

# ACI Fall 2011 Convention

## Program Book



**BRIDGING**  
Theory & Practice



**October 16-20, 2011 Cincinnati, Ohio  
Millennium Hotel and Duke Energy Convention Center**



American Concrete Institute®

# Help Make Literacy More Concrete!

ACI will be accepting books for children in grades K-12 as well as monetary donations for the **Literacy Network of Greater Cincinnati (LNGC)**. Cash/check contribution can be made at the LNGC booth near the ACI Bookstore. Online donations can be made on the LNGC's Web site.

To learn more visit  
[www.lngc.org](http://www.lngc.org)



**Make a difference  
and donate today!**



# Table of Contents

## ACI Fall 2011 Convention

October 16-20, 2011

Millennium Hotel and Duke Energy Convention Center  
Cincinnati, OH

|   |                   |
|---|-------------------|
| ACI Board Committees and Chairs .....                         | 174               |
| ACI Board of Direction.....                                   | 2                 |
| ACI Convention Committee.....                                 | 174               |
| ACI Greater Miami Valley Chapter 2011 Board of Directors..... | 12                |
| ACI Greater Miami Valley Chapter Convention Committee .....   | 13                |
| ACI President's Welcome.....                                  | 3                 |
| ACI Registration.....   | 15                |
| ACI Spring 2012 Convention .....                              | 20                |
| ACI Sustaining Members .....                                  | 5                 |
| Concrete Mixer .....  | 58 and 155        |
| Contractors' Day Lunch .....                                  | 55 and 142        |
| Convention Sponsors.....                                      | 8                 |
| Daily Program.....  | 37                |
| Demonstrations.....   | 36, 113, and 141  |
| Event Details .....   | 75                |
| Exhibitor Floor Plan .....                                    | between 26 and 27 |
| Exhibitors .....  | 27                |
| Future ACI Conventions .....                                  | 20                |
| General Information.....                                      | 15                |
| International Lunch.....                                      | 41 and 80         |
| Maps .....  | between 26 and 27 |
| Mayor's Welcome .....   | 4                 |
| Membership Information .....                                  | 17                |
| Notable Concrete in Cincinnati and Vicinity .....             | 172               |
| Numerical Committee Meeting Listing .....                     | 74                |
| Opening Reception .....                                       | 44 and 92         |
| Opening Session .....   | 44 and 93         |
| Restaurants.....  | 18                |
| Session Attendance Tracking Form .....                        | after 174         |
| Student Competition.....                                      | 41 and 81         |
| Student Lunch .....   | 48 and 114        |
| Tours and Guest Events.....                                   | 21                |
| Transportation.....   | 19                |
| Where's That Meeting Room? .....                              | 26                |

# American Concrete Institute

## Board of Direction

### **President**

Kenneth C. Hover

### **Vice Presidents**

James K. Wight

Anne M. Ellis

### **Directors**

Dennis C. Ahal

Neal S. Anderson

Emmanuel K. Attiogbe

Khaled Awad

James R. Harris

Cecil L. Jones

Ronald Klemencic

David A. Lange

Denis Mitchell

Jack P. Moehle

David H. Sanders

Joseph C. Sanders

### **Past Presidents**

Florian G. Barth

David Darwin

Luis E. García

### **Executive Vice President**

Ronald G. Burg

# ACI President's Welcome

ACI members and guests: Welcome to my hometown of Cincinnati and the ACI Fall 2011 Convention!



I would like to sincerely thank each and every one of you—members, guests, and visitors—for attending the ACI Fall 2011 Convention. Each of you plays an important role in the success of every convention by bringing your questions, interests, insight, experience, enthusiasm, and dedication. In fact, the success and growth of ACI relies on its primary and most powerful asset—our members. ACI's Strategic Plan calls for developing camaraderie by creating “a place for everyone with a technical interest in concrete”—and the Cincinnati Convention is just such a place. By attending this exciting convention, you are helping ACI reach a strategic goal!

ACI and the Greater Miami Valley Chapter have worked hard to design a convention program that allows you to learn, contribute, and network in a professional environment. Convention highlights include the ACI Sustainability Forum, the Katharine and Bryant Mather Lecture Series during the Opening Session, the Student Pervious Cylinder Competition, the Student Project Competition Presentation, the Concrete Mixer, and much more. Whether you are attending committee meetings, taking in technical sessions, networking, or just plain enjoying time with friends, it is my hope that each of you will not only pick up something that will help in your day job, but also that you have some fun as well.

I am honored to share this week with each one of you. Again, I wish to thank you, our members, guests, and the ACI Greater Miami Valley Chapter for making this convention a success. I hope your time in Cincinnati is productive and memorable and that you have the opportunity to experience all that the city has to offer.

Kind regards,

A handwritten signature in cursive script that reads "Ken Hover".

Kenneth C. Hover  
ACI President

# City of Cincinnati



**Mark Mallory**  
*Mayor*

---

Office of the Mayor

October 2011

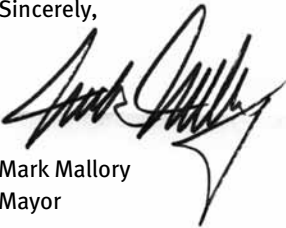
Dear American Concrete Institute Convention Attendees,

On behalf of the City of Cincinnati, it is my pleasure to welcome you to the 2011 American Concrete Institute Convention. Over 1500 people have traveled from all over the nation to not only network, but also to cooperate and share advancements in concrete technology and discuss concrete industry codes, specifications, and guides.

I am delighted to welcome you to the Queen City and look forward to sharing with you everything our city has to offer. I invite you to experience all that our city has to offer. You can watch a Cincinnati Reds game, experience the Cincinnati Pops Orchestra, or visit our exciting museums or parks. The possibilities are endless.

Once again, I thank you for coming to Cincinnati and wish you a successful convention.

Sincerely,



Mark Mallory  
Mayor

# ACI Sustaining Members



ACS MANUFACTURING CORPORATION

ACS Manufacturing Corporation



CECO Concrete Construction



Ash Grove Cement Company



CHRYSO, Inc.



Ashford Formula



Commercial Contracting Corporation



Baker Concrete Construction, Inc.



Concrete Engineering Specialists



Barrier-1 Inc.



The Chemical Company

BASF Corporation



Concrete Reinforcing Steel Institute



Buzzi Unicem USA



CTLGroup



Cantera Concrete Company



Dayton Superior

# ACI Sustaining Members



**EUCLID CHEMICAL**

The Euclid Chemical Co.



Keystone Structural  
Concrete, LLC



Fibercon International, Inc.

Francis Harvey & Sons Inc.



Kleinfelder



Lafarge North America



Lehigh Cement Co.



FUTURE TECH CONSULTANTS  
Construction Materials Engineering,  
Inspection & Testing Services

Future Tech Consultants



Lithko Contracting, Inc.



Golden Relief Resources LLC



Meadow Burke



W.R. Grace & Co.



W. R. Meadows, Inc.



Headwaters Resources, Inc.



Metromont Corporation



Holcim (US) Inc.



Mintz Levin



ICS Penetron International Ltd



# ACI Sustaining Members



MUNICIPAL TESTING

Municipal Testing

Operating Engineers  
Training Trust



Oztec Industries, Inc.



Portland Cement Association



Precast/Prestressed Concrete  
Institute



Schmitt  
Technical Services LLC

Schmitt Technical  
Services, Inc.



LM Scofield



Sika Corp.



S.K. Ghosh Associates, Inc.



STRUCTURAL Group



Structural Services, Inc.



Triad Engineering, Inc.



TWC Concrete Services LLC



Urban Concrete Contractors Ltd.



WACKER  
NEUSON

Wacker Neuson



Westroc, Inc.

# Convention Sponsors

The ACI Greater Miami Valley Chapter wishes to thank the following organizations for their donations to make the ACI Fall 2011 Convention a success.

Sponsors are listed as of 9/23/11.

**Golden Gate Bridge -  
\$20,000+**



American Concrete Institute  
Greater Miami Valley Chapter



**The Brooklyn Bridge -  
\$10,000+**



ANDERSON CONCRETE



**The George Washington  
Bridge - \$5,000+**



The Chemical Company

Concrete  
Engineering  
Specialists

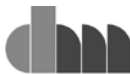


EUCLID CHEMICAL



Ruttura & Sons  
Construction Co., Inc.

**The Sunshine Skyway Bridge -  
\$2,500+**



DUGAN & MEYERS  
BUILDING LIFE

GATEWAY  
CONCRETE FORMING SERVICES, INC.



**Lend Lease**



**The New River Gorge Bridge -  
\$1,000+**



CAROLINAS CHAPTER



# Convention Sponsors

The ACI Greater Miami Valley Chapter wishes to thank the following organizations for their donations to make the ACI Fall 2011 Convention a success.

Sponsors are listed as of 9/23/11.

**The New River Gorge Bridge -  
\$1,000+ (cont.)**



ACI Quebec and Eastern Ontario Chapter



ACI South Texas Chapter



Steven Schaefer Associates, Inc.  
Consulting Structural Engineers

Cincinnati • Columbus

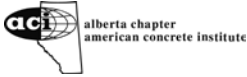


# Convention Sponsors

The ACI Greater Miami Valley Chapter wishes to thank the following organizations for their donations to make the ACI Fall 2011 Convention a success.

Sponsors are listed as of 9/23/11.

## The Roebling Bridge - \$500+



ACI Central Texas Chapter

ACI Dakota Chapter

ACI Eastern Pennsylvania and Delaware Chapter



mid-south chapter



National Capital Chapter



# Convention Sponsors

The ACI Greater Miami Valley Chapter wishes to thank the following organizations for their donations to make the ACI Fall 2011 Convention a success.

Sponsors are listed as of 9/23/11.



ACI RC Reece/Northwest Ohio Chapter



ACI San Diego International Chapter



ACI Southern California Chapter



MS Concrete Industries Association



# **ACI Greater Miami Valley Chapter 2011 Board of Directors**

## **President**

Dennis Knose, Baker Concrete Construction, Inc.

## **Vice President**

Mark Cooper, Sardinia Concrete

## **Past President**

Ryan Hoerst, Messer Construction

## **Treasurer**

Tom Dorsey, CMA Supply

## **Secretary**

John Davidson, Ohio Concrete

## **Directors**

Dan Dorfmueller, d. p. dorfmueller co. inc.

Rich Gardner, Cera Tech, Inc.

Robin Hahn, Advantage Group

Jason Huber, THP Limited Inc.

Jay Moore, Ernst Concrete

Jason Sander, HC Nutting

# ACI Greater Miami Valley Chapter Convention Committee

## **Chair**

Dan Dorfmueller, d. p. dorfmueller co. inc.

## **Contractors' Day**

Mike Breetz, HGC Construction Inc.

## **Exhibits**

Tom Dorsey, CMA Supply

## **Fundraising**

Mike Schneider, Baker Concrete Construction, Inc.

## **Guest Program**

Bud Ruffing, Hilltop Basic Resources

Debbie Dorfmueller

Carol Horst

## **Secretary**

Tom Kolber, Woolpert

## **Social Events**

Mike Hornback, LeHigh Cement Co.

## **Student Program**

Jim Down, Baker Concrete Construction, Inc.

## **Technical Sessions**

Gregory Wagner, THP Limited Inc.

## **Treasurer**

Bud Ruffing, Hilltop Basic Resources



## ACI's Career Center

ACI's Online Career Center brings together great job opportunities and great candidates.

This job search engine is specifically targeted to the concrete industry.

- **Easy online job management**
- **Resume searching access**
- **Company awareness**
- **FREE Student Internships**

Don't miss this unique opportunity to be seen by an exclusive audience of the industry's best and brightest! Visit **[www.concrete.org](http://www.concrete.org)**.



American Concrete Institute®  
*Advancing concrete knowledge*



# General Information

**C = Duke Energy Convention Center** **M = Millennium Hotel**

## ACI REGISTRATION

**C-BALLROOM FOYER**

ACI staff is available to answer your convention questions at the ACI Registration Desk during the following hours:

|           |                    |
|-----------|--------------------|
| Saturday  | 2:00 pm - 6:00 pm  |
| Sunday    | 7:30 am - 5:00 pm  |
| Monday    | 8:00 am - 5:00 pm  |
| Tuesday   | 8:00 am - 5:00 pm  |
| Wednesday | 8:00 am - 12:00 pm |

## Name Badges

ACI uses color-coded name badges to identify attendees. Name badges are as follows:

|                  |              |
|------------------|--------------|
| Member:          | Blue         |
| Attendee:        | Black        |
| Fellow:          | Green        |
| Honorary Member: | Red          |
| Staff:           | Orange       |
| Guest:           | Tan          |
| Student:         | Green Ribbon |

## ATTENTION ACI ATTENDEES!

First-time convention attendees have a “Convention #1” ribbon on their name badge. Please welcome them to the convention!

## SCHEDULE CHANGES

**ACI REGISTRATION**

Cancellations, additions, and location changes to the convention schedule will be posted daily on a monitor in the exhibit area at the Duke Energy Convention Center.

The Meeting Schedule, My Schedule, Sessions, and Future Conventions is now available from your mobile phone. Type **mobile.concrete.org/convention** into your mobile phone’s internet browser and you will find convention information right at your fingertips.



Follow us on Twitter! Don’t miss out on important convention announcements and updates! Follow the ACI Convention on Twitter at **#aciconvention** for the latest information. To sign up for Twitter, please visit **<https://twitter.com/signup>** and follow the instructions.

# General Information

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

## EMERGENCIES

In the event of an emergency, we kindly request that you do NOT dial 9-1-1. Please go to the nearest house phone to contact the operator by dialing “0” or security at extension “220” at the **Millennium Hotel**. In the **Duke Energy Convention Center**, report emergencies to ACI Registration or by calling 513-419-7323 to reach security.

## REFRESHMENT BREAKS

### C-BALLROOM FOYER

Beverages are available courtesy of ACI during the following hours:

|                |   |
|----------------|---|
| Saturday       | Soda: 2:00 pm - 5:00 pm   |
| Sunday-Tuesday | Coffee and pastries: 7:00 am - 10:00 am<br>Lunch concession: 11:00 am - 3:00 pm<br>Soda: 12:00 pm - 3:00 pm |
| Wednesday      | Coffee and pastries: 7:00 am - 10:00 am<br>Lunch concession: 11:00 am - 3:00 pm                             |

## TASTE OF CINCINNATI

### C-BALLROOM FOYER

The ACI Greater Miami Valley Chapter will be hosting a complimentary beer and wine tasting in the **C-BALLROOM FOYER** on Monday from 4:30 pm to 5:30 pm.

## WATER STATIONS

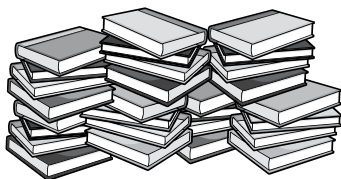
In an attempt to lessen the amount of bottled water thrown away during each convention, ACI has chosen not to provide bottled water to attendees. As a replacement, water stations will be placed throughout the meeting space for you to enjoy.

## ALCOHOL POLICY

Nonalcoholic beer and soft drinks are available at all ACI-sponsored receptions. The legal drinking age in Cincinnati is 21.

# General Information

**C = Duke Energy Convention Center** **M = Millennium Hotel**



## **ACI BOOK DRIVE**      Collection bin located near **C-ACI BOOKSTORE** **Making Literacy More Concrete!**

ACI will be conducting a book drive during the ACI Fall 2011 Convention. ACI is asking that each attendee bring a new or gently used book to the convention for children in grades K-12. **Book and monetary donations** can be made at the **DUKE ENERGY CONVENTION CENTER** near the ACI bookstore during open exhibit hours.

Donations will be given to the Literacy Network of Greater Cincinnati. Literacy Network of Greater Cincinnati is a nonprofit organization that serves as the contact center for literacy programs in the tri-state area (Ohio, Kentucky, and Indiana). The organization works with a coalition of more than 100 literacy provide agencies and more than 30 schools to improve lives throughout the region. They also provide special classes for adults and children with profound reading difficulties. **Help make a difference by donating today!**

## **ACI BOOKSTORE**      **C-BALLROOM FOYER**

Visit the ACI Bookstore to receive 10% off publications and learn how to win a *2011 Manual of Concrete Practice* CD during the following hours:

|                |                    |
|----------------|--------------------|
| Saturday       | 2:00 pm - 6:00 pm  |
| Sunday-Tuesday | 8:00 am - 5:00 pm  |
| Wednesday      | 8:00 am - 12:00 pm |

## **ACI CAREER CENTER**      **C-BALLROOM FOYER**

Looking for a job or an employee? Visit the ACI Bookstore to view ACI's Online Career Center. This job search engine is specifically targeted to the concrete industry. Job seekers, you'll have an opportunity to post your résumé and to view, apply for, and save available jobs. Currently there are approximately 100 jobs listed in the ACI Career Center. Employers, you'll have the opportunity to post job openings, post internships FREE of charge, and target the individuals you want to attract.

## **MEMBERSHIP INFORMATION**      ACI Bookstore - **C-BALLROOM FOYER**

To learn MORE about the new ACI membership benefits and how to become a member, visit the ACI Bookstore.

# General Information

**C = Duke Energy Convention Center** **M = Millennium Hotel**

## **CYBER STATIONS & WIRELESS HOT SPOTS** **C-BALLROOM FOYER**

Stay connected to home and work! Take advantage of the Cyber Stations and FREE wireless hot spots available in the exhibit area during the following hours:

|                |                   |
|----------------|-------------------|
| Saturday       | 2:00 pm - 6:00 pm |
| Sunday-Tuesday | 8:00 am - 5:00 pm |
| Wednesday      | 8:00 am - 2:00 pm |

To access the wireless connection, look for **ACI Cybercafe 1**, **ACI Cybercafe 2**, **ACI Cybercafe 3**, or **ACI Cybercafe 4** in your network connections.

## **MEETING SPOT** **C-BALLROOM FOYER**

Convention attendees are encouraged to visit the meeting spot for coffee or lunch and to meet first-time attendees and other convention attendees on Monday and Tuesday, 8:00 am - 8:30 am and 12:00 pm - 1:00 pm. Lunch items will be available for purchase from 11:00 am to 3:00 pm daily.

## **LOCAL INFORMATION –**

### **ACI Greater Miami Valley Chapter** **C-BALLROOM FOYER**

ACI Greater Miami Valley Chapter members will be happy to answer general convention questions and provide information about the local area. Stop by their information desk during the following hours:

|                |                   |
|----------------|-------------------|
| Saturday       | 2:00 pm - 6:00 pm |
| Sunday-Tuesday | 8:00 am - 5:00 pm |

## **RESTAURANTS**

### **DUKE ENERGY CONVENTION CENTER**

#### **ACI Concession Stand** **C-BALLROOM FOYER**

A concession stand will be set up in **C-BALLROOM FOYER** Sunday through Tuesday, 11:00 am - 3:00 pm, for lunch. Sandwiches, salads, fruit, and other grab-and-go items will be available for purchase.

#### **Espresso Café**

Enjoy a refreshing coffee drink, beverage, or light snack from this café that proudly brews Starbucks' brand coffee. Open Sunday through Wednesday 7:00 am - 3:00 pm. Please note that the café is subject to close earlier, depending on demand.

# General Information

**C = Duke Energy Convention Center** **M = Millennium Hotel**

## RESTAURANTS (cont.)

### MILLENNIUM HOTEL

#### Bistro on Elm Restaurant and Bar

Enjoy American favorites from this Cincinnati restaurant. Good for a casual breakfast, lunch, or dinner. Open weekdays; Breakfast: 6:30 am - 11:00 am (Mon.-Fri.); Lunch: 11:00 am - 2:00 pm (Mon.-Fri.); Dinner: 5:00 pm - 10:00 pm (Sun.-Thur.). Open weekends; Breakfast: 6:30 am - 12:00 pm (Sat.-Sun.); Lunch: 12:00 pm - 2:00 pm (Sat.-Sun.); and Dinner: 5:00 pm - 11:00 pm (Fri.-Sat.).

#### Bistro on Elm Bar and Lounge

Stop by the lobby bar for snacks, sandwiches, appetizers, and drinks with colleagues and friends. Open Sunday through Thursday from 11:00 am to 10:00 pm and Friday - Saturday from 11:00 am to 11:00 pm.

#### Room Service

Room service is available at the Millennium Hotel daily from 6:30 am to 11:00 pm.

## TRANSPORTATION

### Airport Shuttle

Cincinnati Specialty Tours offers transfer service 7 days a week, 24 hours a day to and from the Cincinnati/Northern Kentucky International Airport to downtown Cincinnati for \$27.50 U.S. per person round trip (if advance reservations are made by October 1); \$30 round trip after 10/1/11. Service is also available to/from Dayton International Airport for \$135 for 1-4 people. Advance reservations are required. To purchase your shuttle ticket in advance, please call Cincinnati Specialty Tours at (513) 300-1222.

### Taxis

Taxi cabs are available outside the Millennium Hotel. The rate for a taxi to the airport is approximately \$27 one way.

## PHOTOGRAPHS/VIDEO

ACI will take photographs and video during the ACI Fall 2011 Convention and reproducing them in ACI educational, news, or promotional material—whether in print, electronic, or other media—including the ACI Web site. By participating in the ACI Fall 2011 Convention, you grant ACI the right to use your name, photograph, and biography for such purposes. **Please Note: Photography, audio, and videotaping a presentation or speaker is prohibited without the speakers' prior written consent.**

# General Information

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

## SESSION ATTENDANCE TRACKING FORM

The Session Attendance Tracking Form found after page 174 can be submitted to state boards that allow self-reporting of Continuing Education activities as evidence of participation. In most cases, one contact hour is equal to one Professional Development Hour (PDH). Check with your state board for acceptance criteria.

## SESSION HANDOUTS ON DEMAND

Handouts are available from speakers who have elected to provide and post them to the ACI Web site. Stop by the Cyber Café or go to [www.aciconvention.org/handouts](http://www.aciconvention.org/handouts) to download or print a copy of the handouts for the sessions you plan to attend. If you do not find a handout for a particular session, please contact the speaker for more information.

## SPEAKER READY ROOM

**C-210**

The Speaker Ready Room is available to moderators, speakers, and committee Chairs during the following hours:

|                  |                   |
|------------------|-------------------|
| Saturday         | 2:00 pm - 6:00 pm |
| Sunday           | 7:00 am - 7:00 pm |
| Monday & Tuesday | 7:00 am - 6:00 pm |
| Wednesday        | 7:00 am - 3:00 pm |

All speakers are requested to check in at the Speaker Ready Room 1 day prior to their session to ensure that:

- ACI has downloaded their presentation on the network in the session rooms; and
- Speakers' session handouts are downloaded onto the ACI Web site.

## ACI SPRING 2012 CONVENTION

**C-BALLROOM FOYER**



Mark your calendars for the ACI Spring 2012 Convention in Dallas, TX, March 18-22, 2012, at the Hyatt Regency Dallas.

Stop by the ACI Dallas Chapter Desk Saturday through Tuesday to learn more about the convention and Dallas.

# Tours and Guest Events

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

*Tour tickets may be purchased until 24 hours prior to the event, based on availability.*

**All tours will depart from the Millennium Hotel Main Lobby.**

## Sunday - Wednesday

### ★ Guest Hospitality

|                       |                    |                     |
|-----------------------|--------------------|---------------------|
| Continental Breakfast | 7:00 am - 10:00 am | <b>M-CROSSROADS</b> |
| Guest Lounge          | 10:00 am - 5:00 pm | <b>M-CARDINAL</b>   |

**Use the ticket behind your name badge to gain entry to Guest Hospitality.** You must be a registered guest to attend.

## Sunday, October 16, 2011

### ★ Guest Overview **M-CROSSROADS**

**8:00 am - 9:00 am**

Acquaint yourself with the week ahead! You'll also get a preview of the guest programs for the Spring 2012 Convention in Dallas, TX, and the Fall 2012 Convention in Toronto, Ontario, Canada and changes to the convention being made beginning spring 2013.

### ✓ Queen City Tour

**\$95.00**

**9:00 am - 1:00 pm**

During the first 40 years after its founding, Cincinnati experienced spectacular growth; and by 1820, citizens were referring to it as "The Queen City." This tour will give attendees a historical and iconic look of the city of Cincinnati. Stops will be made at Fountain Square, Great American Ball Park, Paul Brown Stadium, and the very unique City Hall. Then you're off to the Cincinnati Museum Center at Union Terminal, the historic Findlay Market, and the famous Krohn Conservatory. Plenty more stops will be made on this tour, including a stop at the Cincinnati Art Museum for a special lunch.



✓ = Separate fee required

★ = Registered guest event only

# Tours and Guest Events

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

*Tour tickets may be purchased until 24 hours prior to the event, based on availability.*

All tours will depart from the **Millennium Hotel Main Lobby**.

**Monday, October 17, 2011**

✓ **Jeremiah Morrow Bridge**

**Technical Tour**

**\$68.00**

**7:00 am - 11:45 am**

On this tour you will head to Warren County, Ohio, for a technical tour of the Jeremiah Morrow Bridge replacement. The existing bridge carries I-71 over the Little Miami River and consists of twin structures constructed of cantilever steel deck trusses. Built in 1964, it is the tallest bridge in Ohio, standing 240 ft high, and it is also one of the longest

at 2230 ft. The bridge is currently undergoing a complete reconstruction, with the existing twin steel bridges being replaced with twin cast-in-place concrete segmental box structures using the balanced cantilever method of construction. This tour will give you an inside look at the construction of the replacement structures that cross a National Scenic River and Valley.



