

NSSC To Offer Pre- And Post-Conference Courses

A half-day course on Floor Vibrations will be offered prior to the opening of this year's National Steel Construction Conference and a full-day course on Low and Moderate Seismicity Requirements for Low-Rise Steel Buildings will be offered following the conference.

The NSSC, which is sponsored by the American Institute of Steel Construction, Inc., is scheduled for April 1-3 in New Orleans. The conference is the premier event for the steel industry and brings together structural engineers, structural steel fabricators, detailers, erectors and educators.

Scheduled speakers at the Floor Vibrations Short Course are Thomas M. Murray, P.E., Ph.D., of Virginia Polytechnic Institute and State University, David E. Allen, Ph.D., of the National Research Council of Canada, and Eric E. Unger, Sc.D., P.E., of Acentech, Inc. The course will cover the full range of vibrations that commonly occur in buildings. Highlights include: acceptance criteria for human comfort; design for walking excitation; evaluation and solutions of vibration problems; and design for sensitive equipment.

Lawrence G. Griffis of Walter P. Moore & Associates, Inc., will present the Seismicity course, which will focus on steel design in low and moderate seismic areas. Topics include the selection of structural framing systems and connection detailing based on seismic load requirements. Lecture notes and computational examples will be distributed.

In addition to the pre- and post-conference courses, the NSSC will offer 29 technical sessions and the 1998 T.R. Higgins Lecture. Also, the winners of the 1998 Engineering Awards of Excellence also will be announced.

Keynote speaker this year is Daniel R. DiMicco, President and General Manager of Nucor-Yamato Steel Company. DiMicco will speak on the steel industry from a producer's perspective.

"In addition to the educational seminars, attendees will benefit from the extensive networking opportunities presented at the conference," explained Patrick Newman, AISC's

Director of Technical Information Services and the conference director. "Many of the industry's top professionals will be on hand and this is a chance to exchange ideas with your peers," he added.

The NSSC also includes an extensive Guest Program, including a wide variety of daily tours. The conference dinner will be held at the Aquarium of the Americas in New Orleans.

Finally, the NSSC includes a large exhibit hall with nearly 70 vendors of such products as software, fabrication equipment and bolts.

Conference registration costs \$395 (\$320 for non-AISC members) with additional fees for the short courses. An advance program has been mailed to all Modern Steel Construction subscribers. If you have not yet received your copy, you may request one by faxing 312/670-5403. Also, conference and registration information can be found at AISC's web site: www.aisc.org.

1998 NSSC Schedule and Speakers

- Reinforcement Design for Metal Building Systems (Donald Johnson, P.E., and James M. Fisher, Ph.D., P.E.)
- Design of Connections Framing into the Weak Axis of Columns (Duane S. Ellifrit, Ph.D., P.E., and Marshall T. Ferrell)
- Designing for Torsion (Charles Carter, P.E., and Paul Seaberg)
- Results of New Research (John Dawe, P. Eng., and Venkatesh K.R. Kodur, P.Eng.)
- Steel Joist Topics (Walter Schultz, P.E., Thomas M. Murray, Ph.D., P.E., and Cary M. Andrews, P.E.)
- Steel Deck Topics (Dick Heagler, Larry Luttrell and Sam Easterling)
- Engineering and Quality Criteria for Steel Structures (David T. Ricker and Cindi Zahn)
- 1997 AISC Seismic Provisions for Structural Steel Buildings (C. Mark Saunders, Subhash Goel and Gregory Deierlein)
- Seismic Design (TBA)
- Specifications: Is Your Steel Specification Up-To-Date? (William Minchin and Richard DiSalvo)
- Design/Build: When It Works and When It Doesn't (Richard Sharpe, FAIA, and Kenneth Gible)
- Special Inspection (Frank Zamecnik and Terry Gilbertson)
- Electronic Data Interchange (Roger Stroud and Keith Grubb)
- World Wide Web (Jacques Cattan)
- Don't Be Caught Off Guard! Theft (Eugene F. Ferraro)
- Increasing Fabricators Profits (Phillip D. Sherrill, James E. Drylie and Hank Battaglia)
- Are You Hiring the Right People? Personnel—Do You Need Them? Absolutely! (Carrie Partin)
- The Customer is King, Right? Only If He Pays His Bills (Dan Biedenbender and Gerry Martin)
- EPA-Environmental Protection Agency (Ron Peppe)
- Welding Solutions (TBA)
- Details for Ductility (Omer Blodgett)
- Prequalification of Welding for Engineers (Duane Miller)
- Weld Inspection (Robert Shaw)
- Erector Certification (Fred Haas)
- The Practice of Field Welding Moment Connections (TBA)
- Temporary Bracing—Let's Have No More Failures (Mike West, John Bailey and Bob Dunn)
- Designing for Erection and Fabrication Efficiency (Len Middleton)
- Safety on the Jobsite (Barry L. Barger)
- Case Study: Phoenix Baseball Stadium (Brad Lueger, P.Eng., and Jim Brown)



