes, Inc. The author says his novel is "a suspense thriller of

corporate espionage, betrayal, and even a little romance that turns one steel tycoon against another to see who survives." To order a copy of *Stolen Dreams*, call Totten Tubes at 800.882.3748. It's also available as a Kindle download from [amazon.com](http://amazon.com).

*Welding for Dummies*, by Steven Robert Farnsworth, is a friendly, practical guide covering everything from basic safety to placing the finishing touches on more complex projects. With easy-to-follow guidance, the book enables readers to confidently perform this commonly used yet complex task. It provides the fundamentals of mig, tig, and fluxcore welding as well as explaining the more complex practices of plasma cutting and oxyfuel cutting. The author is a welding teacher with more than 20 years experience. He also served in the U.S. Navy, working to keep the fleet afloat with his welding repairs. To order online, go to [www.dummies.com](http://www.dummies.com) and look under Crafts & Hobbies.

*Statics for Dummies*, by James H. Allen III, P.E., Ph.D., is an easy-to-follow

## PROJECT MILESTONE

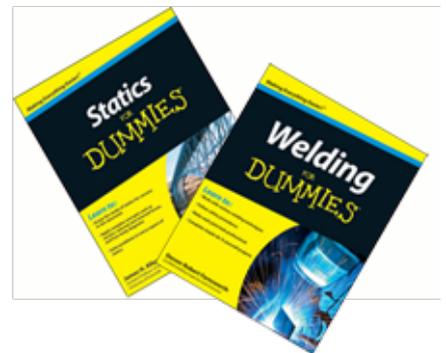
### One WTC Steel Reaches Halfway Point

There is a new spirit at the 1 World Trade Center site as steel construction has met the halfway point for the building, also known as the Freedom Tower. The Associated Press reported that steel at the building reached the 52nd story on Thursday, December 16, 2010. The tower is slated to stand at 104 stories with an antenna reaching hundreds of feet higher, bringing it to a symbolic 1,776 ft—the tallest in the country.

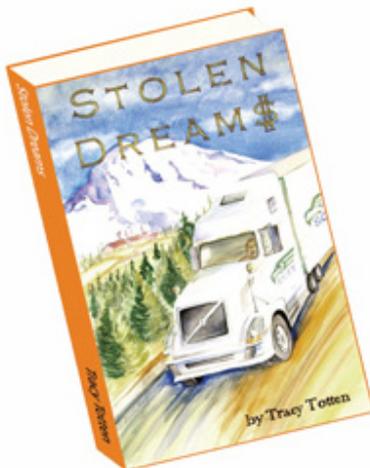
AP reported that it takes so long for workers at the rising tower to return to the ground that a Subway sandwich shop built out of shipping containers is being raised along with the building by a hydraulically powered platform.

According to AP the skyscraper is one of several envisioned at the site along with a September 11 memorial, transit hub, and performing arts center. The memorial, with reflecting pools set above the footprints of the fallen towers, is expected to open by the 10th anniversary of the 2001 attacks.

Stay informed about 1 WTC construction progress at [www.panynj.gov/wtcprogress](http://www.panynj.gov/wtcprogress), which includes a live camera image of the site.



companion to any statics course that moves deftly from the basic principles of vectors to the practical everyday uses one sees in the real world. A good refresher (or an accessible introduction to those in the family who just don't get what all the fuss is about), *Statics for Dummies* opens the world of this fundamental branch of engineering with clear explanations and simple equilibrium problems that show how forces affect objects. For more information online, visit [www.dummies.com](http://www.dummies.com) and look under Education and General.



## STANDARDS

## New Edition of Structural Steel Standards Collection

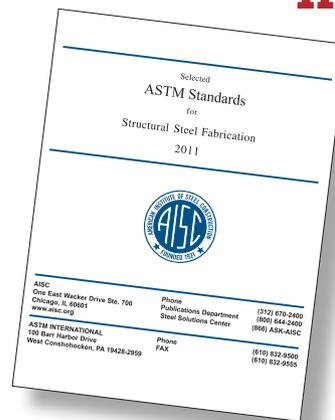
The 2011 edition of the *Selected ASTM Standards for Structural Steel Fabrication* is now available. This 579-page volume includes 63 ASTM standards relating to structural steel fabrication selected by AISC.

The compilation was last published in 2008. The new edition includes updated versions of many of the standards as well as two that have been added to the collection since then: ASTM A1065/A1065M-09, *Standard Specification for Cold-Formed Electric-Fusion (Arc) Welded High-Strength Low-Alloy Structural Tubing in Shapes, with 50 ksi [345 MPa] Minimum Yield Point*, and ASTM F1136-04, *Standard Specification for Zinc/Aluminum Corrosion Protective Coatings for Fasteners*.

The book is available only in a print version. The cost is \$225 for AISC

members and \$450 for non-members. Purchased individually, these standards would cost more than \$1,500. For more information and to purchase online through the AISC bookstore, go to [www.aisc.org/astm](http://www.aisc.org/astm).

The individual standards in this compilation were published and are copyrighted by ASTM International. For additional information and support, visit [www.astm.org](http://www.astm.org).



