



EQUILIBRIUM

December 2016

Newsletter of the Seattle Chapter
Structural Engineers Association of Washington

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Chapter Leadership

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Message from the Board

By Douglas Beck



I had the wonderful opportunity to attend the SEAOC Conference in Maui this last October. I know - tough life . . . I had attended the 2015 conference when it was held in Bellevue/Seattle. When I heard that the 2016 conference was going to be held in Maui, well, I knew I needed to figure out a way to go. So I anted up and with the help of my employer was able to make it happen.

The conference offered a variety of tracks and topics, including: Designing for Irregularities; Seismic Isolation & Damping Systems; Modeling, Performance, Evaluation and Design of Concrete, Steel, & Wood; Case Studies; Lessons Learned from Recent Earthquakes; Performance Based Design; Equity in the Workplace; Community Resilience. Some topics are more directly related to daily work. Others were outside the realm of the mundane - which I found to be invigorating and thought provoking.

One of the big topics (and buzz words) was resilience. While structural design typically relates to single buildings/structures or a small group of buildings/structures, resilience relates more broadly

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to the community-level. For example, while it is helpful to have a building which is designed or retrofitted for immediate occupancy post-disaster, the goal is thwarted if the building is unable to be occupied due to a neighboring building which is about to collapse on it. Resilience starts with understanding of local disasters (EQ, wind, snow, flooding, fire, etc.) and designing buildings, infrastructure, and communities together to respond well to them. As one speaker stated, resilience is about preventing hazards from becoming disasters. Currently, research is going into understanding & defining resilience in technical terms and into the modeling of the ability of communities to respond to hazards for the purpose of policy development. UW professors Jeff Berman (M9) and Laura Lowes (Cyber Infrastructure Center and Computational Modeling and Simulation Center) are currently working on resilience related projects. A full discussion of resilience is beyond the scope of this article. However, I recommend researching the topic to gain further understanding. It is a topic you will hear about in the future and structural engineers have an important part to play. Cross-discipline collaboration is key.

Given that the California SEA put the conference on, there were numerous professors and PhD students from California Universities, along with UW professors Dawn Lehman and Laura Lowes, who presented. Other presenters and guests included Lianne Dalziel, Mayor of Christchurch (keynote speaker), professors from Australia, Japan, & Chile and practicing structural engineers. Of course, Ashraf Habibullah was there. [Read more](#)

From the Editor

By Darrell Staaleson

YMF Corner

By Morgan Wiese



As 2016 comes to a close, your YMF leadership group has been planning some great events for 2017, which will provide ample opportunities to get involved. We will be



The Board of Directors for the Seattle Chapter has decided to make Equilibrium available to all chapters Statewide. In the coming months we will be adding a section for news and articles from each chapter.

All members are welcome to submit articles to Equilibrium. Write Engineer's Notes from Afield; or summarize an interesting technical design you worked on; write about how you have been successful and increased productivity with an accounting procedure or marketing technique; or write about your experiences in community services.

We are looking for another Member to help with the publication of the Equilibrium. Please contact me at dstaal@staaleng.com if you are interested. Currently, the Equilibrium publication team includes:
Darrell Staaleson, Editor
Allison Tran
Cara Condon

SEFW Fall Forum Recap

By Angela Gottula

hosting a table at the annual Puget Sound Engineering Council (PSEC) fair; holding the annual student truss competition which we will need judges/mentors for; and, in the spring, local elementary schools are looking for engineers to come in and share with classes what it means to be a structural engineer. [Read more](#)

Building Connections with WSU

By Ryan Edwards & Jim Mattison



On Halloween weekend, far from Seattle, smack dab in the state's bucolic wheat belt, 50 Washington State University civil engineering, architecture and construction management students gathered on the Pullman campus to attend Simpson Strong-Tie's first ever Building Connections Symposium.

Earlier this year, Simpson Strong-Tie established the Excellence Fund, an eight year partnership with the Voiland College of Engineering and Architecture at WSU. The fund provides an annual gift to sponsor faculty fellowships and conduct engineering and construction research in areas of mutual interest that will benefit the building industry for years to come. And in conjunction, the college named its high-bay lab in the new PACCAR Environmental



The SEFW 2016 Fall Forum was a tremendous success! More than 250 people were able to enjoy the reception and lecture, "Engineers, Architects, Builders: A Legacy of Innovation in the Pacific Northwest."

