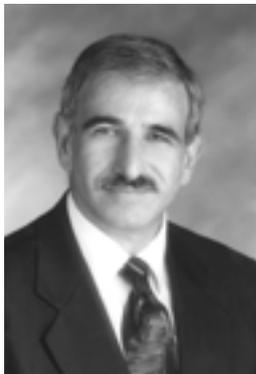


## PEOPLE

### Past Higgins Award Recipient Named NCSEA Code Advisory Committee Chair

Ronald O. Hamburger, structural engineer and senior principal with Simpson, Gumpertz & Heger in San Francisco, Calif., has been named Chair of the National Council of Structural Engineers Association's (NCSEA) Code Advisory Committee. In this position, Mr. Hamburger will act as NCSEA's delegate to the Industry Advisory Committee



of the International Code Council (ICC). He will also be responsible for coordinating with standards development organizations to provide NCSEA access to their processes, as well as for coordinating NCSEA's four Code Advisory subcommittees: Existing Buildings, General Engineering, Seismic, and Quality Assurance.

Hamburger, an authority on seismic design, was AISC's 2006 T.R. Higgins Award recipient. He has served as chairman of the AISC Connection Prequalification Review Panel, vice president of the

Earthquake Engineering Research Institute, and vice president of the Structural Engineering Certification Board. He is currently chairman of the ASCE 7 General Requirements Task Group, Ad Hoc Joint Industry Committee on Structural Integrity, and Scientific Advisory Committee - Pacific Earthquake Engineering Research Center, as well

as a member of the ASCE 7 Standards Committee, ASCE 7 Seismic Task Group, ASCE 7 Load Combinations Task Group, and AWS D1.1 - Seismic Task Group.

A past NCSEA president, Hamburger was honored by the NCSEA Board last year with the James M. Delahay Award, which recognizes outstanding individual contributions towards the development of building codes and standards. He has also served as president of the Structural Engineers Association of California and the Structural Engineers Association of Northern California.

## CERTIFICATION

### AISC Names New Certification Director

Last month, AISC promoted Brian Miller to the position of Director of Certification. After a seven-year tenure as a regional engineer, Brian joined the Certification team in 2005 as Manager of Certification Standard Development, where he was responsible for developing new quality guidelines, and improving existing ones, for AISC Certified fabricators and erectors. The role quickly expanded, and in less than two years he has become a leading advocate for quality in steel construction, and has vigorously promoted the organization's certification programs as key business-improvement tools for certified firms. His extensive marketing experience has assisted him in quickly assessing the needs of the construction market and its key decision makers.

In his new role, Brian will serve as the Secretary for the AISC Committee on Certification and assume responsibility for directing the certification program. While Brian has already been performing some of these duties on an informal basis, his promotion is an opportunity to give him the credit he richly deserves.

## CONFERENCES

### Register Now for NASCC: The Steel Conference!

Register now for the 2007 North American Steel Construction Conference! More than 3,000 engineers, fabricators, erectors, and detailers are expected to register for The Steel Conference, which will take place April 18-21 in New Orleans, La. Visit [www.aisc.org/nascc](http://www.aisc.org/nascc) for a complete schedule of conference events and instructions for pre-registration.

With nearly 90 technical sessions, The Steel Conference is the industry's premier education event. It provides structural engineers, steel fabricators, erectors, and detailers with practical information and the latest design and construction techniques. The conference is a key networking opportunity. Its extensive trade show features products and services ranging from fabrication machinery and galvanizing and connection products to detailing and engineering software. The conference also incorporates the Structural Stability Research Council's Annual Stability Conference. New this year is a series of presentations from seven of the nation's best-known engineering professors.

Online registration is available through April 12, 2007. After April 12, registrations will be taken on-site, but at higher rates.



### AISC Summer Internships

The American Institute of Steel Construction is now accepting applications from college students currently enrolled in structural, architectural, or civil engineering programs for a summer internship at AISC's headquarters in Chicago. Summer interns support the AISC Engineering and Research Department in developing technical resources for structural steel design.

