



# EQUILIBRIUM

February 2018

Newsletter of the Seattle Chapter  
Structural Engineers Association of Washington

## Seattle Chapter February Dinner Meeting

**SEAW & WA ACI Joint Meeting  
Calling All Details**

Tuesday, February 27, 2018  
5:00 pm to 9:00 pm

Hotel Monaco,  
1101 Fourth Avenue,  
Seattle, WA 98101

Our annual SEAW & WA ACI joint meeting will take on a process that is well known and often one of the construction industry's biggest challenges: RFI's. Field solutions are looking for additional design details, and cumbersome procedural requirements often result in significant costs, incomplete details, and schedule delays. RFI's become even more problematic in our current market when decision-making time is short, schedules are compressed, and our workforce is stretched. We'll seek to clarify the problem, discuss possible solutions, and ask, "Where do we go from here?"

Join us for an open discussion as presented by our local panel of WA ACI and SEAW construction professionals representing the project team on how RFI's complicate the fluidity of construction and reduce efficiency and productivity.

Early project team engagement, communications, and identifying an RFI process and outcomes all add up to providing key clarifications and suggest a new way to solve old problems.

### **Panelists:**

Kyle Richardson of OAC Services, Moderator

Cary Kopczynski, PE, SE – Senior Principal & CEO, CKC Company

Jason Collins, PE, SE – Principal, PCS Structural Solutions

### **Schedule:**

5:00–6:00 pm: Registration/Networking  
6:00–6:40 pm: Dinner  
6:45–7:00 pm: Welcome/Announcements  
7:00–8:15 pm: Program

**Seattle Chapter Leadership**  
**President**  
Chun Lau

**Vice President**  
Darrell Staaleson

**Treasurer**  
Theodore E. Smith  
**Co-Treasurer**  
Ignasius Seillie  
**Secretary**  
Michael Bramhall

**Past President**  
Cary Kopczynski

**Directors 2015-2018**  
Joyce Lem

**Directors 2016-2019**  
Douglas Beck  
Shalini Prochazka

**Directors 2017-2020**  
Mike Visser  
Mark Whiteley

**YMF President**  
Marcus Freeman

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#### Registration Fees:

\$40: Members (\$35 early bird)  
\$45: Non-members & Guests  
\$35: YMG (\$30 early bird)  
\$15: Students

Early bird rates end **February 20**. YMG rate applies to engineers under 35 for both members and non-members.

**Register Now!**

## January Dinner Meeting Recap: Firms Showcase and Student Presentations

*By Marcus Freeman*

Bridging the gap between student and professional engineers is an important goal for SEAW. As professional engineers, establishing this connection should be at the forefront of our minds in order to ensure the future prosperity of our profession. With this in mind, SEAW Young Member Group (YMG) was proud to organize the annual student showcase dinner meeting. The showcase took place on January 23 at the University of Washington Waterfront Activities Center. While typical dinner meetings are centered on a professional or academic presentation, this night was dedicated to the students. University of Washington and Seattle University students came to meet professionals and present on their senior projects and the research they are currently pursuing. [Read More](#)



*Networking Hour between students and professionals*

## SEAW Announcements

Check out the new [SEAW Website!](#)

## Refresher Course

## Time to Renew your Membership

We would be thrilled to have you back! It's not too late to remain a part of SEAW, and we'll do our best to get you back on board.

STUDY FOR THE SE EXAM ON YOUR OWN



STUDY WITH THE SEAW REFRESHER



SEAW Seattle Chapter, in cooperation with the UW Department of Civil Engineering, will hold its annual Refresher Course on Tuesday and Thursday evenings from February 6 through March 27.

The course instructions and PDF notes are designed to assist engineers preparing for the NCEES Structural Exam and for practicing engineers who want to review principles of structural engineering. Fifteen two-hour lectures will present information regarding Structural Analysis, Wind Design, Foundations & Earth Retaining Structures, Seismic Design I & II, Structural Steel Design I & II, Concrete Design I & II, Pre-stressed/Post-tensioned Concrete Design, Bridge Design I & II, Wood Design, Masonry Design and Cold-Formed Steel Design.

