

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

#### **SEAO**

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



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CONNECTIONS

Volume 16 Issue 1 October 2015

# **Upcoming SEAO Meetings and Events:**

# Wednesday, October 28, 2015: SEAO Lunch Meeting

Topic: Sellwood Bridge Replacement Project—Design & Construction—An Overview of the Project Speaker: Ian Cannon, PE, Transportation Director/County Engineer, Sellwood Bridge Program Manager, Multnomah County Location: Portland City Grill, 30th Floor, 111 SW Fifth Avenue, Portland, OR Time: 11:30 am Check-In & Buffet; noon Program PDH Credit: 1 Hour Meeting Sponsor: Simpson Strong-Tie Strong-Tie

See Page 3 for additional information.

# Friday, October 30, 2015: YMF Lunch Meeting

Location: KPFF Consulting Engineers, 111 SW Fifth Avenue, 26th Floor Training Room, Portland, OR Time: Noon to 1:00 pm

Join us for our bi-monthly lunch meeting to discuss future events and activities. This is a great way to get involved. See Page 6 for additional YMF information.

# Friday, November 13, 2015: SEAO Fall Seminar

Topic: ASCE 41-13 Standard Seminar (Combines ASCE 31-03 and ASCE 41-06) Speaker: Robert Pekelnicky, PE, SE, Degenkolb Location: The Abernethy Center, 606 15th Street, Oregon City, OR 97045 Time: 7:30 am Registration; 8:30 am to 4:30 pm Seminar (Lunch is Included) Register before November 6, 2015 for best rate. Attendance is limited to first 100 enrollees. PDH Credit: 6 Hours (4 Hours for Viewing Recorded Video) See Pages 15 and 16 for additional information.

# Monday, November 16, 2015: USRC Informational Presentation

Location: KPFF Consulting Engineers, 111 SW Fifth Avenue, Suite 2500, Portland, OR Time: 5:30 pm

More information from SEAO is to follow on this event.

See Page 11 for additional information on the USRC.

9220 SW Barbur Blvd, No. 119 Portland, OR 97219 Or renew online using a credit card by going to: www.seao.org Member (licensed PE in Oregon): \$102 Renewals: Affiliate Member (unlicensed): \$95 Student Member (full-time student in Civil or Structural Engineering): \$16.50 Retired Members & Affiliate 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.

DUES REMINDER

Annual dues for SEAO membership are due on October 31, 2015. You can make checks payable to SEAO and mail to:

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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.

Send membership inquires to: 9220 SW Barbur Blvd. No. 119 PMB #336 Portland, OR 97219

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the (until recently) unexpected position of wielding the gavel as your 2015-2016 SEAO President. My membership

I find myself in

extends back to 1985, but after some early involvement on the Board as Secretary I had a fairly long period of inactivity until 2014. While my children were growing up, I stepped back from involvement in the organization, and because I was committed to a Wednesday night church activity, I was not even available to attend membership meetings for a period of time. When we started having lunch meetings, I started attending some of those, and took advantage of SEAO seminars. But I had no further committee or Board involvement until I was asked to submit my name for the Vice President position. I didn't realize what I was missing until I got re-involved.

This past year on the Board of Directors has been enlightening in the engineering issues that I have been exposed to and in the people I have worked with, both on the Board and within the membership. Learning from observing Jennifer Eggers as President and Amit Kumar as Past-President was invaluable as I prepared to move into this role. Both have taught me a lot, and I'll miss Amit's contributions this year. Kevin McCormick is more than wellqualified to step into the Vice President's office, and I look forward to his help and input. I'll miss Jim Riemenschneider as he steps down as Secretary, and Mike Bair as he finishes his two-year term as Director, but look forward to getting to know Dmitri Wright and Pat Merriman as they step into those roles. And I look forward to continuing to work with Jennifer, Mark Butler as Treasurer, Michelle Chavez as Director, and

of course, Jane Ellsworth (she makes us all look better).

The committee chairs and members, delegates, and other volunteers I have been able to meet this year have greatly impressed me with their abilities and dedication, and if you haven't been involved in SEAO yet or if it has been a while, I urge you to consider whether you can dedicate some time to us this year. Don't let a temporary absence from involvement (like mine) become a permanent one if the reasons you stepped back have since changed. SEAO serves an important role within our profession and in our state and needs your knowledge, time, and ideas.

At the recent Fish Camp retreat, we spent some time in a strategic planning meeting, and many good ideas were presented and discussed. You will hear about them as time goes on, but among them was the need for an emphasis on mentoring. That includes mentoring newer engineers and educating the public about our role and about engineering issues that affect them. One of my goals as president is to help facilitate the continuation of the tradition of excellence that is SEAO, but I won't try to reinvent the wheel. This wheel is rolling along just fine at this writing.

One challenge for SEAO this year will be the improving construction economy that is increasing our workloads and reducing our available free time. We are trying to spread out the work in SEAO so more might each do less and still get things accomplished. Please budget some time in your busy schedules to attend seminars, memberships meetings, and to get involved in leadership or in a committee. Thank you for your trust in me and I look forward to the coming year.

Gary

#### **SEAO COMMITTEES**

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#### DELEGATES

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Seth Thomas (Alternate) seth.thomas@kpff.com

#### OCTOBER LUNCH MEETING ANNOUNCEMENT WEDNESDAY, OCTOBER 28, 2015 Meeting Sponsor: Simpson Strong-Tie

#### Topic: Sellwood Bridge Replacement Project—Design & Construction—An Overview of the Project

The Sellwood Bridge replacement project was in planning stages long before the start of construction in 2012. The new bridge replaces a 90-year-old span that had numerous structural and serviceability issues. This program will give an overview of the many challenges involved in the design, phasing, and construction of the new bridge, which is scheduled to open in early 2016.

#### Speaker: Ian Cannon, PE, Transportation Director/County Engineer, Sellwood Bridge Program Manager, Multnomah County

Ian has been with Multnomah County for over 17 years and has served as Bridge Engineering Manager and Bridge Services Manager. He is a member of the Local Agency Bridge Selection Committee for the State of Oregon. Ian has his B.S. and M.S. in Civil Engineering from Washington State University and is a licensed Professional Engineer in Oregon and Washington.