## CONTEST

## Call for Entries: How Hot is Your Product?

*Modern Steel Construction* in conjunction with AISC has been running an annual Hot Products feature for more than 10 years. Starting in 2011, we are adding the new category of Hot Technology Products. This new category will emphasize products that focus on improving efficiency and increasing integration through the use of computer technology. Beyond that distinction, similar guidelines apply to both Hot Product and Hot Technology Product entries:

- The product must have been introduced (or significantly enhanced) within the last 12 months.
- The entry can be part of an existing product (new feature or function) or it can be a standalone product.
- Special consideration will be given to products that may help toward innovative and new ways of working, collaborating.

Entries in both categories will be judged internally based only on descriptions, submissions and claims by the submitting company—no product testing or evaluation will be performed.

Winners will be announced in the August issue of *MSC* and will receive plaques.

Entry deadline for the competition is May 27, 2011. Submit all entries, questions and comments to [hotproduct@aisc.org](mailto:hotproduct@aisc.org). Information about the contest and entry forms can be found at [www.aisc.org/integration](http://www.aisc.org/integration).

## RESEARCH

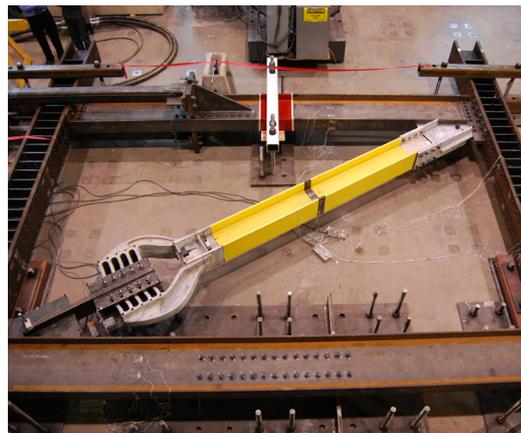
### Seismic Brace Passes University Test

A proprietary yielding brace system (YBS) designed to absorb seismic energy and protect the steel frame in which it is installed successfully underwent its third full-scale test in late November at the University of Toronto. The device, dubbed the Scorpion, looks like a giant wrench and consists of a toothed high-performance steel casting connected to a standard brace member. The casting's yield force, elastic stiffness, displacement capabilities, ductility, and post-peak strengthening can all be independently tuned with this unique bracing system, which is being commercialized by Toronto-based Cast Connex Corporation.

For the University of Toronto test,

the brace system was installed in a full-scale one-story steel frame, laid horizontally, where it was subjected to a half-million pounds of force. Watch a 40-second video of the test at <http://bit.ly/e5icHs>.

Development of the YBS has been part of doctoral student Michael Gray's research, under the supervision of faculty members Constantin Christopoulos and Jeffrey Packer. Learn more on the university website by visiting <http://bit.ly/dHTmdN>. More information also is available on the Cast Connex website, [www.castconnex.com/YBS](http://www.castconnex.com/YBS).



## BUSINESS

### Reliance Steel Acquires Lampros

Los Angeles-based AISC member Reliance Steel & Aluminum Co. has acquired the outstanding capital stock of Lampros Steel, Inc., a steel service center company specializing in structural steel shapes with

a facility located in Portland, Ore. The acquisition also includes a related interest in Lampros Steel Plate Distribution LLC. Lampros, whose current management will remain in place, will operate as a subsidiary

of American Metals Corporation, a wholly-owned subsidiary of Reliance Steel & Aluminum Co. For more information, visit the Reliance Steel & Aluminum Co. website, [www.rsac.com](http://www.rsac.com).

## AWARDS

### Award-Winning Steel Joist Projects Named

The Steel Joist Institute has announced the winners of its 2010 Design Awards, which are presented in three categories. This year's winners are:

- ▶ Industrial: Burrough-Brasuell Corp., Van Buren, Ark., for its structural retrofit work on The Allen Canning Co.'s 132,500-sq.-ft food processing plant in Van Buren, Ark.
- ▶ Non-industrial: Unified Building Sciences & Engineering, Richardson, Texas, for its work on the 400,000-sq.-ft Hallsville Senior High School in Hallsville, Texas, to provide

fine arts, science, career and technical education, and academic facilities.

- ▶ Unique: Steel Encounters Co., Salt Lake City, for its work on the environmentally friendly Star Wash Eco Car Wash in South Jordan, Utah.

Projects were judged based on flexibility, speed of construction, value and aesthetic considerations. The three winning companies each received a \$2,000 scholarship in their name to a school of their choice for an engineering student. The joists for all of this year's prize-winning projects were manufactured by Vulcraft.

To see photos and learn more about the 2010 award-winning projects on the SJI website, go to [www.steeljoist.org/2010winners](http://www.steeljoist.org/2010winners).



▲ Hallsville Senior High School, Hallsville, Texas.

# letters

## Early Days of the Student Steel Bridge Competition

It was enjoyable to track the progress and milestones of *Modern Steel Construction* but I didn't see a milestone for the annual Student Steel Bridge competition. Dr. Ellifritt was our faculty advisor back in 1988 when we went to the University of Alabama

at Birmingham to compete against four other universities. The crew used our school van and drove straight through, arriving at the UAB engineering building about 3 a.m. where we helped the UAB team finish their bridge.

I'm not sure if 1988 was the first year for the regional competitions but it was the first the University of Florida

entered. It was an excellent activity to apply all the technical knowledge we had learned to a completed project—design—fabrication—erection. It has come a long way since then. Thanks for providing this magazine.

—George Olsen, P.E.  
Houston