



# CONNECTIONS

October 2019 Volume 20 Issue 1

Newsletter of the  
Structural Engineers  
Association of Oregon

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



## Upcoming SEAO Meetings and Events:

### Wednesday, October 30, 2019: SEAO Chapter Breakfast Meeting

Topic: Mass Plywood Panel: Designing with the Newest Mass Timber Product

Speaker: Austin Basl, Freres Lumber Co.

Location: Portland City Grill, 111 SW Fifth Avenue, 30th Floor, Portland, OR

Time: 7:00 am check-in and breakfast; 7:30 am program

See page 3 for additional information.

### Tuesday, November 12 to Friday, November 15, 2019: NCSEA Structural Engineering Summit

Events Include: Over 16 Hours of Continuing Education; Keynote Speakers; Timber-Strong Design Build Competition; SE3 National Symposium; the Largest Structural Engineering Focused Trade Show; and the NCSEA Excellence in Structural Engineering Awards.

Location: Disneyland Hotel, Anaheim, CA

See [ncsea.com/meetings/annualconference](http://ncsea.com/meetings/annualconference) for additional information.

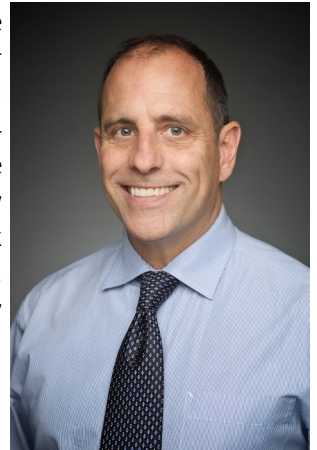


**CONNECTIONS** is a monthly publication of the Structural Engineers Association of Oregon, published to disseminate current news to our membership and others involved in the profession of structural engineering. The opinions expressed reflect those of the author and, except where noted, do not represent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

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## **PRESIDENT'S MESSAGE:** *BY: STEVE TRAUTWEIN, P.E., S.E.*

As we embark on the 2019-2020 SEAO Year, the first thing I'd like to do is thank the outgoing board members for their service to our organization. Norm did a nice writeup in the last newsletter, but I wanted to add my thanks to Seth Thomas as the outgoing Past-President, and to JoMarie Farrell as the outgoing Director. I'd like to welcome our new board members, Alex Stroud, our new Secretary, and James McPherson, our new Director. And thank you to the board members continuing their terms of services, Norm Faris as our Past-President, Dusty Andrews, past Secretary and new Vice-President, Mike Daily, our Treasurer, and CJ Marquardt, serving his second year as Director.



### **BOARD OF DIRECTORS**

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As I start my term of office, I've put a lot of thought into what I'd like to see our organization do in the coming year. Organizations like ours are powered by volunteers, and it seems like boards are forever looking for ways to get more people involved in volunteering. This year, I'm planning to focus efforts on reinvigorating our Younger Member Forum (YMF). I had lunch this last week with our two new co-chairs of the YMF, Sarah Johnson and Nisarg Mehta, as well as our outgoing chair, Deanna Kuhlman. There is a lot of energy in this new group, lots of ideas for activities we could pursue this year. These include a continuation of the monthly Younger Member Happy Hours, establishing a social media presence, setting up project site tours, a speed-mentoring event, and continuing education events targeted for younger members. That sounds like a lot, and if we're prudent we won't pursue them all, but I'm excited about the ideas that are flowing and looking forward to seeing what comes out of this group in the coming year. If you're a younger member (and we'll let you decide if you fit that description!), I encourage you to get involved in these activities and grow your involvement in SEAO. It's a great way to network and expose yourself to new professional opportunities.

If you're not a younger member but are still interested in volunteering, we have vacancies in a number of committees, including the Chair positions for our Monthly Meetings committee, Wind committee, and Legislative committee. If you're not ready to take on a chair position, virtually every other committee we have would be more than willing to add another volunteer or two to their roster. You can find a list of committees and chairs on the website, or reach out to any board member if you have questions.

