President's Message: Where Do We All Belong by Emily Guglielmo

Ah, look at all the lonely people!
Ah, look at all the lonely people!

Eleanor Rigby picks up the lunch in the house where her workspace has been,
Lives on her screen.

Looks out the window, wearing the mask that she keeps in a jar by the door,
Who is it for?

All the lonely people,
Where do we all come from?
All the lonely people,
Where do we all belong?

President Sabelli writing the words for a Convention that no one will hear,
At least not standing near.

Sits at home working, writing code changes while distanced when there's nobody there,
What should he wear?

All the lonely people
Where do we all come from?
All the lonely people,
Covid look what you've done.

With apologies to the Beatles, our current challenges bring back memories of

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my own past professional loneliness. It was a SEAONC meeting several years ago when my professional life took a sudden and lasting turn. Up until that specific meeting, I had very few connections, I had not developed a professional passion, I was not sure where I belonged. I chose the last open seat at a SEAONC event and mustered the courage to engage the engineer to my right. That ensuing conversation launched a lifelong friendship and the start of me truly belonging in SEAONC.

For the past four months, and likely the foreseeable future, our members have not been afforded that same opportunity to rub shoulders with a colleague. While social distancing is a current necessity, it is the antithesis of SEAONC’s rich history of bringing like-minded people together.

So today, SEAONC is committed to discovering the most relevant and resonant mechanisms to connect with our membership. At this time, we are making progress with novel learning and networking opportunities, and we are strategically planning for the challenges we face now and the future.

1. Revised Newsletter:
   This September, SEAONC will introduce a brand-new newsletter format, which will include more robust content, increased opportunities for remote engagement, and exposure to our SEANOC community. To jumpstart our new format, please help us name our newsletter!

2. Published Calendar of Technical Content:
   In planning this year’s calendar, we will shift away from dinner meetings, short courses, seminars, and miniseries. In their place, we are committed to delivering relevant technical content to our members on an ongoing virtual basis.

3. Social and Interactive Events:
   SEAONC is committed to celebrating our successes as well as creating opportunities to interact in a virtual setting. On September 1, we will announce our SEAONC Honors Awards, including SEAONC Fellow, Brunner Lifetime Achievement, and the Zacher Award. In addition to honoring our esteemed colleagues, we are now evaluating new ways to facilitate virtual social gatherings for SEAONC members.

4. Social Media:
   SEAONC is committed to developing and growing our social media presence to stay connected with our members in new and dynamic ways.

5. Committees:
   In our now virtual setting, there has never been an easier time to participate in a SEAONC committee meeting. SEAONC has published a calendar with upcoming committee meetings and promises relevant and actionable committee goals for the coming year.

Many organizations offer education and information, but SEAONC offers something more: the sense of belonging to a community. SEAONC is not just any community, but a mission-driven organization that advances practice, builds community, and educates the public regarding the structural engineering profession.

SEAONC is an organization where we can be part of something greater than ourselves while improving our careers, companies, profession, and local community. Along the way, we develop relationships with friends and acquaintances who convince us that SEAONC is a community where we all belong.
Submit your idea for the SEAONC Newsletter name

Winner gets 1-year free membership to SEAONC

Submit by August 14 to office@seaonc.org

UPCOMING EVENTS

Committee Meeting Calendar

Click here to access the new calendar

- Join a committee
- Get meeting information
- Become engaged to serve the public
- Share knowledge
- Help shape the practice of structural engineering
Note: Registration rate covers both the individual and other employees at the same company. Only the registering individual(s) will receive PDH credits. They are responsible for sharing the zoom link and any handouts to their company.

Please join us and our distinguished speakers to learn about updates in ACI 318-19 – Building Code Requirements for Structural Concrete. The seminar will include the following topics: code overview, shear updates, concrete anchorage, high strength rebar, and lateral system updates.

**Part 1: August 5th**

**Code Overview and Shear Updates**  
**Speaker: Dr. Jack Moehle – U.C. Berkeley**
As Chair of ACI 318, Moehle was responsible to set overall directions and manage the code development process for this code cycle. He will provide a broad overview of all the main changes to ACI 318-19 to make sure that code users are aware of changes that may affect their design practice. He will then delve into the detailed new code provisions for one-way and two-way shear, including equations recognizing size effect and reinforcement ratio effect, hanger reinforcement, bi-directional shear, and other new shear provisions. He will conclude with a review of the new concepts introduced in strut-and-tie modeling.

**Concrete Anchorage Updates**  
**Speaker: John Silva – Hilti**
Mr. Silva will address important changes to the anchorage provisions in ACI 318-19, including the addition of provisions for shear lugs and screw anchors. In addition, he will discuss the general topic of how the 318 code distinguishes development length from anchorage.

