

01 Aug 1991

CCFSS News August 1991

Wei-Wen Yu Center for Cold-Formed Steel Structures

Follow this and additional works at: <https://scholarsmine.mst.edu/ccfss-news>



Part of the [Structural Engineering Commons](#)

Recommended Citation

Wei-Wen Yu Center for Cold-Formed Steel Structures, "CCFSS News August 1991" (1991). *CCFSS Newsletters (1999 - 2008)*. 22.

<https://scholarsmine.mst.edu/ccfss-news/22>

This Newsletter is brought to you for free and open access by Scholars' Mine. It has been accepted for inclusion in CCFSS Newsletters (1999 - 2008) by an authorized administrator of Scholars' Mine. This work is protected by U. S. Copyright Law. Unauthorized use including reproduction for redistribution requires the permission of the copyright holder. For more information, please contact scholarsmine@mst.edu.

CCFSS NEWS

Director: Wei-Wen Yu, Ph.D., P.E.
Associate Director: Roger A. LaBoube, Ph.D., P.E.

Butler-Carlton Civil Engineering Hall
Rolla, MO 65401-0249
Telephone: 314-341-4471
Fax: 314-341-4476

Volume 2, Number 1

August, 1991

Professor Salvadori Receives the First ASCE George Winter Medal

The George Winter Medal was established by the American Society of Civil Engineers in 1989. This award is intended to recognize the achievements of a selected active structural engineering researcher, educator, or practitioner who best typifies the late Professor Winter's humanistic approach to his profession, i.e., an equal concern for matters technical and social, for art as well as science, for soul as well as intellect. The recipient of the award should have the following qualifications: (a) a structural engineer, who has consistently worked to advance the state-of-the-art of the profession through the practical application of design and/or research studies, and (b) the individual must have demonstrated a commitment to the social or artistic needs of the human community through work performed in an area not related to engineering or science.

The first recipient of the George Winter Medal is Professor Mario G. Salvadori, James Renwick Professor Emeritus of Civil Engineering at Columbia University and Chairman of the Board of Weidlinger Associates, Consulting Engineers, in New York City. On receiving this award, Professor Salvadori offered the following testimonial to the late Professor George Winter:

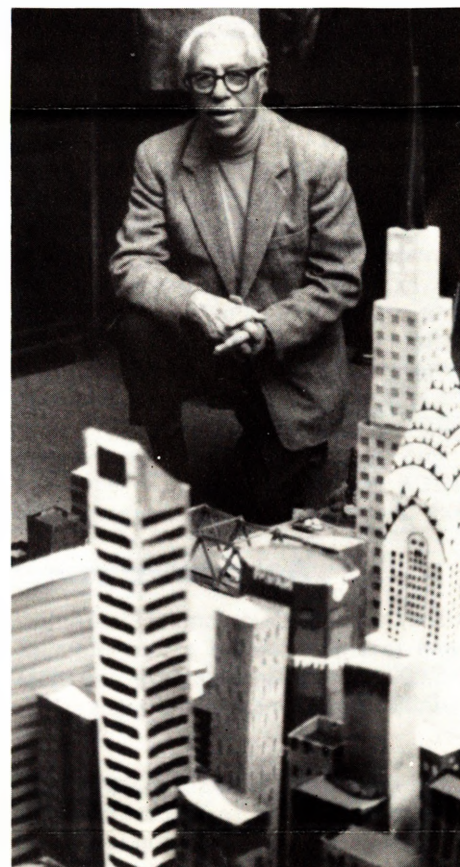
"I consider the first George Winter award conferred upon me by the American Society of Civil Engineers, of which I am an honorary member, one of the most significant and welcome awards I have received so far. George Winter was my good friend and my admiration for him was and is unbounded. Of course, he will go down in the history of engineering as the inventor of the cold-formed steel sections so successfully used in our structures, but he remains vividly in my memory as an exceptional human being for his mastery of the teaching art and for the humanity of his approach to his friends, his fellow teachers and students. I value, as he did, the heart before the intellect, and George's heart was generous and open to anyone who would appeal to him.

I believe the motivation of his award defines perfectly his character and his approach to life. His memory will never fade from the mind and heart of those who knew and loved him."

Dr. Salvadori has a long and distinguished career as an educator, engineer, and humanist with a worldwide reputation for excellence and innovation. He earned his doctor of civil engineering degree from the University of Rome in 1930 and his doctorate in pure mathematics from the same university in 1932. In 1978, he was awarded an honorary degree of doctor of science by Columbia University, and in 1991 the honorary degree of doctor of fine arts by Parson's School of Design.

