

cross sections

Magazine for the Structural Engineers Association of New York

2018 VOLUME 23 NO. 1

The view from the
WTC Observation Deck
during the
YMG Group
Networking Event



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The view from the WTC Observation Deck
during the YMG Group Networking event

Photo by Paige Sieffert

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President's Message

This issue of Cross Sections covers a variety of topics. Without one single theme to the magazine, I realized I can write about pretty much whatever I want, so I thought I'd write about why I love being a structural engineer. I've written this as a list because sometimes I really prefer lists to sentences.

Why I love being a structural engineer:

- Our main job is to design structures that keep people safe (and also keep them from feeling nauseous – no one likes a drifty building!)
- Structural engineering connects us to the world – no matter where I go, I see structures, whether buildings in other cities or even birds' nests and beaver dams in nature
- Our calculations, analysis models, and drawings can turn into a building like a school, library, or museum that can enrich hundreds or thousands of people's lives
- This one is specific to me – when I meet someone for the first time, they say, "Sara Steele – you have the most perfect name for a structural engineer!"
- I can walk down the street, point to a building and say "I designed that"
- I get to use my calculator every week
- Sometimes I wear a hard hat and climb around on scaffolding – and get paid for it!
- It is really fun to hit a button and watch the magnified deflections of your analysis model sway back and forth...
- I get to work with many different people with unique personalities and expertise - architects, contractors, owners, other kinds of engineers

I hope each of you loves being a structural engineer as much as I do. When you are feeling especially stressed out about work, making a list like this can be a great reminder of why being a structural engineer is so worthwhile.

Sara Steele



Editor's Message

Dear Friends and Readers,

We are so fortunate to live and work in a city so vast. There are a great many opportunities to network, explore, and learn here. In this issue we will recap a few of the recent events sponsored by SEAoNY or attended by SEAoNY members.

I know that it can be tough to make time for some of these events in our increasingly busy lives, but it is our hope that these articles will not only fill you in on an event you may have missed, but inspire everyone to get out there and participate themselves.

This issue also features (another) article on the use of drones in the building industry. Last year's Technology issue featured an article on the use of drones in building inspections. In this issue, we take a look at the use of drones from a legal perspective and the inherent risks you should be aware of.

We also embark on what I hope to be a recurring feature in the magazine: an interview with SEAoNY's honorary member. We hope you enjoy reading it as much as Joe clearly enjoyed answering our questions!

And finally, we at the Publications committee could use your help. If you have an idea for an article or are interested in writing one yourself, let us know! We can be reached at publications@seaony.org or stop by our next meeting for pizza, beer, and conversation. Happy reading!

Adam J. Kirk, PE

UPCOMING EVENT

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PRESIDENT'S BREAKFAST ROUNDTABLE - LEVERAGING TECHNOLOGY IN DESIGN AND CONSTRUCTION

PROJECT DESIGN WORKFLOW

Table Moderated by Doug Gonzalez, LERA

This session revealed many different approaches to how engineers structure their work. One table discussion revealed two prevalent approaches – invest in Building Information Modeling from the beginning of a project or delay its implementation for as long as possible. The use of BIM technology for creation of drawings was viewed by some as a huge challenge to efficient workflow – there are constant changes early in design that are unwieldy to consistently document. Other simple technology tools such as CAD and Bluebeam were put forth as best due to being nimble, low cost, and representing the appropriate work effort early in design. Because design drawings are fundamentally about communication, visually clear work product is very important and using platforms like Revit is challenging to get right every time.

Yet, everyone agreed that clients are pushing BIM use regardless as representing a standard practice to help achieve compression of project schedules and better coordinated documents. Some engineers embrace this with company philosophies to use BIM throughout, particularly for new buildings (although documenting existing conditions is best done early in BIM to help the team). They find that the prevalent teaching of technology platforms like Revit and analysis software in college produces newer engineers and staff that are much more comfortable with these skills. Coupled with sophistication in coding, some firms are exploiting 3D platforms to maximize flexibility of early documentation coupled with parametric design optimization. The key they say is to maintain open transparency vetted with standards and avoid black box scenarios. Some attempt to couple analysis and documentation but for the most part those design paths remain distinct among many engineering firms allowing for traditional quality assurance philosophies of experienced designers reviewing and checking the work of others.

