

# cross sections

Magazine for the Structural Engineers Association of New York

2018 VOLUME 23 NO. 3



YEAR END REVIEW



SEaONY  
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"Truss the Process" Winner of the 2018

Young member group photo contest.

Photo by Rob Calderon, Severud Associates

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## President's Message

As the current SEAoNY Fiscal Year draws to a close, we take a step back to review the accomplishments and events of the past year. We started the year with our Annual meeting in September 2017 where we honored Joe Tortorella, President of Silman, bestowing on him the distinguished title of Honorary Member for his work and dedication to SEAoNY. Joe joins the ranks of Honorary Member Alumni which SEAoNY started awarding back in 1999.

The Boards of SEAoNY and NCSEA, the National Council of Structural Engineers Associations, had a joint meeting in early January 2018. The meeting aimed to bolster closer cooperation between SEAoNY and the National Organization.

The All Day Seminar in February this year on the topic –“The Ever Changing New York City: Building Renovations and Alterations”, was very well attended and well received. The speakers were from the local structural engineer private practitioners and the New York Department of Buildings.

Topics covered included Codes, Adjacent Construction, Cladding and Over-cladding, Landmarks and Historic Preservation, Older Structural Systems, Alterations, Foundations and Structural Stability and Inspections. Participants were awarded 6.5 hours of professional development hours. This seminar provides the member of the engineering community not only the opportunity to earn the required PDHs but more importantly provides an opportunity to meet with and exchange ideas with their peers and colleagues.

The other annual events of SEAoNY, the Golf Outing where SEAoNY presents Scholarships to High School Students and the Harbor Cruise where the Excellence in Structural Engineering Awards Winners are presented, were also very successful and well attended.

Later in this issue and during the Annual Meeting the SEAoNY committees will be presenting their annual reports. We are very happy and proud of the accomplishments of the Diversity Committee and the Young Member Group. The SEER (Structural Engineering Emergency Response) committee has been reactivated and our members are being trained and encouraged to sign up for the NCSEA Second Responder Roster.

We remember Honorary Members who have been pillars of the profession, Irwin Cantor and Robert Silman who both passed away this year. We thank them for their contribution to Structural Engineering and to SEAoNY.

We are excited to see the organization grow to more than 500 members and look forward to additional chapters being established in New York State. I would like to thank our outgoing president, Sara Steele. Through her guidance and leadership, the organization has continued to grow and become a valuable tool in the enrichment of the profession.

**Jonathan C. Hernandez P.E., SECB**



## Editor's Message

Dear Friends and Readers,

This issue of CrossSections is all about us, the SEAoNY membership. In this, the inaugural "State of the Union" issue, we will focus solely on an in-depth review of what the organization has been up to over the past year.

Moving forward, we plan to use this time at the beginning of each new membership year to focus on what SEAoNY has done and what SEAoNY is looking forward to doing in the next year. The remaining issues will continue to provide articles with unique insight into the concerns of the structural engineering community of New York.

I would also like to take this time to thank Sara Steele for her efforts as SEAoNY President and wish her the best as she transitions to the role of Past President. We welcome the new President, Jonathan Hernandez, and look forward to another great year at SEAoNY.

Finally, after 2 years of serving as Editor-in-Chief, I will be stepping aside to allow Daniel Ki to take this role. Daniel has stepped up in the past year to be a dedicated and consistent member of the committee. He will be an excellent person to assume the mantle of editor and continue to find ways to improve each and every issue.

**Adam J. Kirk, PE**

## UPCOMING EVENTS

**October 4th, 2018  
6:00 PM - 8:30 PM**

### **SEAoNY 3rd Annual Young Member Pub Trivia Night!**

*O'Lunney's Times Square Pub 145 W 45th St, New York, NY 10036*

**October 25th, 2018  
9:00 AM**

### **ICRI-MNY & SEAoNY Present**

**Expanding Responsibility Lines for the Engineer of Record  
Case Studies on Responsibility in Repair Construction**  
*Club 101, 101 Park Avenue, New York, New York 10178*

**October 9th, 10th, 11th,  
12th, 30th and Nov. 1st  
8:00 AM - 4:00 PM**

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Visit [www.seaony.org/programs](http://www.seaony.org/programs) for additional information on these and other events!



