



THE STRUCTURAL ENGINEER

Techniques, Materials, and Design Considerations
For Strengthening and Repair of

Existing Concrete Structures

Although the analysis, repair and upgrade of existing concrete structures is somewhat of a “scientific art” that has been practiced for many years, it has evolved into a complex science that requires a blend of engineering, material science and construction perspectives. Concrete strengthening and repair projects may utilize traditional materials such as conventional cement-based and steel materials as well as advanced composite carbon materials (FRP’s) that are commonly used for aerospace applications. The techniques used to design and install these materials for upgrade applications are neither common to the engineering nor general construction industry which makes these projects even more challenging and complex than new construction.

This presentation will describe the typical causes, outward signs of distress, design strategies, techniques and materials used for repairing or strengthening concrete structures. The use of each technique will be illustrated through actual case studies. Case studies will cover various types of projects on structures such as chimneys, silos, vaults, circ pipes and transmission towers.

Jay Thomas is a Vice President of the Strengthening Division at STRUCTURAL. He has a 33 years of construction experience in the repair/strengthening of commercial and industrial facilities. He has been involved in over 1300 strengthening projects including 800 FRP strengthening projects. Jay is a graduate engineering of the University of Pennsylvania and is a member of ACI (American Concrete Institute) committees 440 (FRP) and ACI 437 (Strength Evaluation), and the International Concrete Repair Institute.

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MEETING INFO

| WHEN: | WHERE: | COST: | RSVP: | UPCOMING MEETINGS |
|---|---|---|--|--|
| 6:00 pm Social 6:30 pm Dinner 7:00 pm Program | HESS Engineering and Scientific Society 5430 Westheimer Houston, TX 77056 713.627.2283 | Members: \$25.00 Non-members: \$35.00 Student members & Non dinner guests \$10.00 | Click Here to register online. The deadline is 12:00pm, the Tuesday before | November 20, 2014 TBD December 18, 2014 TBD |

[CLICK HERE](#) TO REGISTER FOR THIS MEETING

President's Address

Steve Wilkerson, PhD, PE

Dear fellow Houston/Gulf Coast Chapter members: I thought I would take this opportunity to make sure that my fellow SEAOt chapter members know about the resources available on the NCSEA (National Council of Structural Engineers Associations) website. Of course, as a SEAOt member, you already receive STRUCTURE magazine, a monthly publication of NCSEA, our parent organization. But, if you browse the website, you will also find (among other things):

- Articles on SE licensure
- Information and study guides for the SE exam
- Links to reputable exam preparation resources
- A "Resource Guide" for engineers – this contains a lengthy list of references and sources of technical information
- A link to the ATC "Windspeed by Location" website – the online resource that is tied to the ASCE 7 windspeed map database
- A link to the "Career Center" – an online job placement resource specifically for structural engineers

NCSEA publishes about a half dozen technical books and publications that are for sale at a discount to members. In addition, members can purchase any of over 75 titles published by the ICC (International Code Council) at a discount.

Besides code documents, topics include seismic design, wood/concrete/steel/masonry design, geotechnical engineering, flood resistant design, a guide to fire safety in tall buildings, and many more. And the first printing of the 2015 IBC is out. There's nothing quite as satisfying as tossing out a couple of new code requirements to impress your boss!

NCSEA also has an extensive library of on-demand webinars as well as sponsoring live webinars about once a month. This is an excellent source of continuing education hours for licensed professional engineers. Webinars are available for a fee - ala carte or via subscription. This is the only national organization that manages such a program aimed specifically at licensed engineers practicing structural engineering.



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President's Address (continued)

Steve Wilkerson, PhD, PE

Finally, NCSEA hosts a major Annual Conference. This is a good opportunity to earn PDHs and network with others in your field at a national level. This year's conference was held in New Orleans in late September. The upcoming conference will be in Las Vegas – never a dull moment.

The web is a big place and there's a lot of cool stuff out there. Sometimes we forget to look in the most obvious places for valuable information. Be sure to take a look...

Thanks,
-Steve



"Houston Chapter SEAOt member Everett Baker receives a gift card from chapter President Steve Wilkerson. The prize was won in a random drawing of member survey respondents."

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Texas A&M Student Chapter Report

Kim Lyons

The Texas A&M University SEAoT Student Chapter has already had a pretty busy October. We hosted Joel Barron, P.E. and Bryan Tyson, E.I.T. from the Dallas office of Thornton Tomasetti. Joel and Bryan gave a presentation over some of the recent sports projects Thornton Tomasetti completed. Included in the presentation was TCU's Amon G. Carter Stadium, the redevelopment of SMU's Moody Coliseum, and the current sports project, the Minnesota Multi-purpose Stadium. The students really enjoyed the presentation.

TAMU SEAoT took 35 students on a field trip to Dallas on October 3rd. Hunt and Joiner hosted us. We went to the Hunt and Joiner office in Dallas where we got a tour of the office, lunch, and a tour of the Old Parkland project that is currently being constructed. The tour was amazing and the students were shown a lot. We are very thankful for companies like Hunt and Joiner that are so hospitable to students. Here is a picture of all the students at the project location.