**Topics:**
- Chapter 17 reorganization
- Inspection provisions
- Screw anchor provisions
- Shear lug provisions
- Anchorage and development length

**Part 2: August 12th**

**High Strength Rebar Updates**  
**Speaker: Rahul Sharma – Hohbach-Lewin, Inc.**
Among the many changes in ACI 318-19, one sure to have a substantial impact is the allowance of higher-grade reinforcement in Seismic Applications. Up until the latest building code, the grade of reinforcement was limited to 60 ksi due to lack of research and testing on higher grades. However, recent research has broadened the understanding of the performance of high strength reinforcement and allowed less restriction in the building code. Mr. Sharma will go through the research behind these changes and then delve into the changes in ACI 318-19 related to high strength reinforcement.
Lateral System Updates

Speaker: Dr. John Wallace – U.C. Los Angeles

A host of code changes were approved for adoption in Chapter 18 – Earthquake Resistant Structures of ACI 318-19. The most important of these changes range from amplification of wall shear demands to reinforcement detailing revisions. New procedures that check expected wall deformation capacity against wall drift demand will also be covered. Dr. Wallace will also introduce provisions associated with a new structural system being introduced in ASCE 7, referred to as a Ductile Coupled Wall.

Speaker Biographies:

Jack P. Moehle, PE, F.ACI, F.SEI, F. SEAOC is the Ed & Diane Wilson Presidential Chair in Structural Engineering in the Department of Civil and Environmental Engineering at the University of California, Berkeley. His research and teaching activities are mainly in structural engineering, with emphasis on reinforced concrete and earthquake engineering. He is active professionally, both as a consulting engineer and as a contributor to development of structural engineering standards and guidelines. He was the Chair of ACI Committee 318, Structural Concrete Building Code, for the code cycle leading to publication of ACI 318-19. He has served on the Boards of Directors of the Structural Engineers Association of Northern California, the Earthquake Engineering Research Institute, and the American Concrete Institute. He has received several professional awards, including the Krawinkler Award from SEAONC and the Distinguished Lecturer Award from EERI. He is author of the book Seismic Design of Reinforced Concrete Buildings.

John Silva PE, SE, F.ACI, F.SEI is a senior director with Hilti North America engaged in standards development. He is a licensed civil and structural engineer in California (S3181), a Fellow of the Structural Engineering Institute and the American Concrete Institute, and served on the SEAONC Board. He is the current President of the Concrete and Masonry Anchor Manufacturers Association (CAMA). Over the past three decades, Mr. Silva has served on numerous committees addressing seismic design and anchorage and has conducted earthquake reconnaissance following major earthquakes in California, Chile, New Zealand, Japan and Haiti. He chaired Task Committee 8 (Nonstructural Components) as part of the Seismic Subcommittee of ASCE 7 during the development of ASCE/SEI 7-10 and ASCE/SEI 7-16 and currently serves on the NEHRP Provisions Update Committee and on the Seismic Subcommittee of ASCE 7. He also chairs ACI 349-C (Nuclear Anchorage) and is a voting member on several code-related ACI committees. Mr. Silva is a co-author of Anchorage in Concrete Construction (2006 Ernst & Sohn, 378 pp.).

Rahul Sharma, PE, SE is a Project Engineer at Hohbach-Lewin, Inc. where he designs new buildings and retrofits existing buildings. Rahul is an active member of the SEAONC Seismology committee and is the current chair of the Concrete Subcommittee. He has previously worked on editing the SEAOC Seismic Design Manuals for the 2015 IBC, editing several articles for the 2019 SEAOC blue book and was part of an ad-hoc committee that investigated torsion in buildings. He also frequently attends ASCE 7-22 Seismic Subcommittee Meetings.

John Wallace, Ph.D., C.E, F. ACI, F. ASCE, professor of civil engineering at the University of California, Los Angeles (UCLA), is an internationally recognized expert on the seismic behavior of reinforced concrete structures. His research contributions focus on assessing the behavior of structures subjected to earthquake loading, laboratory and field testing of structural components and systems, developing and validating models for structural analysis and design, and applying sensors and sensor networks to measure structural responses and interactions. Professor Wallace is active as a consultant and peer reviewer on high-profile performance-based design projects for seismic retrofit of existing buildings and seismic design of tall buildings. He has actively participated in updates to ASCE 41 and ACI 318, as well as the PEER TBI and LATBSDC Guidelines. Dr. Wallace received a BS in Civil Engineering from the University of Vermont and MS and PhD in Civil Engineering from the University of California, Berkeley.
COMMITTEE NEWS

SE3 Committee
Chairs: Brenna Marcoux and Rachel Cohen

SE3 LONG TERM MENTORSHIP PROGRAM
SE3’s 2020-2021 Long Term Mentorship Program is in full swing, with most groups having held their first virtual meetings in the last month. This year’s program consists of 29 mentorship groups, each with 3-5 engineers over a range of years of experience, who will meet regularly over the course of a year. SE3 looks forward to working with participants to foster a productive and valuable experience.

