



## Topics for AISC “Steel Talks”

The following lectures will be given by AISC Staff at no cost to the sponsor. Steel Talks are typically 60 minutes. Attendees have the opportunity to earn 1 PDH/0.1 CEU/1 AIA LU. Steel Talks are AIA registered presentations. Individuals should always determine whether they qualify for PDH credits based on requirements by their local regulating body. Limit one Steel Talk per meeting.

### **Architecturally Exposed Structural Steel—Realizing Your Expectations**

Architects want the architecturally exposed structural steel on projects to meet their expectations for appearance and budget. Fabrication, erection and acceptance criteria can be difficult to define in the project documents, often leading to disputes between the designer and the contractor over what was desired vs. what was bid. Building on language in the *AISC Code of Standard Practice*, participants in this program will see how they can more effectively communicate the desired appearance for exposed structural steel in a format that contractors can price/budget/ bid appropriately. Resources and tools are provided to assist in selection, specifying, budgeting, and evaluation of architecturally exposed structural steel.

### **The Economy and How it Affects the Steel Design and Construction Industry**

With the current economic climate that is affecting all areas of the construction industry, The American Institute of Steel Construction is actively following the trends that affect the structural steel industry and doing what we can to keep all parties informed of how best to manage the conditions that arise. The AISC Steel Solutions Center is active daily in assisting engineers with conceptual solutions on their projects to bring more value to their work and assist in making structural steel a more viable and cost effective solution. This presentation will discuss current economic trends and their impact on the design and construction industry. Special attention will be paid to the implication of these trends on the structural steel supply chain. This presentation will assist attendees in better anticipating and planning business practices for this year and into the coming year.

### **Innovations in Steel**

Fabricated structural steel is the material that you've always wanted to have at your disposal for that special project or client. This program will demonstrate how recent steel industry innovations allow engineers and architects to easily express their design concepts and overcome client serviceability concerns. As a partner in the procurement and delivery process, steel can provide strategic ideas for cost-effective and time-saving project performance. Attendees will gain the knowledge to understand and incorporate low floor-to-floor height systems and long span solutions for economies of construction, appreciate the current supply chain and market conditions impacting the construction industry, apply Building Information Modeling (BIM) and improved shop drawing review methods for use on their next project, incorporate innovative connection methods and modular systems in future challenges, and have an understanding of how best to apply the requirements of AESS and current Sustainability concerns.

### **Steel Solutions Center FAQs**

Averaging over 200 inquiries each week, the Steel Solutions Center can readily identify trends in the inquiries received. The Steel Solutions Center works closely with the Engineering and Research Department and the Committee on Technical Assistance to develop new Frequently Asked Questions to address these topics. These questions are published on the website each quarter, providing a valuable resource to the design and construction industry. This one-hour seminar focuses on the most commonly asked questions from this resource, including such topics as the new 2010 *Specification*, the new 2010 *Seismic Provisions*, and high-strength bolting.

### **Harnessing the Power of AISC Design Guides**

Structural Engineers are called upon to tackle tough analytical problems every day and AISC has many resources available to make that job a little bit easier. This one hour presentation will familiarize you with the great technical resources available in the AISC Design Guide Series. We will review the Design Guide Series paying particular attention to the Design Guides that cover floor vibrations (DG#11), Base Plate and Anchor Rod Design (DG#1), retrofit and rehabilitation of existing structures (DG#15), Low and Medium Rise Buildings (DG#5), and design of industrial buildings (DG#7). The session will also include a general review of all AISC Design Guides, including the newest ones on column base plates, steel plate shear walls, welding, and fire.

### **Framing Solutions for Steel-Framed Office Buildings**

Attendees will understand how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants. The program will demonstrate how the flexibility of a steel frame system can increase an office owner's competitive advantage in the marketplace through easier, cost-effective tenant improvements and changes.

Attendees will discover the design benefits steel brings to office projects by allowing column-free spaces, which provides more freedom for office layout. Attendees will gain knowledge as to how an integrated, collaborative steel team can employ interoperable design software to reduce project schedule, realize significant cost savings, improve quality control, and increase productivity.

### **Multi-Story Residential: Low Floor-to-Floor Structural Steel Framing**

Market conditions have changed recently and structural steel framing has become an economical alternative to structural concrete for mid-rise hotels and other multi-story residential projects.