Location: Portland City Grill, 111 SW 5th Avenue, Portland, OR

Check-in & Lunch Buffet: 11:30 am; Program: Noon

Cost: Lunch and Program:

\$32 — Prepaid Members
\$20 — Prepaid YMF Members
\$40 — Prepaid Non-Members
Free — Students

**Reservations:** Pre-registration is required for all. **You can register and pay online at** <u>www.seao.org</u> **before noon, Friday, October 23.** You can also register with Jane Ellsworth via phone at (503)753-3075 or via Email: <u>jane@seao.org</u>. Note: No-shows will be billed.

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

This month's meeting is proudly sponsored by Simpson Strong-Tie. Reference page 6 for additional information.



# FIRST ANNUAL SEAO EXCELLENCE IN STRUCTURAL ENGINEERING AWARDS

BY: BRYNN ADKINS, AWARDS COMMITTEE

Congratulations to the 2015 Excellence in Structural Engineering Award Winners!

# **Renovation / Retrofit**

The Seismic Upgrade of Spencer Court Miller Consulting Engineers



A seismic upgrade of the two-story 1918 building damaged by fire. Char was removed from the existing timber beams and remained exposed. The engineers added concrete moment frames allowing for a continuous glass storefront which helped it blend in with its more contemporary neighbors. Their design also allows for a future roof deck and 90-foot self-supporting elevator with a sky bridge to the adjoining hotel.

## New Buildings Under \$10M

Ponzi Vineyard DCI Engineers



The new Ponzi Vineyard building is a 13,000 square-foot singlestory timber building that consists of a tasting room and administrative offices. A flush cantilever wood I-joist system was utilized to minimize the soffit line around the roof. This low-profile look allowed the building to blend in with the country landscape. Additionally, the engineers made use of a large concrete fireplace for the west side lateral system.

#### New Buildings Over \$10M

Collaborative Life Sciences Building & Skourtes Tower KPFF Consulting Engineers



A new allied health, academic, and research building designed for the Oregon University System and OHSU. It consists of approximately 650,000 square feet of classrooms, lecture halls, teaching and research labs, and two levels of underground parking. The design of four seismically separated structures on a shared foundation (sitting on a contaminated site) combined with an aggressive schedule was no easy task.

#### Special Use Structures

What the Festival Sound Stage WDY, Inc.



This unique structure consists of DJ booth and 50-foot dragon sculpture that has the ability to move its head and tail. Accurately modeling the structure was crucial due to the complexity of connections between the body and its extremities. Because the structure was used in several different festivals, the design incorporated the ability to be easily deconstructed, transported, and reconstructed.

# FIRST ANNUAL SEAO EXCELLENCE IN STRUCTURAL ENGINEERING AWARDS (CONT.)

# Jurors' Favorite

This year the jurors believed there was one project which stood out among all the rest. Congratulations to <u>Equilibrium Engineers LLC</u> for winning the award of *Jurors' Favorite* with their work on the **Oregon Zoo Elephant Lands** 



This was a wholesale replacement and expansion of the Asian Elephant Exhibit and Habitat that originally opened in 1959. New structural site work consists of a new elevated trestle for the zoo train, a pedestrian bridge, shade shelters and a perimeter cable barrier in the outdoor elephant habitat, over 3200 lineal feet of tied-back retaining walls for a new service road and outdoor habitat ravines, interpretive kiosks, and artwork. Especially challenging was the lack of standards for loads and deflection limitations associated with elephant management structures. With the help of zoo staff, each structural component that could be touched by an elephant was designed for load-ing conditions that were specific to its location and purpose within the overall project

# Thank You to the Other 2015 Excellence in Structural Engineering Awards Finalists



**KPFF** Consulting Engineers

Portland VA Medical Center Parking Garage



Miller Consulting Engineers, Inc.

**Overton 19** 



**DCI** Engineers

#### Lovejoy Park Canopy Rehabilitation



**KPFF Consulting Engineers** 



**KPFF** Consulting Engineers

# 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, 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.

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

#### Upcoming YMF Events:

**Friday, October 30th — YMF Lunch Meeting** Location: KPFF Consulting Engineers, 26th Floor Training Room, 111 SW Fifth Avenue, Portland, OR Time: Noon to 1:00 pm

After our short summer break, the YMF is back and ready to get going again, so come join us as we start planning our year. All are invited to attend the lunch meeting as we decide what we want to accomplish this year and begin planning our social and educational events. Lunch is provided. Contact Phillip Davis at <u>Phillip.Davis@kpff.com</u> if you want to rsvp or have any questions.

# OCTOBER MEETING SPONSOR



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For more than 55 years, Simpson Strong-Tie has never stopped working toward helping our customers succeed by providing innovative products, full-service engineering and field support, product testing and training, and on-time product delivery. Simpson Strong-Tie offers a full array of products for residential, commercial and industrial construction. As we continue to move into other commercial and infrastructure markets, we will introduce new products designed to protect, repair and strengthen concrete, wood and steel structures. These new product lines, like all of our others, will feature the Simpson Strong-Tie brand and logo – and the trusted levels of service and quality you've come to expect.

#### YMF Website Info:

<u>http://www.seao.org/committees/advocacy/ymf/</u>. Please visit our website for more information on YMF events and information.

# **NEW MEMBERS**

The newest members to join SEAO are:

<u>October New Members</u>: Josh Henry – Student Scott Horton—CH2M Hill Christopher Mount—SCE, Inc. Zachary Stokes—OIT Thomas North—US Army Corps of Engineers

Welcome New Members!!

The Board of Directors of the Structural Engineers Association of Oregon takes great pleasure in honoring and recognizing four extraordinary members that form our newly added Awards Committee. If you were able to attend the September Excellence in Structural Engineering Awards Dinner, you saw them in action. The committee is listed below:

Chair — Lauren DiPalma, KPFF Consulting Engineers



#### Devin Connell, KPFF Consulting Engineers



Brynn Adkins, WDY Structural & Civil Engineers



Jeff Schwindt, Harper Houf Peterson Righellis, Inc.