✓ **Northern Kentucky Tour**

**\$60.00**

**9:00 am - 1:00 pm**

Make your way across the Ohio River to explore Covington, Kentucky. Stops will be made at many recognizable and historic locations in Covington, including Cathedral

Basilica; the World Peace Bell; historic Millionaires Row; and Newport on the Levee, a popular tourist attraction featuring multiple restaurants, live bands, an aquarium, and an array of shops. Guests will have the opportunity to eat lunch at their leisure at one of the many restaurants at Newport on the Levee.



✓ = Separate fee required

★ = Registered guest event only



# Tours and Guest Events

**C = Duke Energy Convention Center** **M = Millennium Hotel**

*Tour tickets may be purchased until 24 hours prior to the event, based on availability.*

All tours will depart from the **Millennium Hotel Main Lobby**.

## Monday, October 17, 2011 (cont.)

### Walking Tour of Paul Brown Stadium

**FREE**

**2:30 pm - 5:00 pm**

A presentation of the stadium construction will be given, followed by a walk on the field and tour of the facility. Pass a football and take some photos. This tour is open to the first 100 individuals who preregister. Paul Brown Stadium is walking distance from the Duke Energy Convention Center. Comfortable shoes are recommended.



### ★ Guest Social

**M-BRONZE A**

**3:30 pm - 5:00 pm**

Please join Mrs. Hover for light refreshments. This is a wonderful opportunity to get to know other registered guests and enjoy a refreshing break! A guest name badge is required to attend this event.

### ✓ Riverboat Cruise and Dinner on the Ohio River \$110.00 U.S. per person

**5:45 pm - 10:00 pm**

Take in the sights and sounds along the Ohio River with friends, colleagues, and other convention attendees on a dinner riverboat cruise. This will be an evening of great food, music, and fun that you won't want to miss. Transportation will be provided from the Millennium Hotel to the boat dock. Buses will begin boarding at 5:45 pm.



✓ = Separate fee required

★ = Registered guest event only

# Tours and Guest Events

**C = Duke Energy Convention Center** **M = Millennium Hotel**

*Tour tickets may be purchased until 24 hours prior to the event, based on availability.*

All tours will depart from the **Millennium Hotel Main Lobby**.

## Tuesday, October 18, 2011

### ✓ Lebanon Tour

**\$96.00 U.S. per person**

**9:00 am - 3:30 pm**

Travel 45 minutes north of Cincinnati to Lebanon, Ohio, which has recently become one of Ohio's top tourist destinations. You will dine at the famous Golden Lamb Restaurant and visit quaint shops. Then you'll visit the historic Glendower Mansion, located on a hill overlooking downtown Lebanon—one of the finest examples of residential Greek revival architecture found in Ohio. Finally, you'll visit the Premium Outlets, which offer you an afternoon of exciting bargains from 100 designer and specialty shops.



## Wednesday, October 19, 2011

### ✓ Taft Museum and Taft Home Tour

**\$95.00**

**9:00 am - 1:00 pm**

Tour the home of William Howard Taft, the 27th President of the United States, where he was born and lived for 27 years. Built in the 1800s, this historic home was considered one of the most elegant and exquisite homes in Cincinnati. Following this tour, you will be taken on a tour to the Rookwood Pottery Restaurant, home of the original Rookwood Pottery Kilns. The kilns are still in the restaurant and used in a very unique way. You will then be treated to lunch at the restaurant. After lunch, you'll make your way to the Taft Museum of Art, originally the home of President Taft's half-brother Charles Taft and his wife Anna, both avid art collectors and artists. In 1927, Anna and Charles gave their collection of 690 works of art to the city of Cincinnati. Following their death, the museum was established in their honor.

✓ = Separate fee required

★ = Registered guest event only

# Tours and Guest Events

**C = Duke Energy Convention Center** **M = Millennium Hotel**

*Tour tickets may be purchased until 24 hours prior to the event, based on availability.*

**All tours will depart from the Millennium Hotel Main Lobby.**

## ✓Wright-Patterson Air Force Base Tour

**\$85.00**

**9:00 am - 3:00 pm**

Travel to Dayton, Ohio (approximately 60 minutes north), the home of aviation that boasts the famous Wright Brothers, who are credited with the invention of the airplane as we know it in America today. There you will see everything from aircrafts to missiles, including a stealth bomber and a presidential aircraft. You will see space shuttle aircrafts, missiles, and a great deal more. This historic landmark location is home of the Wright-Patterson Air Force Base and the origins of flying in America. Guests may enjoy lunch at their leisure in the museum. Comfortable shoes are recommended.



✓ = Separate fee required

★ = Registered guest event only

# Where's That Meeting Room?

## C = Duke Energy Convention Center

|                  |           |
|------------------|-----------|
| C-200            | 2nd Floor |
| C-201            | 2nd Floor |
| C-202            | 2nd Floor |
| C-203            | 2nd Floor |
| C-204            | 2nd Floor |
| C-205            | 2nd Floor |
| C-206            | 2nd Floor |
| C-207            | 2nd Floor |
| C-210            | 2nd Floor |
| C-211            | 2nd Floor |
| C-212            | 2nd Floor |
| C-230            | 2nd Floor |
| C-231            | 2nd Floor |
| C-232            | 2nd Floor |
| C-233            | 2nd Floor |
| C-234            | 2nd Floor |
| C-235            | 2nd Floor |
| C-236            | 2nd Floor |
| C-237            | 2nd Floor |
| C-238            | 2nd Floor |
| C-250            | 2nd Floor |
| C-251            | 2nd Floor |
| C-252            | 2nd Floor |
| C-260            | 2nd Floor |
| C-261            | 2nd Floor |
| C-262            | 2nd Floor |
| C-263            | 2nd Floor |
| C-264            | 2nd Floor |
| C-BALLROOM FOYER | 3rd Floor |
| C-GRAND A        | 3rd Floor |
| C-JUNIOR A       | 3rd Floor |
| C-JUNIOR B       | 3rd Floor |
| C-JUNIOR C       | 3rd Floor |
| C-JUNIOR D       | 3rd Floor |

## M = Millennium Hotel

|                       |           |
|-----------------------|-----------|
| M-456 CONFERENCE ROOM | 4th Floor |
| M-464 BOARD ROOM      | 4th Floor |
| M-ATRIUM              | 2nd Floor |
| M-BRONZE A            | 2nd Floor |
| M-BRONZE B            | 2nd Floor |
| M-CABANA A            | 4th Floor |
| M-CABANA B            | 4th Floor |
| M-CARDINAL            | 4th Floor |
| M-COLONNADE A         | 2nd Floor |
| M-COLONNADE B         | 2nd Floor |
| M-COUNCIL             | 4th Floor |
| M-PAVILION A          | 2nd Floor |
| M-PAVILION B          | 2nd Floor |
| M-PORTICO             | 4th Floor |
| M-SALMON BOARD ROOM   | 4th Floor |
| M-STATESMAN           | 4th Floor |

# Exhibitors

Exhibitor Listing as of 9/23/11

## Exhibits

**C- BALLROOM FOYER**

The ACI Greater Miami Valley Chapter and the American Concrete Institute wish to thank all exhibitors for their participation in and support of the ACI Fall 2011 Convention.

## Exhibit Hours

Sunday 8:00 am - 5:00 pm

Monday 8:00 am - 5:00 pm

Tuesday 8:00 am - 5:00 pm

## Airplaco Equipment

**Booth #37**

Based in Cincinnati, Airplaco is a manufacturer of shotcrete, gunite, grouting, and masonry equipment. For more information, go to [www.airplaco.com](http://www.airplaco.com).

## American Engineering Testing, Inc.

**Booth #32**

American Engineering Testing, Inc. (AET) is a consulting engineering company offering geotechnical, environmental, and construction materials and forensic services. AET is an employee-owned corporation that provides national services from offices throughout the upper Midwest, Florida, Idaho, and Louisiana. Typical services include geotechnical exploration and engineering, construction materials, and concrete and masonry services. The booth will feature AET's concrete services including, but not limited to, monitoring concrete placement, documenting plastic concrete properties, casting specified test specimens, strength testing, performance testing, locating embedded reinforcing steel, chloride-ion concentration, and mixture designs. For additional information, visit [www.amengtest.com](http://www.amengtest.com).

## Baker Concrete Construction, Inc.

**Booths #34 & 35**

Baker Concrete Construction, Inc. is one of the nation's leading concrete construction firms, specializing in all types of cast-in-place concrete construction. Through 40 years of construction experience, Baker is qualified to handle any concrete construction project from commercial office buildings to heavy industrial power plants, including forming, reinforcing, placing, and finishing of foundations, slabs, structures, or virtually any other concrete structure. Baker operates throughout the United States and the Caribbean with a commitment to developing concrete solutions from preconstruction through completion. To learn more about Baker Concrete Construction, Inc., go to [www.bakerconcrete.com](http://www.bakerconcrete.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **BASF Construction Chemicals, LLC**

**Booth #17**

BASF's Construction Chemicals division is the worldwide supplier of chemical systems and formulations for the construction industry. The North American Construction Chemicals Division of BASF is comprised of four business lines that offer products and solutions primarily for commercial, residential, industrial, and infrastructure construction, improving durability, water resistance, energy efficiency, safety, and aesthetics. BASF's innovative products and solutions help make products better. Contact BASF Construction Chemicals at (800) 628-9990 or visit [www.masterbuilders.com](http://www.masterbuilders.com).

## **Burgess Pigment Company**

**Booth #13**

Burgess produces OPTIPOZZ highly reactive metakaolin, a white supplementary cementitious material that contributes to strength development and durability in concrete. The use of a small percentage of OPTIPOZZ in a mixture design will decrease ingress of harmful chemicals, improve finishability, reduce efflorescence, mitigate ASR, and assist in shrinkage resistance. For additional information, visit [www.burgesspigment.com](http://www.burgesspigment.com).

## **CEMEX**

**Booths #22 and 23**

As a growing global building-solutions company, CEMEX produces, distributes, and markets cement, ready mixed concrete, aggregates, and related building materials in more than 50 countries. CEMEX works to provide products of consistently high quality and reliable service to customers and communities around the world. CEMEX advances the well-being of those they serve through their unwavering focus on continuous improvement and their efforts to promote a sustainable future. For more information, visit [www.cemex.com](http://www.cemex.com).

## **Contractors Materials Company**

**Booth #31**

Contractors Materials Company is a 104-year-old, fourth-generation family business located in Cincinnati, Ohio. Contractors Materials Company's purpose in attending this convention is to showcase the uses of stainless steel reinforcing bar. Stainless steel reinforcing bar, from its surface to its core, provides a long-term alternative corrosion-resistant concrete reinforcing steel. To learn more about Contractors Materials Company, please go to [www.cmcmmi.com](http://www.cmcmmi.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **CTL Engineering, Inc.**

**Booth #24**

CTL Engineering, Inc. is a regional consulting engineering firm based in Columbus, OH. Significant Ohio projects include the Jeremiah Morrow Bridge and four Ohio River crossing bridges. CTL designed the well-received CTL Concrete Reporting Program, which incorporates e-mail delivery and an Internet Web site for password-protected access to concrete test reports, including the ODOT QC/QA Table 9 and Pay Factor Reports and the ACI STAT2 Report for tracing ACI statistics. For more information, go to [www.ctleng.org](http://www.ctleng.org).

## **The Euclid Chemical Co.**

**Booth #8**

The Euclid Chemical Co., founded in 1910, is a worldwide supplier of quality products and services for the concrete and masonry industry. Euclid offers a full line of admixtures and repair and maintenance products based on the latest technology. Euclid provides on-site service for guidance on proper product use and complete specification assistance and laboratory support. To learn more about The Euclid Chemical Co., visit [www.euclidchemical.com](http://www.euclidchemical.com).

## **FORNEY LP**

**Booth #38**

FORNEY is a manufacturer of material testing equipment and lab supplies for testing concrete, aggregate, asphalt, and soils. For more information about FORNEY, please visit [www.forneyonline.com](http://www.forneyonline.com).

## **GAMCO Concrete Forms**

**Booth #28**

GAMCO Concrete Forms and accessories is an innovative custom manufacturer of concrete forming systems and accessories, including the dropshore deck and slab system, parking garage beam system, column forms, shear wall brackets, post shores, bridge overhang bracket, barrier and parapet wall forms, and bridge deck adjustable joist hanger. GAMCO has been building profits for contractors since 1977. For more information, go to [www.gamcoform.com](http://www.gamcoform.com).

## **Gerdau – Knoxville ZBAR**

**Booth #15**

ZBAR by Gerdau is a high-performance reinforcing steel product that is ideal for harsh environments susceptible to corrosion, such as marine applications or where deicing salts are used. ZBAR offers performance comparable to stainless for an estimated 100-year maintenance-free life and has been used by commercial builders, departments of transportation, and the military. For more information, go to [www.specifyzbar.com](http://www.specifyzbar.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **Germann Instruments, Inc.**

**Booths #18 & 19**

Germann Instruments, Inc., is the leader in nondestructive testing (NDT) of concrete structures. Their cutting-edge, innovative product line includes advanced NDT equipment for concrete testing. For structural integrity, they provide impact-echo, mash, and MIRA/Eyecon 3-D shear wave systems. For durability, they provide service life, rheometer, PROOVEit, chloride, and profile. For freezing and thawing, they provide the EVA Analyzer and RapidAir. For fast-track construction, they produce the LOK-TEST and Coma-Meter. For corrosion surveys, they provide GalvaPulse and RapiCor. Germann also produces the Bond-Test and CorroEye for repair quality. Visit [www.germann.org](http://www.germann.org) for additional information.

## **Goettle, Inc.**

**Booth #29**

Goettle, Inc. is a design/build geotechnical contractor specializing in deep foundation elements, earth retention systems, and marine structures. Goettle has been providing design/build solutions since 1956. For more information, go to [www.goettle.com](http://www.goettle.com).

## **Grace Construction Products**

**Booth #12**

Headquartered in Cambridge, MA, Grace Construction Products is a worldwide leading manufacturer of concrete admixtures and fibers; liquid pigments for colored concrete; cement processing additives; concrete masonry products; air and vapor barriers; roofing underlayments; self-adhered window, door, and deck flashings; structural waterproofing systems; and fire protection products. Visit [www.graceconstruction.com](http://www.graceconstruction.com) for additional information.

## **Geophysical Survey Systems, Inc. (GSSI)**

**Booth #6**

Geophysical Survey Systems, Inc. (GSSI) is a world leader in the development and manufacture of commercial ground-penetrating radar (GPR) systems and electromagnetic induction instruments (EM). The success of GSSI's data acquisition products results from having the most versatile GPR systems on the market today. For more information, go to [www.geophysical.com](http://www.geophysical.com). **GSSI will present the latest advances in ground-penetrating radar on Tuesday, October 18, at 11:15 am.**



# Exhibitors

Exhibitor Listing as of 9/23/11

## **Insulation Solutions, Inc.**

**Booth #25**

Insulation Solutions, Inc. manufactures cutting-edge insulation, high-performance vapor barriers, waterproofing products, and building products and accessories for a variety of industries. The design and ingenuity of these products reflects the mission of Insulation Solutions, Inc. to change everyday building challenges into practical solutions using science, research, and technology. Check out the Viper Vapor® barriers! To learn more about Insulation Solutions, Inc., go to [www.insulationsolutions.com](http://www.insulationsolutions.com).

## **MEVA**

**Booth #20**

MEVA is widely recognized and acclaimed as a leading international provider of innovative formwork solutions. Family-owned and managed, the company was founded in 1970 and today serves contractors all over the world from approximately 40 locations. MEVA is a leader in quality and technology, engineering, and services. MEVA expertise handles concrete works of any type, size, and challenge. For more information, go to [www.mevaformwork.com](http://www.mevaformwork.com).

## **PERI Formwork Systems, Inc.**

**Booth #7**

PERI is one of the world's largest manufacturers and suppliers of formwork, shoring, and scaffolding systems. In addition to its innovative products, PERI offers engineering, planning, special software, rental services, and logistics support. For more information, please visit [www.peri-usa.com](http://www.peri-usa.com).

## **Proceq USA, Inc.**

**Booth #14**

Proceq USA, Inc., a global leader in portable nondestructive testing (NDT) instruments for concrete structures, will be displaying their latest innovations in NDT instruments. These include the new Resipod concrete surface resistivity meter and the new portable handheld Handy Search ground-penetrating radar (GPR). Other instruments on display will include our range of reinforcing bar detection equipment, ultrasonic testing instruments, corrosion analysis instruments, pulloff adhesion testing equipment, and uniformity/strength evaluations of structures with our complete range of Original Schmidt concrete test hammers. For more information, go to [www.proceq.com](http://www.proceq.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **Resource International, Inc.**

**Booth #26**

Resource International, Inc. (Rii) is a broad-based, multi-disciplined professional engineering consulting firm specializing in construction management, information technology and planning, and design of building and infrastructure projects with values in excess of \$1 billion annually. Rii was chartered as an Ohio corporation in 1941 and has been operating as a female-owned business since 1973. For more information, visit [www.resourceinternational.com](http://www.resourceinternational.com).

## **RMD Kwikform**

**Booth #21**

RMD Kwikform is a specialist in concrete formwork, shoring, and providing unique engineering solutions. Their exhibit will consist of picture, video, literature, and product displays. For more information, go to [www.rmdkwikform.com](http://www.rmdkwikform.com).

## **Roadware, Inc.**

**Booth #4**

Roadware, Inc. manufactures and markets high-performance concrete repair materials using the latest developments in polymer technology to build products that are both easy to use and exceed the highest performance standards. Roadware Concrete Repair Products are used by thousands of businesses (large and small) to repair cracks and spalls within their facilities. If your industry is anything from automotive manufacturing, grocery distribution, and fabrication to mega-retailer, Roadware, Inc. products can keep your industrial floors in top repair with no downtime. Also known as Concrete Mender™, or Road Mender™, Roadware Concrete Repair Products are ready to solve difficult concrete restoration problems. For more information, visit [www.concretemender.com](http://www.concretemender.com).

## **SAS Stressteel, Inc.**

**Booth #1**

SAS Stressteel, Inc. provides innovative products and solutions for the construction industry. SAS hot-rolled thread bar sizes from No. 6 to No. 24 in Grades 80 and 97 and 150/160 ksi are used in a wide range of applications from rock and soil anchors to multi-bar caissons and ultra-high-strength reinforcing bars for concrete structures. For more information, go to [www.stressteel.com](http://www.stressteel.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **Sensors & Software Inc.**

**Booth #33**

Sensors & Software Inc. is recognized worldwide as a leading manufacturer of ground-penetrating radar. Conquest™ delivers fast, real-time imaging to evaluate, drill, or cut structures on site; locate reinforcing bar, conduits, post-tension cables, reinforcing wire mesh; and transfer data to a PC. The PCD feature enables delineation of current-carrying power cables. For more information, go to [www.sensoft.ca](http://www.sensoft.ca). **Attend Sensors & Software's presentation on Capabilities of Conquest Ground Penetrating Radar Systems, Tuesday, October 18, at 10:30 am.**

## **Silica Fume Association**

**Booth #11**

The Silica Fume Association provides high-performance concrete information to the construction industry, a valuable material for today's sustainable concrete mixtures. Silica fume is a valuable waste material used in today's sustainable concrete mixtures. Learn more about silica fume concrete and the Silica Fume Association by going to [www.silicafume.org](http://www.silicafume.org).

## **SIMCO Technologies, Inc.**

**Booth #30**

SIMCO Technologies, Inc., offers integrated solutions for the optimum design and maintenance of concrete infrastructure. STADIUM®, its leading-edge service-life predictive software, reliably predicts concrete degradation kinetics and time to initiate reinforcing steel corrosion. SIMCO Technologies solutions serve all the vested parties in developing safe, sustainable, and cost-effective concrete structures. For more information, visit [www.simcotechnologies.com](http://www.simcotechnologies.com). **Watch a live demonstration of STADIUM®, Monday, October 17, at 11:15 am or Tuesday, October 18, at 9:45 am.**

## **STRUCTURAL Group**

**Booth #16**

STRUCTURAL Group collaborates with clients to improve and extend the life of infrastructure by combining award-winning specialty construction, repair, and maintenance services with proprietary technologies to provide solutions for demanding engineering and construction challenges. Technology focus areas at ACI's Fall Convention include corrosion, strengthening, and moisture solutions. For more information, go to [www.structural.net](http://www.structural.net).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **Superior Gunite**

**Booth #5**

Superior Gunite, an industry leader in pneumatically placed structural concrete, has been setting the standard in the technology and application of cast-in-place concrete and shotcrete for over 50 years. Superior has built its reputation on alternative, creative, and cost-effective building solutions. Whether called upon to build the infrastructure for essential transportation or water management systems; critical institutional resources such as hospitals and universities; or other major civic, industrial, or commercial projects, Superior's expertise and innovative methods have been put to the test building the vital infrastructure of the communities we serve. Superior Gunite is a national company that can place its expert teams and equipment anywhere in the continental U.S. and Hawaii. For more information, go to [www.shotcrete.com](http://www.shotcrete.com).

## **Tekla**

**Booth #27**

Tekla provides a building information modeling (BIM) software environment that can be shared by contractors, structural engineers, steel detailers and fabricators, and concrete detailers and manufacturers. The highly detailed, as-built 3-D models created, combined, and distributed with Tekla software enable the highest level of constructability and production control. Centralizing building information into the model allows for more collaborative and integrated project management and delivery. This translates into increased productivity and elimination of waste, thus making construction and buildings more sustainable. For more information, please visit [www.tekla.com/us](http://www.tekla.com/us).

## **Terracon Consultants, Inc.**

**Booth #36**

Construction Materials Engineering, Consulting, and Testing will display various testing equipment, including ND and petrography, photographs, and technical manuals. For more information, go to [www.terracon.com](http://www.terracon.com).

## **Tourney Consulting Group, LLC**

**Booth #39**

Tourney Consulting Group, LLC (TCG) is a consulting and laboratory company that focuses on durability and cost-effective service life solutions for concrete structures. TCG conducts service life engineering on new and existing structures. TCG's laboratory is AASHTO-approved, Army Corp.-validated, STADIUM-certified, and CCRL-compliant. For more information, go to [www.tourneyconsulting.com](http://www.tourneyconsulting.com).

# Exhibitors

Exhibitor Listing as of 9/23/11

## **Vector Corrosion Technologies**

**Booth #3**

Vector Corrosion Technologies offers a portfolio of solutions for concrete corrosion repair and protection. Innovative solutions include electrochemical chloride extraction, cathodic protection, and an array of galvanic protection systems, including embedded galvanic anodes, galvanic jackets, and activated arc-spray zinc metalizing. Vector also provides evaluation, repair, and mitigation services for post-tension corrosion and temperature-resistant composite strengthening systems. Contact Vector at (813) 830-7566 or visit [www.vector-corrosion.com](http://www.vector-corrosion.com).

## **Ytterberg Scientific Inc.**

**Booth #2**

For nearly 100 years, the name Ytterberg has been directly associated with leading products, processes, and service in the concrete flooring industry. Ytterberg's customers are always looking for ways to save time and money. The FloorPro® with TruFlat® software allows you to do both. Ytterberg has developed revolutionary tolerance instruments that have become world-famous and ensure that you effectively supply the best reports on the market today. Stop by Ytterberg's booth to see the instruments and how they work! For more information, please visit [www.flatfloors.com](http://www.flatfloors.com).

# Demonstrations

## C-BALLROOM FOYER

**Monday, October 17, 2011**

**SIMCO Technologies, Inc.**

**11:15 am**

Stadium Service Life Modeling: A live demonstration of the applications of STADIUM® Service Life Modeling for new and existing structures in the selection of concrete mixtures, maintenance scenarios, and quality assurance.

**Tuesday, October 18, 2011**

**SIMCO Technologies, Inc.**

**9:45 am**

Concrete characterization for service life with STADIUM® Lab: A presentation of the STADIUM® Lab methodology for the characterization of concrete mixtures for use in STADIUM® Service Life modeling and quality control.

**Sensors & Software, Inc.**

**10:30 am**

Capabilities of conquest ground-penetrating radar (GPR) systems.

