

# SOUTHWEST CHAPTER



SEAW SW Chapter, P.O. Box 111480, Tacoma, WA 98411 www.seaw.org seawswchapter@comcast.net 253.382.2936

## President's Message

As fall approaches, we look forward to the coming events of the 2009-2010 SEAW session. To kick off the year, of course, the Southwest Chapter hosts the annual SEA Northwest Conference held at Hotel Murano in downtown Tacoma on September 24th and 25th. This year's tradeshow will coincide with the conference and will remain free for attendees. Hopefully, all of you will seize the opportunity to partake in at least some of the activities.

Other events to look forward to are a presentation on the Hood Canal Bridge Project during the annual ASCE joint meeting in October, as well as renewing joint meetings with AIA Southwest Chapter, SEAW Seattle Chapter and CSI Mount Rainier Chapter.

Some of my goals for this coming year as president are to set up some workshops to discuss changes in the coming code cycle and establish a Younger Member Forum with an effort to include students at St. Martin's University. If any of you share an interest in becoming involved with either of these endeavors, do not hesitate to contact me or any of the other Board members.

I would like to thank the following returning Board members for making the transition from last year to this as smooth as could be expected:

Mark Anderson, Past President  
Todd Phillips, Voting Director  
Dan Sully, Secretary  
Andy Pflueger, Treasurer  
Ian Frank, Non-voting Director  
Sara Imbruglio, Non-voting Director

Furthermore, I would like to welcome the following newly-elected Board members:

Luke Heath, Vice President  
Jeff Klein, Voting Director

A special thanks also goes out to Drew McEachern for his participation with the Board and the Tradeshow over the last 5 years.

If you would like to participate in a committee or have ideas for programs for this year, please do not hesitate to contact me.

Andrew Boileau, P.E., S.E.  
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(253) 474-9449

## 2009-2010 SEAW SW Chapter Board

<i>President</i>	<b>Andrew Boileau</b> , Sitts & Hill Engineers
<i>Past president</i>	<b>Mark Anderson</b> , Anderson-Peyton Structural Engineers
<i>Vice President</i>	<b>Luke Heath</b> , PCS Structural Solutions
<i>Secretary</i>	<b>Daniel Sully</b> , City of Tacoma
<i>Treasurer</i>	<b>Andy Pflueger</b> , AHBL, Inc
<i>Director</i>	<b>Todd Phillips</b> , Anderson-Peyton Structural Engineers
<i>Director</i>	<b>Jeff Klein</b> , PCS Structural Solutions
<i>Non-Voting Director</i>	<b>Ian Frank</b> , kpff Structural Engineers
<i>Non-Voting Director</i>	<b>Sara Imbruglio</b>

## Membership Applications Application Received

**Caleb Timmer**, Sitts & Hill Engineers  
St. Martin University, '06

## Upcoming Events

<b>August 4–Sept 15</b>	SEAW Refresher Course 2009
<b>September 11</b>	AIA Golf Tournament
<b>September 18</b>	AISC Urban Waters Tour
<b>September 24–26</b>	<a href="#">SEAW NW Conference</a>
<b>October</b>	ASCE joint Meeting

## Structural Engineers Association Northwest Conference

*September 24–26, 2009*

SEA Northwest Conference 2009  
*Hosted by SEAW Southwest Chapter*

Hotel Murano  
Tacoma, WA

*Featured Speakers, Technical Sessions,  
Networking, Tradeshow and more!!*

For more information and to register, visit  
[www.seaw.org](http://www.seaw.org)

### **CTBUH Seismic Design Recommendations**

*(Council on Tall Buildings and Urban Habitat)*

The Seismic Design Working Group of the Council on Tall Buildings and Urban Habitat (CTBUH) has released *CTBUH Recommendations for the Seismic Design of High-Rise Buildings*, authored by Michael Willford, EERI director Andrew Whittaker, and Ron Klemencic. The objective of this guide is to set out best-practice principles for the seismic design of high-rise buildings for any level of seismic hazard. Whereas rigorous performance-based assessments are required in some countries, others do not require anything beyond traditional design practice that is based on fundamental mode response and force reduction factors. Topics covered in the guide include design objectives and philosophy, modeling, seismic hazard assessment, foundation effects, structural analysis and procedures, and energy dissipation components. For a free download, visit [www.ctbuh.org](http://www.ctbuh.org), click on Publications, then Books/Reports.

