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Wei-Wen Yu Center for Cold-Formed Steel Structures

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UNIVERSITY OF MISSOURI-ROLLA

DIRECTOR: ROGER A. LABOUBE, PH.D., P.E.
FOUNDING DIRECTOR: WEI-WEN YU, PH.D., P.E.

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18th Cold-Formed Steel Short Course Scheduled for October 14 - 16

The 18th Cold-Formed Steel Structures Short Course is scheduled to be held October 14-16, 2003 at the Westport Holiday Inn in St. Louis, MO. This course is a continuing education activity of the Wei-Wen Yu Center for Cold-Formed Steel Structures at the University of Missouri-Rolla, and is sponsored in cooperation with the American Iron and Steel Institute. Since 1968, seventeen short courses on cold-formed steel structures have been successfully conducted.

The short course deals with the fundamentals of cold-formed steel design and is intended to provide engineers and others with a better understanding of the basic principles used in the current design methods for cold-formed steel structural members and connections. The course will strengthen participants' understanding of the fundamental behavior of both members and connections as well as provide a better understanding of the AISI design specifications. Material covered includes various types of structural members cold-formed to shape from steel sheet, strip, or plate. Discussion will include the application of the AISI North American Specification and Design Manual for both commercial and residential applications of cold-formed steel. A preview of future specification changes will also be provided.

Course lecturers will be Dr. Roger A. LaBoube, Distinguished Teaching Professor of Civil Engineering at the University of Missouri-Rolla and Director of the Center and Dr. Wei-Wen Yu, Curators' Professor Emeritus of Civil Engineering at the University of Missouri-Rolla and Founding Director of the Center.

For more information contact Christina Stratman at 573-341-4471 or cfss@umr.edu.

Center Steering Committee Meets in Myrtle Beach

The Steering Committee of the Wei-Wen Yu Center for Cold-Formed Steel Structures met in Myrtle Beach, SC on July 23, 2003. The meeting was in conjunction with the meetings of the AISI Committee on Specifications.

At this annual meeting, the Steering Committee reviewed the Center's current activities including technical services, engineering education, professional activity, and research. Two projects, a modification and enhancement of the Center's website to include a feature for Frequently Asked Questions and the development of a student design manual, were approved. The Frequently Asked Questions feature on the website will provide a mechanism for practitioners to locate answers to commonly asked questions pertaining to cold-formed steel design and behavior. The student design manual will aid university professors by facilitating the introduction of cold-formed steel into an advanced steel design course.

ASCE-SEI Committee on Cold-Formed Steel Meets

The ASCE-SEI committee on cold-formed steel met at the July AISI meetings. The committee sponsored a well-attended session of approximately 40 people at the 2003 Structures Congress in Seattle. Talks were given by Roger LaBoube, Colin Rogers, and Ben Schafer. Professor Schafer's talk on the Direct Strength Method tied for best presentation at the Congress. The committee is currently in the planning stages for the 2005 Structures Congress in New York City. Interested speakers should contact the committee chair, Ben Schafer, at schafer@jhu.edu.

The committee has had an article on deflections in secondary cold-formed steel systems published in STRUCTURE magazine and has recently developed and prioritized a research needs list for cold-formed steel. Both the article and list, as well as abstracts to the talks presented at the July meetings, are available online. For these items and more regarding the committee go to www.ce.jhu.edu/bschafer and follow the links to ASCE-SEI CFS.

Expansion of UMR's Butler-Carlton Hall Completed

- New Library and Offices for CCFSS

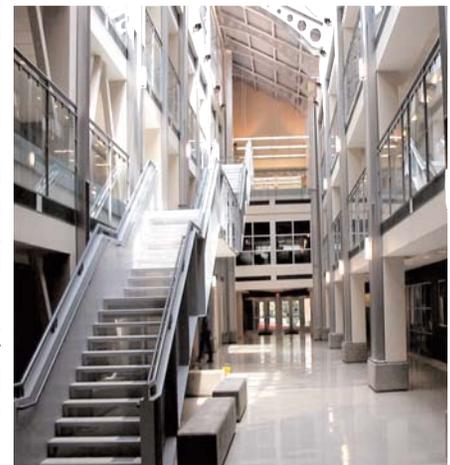
The \$22 million addition and renovation to the Butler-Carlton Civil Engineering Hall at University of Missouri-Rolla, which houses the Wei-Wen Yu Center for Cold-Formed Steel Structures, has been completed and is now fully operational. Officials at UMR formally introduced the campus' newest building to the public on Sept. 12, 2003.