# 2018 SEAO NY ANNUAL GOLF OUTING

On a beautiful day at Mahopac Golf Club, SEAO NY welcomed 132 participants from over 30 different firms to the annual SEAO NY golf outing.

Situated on the majestic, rolling countryside of New York's southern Putnam County, Mahopac Golf Club is among the oldest clubs in the US. The course, which features well bunkered greens, is considered by many to be one of the area's most beautiful and most challenging.

Proceeds from the golf outing provide scholarships for students who are chosen by that year's Honorary SEAO NY Member. In addition, each year the Education Foundation provides a scholarship to a high school senior from the Urban Assembly School for Design and Construction to support them as they go on to represent our industry and become leaders in promoting our profession.

Please look out for information about the 2019 tournament and act fast as the event regularly sells out quickly.



**GOLFERS READY  
TO TAKE THE TEE**







**SEAoNY PRESIDENT SARA STEELE PRESENTING  
THE CHECKS TO SCHOLARSHIP AWARDEES  
ANGEL MARTINEZ AND PETRICA FORCOS.**

## call for writers (*and nonwriters!*)

Interested in writing about our profession?  
Do you have great ideas, but no time to write?

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# SEAoNY COMMITTEE UPDATES

## Young Member's Group

**Our committee was formed with a mission to offer new ways for Young Members to become integrated into the greater SEAoNY community by providing a variety of events. Progressing into our third year, we are happy to report we have successfully created numerous opportunities for Young Members to learn more about the industry, expand their networks, and encourage the early development of their careers. We are grateful for the support we have received from the Board and plan to continue our efforts to provide programs geared toward young members.**

### Young Member's Group – Trivia Competition

In July, members of SEAoNY's YMG joined together to compete against other NCSEA Young Member groups across the country in a Skype based Trivia competition. The event started off with introductions of all the teams participating across the US; this allowed everyone a chance to learn about the other Young Member groups in the NCSEA organization. With 35 SEAoNY members attending, we split up into three teams to compete, and we had our own mini competition among ourselves to see which of our teams would place the highest. Since the teams were a mix of people from different companies, it allowed everyone to mingle while the competition went on. Everyone was challenged with questions ranging from wood design to Olympic history. All of the teams put up a good fight, but unfortunately none of the New York teams were the overall winner. Despite the loss, the attendees enjoyed getting to know their fellow young members over food, drinks, and friendly competition. This was the first time we arranged to join the annual competition, and we plan on participating again next year to hopefully bring a win home for SEAoNY! Keep an eye on the SEAoNY website and the Facebook group for upcoming Young Members Group events.

This past year was focused on increasing the breadth of our events with the goal of widening participation and fostering increased involvement with more educational, social, and outreach events. The "Recap and Rewind" series debuted last year, consisting of a recap of previous lectures and a networking session following technical lectures and programs at nearby restaurants or bars. We look forward to keeping this going, so for the next lecture you attend, make sure you check if a Recap and Rewind will be offered!

We have been focused on providing technical lectures with topics geared towards young engineers. This past March, we teamed up with ASCE's SEI to host a lecture titled "Bad Vibrations", providing insight into design for floor vibrations. In August, we offered an Adhesive Anchor Demonstration, sponsored by Hilti, giving attendees a first-hand experience in installing adhesive anchors.

# Recap and Rewind



# National Engineers Week

SEAoNY

If you are interested in joining our committee or have any questions about our upcoming events, you can reach us at [seaonym@gmail.com](mailto:seaonym@gmail.com). Check out our webpage (<https://seaony.org/YMG>) and follow us on Facebook (<https://www.facebook.com/Seaonymg/>).

## Kids Day

Additionally, we have expanded offerings into community service and outreach. For National Engineer's Week, we gathered volunteers to participate in "Kid's Day" at the New York Hall of Science, hosted by ASCE Met Section. Earlier this summer, a couple of YM's volunteered for the Salvadori Foundation's annual Design Charrette, a day-long structural design competition with middle schoolers. In the coming year, we hope to expand our community service offerings, so keep an eye out for upcoming opportunities.