The challenge is that the use of newer tech platforms requires those proficient in its use to summarize results so others can adequately review. The bottom line among all the table discussions was that technology is changing how we work. The most obvious is in communications with email, mobile phones, and texting. The rise of instantaneous communications is disrupting work-life balance more than it ever has and is the real source of anxiety among many in our community.

DESIGN TOOLS FOR EXISTING BUILDING WORK

Table Moderated by Kevin Poulin, Simpson Gumpertz & Heger
At our table, we discussed the leveraging of technology in the design of structural renovations. Many participants acknowledged that renovation work is highly constrained by existing conditions. During our discussion we focused on the ability and limitations of technology to improve our understanding of existing conditions and to assist us in understanding structural behavior and performance. The areas of our discussion included laser scanning, structural analysis, and construction monitoring.

Laser scanning technology can be used to quickly document existing conditions and to identify some areas of distress, such as large cracks or settlement. Some of the limitations discussed include the size of the point cloud file and how it makes the corresponding Revit model cumbersome. Others noted that laser scanning of architectural finishes is not effective and that probing should be done prior to the scan. Some are starting to use automated panoramic photography to complement data from point clouds.

The discussion about structural analysis focused on the differences between renovation work and new construction. Most firms have developed in house spreadsheets to analyze archaic structural systems

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and use commercially available software for the analysis of vertical expansions and full-gut renovations. Many participants also discussed the need for hand calculations to analyze unique connections or to verify results from commercial programs.

We finished our discussion with a conversation about construction monitoring. Structural engineers typically monitor buildings that are adjacent to construction sites, most of which are mandated by the New York City Building Code. Examples include use of Total Stations for automated monitoring of building movements and remote vibration monitoring using seismographs. Some stressed that engineers should be cognizant of cyclical building movements when analyzing trends in survey data. Others discussed the sensitivity of equipment, accidental tampering by building occupants, and troubleshooting of equipment malfunction. Beyond adjacent construction, other applications include monitoring of structural displacements during column load transfers or load testing.

NEW MATERIALS AND STRUCTURAL SYSTEMS

Table Moderated by Cristobal Correa, Buro Happold

Participants were quick to talk about some new materials and technologies that are appearing in our projects. Carbon fibers are materials which are used to strengthen existing concrete members are becoming commonplace even without a specific design code although there are DOB guidelines for use. There was also discussion regarding prefabrication which is again emerging as something that we will be seeing more and more of. Members were overall enthusiastic about new materials and techniques appearing in our profession, dealing with the risk of a something new and noting that in NYC we are frequently hampered by our local codes which are slow to evolve. (for the use of Cross Laminated Timber (CLT) for example). It was also noted that the process of learning of a new material or technology is frequently a source of interest and excitement and an opportunity for professional growth – often for the younger members of staff – in our offices

TECHNOLOGIES THAT FACILITATE CONSTRUCTION ADMINISTRATION

Table Moderated by Diana Zakem, Brookfield Properties

We started off with the mundane systems, for submittal tracking, RFI's, punchlists, submittal review, and document control. Collectively, people hated seeing the overdue indicators on those submittal and RFI logs! But we spoke about the hot contenders for construction administration (CA) tracking: Procure, Eclipse, Sage, Submittal Exchange, BIM 360 Conject (no!), Build Flow (no!). There were lots of pros and cons for each. Most users were not using the mobile app; however, I like the user-friendly interface of Procure's mobile app, almost better than their online interface.

Speaking of going mobile, we next spoke about the use of smart phones and tablets on site. Some participants had gone completely digital, and I mean ZERO paper. Very impressive. Others worked at companies where you can "check out" a tablet for a site visit that had everything you needed on it –Microsoft Word application with templates, DropBox with your drawings, etc. And still, others didn't use handheld devices at all, except to take photos at the job. Some people use a GoPro to take photos during extensive inspections.

Bluebeam's Studio feature received a lot of discussion time. Project teams often have the lead architect create a new Studio Session for each submittal review or maybe for key submittals that require multiple reviewers. Participants thought this was a good way to get the comments, but sometimes it can be used too much.