Dr. Salvadori came to the United States in 1939 and was appointed to the faculty of Columbia University at that time. He became a partner in Weidlinger Associates, Consulting Engineers, in 1961 and was responsible for the design of hundreds of millions of dollars worth of construction throughout the United States and all over the world. In addition to his partnership at Weidlinger Associates, Dr. Salvadori is the founder and honorary chairman of the Salvadori Educational Center on the Built Environment (SECBE), a non-profit educational center dedicated to helping inner city youth to understand science and mathematics through the hands-on study of their built environment. In this year, nearly 2,000 disadvantaged students at more than 12 New York City schools have participated in the SECBE programs. He has also developed and teaches graduate courses at the City University of New York for training teachers in the Salvadori educational program.

Professor Salvadori is internationally known as a pioneer in numerical engineering and structural uses of reinforced concrete. He has been deeply involved in the analysis and design of space frames, space trusses, and shells. He is the author and co-author of five books on applied mathematics, ten books on architectural structures, and more than 130 papers on applied mathematics, structures, and ap-



Professor Salvadori with a model of Manhattan Island built in two months by twenty students in 7th and 8th grades in one of the Salvadori Minischools.

plied mechanics. Some of his books have been translated into 14 foreign languages. Professor Salvadori is an honorary member of the American Society of Civil Engineers, an honorary member of the American Institute of Architects, a Fellow of the American Society of Mechanical Engineers, the New York Academy of Sciences and the American Concrete Institute, and a member of numerous honor societies.

We congratulate Professor Salvadori on his selection as the first recipient of the George Winter Medal.



Al Johnson, center, AISI director of product applications, received recognition for 19 years service as secretary, Cold-Formed Steel Advisory Group, at the March 1991 meeting in Denver. From left: Roger Brockenbrough of USS, chairman of the Committee on Specifications; Johnson; Rick Haws, AISI cold-formed steel construction program manager, and secretary of Committee on Specifications.

Advisory Group Changes Name

The AISI Committee on Specifications for the Design of Cold-Formed Steel Structural Members unanimously adopted formal by-laws at its March 16 meeting in Denver. One provision of the new by-laws is to change the name from an advisory group to a committee. It was felt that the name change more accurately reflected the group's role in developing the AISI cold-formed steel specification.

The by-laws were prompted by the BOCA building code which requested AISI to document its consensus standard

procedures. The three national model building codes, BOCA, SBCCI and ICBO, require consensus standards such as the AISI Specification for the Design of Cold-Formed Steel Structural Members to follow ASTM guidelines. By adopting the by-laws, the committee is in compliance with these code requirements.

The by-laws were drafted by AISI's Construction Codes and Standards Committee, which is responsible for monitoring the committee's procedures.

Acknowledgements From the Center

The Center for Cold-Formed Steel Structures recently received a new grant of \$45,000 from the American Iron and Steel Institute to support its second year's activities.

The center wishes to acknowledge donations made to the Technical Library by the following universities, institutions, and associations by providing copies of conference proceedings, research reports, design documents, technical papers, and video tapes:

- American Institute of Steel Construction, USA
- American Iron and Steel Institute, USA
- American Society of Civil Engineers, USA
- Technical University Budapest, Hungary
- University of Sydney, Australia

If you have conducted research projects related to cold-formed steel structures and published any papers and research reports, please notify the center. We would like to obtain copies of your publications for our Technical Library and to receive pertinent information for our current research database.

In order to better serve the needs of engineers, product manufacturers, students, and other interested individuals, the center has begun the process of assembling computer programs and other aids for the design of cold-formed steel structural members, connections, and assemblies. The center wishes to acknowledge the donation of computer programs by the following companies and institutions:

1. Keck Tech, Inc., 286 East State Street, Salem, OH 44460.
2. Rand Afrikaans University, Johannesburg, South Africa.
3. RSG Software, 2803 NW Chipman Road, Lee's Summit, MO 64081.
4. Structuneering, Inc., 7322 Southwest Freeway, Suite 760, Houston, TX 77074.
5. Tondelli Engineering, P.A., 3606 West Swann Avenue, Tampa, FL 33609-4518.

Most of the above computer programs are listed in the new AISI publication, "Cold-Formed Steel Design Computer Programs," June 1991 Edition. These computer programs can be purchased from the various companies at the above addresses.