Speaking of the website, after over a year of work, we're finally getting ready to roll out our new SEAO website. You'll see lots of great new features, such as automatic tracking of your PDHs, easier registration for events, and more user-friendly update capabilities, which will allow us to keep the website current without the previous hassles of going through our web-provider. We'll share a demo at our October breakfast meeting, and it will go live soon after that.

Thank you for giving me the opportunity to serve you as President of SEAO this coming year. My job is to serve you the members and make sure that our organization is providing value to the Structural Engineering community. If there is anything you would like to see us do, please let me know. We have a lot planned this year and it should be a good one, I'm looking forward to it!

## SEAO COMMITTEES

### CODE ADVISORY COMMITTEE

Seismic  
*Reid Zimmerman*  
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Wind  
*OPEN CHAIR*

Snow Load  
*Andy Stember*  
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Code  
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Vintage Building  
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Mass Timber  
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### STRUCTURAL ENGINEERS EMERGENCY RESPONSE (SEER)

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Monthly Meetings  
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Awards  
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Golf Tournament  
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Conferences  
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### ADVOCACY COMMITTEE

Website  
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Engineers Week  
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Young Member Forum  
*Sarah Johnson*  
sjohnson@dc-engineers.com &  
*Nisarg Mehta*  
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### CONTINUING EDUCATION COMMITTEE

Seminars  
*Andy Stember*  
andy@jasenginc.com

### MEMBERSHIP COMMITTEE

Newsletter  
*JoMarie Farrell*  
jomarie@equilibriumllc.com

Roster  
*Jane Ellsworth*  
jane@seao.org

### DELEGATES

NCSEA & WCSEA/NWC

*Amit Kumar*  
amit.kumar@portlandoregon.com

*Steve Trautwein (Alternate)*  
steve.trautwein@jacobs.com

## OCTOBER BREAKFAST MEETING ANNOUNCEMENT WEDNESDAY, OCTOBER 30, 2019

### Topic: Mass Plywood Panels — Designing with the Newest Mass Timber Structural Product

Mass plywood panels (MPP), a veneer-based engineered wood product, are a recent addition to the mass timber line-up of product options. This presentation will introduce MPPs with an outline of the manufacturing technologies, testing, and certification that led to their development, followed by an in-depth look at the applications and requirements associated with their use. Topics will include methods of structural design, code compliance, product size options, and availability:

- What MPP is and how it is made
- The reliability and flexibility of MPP
- Designing with MPP
- MPP on sustainability

### Speaker: Astin Basl, Freres Lumber Company

Freres Lumber Co. is an industry leader in the production of grade lumber, specialty veneer, plywood and, its latest offering, mass plywood panels (MPP). A family-owned and operated business since 1922, Freres also produces and sells a variety of wood by-products derived from its primary manufacturing processes, including small dimension lumber, wood chips, shavings, bark dust, and electricity. Throughout the company's long life, it has focused on maintaining modern manufacturing facilities, providing high-quality wood products, and providing family-wage jobs in its local communities.

Austin Basl joined Freres Lumber Co. to bring his structural engineering background to help assist the development and sales of MPP. He graduated from Oregon State University with his Bachelors in Civil and Forest Engineering degree and a Masters in Structural Engineering. He has worked in a structural engineering firm designing residential and commercial buildings. He also has experience in designing and building his own home and working in the aerospace industry designing and testing composite structures.



**Location:** Portland City Grill, 111 SW Fifth Avenue, 30th Floor, Portland, OR  
Parking information: 2.5 hours of validated parking is included for attendees in either of the two Unico garages. There are 200 spaces in the garage below the tower and 500-plus spaces in the parking structure between 5th and 4th Avenues.

