# CONNECTIONS

September 2011 Volume 12 Issue 1



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

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## Upcoming SEAO Meetings and Events:

**September 14th:** Seismic Committee Meeting
4 to 6 pm at KPFF's office in Downtown Portland, Oregon.

**September 22nd and 23rd:** Structural Engineers Association 2011 NW Conference
The conference this year is hosted by the Spokane and South Central Chapter of SEAW and will be held in Spokane, Washington. See attached brochure.

**September 28th:** SEAO Dinner Meeting
Meeting will include:

- Speaker Kurt Haapala, AIA Portland President
- New Board Installation
- Scholarship awards

See page 3 for additional information on this month's dinner meeting

**September 29th:** OSBEELS Symposium
The first OSBEELS symposium is being held at the Salem Conference Center and features four sessions in each profession: Engineering, Land Surveying, Photogrammetric Mapping, and OSBEELS topics. Lunch is provided and registrants will earn 1 professional development hour (PDH) for every 1 hour in attendance. Registration has been extended through Friday, September 16. See attached brochure for additional information.

**October 6:** Chance Engineering Seminar
Location: Portland, OR.
See attached brochure for additional information.

**October 26th:** SEAO Dinner Meeting
Speaker: Daniel A. Cuoco, Editor-in-Chief of Structural Engineer magazine
Location: Governor Hotel, Portland/5:30 pm social, 6:15 pm dinner.

**Mid-November:** SEAO Fall Seminar
Tentative Topic: SEAOC Seismic Design Manual III
Date: To be determined.
Details to follow in October newsletter.

**February 23, 2012:** Save this date for the SEAO Tradeshow.

### 2011-2012 SEAO Board

We are pleased to announce the following new board members for the 2011-2012 term:

| | |
|---|---|
| President: | Ed Quesenberry |
| Vice President: | Aaron Burkhardt |
| Treasurer: | Kevin Kaplan |
| Secretary: | Michelle Chavez |
| Director: | Norm Faris (2nd year) |
| | Don Ellsworth (1st year) |
| Past-President: | Trent Nagele |

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:

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## BOARD OF DIRECTORS



# PRESIDENT'S MESSAGE:
## Out of The Groove!

*By: Trent Nagele, P.E., S.E.*

In the ebb and flow of the SEAO calendar, September marks the beginning of a new year as we resume regular monthly meetings and activities following the summer hiatus. It also marks the transition of our board and means this is my last editorial as I hand over the President's gavel to Ed Quesenberry at the end of the month. However, before someone shouts from the back of the room for me to get off the stage already, or I digress into the many "thank yous" I owe to so many, let me tell you about a road trip.

This past spring I pointed my car down I-5 and struck off to visit some of the engineering firms


outside of the Portland area. In two days, I visited with engineers in Salem, Albany, Corvallis, Eugene, Medford and Ashland. Planned stops in Klamath Falls and Bend had to be postponed when bad weather rolled into the passes, though I still enjoyed some good phone conversations with firms in these areas as well.

The purpose in making this trip was to share some of the things that SEAO has to offer, and particularly some of the ways that we are trying to make the organization more accessible to those outside the Portland area. I also wanted to hear what concerns and recommendations they had to share. Some of the people I visited with were members of SEAO, some were not—but it was a pleasure to meet each of the engineers and firms I had the opportunity to visit.

As I talked with people and listened to them, there were several topics that seemed to come up with frequency, and spanned across firms and cities. I don't think these are new subjects, but I suspect that the economic realities of the past couple of years have again brought them to the forefront.

The first was a general sense that, as a profession, we could do a better job of making the public and our clients better aware of the benefit and value that we as structural engineers provide. The truth is that there aren't many people who really understand what we do, how we do it, or even why we do it. They're as likely to attribute the strength and safety of a structure to the contractor or architect, as they are to the structural engineer. And without an objective way to evaluate our work, their judgments regarding an engineer's abilities are too often based on the more subjective: like how quickly an engineer can respond or fix things, or whether they think the resulting design requirements are "reasonable", and of course, fees.

Another topic that came up frequently was the need for consistent and qualified plan checks. This wasn't a topic I had expected, but reminded me of the benefits plan checks provide. I know it's an often debated topic and the argument can be made that the engineer's seal ought to be sufficient. And I agree that in an ideal world, that is true. In Portland and the surrounding jurisdictions, I think we've become accustomed to a relatively uniform degree of plan checks done by qualified engineers. However, in some parts of the state, I understand this is not the case. Some of the engineers I talked with said it was difficult to do quality work and remain competitive because adequate plan checks aren't being done. And without it, substandard work can too often be rewarded. After all, it's infinitely easier to provide the obligatory stamp and minimum engineering (with corresponding fees) if you're four codes behind and aren't meeting the current standards of care and practice.

But why talk about these concerns? The reason that I think these are important is that they illustrate some of the challenges we face as a profession that aren't easily solved with our usual toolbox of technical mastery. These are issues that require a different toolset. How do we better educate our clients, or the public, or policy makers and building officials about what structural engineers do and why we do it? Do we care to, and is there a benefit? The seismic symposium I discussed last month and the vast amount of not only education but preparedness that needs to be done for the magnitude of earthquake we know this region will most likely sustain in the future is daunting, but I think falls into the same category. Yet it presents opportunities as well,

*(Continued on page 8)*

## SEAO Committees

**Technical**
*Doug Meltzer*
dougm@bmgpengineers.com

**Seismic**
*Jason Thompson*
Jason.thompson@kpff.com

**Wind**
*Jim Riemenschneider*
jimr@vlmk.com

**Snow Load**
*Andy Stember*
andy@jasenginc.com

**Code**
*Eric Watson*
eric@miller-se.com

**Vintage Building**
*Wade Younie*
wyounie@dci-engineers.com

**Emergency Response**
*Shelly Duquette*
emergencyresponse@seao.org

**Legislative**
*Paul Kluvers*
pkluvers@gmail.com

**Website**
*Aaron Burkhardt*
Aaron.burkhardt@kpff.com

**Newsletter**
*JoMarie Farrell*
jomarie@equilibriumllc.com

**Monthly Meetings / Programs**
*Brandon Erickson*
Brandon@ericksonstructural.com

**Golf Tournament**
*Melissa McFeron*
melissa@miller-se.com

**Conferences**
*Kevin McCormick*
kevin@miller-se.com

**Young Member Forum**
*Aaron Rudis*
aaronx.v.rudis@intel.com

**Seminars**
*Andy Stember*
andy@jasenginc.com

**Engineers Week**
*David Nilles*

**NCSEA**
*Sue Frey*
sfrey@ch2m.com

**WCSEA/NWCC**
*Sue Frey*
sfrey@ch2m.com

**MASER, OBOA**
*Ron Vandehey*
ron@miller-se.com

# SEPTEMBER DINNER MEETING ANNOUNCEMENT

## Wednesday, September 28, 2011

**Topic:** "Collaborative Opportunities for Architects and Engineers, Looking Beyond Your Desk." Kurt Haapala, AIA Portland President, will discuss the collaborative relationship between Architects and Structural Engineers and how that relationship can be leveraged and applied to educate the public on issues that affect our professions.