Lastly we covered coordination, BIM, and reviewing in 2D vs. 3D. 2D coordination is good for most items, but complex geometry might require 3D coordination. The issue with 3D coordination during design is making sure all major consultants have the same contractual requirements, or else what is the use when Arch and Struct are in 3D and MEPS is drawing in 2D? During CA, many projects are using 3D coordination. When you go to 3D coordination, is it an expectation that the clashes will work themselves out? Is there an issue with 3D modelers adjusting their drawings to resolve clashes? Often 3D coordination happens between structural trades and MEPs. There was also discussion of using 3D models for connection design and review. Some engineers have considered sharing their 3D analysis models with contractors, but most share them only for a Peer Review.



Young Member Group -- Night at the World Trade Center Observation Deck

BY PAIGE SIEFERT, STANTEC

On Wednesday, April 25th, the Young Members Group hosted a “Night at the World Trade Center Observation Deck.” About 100 engineers came out to network while atop the tallest building in the Western Hemisphere. While clouds initially obstructed the view, the poor visibility worked in our favor as SEAoNY had the entire observation deck to themselves. Attendees were also treated to a private talk about the structural engineering behind the WTC.

By the end of the night, the clouds lowered to reveal breathtaking views of the Empire State Building and other iconic Manhattan structures. Participants enjoyed informal networking, while others use the opportunity to point out and describe their notable projects to their peers as buildings like Hudson Yards started emerging through the clouds.

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FUTURE of DESIGN

BY SAMANTHA BRUMMELL, MURRAY ENGINEERING

Organizers Lee Franck and Powell Draper initiate the afternoon panel discussion.



Joe Tortorella explains IABSE and the upcoming 2019 IABSE Congress in NYC.

IN NEW YORK CITY: “INTERSECTIONS”

The second annual Future of Design NYC Conference was held on April 28, 2018. Future of Design (FoD) started in London in 2012. It is a conference sponsored by the International Association for Bridge and Structural Engineering (IABSE) that promotes collaboration amongst structural engineers, architects, artists and fabricators. This year's theme was “Intersections,” which many speakers interpreted as how different groups of people collaborate and interact. Approximately 170 people participated in this year's event, of which the majority were structural engineers/designers (55%), but the group also included students (16%), architects (10%), university faculty/researchers (3%), artists, fabricators and contractors.

The event began with a series of short presentations designed to highlight the conference theme. Knut Stockhusen from schlaich bergemann partner kicked off the morning session with a presentation about a number of stadiums using innovatively repurposed concepts, like temporary, “plug and play” mega stadiums. The idea stemmed from watching the ebb and flow of crowds for seasons all music festivals, which was adapted to create “pop-up” reusable modular structures.

Next, Lorena del Rio from RICA* Studio. She opened with a quote, “Architects cannot work in isolation.” Del Rio used examples of how people connect with fiction and ‘play the game’ with their false environment, like The Weather Project 2003. In the exhibit, artist seduces the viewers

with an artificial sun. She went on to use her firm's design of schools, which used partitions between classrooms with nooks for storage and play to encourage interactions.

Then Thorsten Helbig from Knippers Helbig spoke about his influences from Peter Rice, reminding the engineers, sometimes the goal is to “work incognito.” Rice was not always recognized for his contributions, but had been part of notable projects like the Sydney Opera House. Helbig featured his collaboration with Howeler and Yoon Architecture for the Collier Memorial in Boston, which emphasizes void space using Gustavino arches. He explained the structure's redundancy, including steel pins between stone pieces to ensure ductile failure. The project was constructed using a ‘backwards approach’ starting with the keystone to allow for maximum adjustment during installation.

Next, Chuck Hoberman presented on Origami-based deployable structures. Hoberman works with both Harvard University and the Wyss Institute, and like Helbig, touched on his influences from Peter Rice. He spoke about expandable, retractable and morphing elements that ‘push scales’, both large and small. One example was his design of the retractable petal roof for the new Mercedes Benz stadium. He has brought attention to a new class of structures using the concept of rigid balloons or bi-stable structures, exploring the uses of positive pressure and vacuums.



Omar Hamad prepares materials for his team's lifeguard station prototype.