The newly completed 143,000 square foot structure features some of the most modern civil engineering research facilities in Missouri and surrounding states, according to Dr. William Schonberg, chair of UMR's Civil, Architectural and Environmental Engineering Department. The 100,000 square foot addition includes 29 classrooms; a three-story high-bay structures laboratory, which allows researchers to conduct heavy-duty testing of full-scale steel beams and other large construction materials; an expanded hydraulics laboratory designed for the real-time study of rainfall; an expanded construction materials laboratory; a rooftop greenhouse for the study of wetlands and environmental cleansing trees; and interconnected environmental engi-

neering laboratories and classrooms. The 43,000 square feet of renovated space includes a student advising complex, computer learning centers, a geotechnical engineering laboratory, graduate research offices and labs, a senior design lab, large classrooms, the Needles Seminar Room (named after 1914 civil engineering graduate Enoch Needles), student lounge areas, and two new lecture halls named for prominent alumni: the Gunther Lecture Hall, funded through a gift from 1960 UMR civil engineering graduate Don and Rosemary Gunther, and the Neil Stueck Lecture Hall, funded through the estate of Cornelius S.P. Stueck, a 1943 civil engineering graduate. The centerpiece of the of the new addition is an expansive atrium, funded through a gift from Fred Kummer, a 1955 civil engineering graduate and president of HBE Corp. in St. Louis, and his wife, June.



Butler-Carlton Hall campus entrance



Kummer Atrium inside Butler-Carlton Hall



High Bay Structures Lab

Wei-Wen Yu Center For Cold-Formed Steel Structures

Included in the addition to Butler-Carlton Hall is the new home of the Wei-Wen Yu Center for Cold-Formed Steel Structures, made possible through the generous donation of Dr. Wei-Wen and Mrs. Yueh-Hsin Yu. Located on the third floor, the new Center office looks out on both the Kummer

Atrium through the front windows, and the town of Rolla through the rear windows. The space features a vaulted ceiling, large windows, and bookcases which house the cold-formed steel structures technical resource library.



Entrance to Center library and office



Reception and conference area



View from back of CCFSS library

17th International Specialty Conference on Cold-Formed Steel Structures

Papers are invited for presentation at the Seventeenth International Specialty Conference on Cold-Formed Steel Structures, November 4-5, 2004 in Orlando, FL. The conference will include the following subjects concerning cold-formed steel: basic and applied research; structural design; development of new products; development of new design criteria; manufacturing technique; construction methods; economy and effective use of cold-formed steel; and engineering education.

It is expected that leading researchers, engineers, manufacturers, and educators who have engaged in research, design, manufacture, and the use of cold-formed steel members will present detailed discussions of their recent findings. Abstracts will be reviewed for topic suitability, and final acceptance will be based on the complete manuscript. Papers accepted for presentation will be published in the proceedings available at the conference. Abstracts should be postmarked by **November 1, 2003** to: Dr. Roger A. LaBoube, Wei-Wen Yu Center for Cold-Formed Steel Structures, University of Missouri-Rolla, 323 Butler-Carlton Hall, Rolla, Mo 65409-0030. For more information call: 573-341-4481, fax: 573-341-4476, or email ccfss@umr.edu.

Since 1971, 16 international specialty conferences on cold-formed steel structures have been conducted in Rolla, Missouri, St. Louis, Missouri and Orlando, Florida. Those conferences were co-sponsored by the American Iron and Steel Institute, National Science Foundation, Metal Building Manufacturers Association, Metal Construction Association, Rack Manufacturers Institute, Steel Deck Institute, Steel Stud Manufacturers Association, and the University of Missouri-Rolla in cooperation with the American Society of Civil Engineers, Canadian Sheet Steel Building Institute, Structural Stability Research Council, the University of Strathclyde in Scotland, and the University of Sydney, Australia.