**GSSI**

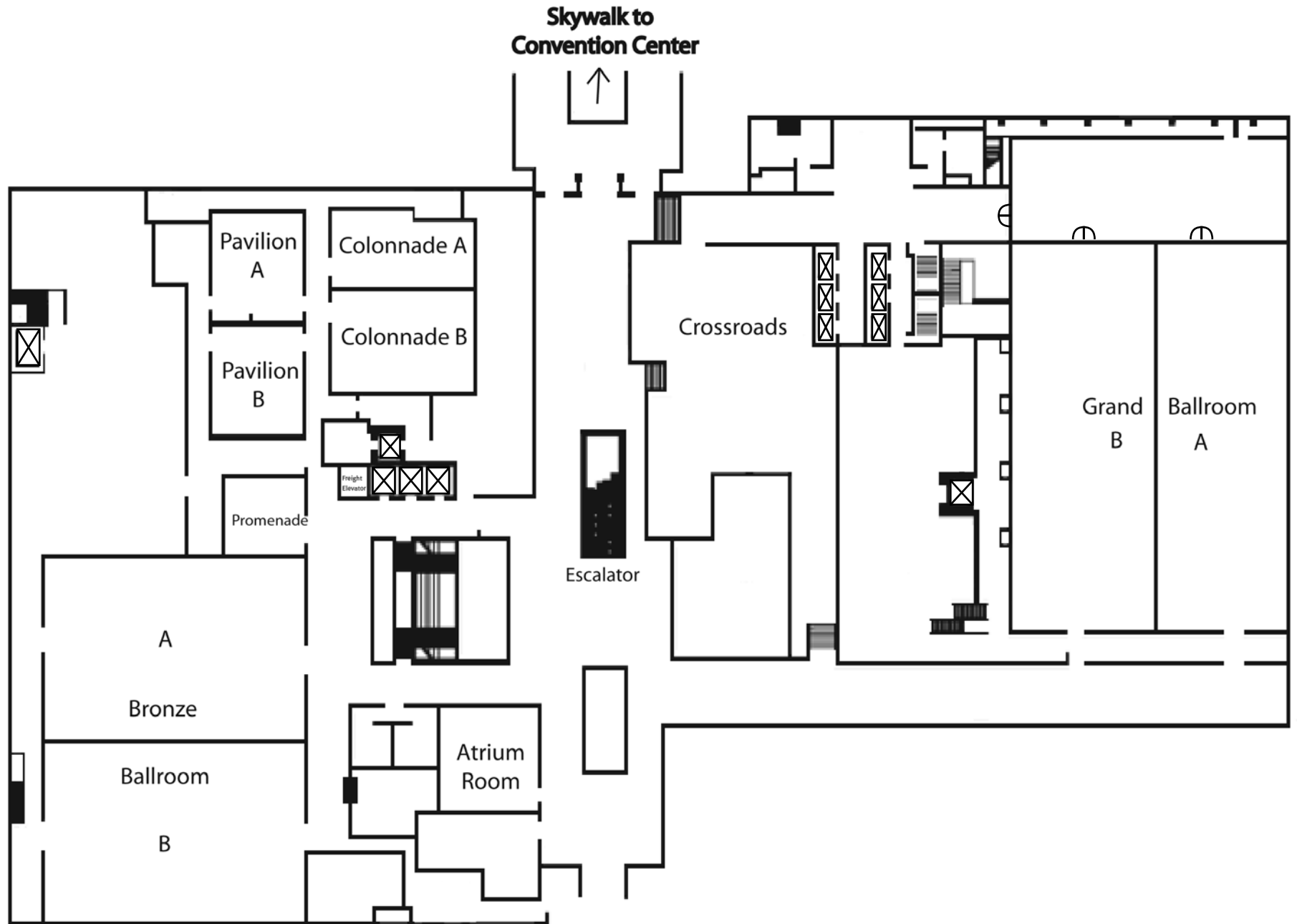
**11:15 am**

GSSI will present the latest advancements in ground-penetrating radar as it relates to the nondestructive testing in today's infrastructure. Specific topics will include the next-generation high-performance multi-channel radar control unit.

**Additional demonstrations may be added following  
the printing of the convention program book.  
Please see an updated schedule in the demo area.**

# Millennium Hotel Floor Plans

## 2nd Floor



# Millennium Hotel Floor Plans

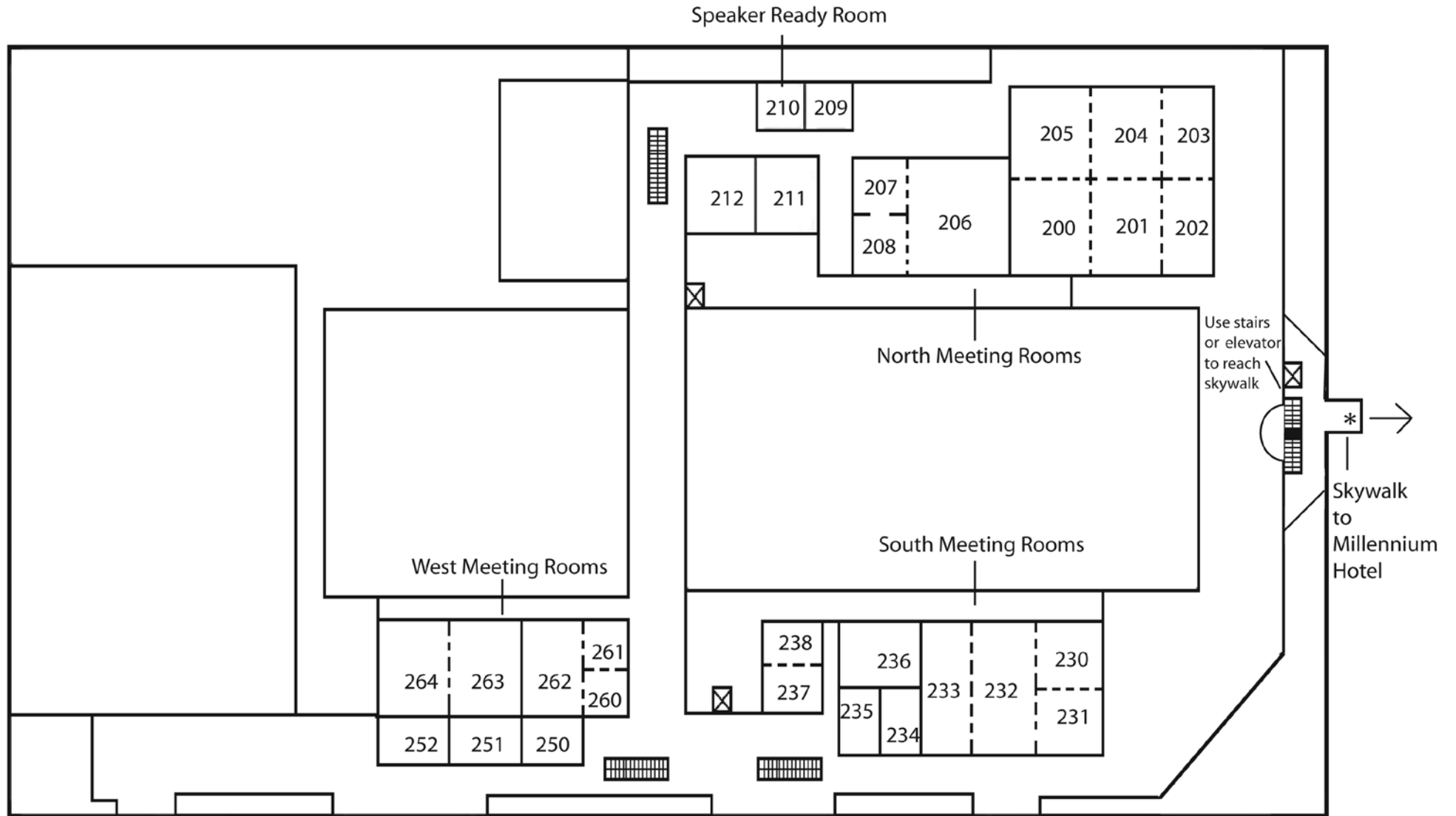
## 4th Floor





# Duke Energy Convention Center Floor Plans

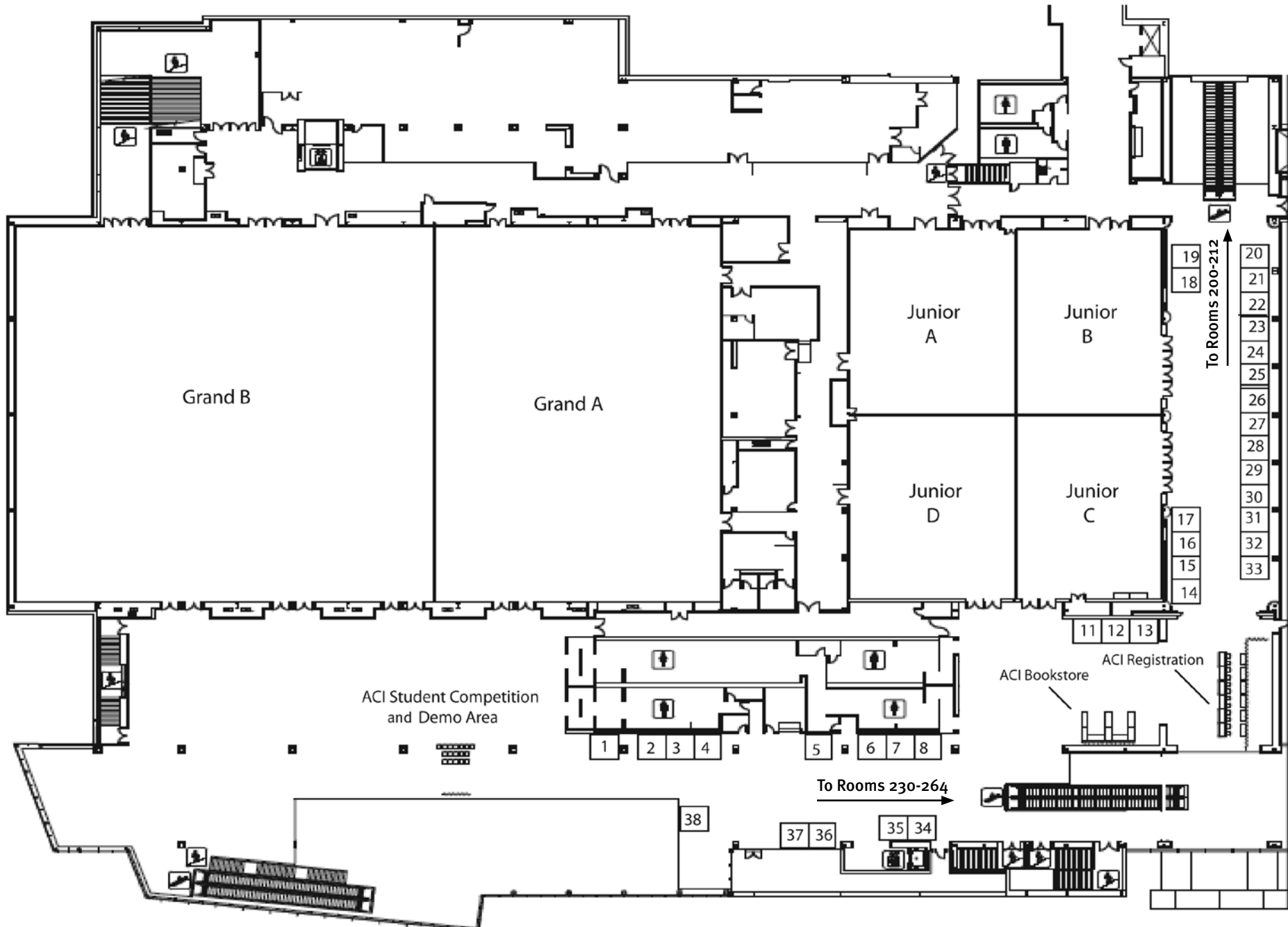
## 2nd Floor



\*Please note that the skywalk to the Millennium Hotel is located between the first and second floors of the convention center.

# Duke Energy Convention Center Floor Plans

## 3rd Floor & Exhibit Area



# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Friday, October 14, 2011

**6:30 pm - 9:00 pm**

TAC Technical Activities M1 **M-COLONNADE B**

## Saturday, October 15, 2011

**7:00 am - 6:00 pm**

TAC Technical Activities M2 **M-COLONNADE B**

**9:00 am - 6:00 pm**

347 Formwork M1 **M-PAVILION B**

**10:00 am - 12:00 pm**

562-D Eval, Repair & Rehab - Structural Repair  
Design M1 **M-COLONNADE A**

**1:00 pm - 4:00 pm**

562-D Eval, Repair & Rehab - Structural  
Repair Design M2 **M-COLONNADE A**

**1:00 pm - 5:00 pm *Session***

ACI Concrete Sustainability Forum IV **C-JUNIOR B**

**1:00 pm - 5:00 pm**

EAC Educational Activities M1 **C-202**

**1:00 pm - 6:00 pm**

562-F Eval, Repair & Rehab - General **M-ATRIUM**

**2:00 pm - 5:00 pm**

Afternoon Break **C-BALLROOM FOYER**

**2:00 pm - 6:00 pm**

ACI Registration & Bookstore **C-BALLROOM FOYER**

**2:00 pm - 6:00 pm**

Speaker Ready Room **C-210**

**3:00 pm - 5:00 pm**

376 RLG Containment Structures M1 **C-204**

**4:00 pm - 6:00 pm**

562-A Eval, Repair & Rehab - Life Safety **C-203**

562-C Eval, Repair & Rehab - Structural  
Analysis M1 **M-COLONNADE A**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Saturday, October 15, 2011 (cont.)

**6:00 pm - 9:00 pm**

562-E Eval, Repair and Rehab - Durability  
Qlty Assurance **M-PAVILION B**

**7:00 pm - 9:00 pm**

347-A Formwork Specification **M-COLONNADE A**

562-C Eval, Repair & Rehab - Structural  
Analysis M2 **M-ATRIUM**

## Sunday, October 16, 2011

**7:00 am - 8:30 am**

301-SC Spec - Steering Committee **C-230**

408-A Mech Splices **M-SALMON BOARD ROOM**

**7:00 am - 10:00 am**

★ Guest Hospitality **M-CROSSROADS**

Coffee Break **C-BALLROOM FOYER**

**7:00 am - 2:00 pm**

TAC Technical Activities M3 **C-236**

**7:00 am - 7:00 pm**

Speaker Ready Room **C-210**

**7:30 am - 5:00 pm**

ACI Registration **C-BALLROOM FOYER**

**8:00 am - 9:00 am**

Convention #1 Breakfast **C-233**

★ Guest Overview **M-CROSSROADS**

**8:00 am - 9:30 am**

341-B Equake Res Brdgs - Pier Walls **C-252**

**8:00 am - 10:00 am**

E706 Repair Application Procedures **C-261**

S801 Student Activities **C-201**

**8:00 am - 10:30 am**

CLC Construction Liaison **C-202**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

### 8:00 am - 11:00 am

|        |                               |          |
|--------|-------------------------------|----------|
| TACRG1 | TAC - Review Group 1          | C-234    |
| TACRG2 | TAC - Review Group 2          | C-235    |
| TACRG3 | TAC - Review Group 3          | C-237    |
| 445-B  | Shear & Torsn - Seismic Shear | M-ATRIUM |

### 8:00 am - 12:00 pm

|       |                              |       |
|-------|------------------------------|-------|
| 562-B | Eval, Repair & Rehab - Loads | C-260 |
|-------|------------------------------|-------|

### 8:00 am - 5:00 pm

|                          |                  |
|--------------------------|------------------|
| ACI Bookstore & Exhibits | C-BALLROOM FOYER |
|--------------------------|------------------|

### 8:30 am - 10:00 am

|     |                   |       |
|-----|-------------------|-------|
| 342 | Bridge Evaluation | C-203 |
|-----|-------------------|-------|

### 8:30 am - 10:30 am

|       |  |       |
|-------|--|-------|
| 549-A | Glass Fiber-Reinforced Concrete - Spray Up | C-262 |
|-------|--|-------|

### 8:30 am - 11:30 am

|       |                              |                  |
|-------|------------------------------|------------------|
| MEMC  | Membership                   | C-230            |
| 314   | Simplified Design Buildings  | M-COLONNADE B    |
| 315-B | Detailing - Constructibility | C-207            |
| 350-C | Env Str - Reinf & Devel      | M-464 BOARD ROOM |
| 408   | Development and Splicing     | C-264            |
| 440-H | FRP - Reinforced Concrete    | C-200            |

### 8:30 am - 12:00 pm

|     |                   |       |
|-----|-------------------|-------|
| 301 | Specifications M1 | C-204 |
|-----|-------------------|-------|

### 8:30 am - 12:30 pm

|     |             |       |
|-----|-------------|-------|
| 347 | Formwork M2 | C-205 |
|-----|-------------|-------|

### 9:00 am - 11:00 am

|       |                          |       |
|-------|--------------------------|-------|
| 506-A | Shotcreting - Evaluation | C-250 |
|-------|--------------------------|-------|

### 9:00 am - 12:00 pm

|     |         |           |
|-----|---------|-----------|
| 551 | Tilt Up | M-PORTICO |
|-----|---------|-----------|

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

**9:00 am - 1:00 pm**

✓ Queen City Tour

**DEPART MILLENNIUM**

**9:00 am - 5:00 pm**

376 RLG Containment Structures M2

**C-263**

**9:30 am - 11:00 am**

341-A Equake Res Brdgs - Columns

**C-252**

**10:00 am - 11:30 am**

E701 Materials for Concrete Construction

**C-231**

**10:00 am - 12:00 pm**

IC-Part International Partnerships & Publications

**C-203**

546-C Repair - Guide

**M-PAVILION B**

**10:00 am - 12:30 pm**

228 Nondestructive Testing

**C-232**

**10:00 am - 1:00 pm**

421 Reinf Slabs

**C-201**

**10:00 am - 5:00 pm**

★ Guest Lounge

**M-CARDINAL**

**10:30 am - 12:30 pm**

549 Thin Reinforced

**C-262**

**10:30 am - 1:30 pm**

445-A Shear & Torsn - Strut & Tie

**C-202**

**11:00 am - 12:00 pm**

343-A Design

**C-234**

**11:00 am - 12:30 pm**

341-D Perf Based Seismic Design

**C-251**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

### 11:00 am - 1:00 pm

|       |                             |       |
|-------|-----------------------------|-------|
| C640  | Craftsman Cert              | C-252 |
| 506-G | Qualifications for Projects | C-235 |

### 11:00 am - 3:00 pm

|                  |                  |
|------------------|------------------|
| Lunch Concession | C-BALLROOM FOYER |
|------------------|------------------|

### 11:00 am - 5:00 pm

|   |                  |
|---|------------------|
| Student Pervious Cylinder Competition and<br>Student Concrete Project Competition<br>Presentation | C-BALLROOM FOYER |
|---|------------------|

### 11:30 am - 1:00 pm

|        |   |                     |
|--------|---|---------------------|
| HTC    | Hot Topic                                   | M-SALMON BOARD ROOM |
| 221    | Aggregates                                  | C-207               |
| 335    | Composite Hybrid                            | C-230               |
| 350-SC | Env Str - Steering Comm                     | C-237               |
| 374-TG | Protocol for Testing RC Structural Elements | M-ATRIUM            |
| 441-E  | Columns - Multi Spiral Reinf                | C-238               |

### 12:00 pm - 2:00 pm

|                      |       |
|----------------------|-------|
| ✓International Lunch | C-233 |
|----------------------|-------|

### 12:00 pm - 3:00 pm

|                 |                  |
|-----------------|------------------|
| Afternoon Break | C-BALLROOM FOYER |
|-----------------|------------------|

### 12:30 pm - 2:00 pm

|       |                             |               |
|-------|-----------------------------|---------------|
| 130-F | Social Issues               | M-COLONNADE A |
| 445-E | Shear & Torsn - SOA Torsion | C-260         |

### 12:30 pm - 3:30 pm

|       |                                   |       |
|-------|-----------------------------------|-------|
| 301-H | Spec - Tilt Up Constr & Arch Conc | C-234 |
|-------|-----------------------------------|-------|

### 12:30 pm - 4:30 pm

|       |                                 |       |
|-------|---------------------------------|-------|
| 301-B | Spec - Formwork & Reinforcement | C-251 |
|-------|---------------------------------|-------|

### 1:00 pm - 2:30 pm

|     |                    |       |
|-----|--------------------|-------|
| 369 | Seismic - Rehab M1 | C-207 |
| 533 | Precast Panels     | C-230 |

### 1:00 pm - 3:00 pm

|       |                                |       |
|-------|--------------------------------|-------|
| 445-C | Shear & Torsn - Punching Shear | C-235 |
|-------|--------------------------------|-------|

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

### 1:00 pm - 4:00 pm

423-E Prestressed Losses **C-203**

### 1:00 pm - 5:00 pm

301-C Spec - Placing Consolidating & Curing **C-250**

301-D Spec - Lightweight & Massive  
Concrete **M-SALMON BOARD ROOM**

301-G Spec - Shrink Comp Conc & Ind Floor Slabs **C-238**

336 Footings **M-PAVILION B**

350-E Env Str - Precast/Prestressed **C-262**

562 Eval, Repair & Rehab **C-200**

### 1:30 pm - 3:00 pm

341-C Equake Res Bldgs - Retrofit **C-231**

440-D Research Development and Applications **C-232**

### 1:30 pm - 3:30 pm

345 Bridge Construction **M-PAVILION A**

### 1:30 pm - 4:00 pm

370 Dynamic & Vibratory Effects **C-264**

### 1:30 pm - 5:00 pm

355 Anchorage **C-201**

### 2:00 pm - 3:00 pm

215 Fatigue **C-260**

310-TG1 Curing Decorative Concrete **C-237**

506-B Shotcreting - Fiber Reinforced **M-COLONNADE A**

### 2:00 pm - 3:30 pm

236-B Material Science - Transport Mechanisms **C-261**

### 2:00 pm - 4:00 pm

305 Hot Weather **C-204**



# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

### 2:00 pm - 5:00 pm *Sessions*

Andy Scanlon Symposium on Serviceability  
and Safety of Concrete Structures: From  
Theory to Practice, Part 1 **C-206**

Emerging Technologies in Civil Infrastructure  
Applications **C-JUNIOR B**

Modeling of FRP Strengthening Techniques  
in Concrete Infrastructure **C-JUNIOR D**

Recent Development in Bond Splice Tests **C-JUNIOR A**

Understanding the Implications of Green  
Building Codes and Standards on the Concrete  
and Masonry Industries **C-JUNIOR C**

### 2:00 pm - 5:00 pm

RCC Responsibility **C-252**

315 Detailing **C-202**

352 Joints **C-236**

### 2:30 pm - 5:00 pm

224 Cracking **M-COLONNADE B**

### 3:00 pm - 4:30 pm

550 Precast Structures **M-COLONNADE A**

### 3:00 pm - 5:00 pm

121 Quality Assurance **C-207**

301-E Spec - Post-Tensioned Concrete **M-464 BOARD ROOM**

309 Consolidation **C-231**

310 Decorative Concrete **C-230**

341 Earthquake-Resistant Bridges **C-232**

351-C Equipment Foundations - Dynamic Foundations **C-237**

423/445 Adhoc Grp on Shear in Prestress Conc **C-235**

440-L FRP - Durability **C-205**

445-D Shear & Torsion - Database **M-PORTICO**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Sunday, October 16, 2011 (cont.)

