



CONNECTIONS

September 2018 Volume 18 Issue 6

**Newsletter of the
Structural Engineers
Association of Oregon**

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SEAO has a twitter account and can be followed at @SEAOregon.



Upcoming SEA0 Meetings and Events:

Wednesday, September 26, 2018: September Awards Meeting & Presentation

Topic: September Awards Program & The Momentum of Tall Wood

Speaker: Ethan Martin, Wood Works

Location: Sentinel Hotel, 614 SW 11th Ave, Portland, OR 97205

Time: 5:30pm

See page 3 for additional information.

Wednesday, September 26, 2018: YMF Lunch Meeting

Location: Mackenzie, 1515 SE Water Ave. #100, Portland, OR 97214 ,

Time: 12:00pm – 1:00pm

See page 7 for additional information.

Wednesday October 24, to Saturday October 27, 2018: Structural Engineering Summit

Topic: The Business of Structural Engineering

Location: Sheraton Grand, Chicago IL

See link: www.ncsea.com/meetings/annualconference/

Thursday, October 25, 2018: Post-Earthquake Inspection Training Opportunity

Location: KPFF Consulting Engineer's office: 111 SW Fifth Ave., Suite 2500 Portland, OR

Time: 8:00am– 2:00pm

See page 5 for additional information.

Wednesday, October 31, 2018: October Breakfast Meeting

Topic: Durability and Performance Specifications

Speaker: Dr. Jason Weiss, Oregon State University

Location: Portland City Grill, 30th Floor, 111 SW 5th Ave. Portland, OR

Time: Check-in 7:00am, Program 7:30am

Additional information in future newsletter

Thursday, November 15, 2018: SEA0 Fall Seminar

Topic: Ever Changing Structural Provision of Our Building Codes

Location: Embassy Suites Washington Square

Time: 8:30am -4:30pm

See page 5 for additional information. Location will be sent out via email.

Thursday July 18, to Saturday July 20, 2019: URM & Seismic Upgrade Symposium

Location: Portland State University's Lincoln Hall, Portland, OR

See page 9 for additional information. Volunteers needed!

Wednesday August 7, to Saturday August 10, 2019: SEA Northwest Conference

Location: Salishan Resort, Gleneden Beach, OR

Additional information in future newsletter.

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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BOARD OF DIRECTORS

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PRESIDENT'S MESSAGE: FINAL MESSAGE

And just like that it is September – where has the summer gone! With September comes the end of my time serving you as SEAO president – Although it has been a very busy year I enjoyed the experience and got to do it with a great group of individuals. I can't thank our 2017/2018 board of directors enough for their contributions, without their efforts SEAO would simply not happen. Aside from putting up with me in the board meetings each month most of these individuals served in other roles within SEAO from involvement with other committees or just helping out when things needed to get done. In addition, without a program chair (see below) the board has served double duty the last two years working on coming up with ideas for the monthly meetings and then working on the logistics to make these meetings happen. Kevin McCormick is your outgoing past president who has served on the board for 3 years and is also your Conference chair (SEAO hosts the 2019 NW conference). Phil Davis is your outgoing treasurer who has served 2 years on the board making sure all of the financials are in line – and bringing some well needed humor to the board meetings. Last but not least is JoMarie Farrell who has served her two year term as Director who also is on the awards committee and spent years editing and compiling the SEAO newsletter. A special thank you to the three of you for your service to SEAO.



Continuing on the board of directors is Norm Faris (Moving from VP to President), Dusty Andrews who is back for another year as Secretary, and Chad Norvell who will be serving his second year of his two year term as director. I am excited to have another year on the board with the three of you. Joining the board this year is Steve Trautwein as VP, CJ Marquardt as Director and Mike Daily as Treasurer - thank you all for being willing to serve on the board. Other people I need to thank who have contributed greatly to the organization over the last year. Our code committee lead by Eric Watson put in an incredible amount of time working on code amendments to propose to the state for the 2019 OSSC which included trips down to Salem to testify on our proposals. Our awards committee lead by Brynn Adkins is putting on our September meeting and awards program which hopefully everyone can attend. Deanna Kuhlman leads our young member group in addition to serving as the editor for the newsletter – She has done a great job gently reminding all of the contributors to get their material in on time and puts together a great newsletter each month. Lastly I can't thank Jane Ellsworth our Executive Secretary enough! If you have been involved with SEAO you know Jane is the reason things happen, from setting up meeting logistics and venues to sending out emails to membership - Jane does it all! We are very lucky to have her.

