



# CONNECTIONS

February 2025 Volume 24 Issue 3

Newsletter of the  
Structural Engineers  
Association of Oregon

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## Upcoming SEAO Meetings and Events:

**Tuesday, February 11, 2025:**

### SEAO Chapter Lunch Meeting

Location: The Old Spaghetti Factory, 715 S Bancroft Street, Portland, OR 97239

Time: 11:30 pm—Lunch, Noon — Program

Topic: Artificial Intelligence in AEC

PDH Credit: 1 PDH

See Page 3 for more information and how to register.

**Tuesday, March 25—Thursday March 27, 2025:**

### International Mass Timber Conference

Location: Oregon Convention Center, Portland, OR

Registration is Now Open for Early Bird Pricing through February 19, 2025.

Visit: <https://masstimberconference.com/register/> to register.

Visit: <https://masstimberconference.com/> for event information

### Thursday, September 25 - Friday, September 26, 2025: SAVE THE DATE 2025 SEA NW Conference E

Location: DoubleTree by Hilton Hotel Spokane City Center, 322 N Spokane Falls  
Court, Spokane, WA

See Page 4 for more information.



SEAO has a LinkedIn account  
and can be followed at [SEAO  
LinkedIn Page](#).

CONNECTIONS is a monthly publication of the Structural Engineers Association of Oregon, published to disseminate current news to our membership and others involved in the profession of structural engineering. The opinions expressed reflect those of the author and, except where noted, do not represent a position of SEAO.

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## PRESIDENT'S FEBRUARY MESSAGE BY: CHRISTOPHER CARROLL, PE

Dear SEAO Members:

As we start the second month of the new year, I want to extend my warmest greetings to each of you and your families. I hope that each of you had a joyous holiday season filled with happiness, peace, and good health. May the new year bring even more success and fulfillment than the last year.



This month we are pleased to announce an upcoming Lunch and Learn session, featuring Josh McDowell and Matt Tuan, who will be presenting on the topic of AI in structural engineering. **We are nearly sold out so if you are interested sign up quickly.**

Secondly, in our ongoing efforts to enhance SEAO, we are seeking volunteers to assist with the innovation of our website. If you have expertise in web development or website design, we would be delighted to hear from you. Please contact Jane if you are interested in contributing.

As we look forward to this year, let's remember the words of Margaret Mead: "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." Your involvement and support truly make a difference.

Thank you,  
Christopher M Carroll  
2024/2025 SEAO President



## 2025 SEA NW CONFERENCE SEPTEMBER 25-26, 2025 CALL FOR ABSTRACTS

The 2025 SEA Northwest Conference Planning Committee is seeking submissions by practicing engineers, academia, and vendors. Presentations will be 45 minutes total, including time for Q&A, and may be focused on advanced analysis techniques, case studies, evaluation and retrofit of existing structures, best design practices, and other topics that focus on unique, forward-thinking, innovative approaches that symbolize SEA's and the unprecedented growth of our region.

Visit the conference website (<https://www.seaw.org/sea-nw-conference-2025>) for further information and for the official Abstract Submittal Form. **The deadline for submissions is February 28, 2025.** Speakers will be notified of abstract acceptance by March 21, 2025. The planning committee is excited to offer all selected speakers free full registration to the conference and a \$500 travel/expense allowance.

## YOUNG MEMBER FORUM (YMF) OREGON ENGINEERS WEEK OUTREACH OPPORTUNITY

If you've been looking to get involved in outreach with high school age students, now is your chance! On Thursday, February 20, 2025 there will be an event called "[Oregon E-Week](#)" at the Portland Double Tree at Lloyd Center.

This event is a day-long celebration of engineering that includes morning sessions with panel discussions, a career-fair-style exhibit hall, and field trips for the students. Volunteers can help staff a table during the exhibit hall/career expo period from 9:30-11:45 am and/or participate in a complimentary banquet lunch with a group of high school students from 11:45 am-1:30 pm. We still have 2 more spots available and it'll be first come, first serve. If you're interested please contact YMF at [ymf.seao@gmail.com](mailto:ymf.seao@gmail.com) by February 16th.

If you want to join YMF and receive emails from them, please email [ymf.seao@gmail.com](mailto:ymf.seao@gmail.com). Some of their emails are going into spam filters/folders, so remember to check those or make sure to add them as a safe sender.