SUMMER SPEED MENTORSHIP EVENT
SE3 will be hosting our first virtual speed mentorship event at the end of August, targeted at students, interns, and entry-level engineers. The event will give attending mentees the chance to speak in small groups with more experienced professionals in the SE industry. Registration will be open the first week of August - more information will be coming soon on our website.

DIVERSITY, EQUITY, AND INCLUSION (DEI) SUBCOMMITTEE
To carry out SE3’s pledges related to racial justice outlined in our recent statement, we have formed an expanded DEI Subcommittee who will be meeting regularly over the course of this year to plan events and engage in ongoing research projects. Currently, we are beginning to compile research relating to Black representation in structural engineering at the university and industry levels, gathering contacts to make connections with university groups serving underrepresented racial minorities in engineering, and discussing plans to bring together firm leaders to share ideas around working towards a more inclusive industry within their own organization. Please reach out to us if you are interested in getting involved.

ASCE/SEI WEBINAR
On July 16th, SE3 co-chairs Rachel Cohen and Brenna Marcoux presented the 2018 NCSEA Survey results to around 70 attendees at a lunchtime webinar hosted by SEI SF. The speakers discussed key take-aways from the survey related to employee satisfaction and career progression, as well as recent SEAONC SE3 programming that has been developed in response to the survey data. For more information, visit NCSEA SE3’s website to read the full 2018 Survey Report.

SE3 2020 PROGRAMMING
Whether or not you have been a member of our committee in past years, we would be delighted to have your contributions in any of our sub-committees and programs. If you are interested in joining the SEAONC SE3 committee, please email us at se3@seaonc.org. New members are always welcome!

NCSEA SE3
The 2020 NCSEA SE3 survey has closed, with over 5,000 responses from engineers nationwide. If you are interested in getting involved in analysis of the survey results, please reach out to the NCSEA committee at SE3@NCSEA.com.
Concrete is a significant source of embodied carbon emissions in buildings, with the main contributing factor identified as cement. Engineers can reduce these emissions and have a significant impact on the Global Warming Potential of a project by modifying their concrete mix design.

To better understand the emissions impact of mix variations, the SEAONC Sustainable Design Committee (SDC) performed a Life-Cycle Assessment on over 300 concrete mixes submitted by SEAOC members and used in California projects in the last few years. The data collected and findings were summarized in a paper presented at the 2019 SEAONC Convention titled “Embodied Carbon Impacts of California Concrete Mix Designs”. Based on the data collected, concrete specification best practices for low carbon concrete were distilled into lists for performance based specifications and prescriptive specifications.

Low carbon concrete best practices for performance based specifications:
1. Control the embodied carbon in a mix by setting maximum limits on Portland cement or the life cycle GWP in a mix.
2. Specify the required ultimate concrete strength of the mix and any early strength requirements.
3. Specify a shrinkage limitation where needed.
4. Low carbon concrete best practices for prescriptive specifications:
   a. Specify cement replacement ratios using Supplemental Cementitious Materials such as slag and fly ash.
   b. Choose an appropriate prescription for the total amount of water in the mix, with provisions for use of plasticizers or water reducers for meeting slump/workability. Mixes with less water meet higher strengths with less cement.
   c. Specify a higher allowable water cement ratio to reduce unnecessary cement in the mix.
   d. Provide a list of acceptable aggregates that are known to perform well.
   e. Specify 56-day (or longer) strength. Concrete continues to gain strength well beyond 28 days, especially when including fly ash, which can slow strength gain. Specifying longer cure times can allow less over-design of the concrete mix by giving it more time to come up to strength.

The data that SDC collected was also used as part of the Bay Area Low Carbon Concrete Code Project, which was adopted in January 2020 by the County of Marin. It was the focus of the May 13th, 2020 SEAONC Mini-Seminar hosted by the Continuing Education Committee.

The figure below shows how the SEAONC Sustainable Design Committee data was used as a reference that the Low Carbon Concrete Limits were achievable, despite being significantly less than the NRMCA US average emissions. The blue boxes show the middle quartile emissions of the concrete mixes in our data set, and the solid black line shows the targets that were set by the Low Carbon Concrete Code. Our data showed that the median concrete mix already being specified in the Bay Area could meet these limits.