Looking forward, we plan to keep our momentum moving. On October 4th, we will be hosting our third annual pub trivia at O' Lunny's Times Square Pub. Last year's champions took home some great prizes: Amazon gift cards AND our new YMGT-shirts!

A quick thank you to our committee members. We are extremely grateful to those who volunteer their time and effort to make these events possible. Finally, we are excited to announce that our YMGM is a finalist for the Young Member Group of the Year Award as presented by NCSEA. The winner will be announced at the NCSEA Summit in Chicago on October 25th-27th. Wish us luck!

## Networking

## The Diversity Committee

The SEAoNY Diversity Committee advocates for inclusion and advancement of women, LGBTQ+, and other minorities in the structural engineering community by raising awareness about the challenges they face in the professional workplace, and proposing solutions through worker-friendly, equitable policies. The committee envisions a more diverse and inclusive community with better collaboration in the workplace and longer-term employee retention. This vision is closely aligned with the national NCSEA committee for Structural Engineering, Engagement and Equity (SE3).

The committee was the recipient of a 2017 NCSEA grant, which was used to organize several events on equity and engagement for SEAoNY and other industry professionals. Past events include Effective Networking Strategies with Judy Nitsch of Nitsch Engineering, The SE3 Project with Rose McClure, and Deconstructing Implicit Bias in the AEC Workplace with Nancy Alexander. This summer, the committee hosted the first in a series of panels on “Navigating Today’s Workplace for Employers and Employees.” Session one focused on breaking down harassment, while future sessions will address the myriad of other issues facing today’s structural engineering workplace. For our next event, NCSEA Structural Engineering, Equity and Engagement (SE3) members Lauren Francis of Thornton Tomasetti and Jennifer Anna Pazdon, PE of CAST CONNEX will present the findings of the 2018 SE3 Survey. The event will be held on November 27th at CFA. Please contact [seaonydiversity@gmail.com](mailto:seaonydiversity@gmail.com) if you are interested in joining the Diversity Committee.

## Website Committee

The website committee has accomplished a number of milestones in the past year. The overall goal was to prep the current website for an upcoming overhaul. We started by implementing Google Analytics to find out more about the website audience and their browsing patterns. Then we completed a review of those sites not receiving traffic and determined how they can be refreshed or reformatted to make them more useful. We then created a number of new pages within the website to provide more information about SEAoNY Awards and Committee goals and activities. SEAoNY is now on Twitter and Instagram (@SEAoNYC) to help our membership celebrate their interaction with the organization as well as provide free interactive options that can be embedded into the website.

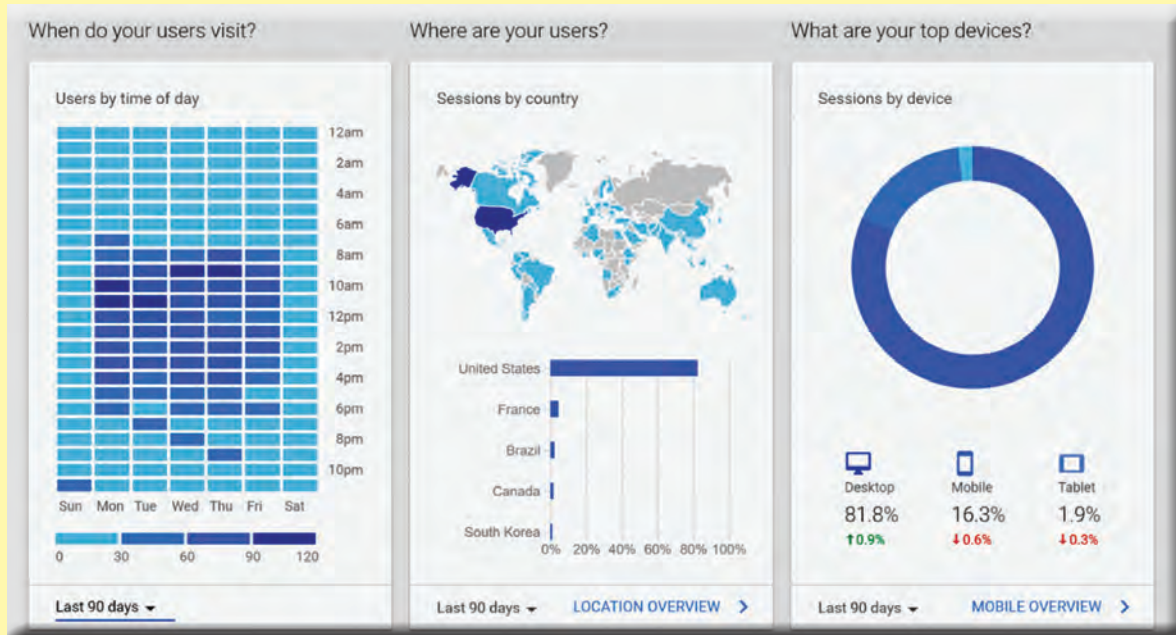
While reaching all of these milestones, the website committee has been working hard to compile items that will be placed in the proposal for the website redesign. In 2018/2019 the Website Committee's focus will be to create a proposal for a complete redesign of the website that will provide an intuitive interface, better functionality, more engineering resources, and all with a modern look to be proud of.