## 2025 SEA NW CONFERENCE SEPTEMBER 25-26, 2025 SAVE THE DATE

The annual 2025 SEA NW Conference will be hosted by the Spokane Chapter of the Structural Engineers Association of Washington.

More details are to come in future newsletters.

Limited early pricing is available. To register early, please visit (<https://www.seaw.org/sea-nw-conference-2025>) for more information.

## NCSEES SEEKING LICENSED STRUCTURAL ENGINEERS

NCEES is seeking licensed structural engineers to participate in a professional activities and knowledge study, or PAKS, for the PE Structural exam. The results of this online survey will be used to update the content of the exam, a process that occurs every six to eight years.

NCEES requires a cross section of licensed professional engineers practicing structural engineering—including those working in industry, consulting, the public sector, and academia—to complete the survey. If you are a licensed professional engineer, we would appreciate your input. The survey can be completed in about 50 to 60 minutes.

Click here for access to the online survey: [ncees.org/STRPAKS](https://ncees.org/STRPAKS). The survey will be open until **March 10, 2025**.

NCEES sincerely thanks members who participate for their contribution to ensure that the PE Structural exam is reflective of the current practice of P.E.s. For more information, contact NCEES Exam Development Engineer Sonya Dawson, P.E., at [sdawson@ncees.org](mailto:sdawson@ncees.org).

## ASK A QUESTION – GET AN ANSWER

### Question: Where can I find the adopted wind loads for Oregon?

Answer:

<https://www.seao.org/resources/wind-loads>

### Question with Conversation: Detailing for SCBF Seismic Steel Braced Frames?

For SCBF connections, usually you have to design for the possible yield capacity of the brace (not the tension loads themselves). However, if you were designing the connection to concrete, would you design the anchor bolts for the full tension capacity of the brace? Or just omega-level tension loads (which will be much lower)?

Answer:

MANY, MANY, MANY opinions on this. Below is a sampling of Board responses. Not much different than debates elsewhere. Bottom line: Best to understand your Firm's standards and conduct the analyses and designs accordingly.

- *We designed a SCBF and designed the anchors for the full expected brace capacity.*
- *Best detailing practice would be to design for the expected tensile capacity of the brace :  $R_yF_yA_g$ . However, by code, you can design the connection for overstrength (likely a much smaller demand by at least one order of magnitude) and be compliant. Now, we don't typically use SCBF's because of the overall greater demands to connections, foundations, frame elements, collectors, chords, etc. Any reason a BRB couldn't be substituted? It would likely be a significant reduction in the connection forces alone .*
- *Use reinforced concrete shear walls (jokingly added).*
- *Use steel shear lugs to resolve the shear and design the anchor rods and connection to concrete for the brace tensile capacity. You can also look at the maximum force the global system can deliver and limit the forces to that value. That requires a thorough comprehension of the limit states of the system.*

Do you have a code question you would like to ask one of our committees? SEAO is pleased to provide a simple way for Q&A's with technical committees. Email questions to [jane@seao.org](mailto:jane@seao.org), and SEAO will direct your question to the appropriate committee chair for a response.

Questions and their answers will be made anonymous and available to the membership on the website [www.seao.org](http://www.seao.org) and in the newsletter. Committees include: Seismic, Wind, Snow, Code, Vintage Building, and Special Inspections.

## SEAO TRADE SHOW

SEAO will not be having a trade show this year due to lack of attendance and a major remodel of our usual venue at the Monarch Hotel in Clackamas, Oregon. We are working to revamp the tradeshow and will return in 2026.

## ADVERTISING SPACE AVAILABLE

SEAO is pleased to provide full page advertising to members for \$500 and to non-members for \$600. That is the price to run the ad the entire year from September to August. If you'd like to advertise, please contact Jane at [jane@seao.org](mailto:jane@seao.org).

## NCSEA UPCOMING LIVE WEBINARS

REGISTER AT: [HTTPS://WWW.NCSEA.COM/EDUCATION-EVENTS/CALENDAR/](https://www.ncsea.com/education-events/calendar/)

