

## RISA Technologies Acquires C-Concepts, Inc.

RISA Technologies announced May 4 its acquisition of C-Concepts, Inc. The acquisition includes all rights to tower analysis and design software ERITower, a program that allows designers to generate both self-supporting towers and guyed towers. This addition of specialized tower design software complements RISA's library of FEA applications such as RISA-3D and RISAFloor.

ERITower, authored by the late Daniel G. Horn, P.E., was a joint effort between C-Concepts, Inc. and Electronics Research, Inc (ERI). C-Concepts bought the rights to ERITower in 2000. RISA Technologies will complete the implementation of the TIA/EIA-222 Revision G standard Horn started before he passed away unexpectedly July 19, 2004. For more information, visit [www.risatech.com](http://www.risatech.com). ★

## Project File: Louisville's New Landmark

The Preston Pointe mixed-use building features a unique concave cone-shaped sloping roof. In plan, the building is a 93'-8" square. The first five floors are general office space, the sixth and seventh floors contain four two-story condominium units, and the eighth floor is mechanical space. The open floor plan calls for 39'-8" column spacing from the exterior columns to the interior core columns.

The facility encompasses 103,700 sq. ft with one level of parking partially below grade. The total height of the building is 171', qualifying it as Type 2A high-rise construction under the 2002 Kentucky Building Code (based on IBC 2000).

The nature of the project's design lent itself to composite steel floor framing. While a concrete framing system with post-tensioned beams and a one-way slab was considered for the first floor structure above the parking level, an evaluation by the architect and general contractor determined that steel would best meet the budget and schedule requirements. The selected floor system is 5.25" lightweight structural concrete composite slab with 2" deck.

All primary steel was specified to be ASTM A992 grade 50. The typical floor beams are W18x40 with W24x62 girders. Column sizes vary from W10x100 for the base gravity columns to W14x120 for the rigid frame columns at the base.

Read more about Preston Pointe online at [www.modernsteel.com](http://www.modernsteel.com). ★



## REI 2005 STAAD Conference

Research Engineers International will host the REI 2005 STAAD Conference July 22-23 at the Monte Carlo Resort and Casino in Las Vegas, NV.

This 19th annual software product conference is for software users who want to understand the latest technologies in structural modeling, analysis, design, and detailing. The conference will include information on timesaving techniques for increasing efficiency in the design office, product training, updates, and the use of STAAD for real-world applications.

The conference will feature presentations by speakers from AISC and renowned engineering firms like Parsons, Jacobs, and Minoru Yamasaki & Associates, as well as discussions on outsourcing by engineers from Capitol Hill. S.K. Ghosh, Ph.D., known internationally for his work in earthquake engineering, will deliver the keynote speech.

The conference is hosted by STAAD engineers with partners like Tekla, LARSA, DESCON, Structural Desktop, Intergraph, and Bentley Systems. Cost of registration is \$499 per person. A spouse program is available for \$99. For more information about the REI 2005 STAAD Conference, please visit [www.reiworld.com](http://www.reiworld.com) and browse to "Events/Seminars." ★

## Higgins Award Nominations Solicited

Nominations for AISC's 35th annual T.R. Higgins Lectureship Award are being accepted through July 1, 2005. The award recognizes a lecturer and author whose published paper or papers are considered an outstanding contribution to engineering literature on fabricated structural steel.

The nominated author must be a resident of the U.S. and able to fulfill the award's commitments. The paper or papers must have been published in a professional journal between January 1, 2000 and January 1, 2005.

Send your nominations to: T.R. Higgins Award Nomination c/o Janet T. Cummins, Engineering and Research Coordinator, AISC, One E. Wacker Dr., Suite 3100, Chicago, IL 60601-2000. For more information about the award and nomination requirements, please visit [www.aisc.org/awards](http://www.aisc.org/awards). ★

## Correction

In the Specwise article titled "All About Flexure" in the May issue of *Modern Steel Construction*, the second set of equations on p. 57 should read:

$$\frac{R_n}{\Omega} = D + L = D + 3D = 4D$$

$$R_n = 4D\Omega$$

A corrected version of the article is available online at [www.modernsteel.com](http://www.modernsteel.com).

## Plan Ahead for AISC's Fall Seminars

AISC's continuing education department will offer seminars on "Steel Design After College," "Seismic Braced Frames," and "Field Fixes" starting again in August 2005. Visit [www.aisc.org/seminars](http://www.aisc.org/seminars) for a complete schedule and to register today.