# Membership



# Analytics

# Goals



## Programs Committee

One of the oldest and long-standing committees within SEAoNY, the Programs Committee plans at least one event per month. Starting with the annual meeting in September, then monthly technical seminars from October to May.

Scattered throughout the years are site visits, workshops, one all-day seminar, and the awards ceremony at the annual summer boat cruise. All events are planned based on our commitment to fostering knowledge and promoting technical excellence in our structural engineering community. We have a team of dedicated liaisons who connect SEAoNY with the industry's leaders, experts, researchers, and more. This team will never be too big and we welcome you to join us in our endeavors.

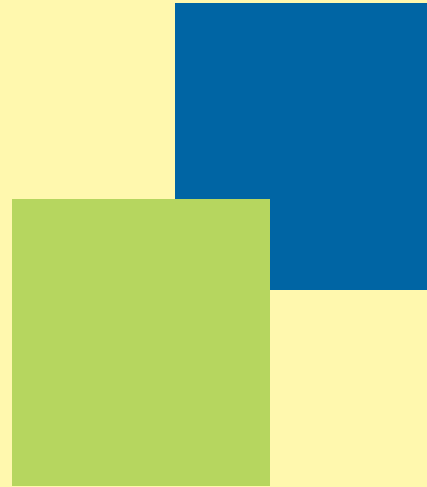
The Programs Committee also oversees the Awards Committee, a sub-committee organized around a panel of judges. The panel typically includes a SEAoNY Past-president, an Honorary Member and other industry leaders.

# Functionality

## Education Committee

The past year has been an exciting one for the Education Committee. Beginning in 2017, we began the process of forming student chapters of SEAoNY at colleges around the city to better engage students and provide additional resources for students interested in pursuing structural engineering. We are proud to announce that Cooper Union, City College of New York, and Manhattan College now have SEAoNY chapters. In the upcoming year, we hope to expand our presence to three additional schools and host exciting new events to better serve engineering students throughout the area.

As in years past, we will be hosting StructureQuest in November, Shadow a Structural Engineer in the spring, and resume and interview workshops throughout the year. Our new student chapters are also planning to host presentations, technical lectures, and panel discussions. At the various events throughout the year, we try to host a wide range of engineers to share different perspectives and experiences with the students. As always, we are looking for new volunteers from different companies to offer their time in any way they can to the next generation of engineers. If giving back to students interests you, please contact us at [seaonyeducation@gmail.com](mailto:seaonyeducation@gmail.com) and we'll see how you can best help out. *If interested in joining...*