When Lauren came to me about a year ago and said, "Has SEAO ever thought about doing an Awards Banquet?", I said – "Not that I'm aware of, but if you are up for it – let's go for it!" So she did.

Lauren attended the January 2014 Committee Info Night to promote her new committee and got a few volunteers and that was all it took. Then they all took off! I attended many of their meetings and they were all full of ideas and every single member contributed. They were able to split up the work to accomplish this seemingly daunting task of laying down the foundation for future SEAO Awards Dinners.

I am so proud of the work that they have done and what they all accomplished in such a short amount of time. Their hard work paid off with a very successful inaugural awards dinner!

A special Thank You goes to Lauren for her idea and her leadership skills that made this event so successful.

The SEAO Board would like to thank **Lauren**, **Brynn**, **Devin**, **and Jeff** for their dedicated service to our organization and the engineering community. I'm sure we will be seeing more from them . . . they are already talking about next year!

## SEPTEMBER MEETING PROGRAM RECAP By: David Tarries, PE, SE

#### Topic: Urban Cities and How They Have Developed, with a Spotlight on Portland Speaker: Paddy Tillet, ZGF Architects, LLP

Paddy Tillett grew up in rural Scotland, attended school in Oxford and Liverpool, and practiced architecture in London. He relocated to Portland in 1982 and is currently a Principal with ZGF Architects, LLP. Paddy is a fellow of the Royal Town Planning institute, a member of the Royal Institute of British Architects, a fellow of the American Institute of Certified Planners, a fellow of the American Institute of Architects, and an accredited LEED professional.

#### Portland's Evolving Urban Design:

Portland is a young city, merely 200 years old. By comparison, London has been a population center for some 2,000 years, and Rome has been in existence for over 2,500 years. In older cities the roads meander through the buildings along routes that were originally located adjacent to sheep pens, bogs, tree copses, and other obstacles long since removed to make way for progress. Additionally many of the buildings in ancient cities have a similar look to them. The buildings were constructed by skilled laborers who learned their trade from their forefathers, who had all learned and practiced in the same city without much influence from the outside world.

Portland's downtown grid layout betrays its youth and urban planning. It was designed with small blocks since corner lots sold for more money than center lots. The streets were laid out to allow the easiest access to the riverfront and its ship borne goods. The north-south streets were wider to catch more sunlight. The downtown park blocks were set aside early in the city's history to provide a fire break between the growing downtown and the wooded area to the west of town. Sectioning off what is now prime real estate was not so much by the choice of landowners, but of the requirement of insurance companies that would not provide fire insurance to the buildings downtown without it.

Portland continued to grow like this for over 100 years, when in



1967 things started to change. A skyscraper moved in next door to the old city hall, in the form of the First National Bank Tower (Wells Fargo Tower). Concerns about tall buildings limiting Portlander's views of Mt. Hood led to the development of a downtown plan by 1973. In order to stop speculations and demolition of historic buildings for new skyscraper development, a 75-foot building height limit was adopted in historic areas, and floor area ratios were limited to around 10 to 1.

Urban sprawl resulted in increased traffic into the downtown area which crowded downtown and resulted in air quality issues. Portland put a cap on parking downtown to limit car traffic and reduce pollution. As a result, parking pricing increased sharply and bus ridership went up with it.

During the 1970s, TriMet developed a central hub of services downtown and eventually opened the Portland Transit Mall. Pe-



destrian access was promoted and the streets had wide clean sidewalk areas. People began to feel that walking and using mass transit were not just for the poor. One setback in the development, however, was the old bus stations. They were elaborate and not exactly a timeless design. In addition,

they cost about \$85,000 each when the average house in Portland at the time only cost \$63,000.

Downtown life in many major US cities was changing during this time. The shift of population to suburban areas had left many cities with downtowns that were deserted beyond normal business hours, and retail areas were either moving out or moving to interior spaces built above street level in the form of urban malls.

Portland was beginning to see the same shift in retail as well, with many of the large chain stores such as J.C. Penny and Woolworth's moving to suburban locations. When Nordstrom of Seattle came to Portland to open their first store in Oregon, they wanted to be in the middle of suburbia targeting Washington Square. Mayor Neil Goldschmidt was aware of the exodus from downtown and had the power to coerce Nordstrom to build a store downtown or not to come to Oregon at all. The addition of Nordstrom to the downtown scene helped to turn things around.

In the 70's, the city desired to build a great "Living Room" in the center of downtown Portland, at the site of the old Portland Hotel and Meier & Frank parking lot. Designs were solicited from many prominent architects, and construction commenced on what is



now Pioneer Square. It opened to the public in 1984. The location proved to be the perfect choice with Meier & Frank, Nordstrom, Pioneer Place Mall, the bus mall, and the MAX all in close proximity.

Today

Before 1980



(Continued on Page 6)

# SEPTEMBER MEETING PROGRAM RECAP (CONT.)

Around the same period, with the assistance of federal funds, there was a push to build the Mt. Hood Freeway, along Highway 26, to the east of downtown. The idea was to relieve traffic congestion downtown as well as provide better access for the people of Gresham to the city center. As this freeway plan for car traffic ran counter to the city's mass transit plans, the city passed on the project, but Goldschmidt managed to keep the federal funds anyway and use them on a new light rail project. The new Eastside Metropolitan Area Express (MAX) Blue Line opened in 1986. It connected Gresham to the city center. The route of the new line was carefully chosen to avoid as many properties as possible. This was done because the perception of the public at the time was that this would be a large, noisy, Amtrak style train that would be disruptive to anything nearby. In actuality the MAX was relatively quiet and benefited the communities and properties it touched. As a result, construction of the Westside Red Line did not have public opposition and people actually wanted the alignment to be near their property.



Light rail downtown had a good design; the idea was to make the best street possible. The rails would be in the same alignment for generations so people felt comfortable upgrading buildings and properties next to the tracks. As it

turned out, every \$1 spent on the rail construction resulted in \$30 in private money for improvements to adjacent properties.