**Time:** 7:00 am — Check-in and Breakfast  
7:30 am — Program

**Cost:** \$39 — Prepaid Members  
\$49 — Prepaid Non-Members  
\$25 — Prepaid YMF Members  
Free — Students

**Reservations:** Pre-registration is required for all. You can register and pay online at [www.seao.org](http://www.seao.org) before noon, Friday, October 25. You can also register with Jane Ellsworth via phone at (503)753-3075 or via Email: [jane@seao.org](mailto:jane@seao.org). Note: No-shows will be billed.

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



# SEPTEMBER MEETING PRESENTATION RECAP

## PROVIDENCE PARK STADIUM EXPANSION

NATHAN INGRAFFEA, PRINCIPAL, KPFF CONSULTING ENGINEERS  
*RECAP BY: ANISHA AGRAWAL*



Providence Park Stadium in the Soccer city of Portland, Oregon reopened in 2019 with a new seating capacity of over 25,000, up by 4000 seats added to the east side. The total cost of the expansion came around \$85 million. Our speaker Nathan from KPFF walked us through some of the interesting techniques used and the design and construction challenges faced during the project.



Fig.1: (from left) Providence Park before and after expansion

### Considerations

- The stadium continued to host games throughout the project. In fact, most of the construction was achieved during 2018 games and the stadium reopened with new seating capacity in 2019.
- MAX line running on the east right next to the location of the project remained functional throughout the project.
- In order to exactly locate structural elements and ductwork, pipes etc. in the existing facility, 'Point cloud scanning' was used. **Point cloud scanning** uses a laser scanner which takes images of the site in the form of points. These images can then be transferred to software like Navisworks and Revit to create accurate 3D models. This saves a lot of time in field visits to figure out existing utilities and structure.
- An interesting consideration in design was an analysis of the structure during dynamic loads caused by crowd action. For this a British publication for Dynamic performance requirements for permanent grandstands subject to crowd action and SAP were used. People were treated as dynamic load generating elements in SAP.

### The Structure

The superstructure consists of special reinforced concrete moment frames in both primary directions. The roof cantilevers in the E-W direction. The entire structure rests on micropiles with pile caps at the street level. The new structure is independent of existing structure and at some places it also supports the existing one.

The columns are 74 ft high and support a 20ft deep and 112ft long tapered cantilever steel roof truss. The truss was designed in RISA and the largest truss member is 10" in diameter. The raker beams supporting the seating area 30ft cantilevers from columns and take about 4000 lbs each. For slabs post-tensioned has been used.



Fig.2: (from left): Superstructure consisting of reinforced concrete moment frames with raker beams and cantilever steel roof truss, raker beams at the seating area connecting to columns

### Challenges Faced

- Due to the scale of the structure it became difficult to show dimensions on paper. KPFF went ahead with showing isometric views and member sizes in the drawings. When it went to the city for approval it was commented that the structure wasn't buildable since it had no dimensions!
- Considering the scale and complexity of design, reinforcement was color coded in Sketchup to ease construction.
- **Roof Truss Erection:** This was one of the biggest construction challenges on the project. Each truss was fabricated in two pieces in Southern California and was driven to Portland. Each piece was then lifted up to about 100ft in the air and connected at proper locations. To achieve this, a cranes were stationed on the field and on SW and 18th Ave on the East. Connection between the truss pieces was then made in the air while the cranes still held and aligned them in position. Then the end was connected to columns below.



Fig.3: (clockwise from left): Roof truss erection sequence: Truss pieces placed on field for lifting; cranes positioned on both sides of the east wing; a truss piece being erected from the crane on SW 18th Ave side; truss connection to reinforced concrete moment frame and a construction worker doing field adjustments to align truss pieces in position.

- For providing a gutter to drain rainwater on the roof away from the field, aesthetics was a consideration. To do this a 310-ft long gutter was strategically placed on top of the cantilevering end of the roof. This main gutter carries water to a mid-gutter which drained it outside the primary structure.