Qualified applicants will be nearing completion of at least their third year of curriculum and will have completed at least one course in structural steel design. Interested students should submit their resumes to Chris Hewitt at [hewitt@aisc.org](mailto:hewitt@aisc.org). For additional information, call 312.670.5426.

### Best of 2006 Engineering Journal Competition

It's time to cast your vote for the best *Engineering Journal* paper of 2006. By voting, you become eligible for a free trip to the 2007 North American Steel Construction Conference, which takes place April 18-21 in New Orleans, La. All articles published in *Engineering Journal* in 2006 are included in the survey (excluding discussions of previously published papers). The winning author will receive free registration to the 2007 NASCC (where the award will be presented), round-trip airfare, and a one-night stay at the conference hotel. Cast your vote today at [www.aisc.org/ejsurvey](http://www.aisc.org/ejsurvey). The deadline for voting is February 28, 2007.

# letters

## Recognizing Talents

Regarding your editorial on the leaders of the industry and Larry Griffis (December 2006), I have had the pleasure to work for Walter P. Moore for nearly 20 years and have worked directly with Larry on a few projects, most recently the new Arizona Cardinals stadium. One great trait of Larry's, and I suspect of all great leaders, is his ability to let all the team members excel in their own world. Projects of reasonable size are not done by one guy in a vacuum. They are a team effort and everyone brings something to table. Finding out what people are capable of doing and then missioning them to accomplish it is greatly admired by those doing the actual work.

There is no engineer on the planet I would rather work with than Larry, partly because I believe there is no other CAD designer on the planet he would rather work with than me. We believe what we want to believe.

**David J. Harrington, Senior Associate, Walter P. Moore and Associates, Inc., Tampa, Fla.**

## Leading the Way

"A Culture of Discipline" (December 2006) is not only a terrific title, but also a good read for young and older people—like me. I like Larry Griffis' statement about working smarter, as well as the history of Gustave Eiffel and his tower and the list of 16 suggestions to avoid problems. It's too bad that many people don't learn these 16 points—or at least not until they have lived in the real world for a while.

Larry's words should be posted in every civil engineering classroom, design office, and construction trailer. Suggestion 15 is the best, I think ("Reach out to fabricators, detailers, erectors, and contractors whenever you can...") At a younger age we think we know it all. But now more than ever, people young and old need to reach out to others; they will discover a lot they didn't know. To assume we know everything is wrong—on any and all projects.

Thanks to Larry for this story. I must say that another title in the same issue ("Leading the Way," p. 24) could be the title of his article. That is what Larry has done; with all of his experience his experience, he has "Lead the Way" for all of us.

**Roy Reiterman, P.E., FACI, Roy H. Reiterman & Associates-Consulting Engineers, Troy, Mich.**

## A Privilege to Know

As often is the case, I thumb through the pages of MSC to see if an article is of any particular interest to me. However, I took one glance at the cover of the December 2006 issue and I knew I had to read the article on page 31 ("A Culture of Discipline"). I feel privileged to know Larry Griffis and to work with the structural group at Walter P. Moore.

Larry has always inspired young engineers and has been a role model for all of us who make a career in structural engineering. His hard work, attention to detail, and zealous contributions to the art of structural engineering are very well documented through various publications, papers, lectures, awards, and accolades. But what stands out most is his ability to tackle difficult problems with a sense of calmness—and remain smiling throughout the process.

I feel fortunate to have crossed paths with Larry, and I can proudly state that I know one of the icons in the world of structural engineering.

**Jaynool Khayrattee, P.E., Principal, Matrix Structural Engineers, Inc., Houston, Texas**

## CONTINUING EDUCATION

### AISC Spring Seminars

AISC's Continuing Education Department will once again offer "Design Steel Your Way with the 2005 AISC Specification." This seminar will accelerate your ability to design steel buildings according to the 2005 AISC specification, whether you design in ASD or LRFD.

Presentation topics will include proper material selection, design philosophies and analysis requirements, member and structure stability provisions, member design, and connection design.

Each attendee will receive a copy of the course notes and design examples, the AISC *Design Examples* CD, and a copy of the 13th Edition AISC *Steel Construction Manual*, which includes the 2005 AISC specification, the 2004 *RCSC Specification*, and the 2005 *Code of Standard Practice for Steel Buildings and Bridges*.