### 3:30 pm - 5:00 pm

|           |   |                     |
|-----------|---|---------------------|
| Intl-Cert | International Certification                         | <b>C-234</b>        |
| 201-A     | Durability - Sulfate Attack                         | <b>M-PAVILION A</b> |
| 236-D     | Material Science - Nanotechnology<br>of Concrete M1 | <b>C-261</b>        |
| 439-A     | Steel Reinforcement - Wire                          | <b>M-ATRIUM</b>     |

### 4:00 pm - 5:00 pm

|      |                             |              |
|------|-----------------------------|--------------|
| S805 | Collegiate Concrete Council | <b>C-203</b> |
| 123  | Research                    | <b>C-204</b> |

### 5:15 pm - 6:30 pm

|                 |                  |
|-----------------|------------------|
| Opening Session | <b>C-GRAND A</b> |
|-----------------|------------------|

### 6:30 pm - 7:30 pm

|                   |                         |
|-------------------|-------------------------|
| Opening Reception | <b>C-BALLROOM FOYER</b> |
|-------------------|-------------------------|

### 7:30 pm - 10:00 pm *Sessions*

|   |                   |
|---|-------------------|
| 123 Forum: What is the Current Status of<br>Nanotechnology?   | <b>C-JUNIOR B</b> |
| Hot Topic Session: The Great East Japan<br>Earthquake: Lessons Learned Since the<br>"Kobe" Earthquake | <b>C-JUNIOR C</b> |

### 9:00 pm - 10:30 pm

|  |   |
|--|---|
| Student and Young Professional<br>Networking Event | <b>Rock Bottom Brewery<br/>10 Fountain Square</b> |
|--|---|

## Monday, October 17, 2011

### 6:30 am - 8:15 am

|   |                  |
|---|------------------|
| Workshop for Technical Committee Chairs | <b>C-GRAND A</b> |
|---|------------------|

### 7:00 am - 8:30 am

|                               |              |
|-------------------------------|--------------|
| Speaker Development Breakfast | <b>C-262</b> |
|-------------------------------|--------------|

### 7:00 - 10:00 am

|                     |                         |
|---------------------|-------------------------|
| ★ Guest Hospitality | <b>M-CROSSROADS</b>     |
| Coffee Break        | <b>C-BALLROOM FOYER</b> |

### 7:00 am - 11:45 am

|  |                          |
|--|--------------------------|
| ✓ Jeremiah Morrow Bridge<br>Technical Tour | <b>DEPART MILLENNIUM</b> |
|--|--------------------------|

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

**7:00 am - 6:00 pm**

Speaker Ready Room **C-210**

**7:15 am - 8:30 am**

IC-Conf International Conferences **C-234**

**8:00 am - 8:30 am**

Convention #1 Meeting Spot **C-BALLROOM FOYER**

**8:00 am - 5:00 pm**

ACI Registration, Bookstore,  
& Exhibits **C-BALLROOM FOYER**

**8:15 am - 9:00 am**

343-B Bridge Deck Design **C-203**

**8:15 am - 10:00 am**

351-B Grtng Fndns - Equip Machnry **M-COLONNADE B**

**8:15 am - 11:00 am**

237 Self Consolidating Concrete **C-205**

349-C Nuclear Structures - Anchorage **C-236**

548-A Polymers - Overlays **M-CABANA B**

**8:15 am - 12:00 pm**

374 Seismic Design **C-204**

**8:30 am - 10:00 am**

S802 Teaching Methods and Educational Materials **C-238**

118 Computers **M-PAVILION B**

122 Energy Efficiency **C-235**

130-A Materials **C-232**

311 Inspection **M-SALMON BOARD ROOM**

318/

ASCE 7 ACI 318/ASCE 7 **C-237**

439 Steel Reinforcement **C-212**

440-E FRP - Prof Education **M-PAVILION A**

524 Plastering **C-231**

544-B FRC - Education **C-201**

**8:30 am - 10:30 am**

PUBC Publications **C-202**

506-E Shotcreting - Specifications **M-CABANA A**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

### 8:30 am - 11:00 am

|        |                       |              |
|--------|-----------------------|--------------|
| C610   | Field Technician Cert | <b>C-230</b> |
| 355-TG | Anchorage TG          | <b>C-207</b> |

### 8:30 am - 11:30 am

|       |                                   |                              |
|-------|-----------------------------------|------------------------------|
| 209   | Creep & Shrinkage                 | <b>C-252</b>                 |
| 301-F | Spec - Precast Concrete<br>Panels | <b>M-456 CONFERENCE ROOM</b> |
| 543   | Piles                             | <b>C-234</b>                 |
| 546   | Repair                            | <b>C-264</b>                 |

### 8:30 am - 12:00 pm

|       |  |                         |
|-------|--|-------------------------|
| 301-A | Spec - Gen Req, Definitions,<br>& Tolerances | <b>M-COLONNADE A</b>    |
| 362-A | Parking Str - Standard                       | <b>M-464 BOARD ROOM</b> |

### 8:30 am - 12:30 pm

|     |             |              |
|-----|-------------|--------------|
| 423 | Prestressed | <b>C-263</b> |
|-----|-------------|--------------|

### 8:30 am - 1:00 pm

|       |                      |                   |
|-------|----------------------|-------------------|
| 302   | Floor Construction   | <b>M-BRONZE B</b> |
| 350-B | Env Str - Durability | <b>C-260</b>      |

### 8:30 am - 6:30 pm

|       |                      |              |
|-------|----------------------|--------------|
| 350-D | Env Str - Structural | <b>C-251</b> |
|-------|----------------------|--------------|

### 9:00 am - 11:00 am

|     |                 |              |
|-----|-----------------|--------------|
| 365 | Service Life M1 | <b>C-262</b> |
|-----|-----------------|--------------|

### 9:00 am - 12:00 pm *Sessions*

Andy Scanlon Symposium on Serviceability  
and Safety of Concrete Structures: From Theory  
to Practice, Part 2 **C-206**

Evaluation of Existing Structures Prior to  
Rehabilitation **C-JUNIOR A**

Fiber-Reinforced Concrete—Smart Materials  
and Sensors **C-JUNIOR D**

Structural Health Monitoring Technologies,  
Part 1 **C-JUNIOR C**

Research in Progress **C-JUNIOR B**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

**9:00 am - 1:00 pm**

✓ Northern Kentucky Tour

**DEPART MILLENNIUM**

**9:00 am - 3:30 pm**

Exhibitor Demonstrations

**C-BALLROOM FOYER**

**9:00 am - 5:00 pm**

376-TG1 RLG Containment Structures - TG M1

**C-203**

**10:00 am - 11:00 am**

130-B Production/Transport/Construction

**M-PAVILION A**

**10:00 am - 11:30 am**

440-J FRP - Stay-in-Place Forms

**C-232**

**10:00 am - 12:00 pm**

S806 Young Professional Activities

**M-PAVILION B**

351-D Design Provisions for Heavy Industrial  
Equipment and Machinery Concrete  
Support Structures

**C-235**

**10:00 am - 1:00 pm**

207 Mass Concrete

**C-212**

216 Fire Resistance

**C-237**

232-A Fly Ash - Use of Nat Pozzolans

**M-PORTICO**

318-B Reinforcement & Development M1

**C-201**

318-D Flexure & Axial Loads M1

**M-COLONNADE B**

318-E Shear & Torsion M1

**C-231**

343 Bridge Design

**C-238**

**10:00 am - 5:00 pm**

★ Guest Lounge

**M-CARDINAL**

**10:30 am - 12:00 pm**

124 Aesthetics

**M-SALMON BOARD ROOM**

**10:30 am - 12:30 pm**

437 Strength Evaluation

**C-202**

506-C Shotcreting - Guide

**M-CABANA A**

**11:00 am - 12:00 pm**

364-TG1 Rehabilitation - Guide

**M-PAVILION A**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

### 11:00 am - 12:30 pm

548-C Structural Polymer Design **M-CABANA B**

### 11:00 am - 1:00 pm

130-E Design/Specifications/Codes/Regulations **C-236**

### 11:00 am - 1:30 pm

447 Finite Element Analysis **C-207**

### 11:00 am - 3:00 pm

Lunch Concession **C-BALLROOM FOYER**

### 11:30 am - 1:00 pm

C601-A Adhesive Anchor Installer **C-261**

201-D Durability - Oversight Committee **C-252**

304 Measuring/Mix/Trans/Placing **C-262**

346 CIP Pipe **C-234**

544-A FRC - Production & Applications **C-264**

### 11:30 am - 2:00 pm

441 Columns **C-232**

### 12:00 pm - 2:00 pm

✓ Student Lunch **C-GRAND A**

### 12:00 pm - 3:00 pm

Afternoon Break **C-BALLROOM FOYER**

### 12:30 pm - 4:30 pm

349-A&B Nuclear Structures - Design & Materials **C-202**

### 1:00 pm - 2:00 pm

214 Strength Tests M1 **C-234**

### 1:00 pm - 2:30 pm

C631 Conc Transportation Const Insp **M-ATRIUM**

ISO/TC-71 ISO/TC-71 Advisory Cmte **C-252**

350-H Env Str - Editorial **M-CABANA A**

### 1:00 pm - 3:00 pm

C660 Shotcrete Nozzleman Cert **M-456 CONFERENCE ROOM**

228-A NDT Technician Certification **C-235**

364 Rehabilitation **C-204**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

### 1:00 pm - 3:30 pm

375 Design for Wind Loads **C-238**

### 1:00 pm - 4:00 pm

225 Hydraulic Cements **M-PAVILION B**

232 Fly Ash & Natural Pozzolans **C-236**

### 1:00 pm - 5:00 pm

301 Specifications M2 **C-201**

362 Parking Structures **C-212**

### 1:30 pm - 3:00 pm

440-M FRP - Repair of Masonry Str **C-200**

### 1:30 pm - 4:30 pm

548-B Polymers - Adhesives **M-CABANA B**

### 2:00 pm - 3:30 pm

231 Early Age **C-263**

318-S Spanish Translation **M-PAVILION A**

348 Safety **C-260**

544-E FRC - Mechanical Properties **C-234**

### 2:00 pm - 4:00 pm

365 Service Life M2 **M-COLONNADE B**

### 2:00 pm - 5:00 pm *Sessions*

Andy Scanlon Symposium on Serviceability  
and Safety of Concrete Structures: From Theory  
to Practice, Part 3 **C-206**

Concrete Overlays for Pavement  
Rehabilitation **C-JUNIOR D**

Field Guide to Concrete Repair Application  
Procedures **C-JUNIOR A**

Structural Health Monitoring Technologies,  
Part 2 **C-JUNIOR C**

Technical Session in Honor of Robert Gulyas **C-JUNIOR B**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

### 2:00 pm - 5:00 pm

|      |                     |                      |
|------|---------------------|----------------------|
| CAC  | Chapter Activities  | <b>C-230</b>         |
| MKTC | Marketing           | <b>C-261</b>         |
| 130  | Sustainability M1   | <b>C-232</b>         |
| 212  | Chemical Admixtures | <b>M-COLONNADE A</b> |
| 307  | Chimneys            | <b>M-PORTICO</b>     |

### 2:00 pm - 6:00 pm

|     |                  |              |
|-----|------------------|--------------|
| 369 | Seismic Rehab M2 | <b>C-262</b> |
| 445 | Shear & Torsion  | <b>C-231</b> |

### 2:00 pm - 6:30 pm

|     |                 |              |
|-----|-----------------|--------------|
| 360 | Slabs on Ground | <b>C-205</b> |
|-----|-----------------|--------------|

### 2:30 pm - 4:30 pm

|     |                   |              |
|-----|-------------------|--------------|
| 351 | Equip Foundations | <b>C-252</b> |
|-----|-------------------|--------------|

### 2:30 pm - 5:00 pm

Walking Tour of Paul Brown Stadium **DEPART MILLENNIUM**

### 3:00 pm - 4:00 pm

|       |                             |                              |
|-------|-----------------------------|------------------------------|
| 506-F | Shotcreting - Underground   | <b>C-235</b>                 |
| 563-I | Proprietary Grouts/Concrete | <b>M-CABANA A</b>            |
| 563-M | Polymer Concrete/Overlays   | <b>M-456 CONFERENCE ROOM</b> |

### 3:00 pm - 6:00 pm

|       |                            |              |
|-------|----------------------------|--------------|
| 440-F | FRP - Repair Strengthening | <b>C-200</b> |
|-------|----------------------------|--------------|

### 3:30 pm - 5:00 pm

|       |   |                   |
|-------|---|-------------------|
|       | ★ Guest Social  | <b>M-BRONZE A</b> |
| 211-P | Guide for Selecting Proportions for Pumpable Concrete | <b>C-234</b>      |
| 214   | Strength Tests M2                                     | <b>C-207</b>      |
| 318-L | International Liaison                                 | <b>C-250</b>      |
| 446   | Fracture Mechanics                                    | <b>C-238</b>      |

### 3:30 pm - 5:30 pm

|     |                                 |                     |
|-----|---------------------------------|---------------------|
| 239 | Ultra-High Performance Concrete | <b>M-PAVILION A</b> |
|-----|---------------------------------|---------------------|



# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Monday, October 17, 2011 (cont.)

**3:30 pm - 6:30 pm**

350-J Env Str - Education **C-260**

**4:00 pm - 6:00 pm**

201-E Salt Weathering/Salt Attack **C-235**

**4:30 pm - 5:30 pm**

236 Material Science **C-204**

**5:00 pm - 6:00 pm**

334 Women in ACI Reception **M-CROSSROADS**  
Shells **C-237**

**5:00 pm - 6:30 pm**

E702 Designing Concrete Structures **C-238**  
318-TGF TGF Foundation **M-CABANA B**  
555 Recycled **C-230**

**5:00 pm - 7:00 pm**

E703 Concrete Construction Practices **C-234**

**5:45 pm - 10:00 pm**

✓ Riverboat Cruise and Dinner  
on the Ohio River **DEPART MILLENNIUM**

**6:00 pm - 7:00 pm**

✓ Reception in Honor of Andy Scanlon **M-COLONNADE B**

## Tuesday, October 18, 2011

**7:00 am - 8:30 am**

TRRC TAC Repair & Rehab **M-464 BOARD ROOM**  
TTAG Technology Transfer Advisory Group **C-251**

**7:00 am - 10:00 am**

★ Guest Hospitality **M-CROSSROADS**  
Coffee Break **C-BALLROOM FOYER**

**7:00 am - 6:00 pm**

Speaker Ready Room **C-210**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 7:30 am - 9:00 am

130-G Education/Certification **C-261**

### 8:00 am - 8:30 am

Convention #1 Meeting Spot **C-BALLROOM FOYER**

### 8:00 am - 9:00 am

IJBRC Intl Joints & Bearings Research **C-238**

563-C Excavation/Surface Preparation **M-CABANA A**

563-F Concrete Mixtures **M-456 CONFERENCE ROOM**

563-L Prestressed Concrete **M-CABANA B**

### 8:00 am - 9:30 am

230 Soil Cement **C-260**

238 Workability of Fresh Concrete **M-COLONNADE B**

### 8:00 am - 10:00 am

211-C Proportioning - No Slump **M-COLONNADE A**

325-A Pavements - Design **C-235**

444 Experimental Analysis **C-234**

### 8:00 am - 11:00 am

201 Durability **C-200**

522 Pervious Concrete **C-232**

### 8:00 am - 12:00 pm

EAC Educational Activities M2 **M-PAVILION A**

### 8:00 am - 12:30 pm

318-B Reinforcement & Development M2 **C-236**

318-D Flexure & Axial Loads M2 **C-230**

318-E Shear & Torsion M2 **C-231**

318-G Prestressed Precast **C-262**

### 8:00 am - 5:00 pm

ACI Registration, Bookstore,  
& Exhibits **C-BALLROOM FOYER**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 8:30 am - 10:00 am

|       |                               |              |
|-------|-------------------------------|--------------|
| C620  | Laboratory Tech Cert          | <b>C-250</b> |
| 523-A | Cellular - Autoclaved Aerated | <b>C-201</b> |

### 8:30 am - 10:30 am

|     |                      |                     |
|-----|----------------------|---------------------|
| 357 | Offshore & Marine    | <b>M-PAVILION B</b> |
| 560 | Design & Constr ICFs | <b>C-251</b>        |

### 8:30 am - 11:30 am

|         |                                     |              |
|---------|-------------------------------------|--------------|
| 117     | Tolerances                          | <b>C-204</b> |
| 306     | Cold Weather                        | <b>C-252</b> |
| 350-G&K | Env Str - Tightness Testing/Haz Mat | <b>C-237</b> |
| 440     | Fiber-Reinforced Polymer            | <b>C-205</b> |
| 506     | Shotcreting                         | <b>C-263</b> |
| 548     | Polymers                            | <b>C-264</b> |

### 8:30 am - 3:30 pm

|       |                   |              |
|-------|-------------------|--------------|
| 350-F | Env Str - Seismic | <b>C-202</b> |
|-------|-------------------|--------------|

### 9:00 am - 10:00 am

|       |                                |                              |
|-------|--------------------------------|------------------------------|
| 563-G | Placing/Curing                 | <b>M-CABANA A</b>            |
| 563-H | Architectural/Precast Concrete | <b>M-464 BOARD ROOM</b>      |
| 563-J | Crack Repair                   | <b>M-SALMON BOARD ROOM</b>   |
| 563-K | External Reinforcement         | <b>M-ATRIUM</b>              |
| 563-N | Protection Systems             | <b>M-456 CONFERENCE ROOM</b> |
| 563-P | Corrosion                      | <b>M-CABANA B</b>            |

### 9:00 am - 10:30 am

|       |                            |              |
|-------|----------------------------|--------------|
| 332-B | Conc Mtrls and Plcmnt      | <b>C-238</b> |
| 332-F | Residential Concrete Slabs | <b>C-261</b> |

### 9:00 am - 11:30 am

|    |                         |              |
|----|-------------------------|--------------|
| IC | International Committee | <b>C-207</b> |
|----|-------------------------|--------------|

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 9:00 am - 12:00 pm *Sessions*

ACI 301 - Bridging Codes and Specifications **C-JUNIOR C**

Andy Scanlon Symposium on Serviceability  
and Safety of Concrete Structures: From Theory  
to Practice, Part 4 **C-206**

Bridging Theory and Practice in the Greater  
Miami Valley **C-JUNIOR D**

Mass Concrete and Thermal Cracking,  
a Joint ACI-JCI Seminar, Part 1 **C-JUNIOR B**

Recent Development in Reinforced Concrete,  
Slab Analysis, Design, and Serviceability,  
Part 1 **C-JUNIOR A**

### 9:00 am - 3:30 pm

✓Lebanon Tour **DEPART MILLENNIUM**  
Exhibitor Demonstrations **C-BALLROOM FOYER**

### 9:00 am - 5:00 pm

376-TG1 RLG Containment Structures - TG M2 **C-203**

### 10:00 am - 11:00 am

130-C Structures in Service **C-250**

### 10:00 am - 11:30 am

C630 Construction Inspector Cert **C-234**

### 10:00 am - 12:00 pm

211-A Proportioning - Editorial **M-CABANA B**

### 10:00 am - 1:00 pm

523 Cellular Concrete **M-COLONNADE B**

### 10:00 am - 5:00 pm

★ Guest Lounge **M-CARDINAL**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 10:30 am - 12:00 pm

|           |                                     |                     |
|-----------|-------------------------------------|---------------------|
| 325-C     | Pavements - Prestressed and Precast | <b>M-PAVILION B</b> |
| 332-D & E | Residential Concrete D & E          | <b>C-261</b>        |
| 515       | Protective Systems                  | <b>C-238</b>        |
| 544-F     | FRC - Durability                    | <b>C-201</b>        |

### 10:30 am - 12:30 pm

|         |                                 |              |
|---------|---------------------------------|--------------|
| 236-TG4 | Modeling and Simulation Methods | <b>C-251</b> |
|---------|---------------------------------|--------------|

### 11:00 am - 12:30 pm

|     |   |                         |
|-----|---|-------------------------|
| 371 | Elevated Tanks with Concrete<br>Pedestals | <b>M-464 BOARD ROOM</b> |
|-----|---|-------------------------|

### 11:00 am - 1:00 pm

|     |                           |              |
|-----|---------------------------|--------------|
| CRC | Concrete Research Council | <b>C-250</b> |
| 130 | Sustainability M2         | <b>C-200</b> |
| 327 | RCC Pavements             | <b>C-260</b> |

### 11:00 am - 3:00 pm

|  |                  |                         |
|--|------------------|-------------------------|
|  | Lunch Concession | <b>C-BALLROOM FOYER</b> |
|--|------------------|-------------------------|

### 11:30 am - 12:30 pm

|         |   |              |
|---------|---|--------------|
| 236-TG2 | Sustainability Engineered by Material Science | <b>C-263</b> |
|---------|---|--------------|

### 11:30 am - 1:00 pm

|        |   |                              |
|--------|---|------------------------------|
| E707   | Specification Education                                 | <b>C-234</b>                 |
| 211-E  | Proportioning - Evaluation                              | <b>M-456 CONFERENCE ROOM</b> |
| 213-TG | Lightweight - Editorial TG                              | <b>M-CABANA A</b>            |
| 223-D  | Shr Compensating - Non Reinforced<br>Concrete or Mortar | <b>C-235</b>                 |

### 11:30 am - 2:00 pm

|     |                       |              |
|-----|-----------------------|--------------|
| 552 | Cementitious Grouting | <b>C-237</b> |
|-----|-----------------------|--------------|

### 11:30 am - 5:00 pm

|       |                              |                 |
|-------|------------------------------|-----------------|
| 350-A | Env Str - General & Concrete | <b>M-ATRIUM</b> |
|-------|------------------------------|-----------------|

### 12:00 pm - 2:00 pm

|  |                         |              |
|--|-------------------------|--------------|
|  | ✓Contractors' Day Lunch | <b>C-233</b> |
|--|-------------------------|--------------|

### 12:00 pm - 3:00 pm

|  |                 |                         |
|--|-----------------|-------------------------|
|  | Afternoon Break | <b>C-BALLROOM FOYER</b> |
|--|-----------------|-------------------------|

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 1:00 pm - 2:00 pm

- 223-C Shr Compensating Constr **C-235**  
325-D Proportioning for Pavements **M-CABANA B**

### 1:00 pm - 3:00 pm

- 201-C Durability - Condition Report **M-CABANA A**  
211-I Assessing Aggregate Gradation **M-464 BOARD ROOM**  
236-D Material Science - Nanotechnology of  
Concrete M2 **C-234**

### 1:00 pm - 5:00 pm

- 332 Residential Concrete **C-232**  
563 Specs for Repair of Struct Conc in Bldgs **M-PAVILION A**

### 1:30 pm - 3:00 pm

- 120 History **C-261**

### 1:30 pm - 3:30 pm

- 213 Lightweight **M-COLONNADE B**

### 1:30 pm - 5:00 pm

- 349 Nuclear Structures **C-204**

### 1:30 pm - 6:00 pm

- 318-A General Concrete Constr **C-238**  
318-C Serviceability/Safety **C-230**  
318-H Seismic Provisions **C-250**  
318-R Code Reorganization **C-252**

### 2:00 pm - 3:30 pm

- 234 Silica Fume **C-237**  
325-E Accelerated Paving **M-CABANA B**  
544-C FRC - Testing **C-201**

### 2:00 pm - 4:00 pm

- 130-D Rating Systems/Sustainability Tools **C-262**  
211-F Proportioning - Submittal **M-456 CONFERENCE ROOM**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

### 2:00 pm - 5:00 pm *Sessions*

Achieving Sustainability with Prestressed Concrete **C-JUNIOR C**

Contractors' Day Session: Challenges and Other Endurances for the Concrete Contractor **C-JUNIOR D**

Open Paper Session **C-206**

Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 2 **C-JUNIOR B**

Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 2 **C-JUNIOR A**

### 2:00 pm - 5:00 pm

CPC Certification Programs **M-PAVILION B**

222 Corrosion **C-264**

223 Shrinkage Compensating **C-235**

229 Controlled Low Strength **C-231**

235 Electronic Data Exchange **C-260**

### 2:00 pm - 6:00 pm

233 Slag Cement **C-236**

### 3:00 pm - 4:00 pm

236-TG1 Advanced Analysis Techniques for Concrete **M-464 BOARD ROOM**

### 3:00 pm - 5:00 pm

CC Convention Committee M2 **C-207**

131 BIM **C-263**

211-N Proportioning with Ground Limestone and Material Fillers **C-261**

359-C Working Group on Modernization **C-234**

372 Tanks Wrapped Wire/Strand **M-CABANA A**

### 3:30 pm - 5:00 pm

363-A High-Strength - Lightweight Concrete **M-CABANA B**

### 3:30 pm - 5:30 pm

325 Pavements **C-202**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Tuesday, October 18, 2011 (cont.)

**3:30 pm - 6:00 pm**

544 Fiber-Reinforced Concrete **C-201**

**3:30 pm - 6:30 pm**

435 Deflection **C-237**

**4:00 pm - 5:30 pm**

308/213 Guide on Internal Curing **M-COLONNADE B**

**4:00 pm - 6:00 pm**

350-L Env Str - Specification **M-456 CONFERENCE ROOM**

**5:00 pm - 6:00 pm**

Faculty Network Reception **M-CROSSROADS**

349/359 ACI 349 and ACI 359 Joint Committee **C-204**

**6:00 pm - 9:00 pm**

Concrete Mixer **UNION TERMINAL**

## Wednesday, October 19, 2011

**7:00 am - 9:00 am**

SYPAC Student & Young Professional Activities **C-251**

**7:00 am - 10:00 am**

★ Guest Hospitality **M-CROSSROADS**

Coffee Break **C-BALLROOM FOYER**

TCSC TAC Construction Standards Committee **C-238**

**7:00 am - 3:00 pm**

Speaker Ready Room **C-210**

**8:00 am - 10:00 am**

359-A Working Group on Design **C-203**

**8:00 am - 10:30 am**

308-B Curing - Specifications **C-234**

**8:00 am - 12:00 pm**

ACI Registration & Bookstore **C-BALLROOM FOYER**

**8:00 am - 5:00 pm**

350 Environmental Structures **C-232**



# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Wednesday, October 19, 2011 (cont.)

**8:00 am - 6:00 pm**

318 Building Code **C-GRAND A**

**8:30 am - 10:00 am**

C601-C Masonry Testing Technician **C-235**

**8:30 am - 10:30 am**

303 Architectural CIP **C-261**

**8:30 am - 11:30 am**

211 Proportioning **C-230**

330-TG Parking Lots & Paving Sites TG **C-237**

363 High Strength **C-231**

**9:00 am - 10:00 am**

359-B Materials, Fabrication and Examination **C-207**

**9:00 am - 12:00 pm Sessions**

CLSM from Practice to Theory **C-JUNIOR A**

Multi-Type Durability Attack, Part 1 **C-JUNIOR B**

Rapid Nondestructive Testing of Reinforced  
Concrete Bridge Decks—From Theory to  
Practice, Part 1 **C-JUNIOR C**

Silica Fume Concrete Field Applications  
and Performance **C-206**

**9:00 am - 12:00 pm**

ACIFdn ACI Foundation **C-260**

**9:00 am - 1:00 pm**

✓ Taft Museum and Taft Home Tour **DEPART MILLENNIUM**

**9:00 am - 3:00 pm**

✓ Wright Patterson Air Force  
Base Tour **DEPART MILLENNIUM**

**9:00 am - 5:00 pm**

376-TG1 RLG Containment Structures - TG M3 **C-251**

# Daily Program

All schedule and location changes will be posted daily in **C-BALLROOM FOYER**.