Seminar registration is \$225 per person for members and \$325 per person for non-members. AISC will once again offer its popular Bring a Buddy program: each paid registrant can bring one colleague for only \$100 more. Register online and save \$5 off the registration fee. Visit [www.aisc.org/seminars](http://www.aisc.org/seminars) to register. ★

The following articles will appear in the Second Quarter, 2005 issue of AISC's *Engineering Journal*.

## Yielding Limit State of Tee Stems in Flexural Compression

C. J. Earls and L.E. Volle

The present paper outlines the results from a parametric study involving the finite element modeling of tee beams subjected to a constant moment loading resulting in stem compression and flange tension. The parameters varied as part of the study include: the flange width-to-cross-sectional depth ratio,  $bf/d$ ; the unbraced length-to-cross-sectional depth ratio,  $L_b/d$ ; the ratio of stem depth to stem thickness,  $h/t_w$ ; and the ratio of flange width to flange thickness,  $bf/2t_f$ . The present discussion focuses on how these parameters impact WT ultimate capacity and flexural ductility. Compactness limits for tee stems are subsequently proposed: Currently such compactness limits are not prescribed by AISC for WT stems.

## Understanding the Response of Composite Structures to Fire

Asif S. Usmani

This paper provides a general introduction to the intricacies of the behavior of composite structures exposed to thermal loading from fire. This is not a topic many structural engineers often deal with as part of their normal

practice. However, even the engineers who do have to address this issue generally follow entrenched code-based prescriptive procedures. These procedures generally require them to protect the steel based on furnace testing of individual members. The actual structural behavior is hardly ever a part of this assessment. Fortunately there is considerable interest internationally to moving towards a more rational approach for designing structures for fire, particularly within the performance-based design context. This has led to considerable recent research in this area in the United Kingdom and continental Europe. The University of Edinburgh has been a major contributor to this new work. This paper provides a brief description of the research that has taken place in Edinburgh and the new knowledge that has accrued from it. This work quite clearly indicates that the traditional prescriptive ways of protecting structural members from fire are flawed, particularly if actual structural behavior in response to fire is ignored. In general, this leads to higher costs for fire protection but potentially it could also result in catastrophic failures.

## Flexible Moment Connections for Unbraced Frames Subject to Lateral Forces— A Return to Simplicity

Louis F. Geschwinder and Robert O. Disque

It seems that there has been confusion among structural engineers about the type

of construction referred to in the AISC *Load and Resistance Factor Design Specification for Structural Steel Buildings* (AISC, 2000), since 1986, as Partially Restrained or PR. The general concept has been of interest to the authors for many years and has been the topic of several of their papers. The purpose of this paper is to reacquaint the profession with a longstanding and successfully applied approach to structural steel frame design, herein called "Flexible Moment Connections (FMC)," and to compare this approach to the *Specification*-defined PR approach. In addition, the goal is to show that although much has changed in the profession, including specifications and the tools for their application, FMC design remains an acceptable and economical approach for steel structures.

## Current Steel Structures Research

This is the second installment of a new feature in the *Engineering Journal* that will provide information on new and ongoing research projects around the world. This issue includes synopses of work that fall under the general topics of structural member analysis and design, frames and framing systems, connections, composite construction, fabrication and materials, and steel and composite bridge structures. Projects occurring in a wide geographic range are covered, specifically, Australia, Hungary, Finland, Germany, Denmark, France, and England. ★

## AISC Member Aztec Galvanizing Services Wins American Galvanizers Association Awards

AISC associate member Aztec Galvanizing Services, Fort Worth, TX, was honored by the American Galvanizers Association (AGA) in its 2005 Excellence in Hot-dip Galvanizing Awards competition.

Aztec Galvanizing Services was recognized in the competition's bridge and highway category for its Missouri DOT I-70 North Bridge enhancements in St. Louis and in the food and agriculture category for its work on Legacy Farms in Plainview, TX. Arizona Galvanizing, Inc., owned by Aztec Galvanizing Services, was recognized in the competition's duplex systems category for its work on the Mission Valley East Light Rail Transit's Grantville Station in San Diego and in the transportation category for the Amtrak West Oakland maintenance facility in Oakland, CA. AISC member Lynx Iron Corporation was steel fabricator for the Amtrak project.

The companies' winning projects were chosen for their ideal, creative, and innovative use of hot-dip galvanizing. For information about the 2006 Excellence in Hot-dip Galvanizing Awards competition (entries will be accepted as of October 2005), please contact Madison Sterling at AGA (720.554.0900 Ext. 15 or msterling@galvanizeit.org). ★



Mission Valley East Light Rail Transit's Grantville Station in San Diego.