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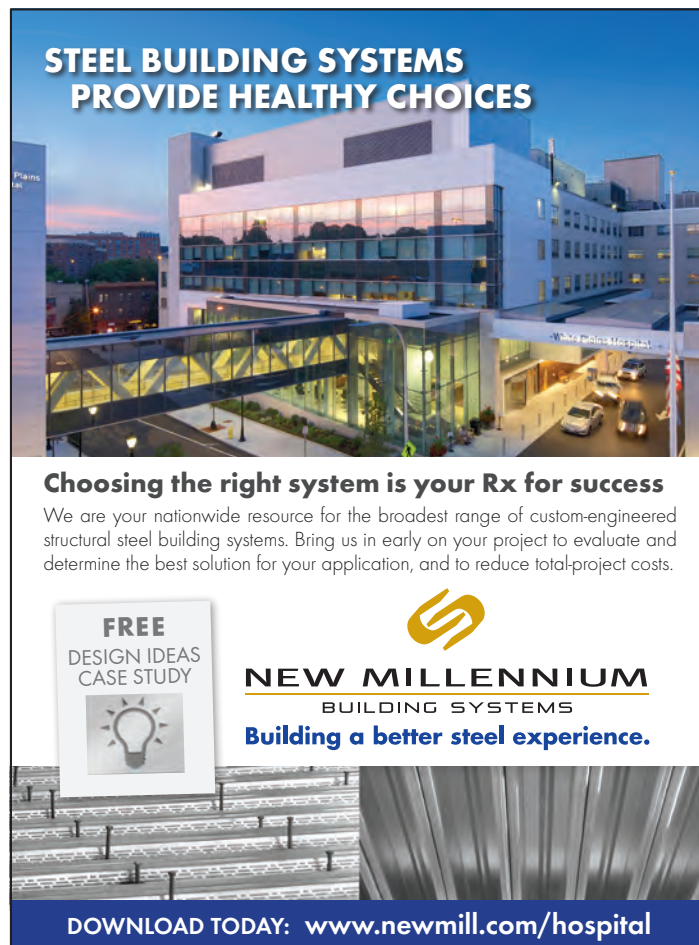
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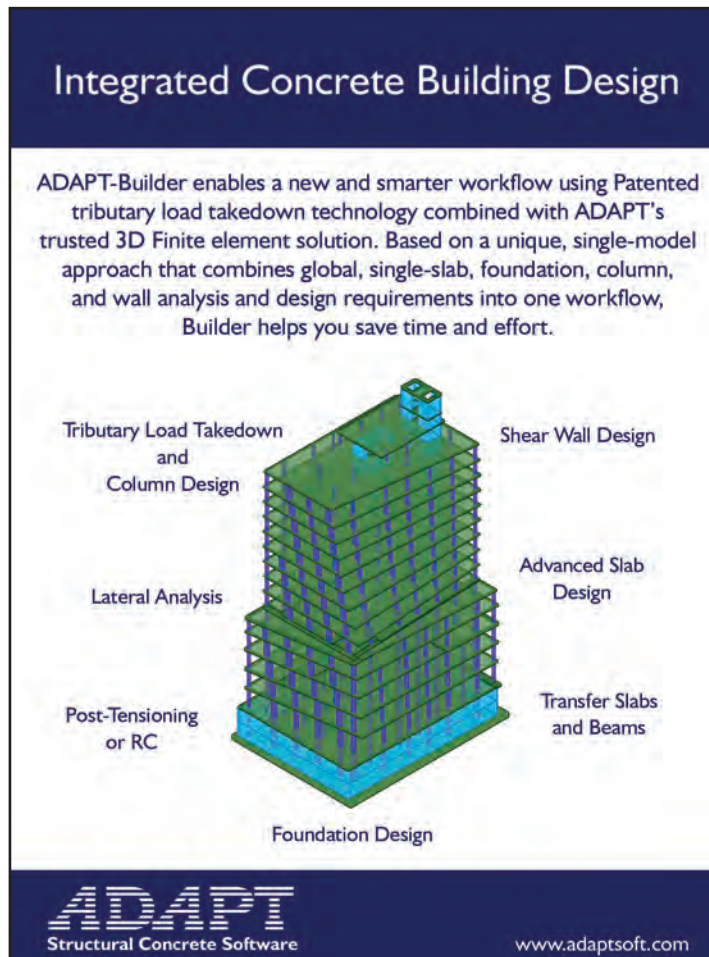
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# YOUNG MEMBER GROUP PHOTO CONTEST

The SEAoNY Young Member Group successfully held their first photo contest this year. After receiving entries from members at more than 8 different firms, the photos were narrowed down to three finalists, and the final winner was chosen by the attendees of SEAoNY's Annual Boat Cruise.



