

CERTIFICATION

AASHTO Committee Outlines Essential Requirements For Fabrication Certification Programs

The American Association of State Highway and Transportation Officials' (AASHTO's) Subcommittee on Bridges and Structures, at its recent 2009 Annual Meeting, passed a resolution endorsing national technical institute certification programs as meeting the essential requirements for certification of personnel, production, and other quality processes related to fabricated structural bridge components. Technical institutes, according to the resolution, "develop consensus standards for their industries; sponsor relevant research; draw upon and energize established technical committees; publish technical training, design, and standards manuals; have staff positions held by engineers and subject experts; and qualify and monitor their third-party independent auditors who are trained to provide critical assessment and bring consistency to their work."

"This action clearly throws AASHTO's weight behind certification programs

established by the national technical institutes," said James G. Toscas, P.E., president of the Precast/Prestressed Concrete Institute. "It recognizes that a national technical institute is uniquely qualified to develop and deliver certification programs in its specific industry."

"The AASHTO Bridge Subcommittee understands that a program under the auspices of a national technical institute best assures state-of-the-art quality certification," commented Roger E. Ferch, National Steel Bridge Alliance executive director. Furthermore, it can be uniformly applied in all jurisdictions, which leads to an economy of scale that benefits both the industry and the owner."

The resolution notes that AASHTO bridge design and rating specifications are developed and calibrated to levels of reliability and quality inherent in the certification programs provided by national technical institutes.

SPECIFICATIONS

Third Public Review of 2010 AISC Standards 360 and 341

Limited portions of the 2010 draft of the AISC *Specification for Structural Steel Buildings* and the AISC *Seismic Provisions for Structural Steel Buildings* are available for public review until January 18, 2010. This is the third opportunity for the public to submit comments on these new specifications; however, only portions that have been revised since the second public review (September 2009) are open for comment. Look for a press release announcing this public review listed under "News" on the AISC home page (www.aisc.org). The draft specification and seismic provisions, as well as the comment submittal forms are also available for downloading on the website. Hard copies are available (for a \$12 nominal charge) by calling 312.670.5411.

Please submit comments using the forms provided online to Cynthia J. Duncan, director of engineering, at duncan@aisc.org by January 18, 2010 for consideration.

People and Firms



• **Emmett A. Sumner III, Ph.D., P.E.**, is the recipient of the 2009 Robert J. Dexter Memorial Lecture by the American Iron and Steel Institute's Steel Market Development

Institute Steel Bridge Task Force and the American Association of State and Highway Transportation Officials (AASHTO) Technical Committee for Structural Steel Design. Sumner is assistant professor of civil engineering and technical director of the Constructed Facilities Laboratory at North Carolina State University, Raleigh, N.C. His presentation, which was recently delivered to the Steel Bridge Task Force in Baltimore, was on "Lateral Flange Bending Research of Skewed Steel Bridge Girders." The program was instituted in 2005 in memory of Robert J. Dexter, an associate professor of civil engineering at the University of Minnesota and an internationally recognized expert on steel fracture and fatigue problems.

• **Tekfab Inc.** has a new, updated website

with more information on company products, including machinery for pre- or post-punch and cut, flying cutoffs, drilling and sawing, secondary operations, automated stackers, and full turnkey systems. The site also includes downloadable videos and pictures as well as other pertinent information. www.tekfabinc.com.



• **Cartee-Berry & Associates, (www.carteeberry.com)** Florence, S.C., has been awarded a grand prize in the commercial category of the 2009 Design Data SDS/2 Solid Steel Competition. The company received the award for its steel detailing work on the Cyber Innovation Center, a

state-of-the art research park located in Bossier City, La. Wylie Steel, Brentwood, Tenn, is the fabricator on the project.



• **William D. Bast, P.E., S.E., SECB**, a principal in the Chicago office of Thornton Tomasetti, Inc., has been named president of the National Council of Structural Engineers

Associations (NCSEA). The announcement was made at the NCSEA Annual Conference in Scottsdale, Ariz. NCSEA advances the practice of structural engineering and, as the national voice for practicing structural engineers, protects the public's right to safe, sustainable and cost-effective buildings, bridges and other structures.

• **Jerry Maly, P.E.**, recently was promoted to principal in the Denver office of Wiss, Janney, Elstner Associates Inc. (www.wje.com). Maly joined WJE in 2000 and is an AISC Professional Member.

PUBLICATION

Inspirational International Steel Architecture



Andrade Morettin Arquitetos of Brazil won the 2007 Brazil-focused competition with this site-specific entry, Essential Architecture, optimizing housing density. Photo: Living Steel.

Houses of Steel captures the quality and inventiveness of entrants into the Living Steel International Architecture Competition that has run internationally over the last three years. The competition aims to stimulate the use of steel in sustainable housing, especially in urban environments.

This comprehensive collection documents the winners and finalists of all the global competitions: India and Poland, 2006; Brazil, China and United Kingdom, 2007; and Cherepovets, Russia, 2008. More than 2000 architecture practices worldwide entered the competitions, representing all continents. A jury of senior figures in architecture was chaired by Pritzker Architecture Prizewinner Glenn Murcutt (2006, 2008) and founding partner of PCKO Architects Andrew Ogorzalek (2007).

Houses of Steel details each of the finalists' entries with quality images and drawings of the projects, providing a valuable insight into the many ways that architects approach the same challenge. Each competition brief was different in its specifics. The year 2006 called for a five-story residential building in

Rajarhat, India, where the extreme tropical climate called for innovative cooling. The growing middle class in Warsaw was the focus for the 2006 competition in Poland, where the challenge was housing young professional families. Brazil was one of the focal countries for 2007, where optimization of housing density was the issue.

