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## AISC Steel Talks

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Registration and Attendance: For registration and attendance policies, please go to [www.aisc.org/steeltalks](http://www.aisc.org/steeltalks).



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## 2016 AISC Standards

Presented by: AISC staff

### AIA Information:

AISC271

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 04/25/2020

### Course Description:

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.

### Learning Objectives:

1. Identify key changes in the 2016 *Code of Standard Practice*.
2. Describe the process of how AISC standards are adopted into building codes.
3. Identify key changes in the 2016 *Specification for Structural Steel Buildings*.
4. Describe the process of developing AISC standards.



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## AESS: Categorized by Design

Presented by: AISC staff

### AIA Information:

AISC382

1 LU | HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 01/16/2023

### Course Description:

Architects want architecturally exposed structural steel on projects to meet their expectations for appearance, budget, quality and structural integrity. The category system implemented in the AISC Code of Standard Practice effectively communicates expectations and should be utilized on any AESS project. Participants in this program will learn how and when to implement the AESS Category Method to effectively communicate the desired appearance for architecturally exposed structural steel in a format that contractors can understand.

### Learning Objectives:

1. Describe how to identify and specify AESS in the contract documents using the category method.
2. Identify available resources for additional information when applying AESS on upcoming projects.
3. Explain the factors which impact the implementation of AESS.
4. Discuss the expectations of fabrication and erection of AESS under the 2016 AISC Code of Standard Practice.



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# Building Tomorrow's Steel-Framed Parking Structures Today

Presented by: AISC staff

## AIA Information:

A913

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 05/01/2022

## Course Description:

The course describes the ins and outs of designing and constructing innovative steel-framed parking structures.

## Learning Objectives:

1. Learn how lightweight steel framing, ample steel supply, and active competition in the steel fabrication industry contribute to rapid project delivery, low construction cost and a safer more secure parking structure.
2. 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 percent recycled content of today's structural steel supports environmental responsibility.
3. Learn why the popularity of steel-framed parking structures is growing and many owners, developers and designers are realizing that steel-framed parking structures have a clear advantage in economy, durability and safety.
4. Learn and see how smaller steel structural members improve lighting, safety and security for garage users.



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# Choosing the Right Framework for Sustainable and Resilient Structures

Presented by: AISC staff

## AIA Information:

EX450

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 04/14/2020

## Course Description:

Close your eyes and picture it in your mind, what characteristics would it have? Is there an ideal construction material? On a typical project multiple materials are utilized. But when we start to consider what an ideal construction material would be, it provides us with a framework to evaluate the major materials in use today. Today sustainability is just as important as it has been, but resiliency has become part of the equation as well. This course will discuss the sustainable and resilient characteristics of structural steel and comparing those characteristics to those of wood and concrete.

## Learning Objectives:

1. Recognize the sourcing and production of traditional framing materials and how building processes impact the life cycle analysis of projects, which affects the impact that a building has on health, safety and welfare of building as it pertains to the structure and its occupants.
2. Evaluate methods of resilient building design for communities by selecting the most appropriate structural system.
3. Identify the sustainable advantages of structural steel as compared to wood and concrete structures to provide to provide for safe and healthy building structures.
4. Demonstrate how structural steel framing addresses the challenges of resilient building design for earthquakes, flooding, fire, extreme wind, blasts, and more.



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# Combating Thermal Issues in Building Construction Utilizing Structural Steel

Presented by: AISC staff

## AIA Information:

A916

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 05/29/2022

## Course Description:

Steel elements that bridge across the insulation in a building enclosure can cause significant heating and cooling energy loss in a building, adversely affecting a building's energy performance and the comfort and wellbeing of inhabitants - but they don't have to. A number of effective mitigation techniques can be used to combat this issue and other systems are being developed. As buildings become tighter and more insulated, it becomes increasingly important to address thermal steel bridging. This presentation will explain the issues and present practical solution strategies. Topics to be addressed include the use of manufactured structural thermal break assemblies, proprietary support systems, thermal 'shims', isolation techniques, and others. 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.

## Learning Objectives:

1. Understand the background of heating and cooling in building structures and the impact of energy use in structures for greater building sustainability and occupant health and comfort.
2. Gain background knowledge on thermal bridging: why it's important in building construction from the perspective of economics, occupant comfort and health, and lifetime structure longevity and sustainability.
3. Explore possible solutions to improved details in building construction that address typical challenge areas of structures, which can help mitigate thermal bridging, considering both cost and energy savings.
4. 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 – all areas which impact building sustainability and occupant comfort.