### **Standing Strong: The 2009 NEESWood Capstone Test Webcast**

The world's largest shake table test was performed on a six-story condominium building on July 14<sup>th</sup> as part of final experiment of NSF's (National Science Foundation) multi-year NEESWood project.

The six-story wood-frame structure became the subject of the largest shake table test the world has seen to date: six stories, all-wood construction, shaken to motions from the 1994 Northridge earthquake, amplified to a level that equates to an event that occurs, on average, once every 2,500 years.

Check out the [video](#) of the shake test online.

## Seminars

September 2, 2009

### **EERI Seminar on Next Generation Attenuation (NGA) Models**

The seminar, to be given in 4 cities, will be of interest to both structural and geotechnical engineers who want to understand how the recently developed NGA models can be put into practice. 0.7 CEUs (Continuing Education Units) will be awarded to participants upon completion of the seminar. [Click here to register online.](#)

This seminar discusses the main research findings on this topic, which are the result of research work sponsored by the National Cooperative Highway Research Program (NCHRP) under Project 12-74 "Development of Precast Bent Cap Systems for Seismic Regions", and the Department of Transportation Caltrans under a project entitled "Development of Seismic Design Guidelines for Precast Segmental Bridge Construction".

This course will award 1.5 hours of continuing education. Time of session is 10:00 Pacific. To register, click [here](#).

September 24, 2009

### **Performance-Based Earthquake Engineering with Application to a Bridge Structure**

This webinar present the nonlinear finite element model of the bridge-foundation-ground (BFG) system used and then focuses on the several analytical steps of the PEER PBEE methodology as applied to this bridge. This methodology integrates in a probabilistic framework seismic hazard analysis, seismic demand analysis, capacity analysis reliability/damage analysis and loss analysis. Several potential failure mechanisms of the HMBC Bridge are considered: flexural failure of bridge piers, failure of shear key(s), and unseating. For each failure mechanism, several limit/damage-states measuring the stage of formation of the mechanism are defined. The seismic reliability against these limit-states is evaluated in terms of mean annual rate/frequency of exceedance or, alternatively, return period. As outcome of the seismic loss analysis, the seismic loss hazard curve expresses the mean annual frequency of exceeding any total annual seismic repair/replacement cost. Selective results will be presented which illustrate the various steps of the PEER PBEE methodology as applied to the HBMC Bridge.

This course will award 1.5 hours of continuing education. The session time will be 10:00 Pacific. [Click here to register.](#)

## Webinars

*CLT – A new product for innovative design?*

### **Designing the World's Tallest Modern Mixed-Use Wood Building**

Through a new and innovative product – cross-laminated timber (CLT) – UK based Waugh Thistleton Architects created the world's tallest mixed-use wood structure.

The nine-story Stadthaus building was created with cross-laminated timber panels. Because the panels are cross-laminated, loads can be transferred in one direction (for supports or girders, for example) or on all sides, creating unique design opportunities.

Read the full article [here](#). [Check](#) out the webinar presented by architect Andrew Waugh.

**September 15, 2009**

### **Utilization of Precast Concrete in the Construction of Bridges in High and Moderately High Seismic Regions – What Do We Know?**

Precast and precast segmental bridge construction has proven to be a very effective method of construction for many applications in the highly congested urban and in environmentally sensitive areas in the nation. It is seen as one of the best alternatives for the ongoing Accelerated Bridge Construction endeavor promoted by the Federal Highway Administration and endorsed by several States' Department of Transportation. However, while bridge construction incorporating precast concrete elements often increases the speed of construction and the quality of the end product, the use of precast concrete for the construction of bridges in high and moderately high seismic regions has been rather limited, due to a lack of design guidelines.