As I mentioned above the board is always looking for new volunteers and ideas. All of our committees are looking for individuals who are willing to help out – currently our Wind, Legislative and Program committees do not have a chair. If these topics interest you please shoot me an email (seth.thomas@kpff.com) or call (503-764-0554) and you can get involved to whatever level you want. Each meeting we ask for feedback on the monthly meeting and seminars. When you attend meetings please let the board members know if you like the meeting topics, format, and/or venue. For our October meeting we are going to try something new – a breakfast meeting – we know everyone is busy and we are looking for ways to make it easier to attend the monthly meetings and still get your work done. Please let us know what you think of what we are trying and what other things you would like us to try.

In summary it has been a great year serving as your President. I am now handing the reins over to Norm who will do a great job leading the organization for the next year.

-Seth Thomas

SEAO COMMITTEES

CODE ADVISORY COMMITTEE

Seismic
Reid Zimmerman
reid.zimmerman@kpff.com

Wind
OPEN CHAIR

Snow Load
Andy Stember
andy@jasenginc.com

Code
Eric Watson
eric@miller-se.com

Vintage Building
Wade Younie
wyounie@dc-engineers.com

Special Inspections
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Mass Timber
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Eric.McDonnell@kpff.com

STRUCTURAL ENGINEERS EMERGENCY RESPONSE (SEER)

Dave Tarries
David.Tarries@portlandoregon.gov

PROGRAM COMMITTEE

Monthly Meetings
OPEN CHAIR

Awards
Brynn Adkins
brynn@wdyi.com

Golf Tournament
Stephen Stenberg
steez07@yahoo.com

Conferences
Kevin McCormick
kevin@miller-se.com

ADVOCACY COMMITTEE

Website
Seth Thomas
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Engineers Week
Michelle Juarez
michelle@miller-se.com

Young Member Forum
Deanna Kuhlman
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CONTINUING EDUCATION COMMITTEE

Seminars
Andy Stember
andy@jasenginc.com

MEMBERSHIP COMMITTEE

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Deanna Kuhlman

Roster
Jane Ellsworth
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DELEGATES

NCSEA & WCSEA/NWC
Seth Thomas
seth.thomas@kpff.com

Amit Kumar (Alternate)
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SEPTEMBER AWARDS MEETING WEDNESDAY, SEPTEMBER 26, 2018

Please join SEAO for the 4th Annual Excellence in Structural Engineering Awards presentation. This awards program was created to acknowledge outstanding projects and structural engineering advancement by members. Winning projects will be recognized as part of the September 26th dinner meeting.

Submission categories include:

- New Buildings Under \$10M
- New Buildings Over \$10M
- Renovation/Retrofit
- Special Use Structures

Projects will be judged by a panel of invited judges from multiple fields related to design and construction based on innovative design, engineering achievement, and creativity. In addition to the Awards and Speaker we will be installing the new SEAO Board and announcing the SEAOSF scholarship recipients. See page 8 for Board info and page 4 for SEAOSF scholarship recipients.

TOPIC: The Momentum of Tall Wood

As examples of successful tall wood buildings proliferate worldwide, many U.S. architects are seeking a way to leverage wood's sustainability among other advantages in their own tall building designs. Pursuing both an ambitious carbon reduction and a new aesthetic does not exempt design teams from achieving a high degree of life safety, cost-effectiveness, and building performance; all the things building codes are designed to insure.

Because mass timber is a relatively novel concept in modern construction, it is not well addressed in the prescription of US building codes today. With several tall wood projects of 10 stories or more in height planned to start construction in the US in 2019, designers are curious how design teams are navigating the code hurdles. This presentation will examine the latest research available supporting tall wood structures and how architects and engineers can leverage this information with their local authorities having jurisdiction (AHJ).