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# Framing Solutions for Steel-Framed Office Buildings

Presented by: AISC staff

## AIA Information:

A915

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 05/13/2022

## Course Description:

Course illustrates how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants. Course illustrates how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants.

## Learning Objectives:

1. Learn how the flexibility and adaptability of a steel-frame system can increase an office owner's competitive advantage in the marketplace through easier, cost-effective tenant improvements and changes.
2. 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.
3. Understand how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants.
4. Discover the design benefits steel brings to office projects by allowing column-free spaces, which provides more freedom for office layout.



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## Harnessing the Power of AISC Design Guides

Presented by: AISC staff

### AIA Information:

AISC379

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 12/18/2022

### Course Description:

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. The session will review the Design Guide series paying particular attention to the Design Guides that cover retrofit and rehabilitation of existing structures (DG#15), welded connections (DG#21), structural stainless steel (DG#27), vertical bracing connections (DG#29), and curved steel (DG#33).

### Learning Objectives:

1. Describe how to access AISC Design Guides to assist in structural steel design.
2. List topics that are covered by AISC Design Guides.
3. Identify recommended methods for connection repair as suggested in Design Guide 21 on welded connections.
4. Determine what situations require the use of Design Guide 27 on structural stainless steel.





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# Healthcare Success - Applications and Techniques for Structural Steel-Framed Construction

Presented by: AISC staff

## AIA Information:

A929

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 10/22/2022

## Course Description:

Healthcare project teams strive to design and build facilities that will not only meet the challenges of today's budget, schedule, and planning constraints, but also the challenges of future upgrades, including equipment changes, facility expansions and changing patient care standards. By learning about ways to overcome unique healthcare project challenges using structural framing, architects and project teams can meet these challenges with greater success.

## Learning Objectives:

1. Learn the advantages of designing and building healthcare projects with structural steel framing to achieve project goals for structural safety and efficient and aesthetic building design.
2. Discover new innovations and project success stories using structural steel framing solutions to overcome healthcare project challenges, saving time and money on projects and providing a safer and healthier environment for construction crews and healthcare patients and staff.
3. Observe how collaboration between the structural engineer and steel fabricator – via use of Building Information Modeling (BIM) and Integrated Project Delivery (IPD) - can contribute to schedule savings and overall project success.
4. Realize the inherent sustainable characteristics of structural steel for healthcare projects and all building types, and understand what the future of the sustainable movement may look like as sustainability in design and construction continues to evolve.



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# Innovations in Steel

Presented by: AISC staff

## AIA Information:

A901

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 07/02/2021

## Course Description:

This program will demonstrate how recent structural steel industry innovations allow architects to easily express their design, concepts, overcome client serviceability and safety concerns, enhance their use of architecturally exposed structural steel, and help ensure a comfortable, safe and sustainable building environment for occupants.

## Learning Objectives:

1. Understand framing systems that achieve low floor-to-floor heights and long spans for economies of construction cost and schedule and reduced use of materials for a sustainable yet safe building structure.
2. Learn how, as a partner in the procurement and delivery process, steel fabricators can provide strategic ideas for cost-effective and time-saving project performance. Examples of the benefits to specific project cost and schedule due to off-side fabrication of the steel will be shown. And attendees will understand the qualities of and fabrication techniques for structural steel, structural engineering concepts, as well as architectural detailing, fire protection and coating systems for structural steel that promote the structural integrity, safety and long-term maintenance of the material and the building.
3. Learn how recent structural steel industry innovations allow architects to easily express their design concepts to overcome client serviceability concerns and demonstrate how the design of the steel structure will enhance occupant comfort and well-being.
4. Learn how steel Wide Flange (WF) shapes and Hollow Structural Sections (HSS) are manufactured and what makes steel fully recyclable and environmentally friendly in addition to being a strong, durable, adaptable and safe building material.



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# Lessons Learned: Hot Topics in Steel Construction

Presented by: AISC staff

## AIA Information:

A920

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 09/16/2022

## Course Description:

Architects want to know what new innovations and techniques exist in the structural steel industry and how they can be applied to express their designs, overcome client serviceability and safety concerns while optimizing budget and schedule. Participants in this program will learn about sustainable and efficient framing systems, methods and practices which make steel the material of choice for any project, no matter the size, shape or end use.