This seminar discusses the main research findings on this topic, which are the result of research work sponsored by the National Cooperative Highway Research Program (NCHRP) under Project 12-74 "Development of Precast Bent Cap Systems for Seismic Regions", and the Department of Transportation Caltrans under a

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### Design Responsibilities for Metal-Plate-Connected Wood Truss Building Construction

ANSI/TPI 1-2007 will be the referenced standard for metal-plate-connected (MPC) wood trusses in the new 2009 *International Residential Code*® (IRC) and *International Building Code*® (IBC). In Chapter 2 of ANSI/TPI 1-2007, the responsibilities in the design and application of MPC wood trusses have been defined for the Owner, Registered Design Professional (RDP), Contractor, Truss Designer, and Truss Manufacturer. While some responsibilities defined by the new ANSI/TPI 1-2007 standard overlap responsibilities defined by the previous editions of ANSI/TPI 1, the new Chapter 2, *Standard Responsibilities in the Design and Application of MPC Wood Trusses*, addresses additional issues and information valuable to all parties involved in MPC wood truss construction.

This article reviews important content of ANSI/TPI 1-2007 with respect to responsibilities when metal-plate-connected trusses are utilized, and provides discussion and background on several topics in Sections 2.3 of the standard on Owner and RDP design responsibilities. The discussion presented should be viewed only as a starting point for learning the responsibilities of the RDP when utilizing MPC wood trusses – all RDPs are strongly encouraged to purchase a complete copy of ANSI/TPI 1-2007 standard for study and familiarity. Copies are available at the [TPI website](#).

### Constructability of Structural Steel Building Design Guide No. 23

David Ruby, founder of the structural engineering firm Ruby + Associates, long considered a pioneer behind the concept of constructability, can now say that he literally wrote the book on the topic. The publication, *Constructability of Structural Steel Buildings Design Guide No. 23*, was written in collaboration with the American Institute of Steel Construction (AISC).

The Guide is expected to become an authoritative voice on incorporating construction considerations into the structural design decision matrix. More specifically, constructability is the application of construction knowledge and experience into the design process to achieve the most efficient and effective results. The notion behind constructability is to bridge the gap between design and construction. As the publisher's note in the Design Guide states, "...this document can serve as a primer for structural engineers and others in the structural steel

industries who seek new approaches to construction and new ways of doing business. The author is not just theorizing about integrating 'constructability' into structural engineering practice. Rather, his firm has actually done it and is sharing this knowledge..."

"By collaborating early in the construction process, team members can anticipate issues and develop creative, relevant solutions while still in the project planning phase," said David Ruby. "The results of constructability are manifested in faster approvals, shortened schedules and reduced construction costs."

The Design Guide explores specific areas such as: early involvement, the design process, issues related to the structural steel framing, detailing and fabrication, steel erection, and special constructability issues (e.g., anchorage to concrete, camber, and tolerances).

Ruby + Associates applied its constructability approach to recent marquee projects like the Kaufman Center for the Performing Arts in Kansas City, a Naval Air Station hangar complex in Jacksonville, FL, Ford Field in Detroit, Michigan and Mercy Hospital of Tiffin in Tiffin, OH to name just a few.

Design Guide No. 23 is available as a free download to AISC members from [www.aisc.org/ePubs](http://www.aisc.org/ePubs) or at a price of \$60 for nonmembers.

### American Institute of Steel Construction

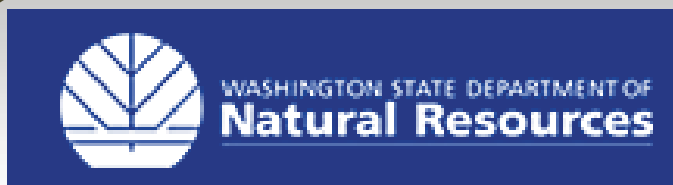
## STEEL DAY 2009

*Center for Urban Waters  
Tacoma, WA*

Date: September 18, 2009  
Time: 2:30 – 5:00pm  
Event Type: Cocktail presentation  
Project Site Tour  
Location: The Vault at Varsity  
1141 Broadway  
Tacoma, WA 98402

For full details about the agenda and to sign up, please visit [www.aisc.org/CUW](http://www.aisc.org/CUW) or contact:

Nina Kristeva: [kristeva@aisc.org](mailto:kristeva@aisc.org) (619.254.6708)  
Ross Allbritton: [allbritton@aisc.org](mailto:allbritton@aisc.org) (206.226.7551)



### Washington Online Interactive Maps

Two new interactive mapping applications, the Washington Interactive Geologic Map and the Earth Resource Permit Locations map, have been added to the Washington Geologic Information Portal on the Internet.