***Invite an architect to join you for this meeting!*** **See special pricing information below.**

**Location and Times:**
Governor Hotel, 2nd Floor, Billiard Room
614 SW 11th Ave, Portland OR
*The MAX Light Rail System stops just a block away from the hotel (The Galleria stop) and Portland's Streetcar stops right outside the hotel. Smart Park is located at SW 10th and Yamhill about two blocks from the hotel.*

**Check-in and Social Hour:** 5:30pm
**Dinner:** 6:15 pm
**Program:** 6:45 pm
**Cost:**
**Dinner & Program**

| | |
|---|---|
| $32 – Pre-paid Members | **Cost for Videocast Locations:** $20 – Members |
| $40 – Pre-paid Non-members | $33 – Non-members |
| $18 – Students | $13 – Students |

**To welcome AIA members who would like to join us this month, AIA members will receive the same member pricing as SEAO members ($32)!**

**Videocast Venues:**
**Corvallis:** CH2M Hill, 1100 NE Circle Blvd., Suite 300, (541)752-4271
**Medford:** Marquess & Associates, 1120 East Jackson Street, (541)772-7115
**Bend:** Eclipse Engineering, 155 NE Revere Avenue, Suite A, (541)389-9659
**Eugene:** Artisan Engineering, 325 West 13th Avenue, (541)338-9488

**Reservations:**
Pre-registration required. **You can register and pay online at** www.seao.org **before noon, Friday, September 23.** 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

**About the Speaker:** An Associate Principal at Mahlum Architects, Kurt Haapala is an industry leader in the planning and design of student housing facilities with over 16 years of professional practice. He has completed residential projects for over a dozen college and university campuses across the West Coast. He is a frequent presenter at numerous conferences on topics of student housing, sustainability and campus planning, including SCUP, ACUHO-*i*, NWACUHO, NACAS and AASHE. He received his Bachelors and his Master of Architecture degrees from the University of Michigan as well as accreditation from the Royal Danish Academy in Copenhagen, Denmark. Kurt currently serves as the President of the Portland Chapter of the American Institute of Architects, delegate to AIA Oregon and AIA Northwest & Pacific Region Board of Directors.

# SEAO DIGITAL STAMPING - PART 2

By: Sue M. Frey, P.E., S.E.

## *Digital Stamping Part 1: Overview*

The second in a series of informational articles introduces Digital Stamping for Engineering Documents. For answers to common questions, visit:

http://www.faq.pdf-it.com/DigitalSignature/GeneralQuestions/DigitalSignatureGQ.aspx.

### *OSBEELS Symposium*

*The first OSBEELS Symposium will be held on September 29, 2011, at the Salem Conference Center. More information is provided at www.oregon.gov/osbeels. One session will cover the state of Oregon's requirements on Digital Signatures. SEAO has a representative attending the digital signature session who will provide a summary in the next article of this series.*

### *Electronic versus Digital Signatures --Reminder*

From the OSBEELS site, from a document posted there by Ron Singh, PLS, "Digital Signatures for Engineering Documents":
http://www.oregon.gov/OSBEELS/docs/DigitalSignatures.rev.September_2008.pdf?ga=t

> *Often the terms electronic signature and digital signature are used interchangeably to mean the same thing. In the information security world, the two terms are distinctly different. The term electronic signature may include scanned images of hand written signatures; typed notation, such as Jane Doe, or signature blocks on email messages, etc. without any authentication and/or encryption system included. The term digital signature is more properly used to describe a signature system applied to an electronic document that utilizes specific technical processes to provide significant added security, authentication, and/or encryption.*

### *Basic Information –Digital Signatures*

You are not meeting state requirements if:

You have someone other than you apply a PE or SE stamp electronically to a drawing to receive your digital signature. Your digital stamp must be under your control and be third party certified and only available to you. You can have the stamp applied by a CAD technician if you are going to wet sign the stamp. That is not a digital signature and then must meet the traditional stamp and signing requirements.

You apply a scanned image of your signature to a CAD applied stamp. That is not a digital signature. Anyone can lift your signature and no one can verify it.

You apply an electronic (scanned) image that has not been third party verified. That is an electronic signature, not a digital signature.

A digital signature has third party certification (that you are you). In an electronic signature, you create a graphic but do not have it certified by a third party so no one can verify where it came from and it is not protected.

An official digital PE or SE stamp applied by you has your stamp with the words "Digital Signature" replacing "your name signature". The graphic is under your control in an external "key" or secured hard drive "key". See below.

### *Digital Signature Demonstration*

A short cartoon version discussion of how a digital signature and keys work is provided at http://www.youdzone.com/signature.html. See this site to understand how to protect your documents and keys and meet State requirements.

### *Keys*

Note that the "keys" discussed in the demonstration above are provided by a third party. They are readily available from many sources and are not expensive. Firms can purchase for all their engineers or an individual can purchase a key. They are usually provided on either a one time basis or an annual basis. Some sources have a free first time use.

Public keys are like your debit or ATM card – you can hand it to most anyone and the number is everywhere.

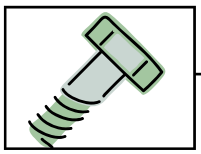
Private keys are like your PIN number for the card – you don't give it out.

*(Continued on page 7)*

# COMMITTEE UPDATES

## SEMINAR COMMITTEE

SEAO is planning on hosting the Seismic Design Manual III for our 2011 Fall Seminar. We are working with a new Seminar chair for SEAOC to finalize dates in early to middle of November. The seminar will be held at the Embassy Suites Washington Square.

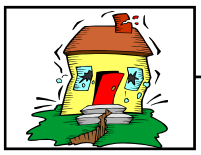


## TRADE SHOW COMMITTEE

The Trade Show will be held on February 23, 2012. It will be at the Monarch Hotel in Clackamas, Oregon.

## SNOW LOAD COMMITTEE

The SEAO snow load committee has sent the 50 year MRI snow data to NACSE at Oregon State University (OSU). They have provided some review of the data and are working to set up a PRISM run. OSU has received a check from BCD for the SEAO portion of the project, and SEAO has invoiced OSU so the funds can be transferred/reimbursed to us.