Another development of the 80s, with the decline of the timber industry, was a common conception in the area that only old people and the homeless lived downtown. The Portland Development Commission (PDC) worked to change that belief and to bring housing and mixed-use development to urban Portland. Examples of this new program were the KOIN Tower and Belmont Dairy. The finance industry had a difficult time at first combining risks from commercial, retail, and residential buildings, but eventually caught on. At times, private developers joined with the City to develop areas beneficial to both parties. One such area was north of downtown along the Willamette River. Burlington Northern Railroad decided to unload their rail yard properties due to fears of liability for contaminants in the soil and groundwater. The City helped obtain the property for development of condominiums and retail space along the riverfront.

As these new properties were developed it became apparent that transportation between the areas north and northwest of Burnside and the downtown area were lacking. Light rail had been Portland's solution in the past and the MAX was well received, but using the MAX in the downtown areas without long stretches, without stops or intersections, would not be feasible. Instead the City turned to a smaller rail system, the streetcar, to follow existing streets and mingle with vehicle traffic. The intent of the streetcar was that people would walk a few blocks to get to a stop, ride the train, and then walk again a few blocks to their destination. One terminus of the line was at Good Samaritan Hospital on NW 23<sup>rd</sup> Avenue and the other was at the Portland State University campus. The area west of downtown near SW 11<sup>th</sup> Avenue was used to bring the line into the city center, because it was hoped that the streetcar would spur redevelopment in the area which had lagged behind since a late 70's rezoning. The streetcar started construction in 2001, to mixed reviews at first, but eventually caught on.

Later the line was expanded to the South Waterfront and the East Bank of the Willamette River where the city center has continued to grow.



In closing, Paddy left us with the following food for thought: What have past successes taught us?

- 1. Listen carefully; respond to the right questions
- 2. Understand what is important
- 3. Design places primarily for people-not their cars
- 4. Bring equity to street users
- 5. Enrich the built environment

And Remember . . . Good Citizens are the riches of the City (Engraving on Skidmore Fountain).

#### IBC CODE INFORMATION EXCERPT FROM 2012 IBC HANDBOOK

# 1610.1 Soil Lateral Loads

**General.** Table 1610.1, Lateral Soil Load, is a modified version of Table 3-1 of ASCE 7. For example, Footnotes c and d to Table 3-1 are incorporated into the last column in Table 1610.1 entitled "At-rest pressure."

Table 1610-1, in addition to showing soil lateral loads from the IBC and the ASCE 7 Standard, also shows soil lateral load values using the calculation procedure that formed the basis of the values included in *The BOCA National Building Code*.20. The calculated soil lateral loads are presented for both moist and saturated conditions. Table 1610-1 shows that for gravels and sands, IBC, ASCE, and the calculated soil lateral loads for moist conditions closely agree. For silts and silt-clay mixtures, the IBC values tend to agree more closely with the calculated soil lateral loads for moist conditions, whereas ASCE 7 values are closer to the calculated soil lateral loads for saturated conditions. Footnote a to IBC Table 1610.1 as well as ASCE 7 Table 3-1 states that the design lateral soil loads are given for moist soil conditions, which appears to be the case more so for the IBC soil loads.

According to the exception to Section 1610.1, foundation walls (basement walls) extending not more than 8 feet below grade and laterally supported at the top by flexible diaphragms are permitted to be designed for active pressure. Note that ASCE 7 uses the term *light floor system* rather than *flexible diaphragm*. Examples of light floor systems supported on shallow basement walls, given in the ASCE 7 Commentary, are floor systems with wood joists and flooring, and coldformed steel joists without cast-in-place concrete floors attached.

Expansive soils are found in many regions of the United States. Without special design considerations, expansive soil can cause serious damage to basement walls.<sup>1</sup> Footnote b of Table 1610.1 prohibits the use of expansive soils as backfill because of the potential for very highlateral pressures acting against walls. In this case, it is preferable to excavate expansive soils and backfill with suitable



non-expansive material such as sands and gravels.

This excerpt is from the 2012 International Building Code Handbook, authored by John Henry, PE and Doug Thornburg, AIA. The book is available at iccsafe.org/store. Use ID # 4000S12.

Table 1610-1. S	Soil Lateral Loads—	<b>Calculated Versus</b>	<b>Code and Standard Va</b>	lues
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Soil Description	Unified Soil Classi- fication	Design Lateral Soil Load (pounds per square foot per foot of depth)		Calculated Lateral Soil Load Active Lateral Pres- sure (pounds per square foot per foot of depth)	
		IBC	ASCE 7	Moist	Saturated
Well-graded clean gravels, gravel- sand mixes	GW	30	35	34	81
Poorly graded clean gravel, gravel- sand mixes	GP	30	35	34	80
Silty gravels, poorly graded gravel- sand mixes	GM	40	35	40	84
Clayey gravels, poorly graded gravel- sand-clay mixes	GC	45	45	44	86
Well-graded clean sand, gravelly sand mixes	SW	30	35	32	80
Poorly graded clean sands, sand- gravel mixes	SP	30	35	32	79
Silty sands, poorly graded sand-silt mixes	SM	45	45	38	82
Sand-silt clay mix with plastic fines	SM-SC	45	85	40	84
Clayey sands, poorly graded sand-clay mixes	SC	60	85	42	85
Inorganic silts and clayey silts	ML	45	85	39	82
Mixture of inorganic silts and clay	ML-CL	60	85	40	83
Inorganic silts and silt-clay, medium plasticity	CL	60	100	46	86
Organic silts and silt-clays, low plasticity	OL	Unsuitable	Unsuitable	_	
Inorganic clayey silts, elastic silts	MH	Unsuitable	Unsuitable	_	_
Inorganic clays or high plasticity	СН	Unsuitable	Unsuitable	_	_
Organic clays and silty clays	OH	Unsuitable	Unsuitable	_	—

 American Society of Civil Engineers, ASCE Standard Minimum Design Loads for Buildings and Other Structures, ASCE 7-93, ASCE 7-95, ASCE 7-98, New York, NY, 1993, 1995, 1998, and 2000, respectively, ASCE 7-02, ASCE 7-05, ASCE 7-10, Reston, VA, 2002, 2005, and 2010, respectively.