## YOUNG MEMBER FORUM (YMF)

BY: SARAH JOHNSON

The Young Member Forum is beginning to pick up steam again. Deanna Kuhlman, the previous Chair, is now working with two new co-Chairs: Sarah Johnson and Nisarg Mehta. This new team has already started up the monthly Happy Hours and are planning some new seminars, lunch get-togethers, and other outreach activities. Last month's Happy Hour, on September 19, was quite a success, with around 25 young engineers meeting at Henry's Tavern for drinks, appetizers, and some fun conversation. October's Happy Hour occurred on Thursday, October 17 at Von Ebert Brewery at 5:30 pm. If you're interested in attending Happy Hours, want further information about the YMF, or if you want to be added to the email list, simply contact Sarah Johnson at [sjohnson@dc-engineers.com](mailto:sjohnson@dc-engineers.com). While the Young Member's Forum is supposedly for engineers under 35, the real purpose is to help people who feel like they're just breaking into the field to make new connections and build friendships. So, if that sounds like you, feel free to join the fun regardless of age or whether you have your official membership.

Also, here are some pictures from our Happy Hour in September:



## 2019 SEO/OACI ANNUAL GOLF TOURNAMENT RESULTS

This year's golf tournament was a huge success. It was held at The Reserve Golf Club in Aloha, Oregon on July 17, 2019. It was a festive day of golf and finished with a delicious dinner, awards for winners, and a raffle. The winners include the following:

1 <sup>st</sup> Place	2 <sup>nd</sup> Place	3 <sup>rd</sup> Place
Jamie Anderson	Korey Shimojima	Eric Vermillion
Jeff Kron	Doug Wolf	Doug Gillmer
Tim Cofstad	Scott Martin	John Jones
	Dave Young	Dave Denham

### LONG DRIVE

#18 – Dave Denham

# 6 - Jeff Kron – Brundage Bone

### KP

#3 – Brad Montgomery – Knife River

#11 – Stephen Stenberg - VLMK

### RAFFLE PRIZE WINNERS

Power Washer – Pat Merriman – Mason Supply  
Wheel Barrow – Ray Miller – Miller Consulting Engineers  
Bose Headset – Sean Owens – ABC Fibers  
Black Fishing Backpack – Sean Owens – ABC Fibers  
Mariner Tickets – Gordy Jarman - Knife River  
Brown Fishing Backpack – Evan Altorfer – Miller Cons.  
Beaver Cooler – Evan Altorfer – Miller Consulting Eng.  
Drone – Pat Merriman – Mason Supply  
Bose Sound Bar – Brent Haberly – Evans Distribution  
Fishing Tote – Dave Butler – Mechanical Agents  
Stoler Wine – Pete Lucarelli – CalPortland  
Yeti Cooler – Jed Barnes  
Kegeator – Ron Morris – Lyons Manufacturing  
Cigars – Casey Walker – Whitaker Ellis  
Salmon Fishing Trip – Sul Banwal – Hilti  
Garmin Golf Watch – Dave Raleigh  
Fly Fishing Trip – Sean Owens – ABC Fibers  
Bluetooth Speaker – Brandon Sirosis – Whitaker Ellis  
TV – Tim Urben – Pence Kelly  
Weber Grill – Randy Baker – Schuepbach Custom Bldrs  
Traeger Grill – Troy Gustafson – Encon NW

## PE/SE PRACTICE EXAM A SUCCESS!

*By: STEVE TRAUTWEIN*

On October 12, sixteen aspiring Professional Engineers attended the SEO PE/SE Practice Exam co-hosted by Jacobs Engineering. Five of the test takers were SEO members (Barry Maslen, Rajeev Naik, Damian Andreani, Nana Ochiai, and Huzaifa Ghori), and twelve were Jacobs employees. Barry was the only one preparing for the SE this time around; most were preparing for the Civil/Structural PE.

There were also people practicing for the Mechanical PE, Electrical PE, Geotechnical PE, and one was preparing for their FE.

Feedback was good, people appreciated the opportunity to spend a day in a simulated testing environment to get themselves ready for the exam.