## SEISMIC COMMITTEE

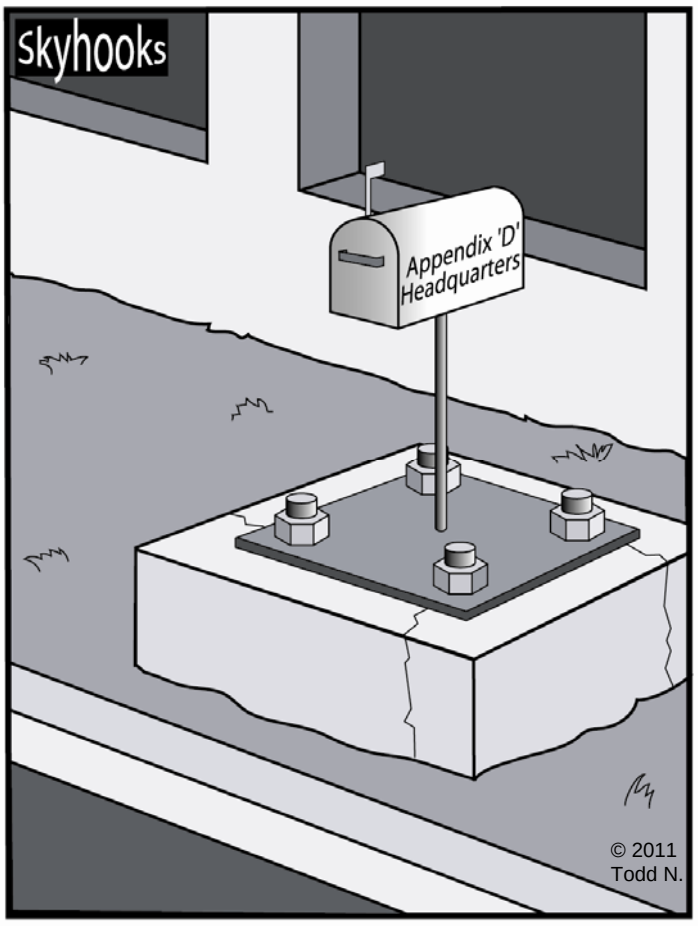
The seismic committee will be meeting on Wednesday, September 14 at 6 pm at KPFF's Portland office. If you have comments or questions, contact Jason Thompson at Jason.thompson@kpff.com.

# MEMBER OF THE MONTH

All of us have noticed an incredible improvement in our newsletters over the last year, and this could not have been done without the generous time and effort by JoMarie Farrell. As the chair of the committee, JoMarie spends countless hours every month writing and gathering articles and editing them prior to sending to layout. David Tarries and Todd Nagele also volunteer on the committee to make sure the newsletter is written and delivered on time. The new look, the format, and of course the comics are all ideas that have come about under JoMarie's leadership. This is a great new vision which gives our membership something to look forward to every month.

When JoMarie is not working on the newsletter, she plays a major role with Equilibrium Engineers LLC in Lake Oswego. Prior to joining Equilibrium Engineers, she worked at KPFF and BOORA. JoMarie is a native Oregonian, and she is an alumna of the University of Portland. She enjoys spending her free time with her daughter Shelby, traveling and coaching and playing volleyball.

The board would like to thank JoMarie for her dedication to SEAO and all the countless hours she spends to provide us our newsletter.



## MEMBER OBITUARY

**DAVID A. HALL**

Oct 11, 1960 - June 2, 2011
Structural Engineer, self-employed, died at home in Portland, OR. David graduated from Heritage High School in 1978 and CU Boulder in 1982. David is survived by parents Tom and Louise Hall, siblings Ken Hall, Jenell Harkrider, four nieces and three nephews. Services were held in Oregon. Please visit www.legacy.com if you would like to write in the memory guest book.

## SEAO DUES ARE GOING UP

Yes, it is one heck of a headline. Two main factors compelled the SEAO Board to approve a dues increase that will be effective immediately. The main factor was an increase in NCSEA Member Organization dues of $4.00 per member that was implemented this summer by NCSEA. For SEAO, this equates to an additional annual cost of over $2,000, which is a very significant amount for our organization's budget to absorb. The SEAO Board still feels strongly that membership in NCSEA provides distinct services that benefit our members and our profession. These services include advocacy for our profession, code advisory opportunities and efforts, publishing of informative publications such as Structure magazine, and offering numerous continuing education opportunities and resources to our members.

The secondary factor that the Board considered was that it has been 3 years since dues were increased. In these three years, we have seen costs for goods and services (hotel and conference facilities costs, food costs, printing costs, etc.) increase and vendor donations and sponsorships decrease. This has made the financial aspects of our monthly meetings and seminars more challenging to deal with.

In an effort to account for these factors, the Board voted to increase Member annual dues from $95 to $102 and Affiliate Member annual dues from $93.50 to $95. The new dues structure will allow SEAO to absorb the NCSEA dues increase and further our mission of providing educational and professional development opportunities to our members.

## RESPONSE TO OUR MAY NEWSLETTER SURVEY

How are you using BIM?

| | |
|---|---|
| a) Yuck, I won't touch it. | 1 |
| b) I'm waiting for greener pastures. | 2 |
| c) A little, but only when I have to. | 2 |
| d) Somewhat regularly, but not to its full potential. | 1 |
| e) Love it! I'm in for the whole enchilada whenever possible. | 1 |
| f) Forget engineering, I'm going into dentistry. | 1 |

## VOLUNTEERS: PORTLAND ADVISORY COMMITTEE

### The City of Portland Bureau of Development Services Seeks Applicants to Serve on the Structural Engineering Advisory Committee

The City of Portland's Bureau of Development Services (BDS) is seeking applicants to fill vacancies on the Structural Engineering Advisory Committee.

The Structural Engineering Advisory Committee advises the Director and/or the Appeals Board in structural matters relative to reasonable interpretation and alternate materials, design and methods of construction. The committee meets on an as-needed basis during normal business hours. In the past there have been about two to four meetings a year.

Committee members serve three-year terms and may be re-appointed. The Committee consists of six members: three regular members and three alternate members.

There are currently six positions to be filled. Two of these positions will be filled by re-appointment of existing members and the remaining four positions will be filled by structural engineers interested in serving on the committee.

BDS is seeking applications from structural engineers with 10+ years of experience. The applicants must demonstrate experience with existing buildings, seismic retrofits of existing buildings, alternative materials, design and methods of construction. Applicants must be registered Professional Engineers (P.E.). Registration as Structural Engineer (S.E.) is preferred.

Interested persons can download the application (Interest Form for City Board & Commission Appointments) through the Office of Neighborhood Involvement (ONI) website at http://www.portlandonline.com/oni/index.cfm?c=38616**.** Applications should be submitted to the ONI at the address listed on the form with a letter of interest and a resume listing the applicant's background and experience. **Applications should be submitted by September 30, 2011**.

For more information about the Structural Advisory Committee, you may contact Amit Kumar at the Bureau of Development Services at 503-823-7561 or via email to amit.kumar@portlandoregon.gov.

## ADHESIVE ANCHORAGE PROVISIONS

Adhesive anchorage provisions are set to change in the 2012 International Building Code. See attached document for specific updates that will be included in the 2012 IBC and ACI 318-11.

# SEAO DIGITAL STAMPING - PART 2

(Continued from Page 4)

### *Validation*

When someone opens your PDF that you have applied a true digital signature to, they see a blue ribbon banner indicating that you and a third party have validated that drawing, specification section or other document. If your firm is involved in obtaining the third party key, the firm name can appear as well.

If they are looking at a paper copy, the words "Digital Signature" appear across your stamp; they must request the PDF version to validate. That validation is possible; there is no way to validate an electronic signature and it is a lot of time and trouble to validate a wet signature, although it can be done.