This one-hour presentation will provide a detailed description of four steel-framed systems that can achieve floor-to floor heights as low as 8'-8" while offering greater speed and economy over conventional concrete framing systems. Attendees will learn what these different systems are and how they provide benefits to the architect and client. The presentation will also include examples of recently completed steel-framed multi-story residential projects describing how the use of each particular system benefited the project owner.

### **Chapter N – Quality Control and Quality Assurance**

AISC has added a new chapter in the 2010 *Specification, Chapter N—Quality Control and Quality Assurance*. This Steel Talk will discuss the reasons why AISC included this new chapter, and how Chapter N provides both a high level of assurance and a consistent set of inspection requirements. Most of the requirements of Chapter N are derived from current requirements in the IBC and those in related standards, such as AWS D1.1 and the RCSC *Specification*. Chapter N makes these requirements clear and places them in a single document.

### **Structural Steel Supply and Availability: The Crucial Role of Service Centers**

This presentation of the role of a service center provides participants with first-hand knowledge of the crucial role these organizations play within the structural steel supply chain.

Steel service centers supply up to 70% of the nation's requirements for structural steel and during this presentation, participants will realize just what this means to architects, owners, engineers and contractors—as well as to structural steel fabricators.

#### **A review of the structural steel supply chain and how it has evolved over time**

- What a steel service center is
- Who buys from service centers and why
- Why fabricators work with service centers
- How service centers can enable early occupancy
- Why architects need to know their local service center
- What value-added services and processes service centers provide
- How service centers help with finance and cash flow

In addition, participants will realize what material is commonly stocked and, therefore, commonly available and just how effective service centers are in creating maximum availability of structural steel for the marketplace.

Service center personnel are the industry's most knowledgeable people regarding steel pricing, trends and commonly stocked items. Understanding how service centers function and learning to work with service center personnel effectively can ensure an on-time, on-budget project with minimal lead times required for material availability.

### **Building Tomorrow's Steel-Framed Parking Structures Today**

The popularity of steel-framed parking structures is growing nationwide. Many owners, developers and designers are realizing that steel-framed parking structures have a clear advantage in economy and durability. In this one-hour presentation, learn how lightweight steel framing, ample steel supply, and active competition in the steel fabrication industry contribute to rapid project delivery and low construction cost. Examples will be provided that show how smaller steel structural members improve lighting and security for garage users. Find out how modern coating systems and a readily accessible steel frame simplify inspection and reduce life cycle maintenance costs. Additionally, see how the almost 100% recycled content of today's structural steel supports environmental responsibility.

### **Healthcare Success! Applications and Techniques for Structural Steel Framed Construction**

Healthcare project teams strive to design and build facilities that will not only handle the challenges of today's budget, schedule, and planning constraints successfully, but also handle future upgrades including equipment changes, facility expansions, and changing patient care standards, with ease. Structural steel has continued to be the material of choice for healthcare projects nationwide. By learning about various ways to overcome unique healthcare project challenges with structural steel framing, you can realize similar success.

The American Institute of Steel Construction tracks the healthcare construction market closely and monitors successful projects nationwide to investigate how project teams overcame various challenges through the use of structural steel. Such challenges include tight urban site constraints, vibration sensitive equipment, budget and schedule requirements, future adaptability concerns, working in an IPD/BIM environment, and sustainability. We will not only demonstrate specific lessons learned and successful innovations that you can use on your next project, but also illustrate how to achieve healthcare project success and reduce your risk by working in a collaborative environment with the structural steel fabricator (and other members of the steel team) involved early in the design phase. Attendees will walk away with specific solutions to challenges that owners, architects, engineers, and general contractors face every day in the healthcare construction sector.

### **Around the Bend: What you need to know about Steel Bending**

Attendees will gain an understanding of the overall supply chain of Structural Steel in the current construction market. Attendees will learn how steel is made, the recycled content, how it is distributed into the marketplace (by either fabricators or service centers), how that steel is fabricated and shipped to their job site. This information gives the attendee a clearer vision of the steel industry than just picking a steel shape out of the *Steel Construction Manual*. The Bending Processes of Structural Steel portion of presentation will inform attendees that there are several different types of bending processes to suit their desired result and to meet their client's expectation. The 'What Do We Need' from the Architect portion of the presentation goes through a variety of information that is needed to be included on the construction drawings for the construction team (fabricator, contractor and erector)

to establish a clear vision of what the architect is expecting. This covers member sizes, proper nomenclature, and architecturally exposed structural steel applications and requirements.