**February 11, 2025, 10 am—11 am Pacific Time (Fee for Webinar/Free to Webinar Subscribers)**

### **Fire Design Specification for Wood Construction: A Resource for Mass Timber Design**

Speaker: Jason Smart, P.E., AWC Director of Fire Engineering  
US model building codes recognize multiple construction types using mass timber. These code provisions stipulate, among other fire safety requirements, minimum fire-resistance ratings for building elements and fire protection of connections. Among the numerous means provided by building codes for establishing fire-resistance ratings, the calculation approach is the primary focus of this course. The AWC National Design Specification for Wood Construction (NDS) and the AWC Fire Design Specification for Wood Construction (FDS) provide the necessary design guidance for establishing the fire-resistance rating of wood building elements using the calculation approach. In this course, NDS and FDS provisions applicable to fire design of mass timber are presented. Examples of how these provisions can be used in design of wood members and connections are also given. (1 PDH)

**February 25, 2025, 10 am—11:30 am Pacific Time (Fee for Webinar/Not Included in Webinar Subscription Package)**

### **Chapter 26 and General Wind Design Principles**

Speakers: Emily Guglielmo, P.E., S.E., Principal at Martin/Martin, Inc. and Gwenyth Searer, P.E., S.E., Principal at Wiss, Janney, Elstner Associates

This session serves as the foundation for the entire wind design webinar series, introducing key wind design principles and Chapter 26 of ASCE 7. The session will provide an overview of wind design history, fundamental wind flow concepts, and an overview of the scope of Chapter 26. Attendees will gain a detailed understanding of wind maps, the Hazard Tool, exposure categories, internal pressure coefficients, gust effect factors, and topographic factors. The session will also cover key updates from ASCE 7-22, including changes to  $K_d$ . Example problems from the SEAOC Wind Design Manual will be used to reinforce the application of these concepts. (1.5 PDH)

**March 4, 2025, 10 am—11:30 am Pacific Time (Fee for Webinar/Not Included in Webinar Subscription Package)**

### **Chapter 26 and General Wind Design Principles**

Speaker: Adam Boswell, P.E., S.E., Manager at Martin/Martin  
This session will provide an overview of the design of Main Wind-Force Resisting Systems (MWFRS) in structures, their functions, and significance to wind resistance. We will delve into analytical methods including directional and envelope procedures, and explore comparative use cases, as well as discuss the latest research on these analytical methods. Additionally, we'll address key design considerations, such as design equations and issues like torsion and irregular buildings. The session will conclude with a practical example problem using the SEAOC Wind Design Manual to illustrate MWFRS design in action. (1.5 PDH)

**March 6, 2025, 10 am—11:30 am Pacific Time (Fee for Webinar/Free to Webinar Subscribers)**

### **Effective Repair and Maintenance Strategies for Parking Garages: Ensuring Longevity and Safety**

Speaker: David Flax, CDT, CCPR, SW Regional Manager of the National Development Group of Euclid Chemical  
Identification, Evaluation, the Repair Process, and the Repair – At a typical construction cost of tens of thousands of dollars per parking space in a garage, proper repair and maintenance is essential. This presentation will cover the identification of the problem (not the symptom), evaluation, owner requirements for aesthetics & function, surface preparation, bonding, material & method selection, curing, and sealing. Failures, spalls, corrosion, and cracks will all be addressed. It will also cover things to include in the repair spec to make sure you get quality repairs including contractor experience, a mockup, and a pre-job meeting. (1.5 PDH)

**March 11, 2025, 10 am—11:30 am Pacific Time (Fee for Webinar/Not Included in Webinar Subscription Package)**

### **Components and Cladding (C&C)**

Speaker: John O'Brien, P.E., S.E., Associate & Director of Engineering at PES Structural Engineers

This session provides a deep dive into Components and Cladding (C&C) wind loads, distinguishing them from MWFRS loads and explaining their significance in building performance. Attendees will learn calculation methodologies for C&C loads and explore design considerations such as corner and edge zones, parapets, and effective wind areas. Using SEAOC Wind Design Manual examples, the session will demonstrate best practices for designing cladding, roofing, and façade elements to withstand wind loads. (1.5 PDH)

**March 13, 2025, 10 am to 11 am Pacific Time (FREE)**

### **2025 SEE Awards Webinar Series**

#### **New Buildings Over \$200 Million: Perelman Performing Arts Center**

Speaker: Ron Klemencic, P.E., S.E., MKA's Chairman & CEO  
Pushing the envelope for new possibilities in multiform performance spaces, this nine-story performing arts venue in Lower Manhattan's World Trade Center site offers three seamlessly interchangeable theater spaces and dedicated areas for rehearsals, back-of-house operations, and public amenities. From small black-box venues of fewer than 100 people to one theater large enough for 1,200 people, the facility operates as a "machine" with massive guillotine doors allowing multiple configurations. Built above subway tracks and loading docks below grade, the venue acoustically isolates the three theaters from each other, the primary building structure, and the envelope, with the interior boxes sitting on rubber-and-steel bearing pads to prevent noise and vibration. Existing below grade constraints also forced the structure to span between only seven limited capacity "super column" support points. This presentation covers MKA's solutions to these challenges as well as the history and vision of this iconic new building. (1 PDH)