AISI Committee on Framing Standards Update

by Jay Larson, American Iron and Steel Institute

The American Iron and Steel Institute is pleased to announce that Rick Haws of Magnatrx has been approved as the new Chair of the Committee on Framing Standards (COFS). Rick has served well on the committee since its inception in 1998. Most recently, Rick has served as chair of the Prescriptive Methods Subcommittee and member of the Steering Subcommittee. Rick is also an active member of the AISI Committee on Specifications.

Rick Haws fills a vacancy created when Jay Larson, formerly the COFS Chair, became AISI's Director of Construction Standards Development and assumed responsibility as the COFS Secretary. Steve Fox, of CSSBI, COFS Vice Chair, has taken responsibility as the new Chair of the Prescriptive Methods Subcommittee.

The COFS remains very active in developing new standards to enable the widespread and practical use of steel framing in residential and light commercial applications. For more information about the activities of the COFS, please check the AISI website at www.steel.org/construction/framing/.

Structural Stability Research Council Announces Relocation of Headquarters

by Nestor Iwankiw

The Structural Stability Research Council is pleased to announce the relocation of its Headquarters to the University of Missouri-Rolla. Dr. Roger LaBoube, one of the Council's long-time active participants, renowned steel stability researcher, Task Group Chair, and a former member of the Executive Committee, is now the primary SSRC faculty contact, and Ms. Christina Stratman will now be providing administrative support.

Upon the resignation of former Administrative Secretary Christine Schwing at the end of 2002 it became necessary for SSRC to re-evaluate its ongoing Headquarters office operations. Invited proposals were received from the University of Florida and the University of Missouri-Rolla, which were carefully reviewed by the Executive Committee relative to the Council's needs and budget resources. On this basis, it was decided that the best interests of the SSRC would be served by relocating its Headquarters to the University of Missouri-Rolla.

The new SSRC Headquarters contact information is as follows: University of Missouri-Rolla, 301 Butler-Carlton Hall, Rolla, MO 65409-0030; Phone: (573) 341-6610; Fax: (573) 341-4476; Email: ssrc@umr.edu; and Website: <http://stabilitycouncil.org>.

SSRC gratefully acknowledges Dr. Perry Green, former Faculty Liaison, Ms. Christine Schwing, and the rest of the Department for providing a good "home" to SSRC at the University of Florida over the past several years, and we now look forward to our new association with the University of Missouri-Rolla.

Sam Errera is Recognized

At the July 2003 meeting of the AISI Committee on Specifications, Dr. Samuel J. Errera was recognized for his service to the Committee. Dr. Errera has been a long time member of the committee. In addition to serving as a subcommittee chairperson, Dr. Errera served as the chairperson for the Committee on Specifications during the development of both the 1986 edition of the Specification as well as the 1989 Supplement.

Dr. Errera holds a Bachelor of Science in Civil Engineering from Rutgers University, a Master of Science in Civil Engineering from the University of Illinois, and a Ph.D. from Cornell.

From 1962 to 1970, Dr. Errera was Manager of Structural Research at Cornell University. For 21 years Dr. Errera was a Senior Engineer with Bethlehem Steel Corporation engaged in product design and development. He most recently served as a Consultant to the American Iron and Steel Institute, working with the automotive industry.

Dr. Errera has many publications to his credit, but the most noteworthy may be the "Guide for Preliminary Design of Sheet Steel Automotive Structural Components". The Guide provided the motivation for the development of the AISI Automotive Steel Design Manual and the Computerized Application and Reference System (CARS) used by the automotive industry.



Sam has been a role model for those of us who have been privileged to have worked with him and he continues to affect the lives of others as he serves as a teacher's assistant at a local elementary school where he works with students who have learning disabilities.

Haselton Appointed Staff Engineer at MBMA

Justin R. Haselton has been appointed staff engineer for the Metal Building Manufacturers Association (MBMA). The announcement was made by Dr. W. Lee Shoemaker, P.E., the association's director of research and engineering.

In this new position, Haselton will assist Dr. Shoemaker in coordinating and administering all MBMA research and technical projects. He will operate from MBMA's Cleveland headquarters and assist in acting as a technical spokesman for the industry, as well as a liaison between the association and the major code and standards organizations.