### *Fact*

Architects registered in Oregon are not allowed to use digital signatures. However, all engineers registered in Oregon are allowed to use digital signatures.

### *Next Article*

Updates, changes and corrections, if needed, based on the attendance at the OSBEELS symposium will be provided.

# OSU CLASSES

**PRESTRESSED CONCRETE DESIGN CLASS**
**SPONSORED BY KNIFERIVER AND OREGON PRECAST CONCRETE INSTITUTE**

CE 408/508 or CE 808 – Prestressed Concrete (3 credits)
Prerequisite: course in reinforced concrete design
Instructor: Dr. Keith Kaufman of Kniferiver
Winter Term: 6-9 PM on Mondays starting January 3rd in Kearney Hall 312 at OSU. Course is also available as a regular university course (CE 486/586) if you are pursuing a degree.

**MASONRY DESIGN CLASS**
**SPONSORED BY MASONRY INSTITUTE OF OREGON**

CE 408/508 or CE 808 – Masonry Design (3 credits)
Prerequisite: course in reinforced concrete design
Instructor: Sue Frey of CH2M-Hill
Winter Term: 6-9 PM on Thursday in Kearney Hall 205 at OSU starting January 6th. Course is also available as a regular university course (CE 482/582) if you are pursuing a degree. Also, note that the masonry design course is available on-line in the e-campus version (CE 408/508 or CE 808) including videos, and does not need to be an on-site attendance class.

Note:
Approximately 30 PDH hours are earned per 1 quarter hour of college credit coursework.

# SE LICENSING NEWS

NCSEA is soliciting SEAO, as a member organization, to vote on their proposed SE Licensing Policy, which can be viewed at:

http://www.ncsea.com/downloads/20110817_NCSEA_Proposed_Licensing_Policy.pdf

The document at that site already reflects SEAO's and the State of Oregon's Structural Engineering Licensing Act, which stipulates that for "specialty structures" 16 hours of structural engineering testing is required in addition to education and experience requirements. The policy is the first to tie the testing to the new NCEES 16 hour exam.

NCSEA is formally putting forth a paper paralleling policies and/or recommendations from other professional organizations such as NCEES, CASE and ASCE, and SEI, which are also provided in the document at the link above.

The NCSEA policy is intended to encourage a uniform and formal collaboration on SE licensing nationally. Less than ten states/territories currently have a restriction on practice for structural design. Only two (Hawaii and Illinois) require an SE license for any and all types of structures. NCSEA is not tying license restriction to post-PE credentialing nor are they opposed to it formally. They are trying to first establish SE practice acts where they do not already exist and then move toward more uniformity in requirements and practice restriction **across states** at a later date.

Oregon's current practices parallel the NCSEA document intents and policy statement and were one of the practice restrictions used to formulate the NCSEA policy.

Please send comments to jane@seao.org to provide input into the SEAO board's vote to take to the NCSEA national meeting where SEAO's delegate vote will be cast. Questions: contact Sue Frey at sue.frey@ch2m.com.

On a lighter note, weigh in on the options for a new NCSEA logo: http://www.ncsea.com/downloads/NCSEA_logos_81511.pdf

# EMPLOYMENT OPPORTUNITY

International structural engineering consulting firm seeks permanent, full time structural engineers with a PE and 3 to 8 years of experience in seismic design to assess, strengthen and retrofit existing buildings and design new structures in Christchurch, New Zealand - an exciting and rewarding time for those passionate about buildings and design. If you are interested and have the appropriate qualifications and experience, please e-mail your resume to careers@holmesgroup.com. Positions may also be available in other New Zealand locations.

## Out of The Groove!

(Continued from Page 2)

and SEAO is a great forum for putting our heads together on some of these.

As Ed and I have discussed throughout the year, and he's begun to formulate his vision and goals for next year—which I'm sure he will share more about in the coming months-- one of the first things you will probably notice is that several of the upcoming speakers and topics for our monthly meetings are a little outside of our normal technical "box". They aren't necessarily going to address the specific topics I've discussed here, but they will deal with some of the broader issues and challenges that affect our profession—from business topics to collaboration outside our normal spheres—with the intent of maybe challenging us to peer beyond the well-worn grooves we've become accustomed to.

So, what of these challenges, including the specific ones I've shared here? These aren't SEAO's problems per se, but by getting together as fellow professionals and discussing them, I think we can start to make a difference. We can look at ways to reach out to our communities and educate them on what we do and why. Consider too that an increased understanding of what we do also creates additional markets and demand for our services. If I'm in one of the smaller cities, I can invite the local building official to join us for a dinner and an SEAO web presentation, and through that we might have an opportunity to discuss the difficulties we've seen with plan checking in a less formal and non-threatening way. We can also approach some of these challenges formally through our committees, making recommendations or code proposals that have the backing of the entire association and might carry more weight than we would individually. We can develop and provide educational programs to share with schools and others in the community. We can also collaborate with other professionals in our industry to begin tackling the larger challenges, such as earthquake preparedness.

This gets to the heart of what SEAO is about. But, unlike many of the other professional societies and organizations, SEAO is almost entirely a volunteer organization. We do have some paid administrative help, but at its core, SEAO exists because we as professional structural engineers have come together, volunteering our time and abilities, to develop educational opportunities, friendships and a greater understanding of the work we do. We aren't organized around furthering a particular product or material, other than increasing our own professional abilities. It's easy to be consumers, looking over the offerings and wares SEAO provides as you would any other purchase. Or thinking it's someone else's responsibility to tackle these challenges. It's another to be involved, volunteering your time to make a contribution. I probably don't have to tell you that too many of the former and not enough of the latter and not much will happen. So get involved, and a make a difference for your profession. You might just reap some great benefits!

So that's my story! Now let me acknowledge a few of the many people who have helped move some of the goals of the organization forward this past year. You may not know all of these people personally, but you've likely benefitted from their tireless efforts.

So if you see them, take a moment to stop and thank them for volunteering their time:


Aaron Burkhart was the point man in developing our new SEAO website that came to fruition this past spring, and helped create a site that will serve SEAO for many years to come. JoMarie Farrell stepped in this year as our newsletter editor and, along with her team, has delivered a great newsletter focused on the news and events that affect structural engineers here in Oregon. Andy Stember has continued to research and line up top caliber seminars. He also organizes the Scholarship Foundation trade show, and chairs the snow load committee. Thanks a bunch! A big thank you also goes to our 2010-11 program committee chair, Jason Holland, Sterling Rose our webcast resource man, and of course our remote site hosts—all of whom are needed to make sharing our meetings to locations around the state possible.