A half Refresher Course of eight sessions is also available at a reduced rate.

For those who live outside the Greater Seattle area, course presentations are offered online through GoToMeeting. Please note that you must register individually to receive access to the online course. Multiple viewers who access a single registration are not permitted. [Read more](#)

## A Brief History of PT

*By Rick M. Fine, P.E., S.E.*

Historically, mid-seventies to mid-eighties, unbonded post-tensioned concrete design was often done by post-tensioning supply companies either as value engineering or deferred submittal. It was initially done with moment redistribution on slide rules, then hand calculators. The post-tensioning materials were proprietary systems and had differences in sheathing types, anchorage devices, and stressing equipment. Some were still using "Stress-Relieved" strand and some were using "Low-Lax" strand. All of this played into the complexity of unbonded pre-stressed concrete design.

For these reasons and others, many design engineers were not comfortable specifying one system, so they either designed a mildly reinforced system with a value engineering option or

As a member of SEAW, you enjoy many important benefits, including:

- Member pricing for SEAW dinner meetings and seminars
- Access to members-only resources on the SEAW website
- Advance notice of activities, technical updates, job opportunities, and member news through the chapter newsletters and the website
- Complimentary subscription to *Structure* magazine
- Discounts on the purchase of ICC publications

[Renew your membership](#)

## Save the Date: ATC 20/45 and Cal OES SAP Classes in Spokane and Kennewick

*By Joyce Lem, Chair, Disaster Prep & Response Committee*

Classes on ATC 20/45 and the Cal OES Safety Assessment Program (SAP) will be held on March 15 in Spokane and March 16 in Kennewick. These 8-hour training sessions on Post-Disaster Building Safety Evaluation Procedures will help participants develop the skills to properly assess buildings for occupancy following a major earthquake, flood, or wind event. The training will be based on the California Office of Emergency Services (Cal OES) Safety Assessment Program (SAP), incorporating material from ATC-20 (Post-Earthquake Safety Evaluation of Buildings) and ATC-45 (Safety Evaluation of Buildings after Windstorms and Floods).

Stay tuned for more details and registration.

[Learn More](#)

## Mexico City Earthquake Reconnaissance Report

*By Drew Nielson*

used a deferred submittal process. By the mid-1980's the major suppliers had all gone to extruded sheathing of tendons, and the friction and loss coefficient assumptions had become uniform among the suppliers. Consulting engineers began to do more designs in-house. Also, during this period, computer software was developing. This made the number crunching less laborious and the designs more efficient, since the designer could try alternate profiles/tendon quantities a little more easily. [Read More](#)



## SEFW Updates for 2018: FilmWorks, Dues Donations, and Board Changes

*By Angela Gottula Twining*

The Structural Engineers Foundation of Washington is excited for 2018! Here are several things to note:

**FilmWorks:** Are you an amateur videographer? Put your video skills and engineering knowledge together and participate in the Second Annual FilmWorks Initiative. SEFW is accepting 2-minute videos that promote the theme, "Structural Engineering in Motion." There are cash prizes! Check out our competition announcement, and email [admin@sefw.org](mailto:admin@sefw.org) to officially register and receive the fine print. Last year's winners are all posted on [www.vimeo.com/sefw](http://www.vimeo.com/sefw). The winning entry has more than 2,000 views, was featured in the DJC, and is being promoted by NCSEA! [Read More](#)

Reid Middleton fielded earthquake teams to conduct volunteer safety assessments and perform engineering reconnaissance of the recent earthquake in Mexico City. The time in Mexico was full of field observations, meetings, discussions, processing, countless touching interactions with locals, and team logistics coordinating. The primary reasons for fielding the teams are as follows:

These events are a real-world laboratory in which the abstract theories of earthquake engineering play out in real life, with real structures, affecting real people. They are a reminder that the details matter, and why we as structural engineers are in the business of promoting public safety and welfare. Learning from these events helps us to improve the earthquake performance of our buildings and infrastructure, ultimately benefitting the resilience of our communities. [Read More](#)

## State and Chapter Committee Reports

Contact the committee chair if you are interested in working and learning on a committee.