"We're excited that Justin has joined MBMA's progressive research and engineering department, and his technical capabilities should be very valuable to us," said Dr. Shoemaker. "He will work on a variety of programs related to metal building systems and metal roofing, as well as activities with the various code bodies."

A 2003 graduate of Case Western Reserve University, majoring in civil engineering, Haselton recently co-authored a paper with CWRU Professor Dr. Xiangwu Zeng concerning the shear and constrained moduli of a composite soil measured using piezoelectronic elements. He also worked with the Ohio Department of Transportation and is a member of the American Society of Civil Engineers. Haselton resides in Twinsburg, Ohio.

For additional information, contact: Metal Building Manufacturers Association, 1300 Sumner Avenue, Cleveland, Ohio 44115-2851.

Larson Joins AISI

American Iron and Steel has announced that Jay Larson has joined their staff as the Director of Construction Standards Development.

Jay is a civil engineering graduate of Lehigh, with both Bachelors and Masters Degrees. He is a registered professional engineer and, for the past 23 years, has been part of the Bethlehem Steel Construction Marketing Team. In this capacity, he has had extensive experience in commercial construction. Jay has also chaired the AISI Committee on Framing Standards, since its inception, and has been actively involved in the AISI Construction Program throughout most of his career.

Jay's training and experience make him uniquely qualified to lead the AISI standards development program and to provide critical technical support for the Steel Framing Alliance.

Cool Metal Roofing Elevated by EPA ENERGY STAR Amendment

A recently announced procedural amendment to the US EPA ENERGY STAR program for roof products will elevate Cool Metal Roofing's ongoing contribution to energy efficiency. This significant amendment, under the *ENERGY STAR Program Requirements for Roof Products: Eligibility Criteria*, became effective June 5, 2003. It allows aged solar reflectance of roofing products to be measured for program qualification through exposure of test panels on weathering farms, as an option to the requirement of using roofing assemblies on actual structures in selected metropolitan areas.

Scott Kriner, Cool Metal Roofing Coalition Chairman, comments, "The development and adoption of this new ENERGY STAR procedure is something we've followed closely for several years and we are absolutely delighted to see it in place now. This will truly benefit the consumer and the environment by providing broader selection and recognition of cool roofing products. A testing period of three years is still required, of course, so the new process is not any faster, however, more manufacturers will be encouraged to become Energy Star Partners sooner."

In agreement, Steve Ryan, ENERGY STAR Product Manager, explains further, "We are always open to ways of making it easier for Partners to participate while not lessening the integrity of ENERGY STAR. This was one such opportunity. It allows manufacturers to qualify more products using established, yet rigorous, testing procedures. This change benefits

consumers and manufacturers while maintaining the strength of the ENERGY STAR brand."

"This will be a boon to the metal roofing industry at large, since it will speed the introduction of ENERGY STAR qualified products into the marketplace," states Jim Robinson, Vice-Chairman, Cool Metal Roofing Coalition. He adds, "The practice of using actual roofing as a weathering performance testbed has been rather daunting to the metal roofing industry because of the logistical difficulty and expense. Weathering farms are a practical and yet responsible way to go since they comply with established quality control procedures and receive accreditation from professional independent standards organizations."

The mission of the coalition is to unite the resources of the metals industry for education on the sustainable energy-related benefits of metal roofing.

Greg Crawford, Coalition Executive Director, notes, "Existing and potential ENERGY STAR partners can get complete information on ENERGY STAR for Roof Products on the web site, www.energystar.gov. Questions regarding this amendment can be directed to Rachel Schmeltz at schmeltz.rachel@epa.gov. We are strongly encouraging member companies of the Cool Metal Roofing Coalition to take full advantage of this amendment quickly so a broader selection of qualified metal roofing products will become registered and available. In turn, this will enhance Cool Metal Roofing's increasingly positive contribution to energy conservation."

The mission of the coalition is to unite the resources of the metals industry for education on the sustainable energy-related benefits of metal roofing. Formed in September, 2002, the Coalition has five Charter Sustaining Members: American Iron and Steel Institute, Galvalume Sheet Producers

of North America, Metal Building Manufacturers Association, Metal Construction Association, and National Coil Coating Association. In addition, Oak Ridge National Laboratories and American Zinc Association are Affiliate Members. More information on Coalition members and links to related sites can be found at www.coolmetal-roofing.org.