In addition to the test taking experience, people got a chance to meet some of their peers during lunch and the Happy Hour at Suki's afterwards.

If you're planning to take an exam in the spring, we'll do this again in March. Good luck to those taking the exam!



## NEW MEMBERS

Welcome to our new Members!

Anisha Agrawal — MacKenzie  
Mukul Bindal — WHPacific, Inc.  
Scott Donart — Scott Donart  
Kevin Friskel — SSOE Group  
Patrick Leonard — PACE Engineers, Inc.  
Rajeev Ranasoth Naik — Bittner-Shen Consulting Eng.  
Akshay Pawar — Lewis & Van Vleet  
Katie Ritenour — KPFF Consulting Engineers  
Rock Shetler — Blazer Industries, Inc.  
Kelly Sheeran — James G. Pierson, Inc.  
John Siler — Jacobs Engineering Group

## WELCOME TO SEAO!

## DUES REMINDER

Annual dues for SEAO membership are due on October 31, 2019.

You can make checks payable to SEAO and mail to:  
9220 SW Barbur Blvd, No. 119  
Portland, OR 97219  
Or renew online using a credit card by going to  
[www.seao.org](http://www.seao.org)

### Renewals:

Member (licensed PE in Oregon): \$115  
Affiliate Member (unlicensed): \$105  
Student Member (full-time student in Civil  
or Structural Engineering): \$18  
Life Members or Retired Members/Affiliates: \$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](mailto:jane@seao.org).

## ASK A QUESTION, GET AN ANSWER

Do you have a code question you would like to ask the Wind Committee or Snow Committee? SEAO is pleased to announce 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).

Committees include: Seismic, Wind, Snow, Code, Vintage Building, and Special Inspections.

## WEBSITE UPDATE

The SEAO Board has been working with the web designer on the new SEAO website. The primary objective is to make the website more user-friendly and up-to-date. A sample of what is being developed will be presented at the October breakfast meeting.

One new feature will be each member's ability to track their PDHs and upload PDH certificates to their personal profiles (even for non-SEAO PDHs).

If you have any ideas or comments on the existing website that you would like to see improved, please contact Seth Thomas ([seth.thomas@kpff.com](mailto:seth.thomas@kpff.com)).

### **VENDOR ADVERTISING**

SEAO is 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](mailto:jane@seao.org).



# 2019 SEA NW CONFERENCE – DELEGATE REPORT

BY: SETH THOMAS



SEA NW chapters.

This year's SEA NW conference was hosted by SEAO at Salishan Resort at the Oregon Coast. This was my last chance to represent SEAO as delegate as I am handing the reins over to Amit Kumar (and Steve Trautwein as alternate). The SEAO team did an excellent job putting on this conference and while not everything went according to plan – the resort lost power for ~12hrs on Friday - the conference was a great success enjoyed by participants from all the

The conference started out on Thursday morning with a delegate meeting. In the meeting we discussed several topics. We heard about the great things going on in other SEAs while also finding out other SEAs struggle with the same issues we do. One of the major topics of the meetings was growing the NW conference. Each year one of the eight SEA chapters puts in a tremendous amount of work to put on a great conference – unfortunately attendance is not always what we would like to see. We discussed a number of different reasons why we thought we did not get more attendees and what we could do to improve that in future years. That being said we would love to hear from each of you as SEAO members – what was the reason you did not choose to attend. The reason doesn't need to be long (i.e. too expensive, already booked those dates) – a simple one sentence email to myself ([seth.thomas@Kpff.com](mailto:seth.thomas@Kpff.com)) will be great.

The conference officially kicked off with lunch with the vendors on Thursday and was followed by three technical presentations. These included an update on the ASCE 41-17 provisions, an update on the ASCE 7-16 wind provisions, and a presentation on tall wood building design given by some excellent presenters. Thursday night was highlighted by a dinner and entertainment (an illusionist). The show was quite impressive; you will have to ask someone who was there. It was fun to see a room full of engineers trying to figure out how they were just tricked by a single guy doing a trick right in front of them.