Teams present their creations from the charrette, (left to right) Dorothy Brown, Ryan Miller, Sylvester Black, Gavin Daly, Sam Brummell and Evan Speer.

PHOTOS: PAUL LAROQUE L

Janet Echelman concluded the morning session with her serendipitous journey. While doing her Fullbright Fellowship, she was captivated by fisherman's nets in the wind, calling their motion a "choreography of a force we cannot control." She worked with engineers and fabricators to develop ropes that could resist wear from salt, UV and pollution. Echelman explained she enjoys working with engineers, finding that conversations start not with what she wants, but what is possible, which morphs into beautiful collaborations. She encouraged the audience to learn from tradition and apply those concepts in different ways. She always researches her clients and the net's surroundings, finding inspiration from brain waves during REM sleep or even maps of weather patterns around the globe. Autodesk created a software specifically for Echelman's net patterns, which calculates weights, diameters and stiffness of each element.

Echelman was joined by Alessandro Beghini from Skidmore, Owings & Merrill to present on the engineering behind the "Optimal Wheel," and his task to make the structure disappear. He explained some rope materials are stronger than steel, but they often make designers uncomfortable because they can be unreliable. Their team was forced to change their mindset to suit the challenge.

As attendees broke for lunch, they were able to interact with the sponsorship vendors: CastConnex, AISC and Taylor Devices Inc. Afterwards, participants regrouped for a panel discussion on "Collaboration through Competition". The

first question prompted panelist, "what's the magic" behind successful projects? Tom Carruthers from Dream the Combine opened explaining a collaboration is worth more than the sum of its parts, but that it may mean reinventing yourself through time. Ed Clark from Arup added a big part of successful collaboration is enjoying each other's company.

Moderators then asked how to choose collaborators and deal with changing relationships. Carruthers noted, people gain trust over time, but pitfalls are they can't get too comfortable. Collaborators need to have the confidence to challenge one another. Josh De Sousa and Nancy Hou from Hou de Sousa went on to add the importance of effective communications and seeking experts when venturing into unknown territory, such as foreign materials or construction methods.

Sinead Mac Namara from Syracuse University used her new book as an example for fostering collaboration in education. She paraphrased John Oschendorf stating many architects don't know what they don't know and engineers don't know what they do know. Martin Miller, a visiting critic at Cornell University, chimed in with his attempt to get 'Kinetic Facades' cross-listed with the engineering department. He stressed establishing a relationship. They both agreed, teams cannot have one person doing the entire project because members of mixed discipline teams have a specialized role. Students are forced to put their egos aside and feed on teammates' knowledge, similar to practicing professionals.

FUTURE of DESIGN



The organizing committee celebrates their second successful edition of FoD NYC.

Panelists were then asked to comment on resolving conflict. Carruthers said methods used with children can apply to adults, such as simple steps like identifying the problem, letting someone share their feelings and restating/confirming the issue. Miller elaborated language barriers and ineffective communication can exacerbate the problem. He suggested walking away, then reapproaching it with more information, such as sketches, models or other visual aids.

All panelists agreed, they tend to pursue technically, culturally and socially significant projects. The session concluded with a few words about what is important for successful collaboration. Responses included respect, identifying common goals, coming prepared to listen, being assertive when you need to be, listening to all options before creating opinions and being open-minded.

The last session of the day was a charrette. Attendees broke into teams to produce designs for temporary and interactive beach artwork for the annual Winter Station competition. Through the activity, participants were able to practice some of the concepts shared by the speakers for effective communication and collaboration.

The day ended with networking, allowing attendees to recap the event and make new connections. Several commented how they loved attending

because of the variety in participants and how while it's a short conference, there is so much to learn and gain from the experience. While the conference theme was intersections, recurring buzzwords were organic, modular, adaptable, and user experience and interaction. Attendees learned the value of crediting partners, how to effectively exploit the talents of interdisciplinary teams and manage relationships, all while being inspired by countless examples of successful collaborations.

The Future of Design Conference is a grassroots, bottom-up initiative created and shaped by young designers to inspire their peers and the wider built environment community. The conference takes an experimental and interactive approach to maximize the exchange of innovative ideas. The 2018 edition was led by Lee Franck from Guy Nordenson and Associates and Powell Draper from schlaich bergemann partner. Congratulations to the entire planning committee for another successful installment of FoD NYC. For more about this event, visit <https://fodnyc.org/>. If you'd like to get involved in upcoming IABSE Future of Design events, contact the planning committee through the website.