Metal Roofing Experts Available for Speaking Engagements, Education

The Metal Construction Association (MCA) is pleased to present a group of experts available to speak on the complex issues surrounding metal roofing and siding.

MCA's Residential Roofing Council is composed of industry leaders drawing on combined decades of metal construction experience and expertise. These experts are available to address architects, contractors and other audiences on a broad range of subjects pertaining to the use of metal products in construction, including overall benefits of metal roofing, such as its "cool" attributes and environmental advantages; building market awareness of metal roofing's benefits; performance attributes of resins and coatings; aggregate-coated and batten-mounted steel roofing tiles; detailing, and wind uplift resistance of metal roofing and siding; installation and detailing of low-and steep-slope metal roof systems; ventilation and condensation issues.

Many of the presentations are accepted for professional, industry educational units. Those interested in arranging a speaking engagement with an MCA expert can visit www.metalconstruction.org and contact the individual speakers directly. There may be costs associated with some presentations.

AISI Committee on Specification Meets

The AISI Committee on Specifications for Cold-Formed Steel Structural Members and its subcommittees met for their semi-annual meeting on July 23-25 in Myrtle Beach, SC. The meeting consisted of updates on ongoing research as well as discussion on proposed changes to the Specification.

Research reports were presented on several AISI sponsored research projects. Mr. Jim Crews updated the committee on the progress of a Cornell study of cold-formed steel beam-columns. Distortional buckling experiments is the focus of a study reported on by Dr. Ben Schafer. Dr. T.M. Murray briefed the committee on the progress of a study to better define the anchorage forces for a Z-purlin roof system. A study pertaining to lateral torsional bracing requirements for C-sections subject to bending or axial load was summarized by Dr. Tom Sputo and Dr. Perry Green. Dr. R.M. Schuster provided a status report on a study of multi-web deck sections subjected to web crippling.

One of the major focuses of the meetings was the development of a new edition of the Cold-Formed Steel Design Manual. The Manual will be significant because the document will more accurately reflect industry standard cross sections, their properties and strength.

Several enhancements and/or additions to the Specification were adopted at the meetings. These enhancements or additions pertained to the following sections: (1) Sections E4.3.3 and E4.3.4 on screw connections; (2) Section F1.1 on statistical data for determining bearing strength of screw connections; (3) Section B2.2 on the effective width of stiffened elements with circular holes; (4) Commentary on Section B5.2 for edge stiffened elements with intermediate stiffeners; (5) editorial revisions of Section A2.3.2 on specified minimum yield point. The committee also finalized an interpretation on the use of design yield points.

Calendar

October 14-16, 2003

18th Cold-Formed Steel Structures Short Course
St. Louis, MO
<http://web.umn.edu/~ccfss/conted&seminars.html>

October 28-30, 2003

LGSEA Meetings
Tampa, FL
www.lgsea.com

October 28-30, 2003

METALCON International
Tampa, FL
www.metalcon.com

October 27-28

AISI Committee on Framing Standards
Tampa, FL
www.steel.org

February 19-20, 2004

AISI Committee on Specifications Meeting
Location TBA
www.steel.org

March 24-27, 2004

2004 Annual Stability Conference
Long Beach, CA
ssrc@umr.edu
www.stabilitycouncil.org

June 22-24, 2004

4th International Conference on Thin-Walled Structures
Loughborough, Leicestershire, UK
www.lboro.ac.uk/departments/tt/ictws2004

September 27-29, 2004

4th International Conference on Coupled Instabilities in Metal Structures
Rome, Italy
marchello.pignataro@uniroma1.it (or)
Jacques.Rondal@ulg.ac.be

November 4-5, 2004

17th International Specialty Conference on Cold-Formed Steel Structures
Orlando, FL
<http://web.umn.edu/~ccfss/conted&seminars.html>

June 8-10, 2005

Eurosteel Conference on Steel and Composite Structures
Maastricht, The Netherlands
www.eurosteel2005.info/

Contact us

Please contact us with any questions or comments at:

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