AISC also continues to offer the "Bring a Buddy" program. Eligible paid registrants may add one person to their registration at a reduced rate. And, as always, AISC members attend at discounted rates. To become a member and receive the AISC member discount, please visit [www.aisc.org/membership](http://www.aisc.org/membership). Call 800.809.2364 or visit [www.aisc.org/2007seminars](http://www.aisc.org/2007seminars) for more information or to register. Spring 2007 dates are listed below:

2/6	Los Angeles	3/27	Atlanta
2/6	Edison, N.J.	3/28	Columbus
2/7	Austin, Texas	3/29	Santa Fe
2/8	Portland, Ore.	3/29	St. Louis
2/8	El Paso, Texas	3/29	Charleston, W.Va.
2/8	Hartford		
2/21	Des Moines	5/1	Boston
2/22	New York City	5/3	Tucson
2/22	Seattle	5/3	Richmond
2/22	San Francisco	5/9	Baton Rouge
2/27	San Francisco	5/10	San Diego
3/6	Pittsburgh	5/10	Houston
3/8	Philadelphia	5/15	Los Angeles
3/13	Las Vegas	5/15	Miami
3/14	Louisville, Ky.	5/17	Columbia, S.C.
3/15	San Jose, Calif.	5/23	Tulsa
3/15	Chicago	5/24	Reno
3/20	Syracuse	5/24	Kansas City, Mo.
3/27	Denver		

## First Quarter 2007 Article Abstracts

The following papers appear in the first quarter 2007 issue of AISC's *Engineering Journal*. *EJ* is also available online to AISC members and ePubs subscribers at [www.aisc.org/epubs](http://www.aisc.org/epubs).

### The 2005 AISC Seismic Provisions for Structural Steel Buildings

JAMES O. MALLEY

The AISC standard *Seismic Provisions for Structural Steel Buildings* is the reference document for seismic design of steel structures throughout the United States. The 2003 International Building Code (IBC) incorporated these provisions by reference, and the 2002 National Fire Protection Association (NFPA) 5000 Building Code also followed this approach. Since their 1997 publication, the AISC Seismic Provisions have been updated on a regular basis in order to incorporate new developments from post-Northridge earthquake research on moment frames and other work in this area. The latest revision culminated with the publication of a completely new set of provisions in 2005 that is in the same unified format as the main AISC design specification. This edition also makes reference to a new AISC standard for the pre-qualification of seismic moment connections that was also completed in 2005. Coordinated efforts between AISC and the Building Seismic Safety Council (BSSC) are intended to continue the process of keeping the seismic design provisions for structural steel buildings as current as possible. Efforts to coordinate with Canadian standards are also underway. This presentation will summarize the changes incorporated into the 2005 AISC Seismic Provisions and the use of the new moment connection pre-qualification standard. It will also speculate on future modifications and additions to the U.S. seismic design provisions for structural steel buildings.

**Topics:** Seismic Design; Specifications, Codes and Standards

### Expected Yield Stress and Tensile Strength Ratios for Determination of Expected Member Capacity in the 2005 AISC Seismic Provisions

JUDY LIU, RAFAEL SABELLI, ROGER L. BROCKENBROUGH, AND TIMOTHY P. FRASER

In the 2005 AISC *Seismic Provisions for Structural Steel Buildings*, a factor,  $R_t$ , has been introduced for the ratio of expected tensile strength to the specified minimum tensile strength for use in calculating a modified strength for fracture limit states within designated yielding members. Additionally, for these provisions, some revisions have been made to the expected yield stress ratios,  $R_y$ , from the 2002 AISC *Seismic Provisions for Structural Steel Buildings*. These changes were based on a survey of recent mill certificates, as well as a review of published tensile property surveys.