PRESENTER BIO: Ethan Martin—WoodWorks Pacific Northwest

As the Northwest Regional Director for the U.S. WoodWorks program, Ethan's directive is providing project assistance, education, and resources for developers, architects, engineers, and contractors for code-compliant design, engineering, and construction of non-residential and multi-family wood buildings. Ethan is a licensed engineer and joined WoodWorks when the pilot program went nationwide in 2011. Prior to that Ethan had his own engineering firm for eight years and is a Civil and Environmental Engineering graduate of Cornell University specializing in structures.



DETAILS:

Location: Sentinel Hotel, 614 SW 11th Ave. Portland, OR 97205

Time: 5:30 am — Check in & social
6:15 am — Dinner
6:30 pm — Program

Cost: \$50 — Prepaid Members
\$60 — Prepaid Nonmembers
\$25 — Prepaid YMF
Students— Free

Reservations: Pre-registration is required for all.

You can register and pay online at www.seao.org before noon, Friday, September 21. You can also register with Jane Ellsworth via phone at (503)753-3075 or via Email: jane@seao.org. Note: No-shows will be billed.

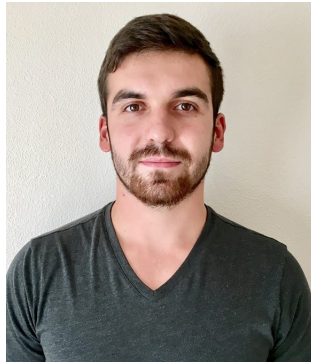
PDH Credit: One PDH has been recommended for this program.

2018-2019 SEAOSF SCHOLARSHIP RECIPIENTS

SUE FREY SCHOLARSHIP

Evgeny Hadji, Portland State University

I'm starting my senior year at Portland State and pursuing bachelor of science degree in civil engineering with emphasis on structural engineering. In 2012 my family and I moved to the United States from Russia and a little fun fact about me is that I have visited 40 US states since then.



DON KRAMER SCHOLARSHIP

Jacob Bibb, George Fox University

I will be graduating in May 2019 with a BS in Civil Engineering. Currently, I work for Newberg Public Works as an intern in their engineering department. I also just finished a summer research project with one of my civil engineering professors, studying ways to remove heavy metals from stormwater.



SEAO SCHOLARSHIP

Cody Beairsto, Oregon State University (Past recipient)

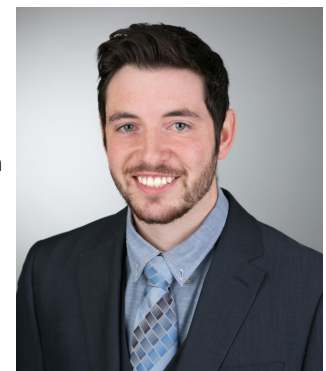
I am currently in graduate school at Oregon State University in a dual MS program for Civil/ Structural Engineering and Wood Science & Engineering. These 2 degrees mesh well with my current research into Cross Laminated Timber diaphragms and measuring the ductility under in-plane monotonic and cyclic loading. A fun fact about myself is I like to brew homemade soft drinks.



SEAO SCHOLARSHIP

Wyatt Dean, Oregon State University

I'm in the Master of Engineering program at Oregon State University, majoring in structural engineering. I'll graduate in June 2020. I am also working part time at OBEC Consulting Engineers. Fun fact: I was a scanning clerk for OBEC Consulting Engineers from 2013-2015 when I attended Lane Community College, and I enjoy hiking & backpacking throughout Oregon.



NCSEA SUMMIT SCHOLARSHIP I'M HEADED TO CHI-TOWN!

Do you like meeting other engineers from around the country? Do you enjoy learning about the newest developments in our industry? Or how about this, would you enjoy travelling to a new city for the NCSEA Annual Summit? If you answered yes to any of these questions, you should consider applying for the NCSEA Summit Young Member Scholarship next year. As a recipient of the scholarship this year, SEA and CSI are covering the costs of my 2018 NCSEA Summit registration fees, accommodations, and airfare. I'm grateful to both of them for their support and encouragement to help me do something I've been wanting to do!

October 24th-27th I'll be heading to Chicago for the Summit. I've been to my fair share of meetings and conferences here in Portland, but this will be my first opportunity to attend a national conference. I'm excited for the chance to meet and talk with engineers from around the country about the exciting developments in their regions; to learn new skills and consider different approaches; and to walk the trade show floor to learn about the latest tools available to the profession. The simplest way to describe what I'm looking forward to: broadening my horizons. When working on projects within a single market it's easy to lose touch and perspective with developments and changes happening in our profession across the country. This conference represents a chance for me to pick my head up out of the PNW and see what's new.