Above and Beyond Your Simple Rolled Shapes will reveal to attendees what is possible in the bending industry: S-Curves, Off-Axis, Multiple Axis, Spiral/Helix Bends and what the architect needs to know about each. Attendees also will be equipped with bending resources and where to find them: articles, brochures, experts, etc.

### **BIM, 3D Modeling & Interoperability—Integrating the Structural Steel Design and Construction Process**

This program provides information on how the use of 3D modeling technology has greatly simplified the structural design, detailing and fabrication process. The need for traditional shop drawings is eliminated and the approval process is greatly simplified, reducing the construction schedule for structural steel construction projects. Further information is provided on how this process reduces the amount of errors and delays on projects. Different types of project delivery methods are discussed as well as various recently completed projects that have successfully utilized this process. A brief discussion of the development of this process and the types of software compatible with this process are also included.

## **Building Exciting Structures with STEEL: Using Hollow Structural Sections (HSS)**

The use of Hollow Structural Shapes (HSS) in North America is becoming more and more popular for use in exposed applications, columns, and vertical bracing in structural buildings. The very popular product has been used more often in other parts of the world, and now the popularity is gaining strength here as well in all types of applications. Through the use of this square, rectangular, and circular steel tubing, endless opportunities are available to the architect and engineer with this product. Through the education in this program, the attendee will learn firsthand the different types of methods of producing HSS in North America. Attendees will also see a video of HSS production from an actual HSS production shop. Attendees will learn the various types of HSS and how to correctly specify the product for its specific end use. Case studies and project pictures will be shown of the use of HSS in North America and also around the world to give the attendee a new “tool box” of ideas on their next project. The program will address the use of HSS in architecturally exposed structural steel and the types of fire protection and coatings that can be utilized with the product. Overall, the attendee will leave the program with a good understanding in the HSS production, its specification, and its options for application in the real world.

## **Specifying Camber: Rules of Thumb for Designers**

Specifying beam camber can provide substantial depth and weight savings to a floor system and an entire building. Though there are times when specifying camber can be advantageous, there are situations in which it is also impractical. The suggestions given in this presentation are based on the summarized results of AISC’s Steel Solutions Center’s research and will help you achieve the greatest benefit when specifying camber

## **2016 AISC Standards**

This presentation highlights some of the important changes in the 2016 AISC 360 *Specification for Structural Steel Buildings*, ranging from updated material standards to new shear strength provisions. It also explores the changes in the 2016 AISC *Code of Standard Practice*, including two of the most significant: the generalization of the AISC *Code of Standard Practice* to include use of models, either in place of drawings or in combination with them; and an expansion of architecturally exposed structural steel (AESS) requirements to provide multiple levels of finish. The process of developing and adopting these standards is also discussed.

## **Structures, Sustainability and Steel**

A series of three presentations focusing on sustainability are available that explore the positive contributions that structural steel can make to high-performance buildings and a sustainable environment.

**Sustainability 101** explores the structural steel supply chain from a cradle-to-cradle perspective. Attendees will discover the sustainable attributes of structural steel, recent improvements in the steel making process, the importance of utilizing recycled material, waste reduction opportunities and key opportunities to enhance the sustainable performance of construction projects. In addition, the interconnectedness of sustainability, collaborative design and the use building information modeling will be discussed.

**Sustainability 201** presents an overview of current green rating systems (LEED and The Living Building Challenge), codes (IgCC) and standards (ASHRAE 189.1) from the perspective of construction materials. Specific credits, compliance paths and necessary documentation will be discussed relative to structural steel. Recent LCI data for structural steel will be presented and a discussion of LCA methodologies is included.

**Sustainability 301** explores the impact that the selection of structural steel framing can have on the energy performance of a building. Steel elements that bridge across the insulation in a building enclosure can cause significant heating and cooling energy loss—but they don’t have to. As buildings become tighter and more insulated, it becomes increasingly important to address thermal steel bridging. There are several mitigation techniques that have been used and these details and concepts will be shared and discussed. The issue of the thermal capacity of buildings will also be explored from the perspective of system mass, exposed thermal area and the heat propagating properties of materials.