#1

▲ **Truss the Process**  
Rob Calderon,  
*Severud Associates*





◀ **Down Under the Manhattan Bridge Overpass**  
Anastasios Kontogiannis, Permasteelisa North America Corp.



◀ **Raising the Yards**  
Eric Donahoe, The Eipel Engineering Group

# BEYOND THE BIO:

## INTERVIEW WITH SEAoNY HONORARY MEMBER GUY NORDENSON

Questions By Phillip Bellis, Severud

***At what point in your life did you realize your passion for structural engineering?***

It was actually after I graduated (with terrible grades) from the UC Berkeley SESM Master's degree program and discovered SEAoNC and their work on the California "blue book" seismic code. I found a vibrant community of geologists, geotech and structural engineers that were working on earthquake hazards reduction in both research and practice. I was able to work and learn from Egor Popov, Henry Degenkolb, Helmut Krawinkler, Boris Bresler and Vitelmo Bertero.

***When you started Guy Nordenson and Associates in 1997, what was the most difficult challenge you faced?***

Throughout our work I have relied on the kindness of my engineer colleagues with whom I have been lucky to collaborate on many of our projects – from Ed Messina in NY, to Glenn Bell in Boston, Larry Whaley in Houston and Bob Silman and Nat Oppenheimer in NY. Our practice has been small and reliant upon these collaborations that allowed us to take on major projects from the Museum of Modern Art in NY to the National Museum of African American History and Culture in DC. Many of our projects involve some sort of innovation—material or system—and these collaborations have been important in helping us manage the risks of innovation. We have also had many trying circumstances where our efforts to sometimes go against the currents of convention have been challenged, and we've learned the hard way that it is important to keep your friends close and some others closer.

***In regard to innovation, both in structural form and analytical techniques, are you quick to adopt or hesitant?***

We hopefully stay somewhere in the "Goldilocks" medium. That said, we have on occasion relied on a single North American fabricator (who may not have known) to bid a structural element—BPD L for our Corning Glass Museum concrete rafters and Structurlam for our laminated timber beams for the Kimbell Art Museum. In both those cases and several others we have also pushed the structural limits—again, with the collaborative help of Joe Yura of UT Austin and Tony Ingrassia of Cornell—of our understanding of buckling and fracture.

***What is your preference, buildings or specialty structures?***

In a sense all our structures are specialty—by design or circumstance. We are, for good or ill, rarely consulted for anything that is not "special." This has its drawbacks and is the reason I think our office has always remained small.

***For those who don't know, you are also a professor. What are your thoughts on the relationship between academia and professional practice?***

When I was a student at MIT there were a number of professors from John Biggs to John Whitman to Howard Simpson who were active practitioners as well as professors. At UC Berkeley I studied with TY Lin, and Alex Scordelis all of whom had extensive "outside" work. This is less common today. The measure of success in most engineering schools is the "h-index" of one's publication record—a measure of "impact" originally established as "a tool for determining theoretical physicists' relative quality". This seems to be the tendency in most Anglo-American universities but is not the case in France, Germany, or Japan, where many great practitioners such as Marc Mimram, Jorg and Mike Schlaich, Mamoru Kawaguchi, and Mutsuro Sasaki are also deeply engaged in both research and practice.

***If you had to teach a course unrelated to engineering or architecture, what would it be?***

I have been teaching for 35 years, at Parsons, Columbia, MIT, and, since 1995, Princeton. I stopped teaching the introductory structures course at the Princeton School of Architecture after 20 years and now have focused on seminars and studios examining climate adaptation and coastal resilience as well as a seminar entitled "Construction and Interpretation" that closely "reads" modern buildings that have a complex interweaving of form, content, and structure—from the IIT Crown Hall to the original WTC Towers.

***An engineer is always learning, what is something that you have learned within the past year?***

Keep calm and carry on.