My decision and process to apply was a quick one. Once I committed to applying, within 2 hours I had filled out the application and developed the first draft of my essay focused on how to better bring structural engineering into the public view. One quick revision session later, and the scholarship was out the door and out of my hands. I don't mean to discount the effort of myself or any of the other applicants for this scholarship, but I do know that you'll never receive 100% of the scholarships you never apply for. So, what have you got to lose?

Landon Harman, P.E.



SEER UPDATE

It appeared there would be some positive changes to the state of Oregon's emergency response plan that would allow for qualified volunteer engineers and architects to assist with post-earthquake building assessments in the event of an emergency, but things appear to have stalled in Salem. The SEER committee will be meeting in September to discuss options and once again try to find a way to get legislation written and then passed in Salem that provides for an emergency response system similar to what California and Washington are using. If anyone is interested in getting involved please contact David Tarries at david.tarries@portlandoregon.gov.

Post-Earthquake Inspection Training Opportunity October 25, 2018:

There will be a Cal OES SAP training provided by SEAO on October 25 starting at 8:00am. Cal OES SAP training is based on ATC-20, ATC-45 and some basic FEMA emergency response courses and is designed to prepare engineers and architects to perform post-earthquake building inspections to determine if they can be occupied after an event or aftershock. Qualified attendees will be entered into California's responder database as possible volunteers for future events and will be provided with a Cal OES ID card. Additional information is available on the Cal OES website at: <http://www.caloes.ca.gov/cal-oes-divisions/recovery/disaster-mitigation-technical-support/technical-assistance/safety-assessment-program>. PDH's will be provided for attendees through SEAO.

Private individuals (non-public employees) are not yet being accepted by the State of Oregon for emergency response so the course does not make attendees acceptable for deployment in the eyes of the state; However, the SEER committee recommends this course, or an ATC-20 course, be taken by as many private engineers as possible so that when there is an emergency, jurisdictions will have more options for help.

The training will be held in the 26th floor training room at KPFF Consulting Engineer's office: 111 SW Fifth Ave., Suite 2500 Portland, OR. Training should be complete around 2 or 3 in the afternoon. Coffee, snacks and lunch will be provided. The cost will be \$65 for SEAO members and \$75 for non-members. The event will be limited to 50 attendees based on space available and is open to ASCE and AIA members as a joint venture. A discount is available for college students, please contact David Tarries at seer@seao.org for more information. A sign-up page is set up on the SEAO website.

SEAO FALL SEMINAR: EVER-CHANGING STRUCTURAL PROVISIONS OF OUR BUILDING CODES

Save the date: Thursday, November 15, 2018

Presenter: SK Gosh

Location: Embassy Suites Washington Square. Time: 8:30am -4:30pm

This seminar will discuss major, far-reaching changes in our wind and seismic provisions in the last 15 to 20 years. This includes the substantive changes in wind and seismic design provisions from ASCE 7-10 to ASCE 7-16, which will be reflected in the next code cycle.

VENDOR ADVERTISING

SEAO is now accepting vendor advertising!

Cost of a full page ad running for one month:

\$250 - Members

\$350 - Non Members

For more information, contact Jane Ellsworth at jane@seao.org.

MAY MEETING RECAP

BY: SARAH VAN OTTERLOO

TOPIC: *The Future Development of Performance Based Design for Seismic, Wind, Fire Protection and Other Loadings*

SPEAKER: *Ron Hamburger – Senior Principal SGH*

In recent years, structural engineers have been adopting the role of technicians rather than the traditional engineer role, due to prescriptive building codes and computing software. Engineers are programming and imputing data rather than performing calculations and producing designs based off engineering principles. Through the use of a performance-based design approach, the engineer returns to using performance goals to solve design problems.