Marc Dutil is the driving force behind the Steel Plus Network

Fabricator Network May Cut Detailing Costs

In a move both financially lucrative as well as visionary, Canam Steel Corporation has begun creating a network of fabricators and suppliers throughout Canada and the U.S. Called the Steel Plus Network, the program provides detailing assistance to its members as well as networking opportunities.

Canam is the largest manufacturer of steel joists in Canada and the second largest supplier in the U.S. It also has a large fabrication division. "Canam's fabrication wing deals with the same issues other fabricators deal with, but as a large company, we had the resources to develop proprietary solutions," explains Marc Dutil, Vice President of Steel Plus. Beginning in 1992, Canam began using an in-house computerized detailing system they named PDM. Rather than sell the program as other fabricators have done with similar in-house programs, they instead saw it as a marketing opportunity for both the fabrication and joist divisions.

"Steel Plus is a network of North American fabricators and suppliers investing in a long-term solution," Dutil says. Membership is limited and is by invitation only. Currently, there are nearly 70 fabricator members, with slightly more than half in the U.S. "Half join to save money, while the other half are attracted to the vision of investing in the future," according to

Dutil. In addition to fabricators, there are service centers and a variety of suppliers, including paint producers and bolt manufacturers, primarily based in Canada. Ultimately, Canam hopes to attract a membership of 50 Canadian fabricators and 250 U.S. fabricators—all by 2001. "We're currently growing by two or three fabricators a month, with most of the U.S. fabricators concentrating in the building market."

While the opportunity to save money on materials from the supplier members is an added bonus, most of the members seem attracted by the detailing package. Canam guarantees that drawings will be turned around in eight business hours, with details and reports sent electronically. Plus, costs are always predictable: \$2.75 per sheet and \$35/hour. "On average, it works out to about \$10/ton," Dutil claims. "Purchasing detailing on the open market is much more expensive."

Steel Plus maintains ownership of all of the equipment as well as the software. It provides computers, a 36" plotter, printer, electronic mail tool and a full-featured CAD package to its members. "And the technology is always leading edge," Dutil insists. "There's a 15-person full-time staff with a \$1.5 million annual budget devoted to development." The software also provides quick access to anchor plans, joist lists, material lists, elevation lists, elevation views and structural details.

Membership is not inexpensive, however. Members enter into a five year agreement and are charged dues of \$1,000/month plus \$150-\$350/month for equipment, depending on options. Membership also includes 20 training days per year, up to \$2,000 in reimbursement of AISC Quality Certification fees and reimbursement for AISC membership fees. In addition, members receive volume discounts. In 1995, discounts totaled \$150,000, and discounts reached \$400,000 in 1996. Of course, while members are encouraged to purchase services from Canam, they are not under any obligation to do so.

While the PDM detailing system is reputed to be fairly basic, fabricators need to be aware that using it does require some effort and there is a learning curve.

"We've been members since January 1997 and I'd recommend it," said David Williams, President of AISC-member Drake Williams. Williams had purchased a computerized detailing system back in the early 1980s, but the technology didn't live up to his expectations and his company went back to manual detailing. "We were gun-shy about getting back into electronic detailing; the hardware and software were both very expensive. But with Steel Plus, you're essentially leasing the equipment and software. You can get in without a big investment."

During the first year of membership, Drake Williams did about four projects using the PDM software. "There was a big learning curve, but we're encouraged by the results. The Steel Plus people have a large investment in making the system work and they'll work hard to make you successful using it," Williams said. "And we've improved with each project."

Boyd Gutrod, President of AISC-member Germantown Iron & Steel Corp., had a similar experience. "The drafting portion was the most important aspect to us when we joined a little over a year ago," he says. "We particularly liked the speed with which they could turn around shop drawings. Also, we deal a lot with joists and this program works very well in preparing shop drawings for steel joists."