Dmitri Wright, Doug Meltzer, Tonya Halog and the rest of the snow load committee worked to update, revise and incorporate new snow load data in a white paper that was issued early this year. And soon, because of the snow committee efforts and a joint venture with Oregon State University and the Oregon Building Codes Division, a new website will be available that will allow site specific lookup of design snow loads for the state. Great job, all!! Tonya Halog has also chaired our Scholarship Foundation, and helped review and edit board guidelines that have been in the works for some time, which, though behind the scenes, will shorten a lot of learning curves and make board transitions and administrative functions much smoother. The emergency response committee chaired by Shelly Duquette developed an ATC-20 training course which they've presented and made available to other interested groups. And to each of our committee chairs and committee members who have given their time to tackle important topics, from vintage buildings, to code, to wind, seismic, legislative issues and even a great golf tournament, thank you! You've made a difference and helped make SEAO an important resource and valuable professional organization. Sue Frey has continued to be an invaluable resource for all things SEAO and beyond, and her representation as a delegate for SEAO to NCSEA, NWCC and WCSEA—national and regional engineering association groups—keeps us well represented and gives us a strong voice among SEA's as she proudly touts the accomplishments of our SEAO committees. Bruce Holiday does our scholarship bookkeeping and makes sure that our corporations stay on the straight and narrow path.

As the music begins to play, meaning I need to exit the stage here soon, I also want to thank our SEAO Board this year (Ed Quesenberry, Jenny Carlson, Kevin Kaplan, Amit Kumar, Craig McManus and Norm Farris). They have been fantastic--enduring some long meetings, an occasionally long-winded chair, and most importantly helping to accomplish some meaningful, and hopefully lasting, goals for SEAO. It's never easy to tackle new things or rethink old approaches, but it's vital for the health of the organization, and I hope that the time and effort will prove to have been worthwhile. And finally, before the picture fades, thank you again for the opportunity to serve as President of SEAO this year. It has been a rewarding experience, and I'm grateful to have been able to meet and work with so many capable, professional and talented people.

CHANCE ENGINEERING SEMINAR SERIES

Portlnad, Oregon / October 6, 2011

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Address _____

Email _____ Phone _____ Fax _____

Send Registration to: Earth Anchors

via fax: 503-235-4627

or

via email: staff@earthanchors.net

# Register TODAY!

**Participants should bring:**

- Laptop computer
- Dress in the classroom will be casual
- A strong desire to learn about the advantages of helicals and resistance piering!

# Keynote Speakers

**Gary Seider, P.E.**, Engineering Manager
CHANCE Civil Construction, Centralia, Missouri

Gary holds a B.S. in Mechanical Engineering from the University of Missouri-Rolla; is a registered professional engineer in several states, Vice Chairman of DFI-Helical Foundations & Tiebacks Committee, and a member of the Tiebacks & Soil Nailing Committee. Gary has more than 20 years experience in helical technology, holds three U.S. Patents covering application of helical piles and anchors, and has authored and co-authored many publications associated with helical technology.

**Raymond T. Miller, P.E S.E.**, founder and former president of Miller Consulting Engineers, Inc.

A registered P.E. in seven states, Ray has more than 45 years of structural engineering experience. He has provided design analysis and review for many structure types, from retrofitting and remodeling to preserving historical structures and designing new construction. Ray has reviewed more than 500 buildings for code and seismic compliance and has served on the Oregon Structural Code Advisory Board.

**Jeff Torson,** Vice President -LZB, Inc dba Earth Anchors, Portland Oregon

Jeff has supervised well over 1000 projects throughout the Northwest since 1991, working with engineers on projects including deep foundations, driving piles, shoring and installing helical piers and Helical Pulldown® Micropiles. Jeff understands the challenges faced in building and repairing foundations, hillsides and retaining walls in Oregon & Washington.

**Dr. Bob Vickars**
Vickars Developments Co., LTD, Burnaby, B.C., Canada

Bob is the U.S. Patent holder and inventor of the Helical Pulldown Micropile. He has lectured internationally on the design and installation of micropiles, comparing conventional versus helical pulldown applications. He has more than 20 years experience with deep foundation piles, shoring and installing helical piers and helical pulldown micropiles.

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Portland, Oregon | ph. 503-235-4625
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CHANCE® CIVIL CONSTRUCTION Centralia, MO | 573-682-8414

# CHANCE™ Engineering Seminar Series

## Portland, Oregon

**October 6, 2011**

Learn the proper application, installation, material selection and specification of CHANCE® Helical Anchors, Helical Piles and Atlas Resistance® Piers

Hosted by:
**CHANCE® Civil Construction**
**LZB, Inc dba Earth Anchors**

# ENGINEERING SEMINAR SERIES

## Portland, Oregon • October 6, 2011

**Registration/Continental Breakfast: 7:30am | Seminar: 8:00am-5:00pm**

### Purpose

The primary focus of the CHANCE® Engineering Seminar Series is to provide techniques and know-how to ensure the proper application, installation, material selection and specification of CHANCE Helical anchors, helical piles and ATLAS Resistance® piers. Participants will be given a thorough theoretical review of helical anchors (tension) used in earth retention structures as well as Atlas Resistance piers and helical piles (compression) used in structures requiring deep foundation support. The knowledge and techniques developed in this course will allow participants to design, install, and specify helical anchors and piers/piles utilizing the latest developments in steel foundation technology.

Today's Challenges:

- Higher Mechanical Loads
- Limited Access
- Limited Right-of-Way
- Environmental Impact
- Corrosion

Despite being faced with these challenges as well as the economic challenges of the construction industry today, engineers have limited opportunities available for developing the knowledge and expertise required. Over the years, the CHANCE Engineering Seminar Series has served to fill this vital education need.

### Who Should Attend?

Structural engineers, geotechnical engineers, project engineers, project managers and construction supervisors involved in the design, installation or material specification of anchors and foundations for commercial, industrial and residential applications.

### Benefits

Participants will receive:

- Professional Development Hours (PDH) certificate for 6 hours
- FREE copy of HeliCAP® v2.0 Helical Capacity Design Software, a retail value of $250
- World-class education on helical piles and resistance piers

### The Program

Participants will learn in both a classroom setting. The instructors for this seminar are part of a CHANCE network representing nearly 12,000 years of combined experience in engineering, manufacturing and installation of helicals.

The in-depth classroom sessions will consist of:

- Evaluating soil types and their interaction with CHANCE helical anchors and helical piles as well as ATLAS Resistance piers.
- Understanding application of different anchor and foundation types.
- Gaining knowledge to specify economical designs for various conditions and loads.
- Understanding the technology of the Helical Pulldown® Micropile.
- Hands-on training in the use of HeliCAP v2.0 engineering software for designing helical anchors and foundations.

### Seminar Content

- History of Helical and Resistance Piers
- Applications and Product Design Methodology
- HeliCAP® v2.0 Helical Capacity Design Software Demo
- Installation Methodology
- Helical Torque Correlation
- Push Pier Systems
- Case Histories
- Helical Pulldown® Micropile including load test demo
- Serviceability Considerations
- Lateral Stability and Corrosion

### LUNCH & LEARN Presentations

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# Course Location

This CHANCE Engineering Seminar will be held at the
**Red Lion Portland Convention Center**
**1021 NE Grand Ave., Portland, OR 97232**
**Phone 505-235-2100**

If you require a room reservation, please contact the hotel directly. Reservations and payment are the responsibility of the attendee.

Room is $120.00 per night + Tax.
Parking fees are included.