New Publications

Textbook on Cold-Formed Steel Design

The second edition of the textbook, *Cold-Formed Steel Design* by Wei-Wen Yu, is scheduled for publication by John Wiley & Sons in September 1991. This book has been revised on the basis of the 1986 Edition of the AISI Specification for the Design of Cold-Formed Steel Structural Members with the 1989 addendum. In addition to the use of the allowable stress design (ASD) method this book also includes a new chapter on the load and resistance factor design (LRFD) method. Specifically, this book includes the following 14 chapters: Introduction, Materials used in Cold-Formed Steel Construction, Strength of Thin Elements and Design Criteria, Flexural Members, Compression Members, Beam-Columns, Cylindrical Tubular Members, Connections, Steel Shear Diaphragms and Shell Roof Structures, Corrugated Sheets, Composite Design, Introduction to Stainless Steel Design, Computer-Aided Design, and Load and Resistance Factor Design.

Copies of the book can be purchased from John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012 at \$74.95 per copy.

ASCE Standard on Stainless Steel Design

The ASCE Standard 8-90, Specification for the Design of Cold-Formed Stainless Steel Structural Members, is now available. This new standard provides design criteria for determination of strength of stainless steel structural members and connections for use in buildings and other statically loaded structures. It includes design rules using load and resistance factor design (LRFD) and allowable stress design (ASD) methods. Copies of the standard can be purchased from Marketing Services, A084, American Society of Civil Engineers, 345 East 47th Street, New York, N.Y. 10017-2398 for \$52 per copy for non-members and \$39 per copy for ASCE members. For further information, call 1-800-548-ASCE.

New AISI Publications

LRFD Specification and Design Manual

The AISI Committee on Specifications approved the new *Load and Resistance Factor Design Specification for Cold-Formed Steel Structural Members* at its March 16, 1991 meeting held in Denver, Colo. This new LRFD specification and the commentary will be published in September by the American Iron and Steel Institute. Engineers in the United States will be able to design cold-formed steel structural members and connections by either the allowable stress design (ASD) method or the load and resistance factor design (LRFD) method.

In the LRFD specification, separate load and resistance factors are applied to specified loads and nominal resistance to ensure that the probability of reaching a limit state is acceptably small. These factors reflect the uncertainties of analysis, design, loading, material properties and fabrication. They were derived on the basis of the first order probabilistic methodology.

Automotive Steel Design Manual

The American Iron and Steel Institute published the first edition of the *Automotive Steel Design Manual* in 1986. The third update of the *Design Manual* has recently been completed and distributed to the registered holders by the institute. It includes a new Section 3.9 - Design Considerations, and significant revisions to Sections 2 - Materials, and 4.3 - Welding. The flow charts in Section 3 -Design, have been revised to facilitate use.

Also prepared by the institute is a new computerized version of the manual, AISI/CARS, which stands for Computerized Application and Reference System. This program is a significant contribution to the technology of automotive steel design. The applications mode performs calculations

according to all equations and procedures presented in the manual, and it allows the user to do parametric studies. In the reference mode, the complete text can be accessed, searched, or printed.

AISI/CARS is a \$995 computer program that the North American Steel producers can make available for only \$200, plus shipping. To order a complete program and users manual, please contact AISI/CARS, Desktop Engineering Int'l, Inc., 1200 MacArthur Boulevard, Mahwah, NJ 07430-9930 or telephone 1-800-888-8680. In addition to the complete program, a full-feature demonstration package also is available for \$25. A free copy of the program can be obtained by participating in a case study. For further information, please call 313-351-2667.

tions according to all equations and procedures presented in the manual, and it allows the user to do parametric studies. In the reference mode, the complete text can be accessed, searched, or printed.

AISI/CARS is a \$995 computer program that the North American Steel producers can make available for only \$200, plus shipping. To order a complete program and users manual, please contact AISI/CARS, Desktop Engineering Int'l, Inc., 1200 MacArthur Boulevard, Mahwah, NJ 07430-9930 or telephone 1-800-888-8680. In addition to the complete program, a full-feature demonstration package also is available for \$25. A free copy of the program can be obtained by participating in a case study. For further information, please call 313-351-2667.

Preliminary Design Guide

The Preliminary Design Guide for Cold-Formed Steel C- and Z-Members provides a simplified method of preliminary design for these members. The guide was developed by Dr. Roger A. LaBoube of the University of Missouri-Rolla, based on the 1986 edition of the Specification for the Design of Cold-Formed Steel Structural Members with the Dec. 11, 1989, Addendum. It has been calibrated to generally yield a conservative load or moment capacity, when compared to the specification. The design equations of the specification have been simplified for the C- or Z-shaped flexural or compression member. A unique feature of the guide is the use of full section properties for all strength calculations with appropriate reduction factors.