## Learning Objectives:

1. Illustrate the domestic structural steel industry's environmentally conscious supply chain which utilizes clean, efficient processes to create structural steel shapes with primarily recycled material.
2. Describe how architecturally exposed structural steel (AESS) can be specified in the contract documents to both showcase the beauty of steel and support the required loading conditions.
3. Discuss how prefabricated, modular and SpeedCore systems improve efficiency, reduce schedule and increase overall safety by moving construction processes to a controlled environment offsite.
4. Explore the concept of thermal bridging and explain how structural steel systems can overcome air quality and user comfort concerns by reducing heat loss, condensation, and material degradation across the building envelope.



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## Multi-Story Residential: Structural Steel Framing Solutions

Presented by: AISC staff

### AIA Information:

A741

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 09/25/2021

### Course Description:

Structural steel framing systems maximize space for occupant comfort, create versatile buildings for ease of design, and enhance the quality of construction to provide safe and healthy buildings. This program provides an overview of structural steel framing systems in mid-rise and high-rise projects and includes case studies which support efficient and economical methods of construction.

### Learning Objectives:

1. Discuss the versatile nature of structural steel and its ability to adapt to multiple functions.
2. Analyze the impact of fast, economical, and environmentally conscious methods of construction. Also, learn the advantages which make structural steel framing an economical and structurally sound solution for multi-story residential buildings. And discover best practices for multi-story residential buildings when using the selected structural steel system to deliver a sound, safe and efficient building.
3. Explore structural concepts that maximize space and promote occupant comfort with structural steel systems.
4. Understand how to achieve higher quality buildings which provide healthy environments for end users.



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# Planning for Performance: Fire Protection for Steel Buildings

Presented by: AISC staff

## AIA Information:

A918

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 08/01/2022

## Course Description:

Structures framed with structural steel, wood and concrete can all experience a building fire. The combination of steel's non-combustibility and effective fire protection methods to minimize loss has resulted in steel buildings being recognized for their superior performance in fires. This program provides an introductory overview of fire protection for structural steel buildings so that attendees can make better informed decisions about protecting structures from fire.

## Learning Objectives:

1. Identify the different roles that the architect, structural engineer, and fire protection engineers play in designing fire protection for steel structures.
2. Compare the behavior of wood, concrete, and steel structures in the presence of fire.
3. Identify important code allowances in fire protection designs.
4. Compare and contrast the pros and cons of sprinklers, spray-applied fire resistive materials, gypsum board, intumescent coatings and cementitious materials for structural steel frames.
5. Describe performance-based design, its applicability to structural steel framing systems and identify examples of its efficiencies in design.



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# SpeedCore: Lateral System Innovation for Today's Construction Challenges

Presented by: AISC staff

## AIA Information:

A919

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 08/01/2022

## Course Description:

SpeedCore is a non-proprietary system of concrete-filled composite plate shear walls (CF-CPSW). The system replaces reinforced concrete core construction in multi-story buildings with the advantage of construction speed standing out as the most significant project benefit. The steel plate composite wall system leverages the stiffness of concrete and the speed and accuracy of steel for a superior lateral system. The history of composite construction is briefly reviewed with an emphasis on the use of the composite wall system in nuclear facilities. The innovative shift from industrial to commercial construction will be detailed with a specific discussion of the Rainier Square Tower project designed by Magnusson Klemencic. Basic design principles of the SpeedCore system used for Rainier Square are discussed with reference to the design resources currently available. Research on the SpeedCore system investigating structural and fire protection optimization are shared within the context of the future of the system and its innovative impact on the design and construction industries.

## Learning Objectives:

1. Describe the design and construction benefits of the concrete-filled composite plate shear wall (CF-CPSW) system.
2. Assess the structural design, steel fabrication, and concrete & steel plate erection of the CF-CPSW system.
3. Describe how this system best solved the challenges of the Rainier Square Tower project.
4. List the research studies currently underway to optimize the structural design and fire protection requirements.



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## Steel Solutions Center FAQs Steel Talk

Presented by: AISC staff

### AIA Information:

AISC380

1 LU/HSW

Prerequisites – None

Instructional Method – Live

Session Date & Time – As requested

Expiration Date – 12/18/2022

### Course Description:

Averaging over 100 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 misinterpretations on the 2016 Specification, high-strength bolting, and welding.

### Learning Objectives:

1. Identify the newly added guidance in Part 9 of the Manual for checking concentrated forces on HSS walls.
2. Distinguish between Specification requirements and Manual procedure guidance
3. Define "Whitmore Section."
4. Identify the correct behavior of bolt pretensioning related to tensile strength.