## The Course fee is FREE!

Includes all course materials (including a FREE registered copy of HeliCAP® v2.0 Helical Capacity Design Software), and both breakfast and lunch.
PLEASE NOTE: Class size is limited. Vacancies will be filled on a first-come first-served basis so be sure to register early.

## To register:

There are two ways to register for this seminar:

**Go to abchance.com.** Click on the seminar banner on the right hand side of the home page. Upon registration, you will receive a confirmation via email.

**Complete the registration form** contained within this brochure and fax it to:
Earth Anchors, 503-235-4627

## Deadline for registration: September 23, 2011

**www.hubbellpowersystems.com/abchance**

# Anchor Provisions Undergo Significant Changes in the 2012 International Building Code

By Andra Hoermann-Gast, MSc., Dipl. Ing.

Since its introduction in 2000, the International Building Code® (IBC) has been the preferred model code for states, municipalities and other jurisdictions throughout the U.S.

The publication of the 2012 IBC, available for purchase in June of this year, represents another milestone in the I-Code legacy. Notable improvements in the 2012 IBC include significant changes to the provisions for anchors in concrete by way of reference in Section 1912 to ACI 318-11, Building Code Requirements for Structural Concrete, and a new ACI standard, ACI 355.4-10. Taken together, these documents provide the basis for the qualification and design of adhesive anchors.

At present the most widely recognized requirements for qualification and design of adhesive anchor systems are given in AC308, Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements, an Acceptance Criteria published by ICC Evaluation Service (ICC-ES). This document establishes requirements that permit post-installed adhesive anchors in concrete elements to be recognized in ICC-ES Evaluation Service Reports (ESRs). Prior to publication of the 2012 IBC, procedures for establishing the design strength of adhesive anchors used to create connections between structural concrete and attachments have not existed in the code. Past editions of ACI 318 have specifically excluded adhesive anchors from the scope of Appendix D – Anchoring to Concrete. Accordingly, the basis for the development of AC308 in 2005 was to allow recognition of adhesive anchors in concrete as an alternative to cast-in-place anchors and post-installed expansion and undercut anchors under the provisions of IBC Section 1912, Anchorage to Concrete – Strength Design. Even with the publication of the new ACI provisions, it will be necessary to retain acceptance criteria for adhesive anchors in order to address the specific documentation and quality control requirements associated with ICC-ES procedures and to accommodate required revisions or enhancements to the standards as they now exist.


The new provisional standard ACI 355.4-10, Acceptance Criteria for Qualification of Post-Installed Adhesive Anchors in Concrete, provides test requirements and assessment procedures that are coordinated with the new design provisions for adhesive anchors in ACI 318-11 Appendix D. While the provisions of the new ACI 355.4-10 standard are largely consistent with those of AC308, notable differences exist. Some of the more significant variances include:

## SIGNIFICANT CHANGES IN THE 2012 INTERNATIONAL BUILDING CODE

- ACI 355.4-10 does not address the use of torque-controlled adhesive anchors, a relatively new addition to the post-installed anchor world. Since AC308 currently provides testing and qualification provisions for these types of adhesive anchors, the revised AC308 will retain those provisions to evaluate torque-controlled adhesive anchors as alternatives to conventional adhesive anchors in the code.

# 2012 International Building Code

- The use of adhesive anchors overhead to support sustained tension loads has long been an area of concern. Testing for sustained tension loads is mandatory under both AC308 and ACI 355.4-10, and while ICC-ES had previously strengthened the provisions of AC308 related to both sustained tension loading and overhead installation, ACI 355.4-10 and ACI 318-11 add further conservatism to the sustained load/overhead installation condition by

  a. adding specific visual assessment criteria for the testing of overhead installations;

  b. requiring a special label on products limited to vertically downward installation only, i.e., if testing and assessment to address sensitivity to installation direction (horizontal and overhead) has not been conducted or if the product is not suitable for this installation direction as established by test;

  c. requiring that anchors be tested for sustained loading at a minimum temperature of 110°F (43°C); and

  d. requiring that all adhesive anchor installations in the horizontal or upwardly inclined position for anchors that are intended to resist sustained tension must be performed by a certified adhesive anchor installer under continuous special inspection.

- Adhesive anchor performance can be influenced if the anchor is installed in water-saturated concrete. Tests for this condition are optional in AC308, but have been made mandatory under ACI 355.4-10.

- Freezing conditions during service life of the anchor can also have a negative effect on the anchor performance. The freezing and thawing test is conducted to verify the anchor's response to a sustained tension load when subjected to 50 temperature cycles ranging between room temperature and sub-freezing temperatures. While AC308 permits this test to be omitted, e.g., for systems to be used only for indoor applications in climate-controlled environments, freeze-thaw testing is mandatory under ACI 355.4-10.

- ACI 318-11 Appendix D provides default bond stress values for design that may be used in the event that a specific adhesive anchor system has not yet been selected. ACI 355.4-10 adopts these default bond stresses as minimum acceptable bond stresses for qualification of adhesive anchor systems; that is, any adhesive anchor system qualified for use under ACI 355.4-10 must be able to provide bond stresses equivalent to or better than the default values provided in the code.

- Tests for the effects of regional variations in concrete on bond strength, already provided in AC308, now include tests in concrete using fly ash as a cement-replacement to assess whether the adhesive anchor system behavior is sensitive in any way to this common concrete additive.

With some exceptions, the design provisions for adhesive anchors in ACI 318-11 Appendix D are also quite similar to those currently included in AC308. Differences include:

- Omission of the increase factor for groups, $\psi_{g,Na}$ in ACI 318-11 Appendix D. This term, which is always equal to or greater than unity, was omitted for simplicity but may still be used at the discretion of the designer.

- Revision of the equation used to determine the critical edge distance and spacing values corresponding to bond failure.

- Revision of the factor on bond strength for the supplemental check on sustained tension loads from 0.75 to 0.55.

- Inclusion of adhesive anchors in lightweight concrete with default strength reduction values. This is not currently included in the scope of AC308.

As noted earlier, ICC-ES will develop acceptance criteria referring to ACI 355.4-10 for qualification requirements and to ACI 318-11 Appendix D for design of adhesive anchors, thus eliminating any duplication of requirements for testing or conflicts in design provisions, and enabling applicants to obtain Evaluation Service Reports for adhesive anchors that comply with the 2012 IBC.

We encourage applicants interested in obtaining Evaluation Service Reports for adhesive anchor systems, showing compliance with the 2012 IBC, to contact Andra Hoermann-Gast at ahoermann-gast@icc-es.org for further information.

ICC EVALUATION SERVICE

*This article is intended to provide information about the 2012 IBC significant changes to the provisions for anchors in concrete. It should not be construed as an endorsement or procedural recommendation by ICC-ES®.*

OREGON STATE BOARD OF EXAMINERS FOR ENGINEERING AND LAND SURVEYING

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Structural Engineering
*-Sue Frey,* PE

Digital Signatures
*-Ron Singh,* PLS

ePermitting
*-Lori Graham*
ePermitting Manager
Oregon Building Codes Division

HB 3316, Oregon Qualifications Based Selection Law Update
*-ACEC*

## LAND SURVEYING

45 Day Filing/Right-of-Entry
*-Dan Linscheid*, PLS,
OSBEELS President

Surveying Narratives
*-Evelyn Kalb*, PLS, Esq.