The conference continued Friday with a full day of technical presentations. This is where it got interesting. The power went out at the resort and the surrounding area in the early hours of Friday. This meant no PowerPoint slides. The first presentation up was a presentation on structural glass design, which as you can imagine could be a difficult one give without slides. The presenter stepped up and gave an amazing presentation while the attendees followed along on printed slides. He was followed by a presentation on the new PCI handbook and a presentation on the new masonry code updates.

Friday's lunch included the raffle where a bunch of great items and

gift cards were won. The committee did a great job of getting a lot of really cool prizes and a ton of gift cards donated. The technical portion of the conference concluded with three afternoon presentations. First a presentation on updates in the cold-formed steel industry and then a great presentation on the updated seismic provisions in ASCE 7-16 by the chair of the committee. Just before the last presentation, the power came back on and the conference concluded with a presentation on the new tsunami provisions in ASCE 7-16.

This year's NW conference concluded with a dinner on Friday night. In effort to make this a family-friendly conference, activities for kids were hosted by volunteers throughout the conference. Next year's conference is being hosted by the SEAW-Seattle chapter. They are looking at hosting the conference in Downtown Seattle in September 2020. Look for a "save the date" in the next month or two. We hope that you can attend the conference next year as there are always a bunch of great presentations and are a lot of fun to attend.

I want to thank the SEAO board and members for entrusting me to be their delegate the last few years. It has been an honor and a lot of fun to represent SEAO. Lastly a big shout out to Kevin McCormick and his team for a fantastic job done planning and running the conference. If you see him or anyone on his committee complement them on a job well done!

Seth

## ONLINE DINNER MEETING IN JANUARY?

BY: STEVE TRAUTWEIN

Most of SEAO's members and virtually all of our events are located in the greater Portland metropolitan region. Unfortunately, we don't always do a great job of making our offerings readily available for those who can't easily make the trip to Portland. This year, the board would like to try something new—provide online access to one of our dinner meetings. We're proposing to do this for our January 29th dinner meeting, the Rainier Square presentation by Ron Klemencic on "Steel Plate Reinforced Concrete".

To make this successful, we are looking to our membership for two things: 1) confirmation from members located outside of the Portland area that this is a service they are interested in, and would be willing to participate in; and, 2) a tech-savvy volunteer to take charge of making the magic happen to enable this remote dinner meeting. If you are a remote member interested in viewing this event via internet, please email [jane@seao.org](mailto:jane@seao.org). If you are a tech-savvy volunteer, please contact [steve.trautwein@jacobs.com](mailto:steve.trautwein@jacobs.com). If we get interest, we will make it happen!



## EMPLOYMENT OPPORTUNITIES

### VAK CONSTRUCTION ENGINEERING SERVICES

#### **Entry Level Engineer**

#### **Beaverton, OR**

VAK is a contractor-focused engineering firm looking for candidates to fill an entry level engineering position. VAK offers a range of contractor services, including design and drafting work in temporary structures associated with: bridge falsework, marine falsework, access structures and crane trestles, cofferdams and shoring, crane and heavy lifting engineering, erection, demolition, equipment seismic/wind anchorage and more.

Candidates will ideally have passed their E.I.T. and/or P.E. exams and be eager to learn.

Construction experience is a plus.

Interested applicants are encouraged to visit our website ([www.vakengineering.com](http://www.vakengineering.com)) for more information. Submit resumes to [nkoiv@vakengineering.com](mailto:nkoiv@vakengineering.com).

### HOLMES STRUCTURES

#### **Project Engineers and Senior Engineers**

#### **San Francisco and Los Angeles, CA & Portland, OR**

Holmes Structures is a structural engineering firm, with offices in San Francisco, Los Angeles, and Portland. We are part of the New Zealand based [Holmes Group](#), with offices around the Pacific Rim. Compelled by the possibilities, we are relentlessly pursuing Why — to create what is Best.