# USRC CERTIFICATION & NEW MEMBERSHIP OPPORTUNITIES

The US Resiliency Council (USRC – <u>www.usrc.org</u>) is pleased to announce two important new opportunities as it launches its rating system for the earthquake performance of buildings.

- 1. Join the USRC as we embark upon our mission to implement meaningful rating systems that describe the performance of buildings during earthquakes and other natural hazards.
- Apply to become a USRC Certified Rating Professional and/or Certified Rating Reviewer to perform and review USRC ratings.

New membership opportunities and benefits are described at <u>www.usrc.org</u>, where you can join online.

The minimum requirements to become a USRC Certified Rating Professional include a professional engineering license with five years of relevant building evaluation experience after the date of license. The cost to become a USRC Certified Rating Professional is \$600 for individuals with a \$100 annual renewal fee. Individual and corporate members enjoy discounts on certification application fees. Your application fee includes a one year individual membership in the USRC and the cost of attending two required web based seminars on the two USRC approved methodologies for seismic evaluations – ASCE 41 and FEMA P58.

The minimum requirements to become a USRC Certified Rating Reviewer include holding the highest professional engineering licensure offered in the state in which you practice and in which the project you are reviewing is located. If that highest level of licensure in a state is an SE then 5 years of relevant experience after an SE license is required. If the highest level is a PE then 10 years of relevant experience after licensure is required. In states that offer a Structural Engineer designation, in lieu of that designation an applicant may have a combination of a Professional Engineering License, a PhD in structural or civil engineering and 5 years minimum qualifying experience. Application fees, membership discounts and annual renewal fees are the same as for Certified Rating Professionals. Reviewers will be compensated by the USRC at the rate of \$200 per hour, subject to USRC Terms and Conditions.

Details of the application process and other requirements for certification are provided on both the web site and the USRC portal <u>www.usrc-portal.org</u>. To become a USRC Certified Rating Professional and/or Certified Rating Reviewer submit your application, qualification package, and payment on the USRC portal.

There will also be an informational presentation about the USRC Building Rating System on Monday, November 16 at 5:30 pm at the offices of KPFF Consulting Engineers, 111 SW Fifth Avenue, Suite 2500, Portland, OR. More information is to follow from SEAO on this event.

# SEISMIC EVENTS

#### ASCE Webinars (www.asce.org)

Friday, October 23, 2015, 8:30 AM – 10:00 AM PT. Design of Masonry Shear Walls.

#### NCSEA Webinars (www.ncsea.com)

Thursday, October 22, 2015, 10:00 AM – 11:30 PM PT. Observations and Reflections on the 2014 South Napa Earthquake.

# ATC REQUEST FOR PROPOSALS

ATC has formally announced their request for proposals to conduct trial evaluations of buildings in the United States using the ATC-78-3 methodology.

A complete description of the scope of services to be performed, required qualifications, submittal requirements, subcontract terms, selection criteria, selection process, and schedule are provided in the Request for Proposals (FEMA), available on the ATC website.

The closing date for the submission is October 30, 2015.

See page 18 for more information and links to ATC's website.

## NCSEA WINTER LEADERSHIP FORUM March 10 & 11, 2016

SAVE THE DATE! The NCSEA Winter Leadership Forum at the Coronado Island Marriott in San Diego, CA is in March. The Forum draws principals and leaders from a diverse group of structural engineering firms to engage in thought-provoking sessions, roundtables, and networking.

See page 17 for more information on the Forum programs and speakers.

#### NCSEA SUMMIT ROCKS LAS VEGAS BY: ED QUESENBERRY, PE, SE

NCSEA held its 23<sup>rd</sup> annual Summit at Red Rocks Resort in Las Vegas between September 30 and October 3 this year, and it was a great event. Seth Thomas and I represented SEAO as Alternate Delegate and Delegate respectively, and we both found the Committee and Delegate meetings to be very informative and relevant to SEAO. In addition, the topics of the two-day educational program were a balanced blend of technical and non-technical, covering practical design considerations in light gauge steel, wood and masonry, the future of BIM, engineering judgment, increasing business profitability, generational issues in the workplace and ownership transition. At the conclusion of each day at the Summit, social events were held where Seth and I could mingle with SEs from all over the country, visit vendor booths and partake in some good food and beverages. The two largest of these social activities included a Rock n Bowl bowling party sponsored by Computers and Structures Incorporated, and the NCSEA Excellence in Structural Engineering Awards Gala. Ashraf Habibullah, CEO of CSI, who gave a presentation to SEAO a few years ago, was the host extraordinaire at the bowling event, and spent about an hour giving away I-Pads, I-watches and various other gifts to attendees. Some of the finest examples of Structural Engineering were on display at the Design Awards Gala, with firms like Thornton Thomasetti, Harman Group, and Arup taking home hardware for their great work. Between the technical and social parts of the Summit, spare time was at a premium for us, but I'd be lying if I said we didn't throw down a few poker chips along the way!

Last year, NCSEA formulated a Strategic Plan that will be implemented over the next couple of years. A summary of the plan can be found on Page 60 of the October 2015 issue of Structure magazine. The Delegate events at The Summit this year were a departure from previous years in response to the Strategic Plan. Through the strategic planning process, NCSEA realized that it needed to improve and bolster its communications with the member organizations (like SEAO), and that the primary conduit for that improved communication is its Delegates. Prior to The Summit, NCSEA issued a survey to each of its Member Organizations (MOs) to determine what the critical issues that each MO was facing. The six most common MO issues were the centerpiece for the Delegate Collaboration Session at the Summit, where Delegates from all over the country brainstormed ways to resolve these issues in a very dynamic and collaborative way. The end result of this session was a comprehensive list of ideas, lessons learned, and proven approaches that was shared back with each Delegate. NCSEA has taken it upon itself to disseminate this comprehensive list into a useful MO Guide that will be issued sometime in November. This Guide will allow us to use ideas from other MO's to improve SEAO's meetings, seminars, events, and overall benefit to its members.