Germantown had used other computerized detailing packages before, but they prefer PDM. "We have a modem and send the basic information to them electronically. The next day we have the drawings back. We've done almost 30 projects with them so far."

As with Drake Williams, Germantown has primarily used the program for low-rise commercial buildings, light manufacturing and retail buildings. One of the few differences Gutrod has noticed between using PDM and a conventional outside detailer is the form in which they receive the drawings. Rather than large rolls, they print out 11x17 sheets. "But it turns out that our shop people like it that way. They find a booklet of plans easier to work with than the conventional roll."

While the majority of participants are happy with the results, there are some dissenters. AISC-member



Recent work by Steel Plus members include such projects as the Southbend Riley High School in Southbend, IN (top) and a Chrysler plant in Windsor, Ontario (above).

Salisbury Steel Products quit after two years. "The system doesn't work," complained Ray Gutierrez, Salisbury's Sales Manager. "You need someone in-house who is very knowledgeable about the system." Gutierrez says that part of the problem is the shortage of qualified detailers. "You need a good detailer to get good results with this system. But we've found that there aren't a lot of good detailers available. We have one good guy in-house, and he's overworked. We've found it better to send drawings to outside detailers than to use the SteelPlus system." Steel Plus does recognize the need for more good detailers, according to Dutil, and will be opening a school for detailers in February. The school will include a placement service for the network's members.

Beyond the detailing aspect of the network, however, is the opportunity to forge closer relationships with other fabricators. "While we joined primarily

for the detailing system, I also like the idea of an alliance among fabricators," explained Williams. A membership perk is being able to attend SteelPlus' annual convention with its obvious networking opportunities. "It's a general business meeting rather than a technical session," Dutil says. The contacts with other fabricators—including, of course, Canam—have proved particularly useful to some fabricators, especially in this busy economic climate. It allows fabricators to subcontract work they may not otherwise be able to handle," Dutil says. Canam also claims that they promote SteelPlus members to general contractors and owners throughout the country.

More information on SteelPlus can be obtained on Canam's website at www.canammanac.com.

Strong Construction Market Extends Steel Shipping Lead Times

The continuing strong construction market has created increased lead times for shipping wide flange sections by mills to structural steel fabricators. As of the beginning of December, lead times for domestic producers were roughly twice the historic norm.

While the shutting down of production of wide flange shapes by Bethlehem Steel and the closing of one of Northwestern Steel & Wire Co.'s mills has contributed to the extended lead times, the biggest culprit is simply the strength of the economy. "Usually, when you see this type of demand, a lot of the skylines in major cities are changing," explained Tom Cooney, Sales Manager of the Steel Division at Northwestern Steel & Wire Co. "But this time the market is stronger and deeper. There are a lot of low-rise office buildings, bridges, hospitals and schools being built."

Also, the strength of the market has affected not just steel, but concrete as well, according to James Wroble, Vice President of Sales and Marketing for Chaparral Steel's Structural Business Unit. Chaparral's parent company is one of the largest domestic cement suppliers and Wroble reports that cement prices and lead times are up. "Rebar lead time also is up. It's just a strong construc-

tion market across the board," he explained.

Added Louis Gurthet, President of the American Institute of Steel Construction, Inc.: "I would like to point out that the steel industry is not alone in striving to meet material supply in an expanded market. Invariably, when the construction market expands to this extent there is an increased construction time due to overall material availability and labor shortages.

"Both the fabrication community and mill producers are working to bring supply in line with normal delivery," Gurthet said. "The general conclusion, after extensive review with the structural shape producers, is that material is available but on an extended basis. However, by working with fabricators and mills, customers can assist in obtaining reasonable steel deliveries through advanced commitments and pre-awarding of steel. The good news is that, based on the steps taken by mills to increase their production and the increase of imports, contracts awarded in the spring of 1998 will see improved steel deliveries, with normal delivery expected to return by summer."

Both Chaparral and Nucor-Yamato are now utilizing allocation or controlled order entry programs. "An allocation is simply a method to make sure all customers receive equitable treatment based on past ordering practices when mills are operating at capacity and lead times extend," explained Robert W. Johns, Sales Manager, Nucor-Yamato Steel Co. Nucor-Yamato, as of December 1, was still accepting bookings for January rollings of some larger shapes. However, for most shapes lead times were 8-12 weeks.