SDC’s low carbon concrete research continues. This year the SDC is working on creating a best practice in low carbon concrete specification document. The intent is to assist bay area engineers in specifying mixes that meet strength, durability and other requirements, but also have lower embodied emissions.

If you are interested in learning more about the study or in joining the committee, please reach out to sustainable@seaonc.org!
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2020 - 2021 Sponsorships Opportunities are now available, contact the office@seaonc.org for more information.
Daedalus Structural Engineering

Job Position: Experienced Structural Engineer

Job Description:
At Daedalus we believe that the structure provides an opportunity to expand and help shape the finished architecture and building envelope, and we constantly stretch the boundaries of engineering to help our clients develop new, creative ways to achieve their project goals. We are fortunate to work with many of the Bay Area’s top architectural firms focusing on a broad mix of project types including high end custom residential, education, civic, commercial, and institutional projects. We have special expertise in earth retention/shoring systems, and more recently we have been working on a number of mass timber projects here in the Bay Area. Beyond the general scope of engineering work we also offer 3D printing of complicated structures/connections to our clients, and we are currently developing a proprietary framing system. Our project locations range from Northern to Southern California, to Napa Valley and Hawaii.

We are currently seeking an experienced Structural Engineer to join our dynamic team in Saratoga, CA.

Benefits:
• Bachelors/Masters Degree in Civil/Structural Engineering
• California P.E. license required, S.E license preferred
• 5+ years of structural design experience
• Desire for continuous learning, personal development, and growth
• Interest in architecture and collaborative design
• Design experience with steel, concrete, and wood structures
• Excellent organization skills
• Experience managing projects and interacting with design team, contractors, and clients
• Excellent client interaction and general written and verbal communication skills.
• Leadership skills in mentoring young engineers, motivating staff, and working well in a team-based environment
• Working knowledge of AutoCAD and Revit is highly desired

How to Apply / Contact
Daedalus is an equal opportunity employer. In addition to a highly competitive salary and a full benefits package, other perks include an additional week off during the holidays, a profit-sharing plan, flex time, dual computer screens, adjustable standing desks, and a membership at the local YMCA.

Please submit your cover letter and resume in PDF format only to employment1@daedalus-eng.com.

H D Rueb Structural Engineer

Job Position: Structural Engineer/Designer

Job Description:
H.D. Rueb Structural Engineer is a consulting firm in Pleasant Hill, and we are looking to hire a full-time structural engineer/ designer.

Our firm has provided structural engineering services for over 45 years, and we have extensive experience in a wide variety of buildings: schools, offices, commercial, medical, public/institutional, churches, retirement centers, apartment complexes, seismic retrofits and custom residential.

Job Requirements:
• 3 years minimum experience in the field of structural engineering.
• CE license is required.
• SE license and MS degree are preferred.
• Experience in the design of wood, steel, concrete and masonry structures.
• Solid understanding of building codes and seismic provisions.
• Experience with DSA and/or OSHPD is preferred.
Minimum Required Skills:

- Self-motivated and able to work independently with minimal supervision.
- Excellent verbal and written communication skills.
- Multi-tasking to effectively work on several projects concurrently.
- Experience with structural analysis software: Enercalc and RISA are required, SAFE and ETABS are preferred.
- Basic proficiency with AutoCAD.
- Prepare accurate and complete structural calculations, plans and details.

We offer a competitive salary, 401k, health insurance allowance, flexible hours, paid vacation, sick leave and holidays.

How to Apply / Contact
Please send your cover letter and resume to staff@hdrse.com.

Ryan Joyce Structural Design

Job Position: Design Engineer

Job Description:
Ryan Joyce Structural Design is a growing San Francisco based structural engineering firm. RJSD currently has a wide variety of project types involving buildings and waterfront structures including new construction, renovations, and seismic retrofits. We are looking for a capable and motivated engineer to help grow our San Francisco office. The successful candidate will prepare drawings in Revit, perform analysis and calculations, attend meetings and site visits, and coordinate with architects, contractors and other consultants. We offer interesting projects and a fun group of people to work with. In addition to an excellent benefits package we offer high quality mentoring by experienced engineers that is well suited to enthusiastic learners in the early stages of their careers.

Job Requirements:
- A Master’s degree in Structural Engineering
- 0-4 years of experience with a consulting structural firm
- Excellent communication skills
- Top notch organizational skills
- An inquisitive and thoughtful nature
- A deep interest in their profession

How to Apply / Contact
If interested please visit our website (RJSDesign.com) and send your resume and cover letter to patrick@RJSDesign.com.