✓ = Separate fee required ★ = Guest-only event TG = Task Group

**C = Duke Energy Convention Center M = Millennium Hotel**

## Wednesday, October 19, 2011 (cont.)

**10:00 am - 12:30 pm**

C601-B Concrete Quality Technical Mgr **C-235**

**10:00 am - 5:00 pm**

★ Guest Lounge **M-CARDINAL**

359 Nuclear Reactors **C-203**

**10:30 am - 1:00 pm**

308-A Curing Guide **C-234**

**10:30 am - 1:30 pm**

329 Perf Ready Mixed **C-204**

**11:00 am - 3:00 pm**

Lunch Concession **C-BALLROOM FOYER**

**11:30 am - 1:00 pm**

C601-D Decorative Concrete Finisher **C-261**

**1:00 pm - 4:00 pm**

330 Parking Lots & Site Paving **C-234**

**2:00 pm - 5:00 pm Sessions**

Multi-Type Durability Attack, Part 2 **C-JUNIOR B**

Promoting the Planning, Design, and Construction of Sustainable Infrastructure: The Institute for Sustainable Infrastructure's envision™ Sustainability Rating System **C-206**

Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 2 **C-JUNIOR C**

**2:00 pm - 5:00 pm**

308 Curing **C-231**

## Thursday, October 20, 2011

**8:00 am - 5:00 pm**

✓ACI/PCA 318-11 Building Code Seminar **M-STATESMEN**

**8:30 am - 5:00 pm**

BOD Board of Direction **M-BRONZE A**

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code   | Committee                           | Day | Time                | Room Name                    |
|--------|-------------------------------------|-----|---------------------|------------------------------|
| ACIFdn | ACI Foundation                      | Wed | 9:00 am - 12:00 pm  | <b>C-260</b>                 |
| BOD    | Board of Direction                  | Thu | 8:30 am - 5:00 pm   | <b>M-BRONZE A</b>            |
| C601-A | Adhesive Anchor Installer           | Mon | 11:30 am - 1:00 pm  | <b>C-261</b>                 |
| C601-B | Concrete Quality Technical Mgr      | Wed | 10:00 am - 12:30 pm | <b>C-235</b>                 |
| C601-C | Masonry Testing Technician          | Wed | 8:30 am - 10:00 am  | <b>C-235</b>                 |
| C601-D | Decorative Concrete Finisher        | Wed | 11:30 am - 1:00 pm  | <b>C-261</b>                 |
| C610   | Field Technician Cert               | Mon | 8:30 am - 11:00 am  | <b>C-230</b>                 |
| C620   | Laboratory Tech Cert                | Tue | 8:30 am - 10:00 am  | <b>C-250</b>                 |
| C630   | Construction Inspector Cert         | Tue | 10:00 am - 11:30 am | <b>C-234</b>                 |
| C631   | Conc Transportation Const Insp      | Mon | 1:00 pm - 2:30 pm   | <b>M-ATRIUM</b>              |
| C640   | Craftsman Cert                      | Sun | 11:00 am - 1:00 pm  | <b>C-252</b>                 |
| C660   | Shotcrete Nozzleman Cert            | Mon | 1:00 pm - 3:00 pm   | <b>M-456 CONFERENCE ROOM</b> |
| CAC    | Chapter Activities                  | Mon | 2:00 pm - 5:00 pm   | <b>C-230</b>                 |
| CC     | Convention Committee M2             | Tue | 3:00 pm - 5:00 pm   | <b>C-207</b>                 |
| CLC    | Construction Liaison                | Sun | 8:00 am - 10:30 am  | <b>C-202</b>                 |
| CPC    | Certification Programs              | Tue | 2:00 pm - 5:00 pm   | <b>M-PAVILION B</b>          |
| CRC    | Concrete Research Council           | Tue | 11:00 am - 1:00 pm  | <b>C-250</b>                 |
| E701   | Materials for Concrete Construction | Sun | 10:00 am - 11:30 am | <b>C-231</b>                 |
| E702   | Designing Concrete Structures       | Mon | 5:00 pm - 6:30 pm   | <b>C-238</b>                 |
| E703   | Concrete Construction Practices     | Mon | 5:00 pm - 7:00 pm   | <b>C-234</b>                 |
| E706   | Repair Application Procedures       | Sun | 8:00 am - 10:00 am  | <b>C-261</b>                 |
| E707   | Specification Education             | Tue | 11:30 am - 1:00 pm  | <b>C-234</b>                 |
| EAC    | Educational Activities M1           | Sat | 1:00 pm - 5:00 pm   | <b>C-202</b>                 |
| EAC    | Educational Activities M2           | Tue | 8:00 am - 12:00 pm  | <b>M-PAVILION A</b>          |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code      | Committee                                  | Day | Time                | Room Name                  |
|-----------|--|-----|---------------------|----------------------------|
| HTC       | Hot Topic                                  | Sun | 11:30 am - 1:00 pm  | <b>M-SALMON BOARD ROOM</b> |
| IC        | International Committee                    | Tue | 9:00 am - 11:30 am  | <b>C-207</b>               |
| IC-Conf   | International Conferences                  | Mon | 7:15 am - 8:30 am   | <b>C-234</b>               |
| IC-Part   | International Partnerships & Publications  | Sun | 10:00 am - 12:00 pm | <b>C-203</b>               |
| IJBRC     | Intl Joints & Bearings Research            | Tue | 8:00 am - 9:00 am   | <b>C-238</b>               |
| Intl-Cert | International Certification                | Sun | 3:30 pm - 5:00 pm   | <b>C-234</b>               |
| ISO/TC-71 | ISO/TC-71 Advisory Cmte                    | Mon | 1:00 pm - 2:30 pm   | <b>C-252</b>               |
| MEMC      | Membership                                 | Sun | 8:30 am - 11:30 am  | <b>C-230</b>               |
| MKTC      | Marketing                                  | Mon | 2:00 pm - 5:00 pm   | <b>C-261</b>               |
| PUBC      | Publications                               | Mon | 8:30 am - 10:30 am  | <b>C-202</b>               |
| RCC       | Responsibility                             | Sun | 2:00 pm - 5:00 pm   | <b>C-252</b>               |
| SYPAC     | Student & Young Professional Activities    | Wed | 7:00 am - 9:00 am   | <b>C-251</b>               |
| S801      | Student Activities                         | Sun | 8:00 am - 10:00 am  | <b>C-201</b>               |
| S802      | Teaching Methods and Educational Materials | Mon | 8:30 am - 10:00 am  | <b>C-238</b>               |
| S805      | Collegiate Concrete Council                | Sun | 4:00 pm - 5:00 pm   | <b>C-203</b>               |
| S806      | Young Professional Activities              | Mon | 10:00 am - 12:00 pm | <b>M-PAVILION B</b>        |
| TAC       | Technical Activities M1                    | Fri | 6:30 pm - 9:00 pm   | <b>M-COLONNADE B</b>       |
| TAC       | Technical Activities M2                    | Sat | 7:00 am - 6:00 pm   | <b>M-COLONNADE B</b>       |
| TAC       | Technical Activities M3                    | Sun | 7:00 am - 2:00 pm   | <b>C-236</b>               |
| TACRG1    | TAC - Review Group 1                       | Sun | 8:00 am - 11:00 am  | <b>C-234</b>               |
| TACRG2    | TAC - Review Group 2                       | Sun | 8:00 am - 11:00 am  | <b>C-235</b>               |
| TACRG3    | TAC - Review Group 3                       | Sun | 8:00 am - 11:00 am  | <b>C-237</b>               |
| TCSC      | TAC Construction Standards Committee       | Wed | 7:00 am - 10:00 am  | <b>C-238</b>               |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code  | Committee                               | Day | Time                | Room Name                  |
|-------|---|-----|---------------------|----------------------------|
| TRRC  | TAC Repair & Rehab                      | Tue | 7:00 am - 8:30 am   | <b>M-464 BOARD ROOM</b>    |
| TTAG  | Technology Transfer Advisory Group      | Tue | 7:00 am - 8:30 am   | <b>C-251</b>               |
| 117   | Tolerances                              | Tue | 8:30 am - 11:30 am  | <b>C-204</b>               |
| 118   | Computers                               | Mon | 8:30 am - 10:00 am  | <b>M-PAVILION B</b>        |
| 120   | History                                 | Tue | 1:30 pm - 3:00 pm   | <b>C-261</b>               |
| 121   | Quality Assurance                       | Sun | 3:00 pm - 5:00 pm   | <b>C-207</b>               |
| 122   | Energy Efficiency                       | Mon | 8:30 am - 10:00 am  | <b>C-235</b>               |
| 123   | Research                                | Sun | 4:00 pm - 5:00 pm   | <b>C-204</b>               |
| 124   | Aesthetics                              | Mon | 10:30 am - 12:00 pm | <b>M-SALMON BOARD ROOM</b> |
| 130   | Sustainability M1                       | Mon | 2:00 pm - 5:00 pm   | <b>C-232</b>               |
| 130   | Sustainability M2                       | Tue | 11:00 am - 1:00 pm  | <b>C-200</b>               |
| 130-A | Materials                               | Mon | 8:30 am - 10:00 am  | <b>C-232</b>               |
| 130-B | Production/Transport/Construction       | Mon | 10:00 am - 11:00 am | <b>M-PAVILION A</b>        |
| 130-C | Structures in Service                   | Tue | 10:00 am - 11:00 am | <b>C-250</b>               |
| 130-D | Rating Systems/Sustainability Tools     | Tue | 2:00 pm - 4:00 pm   | <b>C-262</b>               |
| 130-E | Design/Specifications/Codes/Regulations | Mon | 11:00 am - 1:00 pm  | <b>C-236</b>               |
| 130-F | Social Issues                           | Sun | 12:30 pm - 2:00 pm  | <b>M-COLONNADE A</b>       |
| 130-G | Education/Certification                 | Tue | 7:30 am - 9:00 am   | <b>C-261</b>               |
| 131   | BIM                                     | Tue | 3:00 pm - 5:00 pm   | <b>C-263</b>               |
| 201   | Durability                              | Tue | 8:00 am - 11:00 am  | <b>C-200</b>               |
| 201-A | Durability - Sulfate Attack             | Sun | 3:30 pm - 5:00 pm   | <b>M-PAVILION A</b>        |
| 201-C | Durability - Condition Report           | Tue | 1:00 pm - 3:00 pm   | <b>M-CABANA A</b>          |
| 201-D | Durability - Oversight Committee        | Mon | 11:30 am - 1:00 pm  | <b>C-252</b>               |
| 201-E | Salt Weathering/Salt Attack             | Mon | 4:00 pm - 6:00 pm   | <b>C-235</b>               |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

| Code   | Committee  | Day | Time                | Room Name                    |
|--------|--|-----|---------------------|------------------------------|
| 207    | Mass Concrete  | Mon | 10:00 am - 1:00 pm  | <b>C-212</b>                 |
| 209    | Creep & Shrinkage  | Mon | 8:30 am - 11:30 am  | <b>C-252</b>                 |
| 211    | Proportioning  | Wed | 8:30 am - 11:30 am  | <b>C-230</b>                 |
| 211-A  | Proportioning - Editorial                                | Tue | 10:00 am - 12:00 pm | <b>M-CABANA B</b>            |
| 211-C  | Proportioning - No Slump                                 | Tue | 8:00 am - 10:00 am  | <b>M-COLONNADE A</b>         |
| 211-E  | Proportioning - Evaluation                               | Tue | 11:30 am - 1:00 pm  | <b>M-456 CONFERENCE ROOM</b> |
| 211-F  | Proportioning - Submittal                                | Tue | 2:00 pm - 4:00 pm   | <b>M-456 CONFERENCE ROOM</b> |
| 211-I  | Assessing Aggregate Gradation                            | Tue | 1:00 pm - 3:00 pm   | <b>M-464 BOARD ROOM</b>      |
| 211-N  | Proportioning with Ground Limestone and Material Fillers | Tue | 3:00 pm - 5:00 pm   | <b>C-261</b>                 |
| 211-P  | Guide for Selecting Proportions for Pumpable Concrete    | Mon | 3:30 pm - 5:00 pm   | <b>C-234</b>                 |
| 212    | Chemical Admixtures                                      | Mon | 2:00 pm - 5:00 pm   | <b>M-COLONNADE A</b>         |
| 213    | Lightweight  | Tue | 1:30 pm - 3:30 pm   | <b>M-COLONNADE B</b>         |
| 213-TG | Lightweight - Editorial TG                               | Tue | 11:30 am - 1:00 pm  | <b>M-CABANA A</b>            |
| 214    | Strength Tests M1  | Mon | 1:00 pm - 2:00 pm   | <b>C-234</b>                 |
| 214    | Strength Tests M2  | Mon | 3:30 pm - 5:00 pm   | <b>C-207</b>                 |
| 215    | Fatigue  | Sun | 2:00 pm - 3:00 pm   | <b>C-260</b>                 |
| 216    | Fire Resistance  | Mon | 10:00 am - 1:00 pm  | <b>C-237</b>                 |
| 221    | Aggregates   | Sun | 11:30 am - 1:00 pm  | <b>C-207</b>                 |
| 222    | Corrosion  | Tue | 2:00 pm - 5:00 pm   | <b>C-264</b>                 |
| 223    | Shrinkage Compensating                                   | Tue | 2:00 pm - 5:00 pm   | <b>C-235</b>                 |
| 223-C  | Shr Compensating Constr                                  | Tue | 1:00 pm - 2:00 pm   | <b>C-235</b>                 |
| 223-D  | Shr Compensating - Non Reinforced Concrete or Mortar     | Tue | 11:30 am - 1:00 pm  | <b>C-235</b>                 |
| 224    | Cracking   | Sun | 2:30 pm - 5:00 pm   | <b>M-COLONNADE B</b>         |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code    | Committee  | Day | Time                | Room Name               |
|---------|--|-----|---------------------|-------------------------|
| 225     | Hydraulic Cements                                | Mon | 1:00 pm - 4:00 pm   | <b>M-PAVILION B</b>     |
| 228     | Nondestructive Testing                           | Sun | 10:00 am - 12:30 pm | <b>C-232</b>            |
| 228-A   | NDT Technician Certification                     | Mon | 1:00 pm - 3:00 pm   | <b>C-235</b>            |
| 229     | Controlled Low Strength                          | Tue | 2:00 pm - 5:00 pm   | <b>C-231</b>            |
| 230     | Soil Cement                                      | Tue | 8:00 am - 9:30 am   | <b>C-260</b>            |
| 231     | Early Age  | Mon | 2:00 pm - 3:30 pm   | <b>C-263</b>            |
| 232     | Fly Ash & Natural Pozzolans                      | Mon | 1:00 pm - 4:00 pm   | <b>C-236</b>            |
| 232-A   | Fly Ash - Use of Nat Pozzolans                   | Mon | 10:00 am - 1:00 pm  | <b>M-PORTICO</b>        |
| 233     | Slag Cement                                      | Tue | 2:00 pm - 6:00 pm   | <b>C-236</b>            |
| 234     | Silica Fume                                      | Tue | 2:00 pm - 3:30 pm   | <b>C-237</b>            |
| 235     | Electronic Data Exchange                         | Tue | 2:00 pm - 5:00 pm   | <b>C-260</b>            |
| 236     | Material Science                                 | Mon | 4:30 pm - 5:30 pm   | <b>C-204</b>            |
| 236-B   | Material Science - Transport Mechanisms          | Sun | 2:00 pm - 3:30 pm   | <b>C-261</b>            |
| 236-D   | Material Science - Nanotechnology of Concrete M1 | Sun | 3:30 pm - 5:00 pm   | <b>C-261</b>            |
| 236-D   | Material Science - Nanotechnology of Concrete M2 | Tue | 1:00 pm - 3:00 pm   | <b>C-234</b>            |
| 236-TG1 | Advanced Analysis Techniques for Concrete        | Tue | 3:00 pm - 4:00 pm   | <b>M-464 BOARD ROOM</b> |
| 236-TG2 | Sustainability Engineered by Material Science    | Tue | 11:30 am - 12:30 pm | <b>C-263</b>            |
| 236-TG4 | Modeling and Simulation Methods                  | Tue | 10:30 am - 12:30 pm | <b>C-251</b>            |
| 237     | Self Consolidating Concrete                      | Mon | 8:15 am - 11:00 am  | <b>C-205</b>            |
| 238     | Workability of Fresh Concrete                    | Tue | 8:00 am - 9:30 am   | <b>M-COLONNADE B</b>    |
| 239     | Ultra-High Performance Concrete                  | Mon | 3:30 pm - 5:30 pm   | <b>M-PAVILION A</b>     |
| 301     | Specifications M1                                | Sun | 8:30 am - 12:00 pm  | <b>C-204</b>            |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code    | Committee                                 | Day | Time                | Room Name                    |
|---------|---|-----|---------------------|------------------------------|
| 301     | Specifications M2                         | Mon | 1:00 pm - 5:00 pm   | <b>C-201</b>                 |
| 301-A   | Spec - Gen Req, Definitions, & Tolerances | Mon | 8:30 am - 12:00 pm  | <b>M-COLONNADE A</b>         |
| 301-B   | Spec - Formwork & Reinforcement           | Sun | 12:30 pm - 4:30 pm  | <b>C-251</b>                 |
| 301-C   | Spec - Placing Consolidating & Curing     | Sun | 1:00 pm - 5:00 pm   | <b>C-250</b>                 |
| 301-D   | Spec - Lightweight & Massive Concrete     | Sun | 1:00 pm - 5:00 pm   | <b>M-SALMON BOARD ROOM</b>   |
| 301-E   | Spec - Post-Tensioned Concrete            | Sun | 3:00 pm - 5:00 pm   | <b>M-464 BOARD ROOM</b>      |
| 301-F   | Spec - Precast Concrete Panels            | Mon | 8:30 am - 11:30 am  | <b>M-456 CONFERENCE ROOM</b> |
| 301-G   | Spec - Shrink Comp Conc & Ind Floor Slabs | Sun | 1:00 pm - 5:00 pm   | <b>C-238</b>                 |
| 301-H   | Spec - Tilt Up Constr & Arch Conc         | Sun | 12:30 pm - 3:30 pm  | <b>C-234</b>                 |
| 301-SC  | Spec - Steering Committee                 | Sun | 7:00 am - 8:30 am   | <b>C-230</b>                 |
| 302     | Floor Construction                        | Mon | 8:30 am - 1:00 pm   | <b>M-BRONZE B</b>            |
| 303     | Architectural CIP                         | Wed | 8:30 am - 10:30 am  | <b>C-261</b>                 |
| 304     | Measuring/Mix/Trans/Placing               | Mon | 11:30 am - 1:00 pm  | <b>C-262</b>                 |
| 305     | Hot Weather                               | Sun | 2:00 pm - 4:00 pm   | <b>C-204</b>                 |
| 306     | Cold Weather                              | Tue | 8:30 am - 11:30 am  | <b>C-252</b>                 |
| 307     | Chimneys                                  | Mon | 2:00 pm - 5:00 pm   | <b>M-PORTICO</b>             |
| 308     | Curing                                    | Wed | 2:00 pm - 5:00 pm   | <b>C-231</b>                 |
| 308/213 | Guide on Internal Curing                  | Tue | 4:00 pm - 5:30 pm   | <b>M-COLONNADE B</b>         |
| 308-A   | Curing - Guide                            | Wed | 10:30 am - 1:00 pm  | <b>C-234</b>                 |
| 308-B   | Curing - Specifications                   | Wed | 8:00 am - 10:30 am  | <b>C-234</b>                 |
| 309     | Consolidation                             | Sun | 3:00 pm - 5:00 pm   | <b>C-231</b>                 |
| 310     | Decorative Concrete                       | Sun | 3:00 pm - 5:00 pm - | <b>C-230</b>                 |
| 310-TG1 | Curing Decorative Concrete                | Sun | 2:00 pm - 3:00 pm   | <b>C-237</b>                 |
| 311     | Inspection                                | Mon | 8:30 am - 10:00 am  | <b>M-SALMON BOARD ROOM</b>   |



# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code       | Committee                           | Day | Time                | Room Name            |
|------------|-------------------------------------|-----|---------------------|----------------------|
| 314        | Simplified Design Buildings         | Sun | 8:30 am - 11:30 am  | <b>M-COLONNADE B</b> |
| 315        | Detailing                           | Sun | 2:00 pm - 5:00 pm   | <b>C-202</b>         |
| 315-B      | Detailing - Constructibility        | Sun | 8:30 am - 11:30 am  | <b>C-207</b>         |
| 318        | Building Code                       | Wed | 8:00 am - 6:00 pm   | <b>C-GRAND A</b>     |
| 318-A      | General Concrete Constr             | Tue | 1:30 pm - 6:00 pm   | <b>C-238</b>         |
| 318/ASCE 7 | ACI 318/ASCE 7                      | Mon | 8:30 am - 10:00 am  | <b>C-237</b>         |
| 318-B      | Reinforcement & Development M1      | Mon | 10:00 am - 1:00 pm  | <b>C-201</b>         |
| 318-B      | Reinforcement & Development M2      | Tue | 8:00 am - 12:30 pm  | <b>C-236</b>         |
| 318-C      | Serviceability/Safety               | Tue | 1:30 pm - 6:00 pm   | <b>C-230</b>         |
| 318-D      | Flexure & Axial Loads M1            | Mon | 10:00 am - 1:00 pm  | <b>M-COLONNADE B</b> |
| 318-D      | Flexure & Axial Loads M2            | Tue | 8:00 am - 12:30 pm  | <b>C-230</b>         |
| 318-E      | Shear & Torsion M1                  | Mon | 10:00 am - 1:00 pm  | <b>C-231</b>         |
| 318-E      | Shear & Torsion M2                  | Tue | 8:00 am - 12:30 pm  | <b>C-231</b>         |
| 318-G      | Prestressed Precast                 | Tue | 8:00 am - 12:30 pm  | <b>C-262</b>         |
| 318-H      | Seismic Provisions                  | Tue | 1:30 pm - 6:00 pm   | <b>C-250</b>         |
| 318-L      | International Liaison               | Mon | 3:30 pm - 5:00 pm   | <b>C-250</b>         |
| 318-R      | Code Reorganization                 | Tue | 1:30 pm - 6:00 pm   | <b>C-252</b>         |
| 318-S      | Spanish Translation                 | Mon | 2:00 pm - 3:30 pm   | <b>M-PAVILION A</b>  |
| 318-TGF    | TGF Foundation                      | Mon | 5:00 pm - 6:30 pm   | <b>M-CABANA B</b>    |
| 325        | Pavements                           | Tue | 3:30 pm - 5:30 pm   | <b>C-202</b>         |
| 325-A      | Pavements - Design                  | Tue | 8:00 am - 10:00 am  | <b>C-235</b>         |
| 325-C      | Pavements - Prestressed and Precast | Tue | 10:30 am - 12:00 pm | <b>M-PAVILION B</b>  |
| 325-D      | Proportioning for Pavements         | Tue | 1:00 pm - 2:00 pm   | <b>M-CABANA B</b>    |
| 325-E      | Accelerated Paving                  | Tue | 2:00 pm - 3:30 pm   | <b>M-CABANA B</b>    |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center**   **M = Millennium Hotel**