We look forward to the Houston/Gulf Coast meeting this month. Let me know if you are interested in joining one of our meetings or sharing your engineering experience and expertise, please feel free to contact me at officers@seaot.tamu.edu. You can also like us on Facebook under Structural Engineers Association of Texas – TAMU Student Chapter.

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Secretary's Report

Tan Tran, PE

A belated welcome to our fellow engineers!

Last month's meeting was one of our typical meetings, with the familiar faces of frequent attendants and a few new occasional faces as well. The meeting was sponsored by Wiss, Janney, Elstner Associates, Inc. ; Thus, we were all able to enjoy a few drinks with our fellow engineers.

The meeting started a little late at 6:30pm, allowing everyone to network a little longer. Mr. Steve Wilkerson, reported that the membership survey results were in and he was quite pleased with the response as well as the participation rate.

In general, Mr. Wilkerson reported that the membership appeared to be satisfied with the meeting location and meeting time. Therefore we would not see any changes to that. There was not dissatisfaction with the content of the meetings either; an indication that Mr. Bustamante's efforts in securing the various speakers for our meetings has really paid off.

Mr. Wilkerson also reported that the main reason for members not being able to attend monthly meetings was just "being too busy". In a way, we were glad to know that was the case, and will continue our efforts to facilitate these educational meetings so that when you find time, you'd be sure that your time would not be wasted.

The meeting's speaker was none other than our Chapter's Vice President, Mr. Busamante. His topic was "Precast Concrete Parking Structures Evaluation and Repairs", an interesting topic for several members in the audience.

The chapter's board members were all in attendance that evening, and had the chance for a group picture to be included in this month's newsletter.

The meeting ended on time at 8:30pm.

As always, I would like to encourage you to plan to attend our next meeting. You'll always see some friendly faces welcoming you, have a good time networking with your fellow engineers and you may also learn something new. See you at this month's meeting!"

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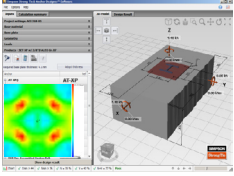


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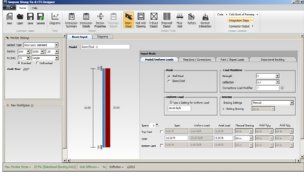
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| <u>Office</u> | <u>Name</u> | <u>Phone</u> | <u>E-mail (click to send)</u> |
|--------------------------|------------------|--------------|-------------------------------|
| President | Steve Wilkerson | 832.969.8641 | steveuw@ziasoftware |
| Vice President | Al Bustamante | 832.467.2177 | abustamante@wje.com |
| Secretary | Tan Tran | 713.868.1591 | tan.tran@cardno.com |
| Treasurer | Jonathan Warshaw | 832.467.2177 | jwarshaw@wje.com |
| Past President | Damon Brotherton | 713.702.9973 | d-brotherton@sbcglobal.net |
| Chapter Director (13-14) | Bob Lanser | 713.670.2468 | rlanser@poha.com |
| Chapter Director (14-15) | Larry Ickert | 832.244.5403 | lickert@excelmidstream.com |
| State Director (12-13) | Dennis Paul | 281.584.9300 | dpaul@paulengineering.com |
| State Director (14-15) | Damon Brotherton | 713.702.9973 | d-brotherton@sbcglobal.net |
| Alternate State Director | Joe Kallaby | 281.584.9300 | osi-jk@swbell.net |

2014 Committee Chairpersons

| <u>Committee</u> | <u>Chair</u> | <u>Phone</u> | <u>E-mail (click to send)</u> |
|--------------------------|--------------------|--------------|-------------------------------|
| Advisory | Jaynool Khayrattee | 713.664.0130 | jayk@matrixstructural.com |
| Scholarship | Paul Gugenheim | 832.309.5584 | paul@fiberwrap.com |
| Membership | Glen Smith | 713.664.0130 | glensmith@gmail.com |
| Program | | | |
| Student Affairs– TAMU | Stefan Hurlebaus | 979.845.9570 | shurlebaus@civil.tamu.edu |
| Student Affairs– Rice U. | Jamie Padgett | 713.348.2325 | Jamie.Padgett@rice.edu |
| Student Affairs– U of H | Mina Dawood | 713.743.2983 | nmdawood@uh.edu |
| Publicity | Lance Operhall | | operhall@gmail.com |
| Young Engineers | Chris Hill | 713.868.1591 | chris.hill@cardno.com |
| Advertising | Chris Hill | 713.868.1591 | chris.hill@cardno.com |
| Newsletter Editor | Jennifer Ju | 713.868.1591 | jennifer.ju@cardno.com |
| TAMU Student Ch. Pres. | Kimberly Lyons | 575.518.8256 | klyons@neo.tamu.edu |



"Left to Right: Chris Hill, Jennifer Ju, Steve Wilkerson, Joe Kallaby, Kimberly Lyons, Damon Brotherton, Al Bustamante, Tan Tran, and Jonathan Warshaw"