The Washington Interactive Geologic Map provides

access to geologic mapping at several scales, earthquake and tsunami hazard mapping, and geothermal resource information. The Earth Resource Permit Locations map provides access to oil and gas exploration drill hole locations and surface mine reclamation permit sites.

Both applications include base information, such as shaded relief, aerial photography, quadrangle boundaries, highways, rivers, and other geographic reference features. Layers will be added to both applications periodically, as new datasets are prepared.

These applications are available [here](#).

### AISI Publishes Cold-Formed Steel Design Manual

WASHINGTON, D.C. – The American Iron and Steel Institute (AISI) announced today the publication of the 2008 edition of the Cold-Formed Steel Design Manual. The Manual supplements AISI S100-07, the 2007 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members. It is available for purchase online at [www.steel.org](http://www.steel.org).

The material contained in the new manual provides the latest design information for conformance with AISI S100-07, as well as new improvements and additions.

### Resources



AISC has gathered all of its free technical resources into one place - *freePubs!* From Specifications to Modern Steel Construction articles- if it's free, you'll find it here. Click on the logo below or [here](#).



SEAW SW CHAPTER 2009-2010 Board of Directors		
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The SEAW Southwest Chapter newsletter is printed monthly from September through May. Circulation is approximately 150 members & related organizations. Articles, letters and announcements are accepted through the SW Chapter office at PO Box 111480, Tacoma WA 98411. Advertising Rates: Help wanted \$25; Goods/Services and inserts \$50. Items received by the 30<sup>th</sup> of the month will be considered for publication in the following month's issue. For information, contact the SW Chapter at 253-382-2936 or email [seawswchapter@comcast.net](mailto:seawswchapter@comcast.net)

# we're hosting an event **STEELDAY2009**



## Center for Urban Waters, Tacoma, WA – Presentation & Tour

The Center for Urban Waters will be an approximately 51,205 square-foot three-story office and laboratory building including a public esplanade, a pier, and a floating dock.

The project has posed some challenges, as city officials want it to be on the cutting edge of the “green” building trend achieving LEED Platinum certification while keeping its price tag from getting too large.

An extensive value engineering process took place due to significant escalation of the project construction budget. Through this process a structural steel framing system was selected over the original cast-in-place concrete framed system. This resulted in significant cost savings including lower foundation/piling costs due to the lighter structure and a shortened construction schedule. These and other additional value engineering measures allowed critical programming needs to be met while still meeting the project goal of LEED Platinum.

Date: September 18, 2009  
Time: 2:30 p.m. – 5:00 p.m.  
Event Type: Cocktail Presentation -  
Project Site Tour  
Location: The Vault at Varsity  
1141 Broadway  
Tacoma, WA 98402  
Of interest to: Architects, Engineers  
Developers, Owners, GS

*Attendees will learn about the benefits of steel for cost-efficient sustainable construction.*



**Turner**  
Building the Future



PERKINS  
+ WILL



## About this Special SteelDay event

Registration starts at 2:30 p.m. The event will begin at 3:00 p.m. with cocktails and a presentation by all project team members, prior to heading out to the construction site for an instructional tour of the project. Shuttles will be provided. All guests are required to wear long pants and closed-toe shoes. All other safety gear will be provided.

For full details about the agenda and to sign up please visit [www.aisc.org/CUW](http://www.aisc.org/CUW) or contact:

### Nina Kristeva

AISC West Coast Regional Engineer  
[kristeva@aisc.org](mailto:kristeva@aisc.org)  
619.254.6708

### Ross Allbritton

AISC Pacific Northwest Area Marketing Representative  
[allbritton@aisc.org](mailto:allbritton@aisc.org)  
206.226.7551

The event is FREE of CHARGE.