We are seeking Project Engineers and Senior Engineers for our San Francisco, Los Angeles, and Portland offices. Candidates should have a B.S. (M.S. preferred) in Structural Engineering and 2-6 years of related experience. Candidates must possess a valid PE license; SE license is also a plus. Candidates must be fast learners, ambitious, have the ability to handle increased responsibilities, have excellent verbal and written communication skills, and be able to interact effectively with clients, project teams, and colleagues.

Check us out at [www.holmesstructures.com](http://www.holmesstructures.com) and send your resume with cover letter to [hr@holmesstructures.com](mailto:hr@holmesstructures.com).

### LUND OPSAHL

#### **Structural Engineers**

#### **Seattle, WA**

Lund Opsahl is located across the street from T-Mobile Park. 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 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](http://www.lundopsahl.com) for additional information and job descriptions. Inquiries and resumes may be sent to [careers@lundopsahl.com](mailto:careers@lundopsahl.com).

### CATENA CONSULTING ENGINEERS

#### **Structural Engineers**

#### **Portland, OR**

Catena Consulting Engineers, a growing structural engineering firm, offers the environment of a small firm while providing the opportunity to work on projects including concrete, steel, timber, and masonry buildings in a variety of market sectors. Our culture is embedded in learning and applying our expertise to projects that require creative structural engineering. You will work closely with Principals who are fully engaged in projects and provide daily mentorship. Our open office fosters optimum communication. We seek engineers that have earned a Master's degree with 2 to 5 years of experience, and that have a desire to learn, grow, and be challenged. While we have small firm setting, we offer salary and benefits of a large firm, and then some. US Citizenship is preferred. Catena is an Equal Opportunity/Affirmative Action Employer. Catena participates in the E-Verify program. Please email a cover letter and resume to [resumes@catenaengineers.com](mailto:resumes@catenaengineers.com).

## EMPLOYMENT OPPORTUNITIES (CONT.)

### NORTHWEST MASONRY INDUSTRY ASSOC.

Executive Director

Washington or Oregon

The Northwest Masonry Industry Assoc. is seeking an Executive Director. Responsibilities include association management; building code development; creation of educational programs and delivering technical presentations; technical support for design professionals; and coordination of industry research projects.

Northwest location permitting residence in Washington or Oregon. To express interest, submit a cover letter and resume to [admin07@nwcma.org](mailto:admin07@nwcma.org). Position Requirements:

- Bachelor's degree in civil/structural engineering.
- Minimum 3-5 years experience in commercial building design. A professional license is preferred.
- Excellent oral and written communication skills.
- Ability to work independently.
- Outgoing personality with the ability to provide design guidance and engage design professionals in discussions regarding building material selection. Existing contacts within the regional A/E/C community preferred.
- Some travel away from home with overnight stays.

For additional information please visit [www.nwcma.org/careers](http://www.nwcma.org/careers).

### VISTA STRUCTURAL ENGINEERING

Structural Engineer

Portland, OR

Vista Structural Engineering has an IMMEDIATE need for structural engineers experienced in wood structures and/or deep foundation systems. The position is to work remotely. Ideal candidate will be able to communicate directly with our firm with minimal guidance until the plans are ready for review immediately prior to submittal to the client; someone who is self-motivated, very organized, and enjoys structural engineering and interacting with clients. **Email resume to [office@vistastructural.com](mailto:office@vistastructural.com).**

Freelance candidate: \$65-\$75/hour with a minimum 10 hours per week. Full-time position compensation based on experience.

- 3+ years of experience in structural engineering and detailing of residential and wood-framed projects.
- Proficiency in AutoCAD, Microsoft Word, Excel and Enercalc, StruCalc, Forte, or similar structural software for wood-framed construction.
- PE license in OR and/or WA preferred but not required.
- **Must live within a one-hour drive of downtown Portland.**