| Code      | Committee                      | Day | Time                | Room Name            |
|-----------|--------------------------------|-----|---------------------|----------------------|
| 327       | RCC Pavements                  | Tue | 11:00 am - 1:00 pm  | <b>C-260</b>         |
| 329       | Perf Ready Mixed               | Wed | 10:30 am - 1:30 pm  | <b>C-204</b>         |
| 330       | Parking Lots & Site Paving     | Wed | 1:00 pm - 4:00 pm   | <b>C-234</b>         |
| 330-TG    | Parking Lots & Site Paving     | Wed | 8:30 am - 11:30 am  | <b>C-237</b>         |
| 332       | Residential Concrete           | Tue | 1:00 pm - 5:00 pm   | <b>C-232</b>         |
| 332-B     | Conc Mtrls and Plcmt           | Tue | 9:00 am - 10:30 am  | <b>C-238</b>         |
| 332-D & E | Residential Concrete D & E     | Tue | 10:30 am - 12:00 pm | <b>C-261</b>         |
| 332-F     | Residential Concrete Slabs     | Tue | 9:00 am - 10:30 am  | <b>C-261</b>         |
| 334       | Shells                         | Mon | 5:00 pm - 6:00 pm   | <b>C-237</b>         |
| 335       | Composite Hybrid               | Sun | 11:30 am - 1:00 pm  | <b>C-230</b>         |
| 336       | Footings                       | Sun | 1:00 pm - 5:00 pm   | <b>M-PAVILION B</b>  |
| 341       | Earthquake - Resistant Bridges | Sun | 3:00 pm - 5:00 pm   | <b>C-232</b>         |
| 341-A     | Equake Res Brdgs - Columns     | Sun | 9:30 am - 11:00 am  | <b>C-252</b>         |
| 341-B     | Equake Res Brdgs - Pier Walls  | Sun | 8:00 am - 9:30 am   | <b>C-252</b>         |
| 341-C     | Equake Res Brdgs - Retrofit    | Sun | 1:30 pm - 3:00 pm   | <b>C-231</b>         |
| 341-D     | Perf Based Seismic Design      | Sun | 11:00 am - 12:30 pm | <b>C-251</b>         |
| 342       | Bridge Evaluation              | Sun | 8:30 am - 10:00 am  | <b>C-203</b>         |
| 343       | Bridge Design                  | Mon | 10:00 am - 1:00 pm  | <b>C-238</b>         |
| 343-A     | Design                         | Sun | 11:00 am - 12:00 pm | <b>C-234</b>         |
| 343-B     | Bridge Deck Design             | Mon | 8:15 am - 9:00 am   | <b>C-203</b>         |
| 345       | Bridge Construction            | Sun | 1:30 pm - 3:30 pm   | <b>M-PAVILION A</b>  |
| 346       | CIP Pipe                       | Mon | 11:30 am - 1:00 pm  | <b>C-234</b>         |
| 347       | Formwork M1                    | Sat | 9:00 am - 6:00 pm   | <b>M-PAVILION B</b>  |
| 347       | Formwork M2                    | Sun | 8:30 am - 12:30 pm  | <b>C-205</b>         |
| 347-A     | Formwork Specification         | Sat | 7:00 pm - 9:00 pm   | <b>M-COLONNADE A</b> |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code    | Committee  | Day | Time                | Room Name             |
|---------|--|-----|---------------------|-----------------------|
| 348     | Safety   | Mon | 2:00 pm - 3:30 pm   | C-260                 |
| 349     | Nuclear Structures   | Tue | 1:30 pm - 5:00 pm   | C-204                 |
| 349-C   | Nuclear Structures - Anchorage   | Mon | 8:15 am - 11:00 am  | C-236                 |
| 349-TG  | ACI 349 and ACI 359 Joint Committee  | Tue | 5:00 pm - 6:00 pm   | C-204                 |
| 349-A&B | Nuclear Structures - Design & Materials  | Mon | 12:30 pm - 4:30 pm  | C-202                 |
| 350     | Environmental Structures   | Wed | 8:00 am - 5:00 pm   | C-232                 |
| 350-A   | Env Str - General & Concrete   | Tue | 11:30 am - 5:00 pm  | M-ATRIUM              |
| 350-B   | Env Str - Durability   | Mon | 8:30 am - 1:00 pm   | C-260                 |
| 350-C   | Env Str - Reinf & Devel  | Sun | 8:30 am - 11:30 am  | M-464 BOARD ROOM      |
| 350-D   | Env Str - Structural   | Mon | 8:30 am - 6:30 pm   | C-251                 |
| 350-E   | Env Str - Precast/ Prestressed   | Sun | 1:00 pm - 5:00 pm   | C-262                 |
| 350-F   | Env Str - Seismic  | Tue | 8:30 am - 3:30 pm   | C-202                 |
| 350-G&K | Env Str - Tightness Testing/Haz Mat  | Tue | 8:30 am - 11:30 am  | C-237                 |
| 350-H   | Env Str - Editorial  | Mon | 1:00 pm - 2:30 pm   | M-CABANA A            |
| 350-J   | Env Str - Education  | Mon | 3:30 pm - 6:30 pm   | C-260                 |
| 350-L   | Env Str - Specification  | Tue | 4:00 pm - 6:00 pm   | M-456 CONFERENCE ROOM |
| 350-SC  | Env Str - Steering Comm  | Sun | 11:30 am - 1:00 pm  | C-237                 |
| 351     | Equip Foundations  | Mon | 2:30 pm - 4:30 pm   | C-252                 |
| 351-B   | Grtnng Fndns - Equip Machnry   | Mon | 8:15 am - 10:00 am  | M-COLONNADE B         |
| 351-C   | Equip Foundations - Dynamic Foundations  | Sun | 3:00 pm - 5:00 pm   | C-237                 |
| 351-D   | Design Provisions for Heavy Industrial Equipment and Machinery Concrete Support Structures | Mon | 10:00 am - 12:00 pm | C-235                 |
| 352     | Joints   | Sun | 2:00 pm - 5:00 pm   | C-236                 |
| 355     | Anchorage  | Sun | 1:30 pm - 5:00 pm   | C-201                 |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code    | Committee                                     | Day | Time                | Room Name               |
|---------|---|-----|---------------------|-------------------------|
| 355-TG  | Anchorage TG                                  | Mon | 8:30 am - 11:00 am  | <b>C-207</b>            |
| 357     | Offshore & Marine                             | Tue | 8:30 am - 10:30 am  | <b>M-PAVILION B</b>     |
| 359     | Nuclear Reactors                              | Wed | 10:00 am - 5:00 pm  | <b>C-203</b>            |
| 359-A   | Working Group on Design                       | Wed | 8:00 am - 10:00 am  | <b>C-203</b>            |
| 359-B   | Materials, Fabrication and Examination        | Wed | 9:00 am - 10:00 am  | <b>C-207</b>            |
| 359-C   | Working Group on Modernization                | Tue | 3:00 pm - 5:00 pm   | <b>C-234</b>            |
| 359-TG  | ACI 349 and ACI 359 Joint Committee           | Tue | 5:00 pm - 6:00 pm   | <b>C-204</b>            |
| 360     | Slabs on Ground                               | Mon | 2:00 pm - 6:30 pm   | <b>C-205</b>            |
| 362     | Parking Structures                            | Mon | 1:00 pm - 5:00 pm   | <b>C-212</b>            |
| 362-A   | Parking Str - Standard                        | Mon | 8:30 am - 12:00 pm  | <b>M-464 BOARD ROOM</b> |
| 363     | High Strength                                 | Wed | 8:30 am - 11:30 am  | <b>C-231</b>            |
| 363-A   | High Strength - Lightweight Concrete          | Tue | 3:30 pm - 5:00 pm   | <b>M-CABANA B</b>       |
| 364     | Rehabilitation                                | Mon | 1:00 pm - 3:00 pm   | <b>C-204</b>            |
| 364-TG1 | Rehabilitation - Guide                        | Mon | 11:00 am - 12:00 pm | <b>M-PAVILION A</b>     |
| 365     | Service Life M1                               | Mon | 9:00 am - 11:00 am  | <b>C-262</b>            |
| 365     | Service Life M2                               | Mon | 2:00 pm - 4:00 pm   | <b>M-COLONNADE B</b>    |
| 369     | Seismic - Rehab M1                            | Sun | 1:00 pm - 2:30 pm   | <b>C-207</b>            |
| 369     | Seismic - Rehab M2                            | Mon | 2:00 pm - 6:00 pm   | <b>C-262</b>            |
| 370     | Dynamic & Vibratory Effects                   | Sun | 1:30 pm - 4:00 pm   | <b>C-264</b>            |
| 371     | Elevated Tanks with Concrete Pedestals        | Tue | 11:00 am - 12:30 pm | <b>M-464 BOARD ROOM</b> |
| 372     | Tanks Wrapped Wire/Strand                     | Tue | 3:00 pm - 5:00 pm   | <b>M-CABANA A</b>       |
| 374     | Seismic Design                                | Mon | 8:15 am - 12:00 pm  | <b>C-204</b>            |
| 374-TG  | Protocol for Testing RC - Structural Elements | Sun | 11:30 am - 1:00 pm  | <b>M-ATRIUM</b>         |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code    | Committee                             | Day | Time                | Room Name                  |
|---------|---------------------------------------|-----|---------------------|----------------------------|
| 375     | Design for Wind Loads                 | Mon | 1:00 pm - 3:30 pm   | <b>C-238</b>               |
| 376     | RLG Containment Structures M1         | Sat | 3:00 pm - 5:00 pm   | <b>C-204</b>               |
| 376     | RLG Containment Structures M2         | Sun | 9:00 am - 5:00 pm   | <b>C-263</b>               |
| 376-TG1 | RLG Containment Structures - TG M1    | Mon | 9:00 am - 5:00 pm   | <b>C-203</b>               |
| 376-TG1 | RLG Containment Structures - TG M2    | Tue | 9:00 am - 5:00 pm   | <b>C-203</b>               |
| 376-TG1 | RLG Containment Structures - TG M3    | Wed | 9:00 am - 5:00 pm   | <b>C-251</b>               |
| 408     | Development and Splicing              | Sun | 8:30 am - 11:30 am  | <b>C-264</b>               |
| 408-A   | Mech Splices                          | Sun | 7:00 am - 8:30 am   | <b>M-SALMON BOARD ROOM</b> |
| 421     | Reinf Slabs                           | Sun | 10:00 am - 1:00 pm  | <b>C-201</b>               |
| 423     | Prestressed                           | Mon | 8:30 am - 12:30 pm  | <b>C-263</b>               |
| 423/445 | Adhoc Grp on Shear in Prestress Conc  | Sun | 3:00 pm - 5:00 pm   | <b>C-235</b>               |
| 423-E   | Prestressed Losses                    | Sun | 1:00 pm - 4:00 pm   | <b>C-203</b>               |
| 435     | Deflection                            | Tue | 3:30 pm - 6:30 pm   | <b>C-237</b>               |
| 437     | Strength Evaluation                   | Mon | 10:30 am - 12:30 pm | <b>C-202</b>               |
| 439     | Steel Reinforcement                   | Mon | 8:30 am - 10:00 am  | <b>C-212</b>               |
| 439-A   | Steel Reinforcement - Wire            | Sun | 3:30 pm - 5:00 pm   | <b>M-ATRIUM</b>            |
| 440     | Fiber-Reinforced Polymer              | Tue | 8:30 am - 11:30 am  | <b>C-205</b>               |
| 440-D   | Research Development and Applications | Sun | 1:30 pm - 3:00 pm   | <b>C-232</b>               |
| 440-E   | FRP - Prof Education                  | Mon | 8:30 am - 10:00 am  | <b>M-PAVILION A</b>        |
| 440-F   | FRP - Repair Strengthening            | Mon | 3:00 pm - 6:00 pm   | <b>C-200</b>               |
| 440-H   | FRP - Reinforced Concrete             | Sun | 8:30 am - 11:30 am  | <b>C-200</b>               |
| 440-J   | FRP - Stay-in-Place Forms             | Mon | 10:00 am - 11:30 am | <b>C-232</b>               |
| 440-L   | FRP - Durability                      | Sun | 3:00 pm - 5:00 pm   | <b>C-205</b>               |
| 440-M   | FRP - Repair of Masonry Str           | Mon | 1:30 pm - 3:00 pm   | <b>C-200</b>               |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code  | Committee                      | Day | Time                | Room Name     |
|-------|--------------------------------|-----|---------------------|---------------|
| 441   | Columns                        | Mon | 11:30 am - 2:00 pm  | C-232         |
| 441-E | Columns - Multi Spiral Reinf   | Sun | 11:30 am - 1:00 pm  | C-238         |
| 444   | Experimental Analysis          | Tue | 8:00 am - 10:00 am  | C-234         |
| 445   | Shear & Torsion                | Mon | 2:00 pm - 6:00 pm   | C-231         |
| 445-A | Shear & Torsn - Strut & Tie    | Sun | 10:30 am - 1:30 pm  | C-202         |
| 445-B | Shear & Torsn - Seismic Shear  | Sun | 8:00 am - 11:00 am  | M-ATRIUM      |
| 445-C | Shear & Torsn - Punching Shear | Sun | 1:00 pm - 3:00 pm   | C-235         |
| 445-D | Shear & Torsn - Database       | Sun | 3:00 pm - 5:00 pm   | M-PORTICO     |
| 445-E | Shear & Torsn - SOA Torsion    | Sun | 12:30 pm - 2:00 pm  | C-260         |
| 446   | Fracture Mechanics             | Mon | 3:30 pm - 5:00 pm   | C-238         |
| 447   | Finite Element Analysis        | Mon | 11:00 am - 1:30 pm  | C-207         |
| 506   | Shotcreting                    | Tue | 8:30 am - 11:30 am  | C-263         |
| 506-A | Shotcreting - Evaluation       | Sun | 9:00 am - 11:00 am  | C-250         |
| 506-B | Shotcreting - Fiber Reinforced | Sun | 2:00 pm - 3:00 pm   | M-COLONNADE A |
| 506-C | Shotcreting - Guide            | Mon | 10:30 am - 12:30 pm | M-CABANA A    |
| 506-E | Shotcreting - Specifications   | Mon | 8:30 am - 10:30 am  | M-CABANA A    |
| 506-F | Shotcreting - Underground      | Mon | 3:00 pm - 4:00 pm   | C-235         |
| 506-G | Qualifications for Projects    | Sun | 11:00 am - 1:00 pm  | C-235         |
| 515   | Protective Systems             | Tue | 10:30 am - 12:00 pm | C-238         |
| 522   | Pervious Concrete              | Tue | 8:00 am - 11:00 am  | C-232         |
| 523   | Cellular Concrete              | Tue | 10:00 am - 1:00 pm  | M-COLONNADE B |
| 523-A | Cellular - Autoclaved Aerated  | Tue | 8:30 am - 10:00 am  | C-201         |
| 524   | Plastering                     | Mon | 8:30 am - 10:00 am  | C-231         |
| 533   | Precast Panels                 | Sun | 1:00 pm - 2:30 pm   | C-230         |
| 543   | Piles                          | Mon | 8:30 am - 11:30 am  | C-234         |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code  | Committee                                     | Day | Time                | Room Name            |
|-------|---|-----|---------------------|----------------------|
| 544   | Fiber-Reinforced Concrete                     | Tue | 3:30 pm - 6:00 pm   | <b>C-201</b>         |
| 544-A | FRC - Production & Applications               | Mon | 11:30 am - 1:00 pm  | <b>C-264</b>         |
| 544-B | FRC - Education                               | Mon | 8:30 am - 10:00 am  | <b>C-201</b>         |
| 544-C | FRC - Testing                                 | Tue | 2:00 pm - 3:30 pm   | <b>C-201</b>         |
| 544-D | FRC - Structural Uses                         | Mon | 3:30 pm - 6:00 pm   | <b>C-263</b>         |
| 544-E | FRC - Mechanical Properties                   | Mon | 2:00 pm - 3:30 pm   | <b>C-234</b>         |
| 544-F | FRC - Durability                              | Tue | 10:30 am - 12:00 pm | <b>C-201</b>         |
| 546   | Repair  | Mon | 8:30 am - 11:30 am  | <b>C-264</b>         |
| 546-C | Repair - Guide                                | Sun | 10:00 am - 12:00 pm | <b>M-PAVILION B</b>  |
| 548   | Polymers                                      | Tue | 8:30 am - 11:30 am  | <b>C-264</b>         |
| 548-A | Polymers - Overlays                           | Mon | 8:15 am - 11:00 am  | <b>M-CABANA B</b>    |
| 548-B | Polymers - Adhesives                          | Mon | 1:30 pm - 4:30 pm   | <b>M-CABANA B</b>    |
| 548-C | Structural Polymer Design                     | Mon | 11:00 am - 12:30 pm | <b>M-CABANA B</b>    |
| 549   | Thin Reinforced                               | Sun | 10:30 am - 12:30 pm | <b>C-262</b>         |
| 549-A | Glass Fiber-Reinforced Concrete - Spray-Up    | Sun | 8:30 am - 10:30 am  | <b>C-262</b>         |
| 550   | Precast Structures                            | Sun | 3:00 pm - 4:30 pm   | <b>M-COLONNADE A</b> |
| 551   | Tilt Up                                       | Sun | 9:00 am - 12:00 pm  | <b>M-PORTICO</b>     |
| 552   | Cementitious Grouting                         | Tue | 11:30 am - 2:00 pm  | <b>C-237</b>         |
| 555   | Recycled                                      | Mon | 5:00 pm - 6:30 pm   | <b>C-230</b>         |
| 560   | Design & Constr ICFs                          | Tue | 8:30 am - 10:30 am  | <b>C-251</b>         |
| 562   | Eval, Repair & Rehab                          | Sun | 1:00 pm - 5:00 pm   | <b>C-200</b>         |
| 562-A | Eval, Repair & Rehab - Life Safety            | Sat | 4:00 pm - 6:00 pm   | <b>C-203</b>         |
| 562-B | Eval, Repair & Rehab - Loads                  | Sun | 8:00 am - 12:00 pm  | <b>C-260</b>         |
| 562-C | Eval, Repair & Rehab - Structural Analysis M1 | Sat | 4:00 pm - 6:00 pm   | <b>M-COLONNADE A</b> |

# Numerical Committee Meeting Listing

**C = Duke Energy Convention Center** **M = Millennium Hotel**

| Code  | Committee  | Day | Time                | Room Name             |
|-------|--|-----|---------------------|-----------------------|
| 562-C | Eval, Repair & Rehab - Structural Analysis M2      | Sat | 7:00 pm - 9:00 pm   | M-ATRIUM              |
| 562-D | Eval, Repair & Rehab - Structural Repair Design M1 | Sat | 10:00 am - 12:00 pm | M-COLONNADE A         |
| 562-D | Eval, Repair & Rehab - Structural Repair Design M2 | Sat | 1:00 pm - 4:00 pm   | M-COLONNADE A         |
| 562-E | Eval, Repair & Rehab - Durability Qlty Assurance   | Sat | 6:00 pm - 9:00 pm   | M-PAVILION B          |
| 562-F | Eval, Repair & Rehab - General                     | Sat | 1:00 pm - 6:00 pm   | M-ATRIUM              |
| 563   | Specs for Repair of Struct Conc in Bldgs           | Tue | 1:00 pm - 5:00 pm   | M-PAVILION A          |
| 563-C | Excavation/Surface Preparation                     | Tue | 8:00 am - 9:00 am   | M-CABANA A            |
| 563-F | Concrete Mixtures                                  | Tue | 8:00 am - 9:00 am   | M-456 CONFERENCE ROOM |
| 563-G | Placing/Curing                                     | Tue | 9:00 am - 10:00 am  | M-CABANA A            |
| 563-H | Architectural/Precast Concrete                     | Tue | 9:00 am - 10:00 am  | M-464 BOARD ROOM      |
| 563-I | Proprietary Grouts/Concrete                        | Mon | 3:00 pm - 4:00 pm   | M-CABANA A            |
| 563-J | Crack Repair                                       | Tue | 9:00 am - 10:00 am  | M-SALMON BOARD ROOM   |
| 563-K | External Reinforcement                             | Tue | 9:00 am - 10:00 am  | M-ATRIUM              |
| 563-L | Prestressed Concrete                               | Tue | 8:00 am - 9:00 am   | M-CABANA B            |
| 563-M | Polymer Concrete/Overlays                          | Mon | 3:00 pm - 4:00 pm   | M-456 CONFERENCE ROOM |
| 563-N | Protection Systems                                 | Tue | 9:00 am - 10:00 am  | M-456 CONFERENCE ROOM |
| 563-P | Corrosion  | Tue | 9:00 am - 10:00 am  | M-CABANA B            |



# Saturday, October 15, 2011

## 1:00 pm - 5:00 pm

### ACI Concrete Sustainability Forum IV

**C-JUNIOR B**

Sponsored by ISO/TC 71/SC 8, Environmental Management for Concrete and Concrete Structures and ACI Committee 130, Sustainability of Concrete

Session Co-Moderators: Koji Sakai  
Professor  
Kagawa University  
Takamatsu, Japan

Julie Buffenbarger  
Engineering & Architectural Specialist  
Lafarge  
Medina, OH

As the essence of sustainability continues to evolve, the ACI Concrete Sustainability Forum IV will present attendees with updates to the development of several standards, guidelines, and rating systems of interest to the global concrete industry. Additionally, the forum will explore strategies and technologies to reduce the materials' carbon footprint and increase the operational efficiency of concrete structures; it will conclude with lessons learned from the March 2011 earthquake in Japan. The ACI Concrete Sustainability Forum IV follows successful forums in St. Louis, MO; New Orleans, LA; and Pittsburgh, PA. This forum is sponsored by ISO/TC 71/SC 8, Environmental Management for Concrete and Concrete Structures, and ACI Committee 130, Sustainability of Concrete.

By attending this session, attendees will be able to:

1. Recognize the current state of ISO and ISI environmental standards development;
2. Recognize the examples of the latest concrete sustainability technologies;
3. Recognize the current state of ACI Committee 130's document development; and
4. Recognize the real meaning of concrete sustainability as a lesson from the Japan disaster.

*This session is pending approval from USGBC for 4 GBCI CE hours toward the LEED Credentialing Maintenance Program. To receive credit you must record the codes given throughout the session.*

### Introduction

**1:00 pm**

**Koji Sakai**, Professor, Kagawa University, Takamatsu, Japan; and **Julie Buffenbarger**, Engineering & Architectural Specialist, Lafarge, Medina, OH

# Saturday, October 15, 2011

## 1:00 pm - 5:00 pm

**ACI Concrete Sustainability Forum IV (cont.)**

**C-JUNIOR B**

**ISO/TC 71/SC 8 Standard Development**

**1:10 pm**

**Takafumi Noguchi**, Associate Professor, The University of Tokyo, Tokyo, Japan

**ISO/TC 59/SC 17 Standard Development**

**1:35 pm**

**Antonio Muñoz**, Quality & Training Director, FCC Construction, Madrid, Spain

**ACI 130: An Update on the Activities of the Sustainability of Concrete Committee**

**2:00 pm**

**Andrea Schokker**, Professor and Head of Civil Engineering, University of Minnesota Duluth, Duluth, MN

**Incorporating LCA into Codes and Standards**

**2:25 pm**

**Emily Lorenz**, Building Science & Sustainability Engineer, CTLGroup, Skokie, IL

**Institute for Sustainable Infrastructure's "EnvISIon" Infrastructure Sustainability Rating Tool**

**2:50 pm**

**Terry Neimeyer**, CEO & Chairman of the Board, KCI Technologies, Inc., Sparks, MD

**Low-Carbon High-Flowable Concrete "CLEAN CRETE"**

**3:25 pm**

**Nobufumi Takeda**, Senior Researcher, Obayashi Corporation, Tokyo, Japan

**An Aggressive Balance between Structure, Economics, and Sustainability**

**3:50 pm**

**Phillip Williams**, Vice President, Webcor, San Francisco, CA

**Essence of Sustainability—Lessons from Japan Disaster**

**4:15 pm**

**Koji Sakai**, Professor, Kagawa University, Takamatsu, Japan

**Discussion**

**4:40 pm**

**Koji Sakai**, Professor, Kagawa University, Takamatsu, Japan; and **Julie Buffenbarger**, Engineering & Architectural Specialist, Lafarge, Medina, OH

# Sunday, October 16, 2011

## 8:00 am - 9:00 am

### ★ Guest Overview

**M-CROSSROADS**

Acquaint yourself with the week ahead and preview the tours at the ACI Spring 2012 Convention in Dallas, TX, and Fall 2012 Convention in Toronto, ON, Canada.



★ = Guest event only

# Sunday, October 16, 2011

## 8:00 am - 9:00 am

### Convention #1 Breakfast

C-233

Sponsored by the ACI Convention Committee

Session Moderator: Kari L. Yuers  
President & CEO  
Kryton International Inc.  
Vancouver, BC, Canada

First-time convention attendees are invited to join Kari L. Yuers, Chair of the ACI Convention Committee, for a continental breakfast and a brief session to orient you to the week ahead. Attendees will have the opportunity to meet other convention attendees and learn what an ACI convention has to offer.



**CONVENTION #1**

# Session Handouts and Presentations on Demand

**Did you miss a presentation or want a copy of a session handout?** Handouts and presentations are available from speakers who have elected to provide and post them to the ACI Web site.

**Go to [www.aciconvention.org/handouts](http://www.aciconvention.org/handouts)** to download or print a copy of the handouts for the sessions you plan to attend.



## Session Disclaimer

The information presented represents the views and recommendations of the individual speaker(s) and does not necessarily represent the views of ACI or its committees. The audience is expected to exercise judgment as to the appropriate application of the information.

# Sunday, October 16, 2011

## 12:00 pm - 2:00 pm

✓ **International Lunch**

C-233

**\$30 U.S. per person**

Sponsored by the ACI International Committee

Speaker: Kazuhiko Kawashima  
Professor  
Tokyo Institute of Technology  
Tokyo, Japan



### **Topic: The Great East Japan (Tohoku) Earthquake: Performance of Structures and Lessons Learned**

When a 9.0-magnitude earthquake struck Japan on March 11, 2011, nearly 20,000 people lost their lives and over 107,000 buildings collapsed (including single-family dwellings). The earthquake shook the northern half of the main island (Honshu) of Japan, including the greater Tokyo area, and triggered a series of tsunamis that devastated much of the northeastern coast. Despite such a major event, only a limited number of buildings and bridges sustained serious structural damage due to ground shaking. The lessons learned from the 1995 Hyogo-ken Nanbu earthquake (Kobe earthquake) and research findings since the 1995 Kobe earthquake have been incorporated into such Japanese documents as the *Revised Design Specifications for Highway Bridges* and the *Building Standard Law*. Implementation of the new regulations and design guides has clearly enhanced performance of engineered structures during the earthquake.

On the other hand, the tsunami that followed the earthquake caused extensive damage to both transportation and building structures. The Great East Japan Earthquake revealed that tsunami-induced inundation and wave actions pose a serious risk to coastal structures. Detailed study is needed to identify tsunami effects on structures that may lead to the development of design recommendations.

Kawashima will present the impact of new Japanese regulations on the performance of engineered structures during the Tohoku earthquake and will discuss the direction of future seismic research on transportation structures based on the lessons learned from the Great East Japan Earthquake.

***PREREGISTRATION IS REQUIRED TO ATTEND.*** Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.

✓ = separate fee required      **80**

# Sunday, October 16, 2011

## 11:00 am - 5:00 pm

### Student Pervious Cylinder Competition and Student Concrete Project Competition Presentation **C-BALLROOM FOYER**

Sponsored by ACI Committee S801, Student Activities; The Center for Maximum Potential Building Systems (CMPBS); The Euclid Chemical Company; and the U.S. Green Building Council® (USGBC)



Center for  
Maximum  
Potential  
Building  
Systems

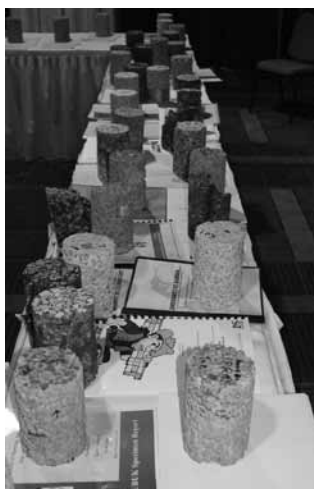


EUCLID CHEMICAL



Session Moderator: Lawrence Taber  
Structural Engineer  
Black & Veatch  
Overland Park, KS

Cheer on your favorite school and watch your future industry leaders compete in the Pervious Cylinder Concrete Competition! This competition demonstrates concrete's sustainability in a fun and exciting way. Watch water splash through pervious concrete cylinders, which are then split wide open. The team that is first to get water through their cylinder might not win if the cylinder isn't strong or economical enough! Additionally, check out the winners of ACI's Concrete Projects competition, as they present their award-winning project! The testing device is graciously provided by FORNEY.



# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

### **Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 1**

**C-206**

Sponsored by ACI Committees 348, Structural Reliability and Safety, and 435, Deflection of Concrete Building Structures.