To relieve the pressure on the lighter sections, Nucor-Yamato is bringing steel into the U.S. from its Japanese joint venture partner, Yamato-Kogyo. "Several vessels are scheduled to arrive in the first quarter," Johns reported. "While we expect the material from Yamato to substantially resolve problems with individual sections, we will be monitoring entry within controls to avoid product mix distortions that unfairly close rollings for one group of customers or impact normal product normal product mix versus productivity. We will take

advantage of any flexibility created by the Yamato program to optimize production between our two mills."

Chaparral instituted their reserve tonnage program last June. "There's still steel available; fabricators just need to plan more," Wroble said. "Stock is down from six months ago, but we're rolling all of our shapes each quarter and hope to rebuild inventory."

In contrast, TradeARBED's lead times are only slightly extended from historical averages. As of December 1, TradeARBED was still taking some January orders and February and March rollings were open.

Also expected to help will be the opening of Nucor's new steel in September 1998, though it's not expected to be a significant factor until January 1999. In addition, both Chaparral and Steel Dynamics Inc. have announced that they will soon have new mills underway.

HSS Seminars

In response to the growing popularity and use of hollow structural sections, AISC will offer an HSS seminar in 13 cities next year. The seminar, offered in association with the Steel Tube Institute and the American Iron & Steel Institute, will review and cover all aspects of HSS design and connections, including both simple and moment connections.

The seminar, to be offered in 13 cities, will run all afternoon and into the evening. Sessions include:

- Materials and Specifications;
- Welding & Bolting;
- Shear Connections;
- Moment Connections;
- Tension & Compression Connections, Column Splices, Base and Cap Plates;
- Truss Connections and Examples;
- Constructability.

Cost of the seminar, including dinner, is \$175 for non-AISC members (\$135 for each additional attendee from the same firm) and \$140 for AISC members (\$100 for additional attendees from the same firm).

The seminar will include extensive hand-out material, but will not include the new HSS Connections Manual, which can be purchased beginning in January for \$72. The seminar starts at 1:00 p.m. in each city and runs through 9:00 p.m. It has a continuing education value of 6.0 Professional Development Hours or .6 CEUs.

All *Modern Steel Construction* subscribers will automatically receive a detailed program mailing.

1998 HSS Seminar Schedule

February 3	Charlotte
February 4	Atlanta
March 18	Philadelphia
March 19	Houston
April 28	Cincinnati
April 29	Chicago
May 19	Boston
May 20	New York
June 2	Denver
June 3	Kansas City
June 16	Los Angeles
June 17	San Francisco
June 18	Seattle

AISC Announces New Seminar Series: "Designing Steel for Serviceability"

The advent of powerful computer software allows engineers to readily review a myriad of alternative design schemes to obtain optimum strength designs. Today's successful designer must look beyond just strength, however, and consider a building's function and maintenance requirements. In short, serviceability issues are becoming increasingly important.

AISC's new 49-city Seminar Series, "Designing Steel for Serviceability", covers five important topics: frame layout options & strength design; roof ponding; floor elevation & levelness; control of lateral drift; and control of floor vibrations.

Frame Layout Options & Strength Design: This portion of the seminar will include information on selection of a steel system, frame layout options and trade-offs, structural analysis, member selection for strength, and serviceability design concerns.

Roof Ponding: Most commercial buildings are designed and constructed with near-flat roofs. Too often, this is not well coordinated with roof drain

location, which can create an unforeseen ponding load on the roof structure. If not considered in design, this ponding effect can cause leakage, damage or even partial roof collapse. This presentation provides an explanation of the ponding mechanism and through design examples shows how to minimize structural complications.

Floor Elevation & Levelness:

The placing of fresh concrete on flexible floor systems to achieve a level floor requires an understanding of the interactive effect of construction floor deflections and the additional loading that may be created in the leveling process. For the unwary, this can result in: non-level floor surfaces; interference with ceiling plenum elements; additional concrete to compensate for the sagged supporting systems; failure to attain specific floor elevations; and potential construction collapse. This portion of the seminar will discuss these issues and through design examples provide alternative solutions to this troublesome problem.

Control of Lateral Drift: Lateral drift of a building has always been an index of structural performance under service loads. And as structural materials have become stronger while non-structural materials have become lighter and less rigid, its importance has only increased. This portion of the seminar provides new information by correlating the racking effect of lateral deformations with damage to various non-structural components. A design example will be presented.