Seth and his teammates from Idaho with their winning structure

Seth represented SEAO well by teaming with a couple of Delegates from Idaho and winning the First Annual Summit Delegate Structure Building Competition. Their toothpick and gumdrop tower reached the respectable height of 36 inches, narrowly beating out a team from Colorado/Texas. Seth's experience with this activity through SEAO's YMF Student Outreach program might have given his team a bit of an advantage, but since when is it wrong to draw from experience?!

On Wednesday Seth had the opportunity to attend two committee meetings. The morning was spent participating in the Existing Buildings Subcommittee (part of the Code Advisory Committee). The primary items discussed were automatic retrofit provisions in the IEBC. We discussed balancing the economic impacts of requiring retrofits with the need to provide a safe building stock. Also discussed was including retrofit for other hazards in these mandates (specifically wind, flood, and tsunami). Most impactful to Oregon would be the tsunami and flood requirements. The committee is still debating on what would trigger an upgrade, but the idea is that all hazards should be considered to create resilient cities and in large parts of the county seismic is not the controlling hazard.

On Wednesday afternoon Seth attended the Young Member Group Support Committee meeting. As a returning member to the committee, Seth spent the last year in the Annual Conference Coordinator role which was responsible for all of the young member events at the Summit. Some highlights included, a new award for the outstanding young member group of the year, young member mixer, young member scholarships, and technical resource sheets provided to YM's at the Summit. This year Seth will be taking on the Registrar/ Secretary position, which leads into the YMG Chair position in 2016-2017.

The end of The Summit doubled as the end of my term as Director on the NCSEA Board of Directors. The experience I had on the Board was one I will remember for a long time. It exposed me to a broader view of our profession, linked me indelibly with fellow Structural Engineers from across our country, and renewed my passion for what we do every day in our work lives. Involvement at the national level has been extremely rewarding for me, and I encourage any of you that have thought about taking the next step in SEA involvement to do so—you will not regret it.

Both Seth and I judged The Summit to be a great success this year, and expect that next year's will build on that success. We thank SEAO for sponsoring our attendance and are proud to have been given the opportunity to represent SEAO at the national level. We hope

that all of you will join us next year on September 14-17 in Orlando, Florida for the 2016 NCSEA Structural Engineering Summit. You will not be disappointed!



L to R: Tom Grogan (SEA Florida, NCSEA VP), Carla Quesenberry, Nancy Grogan, and Ed Quesenberry at the NCSEA Excellence in Design Awards Gala

#### PACE ENGINEERS, INC. Structural Engineer Portland, OR

PACE Engineers, Inc. is looking for energetic and careerminded candidates to join our structural team who have a PE license plus 5-years experience and who also have their SE license. Competence with Microsoft Office, RISA 3D, RAM Steel, and FEA modeling is required. Professional communications with clients and effective coordination skills with colleagues and multi-disciplinary design teams is essential. Strong writing skills are necessary. A spirit of ownership in one's work and the commitment to technically correct work is also required. Project work includes a broad mix of types in various market sectors including; public works, industrial (high-tech & general), ports, architectural, commercial, institutional, and contractor and vendor services. For more information about this Portlandarea employment opportunity, please visit our web site at www.paceengrs.com.

#### TM RIPPEY CONSULTING ENGINEERS Structural Engineer Portland, OR

TM Rippey is looking for an experienced Structural Engineer to join our dynamic team. We are a well-established and successful consulting firm located in Tigard. Our projects include commercial, multifamily residential, educational and religious facilities, and seismic retrofits with sizes from the small (mechanical anchorage) to the large (multistory buildings). We are looking for candidates with a minimum of 2 years of experience in some or all of the types of projects listed above. Experience in all major construction materials is desirable. P.E. preferred. Members of our staff are self-motivated, experienced, and collaborative. We believe in work-life balance and creating a social environment that you can enjoy working in. Competitive experience based salary. Benefits including medical/dental insurance, 401k, bonuses, profit sharing, and ownership opportunities.

Please send resumes to jwetterlin@tmrippey.com.

#### **GROUP DELTA CONSULTANTS, INC.** Catastrophe Response Team Licensed Civil and Structural Engineers

Group Delta is seeking licensed civil and structural engineers with strong professional experience in evaluation of earthquake damaged residential and commercial structures. Group Delta is building a forensic team with California experience and California licenses.

If you have forensic experience evaluating structures, would like to perform earthquake damage evaluations, are interested in being a part of, and working with this team please contact Group Delta Consultants, Inc. Human Resources at Forensics-HR@groupdelta.com.

#### CATENA CONSULTING ENGINEERS Structural Engineer Portland, OR

Catena Consulting Engineers provides the personal environment of a small firm while providing the opportunity to work on a variety of projects. Our projects vary in size from a single day's effort to large projects with construction values in excess of \$300 million. You will gain design experience in concrete, steel, timber, and masonry buildings and will work on a wide variety of project types, including buildings created for healing, learning, living, and interacting.

Due to the technical complexity and challenge of many of our projects, we seek engineers that have earned a Master's degree and that have a desire to learn, grow, and be challenged. U.S. citizenship is preferred. We are currently seeking engineers with 0 to 4 years of experience in structural engineering for buildings. For a detailed advertisement and to submit your resume, visit our website:

http://www.catenaengineers.com/opportunities.php.

#### **KPFF CONSULTING ENGINEERS**

# Experienced Structural Engineers and Entry-Level Structural Engineers

KPFF Portland is looking for Experienced and Entry-Level Structural Engineers who are motivated and interested in an opportunity for growth.

KPFF is about freedom. Freedom to work on what inspires you. Our engineers work on a vast spectrum of projects that are located around the globe: from anchorage of mechanical systems to complex, non-linear analysis of high-rise structures. We have the benefits of a large, stable firm but none of the red tape that comes with it. Providing first-class service to our clients is what we're about. We are a group of dedicated, friendly, collaborative, hard-working professionals. We are looking for exceptional engineers to join us. Please use the appropriate link below for full details.

