



STRUCTURAL ENGINEERS ASSOCIATION OF MICHIGAN (SEAMi) presents...

2017 STATEWIDE STRUCTURAL CONFERENCE

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|-------------------------|--|-------------------------|------------------------------------|-------------|-------|----------|-------|
| DATE AND TIME | May 11, 2017 from 7:15 AM to 8:15 PM (see below) Sign -in: 7:00 AM / 8:30 AM | | | | | | |
| LOCATION | Seminar will be held at MSU’s Kellogg Conference Center at 219 S. Harrison Rd., East Lansing, MI. Program held in Kellogg Auditorium [directions on p. 5] | | | | | | |
| PROGRAM SYNOPSIS | <p>MORNING SESSIONS :</p> <p>7:15 AM to 8:00 AM: Continental Breakfast</p> <p>7:15 AM to 10:15 AM: CRSI / Dr. Mike Mota Economical Design and Detailing of Reinforced Concrete Structures (1.5 hr) Vibrations of Reinforced Concrete Systems (1.5 hr)</p> <p>10:15 AM to 10:45 AM: Break in the Lincoln Room w/ Exhibits</p> <p>10:45 AM to 12:45 PM: ACI/ Dr. Khaled Nahlawi Mass Concrete (1 hr) Repair of Concrete Structures (1 hr)</p> <p>12:45 to 1:35: Lunch in the Lincoln Room w/ Exhibits</p> <p>AFTERNOON SESSIONS</p> <p>1:35 to 1:45: Welcome & Intro by Robert Downey, SEAMi President 2016-2017</p> <p>1:45 to 2:45: Jason Hoover: Lateral Framing Systems / Progressive Collapse (1 hr)</p> <p>2:45 to 3:45: Emily Guglielmo: Serviceability for the Practicing Engineer (1 hr)</p> <p>3:45 to 4:15: Break in the Lincoln Room w/ Exhibits</p> <p>4:15 to 5:15: Scott Walkowicz: Lap Splices in Masonry Walls (1 hr)</p> <p>5:15 to 6:15: Dinner/ Tour Exhibits A meal will be provided (Menu - Italian Buffet) During dinner newly elected SEAMi officers will be introduced with presentation of awards. <i>Note: Special diet requests for dinner or lunch (vegan, gluten-free and kosher)</i></p> <p>EVENING SESSIONS</p> <p>6:15 to 7:15: Andrea Reynolds: U of M Biological Sciences Building (1 hr)</p> <p>7:15 to 8:15: Matt Huizinga: Jeddah Tower Rising (1 hr)</p> | | | | | | |
| REGISTRATION | <p>✉ E-mail: wthayer@macmillanassociates.com</p> <p>✉ Mail checks to: MacMillan Associates, 714 E. Midland, Bay City, MI 48706</p> <p>Preferred Option to Register & Pay "online": go to SEAMi.org</p> <p>See detailed instructions for online registration on Page 5 or alternatively Mail payment by 4/27/17 or at the door. Make checks payable to “SEAMi.”</p> | | | | | | |
| FEES | <table border="0"> <tr> <td>SEAMi members (current)</td> <td>\$100 (includes NCSEA, CRSI & ACI)</td> </tr> <tr> <td>Non-members</td> <td>\$140</td> </tr> <tr> <td>Students</td> <td>\$ 35</td> </tr> </table> | SEAMi members (current) | \$100 (includes NCSEA, CRSI & ACI) | Non-members | \$140 | Students | \$ 35 |
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Sponsors: CRSI and ACI Lincoln Room All day long: particularly at breaks & lunch



Concrete Design Related Topics by CRSI..... Dr. Mike Mota

Economical Design and Detailing of Reinforced Concrete Structures (1.5 hr)

This presentation provides information on how to economically design and detail conventionally reinforced concrete members that comply with the provisions of the 2014 edition of ACI 318, Building Code Requirements for Structural Concrete. Practical and time-proven methods and guidelines have been compiled from various sources to assist designers in the design and detailing processes of a reinforced concrete structure. Numerous details and design aids are provided that will help in achieving overall economy while reducing design/detailing time.

Vibrations of Reinforced Concrete Systems (1.5 hr)

This discussion presents detailed information on how to select an appropriate flat plate, flat plate voided concrete, two-way joist, and wide-module floor systems for various vibration acceptance criteria. The main topics are (1) sources of vibration, (2) vibration acceptance criteria, (3) vibration characteristics of reinforced concrete floor systems, and (4) selection process.