SEFW Chair Mark D'Amato of DCI Engineers opened the Forum by recognizing the event's 32 donors, including Platinum donor DCI Engineers. He recapped some of SEFW's activities for the past year, including scholarship donations, STEM outreach efforts, and the assistance in creating the SEAW Outreach Committee. [Read more](#)

2017 Refresher Course

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 7th through March 30th.

The course is 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, Prestressed/Post-tensioned Concrete Design, Bridge Design I & II, Wood Design, Masonry Design and Cold-Formed Steel Design. [Read more](#)

Technology Building, the Simpson Strong-Tie® Research and Testing Laboratory. [Read more](#)



Student Competition



Organized by SEAW Member Eduardo Avelar. The Competition brings Teams from several engineering colleges to a construction area. The Teams are presented with a diagram of a construction problem to resolve in the field. The Teams are given a stack of 2x4's, nails, plywood, steel straps, and (4) hours to design and construct a field solution. Then their

Viktorija



One of our longtime member firms, Cary Kopczynski & Company, recently won a prestigious international award in the Excellence in Concrete competition sponsored by the American Concrete Institute. Viktorija, which was awarded second place in the High Rise Category, is located in downtown Seattle. The project has won five other regional and national awards from industry trade associations.

As with most high rise towers, a notable design challenge was to maximize Viktorija's usable square footage. CKC developed a unique solution. By thickening the slab around the core and creating a large "drophead," slab spans of forty feet were made possible and all internal columns eliminated. This resulted in wide open living units and a parking layout without structural obstructions.

If you're in downtown Seattle for the holiday shopping season, drop by and check out this six-time award winning high-rise.

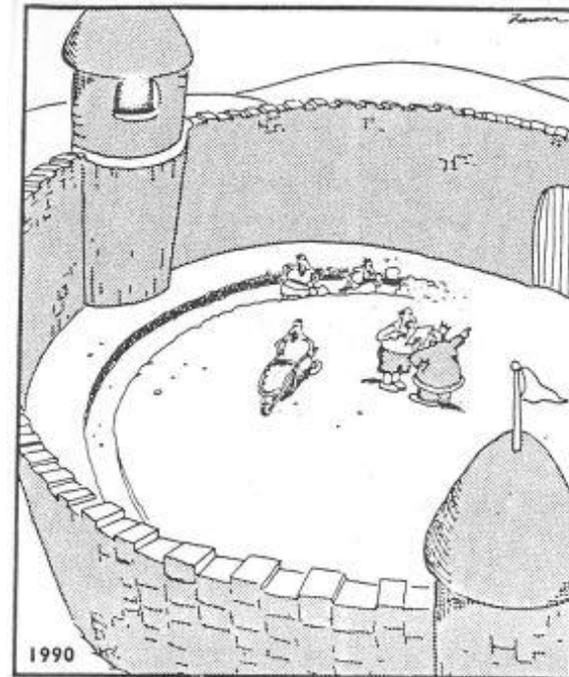
Facebook Update

The SEAW Facebook Page has 2,305 'Likes.' That means 2,305 people will see your post immediately. And the upper-

construction is tested to failure. Teams are asked to predict the failure mechanism and the maximum load. The teams present their design at the Seattle Chapter meeting: "Firms Showcase and Student Event" in January.

In December, look for the announcement of Schedule for this year's Student Competition.

Engineer's Notes from Afield



Suddenly, a heated exchange took place between the king and the moat contractor.

Membership Postings

bound of 2,305,000 could see your post if everyone shared an article of interest on their Timeline with their Friends and it goes viral.

Among other things available on our Facebook page, you can watch the video of the load tests from the 2015 Student Competition.

The most liked recent post from our Facebook page was this photo which reached 1,320 people.



Seattle Chapter Board Member Joyce Lem who is also Chair of Disaster Preparedness Committee as she was talking about ATC-20 Training and WA-SAFE.

October Dinner Meeting Recap

By Morgan Wiese

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](#)



Employment Opportunities

Sr. Structural Engineer - MLA Engineering

Staff Structural Engineer - Harbor Consulting Engineers, Inc.

Structural Design Engineer - Quantum Consulting Engineers LLC

[Read more](#)



During the October dinner meeting speaker Greg Knutson from HDR gave a presentation about the 520 project titled "Design and Construction of the SR 520 West Approach Bridge North". Mr. Knutson described the project setting, structural design criteria, bridge design, and construction techniques and challenges. The dinner meeting at Hotel Monaco was well attended given the general interest for this project that affects the daily lives of tens of thousands of people that travel on the floating bridge across Lake Washington. [Read more](#)