Control of Floor Vibrations:

Excessive vertical motion of floors can cause significant occupant discomfort and sometimes alarm. Modern construction materials and methods, where both structural and non-structural systems are lighter, have only exacerbated the problem. Serviceability guidelines in the past emphasized stiffness limits that have been inefficient in neutralizing potential vibration in floors: Only when both mass and damping are included in the total design can effective control be expected. This portion of the seminar will provide guidelines for controlling this problem.

The seminar series has a CEU value of 0.55 (5.5 PDH). Registration is \$120 (\$90 for AISC members). The

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registration fee includes a wide range of handouts.

Please note that all MSC subscribers will automatically receive a registration form six weeks prior to the seminar scheduled in their area.

For more information, call 630/369-3772, fax 630/369-3773 or point your favorite web browser to:
<http://www.aisc.org>

Seminar Schedule

Jan. 14	Los Angeles
Jan. 15	Los Angeles-East
Jan. 21	Columbus, OH
Jan. 22	Cleveland
Jan. 27	Jacksonville
Jan. 29	Tampa
Feb. 4	Boston
Feb. 5	Portland, ME
Feb. 11	Albuquerque
Feb. 12	Phoenix
Feb. 18	Pittsburgh
March 3	Kansas City
March 5	Denver

Detailer's Commentary: Reducing Costs Through More Complete Design Drawings

By Jim Long

While it is difficult to exactly quantify the problems and added costs caused by inadequate design drawings, it is clear that poorly prepared design drawings can have a substantial negative impact on a project's schedule and costs. Detailing professionals need accurate and complete design information in order to produce the accurate and complete steel details that the fabrication industry expects and deserves. There is no room for ambiguous or incomplete steel details.

Below is a list of seven steps fabricators and engineers can take to make sure that design drawings are complete. Ultimately, following these steps will help everyone, from the detailer to the fabricator to the engineer to the project's owner.

1. Structural, architectural or mechanical drawings should be checked and coordinated by the design professionals. Failure to do so often results in conflicting or missing

information.

2. Dimensions should add up. If they don't, the detailer cannot close out the structure; too often there are missing or erroneous principle controlling dimensions.
3. Structural drawings should be complete with all necessary sections, details and other data needed to properly convey the design intent.
4. Avoid the use of "similar" sections and "general" details that are subject to varied interpretations.
5. Structural design drawings should show the extent, limitations or locations of the sections.
6. Moment connections should be indicated with information on the types of moments and how to apply the moments in various situations (for example, at the roof); likewise, other special conditions should be clarified.
7. Design drawings provided to the detailer should not be marked "not for construction," "GMP drawings," "95% drawings," "issued for steel bid only," etc.; rather, drawings should be as complete as possible to eliminate costly and time-consuming changes.

In the fast-paced construction industry today, it may seem impossible to meet this criteria for design documents. To project owners, spending time and money in the design phase may look to be cost prohibitive; however, accurate and complete design drawings eliminate the inevitable schedule delays and increased costs—which no one can afford.

Steel detailing professionals want to take a proactive position in the steel industry. We want to be part of the team that makes steel the building material of choice.

Jim Long is president of J.B. Long, Inc., in Fleetwood, PA. He is a member of the National Institute of Steel Detailing, as well as being certified under NISD's "Quality Procedures Program."

New HSS Connections Manual

AISC's new Hollow Structural Sections Connections Manual is now available. The new manual is a guide to shear, moment, bracing, truss and other connections for HSS. Similar in format to the AISC LRFD Manual of Steel Construction, Volume II (Connections), the manual includes chapters on:

- Dimensions & Properties
- Welding Design & Fabrication
- Bolted Connections
- Simple Shear Connections
- Moment Connections Between HSS and W-Shapes
- Tension & Compression Connections
- Cap Plates, Base Plates and Column Splices
- Welded Truss Connections
- Truss Design Examples

The manual is a must for every engineer, fabricator, erector, detailer and contractor. It was prepared by the AISC Committee on Manuals, Textbooks and Codes and published by AISC in partnership with the Steel Tube Institute of North America and supported by the American Iron and Steel Institute.

To order a copy of the \$72 (\$54 for AISC members), call 800/644-2400 or order from AISC's web site at www.aisc.org.