IABSE hosts bi-annual international symposia, of which the 2019 Congress will be hosted in NYC. "The Evolving Metropolis" theme will focus on societal needs such as creating infrastructure to last the next century, the future of housing for all income levels and techniques for sustainable and affordable structures. Visit <http://www.iabse2019.com/> for more information.

DRONES IN CONSTRUCTION – UTILITY & RISK

By: Richard T. Ward III



Associate at Welby, Brady & Greenblatt, LLP



In

the past few years, we have witnessed fast paced technological development in the area of civilian use of unmanned aircraft systems, commonly referred to as “drones”. While many may be familiar with drones as popular recreational toys, their commercial applications have quickly progressed, reaching all the way to the construction site. This development of drone technology has created new questions of utility and risk for those seeking to reap its benefits. Additionally, as the commercial use of drones has expanded, so too have the regulations relating to the commercial use of drones.

One of the most common current uses of drones, in the construction context, relates to project management and inspections. For instance, a daily morning flyover with one or more drones equipped with cameras could help track progress, as well as accuracy of work being completed. Images taken by the drones can be compared to As-Planned models to determine when and if something has gone right, or wrong, on a project. Drones could also be used to track occurrences on site during working hours and could be helpful in determining the cause of accidents. Drones could also perform flyovers at jobsites during non-

working hours to ensure there is no trespassing occurring at the jobsite. All of these functions can be accomplished with basic, lightweight drones, offering large benefits for low costs.

There are many other potential applications for drones that, while currently might be categorized as “space-age”, may not be as far off in the future as they seem. For instance, some large drones currently used in the military are capable of carrying heavy payloads. One could imagine the typical crane being replaced by a host of drones capable of quickly and efficiently transporting project materials directly to difficult-to-reach areas on the jobsite. Project duration, as well as environmental impacts, could potentially be greatly reduced through this technique. At some point, in the perhaps more distant future, drones could be used to fully accomplish certain project tasks, such as delivering and installing modular components, allowing completion of large modular projects at impressive speed. Most mind-boggling of all is the potential for single operators for multiple drones, or wholly unmanned operation of drones. Entire projects could be completed with a fraction of the previously required manpower.

DRONES IN CONSTRUCTION – UTILITY & RISK (continued)

By: Richard T. Ward III



Of

course, all of this innovation in the world of drones must be kept in check by government regulation as concerns about safety, privacy, and environmental impact are paramount in our society. As the use of drones becomes more commonplace, there is potential for great benefits in all of these areas. However, as the technology develops, and potential uses are pushed to their limits, government must keep a close eye on the progress to protect the public.

To date, this regulatory role has been assumed by the Federal Aviation Administration (FAA), which enacted regulations meant to strictly govern the use of drones in both commercial and recreational contexts. The basic regulations governing use of drones are codified in the Code of Federal Regulation. (CFR). For the purposes of this article, we will focus solely on the regulations applicable to commercial use of drones in construction, as well as what liability issues are presented by commercial use.

CFR 47 sets forth registration requirements for aircraft (including drones) and generally requires that any aircraft must be registered with the FAA. Building on CFR 47, the FAA issued a notice issued in 2007 entitled “Unmanned Aircraft Operation in the National Airspace System”. This notice required drone operators to obtain an FAA Special Airworthiness Certificate as required for commercial use of any other aircraft. In order to obtain a Special Airworthiness Certificate, an operator is required to submit information to the FAA meant to allow the FAA to ensure safety in the operation of the drone. This information includes: the intended use of the drone; the estimated number of flights the drone will undergo; estimated flight times; and the geographical area

over which the drone will be operated. The operator will also be required to submit detailed drawings or photographs of the drone intended for use. Finally, an onsite review of the drone and demonstration of its use may also be required.