- NCSEA Delegate - Chun Lau
  - [Earthquake Engineering Committee](#) - Kai Ki Mow
- The EEC upcoming meeting dates are as follow: January 9, 2018; March 6, 2018; May 8, 2018.
- One of the current main focus and an important topic that the committee hopes to address in the upcoming year is the Increased Seismic Load in the newly published ASCE 7-16.

## Structures Congress 2018





Members interested in EEC can find additional information regarding the meeting on the [SEAW website calendar](#) or can contact the committee chair.

- Outreach Committee - Pete Opsahl  
To sign up to volunteer or to mentor, [visit the SEFW page](#).
- Sustainability Committee - Kyle Steuck
- Refresher Committee - Mark Whiteley
- [Public Information Committee](#) - Darrell Staaleson
- [Disaster Preparation/Response Committee](#) - Joyce Lem
- WABO Liaison Committee - Charlie Griffes  
The SEAW/WABO Liaison committee is now available for questions from SEAW or WABO members. These questions can be about subjects addressed in the White Papers already issued or general questions in the realm of structural engineering practice as it relates to interaction with the various building departments. Comments or questions can be emailed to [charlie@ctengineering.com](mailto:charlie@ctengineering.com).  
[White Paper 6b - 2017 on Deferred Submittals](#)
- Wind Engineering Committee - Scott Douglas
- Technology Taskforce - Morgan Wiese
- Membership Task Group - Jill Shuttleworth
- Continuing Education Committee - Adam Ailvers
- Scholarship Committee - Kevin Solberg

**Fort Worth, Texas, April 19–21 2018**

**Early Bird rates until 2/14/2018**

**Advanced rates until 3/21/2018**

**On-Site rates begin 3/22/2018**

This year, ASCE SEI is putting on Structures Congress 2018 in Fort Worth Texas, April 19–21. Attendees will listen to keynote speakers Guillermo Trotti and Dr. Dava Newman open the event on Thursday as they present on *Designing Advanced Structures for Human Space Exploration*. Keynote Ashraf Habibullah presents Friday on *Next Generation Structural Engineering*, and keynote Greg Fenves closes the event Saturday presenting on *Engineering and Leadership*. Between plenary keynote sessions, there will be opportunities to attend presentations on over 12 different tracks, including, Bridges, Buildings, Natural Disasters, and Professional Practice. There's a session for just about any specialty. Last, but not least, attendees will have opportunities throughout the congress to meet and mingle with structural colleagues from the U.S. and abroad at the exhibit hall, fun receptions, and throughout the whole event.

For more information, [explore the preliminary program](#).  
[Register Today!](#)

## Earthquake Engineering Committee Report

By Kai Ki Mow, Chair

### **Committee Membership:**

18 Voting Members. ~120 Corresponding Members.

Average participation at bimonthly meeting: 35

### **Committee Ongoing Goals:**

- Provide forum for active discussion and engagement between jurisdictions and structural engineering community.
- Provide forum for discussion and potential resolution to commonly known issues with current design practice versus code requirements.
- Further collaborate with local chapter of EERI as opportunity arises.
- Continue to strengthen collaboration between EEC and local research institutes such as UW, Seattle University, and WSU.