The most recent competition, in 2008, was to design an energy-efficient, single-family home for the extreme climate of Cherepovets, Russia.

The competition is set to continue in 2010. It is sponsored by Living Steel, launched in 2005 by the World Steel Association. The five-year worldwide collaborative program is designed to stimulate innovative and responsible housing design and construction, and to help address the unprecedented pressure on infrastructure, communities and the quality of people's lives, stemming from growing urban populations.

Houses of Steel is published by Images Publishing and available in major architecture and design bookstores. The book also is available at www.imagespublishing.com.

CONTEST

Design Competition for Students

Entries are now being accepted for Bentley's 2010 Student Design Competition. The program recognizes technically advanced projects created by students around the world. University and technical college students can submit projects in Architectural Design, Computational Design, or Engineering. Middle school and high school students can participate in the Design a Medical Facility of the Future category. For each, students must make clear the problem, intent, and solution, and support their design models with architectural or engineering drawings using any Bentley software.

Winning students, along with their projects, will be recognized at their respective schools. In addition, each winner or winning team will receive a scholarship and handcrafted award to display, and be able to choose 10 seats of Bentley software—from the more than 50 products available through the academic subscription—for use by their school.

Entries must be received by February 26, 2010. For additional information about the submission process or to fill out a submission form, visit www.bentley.com/StudentDesign2010.

AWARD

Galvanizer Eliminates Hazardous Waste



From left: Tennessee Deputy Governor John Morgan, Tennessee Department of Environment & Conservation Commissioner Jim Fyke, Tennessee Galvanizing President/CEO David Ware, Tennessee Department of Environment & Conservation Deputy Commissioner Paul Sloan, Tennessee Galvanizing Environmental, Health, and Safety Manager Dennis Rains.

AISC member Tennessee Galvanizing Inc., Jasper, Tenn., has been awarded the 2009 Governor's Award for Excellence in Hazardous Waste Reduction. In 2008, the company invested \$750,000 to reduce its hazardous waste generation by 100%. Working with industry partners, the company developed an onsite, closed-loop sulfuric acid recycling unit and a new machine to more completely utilize raw materials.

The innovative mechanism behind this success, "the skim machine," was designed and built by Tennessee Galvanizing and is the first of its kind. A patent was not secured on this machine because the company wants to help other galvanizing companies achieve the same success in hazardous waste reduction.

To that end, the company hosted 15 other galvanizers from around the country at the plant in 2008 for a demonstration. The completely self-contained system now annually produces more than 1.5 million pounds of ferrous sulfate, which in turn is sold for use in livestock feed and fertilizer.

Annual environmental benefits of this new resource recovery and recycling process include elimination of 2,300 tons of hazardous waste in the form of spent sulfuric acid; elimination of 82.5 tons of hazardous waste in the form of spent sodium hydroxide solution; reduced "virgin" sulfuric acid use by 228 tons; and water consumption reduced by 315,000 gallons. Natural gas consumption also has been reduced 20% by replacing the boiler with tank heaters, and more than 100 trucks that are no longer needed to haul spent acid offsite as a hazardous waste have been removed from the roadways.

letters

Market Forces and Structural Engineer Salaries

The salaries quoted by Mr. Caldwell (\$200,000/year) in the October 2009 *MSC*, p. 74, are the very rare exception, not the typical salary for structural engineers. All the years I worked full time as a structural engineer (1950-1990) salaries were not even close to the value of three times the engineer's age. In 1990 a very good salary at age 63 would be $0.85 \times 63000 = \$53,500$.

Mr. Caldwell states that the structural engineer should develop expertise in something that matters, not the optimal size of a fillet weld. But the good structural engineer is very concerned with details, because a structure can fail as the result of an inadequate detail.

The structural engineer must concentrate on the problems of design, while the owner of the firm must be occupied with obtaining more work. Each is a full-time job.

Some of the engineers I knew left engineering work because of the low salaries and the constant specter of layoffs hanging over their heads. A professor I had in graduate school once brought up the ques-

tion, "Why did I go into teaching?" He explained that while employed by a consulting firm, from time to time he would notice one or more of his fellow engineers had been laid off. He did not want to work under those conditions.

At local ASCE (American Society of Civil Engineers) meetings I would talk to others who were looking for work. Yet at the same time I heard and read over and over that there is a big shortage of engineers, and that the shortage was becoming worse. This repeated claim of a shortage was in direct contrast to what I was observing. Something was clearly wrong. I felt I was walking through a dense fog.

Then on April 9, 1992, the fog lifted, and the earth was illuminated by the brilliant light of Truth. On that day the *Washington Post* came out with the article "Scientist Shortfall a Myth."

"The familiar claim that the United States faces a major shortage of scientists and engineers—often cited by National Science Foundation officials when seeking budget increases—is false and was based on a seriously flawed NSF study, seven scientists, engineers and government officials

told a congressional subcommittee yesterday."

(The quote is from the *Washington Post* of April 9, 1992.) The article goes on to say that the NSF "shortage" was to have left the nation with a "shortfall" of 675,000 engineers and scientists by 2010, and that the shortage never materialized. The article goes on to state that there was a surplus of engineers and scientists, and starting salaries for Ph.Ds in many fields were in the range of \$18,000 to \$25,000 per year. The *Washington Post* article also appears in *ASCE NEWS*, May, 1992, p. 16.

We have an obligation to tell young people the truth: Structural engineering (and other fields of engineering) provide practitioners with challenging work, requiring a high level of technical knowledge and problem solving skills. Designing or restoring a bridge or building provides a great feeling of satisfaction.

However, the employment picture is often filled with uncertainties, and finding work is not easy. There is no shortage of engineers.

Peter Kocsis, S.E., P.E.