Since the 2007 notice, the FAA, due to concerns over time and labor burdens placed on the FAA due to large numbers of applications, issued a December 2015 Notice entitled “Registration and Marking Requirement for Small Unmanned Aircraft”, which implemented a new registration process for certain drones. The new system allows drones classified as small (weighing less than 55 lbs.), to be registered electronically, for a fee of \$5. As such, the potential for employing drones of 55 lbs. or less on construction sites have improved greatly.

CFR 107 sets forth numerous operating requirements for drones.

Some highlights include requirements that:

- (1) all operators of drones for commercial purpose must obtain a remote pilot certificate,
- (2) a remote pilot in command be designated for any drone flight;
- (3) all flights occur during daylight;
- (4) an operator may only operate a single drone at any time;
- (5) the operator or visual observers must maintain line of sight of the drone at all times;
- (6) the drone shall not be flown at a height higher than 400 feet from the ground or, if flown from a structure, within 400 feet of the immediate uppermost limit of the structure; and
- (7) operation of the drone cannot interfere with airport traffic and/or operations.

Finally, there are many local city and state ordinances, both pending and enacted, dealing with the operation of drones for private and commercial purposes. The validity and effect of these ordinances are largely unknown as the federal government has already enacted comprehensive (potentially preempting) legislation. Ultimately, it would take a legal challenge to determine the limits of such ordinances. Accordingly, if possible, compliance with them is likely the safest option.

While the potential applications for use of drones are vast, as with most construction related activities, there is risk involved that will likely affect the content of insurance policies contractors using drones will need to obtain. Potential liability in connection with the use of drones in construction generally revolves around privacy and safety concerns. In terms of privacy, drones operate at heights which may allow line of sight to otherwise private areas such as high-rise apartment windows. This privacy violation could be exacerbated by the potential for cyber-attacks, providing unintended parties with access to such lines of sight. Most drones also currently make at least some amount of noise, and in certain cases can be quite loud. Accordingly, construction in residential areas could mean complaints from local constituents about the effects of drones on their ability to enjoy their homes. As for safety, drone use creates potential for serious injuries and/or property damage. For instance, if an operator loses control of a drone due to negligent use or maintenance of a drone or through some manufacturer or product defect, there is potential for a collision with persons, property, or even other aircraft. There is also the potential for drones causing contamination of protected areas through transference of pollutants.

As drones have only recently become more commonplace, and even more so in the commercial context, insurance coverage for the risk associated with their insurance policies is a bit of a grey area. Currently, it appears that the Insurance



Services Office Inc. (ISO) general form insurance policies currently exclude coverage for bodily injury and property damage related to use of drones (due to their classification as “aircraft”), with certain exceptions. However, under the generic ISO form, coverage for products liability injuries related to drone usage will likely be covered, as those forms lack an aircraft exclusion. The ISO form also appears to provide some coverage for certain invasions of right to privacy, but generally only to the owner, landlord and/or lessor. There is also apparent coverage for publication of material, for instance, any photos obtained from a drone-related cyber-attack. The ISO recently introduced some additional options for customizing its forms which can affect the risk allocation for drone related injuries by incorporating the use of the term “unmanned aircraft”. Until these issues are settled, the takeaway is that contractors, professionals and/or owners intending to use drones for their project must be mindful of contractual insurance requirements and/or risk allocation related to drone operations.

As the uses of drones in construction industry becomes more widespread and technology develops further, there will surely be expansion of federal, state and local legislation that governs their usage, as well as innovations in applicable insurance coverage. Still, regardless of the risks and restrictions, with all of the potential applications currently known and those to be developed in the future, now could be the time for the construction industry to embrace these useful machines. It is important that anyone in the construction industry that intends to utilize the drone technology be prepared to do so safely, and in accordance with federal and local laws.

INTERVIEW WITH SEAoNY HONORARY MEMBER JOE TORTORELLA

Questions By Phillip Bellis, Severud

How did you get started in the industry? My dad was an electrician. I was lucky to attend a High School (Sewanhaka) in Floral Park that had an architecture program. I wanted to be an architect but fell into engineering and the rest is history as they say.

What has been the most difficult challenge you have faced during your career? Going to school for eight years at night while working full time. When I was twenty, I dropped out of college and went to work for a family friend who owned a construction business. Terrible mistake. Then I landed in Bob Silman's lap in 1979 as a drafter and he insisted I go back to school, hence the 8 years of night school to finish 2 years of college.