Building codes have generally been developed to solve problems retroactively. These codes have become prescriptive rules to achieve acceptable building performance based on past performance. However, the concept of “acceptable” is changing constantly. For example, in the 1800’s the major performance intent was to produce structures that could prevent the spreading of fires. This produced buildings with non-combustible exterior walls and parapets, of which the majority were constructed with unreinforced masonry (URM). These parapets and URM walls, in turn, became new hazards when considering seismic performance. The cycle in which the building code reacts to issues has become so quick that we are no longer just reacting to historical issues, we are guessing a potential problems.

Performance-based design is different from the traditional code-based design approach, such that the building is designed for specific building performance rather than code compliance. This requires an understanding of the hazards facing the structure and of engineering principles. The most common use of a performance-based design approach is in the design and construction of projects that do not conform to the code in one or more ways. The most important use is in the accommodation of new products or systems such as CLT or new grades of steel.

A performance-based design is a cyclical process. It begins with confirming the approach is acceptable, then selecting performance objectives. It is important to note that the owner or the developer should choose the performance goals. The designer then develops the preliminary design. The design is assessed and reviewed to see if it matches the design goals through one of two classical ways: prototype testing or analytical simulation. The design is reviewed and redesigned until the design goal is met. When taking a performance-based design approach, the building should perform as well or better as a design based on traditional methods. Equivalence can be based on authoritative documents such as FEMA documents or ICC performance codes; or in some cities, building officials have developed performance-based requirements and criteria.

A performance-based design approach has both advantages and drawbacks. The drawbacks of this approach are that it is hard to access the cost of the design process, increased liability on the designer, increased project risk, and in the end a project may be unsuccessful in getting a permit from a jurisdiction.

Advantages of this process, however, are that owners and developers can set the use of innovative systems, more marketable architectural designs and can possibly see a reduction in construction cost. Designers can utilize innovative and inventive materials and systems in the design, and a greater value is placed in the design process resulting in increased fees.

GOLF TOURNAMENT RECAP

GOLF WINNERS

1st Place winners

Ken Rust – VLMK Engineers Team
Colby Anderson
Stephen Stenberg
Tony Jenkins

2nd Place winner

Kory Shimajim – Pioneer Waterproofing Team
Doug Wolf
Kyle Heckaman
Ken Roko

3rd Place

Pete Lucarelli – CalPortland Team
Troy Gustafson
Tygue Howland
Bryan Wigginton

Long Drive #15

Siriane Lawless – ABHT Engineers

Long Drive Womens #1

Fay Allison

Long Drive #8

Pete Lucarelli – CalPortland

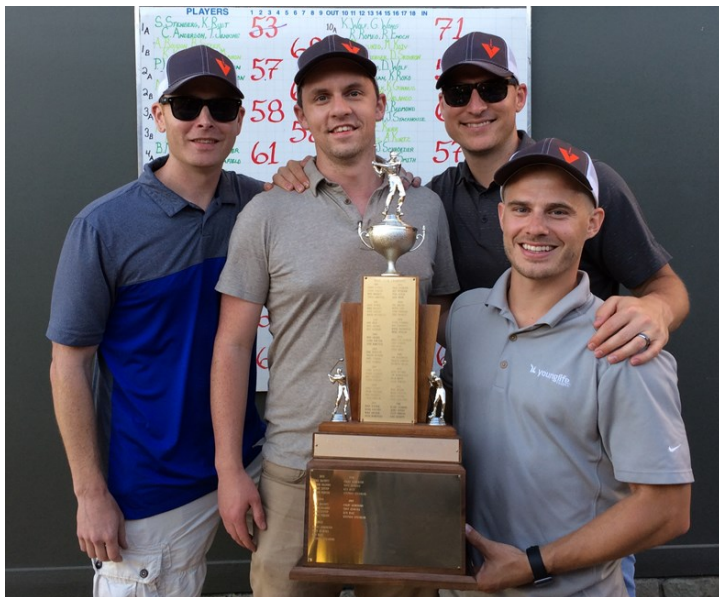
KP #2

Jeff Schroeder – Masons Supply

KP #11

Dave Dillon – Euclid Chemical

THANK YOU AGAIN FOR ANOTHER EXCELLENT YEAR!