# Experienced Structural Engineer Apply Here: http://

chc.tbe.taleo.net/chc05/ats/careers/requisition.jsp? org=KPFF 2&cws=63&rid=73 Entry-Level Structural Engineer Apply Here: <u>http://</u> chc.tbe.taleo.net/chc05/ats/careers/requisition.jsp? org=KPFF 2&cws=63&rid=151

# Experienced and Entry Level BIM/CAD Modelers Portland, OR

KPFF Portland is looking for both Experienced and Entry-Level BIM/CAD Modelers who are motivated and interested in an opportunity for growth.

KPFF is about freedom. Freedom to work on what inspires you. Our modelers work on a vast spectrum of projects that are located around the globe: from anchorage of mechanical systems to complex, non-linear analysis of high-rise structures. We have all the benefits of a large, stable firm but none of the red tape that comes with it. Providing first-class service to our clients is what we're about. We are a group of dedicated, friendly, collaborative, hard-working professionals. We are looking for exceptional modelers to join us. Please use the appropriate link below for full details.

Experienced Modeler Apply Here: http://chc.tbe.taleo.net/ chc05/ats/careers/ requisition.jsp;jsessionid=C7E8EA90347EB424C07FBBB0763537A6 ?org=KPFF\_2&cws=63&rid=96 Entry-Level Modeler Apply Here: http://chc.tbe.taleo.net/ chc05/ats/careers/requisition.jsp? org=KPFF\_2&cws=63&rid=255

## VLMK ENGINEERING + DESIGN Structural Engineer Portland, OR

VLMK Engineering + Design is seeking a Structural Engineer with 0 to 4 years of experience who is passionate about engineering and wants to broaden their experience working in a collaborative, multifaceted environment with a variety of project and building types. If you think this might be you, please see the full posting on our website at <u>www.vlmk.com</u> for additional requirements and the benefits of joining VLMK. If you have questions, please feel free to contact Trent Nagele at <u>trent@vlmk.com</u>.

# EQUILIBRIUM ENGINEERS LLC Structural Engineer

Lake Oswego, OR

Equilibrium Engineers is looking for a Structural Project Engineer with at least 3 years of structural engineering experience to join our team. If you are self-motivated, confident in your abilities as an engineer, and don't mind having fun while you work, you might be the person we are looking for. Our name says it all—at Equilibrium, we understand the stresses inherent to our profession, and our culture is one that promotes work-life balance through maintaining a relaxed, family atmosphere and manageable workload for all of our employees so that they have both the time and energy to devote to other interests.

Please visit our website at <u>www.equilibriumllc.com</u> to learn more about us, and send your resume to <u>edq@equilibriumllc.com</u>, , or just stop by our office!

KPFF is an equal opportunity employer.

# ASCE 41-13 Standard Seminar (Combines ASCE 31-03 and ASCE 41-06)

# Presented by the Structural Engineers Association of Oregon (SEAO)

Date:	Friday, November 13, 2015 – 8:30 AM to 4:30 PM
	Registration Opens at 7:30 AM (Lunch Included)

Cost: \$175 SEAO Member (Includes Class Notes) \$225 Non-member \$25 Late Fee (if registration received after November 6, 2015) Students \$55 (Includes Notes) – Must show current student ID No refunds after 12:00 noon Tuesday, November 6, 2015

Register early; Maximum 100 people

Program to be Taped by Limelight Video

**Location:** The Abernethy Center 606 15<sup>th</sup> Street

Oregon City, Oregon 97045 (503) 722-9400

#### Continuing Education: SEAO recommends 6 PDHs (4 PDHs for Viewing Video)

#### Speaker: Robert Pekelnicky, PE, SE, Degenkolb

Bob specializes in making community and business infrastructure resilient against earthquakes, explosions, and other hazards. He is a recognized leader in the field of earthquake engineering and devotes a lot of his time to developing better performance based earthquake engineering methodologies, building codes and standards. Outside of his technical activities, Bob advocates for public policies that promote disaster resilient cities. He served as the vice-chair and secretariat for the standards update committee. His leadership was instrumental in this monumental combination of two standards into one and the 100 technical changes which were also made to the standard. He has recently been elected chair of that committee.

#### **Summary:**

The seminar details the new ASCE 41-13 standard, which is a combination of ASCE 31-03 and ASCE 41-06. The new standard provides a unified method for evaluating and retrofitting existing buildings for earthquakes and eliminates significant inconsistencies between the two previous standards. This presentation will act as an introduction to the new standard and a primer on its use. Attendees will learn about the underlying philosophy and history of the ASCE 31 and 41 standard. The will also learn how ASCE 41-13 eliminates inconsistencies between ASCE 31-03 and ASCE 41-06 and some of the 100 major technical changes that occurred in the standard.

#### Speaker is from the Structural Engineers Association of California (SEAOC)

Questions: Andy Stember (503) 657-9800

# ASCE 41-13 Standard Seminar (Combines ASCE 31-03 and ASCE 41-06)

**Registration Form** 

# Register Online at <a href="https://www.seao.org/calendar/register/20151113\_wwwseaoorg/">https://www.seao.org/calendar/register/20151113\_wwwseaoorg/</a>

Send to:	SEAO PO Box 295 Vancouver, (503) 753-30	8 WA 98668 75	<b>Make Checks Payable to:</b> SEAO		
Firm Name:					
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# of Attendee	(s) <u>(Non</u>	$\_\ @ $175.00 / each =$ member \$225.00)	\$		
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# of Students		@ \$55.00 / each =	\$		
# of Videos		@ \$150.00 / each =	\$		
	Total	Enclosed =	\$		
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Name (as app	ears on card)				
Credit Card #					
3-digit code		Billing Zip Code			
Cardholder S	ignature				



The NCSEA Winter Leadership Forum draws principals and leaders from a diverse group of structural engineering firms to engage in thought-provoking sessions, roundtables, and networking. This two-day Forum will feature top-notch, thought-provoking speakers and case studies.