**Topics:** Seismic Design; Tension members; Specifications, Codes and Standards

### A Review of Steel Plate Shear Wall Design Requirements and Research

MICHEL BRUNEAU, JEFFREY W. BERMAN, DIEGO LOPEZ-GARCIA AND DARREN VIAN

Steel plate shear walls are rapidly becoming an appealing alternative in high-seismic areas. This paper provides an overview of the current state-of-the-art in steel plate shear wall design, including the 2005 AISC *Seismic Design Requirements for Special Plate Shear Walls* (SPSW). It also discusses some of the research in support of those design requirements. The strip model, developed by others for the representation of SPSW, is described, and plastic analysis results for that model and their use in design are discussed. Finally, new directions for SPSW research (to expand the range of applicability of this structural system) are presented, including the use of light-gauge and low-yield-point steels and strategic hole placement. Additionally, reduced beam sections are described in the context of some recently completed and ongoing research.

**Topics:** Seismic design; Specifications, Codes and Standards; Research; lateral systems

### Designing for Ductile Performance of Bolted Seismic Connections to Axially Loaded Members

LARRY S. MUIR

Field-bolted connections are often the safest and most economical option for structural steel erection. It is therefore desirable to maintain the use and economy of field-bolted connections as an

option for seismically loaded structures, even within the seismic load resisting system. This paper addresses two aspects of the AISC 2005 *Seismic Provisions for Structural Steel Buildings*: bolted joints and the requirement that vertical brace connections be designed for the expected tensile strength of the brace, as stipulated for ordinary concentrically braced frames and special concentrically braced frames.

**Topics:** Seismic design; bolts; connections and joints; connections-simple shear; detailing; Specifications, Codes and Standards

### Impact of Recent Research Findings on Eccentrically Braced Frame Design

PAUL RICHARDS, TAICHIRO OKAZAKI, MICHAEL ENGELHARDT, AND CHIA-MING UANG

Design provisions for eccentrically braced frames (EBFs) are based largely on results from ASTM A36 links tested at the University of California, Berkeley in the 1980s. To address issues related to the use of ASTM A992 steel in modern EBFs, new experimental testing and finite element modeling of EBF links were performed. A total of 24 link specimens were tested at the University of Texas at Austin. UT's experimental data was used to validate finite element modeling techniques used in a parametric study conducted at the University of California, San Diego (UCSD). This paper highlights findings from these experimental and analytical investigations. The impact of flange width-thickness ratio, intermediate stiffener spacing, and loading protocol on link rotation capacity and failure mode are discussed. Recommendations are given for intermediate stiffener detailing that will improve link rotation capacity. Results justify the flange width-thickness requirement for EBF links in the 2005 AISC *Seismic Provisions for Structural Steel Buildings*, which is relaxed from the previous limit and will facilitate more economic design of EBFs. The studies also indicate that the link overstrength value adopted in the provisions, which was originally based on A36 links, is equally valid for A992 links.

**Topics:** Seismic Design; Specifications, Codes and Standards; Lateral Systems; Research

## Towards the Simplified Design of Single-Angle Beam-Columns

C.J. EARLS AND D. CHRISTIAN KEELOR

Single-angle compression members are frequently used as diagonal and lacing members in trusses and in lattice towers. Within this context, connection geometries at the angle ends frequently involve attachment through only one leg of the angle cross-section, thus introducing loading eccentricities and their concomitant end moments. AISC requires that this case be treated as a beam-column involving second-order amplification of moments. In contrast, ASCE recommends that the eccentricities in loading be treated through the use of modified effective length factors in conjunction with standard column design methodologies. Recent research by Mengelkoch and Yura compares the two approaches and makes additional recommendations. This latter research is at the heart of proposed modifications to the new combined specification. The current research expands on the new single-angle design approach by studying additional column slenderness ratios, loading eccentricities, and varying degrees of rotational restraint at the column ends beyond what was considered by Mengelkoch and Yura.

**Topics:** Columns and Compression members; Combined Loading; single angles

## Current Steel Structures Research

REIDAR BJORHOVDE

This regular feature of *Engineering Journal* provides information on new and ongoing research around the world. In the ninth installment, research projects are summarized on the following topics: behavior of steel connections under fire conditions, welded connections for very high-strength steels, reliability of semi-rigid (PR) beam-to-column welded joints, and connections for seismic response.

**Topics:** Research