The guide also provides a mechanism for the code official or casual user of cold-formed steel to quickly verify the adequacy of a cold-formed steel C- or Z-member. The guide includes a commentary and design aids such as charts, tables, graphs and numerical examples. To order the 31-page booklet, please send a check for \$5 to the American Iron and Steel Institute, Publication Department, 1133 15th Street, N. W. 300, Washington, DC 20005-2701. Please make the check payable to American Iron and Steel Institute and request publication number CF 91-1.

Cold-Formed Steel Design Computer Programs

The American Iron and Steel Institute has recently published a list of 12 commercially available computer programs based on the AISI Specification for the Design of Cold-Formed Steel Structural Members. All programs have been written totally or in part by registered professional engineers.

The publication is titled Cold-Formed Steel Design Computer Programs. The 18-page booklet includes a bibliography about the author, a brief description of the program, system requirements and the program price. The programs can be ordered directly from the author. AISI is not associated with any of these programs, makes no assertions as to their accuracy and provides this document as a service to the specification users.

To order the AISI list please send a check in the amount of \$5 to the American Iron and Steel Institute, Publication Department, 1133 15th Street, N. W., Suite 300, Washington, DC 20005-2701. Please make check payable to American Iron and Steel Institute and request publication number SG-910.

CALENDAR

- Metalcon International '91, Oct. 16 - 18, 1991, Washington, DC, USA
- Short Course on Cold-Formed Steel Structures, Oct. 29 - Nov. 1, 1991, St. Louis, Mo., USA
- 1992 Annual Technical Session and Meeting of the Structural Stability Research Council, April 6 - 8, 1992, Pittsburgh, Pa., USA
- 11th International Specialty Conference on Cold-Formed Steel Structures, Oct. 20 - 21, 1992, St. Louis, Mo., USA

Continuing Education Programs

Short Course on Cold-Formed Steel Structures

The 12th Short Course on Cold-Formed Steel Structures will be held in St. Louis, Mo., Oct. 29 - Nov. 1, 1991. This course deals with the fundamentals of cold-formed steel design and is intended to provide participants with a better understanding of the basic principles used in the current design methods for cold-formed steel structural members, connections, and structural assemblies.

This short course will include some new features in the four-day program:

- (a) The course will discuss both ASD and LRFD *Cold-Formed Steel Design Manuals* as published by American Iron and Steel Institute in 1986 and 1991, respectively.
- (b) The course will use a newly revised textbook on *Cold-Formed Steel Design* by Wei-Wen Yu as published by John Wiley & Sons in 1991.
- (c) The course will include a discussion of computer-aided design and will use some available computer programs for the design of structural members.

The enrollment for the course is limited to the first 32 applicants. The deadline for registration is Oct. 15, 1991. For further information, please contact the course director, Dr. Wei-Wen Yu, or Walter Ries, University of Missouri-Rolla, Rolla, MO 65401. Telephone 314-341-4467 or 314-341-4132. Fax: 314-341-4476.

11th International Specialty Conference on Cold-Formed Steel Structures

The 11th International Specialty Conference on Cold-Formed Steel Structures has been scheduled for Oct. 20-21, 1992, in St. Louis, Mo., USA. You are invited to submit papers for presentation at this conference.

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 techniques
- construction methods
- economy and effective use of cold-formed steel
- 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 should be submitted by Nov. 1, 1991, and written manuscripts should be sent by May 1, 1992, to Dr. Wei-Wen

Yu, Center for Cold-Formed Steel Structures, University of Missouri-Rolla, Rolla, MO 65401-0249. (For more information, telephone 314-341-4467, Fax 314-341-4476.) 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.

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

Trade Show

The AISI will participate at Metalcon International '91, Oct. 16-18 in Washington, DC. This is the premier metal construction industry conference and trade show. AISI's exhibit will show the benefits of steel roofing—a superior building material which offers weather-tightness, durability, cost efficiency and trouble-free performance. In fact, in

recent years, metal roofing has been used in more than 50 percent of all low rise commercial and industrial buildings. AISI invites you to attend the conference and visit the AISI booth, Number 403, to take a look at just one of the many applications of steel—the most versatile building material.

Center for Cold-Formed Steel Structures
University of Missouri-Rolla
Rolla, MO 65401-0249

Non Profit Org.
U.S. Postage

Paid

Permit No. 170
Rolla, MO