Concrete Design Related Topics by ACI..... Dr. Khaled Nahlawi

Mass Concrete (1 hr)

Mass concrete is defined as any volume of concrete with dimensions large enough to require that measures be taken to cope with the generation of heat from hydration of the cement and attendant volume change to minimize cracking. But how does one predict whether mass concrete problems will occur and what steps should be taken? This presentation will discuss how to identify mass concrete, ACI 301 requirements pertaining to it, and good construction practices. Topics covered in this presentation will include:

- Examples of mass concrete structures
- How to identify mass concrete based on ACI's definition
- Factors influencing concrete temperature in mass concrete
- ACI 301 requirements for mass concrete

Repair of Concrete Structures (1 hr)

This presentation will introduce the ACI 562-16, "Code Requirements for Assessment, Repair, and Rehabilitation of Concrete Buildings and Commentary." This is the first U.S. code produced specifically for the repair of reinforced concrete. A new guide document for the code with additional information and project examples that help users interpret the code requirements will also be highlighted. Topics covered in this presentation will include:

- Why a repair code is needed
- The philosophy behind ACI 562
- How the code promotes consistency in repair design
- Recognizing repair construction challenges
- Significance of a quality assurance program for successful repairs
- How the code can save the owner money

Lateral Framing Systems / Progressive Collapse / Mr. Jason Hoover: SidePlate (1 hr)

Engineers will learn about "conventional" moment connections and problems that were exposed by the Northridge earthquake, as well as the resultant code changes in the years that followed. Attendees will also get an introduction to progressive collapse and PC mitigation concepts, how connection geometry and load transfer impacts overall frame performance, and how these framing selections impact the construction cost of the structure's lateral system.

Serviceability for the Practicing Engineer / Ms. Emily Guglielmo: Martin and Martin (1 hr)

Serviceability considerations are often subjective and historically building codes have been reluctant to impose clear serviceability criteria. However, serviceability issues are the primary cause of litigation in the construction industry. Structural engineers need to know how to design the buildings that not only withstand the code-required loads for strength limit states, but also meet a level of serviceability. This session will discuss specific code references for various material and systems, outline common industry practice procedures where codes are silent, and discuss the future of the codes as it relates to serviceability requirements.

Lap Splices in Masonry Walls / Mr. Scott Walkowicz: Walkowicz Consulting Engineers (1 hr)

U of M Biological Sciences Building / Ms. Andrea Reynolds: Smith Group JJR (1 hr)

Jeddah Tower Rising / Mr. Matt Huizinga: Thornton -Tomesetti (1 hr)

Construction of the 1000+ meter tall Kingdom Tower in Jeddah, Kingdom of Saudi Arabia is currently well underway with all tower piling and raft foundation complete and superstructure concrete reaching 200 meters in height. The lecture will focus on the significant technical engineering challenges of designing the next world's tallest building. A brief overview of the architectural and master planning scheme for the tower and the surrounding developments is presented as an introduction to this unique, ground-breaking project. Important aspects of the geotechnical site exploration program, piled raft foundation design and significant foundation-tower interaction studies are presented; along with long term settlement predictions, the completed pile load testing program, and ground seismicity studies. The superstructure frame is composed almost entirely of reinforced concrete walls and coupling beams. The structural system was developed based on the need for simplicity and repetition during the construction process. The concrete bearing wall system chosen is unique for ultratall tower schemes in that it relies on no outriggers or belt walls, no column transfers, very little differential shortening in vertical elements, and only 85 MPa concrete strength. The presentation will focus on the development of the tower structural system including historical precedents, the wind tunnel testing program and other unique aspects of the tower structural engineering design and construction planning. Particularly critical technical issues such as the prediction of vertical shortening due to the long-term creep and shrinkage of the concrete frame, and behavioral characteristics of the tower under lateral and gravity loadings are also highlighted. The project is scheduled for completion in late-2019.

Exhibitors: Lincoln Room All day long: particularly at breaks & lunch





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Instructions for Registration and Payment For Members or Non-Members

1. Go to <https://seami.org/>
2. Under "Upcoming Events" under the Mackinac Bridge click on "2017 SEAMi Spring Conference".
3. On the Event Page, click on "Register" near the bottom of the page.
4. Fill in your company e-mail address and then click "Next".
5. Choose your registration type based on your membership affiliation. Click "Next".
6. Fill out your registration information. First Name, Last Name, Company/Organization. Click "Next".
7. Choose if you would like to "Pay Online" (through PayPal).
8. Follow the prompts in PayPal to make your payment.
9. You may pay by check by selecting the "Invoice " tab.
10. Print your invoice and mail it and your check to Bill Thayer at the address above.

Directions to Kellogg Center 219 S. Harrison Rd., East Lansing, MI (517) 432-4000

From North (down US 27) Go to I-69, Go east on I-69 until you get to US 127 (about 1.5 mi.) Follow US 127 south to Trowbridge exit (part of I-496 exchange, about 6 miles south of I-69) Follow Trowbridge east one half mile. Turn left (north) on Harrison, go approx 0.8 mi, parking will be on your right and Kellogg Center will be just past the parking facility.

From West (on I-496, accessed from I-96 or I-69) On eastbound I-496 follow signs to Trowbridge as you approach US 127. Once on Trowbridge follow directions noted "from north".

From South (on US 127) Exit on Trowbridge, Approx. 3 mi. north of I-96, follow directions noted "from north"

From East (on I-96 or I-69) I-96 west to US 127 north to Trowbridge; Or I-69 west to US 127 south to Trowbridge; then follow directions noted "from north".