There are also recorded webinars that can be purchased for professional development hours (PDHs) online at <https://www.ncsea.com/education-events/calendar/>

# EMPLOYMENT OPPORTUNITIES

## HARPER HOUF PETERSON RIGHELLIS

Structural Engineer  
Portland, OR

**The ideal candidate will be** a capable team player, respond effectively to multiple deadlines, and take pride in their work. They must also be highly attentive to detail and have excellent communication and organizational skills. Some responsibilities will include:

- Perform engineer-of-record design computations and code checks and develop contract plans and documents for structural projects
- Assist project managers
- Perform and prepare structural calculations for submittal to permitting agencies.
- Actively participate in structural QA/QC
- Perform feasibility studies/layout work and analysis of structures
- Maintain client relationships to ensure satisfaction and effectively communicate with all disciplines, agencies, and authorities involved in projects
- Provide oversight and resolution of issues during construction phase work
- Interacts with clients and/or coordinates detailed phases of engineering work on projects

### **Experience/Qualifications:**

- Bachelor's degree in civil engineering with a structural emphasis
- Minimum of 2 + years in structural engineering
- Preferred licensed professional engineer or soon to be licensed in Oregon
- Familiarity with applicable building codes and standards
- Knowledge of structural design software is required

Apply via [HHRP's Career Center](#)

Or Send Resumes to: [employment@hhpr.com](mailto:employment@hhpr.com)

## GREEN MOUNTAIN STRUCTURAL ENGINEERING

Structural Engineering Manager  
Vancouver, WA

Green Mountain Structural Engineering is a small firm that specializes in providing structural engineering services for residential builders. Located in East Vancouver, Washington, we work with many quality home builders and designers in the region. Green Mountain has deep relationships with the building community and is passionate about providing efficient and common-sense solutions. We work in many jurisdictions across Washington and Oregon.

We are looking for a structural engineering manager. The main responsibilities include working with our team to manage projects through completion of construction documents. This includes performing or overseeing gravity and lateral analysis of residential wood-framed structures and creation of structural plans for permitting. Other important aspects of the job include collaborating with home builders, designers, and architects as well as dealing with plan reviews and construction issues.

A bachelor's degree in Civil Engineering is required with an emphasis in structural engineering. PE licensed in Washington and/or Oregon is required. Six years minimum post-graduate structural engineering experience in low to mid rise structures is preferred. The ideal candidate should be proficient in wood design as well as concrete and steel. A working knowledge of AutoCAD, structural analysis software and Bluebeam is also required. Strong technical writing skills for creating clear documents and reports is also required.

This position can provide future ownership opportunities. We are looking for candidates that can lead this successful company into the future while retaining our long-standing relationships with a great group of home building clients. If you are passionate about the home building industry and eager to contribute to the American Dream, we encourage you to apply.

The position is full-time, with a flexible Friday option. Green Mountain offers competitive wages with paid vacation, holidays, insurance, and 401K.

To apply, please send resume to:  
[info@greenmountainse.com](mailto:info@greenmountainse.com)

## EMPLOYMENT OPPORTUNITIES (CONT.)

### HARRIS GROUP

Senior Structural Engineer

Portland, OR

Harris Group ([www.harrisgroup.com](http://www.harrisgroup.com)) is seeking a Senior Structural Engineer with extensive analysis and design experience on large and small industrial manufacturing projects to join our Portland office.

This is an opportunity to work with an engineering team providing technical support and design of building and non-building structures (e.g. process towers, manufacturing facilities, and equipment platforms), concrete foundations for buildings and equipment, overhead cranes, seismic and analysis of such. The Senior Structural Engineer will be leading the design, delivery and documentation of project requirements for a variety of facilities.

Harris Group is a multidisciplinary consulting engineering firm servicing a wide range of project types. We are 100% Employee-Owned and Great Place to Work® Certified™.

Visit: <https://www.harrisgroup.com/> to learn more.

Contact/send resumes to: [hr@harrisgroup.com](mailto:hr@harrisgroup.com)