GOLF TOURNAMENT RECAP

RAFFLE PRIZES

Mariner Tickets Donated by Ash Grove Cement

Gordy Jarmin – Knife River

55" Vizio TV – Donated by Larusso Concrete

Dave Dillon – Euclid

Salmon Fishing Trip – Donated by Masons Supply

Mark Galusha – Mayes Testing

Power Washer – Donated by WG Wright

Brian Wigginton – CalPortland

Yeti Cooler

Colby Anderson – VLMK Engineers

Yeti Backpack Cooler

Brandon Sirosis – Whitaker Ellis

Garmin Watch

Ryan Enoch – Knife River

Kegerator

Jim Lang – Larusso Concrete

Traeger Grill

John Reiter – Lyons Mfg

Drone

Kevin McCormick – Miller Consulting Engineers

IPAD

Kevin McCormick – Miller Consulting Engineers

Wheelbarrow – Donated by Masons Supply

Tom North – True North Geotechnical

Bandon Dunes \$500 Gift Card

Eric Kerr – Crestline Construction

YOUNG MEMBER FORUM

Upcoming YMF Events:

Wednesday September 26th—Lunch Meeting

Location: Mackenzie 1515 SE Water Ave # 100 Portland,
OR 97214

Time: 12:00pm -1:00pm

*Pizza will be provided, but if you can't travel, a call in
number will be sent out via email.*

MEMBER OF THE MONTH

BY: KEVIN MCCORMICK

SEAO Member of the Month Raymond T. Miller

We have selected Ray Miller as our SEO member of this month. When I told Ray that he had been selected, he asked “why?” in the typical Ray Miller fashion. Those of you who know Ray understand that he does not do things to get recognition. He does things because he wants to and because it will help or benefit others.



I have known Ray for about thirty years, and over that time I have watched him do things for this organization over and over again. His dedication to mentoring our younger staff and preparing the next generation of structural engineers for what lies ahead is fantastic. Ray is almost fully retired now, but he still comes in from time to time to check up on us and work with our engineers. For some of you who do not know Ray, here is a little background:

- He is a graduate of Portland State University.
- He founded R.T. Miller Engineering in 1979, forty years later it is now Miller Consulting Engineers.
- Ray was involved in the SEO Board and eventually became President in 1989.
- He has been involved in various code committees.
- Ray became involved in the Masonry Society and has helped write four publications of the Masonry Design Guide.

Ray is a life member, but I do not think we can say thank you enough to him for his work and dedication to SEO. That is why he was selected.

In the words of Ray Miller, “check your work and then check it again to make sure it makes sense.”

2018-2019 SEO BOARD

The following members have been elected to this year’s Board and will be installed at this month’s meeting:

Past President: Seth Thomas

President: Norm Faris

Vice President: Steve Trautwein

Secretary: Dusty Andrews

Treasurer: Mike Daily

Directors: Chad Norvell (2nd year of two year term)
CJ Marquardt

NEW MEMBERS

The new SEO members for the Summer are:

John Hermann— **Bain & Associates**

Serge Alexandre— **Sika**

Welcome to SEO!

Our goal is to provide benefit to our members and the best way to do that is get involved! Watch the emails, newsletters, and website for more information!

INTERNATIONAL MASONRY INSTITUTE SYMPOSIUM

URM & Seismic Upgrade Symposium (three-day event)

Dates: July 18-20, 2019.

Location: Portland State University's Lincoln Hall, Portland, OR

Organizing partnerships: International Masonry Institute (IMI), AIA Portland, SEAO, ASCE, PSU, and others

- This Symposium will focus on topics and concerns with URM buildings, including:
- Background on Earthquakes
- URM Construction and Seismic Engineering Technology and Options
- Seismic Upgrade Project Considerations and Costs
- Public Policy, Finance, and Resiliency

The Symposium will also include:

- Seismic Upgrade Project Competition with case studies
- Brewery pub crawl
- Exhibitor booths with sponsorship opportunities and reception
- Cocktail Reception
- One-day walking tour of URM buildings in Portland

We are looking for SEAO volunteers for the following:

- Be on the Seismic Upgrade Design Project Competition organizing group (1-2 engineers needed)
- Help organize the Walking Tour (2-4 engineers needed)
- Please let us know if you are a local engineer that has worked on URM buildings and feels they can contribute to the symposium in other ways as well.
- SEAO would also help us market the event to their members.

Please contact Amy Woods at awoods@imiweb.org or 503-329-3339 if you are interested.