Session Co-Moderators: **Hani H. A. Nassif**  
Associate Professor  
Rutgers, The State University of  
New Jersey  
Piscataway, NJ

**Peter Bischoff**  
Professor  
University of New Brunswick  
Fredericton, NB, Canada

The main objective of this symposium is to present a broad perspective on the important issues related to serviceability (deflection and cracking) and safety of structures from both a theoretical and design perspective. The intent of the symposium is to honor Andy Scanlon's contribution to ACI over his many years of service by focusing on presentations by people who have worked closely with Andy in his areas of interest.

By attending this session, attendees will be able to:

1. Recognize and/or identify the important issues related to serviceability of structures;
2. Recognize and/or identify the important issues related to safety of structures;
3. Analyze the different approaches for assessing deformation and cracking in structures (related to serviceability); and
4. Demonstrate how to evaluate structural failures related to safety.

### **Impact of Adjacent Lane Traffic on the Serviceability of Concrete Bridge Deck**

**2:00 pm**

**Nakin Suksawang**, Assistant Professor, Florida International University, Miami, FL; and **Hani H. A. Nassif**, Rutgers, The State University of New Jersey

### **Design Improvements from Structural Investigations**

**2:30 pm**

**W. Gene Corley**, Senior Vice President, CTLGroup, Skokie, IL; and **Jared E Brewe**, CTLGroup



# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

**Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 1 (cont.)** C-206

**Learning from Concrete Design and Construction** 3:00 pm  
**Norbert Delatte**, Professor and Department Chair, Cleveland State University, Cleveland, OH

**Using Historical Strength Data to Obtain an Equivalent Specified Strength for Structural Evaluation** 3:30 pm  
**F. Michael Bartlett**, Professor, University of Western Ontario, London, ON, Canada

**Revised Statistical Resistance Models for R/C Structural Components** 4:00 pm  
**Andrzej Nowak**, Professor of Civil Engineering, University of Nebraska—Lincoln, Lincoln, NE; **Anna Rakoczy**, University of Nebraska—Lincoln; and **Ewa Szeliga**, Warsaw University of Technology

**Analytical Investigation of Reinforced Concrete Columns under Highly Impulsive Loads** 4:30 pm  
**Serdar Astarlioglu**, Research Assistant Professor, University of Florida, Gainesville, FL



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

### **Emerging Technologies in Civil Infrastructure Applications**

**C-JUNIOR B**

Sponsored by ACI Foundation

Session Co-Moderators: David Stokes  
Manager-Concrete Technology  
FMC Corporation  
Bessemer City, NC

Charles Hanskat  
Principal  
Concrete Engineering Group, LLC  
Northbrook, IL

This session will present overviews of newer technologies currently, or soon to be, impacting the concrete industry. They are in various stages of development with various levels of implementation in the field at present. The presentations will be given by individuals both well-versed in these technologies and directly involved in their implementation and further development.

By attending this session, attendees will be able to:

1. Recognize current emerging technologies in civil infrastructures;
2. Identify the levels of development and implementation for each emerging technology;
3. Evaluate how these emerging technologies impact their business; and
4. Discover sources for securing additional details on these emerging technologies.

**Calcium Carbonate Additions to Concrete Mixtures**      **2:00 pm**  
**Caroline Talbot**, Marketing Director, Admixture, Omya Inc.,  
Mandeville, LA

**Portland Limestone Blended Cement**      **2:30 pm**  
**Steven Kosmatka**, Vice President of Research and Technical  
Services, Portland Cement Association, Skokie, IL

**Nanotechnology for Concrete**      **3:00 pm**  
**Brian Green**, Research Geologist, U.S. Army Corps of  
Engineers, Vicksburg, MS

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

**Emerging Technologies in Civil Infrastructure  
Applications (cont.)**

**C-JUNIOR B**

**Basalt Composites in Construction** **3:30 pm**  
Jack Rigsby, Owner, Proven Performance Chemicals, Bogart, GA

**Lightweight Synthetic Particles for Concrete** **4:00 pm**  
Tricia Ladely, Development Leader, SYNTHEON Inc., Monaca, PA

**“Crack-Free” Repair Materials...Are We There Yet?** **4:30 pm**  
Frank Apicella, Research & Development/Technology, BASF,  
Cleveland, OH



*The American Institute of Architects (AIA) has approved  
this session for 3 Learning Units. ACI is an AIA/CES  
Registered Provider.*

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

### **Modeling of FRP Strengthening Techniques in Concrete Infrastructure**

**C-JUNIOR D**

Sponsored by Joint ACI-ASCE Committee 447, Finite Element Analysis of Reinforced Concrete Structures

Session Co-Moderators: Riadh Al-Mahaidi  
Professor  
Swinburne University of Technology  
Melbourne, Australia

Ashraf Ayoub  
Associate Professor  
University of Houston  
Houston, TX

The strengthening of concrete structures with fiber-reinforced polymer (FRP) composites is enjoying a great deal of popularity worldwide as a result of the unique properties of FRPs—namely, being lightweight, fatigue-resistant and non-corrosive, and their ease of application. The session is based on research carried out around the world where significant development has occurred in the use of constitutive relations for the modeling of the interface layer between the FRP elements and concrete structures. The session will include papers that cover the modeling for strengthening for flexure, shear, torsion, and confinement of concrete. Where applicable, the papers will cover comparisons of modeling results with experimental tests performed around the world.

By attending these sessions, attendees will be able to:

1. List the unique properties of FRP composites;
2. Discuss the research on FRP developments, including models for flexure, shear, torsion, and confinement of concrete;
3. Understand the finite element (FE) modeling of a strengthened carbon fiber-reinforced polymer (CFRP) member; and
4. Recognize the benefits of modeling tools over experimental testing.

**Development of a New Finite Element-Based Constitutive Model for FRP Strengthened Reinforced Concrete Structures** 2:00 pm  
Yashar Mosleh, Student, University of Houston, Houston, TX; and  
Moheb Labib and Ashraf Ayoub, University of Houston

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

**Modeling of FRP Strengthening Techniques in  
Concrete Infrastructure (cont.)**

**C-JUNIOR D**

**Sensitivity Analysis of Reinforced Concrete Beams**

**Strengthened Using Pre-Stressed NSM-CFRP Strips** 2:20 pm

**Fadi Oudah**, Masters of Science Student, University of Calgary,  
Calgary, AB, Canada; and **Raafat El-Hacha**, University of Calgary

**Investigation of Contact Behavior in Hybrid FRP-UHPC Beams**

**Using Finite Element Methods** 2:40 pm

**Raafat El-Hacha**, Associate Professor, University of Calgary,  
Calgary, AB, Canada; and **Donna Chen**, University of Calgary

**Numerical Procedure to Generate Interaction Diagrams for**

**Circular Concrete Columns Wrapped with FRP** 3:00 pm

**Ahmed Abd El Fattah**, Department of Civil Engineering, Kansas  
State University, Manhattan, KS; and **Hayder Rasheed**, Kansas  
State University

**Finite Element Analysis of Concrete Girders Strengthened**

**in Shear with CFRP Composites** 3:20 pm

**Young-Min You**, Research Associate, University of Houston,  
Houston, TX; and **Ashraf Ayoub** and **Abdeldjelil Belarbi**, University  
of Houston

**Finite Element Investigation of CFRP Anchorage Systems**

**Utilizing Multilayered Unidirectional and Bidirectional**

**Fabric Sheet** 3:40 pm

**Robin Kalfat**, PhD Student, Swinburne University of Technology,  
Melbourne, Australia; and **Riadh Al-Mahaidi**, Swinburne  
University of Technology

**FE Modeling of Fatigue of FRP-Concrete Bonded**

**Members** 4:00 pm

**Mindy Loo**, Research Fellow, University of New South Wales,  
Sydney, Australia; **Stephen Foster**, University of New South Wales;  
and **Scott Smith**, The University of Hong Kong

**FE Modeling of RC Beams Strengthened with CFRP**

**Laminates and Subjected to Fire Loading** 4:30 pm

**Rami Hawileh**, Associate Professor, American University of  
Sharjah, Sharjah, UAE; and **M. Z. Nasera**, American University  
of Sharjah

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

### **Recent Development in Bond Splice Tests**

**C-JUNIOR A**

Sponsored by Joint ACI-ASCE Committee 408, Development and Splicing of Deformed Bars

Session Co-Moderators: Genda Chen

Professor of Civil Engineering  
Missouri University of Science and  
Technology  
Rolla, MO

Lesley Sneed

Assistant Professor of Civil Engineering  
Missouri University of Science and  
Technology  
Rolla, MO

This session is organized on behalf of Joint ACI-ASCE Committee 408 and addresses issues related to bond and bar splice in reinforced concrete structures. Recent advances in coating materials, high-performance concrete, and new configurations of deformed reinforcing bar in reinforced concrete structures will be presented by currently active researchers in the field. Some of the emerging technologies are ready for deployment, whereas others require further research. Interactive discussions with practitioners, students, and faculty at the ACI convention can make the audiences aware of these emerging technologies and at the same time include their input for further research and development.

By attending this session, attendees will be able to:

1. Evaluate recently developed reinforcing bar materials and coatings in terms of bond performance in reinforced concrete structures;
2. Compare bond performance differences in concrete and masonry structures;
3. Assess the bond performance of reinforcing bars in new and historic structures; and
4. Apply emerging technologies to civil infrastructure applications.

### **Splice Tests of Beams with High-Strength Reinforcement 2:00 pm**

**David Darwin**, Distinguished Professor, University of Kansas, Lawrence, KS; and **JoAnn Browning**, University of Kansas

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

**Recent Development in Bond Splice Tests (cont.)**

**C-JUNIOR A**

**Lap Splice Behavior of Deformed Bars with Chemically Reactive Enamel Coating** **2:25 pm**

**Genda Chen**, Professor of Civil Engineering, Missouri University of Science and Technology, Rolla, MO; and **Jeffery Volz, Chenglin Wu, Richard Brow**, and **Mike Koenigsten**, Missouri University of Science and Technology

**Evaluation of the Orientation of 90° and 180° Reinforcing Bar Hooks in Wide Members Using Beam-End Specimens** **2:50 pm**

**Lesley Sneed**, Assistant Professor of Civil Engineering, Missouri University of Science and Technology, Rolla, MO; and **Nichole Podhorsky**, Missouri University of Science and Technology

**Behavior of Lap Spliced Plain Steel Bars** **3:15 pm**

**Lisa Feldman**, Assistant Professor, University of Saskatchewan, SK, Canada; and **Montserrat Sekulovic** and **Nazmul Hassan**, March Consulting Associates, Inc.

**Towards Specific Development Length and Splice Provisions for Reinforced Masonry Construction** **3:40 pm**

**Lisa Feldman**, Assistant Professor, University of Saskatchewan, SK, Canada; and **Kawsar Ahmed**, University of Saskatchewan

**Effect of Epoxy Thickness on Bond between Concrete and Coated Reinforcement** **4:05 pm**

**Rachel Henkhaus**, Project Engineer, Janssen & Spaans Engineering, Inc., Dallas, TX; and **Julio Ramirez**, Purdue University

**Bond of Large-Diameter Bars in Well-Confined Concrete** **4:30 pm**

**Juan Murcia-Delso**, PhD Candidate, University of California, San Diego, San Diego, CA; and **Andreas Stavridis** and **Benson Shing**, University of California, San Diego



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

### **Understanding the Implications of Green Building Codes and Standards on the Concrete and Masonry Industries** **C-JUNIOR C**

Sponsored by Joint ACI-TMS Committee 122, Energy Efficiency of Concrete and Masonry Systems (Joint ACI-TMS), and ACI Committee 130, Sustainability of Concrete

Session Co-Moderators: Stephen Szoke  
Director, Codes and Standards  
Portland Cement Association  
Skokie, IL

Larry Rowland  
Manager, Marketing and Technical  
Services  
Lehigh Cement Company  
Allentown, PA

This session provides an overview of trends and content of building codes and standards that may impact the construction of green or sustainable buildings. Recent changes to building codes and standards will affect product selection, design, and construction of concrete and masonry components. The scope of these documents tends to be very broad; this session will focus on requirements that impact the use and applications of concrete and masonry. Green building codes are being adopted and enforced, and the design community must understand the requirements to effectively and appropriately integrate them into their projects.

By attending this session, attendees will be able to:

1. Recognize the different scopes and content of green building codes and standards being developed in the U.S.;
2. Identify methods of compliance to green model building codes and referenced standards.
3. Integrate green building requirements into their projects; and
4. Enhance traditional green building features by including provisions for resilience.

*This session is pending approval from USGBC for 3 GBCI CE hours toward the LEED Credentialing Maintenance Program. To receive credit, you must record the codes given throughout the session.*



# Sunday, October 16, 2011

## 2:00 pm - 5:00 pm

**Understanding the Implications of Green Building Codes and Standards on the Concrete and Masonry Industries (cont.)**

**C-JUNIOR C**

**International Green Construction Code—Part 1: Energy Conservation Requirements**

**2:00 pm**

**Larry Rowland**, Manager, Marketing Technical Services, Lehigh Cement Company, Allentown, PA; and **Stephen Skalko**, Portland Cement Association

**International Green Construction Code—Part II: Material Resources, Site Development, and Indoor Environmental Quality Requirements**

**2:30 pm**

**Lionel Lemay**, Senior Director of Applied Engineering, National Ready Mixed Concrete Association, Elkridge, MD

**Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings (ASHRAE 189.1)**

**3:00 pm**

**Emily Lorenz**, Building Science & Sustainability Engineer, CTLGroup, Skokie, IL

**National Green Building Standard (ICC 700)**

**3:30 pm**

**Michael Weber**, Executive Vice President, Building Works Inc., Lewisburg, PA

**California Green Building Code**

**4:00 pm**

**Kirk McDonald**, Manager of Technical Services, California Portland Cement Co., Glendora, CA

**High-Performance Building Requirements for Sustainability**

**4:30 pm**

**Stephen Szoke**, Director, Codes and Standards, Portland Cement Association, Skokie, IL



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Sunday, October 16, 2011

## 5:15 pm - 6:30 pm

### Opening Session and Katharine and Bryant Mather Commemorative Lecture Series

C-GRAND A

Speaker: Terence C. Holland  
Consulting Engineer  
Concrete Terry LLC  
Auburn Township, OH



### Topic: Is it Really that Difficult to Get New Technology into the Concrete Industry?

The ACI Fall 2011 Convention officially begins during the Opening Session and the Katharine and Bryant Mather Commemorative Lecture Series. Held at the Duke Energy Convention Center, ACI Past President Terence C. Holland will give a presentation titled “Is it Really that Difficult to Get New Technology into the Concrete Industry?”

The ACI Commemorative Lecture Series will begin by recounting the contributions that Katharine and Bryant Mather made to the concrete industry and the experience Holland shared with the Mathers working with the U.S. Army Corps of Engineers at the Waterways Experiment Station in Vicksburg, Mississippi.

Next, Holland will discuss the commonly held belief that it is nearly impossible and very time-consuming to get new technology into the concrete industry. Based on his own experience working with new technologies that have succeeded and failed, Holland will offer his perspective on what works and what does not work in transferring technology from the lab to the field. Holland will conclude with a set of recommendations for a successful launch of new material.

# Sunday, October 16, 2011 6:30 pm - 7:30 pm

## Opening Reception

**C-BALLROOM FOYER**

Sponsored by the ACI Greater Miami Valley Chapter

After the Opening Session, meet your colleagues and friends for a beverage from the cash bar and light refreshments in the exhibit area. This is an opportunity to expand your network and learn more about the products and services offered by the exhibitors.



# Sunday, October 16, 2011

## 7:30 pm - 10:00 pm

### **123 Forum: What is the Current Status of Nanotechnology?**

**C- JUNIOR B**

Sponsored by ACI Committee 123, Research and Current Developments

Session Moderator:            Mohammad S. Khan  
Senior Vice President  
Professional Service Industries, Inc.  
Herndon, VA

Following its long tradition, ACI Committee 123 brings industry experts together in Cincinnati to discuss and debate another subject and to share their views with ACI patrons. The subject this time is the current status of nanotechnology in concrete. Nanotechnology is the science and engineering of modifying the behavior and performance of materials at nanoscale. This technology has gained enough recognition in the field of medicine and other industries and is slowly making its way to the construction industry. Nanomodification of concrete can dramatically improve its strength, ductility, and durability properties.

During the last 10 years, nanotechnology has evolved significantly—particularly its application in concrete. It's timely to have an assessment of the current status of nanotechnology—where we are and where we go from here. Do we understand how nanomodification changes the rheology, C-S-H gel, and kinetics of hydration reactions? Or how nanoclays, nanotubes, and nanofibers are manufactured and how their incorporation in concrete improves its properties? What's the cost of these nanomaterials and do they present any environmental and health concerns? How do physical, mechanical, electrical, magnetic, heat conduction, and light reflection properties of concrete change by nanomodification? How can nanosensors be used for monitoring and measuring the properties of fresh and hardened concrete on a real-time basis? Do we have enough successful field application of nanotechnology in concrete? How does nanotechnology contribute to sustainable development?

Our panelists in Cincinnati will address these and many other questions. After the discussion, one will be able to make an assessment on the current status of nanotechnology in concrete.

# Sunday, October 16, 2011

## 7:30 pm - 10:00 pm

**123 Forum: What is the Current Status of  
Nanotechnology? (cont.)**

**C- JUNIOR B**

**Introduction**

**7:30 pm**

**Mohammad S. Khan**, Senior Vice President, Professional Service Industries, Inc., Herndon, VA

**Nano-scale Perspective of a Mega-scale Organization**

**7:40 pm**

**Paul F. Maulker**, Senior Research Scientist, US Army Engineer Research and Development Center, Vicksburg, MS

**Engineering and Manufacturing of Nanoparticles**

**7:50 pm**

**Konstantin Sobolev**, Associate Professor, Department of Civil and Environmental Engineering, University of Wisconsin-Milwaukee, Milwaukee, WI

**Effects of Nanoparticle Additions in Concrete**

**8:00 pm**

**Kimberly E. Kurtis**, Professor, Department of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA

**Application of Nanotubes and Nanofibers in Concrete**

**8:10 pm**

**Florence Sanchez**, Associate Professor, Department of Civil and Environmental Engineering, Vanderbilt University, Nashville, TN

**Environmental and Health Issues Related to**

**Nanotechnology**

**8:20 pm**

**Charles Geraci**, Coordinator, Nanotechnology Research Center, National Institute for Occupational Safety and Health, Cincinnati, OH

**Questions, Answers, and Discussion**

**8:30 pm**

# Sunday, October 16, 2011

## 7:30 pm - 10:00 pm

### Hot Topic Session: The Great East Japan Earthquake: Lessons Learned Since the “Kobe” Earthquake

**C-JUNIOR C**

Sponsored by the Hot Topics Committee

Session Moderator: H.S. Lew  
Senior Research Engineer  
National Institute of Standards and  
Technology  
Gaithersburg, MD

A 9.0-magnitude earthquake and subsequent tsunami struck Japan on March 11, 2011. Over 24,000 people were killed or are missing and over 6000 were injured. Most buildings and bridge structures that were built and rehabilitated after the 1995 Hyogo-ken Nanbu earthquake (Kobe earthquake) did not sustain serious structural damage due to ground motion. Much of the devastation along the northeast coast of Japan was caused by a series of tsunamis, which ranged in height from 15 to 60 feet. Lessons from this earthquake and the tsunami are highly relevant to the U.S., as the Pacific Northwest is potentially vulnerable to a large magnitude earthquake and subsequent tsunami that may inundate the Washington, Oregon, and Northern California coastal regions. Post-earthquake observations have raised a number of important questions related to the design of structures in coastal regions. Four experts who have participated in post-earthquake investigation— two from Japan and two from the U.S.—will present their observations and findings. They will also address design-related issues and studies needed to improve seismic provisions in U.S. and Japanese codes and standards.

By attending this session, attendees will be able to:

1. Acquire lessons learned from buildings and structures subjected to an earthquake and tsunami;
2. Understand the impact of new and revised building and bridge design specifications;
3. Compare seismic design and rehabilitation approaches for buildings between the U.S. and Japan; and
4. Compare seismic design and rehabilitation approaches for bridges between the U.S. and Japan.

# Sunday, October 16, 2011

## 7:30 pm - 10:00 pm

**Hot Topic Session: The Great East Japan Earthquake: Lessons Learned Since the “Kobe” Earthquake (cont.)**

**C-JUNIOR C**

**Introduction**

**7:30 pm**

**H. S. Lew**, Senior Research Engineer, National Institute of Standards and Technology, Gaithersburg, MD

**Performance of Building Structures—Impact of the New Building Standard Law**

**7:35 pm**

**Hitoshi Shiohara**, Associate Professor, Tokyo University, Tokyo, Japan

**U.S. Versus Japanese Seismic Design and Rehabilitation Approaches for Buildings**

**8:05 pm**

**John W. Wallace**, Professor, University of California, Los Angeles, Los Angeles, CA

**Performance of Bridge Structures**

**8:35 pm**

**Kazuhiko Kawashima**, Professor, Tokyo Institute of Technology, Tokyo, Japan

**U.S. Versus Japanese Seismic Design and Rehabilitation Approaches for Bridges**

**9:05 pm**

**Ian Buckle**, Professor, University of Nevada Reno, Reno, NV

**Questions and Discussion**

**9:35 pm**

**H. S. Lew**, Senior Research Engineer, National Institute of Standards and Technology, Gaithersburg, MD



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Sunday, October 16, 2011

## 9:00 pm - 10:30 pm

**Student and Young Professional  
Networking Event**

**Rock Bottom Brewery  
10 Fountain Square**

Sponsored by the ACI Collegiate Concrete Council and the Student and Young Professional Activities Committee

The ACI Collegiate Concrete Council and ACI Student and Young Professional Activities Committee invite all convention attendees to the Student and Young Professional Networking Event. Meet fellow students and young professionals while networking with ACI members in a fun and casual environment. Attendees to the event will be entered into a drawing for door prizes. In addition, food and beverages will be available for purchase.





# Monday, October 17, 2011

## 6:30 am - 8:15 am

### Workshop for Technical Committee Chairs

**C-GRAND A**

Sponsored by the ACI Technical Activities Committee

Session Moderator: David A. Lange  
Professor  
University of Illinois  
Urbana, IL

ACI Technical Committee Chairs are expected to attend this breakfast workshop to meet with fellow Chairs, TAC members, and ACI staff and to hear updates on important recent developments of interest to ACI Technical Committee Chairs. There will be table discussions and short presentations. If you are unable to attend, please ask the secretary of your committee or another committee member to represent you in your absence.

# Monday, October 17, 2011

## 7:00 am - 8:30 am

### Speaker Development Breakfast

C-262

Sponsored by ACI Committee S802, Teaching Methods and Educational Materials

Session Moderator: Tyler Ley  
Assistant Professor  
Oklahoma State University  
Stillwater, OK

This session provides an informal venue for attendees to learn about how to become better presenters. Join us for a free continental breakfast as we explore ways to become better presenters at ACI conventions, other conferences, client meetings, and school. Meet people from across the ACI spectrum who share your desire to learn and grow in this area.

Have you ever tried to explain something complicated to an audience and they just did not get it? One way to overcome this is to use models or props to allow your audience to experience the subject through kinetic learning. This presentation will give insight into how to develop kinetic learning tools, and a number of proven examples will be displayed from topics in structural and materials engineering.



# Monday, October 17, 2011

## 9:00 am - 12:00 pm

### **Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 2**

**C-206**

Sponsored by ACI Committees 348, Structural Reliability and Safety, and 435, Deflection of Concrete Building Structures

Session Co-Moderators: Shawn Gross  
Associate Professor  
Villanova University  
Villanova, PA

Hani H. A. Nassif  
Associate Professor  
Rutgers, The State University of New Jersey  
Piscataway, NJ

The main objective of this symposium is to present a broad perspective on the important issues related to serviceability (deflection and cracking) and safety of structures from both a theoretical and design perspective. The intent of the symposium is to honor Andy Scanlon's contribution to ACI over his many years of service by focusing on presentations by people who have worked closely with Andy in his areas of interest.

By attending this session, attendees will be able to:

1. Recognize and/or identify the important issues related to serviceability of structures;
2. Recognize and/or identify the important issues related to safety of structures;
3. Analyze the different approaches for assessing deformation and cracking in structures (related to serviceability); and
4. Demonstrate how to evaluate structural failures related to safety.

### **Serviceability and Safety: Core Aspects of Sustainable Structures**

**9:00 am**

**Andrea Schokker**, Professor and Head of Civil Engineering,  
University of Minnesota Duluth, Duluth, MN

### **An Overview of Flexural Cracking Mitigation in Two-Way Slabs and Plates**

**9:30 am**

**Edward Nawy**, Distinguished Professor Emeritus, Rutgers,  
The State University of New Jersey, Manalapan, NJ

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

**Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 2 (cont.)** C-206

**Implementing Lessons Learned from Twenty Years of**

**Bridge-Deck Crack Surveys** 10:00 am

**David Darwin**, Distinguished Professor of Civil, Environmental and Architectural Engineering, University of Kansas, Lawrence, KS; and **JoAnn Browning**, University of Kansas

**Serviceability Design of Structural Concrete Members with**

**Emphasis in Marine Infrastructure** 10:30 am

**Carlos Ospina**, Project Manager, BergerABAM, Houston, TX

**Experimental Study on Cracking and Leakage in RC Walls**

**under Cyclic Loading** 11:00 am

**Reza Kianoush**, Professor, Ryerson University, Toronto, ON, Canada; and **Reza Sadjadi**, URS Inc.

**Prediction of Concrete Integral Abutment Bridge**

**Unrecoverable Displacements** 11:30 am

**Jeffrey Laman**, Professor of Civil Engineering, Pennsylvania State University, University Park, PA; **WooSeok Kim**, PB Americas, Inc.; and **Dan Linzell**, Pennsylvania State University



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

### **Evaluation of Existing Structures Prior to Rehabilitation**

**C-JUNIOR A**

Sponsored by ACI Committees 228, Nondestructive Testing of Concrete, and 364, Rehabilitation

Session Co-Moderators: Bernard Hertlein  
Principal Scientist  
AECOM Technical Services, Inc.  
Vernon Hills, IL

Marjorie Lynch  
Senior Project Manager  
Simpson Gumpertz & Heger, Inc.  
New York, NY

The goal of this session is for researchers and practitioners involved in the evaluation of existing structures to present case study-based presentations on means and methods used for condition assessment of existing concrete structures prior to rehabilitation. Ideally, the presentations describe field, laboratory, and analytical methods to assess the current conditions of structures that are a key step in the preservation of existing structures.