## Southwest Chapter News



By Owen Bower, SEAW Southwest Chapter President

The upcoming [Southwest Chapter Meeting](#) (Tuesday, 2/20) will provide SEAW members with the chance to tour the renovated Tacoma Elks Lodge. The 60,000 sq. ft. building was constructed in 1916 and is being retrofitted to become a McMenamin's property. Once open, the location will feature 40 hotel rooms, two full restaurants, a bar, and a music venue. Renovations are extensive and include structural upgrades as well as restoration of the original finishes. You won't want to miss the opportunity to walk

- Continue to maintain representation in national standard document organizations such as NCSEA, BSSC/NEHRP, ICC, ASCE, AISC, ACI, etc.
- Provide technical seminars at a local or state level and white papers as needed.
- Continue to provide a forum where young engineers can engage and develop professionally. [Read More](#)

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## Public Information Committee Report

*By Darrell Staaeson, Chair*

I will be stepping down as Chair of P.I.C. and Equilibrium Editor as of June 2018 in order to focus on my duties as Seattle Chapter President. This is an opportunity for you to step up and make a contribution to our association and the structural engineering profession. I will help/mentor as needed or wanted, but I encourage you to take it and make it your own.

Many people say to me that they don't have any time. Having studied Dale Carnegie and Steven Covey, I know that no one has time. I don't. You don't have time. We make time for the things that are important to us.

I'm currently reading *Theodore Roosevelt on Leadership: Executive Lessons from the Bully Pulpit* by James M. Strock. I make time to read because as William James said, "Don't be a mental loafer." (Loafer = a person who idles time away: an idler · lay about · good-for-nothing · lounge · shirker · sluggard; but for the synonym-challenged, *not* a leather shoe shaped like a moccasin, with a low flat heel.)

Anyway, of late, I am always asking myself, "What would TR (Teddy Roosevelt) do?" Well, TR said, "Do what you can with what you have, where you are." So, I leave you with a picture of TR showing what editing and writing the Equilibrium is like. It'll be fun!

through this unique project with the contractor and get a sneak peek before it opens! Watch your inbox and [SEAW.org](http://SEAW.org) for registration information in the coming weeks. The Southwest Chapter is working to coordinate several other meetings this spring. We hope to see you there.

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## Spokane Chapter News

Look for Spokane Chapter News in the future.

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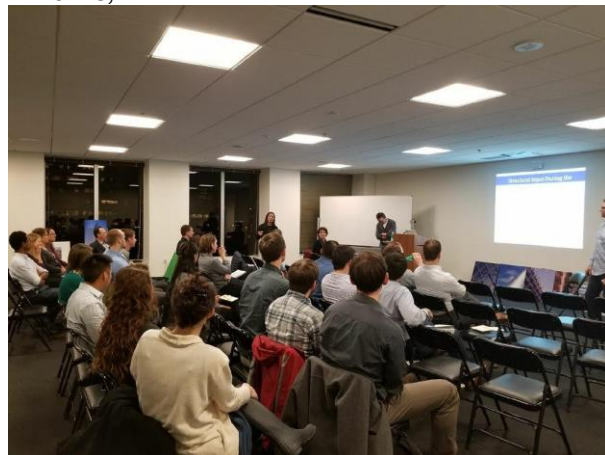
## South Central Chapter News

Look for South Central Chapter News in the future.

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## YMG Corner

*By Tim Lewis, P.E.*



On Thursday, January 25, the SEAW Young Members Group welcomed multiple officials from the cities of Seattle and Bellevue to present and discuss the structural permitting process for those cities. This event, hosted at the offices of Magnusson Klemencic Associates, was a great learning opportunity for young engineers to more fully understand the city process of reviewing calculations and drawings to issue building permits. [Read More](#)

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## Cal OES Safety Assessment Program (SAP) Registration Updates

*By Joyce Lem, Chair, Disaster Prep & Response Committee*

For those of you who are registered as Cal OES SAP Evaluators, your registration expires after 5 years. To renew your registration, you have two options:

1. Take another Cal OES SAP class and go through the application process, or
2. Take the online refresher training and passing the exam on the [California Office of Emergency Services website](#). Near the top of this webpage, select the "SAP Online Evaluator Training" to get started.

For Option 2, you'll need your SAP ID number to log in to the system. To retrieve a lost SAP ID number, contact the SAP Coordinator, Judith Fredericks. Her contact info is at the bottom of the above webpage.