NCSEA MEMBERSHIP UPDATES

Please note that Jane is now able to update your status on the NCSEA database! If you update your address please send an email to jane@seao.org so you can get your Structures Magazine!

DUES REMINDER

Annual dues for SEAO membership are due on **October 31, 2018**. You can make checks payable to SEAO and mail to:

9220 SW Barbur Blvd, No. 119
PMB #336
Portland, OR 97219

Or renew online using a credit card by going to:
www.seao.org

Renewals: Member (licensed PE in Oregon): \$115
Affiliate Member: \$105
Student Member: \$18
Retired Members: \$25

Membership must be current (dues paid) to have your name included in our annual roster.

To update our records, please be sure that we have your correct address, name of your company, current phone numbers, and your email address. This will guarantee that you are receiving all correspondence and information from SEAO. You can update your information online, or if you have any questions contact jane@seao.org.

EMPLOYMENT OPPORTUNITIES

Waypoint Engineering Structural Engineer Vancouver, WA

Waypoint Engineering is a structural engineering firm that is focused on work life balance that values our families, our employees, and the clients we serve. Our office is in the heart of downtown Vancouver, Washington, on the very walkable Main Street close to a vibrant food, drink, and outdoor centric Pacific Northwest.

We are looking for teammates that are outgoing, creative, energetic, and self-motivated with an interest in career growth. We are currently hiring talented structural engineers of at all experience levels including designers, design engineers, and project engineers.

If you would like to work for a growing company, please email your resume to careers@waypointwa.com. For more information on our benefits, please go to our website at www.waypointwa.com.

Livermore Architecture & Engineering Structural Engineer Portland, OR

Livermore Architecture & Engineering is an architectural design and structural engineering firm in Portland, Oregon, specializing in commercial and industrial buildings. We offer competitive salaries, incentive compensation, 401K plan, health benefits, and company-paid continuing education.

Candidate Requirements:

- Civil Engineering Bachelors or Masters degree from an accredited college.
- 2 years minimum experience in structural engineering design field.
- Steel, concrete, wood, and masonry design experience.

Preferred Skills and Credentials

- Project management experience; ability to work cooperatively with architects, clients, contractors, consultants.
- Proficiency in AutoCAD; working knowledge of structural engineering applications (RAM Steel & Frame, Risa & EnerCalc).
- Licensed/actively pursuing licensure.
- Working knowledge of IBC.
- Revit proficiency is beneficial.

Please submit cover letter and resume via email to jobs@livermoreAE.com. All material should be in pdf format, size 8 1/2" by 11".

EMPLOYMENT OPPORTUNITIES (CONT'D)

PCS Structural Solutions

Structural Engineer– Project Manager
Portland, OR

PCS Structural Solutions is a single-discipline structural engineering firm with a national reach. Our firm utilizes a corporate structure unlike any other in the Northwest - single discipline with one passion, process, server, and culture. Come join us in our Portland office! PCS Structural Solutions is seeking a Project Manager.

Qualifications include:

- Master's degree in Civil Engineering from an accredited college or university
- 6-10 years of experience with all building materials and project types preferred
- Excellent technical, communication and management skills
- Working knowledge of concrete, steel, wood, and masonry design preferred
- PE, SE preferred
- Excellent knowledge of Microsoft Office suite
- Preferred knowledge of Revit

Please send your resume to resumes@pcs-structural.com

Lund Opsahl

Structural Engineer
Seattle, WA

Lund Opsahl is located across the street from Safeco Field, Lund Opsahl is a growing structural engineering firm that provides a wide spectrum of services, including planning, design, seismic and damage assessments, upgrades, additions, tenant improvements, and construction support for a variety of new and existing building types in the Pacific Northwest. Our reputation as creative innovators and technical experts is built on responsive service, collaborative teamwork, and lasting relationships. Our firm's size offers early opportunities to work on challenging projects and encourages exciting career growth uncommon at larger firms, especially for the ambitious.

We value the professional relationships within our firm and we believe those values are fundamental to the development of professional relationships outside of our firm. Collaboration within our office as well as with our clients requires commitment and responsibility.

Structural Engineers of all skill levels are encouraged to apply. Please visit our website, www.lundopsahl.com for additional information and job descriptions. Inquires and resumes may be sent to careers@lundopsahl.com.