In 2016, the Forum will focus on managing risk professionally, collaboratively and transparently. The first day will consist of interactive discussions on managing the various risks every firm faces every day. The second day will be a discussion of the various risks faced on projects and some of the preventative measures you can take. Three to four presentations of actual claims will be presented, with a discussion of what went wrong (if anything) and how some of these claims could have been avoided.

#### ON THURSDAY, LOOK FOR:



Legal advice, as well as give and take, on how to achieve your business objectives while minimizing the risks of litigation. Topics will touch on labor and employment law for managers, discrimination in the workplace, leveraging the hiring process to find the best candidates, background checks, best practices for conducting internal investigations, and more. Speaker: Attorney Staci Ketay Rotman

Staci Ketay Rotman is a partner in the Labor & Employment Practice Group at Franczek Radelet P.C. She advises and represents employers in all aspects of labor and employment law and has represented clients before federal and state courts and administrative agencies, as well as in arbitration proceedings. Staci has extensive experience in connection with employment discrimination, sexual harassment, wrongful discharge, leave management, employee accommodation, restrictive covenants, employment related torts, employment policies and agreements, reductions in force, I-9 compliance and other workplace issues.

A Q&A Workshop-type format on the pros, cons, and financial implications of the various project delivery methods. This will be an informative 'conversation' about specific advantages/disadvantages, where you will have the opportunity to take away information tailored to your particular needs. Case examples for each delivery method will be covered, as time permits. Speaker: Dale Munhall, AIA



Dale Munhall, ALA, is Director of Construction Phase Services for Leo A Daly at their national headquarters office in Omaha. He is a registered architect, certified by the National Council of Architectural Registration Boards (NCARB), and is a LEED Accredited Professional. During his four decade career he has developed a unique perspective on the entire project delivery process via

his early experience as a construction manager and field superintendent and as a real estate broker and part-time building code official. He actively serves on committees of the American Institute of Architects (AIA) and the Design-Build Institute of America (DBIA), and he has written and made national presentations on various aspects of design and construction.

#### **ON FRIDAY, LOOK FOR:**



An exploration of the differences in E & O insurance policies and how to conform to insurance requirements. Have your questions answered on Best Ratings, prior acts coverage, pre-claim assistance and cost, whether coverage is limited to the settlement amount if the insured refuses settlement, and more.

Speakers: Dan Bradshaw, insurance agent, and Craig Coburn, attorney.

Dan Bradshaw is president at Benchmark Insurance Agency in Bountiful, Utah, and a past president of the Professional Liability Agents Network (PLAN). He specializes in risk management for designers, architects, and engineers, contract review, and professional liability/errors and omissions insurance.



Claims Sharing: Three firms will present what happened to them when they were sued for professional negligence. They will tell their stories about the projects, the allegations, the outcome and the lessons learned; but the outcome and lessons learned will not be revealed until after WLF attendees have had their own opportunity to predict the outcome. Moderator: John Tawresey, SE

Speakers: Seasoned [been sued] structural engineers and defense counsel

John Tawresey has over 47 years of experience as a structural engineer and was the Chief Financial Officer at KPFF Consulting Engineers for 38 years. He participated in the growth of KPFF from a 50-person firm to the 900-person firm that it is today. He is also a past president of the Structural Engineers Risk Management Council (SERMC) and past chair of the SERMC Claims Committee.



Advancing Engineering Applications for Hazard Mitigation **California** • Georgia • Virginia



September 25, 2015

President: James A. Amundson Vice President: Victoria Arbitrio Secretary/Treasurer: William Staehlin

For More Information:

Technical Information: William Holmes,<u>WHolmes@ruthchek.com</u> Proposal Information: Jon A. Heintz, <u>jheintz@ATCouncil.org</u>

#### ATC ANNOUNCES REQUEST FOR PROPOSALS TO CONDUCT TRIAL EVALUATIONS OF BUILDINGS IN THE UNITED STATES USING THE ATC-78-3 METHODOLOGY

The Applied Technology Council (ATC), in cooperation with the Federal Emergency Management Agency (FEMA), is seeking proposals from U.S. engineering firms to conduct trial evaluations of older concrete frame structures using the methodology described in the ATC-78-3 Report, *Seismic Evaluation of Older Concrete Frame Buildings for Collapse Potential* (ATC, 2015), which was developed with FEMA funding. Trial evaluations are being sponsored by FEMA to test the clarity and usability of the methodology, assess the level of effort required to implement, and determine if calibration is necessary.

A complete description of the scope of services to be performed, required qualifications, submittal requirements, subcontract terms, selection criteria, selection process, and schedule are provided in the Request for Proposals (FEMA), available on the ATC website (<u>www.atcouncil.org</u>). The report can be downloaded from the ATC website at: <u>https://www.atcouncil.org/58-frontpage/268</u> -identification-and-mitigation-of-nonductile-concrete-buildings. The closing date for the submission of proposals is October 30, 2015.

The methodology described in the ATC-78-3 report is under ongoing development, and expansion of the methodology to address concrete wall systems is currently underway. This solicitation is the second in a series of planned trial evaluation programs intended to inform future versions of the methodology. The following additional solicitations can be expected:

• A future Request for Proposals funded by the City of Los Angeles Department of Building and Safety (LADBS), to be announced approximately one year from now, that will solicit the involvement of Southern California engineers to conduct a trial evaluation of the methodology for concrete wall buildings located in California.

Response and/or participation in one Trial Evaluation Program will not preclude response and/or participation in future programs.

More information about the ATC-78 Project Series is available at: <u>https://www.atcouncil.org/58</u> <u>-frontpage/268-identification-and-mitigation-of-nonductile-concrete-buildings</u>.

Board of Directors: James A. Amundson, Victoria Arbitrio, Leighton Cochran, Michael D. Engelhardt, Nancy L. Gavlin, Kurtis R. Gurley, Erleen Hatfield, Douglas C. Hohbach, Andrew B. Kennedy, Roberto T. Leon, Robert B. Paullus, Jr., William Staehlin, Williston L. Warren, Kent Yu