**(Warning: the algorithm for alphabetizing names is a bit odd, scroll around a bit if you can't find your name.)** [Read More](#)

## Wind Engineering Committee

*By Scott Douglas*

Next Meeting: **Thursday, March 8 from 12:00 pm (noon) to 1:00 pm** at MKA, 1301 5th Avenue #3200, downtown Seattle. March meeting's agenda will include the following topics: (1) Continued discussion on a CFSEI Tech note regarding C&C wind loads on wall studs combined with axial loads to address a conflict between ANSI AISI S240-15 Section B1.1.2 and ASCE 7-16 and 2018 IBC Load Combinations, (2) Discussions on review comments by SEAOC and ICC on the five design examples SEAW WEC members are authoring in cooperation with the SEAOC Wind Committee for the SEAOC Wind Design Manual scheduled for publication this spring, and (3) development of a Kzt map for the City of Bellevue.

All members are encouraged to participate either in person or via [Go-to-Meeting](#): **Phone** (224) 501-3412 **Access Code**: 472-607-325

Please contact the WEC chair, Scott Douglas [sdouglasscott@gmail.com](mailto:sdouglasscott@gmail.com), to join the SEAW WEC and to receive information and announcements on committee activities and actions.

## Employment Opportunities

Structural Engineer - Lund Opsahl

[Learn More](#)

## From the Editor

*By Darrell Staaleson*



Equilibrium publication Team:

Darrell Staaleson, Editor

Katie Olleman

Zohrah Ali

Allison Tran - Grammar, spelling, and watching out for you'll-never-believe-how-they-spelled-that!

All members are welcome to submit articles to Equilibrium. To help you with your writer's block, here are a few topics: Write engineer's notes from afield; summarize an interesting technical design you worked on; write about how

## Membership Postings

In accordance with SEAW bylaws, membership applications are vetted by the executive director, granted probationary status by the chapter board, and posted for membership comment. Membership is considered accepted 30 days after posting if current year dues are paid and no member objections have been received. [Read more](#)

## Upcoming Events

February 6: [Refresher Course](#)

February 15: [South Central February Chapter Meeting](#)

February 20: [South West February Chapter Meeting](#)

February 27: [Seattle Chapter February Dinner Meeting](#)

March 15: [South Central March Chapter Meeting](#)

March 15: [Post-Disaster Building Safety Evaluation Training - Spokane](#)

March 16: [Post-Disaster Building Safety Evaluation Training - Kennewick](#)

March 17: [Spring 2018 SEAW Seminar: Foundation and Shoring Design](#)

March 27: [Seattle Chapter March Dinner Meeting](#)

you have been successful and increased productivity with an accounting procedure or marketing technique; write about your experiences in community services; or share some construction site photos, and talk about lessons learned.

“A Picture and a Paragraph,” and please use the Article Submittal Form provided. Please note that when I say, “picture” I mean an actual “picture”, and not a blank space where the “picture” should be. The picture needs a caption along with the names of the people in the photo.

Please submit your articles in Word format using the [Article Template](#).

CORRECTIONS:

None that I can remember.

### February Puzzle:

In this story, reality is altered by one young man's dreams. What word triggers his dreams? What novel tells this story? And who is the author?

Clue: “That horrid little Frenchman! You know, the detective!”

The first SEAW member to respond on our SEAW Facebook Page or at the next Dinner Meeting – **with a correct and full answer** - will get coffee and a Danish pastry.

### January Puzzle:

In this story of humanity's first contact with an alien race, the alien ship was in the shape of a cylinder and used a reactionless gravity drive for propulsion. What Sci-Fi novel tells this story? Name the captain and his ship that made first contact.

Clue: The author is credited with having invented the idea which makes modern cell phone technology possible.

The correct answer is: *Rendezvous with Rama* by Arthur C. Clarke; Bill Norton Commander of the Endeavour.”

The winner is John Gunn. John received cash for a coffee and a Danish pastry at the January Dinner Meeting.