Who was/is your most influential mentor? Need I say more? Bob Silman by far. An engineer is always learning, what is something that you have learned within the past year? I learned that we ought to be doing a better job of managing time on projects and have started a program to do just that.

What is the most common mistake you see young engineers make? They don't ask questions out of fear of being seen as not smart enough. Ask questions. If you are not sure of what you are being asked to do, don't be shy. Let your supervisor know. You will learn faster and save money doing it!

What are your thoughts regarding the recent surge of supertall construction in NYC? I am not a fan of what it does to the skyline quite frankly but that's an easy out as I believe most would say the same. I am encouraged by the methods being employed however.

New construction or a renovation, which do you prefer working on? I have flip flopped on this many times. Currently when I think back on my career, I think I had the most fun (yes it can be fun) working on major renovations where you could come up with on the spot decisions to solve complex problems in the field.

If not a structural engineer, what would you be doing? Always wanted to be a baseball player or a drummer as a child. Now I would say a professional golfer!

What has been your favorite SEAoNY event you have attended?

The golf outing (I bet you would have guessed that)

If you had to choose, what is your structural material of choice? Easy one....

steel. I never really got into concrete design as during the height of my design career; we did not do a lot of concrete.

Do you prefer a suit and tie or construction boots and a hard hat?

Definitely the latter. Even when in the office, I stopped wearing suits and ties years ago. If possible, I would wear shorts and flip flops in the office (sometimes I do on summer Fridays)

In regard to structural engineering, what is your biggest pet peeve? Not being

flexible. As engineers, we need to also understand the contractors side. Being flexible in our beliefs is paramount to being successful.

What are you looking forward to most in the upcoming months? The sun? No really,

what am I most looking forward to? I would have to say the development of the new principals we named last fall. It's great to see how they are stepping into their roles.

How many RFIs is one RFI too many? This one is tricky. We never had RFI's, in fact,

where the heck did they come from? Really, there should be zero RFI's if we all had the proper time to thoroughly coordinate our drawings. Per my recent SEAoNY lecture, we are all moving too fast, hence the myriad of RFI's.

How many cups of coffee does it take to get you through the day? One on my two

hour +/- drive in is a must. From there I am quite random. Some days a cup at 300pm, some days none. What I do like is an espresso with lunch when out or with dinner.

Which of the following best describes your personality: An A325 Bolt or a 5/16 Fillet Weld? Definitely an A325 bolt. I am

wound pretty tight and could use a snap off indicator when I get a little too tight.

Where are you most likely to be found at 5PM on a Friday? At my golf club sipping an

after-round martini in the summer. The rest of the year either at my desk or bolting for the door (did I mention a 2 hour +/- drive...usually more plus than minus)

When in doubt, CJP. Thoughts? Sometimes mis-specified, often mis-installed, often not inspected when it should be.

What is your favorite ACI 318-11 Code Section? Any one that simplifies design. I think as

engineers, we often overcomplicate things.

When it comes to music, classic rock or classical? I am a classic rock fan hands down. Beatles

above all. Van Morrison Billy Joel, John Mellancamp, Eric Clapton...and one of my all-time non-classic rock singers? Bob Marley. He may be the all-time number one. A funny side story...I was on an elevator in a courthouse once in a suit and tie and my phone rang. My ringtone at the time was AC/DC, All Night Long. A lawyer in the elevator took one look at me and she said, "I never would have guessed you for that" and left the elevator.

Do you know how to tie a bow tie? That is the quest in life. I have tried every avenue...Youtube, ask Jeeves, friends, a mirror...you name it. When it comes to tying a bow tie, I am a square peg looking for a round hole to fit in.

It's 3PM and you're hungry. What is your go-to snack? Nuts

Is Earth flat? Provide 3 facts to support your answer. The earth is round. Fact 1. I watched a

lot of NASA when I was a kid (By the way, did I say I wanted to be an astronaut?) and loved the look of the earth from the moon...a big round, not square, marble. Fact 2. It takes me hours to drive into work and even more to drive home on Friday nights. The earth must be round because I could not possibly take that long. I am sure I pass the same places many times. Fact 3. My father told me it was round, and he always gave me the best advice, hands down.

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