Digital Signatures
*-Ron Singh,* PLS

BLM Case Studies and the 2009 Manual
*-John Farnsworth*, PLS

## PHOTOGRAMMETRIC MAPPING

Photogrammetry 101
*-Chris Aldridge*, RPP

LiDAR and Photogrammetric Mapping
*-Doug Smith*, PE, RPP

Forest LiDAR Application
*-Michael Wing*, PE, PLS

Using LiDAR with Archaeological Sites
*-Eric Stone*, LSIT, GISP, RPP

## OSBEELS

SB 126: Changes to CWRE Program
*-Gerry Clark*,
Water Rights Program Analyst
Water Resources Department

Professional Development & Audits
*-Tina Sorensen / Amelia Volker*
OSBEELS' Accounts Specialists

Professional Practices
*-Sue Newstetter,* PLS / *Sue Laszlo,* PE,
OSBEELS Emeritus Member / *Mari Lopez,* OSBEELS Executive Secretary /
*Joanna Tucker-Davis,* AAG

Introduction to OSBEELS Law Enforcement
*-Allen McCartt / J.R. Wilkinson*
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## Hotel Information

The Grand Hotel, 201 Liberty Street SE, Salem, OR 97301 / Toll Free: 877-540-7800 / FAX: 503-589-1715 / www.grandhotelsalem.com. **RESERVATIONS METHOD**: Rooms are subject to availability of rooms at the time the reservation is made. Please contact the hotel for more information. Call the toll free number to get the group rate, 877-540-7800. Let them know you're a part of the OSBEELS Symposium in order to receive the special rate. Reservations are based upon availability at the time of the reservation. **ACCESSIBILITY**: The facilities are accessible to persons with disabilities. Please request ahead of time if auxiliary aids and/or services are needed.

**Salem Conference Center**
**200 Commercial St. SE**
**Salem, OR 97301**

- **Choose Four Presentations to Attend**
- **Choose One Presentation For Every Session**

7:30 a.m. to 8:00 a.m. — Registration

8:00 a.m. to 8:20 a.m. — Opening Remarks: *Dan Linscheid*

**Session 1**
8:30 a.m. to 9:50 a.m.
(Choose One Presentation)

- ☐ **Engineering**: Structural Engineering -*Sue Frey*
- ☐ **Land Surveying**: 45 Day Filing / Right-of-Entry -*Dan Linscheid*
- ☐ **Photogrammetric Mapping**: Photogrammetry 101 -*Chris Aldridge*
- ☐ **OSBEELS**: SB 126: Changes to CWRE Administration -*Gerry Clark*

**Session 2**
10:00 a.m. to 11:20 a.m.
(Choose One Presentation)

- ☐ **Engineering**: Digital Signatures -*Ron Singh*
- ☐ **Land Surveying**: Surveying Narratives -*Evelyn Kalb*
- ☐ **Photogrammetric Mapping**: LiDAR and Photogrammetric Mapping -*Doug Smith*
- ☐ **OSBEELS**: Professional Development & Audits -*Tina Sorensen / Amelia Volker*

11:30 a.m. to 1:00 p.m. — **Luncheon/Keynote Address**: Multiple Engineering Cooperative Program -*Ken Roley*

**Session 3**
1:10 p.m. to 2:30 p.m.
(Choose One Presentation)

- ☐ **Engineering**: ePermitting -*Lori Graham*
- ☐ **Land Surveying**: Digital Signatures -*Ron Singh*
- ☐ **Photogrammetric Mapping**: Forest LiDAR Application -*Michael Wing*
- ☐ **OSBEELS**: Professional Practices -*Sue Newstetter / Sue Laszlo / Mari Lopez / Joanna Tucker-Davis*

**Session 4**
2:40 p.m. to 4:00 p.m.
(Choose One Presentation)

- ☐ **Engineering**: HB 3316, Oregon Qualifications Based Selection Law Update - *American Council of Engineering Companies Oregon (ACEC)*
- ☐ **Land Surveying**: BLM Case Studies and the 2009 Manual -*John Farnsworth*
- ☐ **Photogrammetric Mapping**: Using LiDAR with Archaeological Sites -*Eric Stone*
- ☐ **OSBEELS**: Introduction to OSBEELS Law Enforcement -*Allen McCartt / JR Wilkinson*

## To Register...

**Complete and Return form by September 1**

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Email the registration form to:
osbeels@osbeels.org

or Mail the registration form to:
OSBEELS
670 Hawthorne Ave. SE
Suite 220
Salem, OR 97301

For questions call 503-362-2666

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# THESE CHANGING TIMES

September 22 - 23, 2011

SEA Northwest Conference

Spokane, Washington

www.seaw.org

# *THESE CHANGING TIMES*

Please join us in Spokane, Washington for the 2011 SEA Northwest Conference. We will discuss the changes occurring in our profession due to BIM, NCEES testing, codes, materials, and next generation design techniques. The impacts of the earthquakes in Japan, New Zealand, Chile, and Haiti will be discussed. The conference will conclude with a dinner cruise of beautiful Lake Coeur d'Alene.

## Schedule of Events

### Thursday, September 22

| | |
|---|---|
| 11:30 am - 11:45 am | Welcome and Introduction |
| 11:45 am - 12:00 pm | Break in Exhibitor Area |
| 12:00 pm - 1:30 pm | Lunch Presentation sponsored by Autodesk – Future of BIM |
| 1:30 pm - 2:30 pm | Ed Huston – Masonry – Harmonizing ASD & Strength Design |
| 2:30 pm - 2:45 pm | Break in Exhibitor Area |
| 2:45 pm - 3:45 pm | Brandon W. Erickson, P.E., S.E. – Center Core Retrofit Case Study |
| 3:45 pm - 4:45 pm | Sue Frey – New NCEES Exam and its impact on Structural Engineering Licensing |
| 6:00 pm - 8:00 pm | Dinner Presentation with Dave Swanson – Japan, New Zealand, Chile and Haiti Earthquakes |

### Friday, September 23

| | |
|---|---|
| 9:00 am - 9:15 am | Welcome and Introduction |
| 9:15 am - 9:30 am | Break in Exhibitor Area |
| 9:30 am - 10:30 am | Paul Hopkins P.E. and Kris Brown P.E. – Composite Precast Panels |
| 10:30 am - 10:45 am | Break in Exhibitor Area |
| 10:45 am - 11:45 am | Sara Ganzerli - Natural Materials in Walser Houses of Alagna Valesesia |
| 11:45 am - 1:15 pm | Break in Exhibitor Area and Lunch |
| 1:15 pm - 2:45 pm | Ronald Hamburger - Next Generation of Performance Based Design |
| 2:45 pm - 3:00 pm | Break in Exhibitor Area |
| 3:00 pm - 4:00 pm | Heath Mitchell - Seismic Design for Structural Steel Buildings |
| 4:00 pm - 4:15 pm | Adjourn Technical Sessions |
| 5:00 pm | Transportation to Lake Coeur d'Alene leaves Red Lion |
| 5:30 pm - 6:00 pm | Boarding for Lake Coeur d'Alene Cruise |

For registration information, visit our website at www.seaw.org

# Technical Presentations and Biographies of Speakers

**Masonry – Harmonizing ASD & Strength Design by Ed Huston, P.E., S.E. -** Ed Huston, a 1971 civil engineering graduate of the University of Washington, is a licensed civil and structural engineer in Washington and is licensed in seven other states. He is a principal in the firm of Smith & Huston, Inc., Consulting Engineers in Seattle, Washington. Ed has over 38 years of experience in structural design, evaluation, investigation and code and standards development.