***Describe the ideal relationship between engineer and architect.***

# Mutual respect and trust are of course paramount. Most strong collaborations have a half-life—think of Daniel Kahneman and Amos Tversky or the many pairings of Miles Davis and his bands. So far in my experience, the economics of building have made it difficult to form the kinds of long term repertory groupings that you see in film or modern music. I think that part of the health of collaboration and improvisation in those fields comes from the fact that at different times each party may take the lead, as player or director or composer. A few years ago I organized a lecture series at MoMA of structural engineers, later published as the “Candela Lectures.” Subsequently, with Terry Riley, I curated an exhibition on “Tall Buildings” that highlighted collaboration. And more recently I invited a group of engineers from Europe and the US to speak at MoMA as well, on the lineages of Japanese structural engineers. The books that came out of all three demonstrate I think that we are still working on a framework or theory to help us understand how engineer-architect—and for that matter, architect-architect and engineer-engineer collaborations—operate and at times produced important work. To think there is some ideal though misses the point. The best collaborations are dynamic, sometimes difficult, and often unexpected.

***You have been involved with SEAoNY since its inception, why do you feel it is important for structural engineers to be active in professional organizations?***

When I returned from California in 1982 to work for Paul Weidlinger’s office, I approached Les Robertson about forming SEAoNY in the image of SEAoC, in the hope of creating a greater sense of community and collegiality. It took a decade and the work of the NYC Seismic Code Committee, which I eventually led to get the ball rolling. Together with Tom Scarangelo and others of our generation we began to meet to discuss the idea. I hosted the breakfast meetings at the Players Club (no one seemed to get the humor) and in a few years we were official. Aine Brazil was our first president, setting a progressive precedent, and I followed. The big change of course came about with September 11 when Aine, Ramon Gilzanz, and others of us organized the SEAoNY assistance to the city and the DDC at “ground zero.” We published a book on that effort—both the 24-hour advice and assistance provided to the contractors on site and the survey of the 400 buildings in the “restricted zone” that allowed everyone to return home within a few weeks. From that point on, SEAoNY had established itself as an important partner in NYC civil society.

***Building codes are constantly being updated/redeveloped/changed. Has your design approach ever been significantly altered as a result of the release of a new building code?***

Not really.

***What is your ideal breakdown between time spent in the office, in the classroom, and time spent in the field?***

I don’t spend enough time in the field. This is my summer’s resolution to amend that. Typically I spend about a third of the time working or teaching and writing and two-thirds on project-related work. Lately that project work has included a modest amount related to climate adaptation planning which overlaps with our research at Princeton.

***In a 2009 interview with “The Believer”, you stated “The most difficult thing to overcome in New York is the belief that mediocrity (in design) is inevitable”. In the decade that has passed since, do you still find that belief to be the status quo?***

When I started the New York office of Ove Arup & Partners in 1987, the senior partners there worried that it would be a difficult challenge competing with the eminent local structural engineering community. In fact, NYC was ready to embrace the more adventurous engineering represented by Arup and the later influx of Buro Happold, Schlaich Bergermann, Transsolar, and others. Part of this was the impact of globalization but also the emergence of a new generation of architects interested in material and tectonic experimentation. At that time, some of the older engineers (not those like Weidlinger and Robertson who had worked on the progressive architecture of the 60s) opined that there was not the budget in US projects that there were in Europe. The favorite example at the time was in airport design—contrasting US ones to those like Stansted in London and Kansai in Japan that were the onset of the boom in a new Victorian age of terminals. The irony then and even now is that the high quality architecture of those infrastructure projects is achieved at costs that are a fraction of the cost of our less inspired works here. The causes are complex and for another time, but real reform is still ahead of us.

***How important does an email have to be to warrant a weekend response?***

I am generally too quick to respond to emails.

***You can’t find your calculator. How good is your mental math?***

Quite good in fact. I try in meetings to beat my colleagues to a calculation. It usually takes them a while to find their calculator... I also practice mental math with my sons. Keeps senility at bay.

***What is the most important characteristic you look for in a potential new hire?***

Enthusiasm.

***Headphones in the workplace, yes or no?***

Do I have a choice?

***You go to a lunchtime meeting where food is provided. What are you most disappointed to see?***

Soda and Styrofoam cups.

***Some engineers wear neon, others prefer a suit and tie. How would you describe your approach to engineering fashion?***

A bolo tie.

***You have designed structures, taught in the classroom, conducted research, and written books. What is next on your to-do list?***

I’m not telling.

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