**Center Core Retrofit Case Study by Brandon W. Erickson, P.E., S.E. -** Mr. Erickson is a principal and founder of Erickson Structural Consulting Engineers, P.C., a consulting structural engineering firm based in Vancouver, Washington with a satellite office in Kihei, Maui, Hawaii.

**New NCEES Exam and its impact on Structural Engineering Licensing by Sue Frey, P.E., S.E. -** Ms. Frey is a principal structural engineer serving as a designer, design manager, structural technical quality assurance reviewer, and multi-discipline team quality assurance manager on various types of projects during her 33 years with CH2M HILL.

**Japan, New Zealand, Chile and Haiti Earthquakes by Dave Swanson, P.E., S.E. -** Dave Swanson is a structural engineer with more than 20 years experience in the design of a wide variety of projects throughout the Pacific Northwest, California, and Alaska. He is the Director of the Structural Group at Reid Middleton.

**Composite Precast Panels by Paul Hopkins P.E. and Dr. Kris Brown, P.E. -** Paul Hopkins, P.E. is the Principal Engineer of Hopkins Structural Design Solutions, LLC in Lewiston, ID. Paul graduated from Drexel University with his BS in Civil Engineering and Architectural Engineering. He completed his Master of Science degree at Arizona State University. Paul's special interest areas include steel and concrete design, composites, advanced stress and fatigue analysis and finite element analysis. He is a lecturer in the Civil Engineering Department at the University of Idaho. Kris Brown, P.E., is the Chief Engineer for Central Premix Prestress Co. in Spokane, Washington. She holds a BS in Civil Engineering and MS in Soils Engineering from Iowa State University. Her PhD in Civil Engineering is from University of Idaho.

**Natural Materials in Walser Houses of Alagna Valesesia by Dr. Sara Ganzerli, Ph.D. -** Dr. Ganzerli's research interests include genetic algorithms, convex models of uncertainty, masonry, and historic structures. She is a founding member of the Gonzaga University Center for Evolutionary Algorithms (GUCEA) and conducts research in the Civil Engineering and Computer Science Departments at Gonzaga University.

**Next Generation of Performance Based Design by Ronald Hamburger -** more than thirty years of experience in civil and structural engineering; building design, investigation, and code development; and research. He is an internationally recognized expert in earthquake-resistant design and structural performance evaluation and is widely recognized in the structural engineering community for his leadership in performance-based design.

**Seismic Design for Structural Steel Buildings by Heath Mitchell, P.E., S.E. -** Prior to rejoining AISC in 2010, he was a Project Manager at PCS Structural Solutions, a consulting structural engineering firm in Washington State. Heath started his career as a staff engineer at AISC from 1999 to 2001. In this role, he managed the development of 3rd Edition LRFD Manual of Steel Construction, answered technical inquires and was a presenter at AISC seminars. In the interim, he maintained involvement with AISC; serving on AISC Specification Task Committees, the Seismic Manual Committee and the Technical Assistance Panel.

## Thursday Dinner Presentation

Dave Swanson will present the finding of SEAW's reconnaissance teams that went to the earthquakes in Japan, New Zealand, Chile, and Haiti.

## Lake Coeur D'Alene Lake Cruise

Please join us for a two-hour sunset dinner cruise on beautiful Lake Coeur d'Alene.
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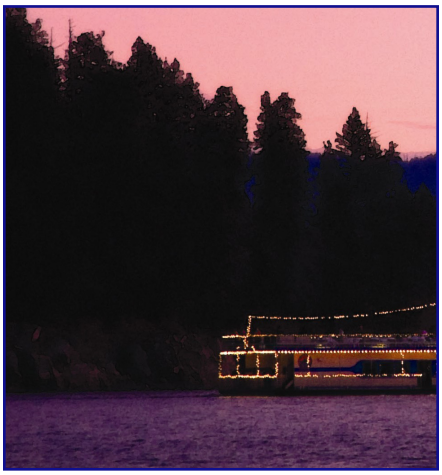

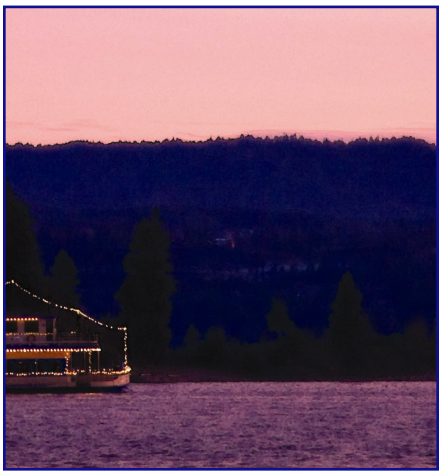

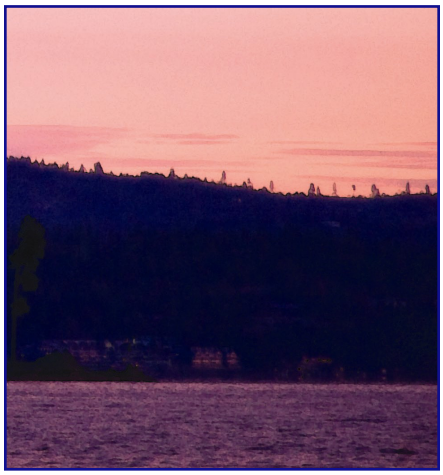

# Registration

- **Register online at:** www.seaw.org **- or -**
- **Mail form & payment to:** SEAW, PO Box 44, Olympia, Washington 98507

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| Both Days plus Lake Coeur D'Alene Cruise | ☐ | $350.00 |
| Both Days without Lake Coeur D'Alene Cruise | ☐ | $300.00 |
| Presenters Both Days plus Cruise | ☐ | $0.00 |

## Bring a Buddy

Both Days (Includes Thursday Dinner and Lake Coeur D'Alene Cruise) ☐ $300.00

2nd Attendee _____

## Guests Attending with Registrant

| | | |
|---|---|---|
| Lake Cruise | ☐ | $25.00 |
| Thursday Dinner | ☐ | $15.00 |

## Additional

Early Registration ☐ Deduct $25.00 - Ends August 31

## Special Room Rates Available

Contact the Red Lion Hotel at the Park by August 22, at 1(800)733-5466