Researchers, material suppliers, contractors, and practitioners in particular will benefit from seeing examples of the types of evaluation that can be performed on existing structures and how the information gained can be used to prolong the life of existing structures. The topics show examples of sustainability and the preservation of the constructed environment.

By attending this session, attendees will be able to:

1. Understand the current state of the practice for structural evaluation;
2. Recognize that the various tools and test methods available for performing such an evaluation have specific capabilities and limitations that govern how they should be used;
3. Make recommendations to potential clients that will improve the quality and effectiveness of condition assessments; and
4. Better understand the value of an effective condition assessment when planning or performing rehabilitation projects.

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

**Evaluation of Existing Structures Prior to Rehabilitation (cont.)**

**C-JUNIOR A**

**Extending the Useful Life of a Cooling Tower at a Nuclear Power Plant**

**9:00 am**

**R. Scott Silvester**, Senior Engineer, Simpson Gumpertz & Heger, Inc., Rockville, MD; and **Charles Russo**, Simpson Gumpertz & Heger, Inc.

**Concrete Material Testing Requirements for Seismic**

**Evaluation of Existing Reinforced Concrete**

**9:25 am**

**Halil Sezen**, Associate Professor, The Ohio State University, Columbus, OH; and **Charles Hookham**, HDR Engineering Inc.

**Evaluation and Assessment of Post-Tensioned Structures**

**9:50 am**

**David Whitmore**, President, Vector Construction Ltd., Winnipeg, MB, Canada; and **Garth Fallis**, Vector Construction Ltd.

**Concrete Reinforcing Steel Corrosion: Assessment, Re-passivation and Monitoring in an Industrial Environment**

**10:15 am**

**Bruce Collins**, Vice President, Reconstruction Corporation, Sedalia, CO

**Structural Assessment: Barton Springs Pool**

**Gravity Dams**

**10:40 am**

**Robin Tuchscherer**, Project Engineer, Datum Engineers, Austin, TX

**Evaluation and Repair of ICF Wall System**

**11:05 am**

**Ashok Kakade**, Principal Engineer, Concrete Science Inc., Hayward, CA; and **Hemant Limaye**, Concrete Science Inc.



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

### **Fiber-Reinforced Concrete—Smart Materials and Sensors**

**C-JUNIOR D**

Sponsored by ACI Committees 236, Material Science of Concrete, and 544, Fiber-Reinforced Concrete

Session Co-Moderators: Corina-Maria Aldea  
Associate Materials Engineer  
AMEC  
Hamilton, ON, Canada

Konstantin Sobolev  
Associate Professor  
University of Wisconsin-Milwaukee  
Milwaukee, WI

This session will include papers on advances on sensing abilities of fiber-reinforced concrete (FRC) and FRC as a smart material. Material suppliers, engineers, researchers, and scientists will benefit from this session.

By attending this session, attendees will be able to:

1. Name some of the advances in sensing abilities of FRC and the use of FRC as a smart material;
2. Recognize the applications for using shape memory alloy-based self-stressed fiber cement composites;
3. Understand the advantages and disadvantages of using carbon nanotube and carbon nanofiber cementitious composites to monitor electrical resistivity, traffic flow, and other applications; and
4. Understand how carbon fibers and carbon nanotubes can be used to create cement-based sensors that can detect both changes in strain and changes in the chemical environment.

### **Shape Memory Alloy-Based Self-Stressed Fiber Cement**

**Composites: Material Behavior and Structural Use** 9:00 am

**Neven Krstulovic-Opara**, Senior Staff Engineer, Exxon-Mobil, PNG-LNG Project, Yokohama, Japan; and **Antoine Naaman**, University of Michigan

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

**Fiber-Reinforced Concrete—Smart Materials  
and Sensors (cont.)**

**C-JUNIOR D**

**Electrical Resistivity of Carbon Nanotube and Carbon Nanofiber  
Cementitious Nanocomposites** 9:25 am

**Maria S. Konsta-Gdoutos**, Associate Professor and Director of Section of Mechanics, Democritus University of Thrace, Xanthi, Greece; **Surendra P. Shah**, Northwestern University; and **Zoi S. Metaxa** and **Apostles Maurozoumis**, Democritus University of Thrace

**Self-Sensing Carbon-Nanotube/Cement Composite** 9:50 am

**Xun Yu**, Assistant Professor, University of Minnesota Duluth, Duluth, MN; and **Baoguo Han** and **Eil Kwon**, University of Minnesota Duluth

**Experimental and Analytical Study of CNT Reinforced  
Cement with Sensing Capability** 10:15 am

**Bassem Andrawes**, Assistant Professor, University of Illinois at Urbana-Champaign, Urbana, IL; and **Lai Yin Chan**, University of Illinois at Urbana-Champaign

**Fiber Reinforced Cementitious Composites with Carbon  
Nanotubes for Piezo and Chemo Sensing** 10:40 am

**Nemkumar Banthia**, Professor, University of British Columbia, Vancouver, BC, Canada; and **Faezeh Azhari**, Ausenco Sandwell

**Durability of Carbon Nanofiber Cement-Based Composites** 11:05 am

**Florence Sanchez**, Associate Professor, Vanderbilt University, Nashville, TN; and **Les Brown**, Vanderbilt University

**Investigation of Electrical and Mechanical Properties of  
Nano-Carbon Fiber-Reinforced Cement Composites** 11:30 am

**Konstantin Sobolev**, Associate Professor, University of Wisconsin-Milwaukee, Milwaukee, WI; and **Ismael Flores-Vivian**, **Zhibin Lin**, and **Petr Zilberman**, University of Wisconsin-Milwaukee



*The American Institute of Architects (AIA) has approved  
this session for 3 Learning Units. ACI is an AIA/CES  
Registered Provider.*



# Monday, October 17, 2011

## 9:00 am - 12:00 pm

### **Structural Health Monitoring Technologies,**

#### **Part 1**

**C-JUNIOR C**

Sponsored by ACI Committee 444, Experimental Analysis for Concrete Structures

Session Co-Moderators: Faris Malhas  
Dean of College of Engineering & Sciences  
Bowling Green State University  
Bowling Green, OH

Nankin Suksawang  
Assistant Professor  
Florida International University  
Miami, FL

Structural health monitoring (SHM) is a process aimed at providing accurate and timely information concerning structural health condition and performance. The information obtained from monitoring is generally used to plan and design maintenance activities, increase the safety, verify hypotheses, reduce uncertainty, and widen the knowledge concerning the structure being monitored. The technologies used to perform the SHM are continuously developing, and researchers and practitioners are not always aware of their market maturity, performances, and applicability. The aim of this session is to 1) pull together the knowledge on SHM technologies to raise awareness about them; 2) assess the current status of their market maturity, performances, and applicability and identify challenges; and 3) present SHM technologies (that is, their performance and applications) to a broader public through the use of presentations and a special publication (SP). The session is organized as a holistic overview and includes all aspects of monitoring.

By attending this session, attendees will be able to:

1. Identify the state-of-the-art SHM technologies, including their performances, applications, and market maturity;
2. Generalize the use of SHM technologies for various classes of problems and structures;
3. Examine how the SHM technologies can be used in evaluation of the current conditions and performances of concrete structures; and
4. Analyze the benefits of SHM technologies regarding the preservation and safety of concrete structures and long-term management activities in general.

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

**Structural Health Monitoring Technologies,  
Part 1 (cont.)**

**C-JUNIOR C**

**Introduction** **9:00 am**

**Faris Malhas**, Dean of College of Engineering & Sciences, Bowling Green State University, Bowling Green, OH

**Assessment of Concrete Structures Using Structural  
Health Monitoring** **9:05 am**

**Hani H. A. Nassif**, Associate Professor, Rutgers, The State University of New Jersey, Piscataway, NJ; and **Nakin Suksawang**, Florida International University

**Discrete Fiber-Optic Sensing Techniques for Structural  
Health Monitoring of Bridges** **9:25 am**

**Farhad Ansari**, Professor/Department Head, University of Illinois at Chicago, Chicago, IL

**Distributed Fiber-Optic Sensing Technologies and Applications—  
An Overview** **9:45 am**

**Branko Glisic**, Assistant Professor, Princeton University, Princeton, NJ

**Corrosion-Resistance Monitoring in Steel  
Reinforcement** **10:05 am**

**Yoon-Si Lee**, Assistant Professor of Civil Engineering, West Virginia University Institute of Technology, Montgomery, WV; and **Faris Malhas**, Bowling Green State University

**Use of Electrical Impedance Spectroscopy and Conductive  
Surface Films to Detect Cracking and Damage in Cement-  
Based Materials** **10:25 am**

**Mohammad Pour-Ghaz**, Graduate Research Assistant, Purdue University, West Lafayette, IN; **Mark Niemuth**, Lafarge; and **Jason Weiss**, Purdue University

**Smart Technical Textiles for Reinforcement of  
Concrete Structures** **10:45 am**

**Daniele Inaudi**, Chief Technology Officer, SMARTEC SA, Manno, Switzerland; and **Riccardo Belli**, SMARTEC SA

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

**Structural Health Monitoring Technologies,  
Part 1 (cont.)**

**C-JUNIOR C**

**Wireless Structural Health Monitoring of  
Concrete Structures**

**11:05 am**

**Jerome Lynch**, Assistant Professor, University of Michigan, Ann Arbor, MI

**Wireless Structural Health Monitoring of  
Concrete Bridges**

**11:25 am**

**Mohsen Issa**, Professor, University of Illinois, Chicago, IL



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

### Research in Progress

**C-JUNIOR B**

Sponsored by ACI Committee 123, Research and Current Developments

Session Co-Moderators: Thomas Schumacher  
Assistant Professor  
University of Delaware  
Newark, DE

Aleksandra Radlinska  
Assistant Professor  
Villanova University  
Villanova, PA

This session will feature presentations of original, unpublished results from ongoing research projects and leading-edge concrete technology and research throughout the world.

By attending this session, attendees will be able to:

1. Recognize on going concrete research projects from a wide range of research topics;
2. Discuss recent techniques, research methods, and procedures related to structural and material aspects of concrete research;
3. Describe emerging ideas in concrete research; and
4. Summarize recent technical information related to concrete structures and materials.

### High-Volume Fly Ash Cementitious Systems with NanoCaCO<sub>3</sub> and Nanoclays

**9:00 am**

**Shiho Kawashima**, Graduate Student, Department of Civil and Environmental Engineering, Northwestern University, Evanston, IL; **David J. Corr** and **Surendra P. Shah**, Northwestern University; and **Kejin Wang**, Iowa State University

### Determination of Nanomechanical Properties for Cementitious Materials Using Nanoindentation Loading Curve

**9:15 am**

**Kaushal K. Jha**, PhD Candidate, Department of Civil and Environmental Engineering, Florida International University, Miami, FL; and **Nankin Suksawang**, Florida International University

### Radiation Resistant Concrete

**9:30 am**

**Jason Rapich**, S. E., Utah Nuclear Engineering Program, University of Utah, Salt Lake City, UT; and **Tatjana Jevremovic**, University of Utah

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

Research in Progress (cont.)

C-JUNIOR B

### **In-Boiler Benefication of Coal Ash on Concrete**

#### **Durability Properties**

9:45 am

**Karla A. Kruse**, Graduate Research Assistant, The University of Texas at Austin, Austin, TX; **Anthony F. Bentivegna**, The University of Texas at Austin; and **Paul Sandberg** and **Marc Zacharias**, Ash Improvement Technology

### **Quantification of CO<sub>2</sub> Sequestration Capacity of Alkaline**

#### **Industrial Wastes**

10:00 am

**Dinusha Siriwardena**, Graduate Student, Department of Civil and Environmental Engineering, Clarkston University, Potsdam, NY; and **Sulapha Peethamparan**, Clarkston University

### **Evaluating the Efficacy of ASR Mitigation Measures in**

#### **Miniature Concrete Prism Test**

10:15 am

**Enamur Latifee**, PhD Student, Department of Civil Engineering, Clemson University, Clemson, SC; and **Prasad Rangaraju**, Clemson University

### **Characterizing the Disconnect between Laboratory and Field Performances of External Sulfate Attack: What Does ASTM 1012 Really Tell Us?**

10:30 am

**Federico M. Aguayo**, Research Assistant, The University of Texas at Austin, Austin, TX; and **Dr. Kevin J. Folliard**, The University of Texas at Austin

### **Shear Behavior of Large Scale Concrete Beams Reinforced with High-Performance ASTM A 1035 Steel**

10:45 am

**Admasu S. Desalegne**, PhD Candidate, University of Alberta, Edmonton, AB, Canada; and **Adam S. Lubell**, University of Alberta

### **Seismic Performance of Precast Column to Foundation**

#### **Connections for Accelerated Bridge Construction**

11:00 am

**Zachary B. Haber**, PhD Student, University of Nevada, Reno, Reno, NV; and **M. Saiid Saiidi** and **David Sanders**, University of Nevada – Reno

### **Effect of Tie Configuration on Fire Performance of High Strength Concrete Columns**

11:15 am

**W. Khaliq**, Civil and Environmental Engineer, Michigan State University, East Lansing, MI; and **N. K. Rautand Kodur V. K. R.**, Michigan State University

# Monday, October 17, 2011

## 9:00 am - 12:00 pm

Research in Progress (cont.)

C-JUNIOR B

**Resistance of Reinforced Concrete Panels Under Blast Loading with Long Carbon Fibers**

11:30 am

**Zahara S. Tabatabaei**, Graduate Assistant, Missouri University of Science and Technology, Rolla, MO; and **Jeffery S. Volz**, Missouri University of Science and Technology

**Integration of Traditional Remote Sensing into a Framework for Structural Health Monitoring of Concrete Bridges**

11:45 am

**Devin K. Harris**, Assistant Professor, Department of Civil and Environmental Engineering, Michigan Technological University, Houghton, MI; and **Theresa Ahlborn, Lawrence Sutter, and Colin Brooks**, Michigan Technological University



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 9:00 am - 3:30 pm

### Exhibitor Demonstrations

**C-BALLROOM FOYER**

Exhibitors will demonstrate the capabilities of their products and services. Presentations may demonstrate equipment operation, introduce new products, demonstrate software capabilities, or describe the service provided by each participating company. These presentations may include PowerPoint shows, videos, and hands-on workshops. Each demonstration will conclude with a question and answer period. Attendees representing all areas of the concrete industry will find the demonstrations both interesting and educational. Learn more about the products and services offered by the following companies.

| <b>Monday Exhibitor Demonstration Schedule</b> |                             |  |
|--|-----------------------------|--|
| <b>Time</b>                                    | <b>Exhibitor</b>            | <b>Presentation/Demo Title</b>                 |
| 11:15 am                                       | SIMCO<br>Technologies, Inc. | STADIUM® Service Life<br>Modeling: A Live Demo |

**Additional demonstrations may be added following  
the printing of the convention program book.  
Please see an updated schedule in the demo area.**

# Monday, October 17, 2011

## 12:00 pm - 2:00 pm

✓ Student Lunch

C-GRAND A

\$35 U.S. per person

FREE to students who preregister

Sponsored by Baker Concrete Construction Company, Inc.



Coordinated by the ACI Greater Miami Valley Chapter and  
ACI Committee S801, Student Activities

Speaker:

Kenneth C. Hover  
Professor of Civil  
and Environmental  
Engineering  
Cornell University  
Ithaca, NY



**Topic: Things I Learned While Enjoying a Career in Concrete Design, Construction, and Education**

Featured speaker Kenneth C. Hover, ACI President and Professor at Cornell University, will give a presentation featuring stories, lessons, and tips for students and young professionals as they make the transition into the world of concrete. Awards from the Student Pervious Cylinder Competition and Student Project Competition will also be presented.

**PREREGISTRATION IS REQUIRED TO ATTEND.** Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.

✓ = separate fee required



# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

### **Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 3**

**C-206**

Sponsored by ACI Committees 348, Structural Reliability and Safety, and 435, Deflection of Concrete Building Structures.

Session Co-Moderators: Eric Musselman  
Assistant Professor  
University of Minnesota Duluth  
Duluth, MN

Shawn Gross  
Associate Professor  
Villanova University  
Villanova, PA

The main objective of this symposium is to present a broad perspective on the important issues related to serviceability (deflection and cracking) and safety of structures from both a theoretical and design perspective. The intent of the symposium is to honor Andy Scanlon's contribution to ACI over his many years of service by focusing on presentations by people who have worked closely with Andy in his areas of interest.

By attending this session, attendees will be able to:

1. Recognize and/or identify the important issues related to serviceability of structures;
2. Recognize and/or identify the important issues related to safety of structures;
3. Analyze the different approaches for assessing deformation and cracking in structures (related to serviceability); and
4. Demonstrate how to evaluate structural failures related to safety.

### **Evaluation and Management of Tension Stiffening** 2:00 pm

**Richard H. Scott**, Reader in Engineering and Computing Sciences, University of Durham, Durham, UK; and **Andrew Beeby**, University of Leeds

### **The Importance of Cracking Moment in Estimating Instantaneous Deflections**

2:30 pm

**Shawn Gross**, Associate Professor, Villanova University, Villanova, PA

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

**Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 3 (cont.)** C-206

**Creep and Shrinkage-Induced Deflection in Reinforced Concrete Beams and Slabs** 3:00 pm

**Ian R. Gilbert**, Professor of Civil Engineering, The University of New South Wales, Sydney, Australia

**Flexural Behavior of Concrete Beams Reinforced with FRP Bars** 3:30 pm

**Young Hak Lee**, Assistant Professor, Kyung Hee University, Yongin, Korea; and **Min Sook Kim**, Kyung Hee University

**Deflection of Reinforced Concrete Beams with Consideration of Shear Deformations** 4:00 pm

**Admasu Desalegne**, Graduate Student Researcher, University of Alberta, Edmonton, AB, Canada; and **Adam S. Lubell**, University of Alberta

**Generalized Design Approach for Computing Deflection of Concrete Reinforced with Steel or FRP Bars** 4:30 pm

**Peter Bischoff**, Professor, University of New Brunswick, Fredericton, NB, Canada



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

### **Concrete Overlays for Pavement Rehabilitation**

**C-JUNIOR D**

Sponsored by ACI Committee 325, Concrete Pavements

Session Moderator: Peter Taylor  
Associate Director  
National Concrete Pavement  
Technology Center  
Ames, IA

Concrete overlays are a rapidly growing sector in the pavement construction industry. They provide an effective, affordable, and more sustainable approach to the rehabilitation of existing roadways of all types because they make use of the infrastructure already in place. Many millions of square feet of overlays have been placed around the country over the last few years despite the economic downturn. This session will discuss in detail the benefits of using concrete overlays for pavement rehabilitation, provide information on how they should be designed and built, and describe examples of recent and long-lasting applications. The material will largely be based on an existing publication and the direct experience of the authors.

By attending this session, attendees will be able to:

1. Describe the various types of concrete overlays available;
2. Choose the correct type of overlay for given applications;
3. Find resources to be able to design a concrete overlay; and
4. Find resources to be able to construct a concrete overlay.

#### **What is a Concrete Overlay?**

**2:00 pm**

**Peter Taylor**, Associate Director, National Concrete Pavement Technology Center, Ames, IA

#### **Selection of Overlay Type**

**2:35 pm**

**Kurt Smith**, Program Director, Applied Pavement Technology Inc., Champaign, IL

#### **Overlay Design**

**3:10 pm**

**Jeffery Roesler**, Associate Professor, University of Illinois, Urbana, IL

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

**Concrete Overlays for Pavement  
Rehabilitation (cont.)**

**C-JUNIOR D**

**Construction**

**3:45 pm**

**James Cable**, President, Cable Concrete Consultation, Ames, IA

**Case Studies**

**4:20 pm**

**James Cable**, President, Cable Concrete Consultation, Ames, IA



*The American Institute of Architects (AIA) has approved  
this session for 3 Learning Units. ACI is an AIA/CES  
Registered Provider.*

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

### Field Guide to Concrete Repair Application Procedures

**C-JUNIOR A**

Sponsored by ACI Committee E706, Repair Application Procedures

Session Moderator: David Whitmore  
President  
Vector Construction Ltd.  
Winnipeg, MB, Canada

By attending this session, attendees will learn:

1. When to use certain concrete repair procedures;
2. How to specify concrete repair procedures;
3. How to execute common concrete repair procedures; and
4. How to perform quality control of common concrete repair procedures.

**Structural Crack Repair by Epoxy Injection** **2:00 pm**  
**J. Christopher Ball**, Vice President, Vector Corrosion Technologies,  
Tampa, FL

**Crack Repair by Gravity Feed with Resin** **2:12 pm**  
**Aamer Syed**, Senior Product Manager, Sika Corporation,  
Lyndhurst, NJ

**Spall Repair by Low-Pressure Spraying** **2:24 pm**  
**Patrick Watson**, Senior Product Technical Specialist, BASF,  
Sun Prairie, WI

**Surface Repair Using Form-and-Pour Techniques** **2:36 pm**  
**Peter Emmons**, President, STRUCTURAL, Hanover, MD

**Surface Repair Using Form-and-Pump Techniques** **2:48 pm**  
**Peter Emmons**, President, STRUCTURAL, Hanover, MD

**Vertical and Overhead Spall Repair by Hand Application** **3:00 pm**  
**J. Christopher Ball**, Vice President, Vector Corrosion Technologies,  
Tampa, FL

**Spall Guide to Concrete Repair Application Procedures** **3:12 pm**  
**Peter Emmons**, President, STRUCTURAL, Hanover, MD

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

**Field Guide to Concrete Repair Application  
Procedures (cont.)**

**C-JUNIOR A**

**Installation of Embedded Galvanic Anodes** **3:24 pm**

**David Whitmore**, President, Vector Construction Ltd., Winnipeg,  
MB, Canada

**Spall Repair by the Preplaced Aggregate Method** **3:36 pm**

**Patrick Watson**, Senior Product Technical Specialist, BASF,  
Sun Prairie, WI

**Leveling and Reprofiling of Vertical and  
Overhead Surfaces** **3:48 pm**

**H. Peter Golter**, Senior Regional Sales Director, Oldcastle, Inc.,  
Brooklyn Center, MN

**Slabjacking** **4:00 pm**

**Fred Goodwin**, Fellow Scientist, BASF Building Systems,  
Cleveland, OH

**Concrete Repair by Shotcrete Application** **4:12 pm**

**David Whitmore**, President, Vector Construction Ltd.,  
Winnipeg, MB, Canada

**Methacrylate Flood Coat** **4:24 pm**

**John Lund**, Principal of Investigative Engineering, Martin/Martin  
Consulting Engineers, Lakewood, CO

**Concrete Removal Using Hydrodemolition** **4:36 pm**

**David VanOcker**, Principal/President, CVM Facilities Renewal,  
Oaks, PA

**Bonded Cementitious Overlays** **4:48 pm**

**H. Peter Golter**, Senior Regional Sales Director, Oldcastle, Inc.,  
Brooklyn Center, MN

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

### **Structural Health Monitoring Technologies, Part 2**     **C-JUNIOR C**

Sponsored by ACI Committee 444, Experimental Analysis for Concrete Structures

Session Co-Moderators:    Branko Glisic  
Assistant Professor  
Princeton University  
Princeton, NJ

Hani H. A. Nassif  
Associate Professor  
Rutgers, The State University of  
New Jersey  
Piscataway, NJ

Structural health monitoring (SHM) is a process aimed at providing accurate and timely information concerning structural health condition and performance. The information obtained from monitoring is generally used to plan and design maintenance activities, increase the safety, verify hypotheses, reduce uncertainty, and widen the knowledge concerning the structure being monitored. The technologies used to perform the SHM are continuously developing, and researchers and practitioners are not always aware of their market maturity, performances, and applicability. The aim of this session is to 1) pull together the knowledge on SHM technologies to raise awareness about them; 2) assess the current status of their market maturity, performances, and applicability and identify challenges; and 3) present SHM technologies (that is, their performance and applications) to a broader public through the use of presentations and a special publication (SP). The session is organized as a holistic overview and includes all aspects of monitoring.

By attending this session, attendees will be able to:

1. Identify the state-of-the-art SHM technologies, including their performances, applications, and market maturity;
2. Generalize the use of SHM technologies for various classes of problems and structures;
3. Examine how the SHM technologies can be used in evaluation of the current conditions and performances of concrete structures; and
4. Analyze the benefits of SHM technologies regarding the preservation and the safety of concrete structures, and long-term management activities in general.

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

**Structural Health Monitoring Technologies,  
Part 2 (cont.)**

**C-JUNIOR C**

**Introduction** **2:00 pm**

**Branko Glisic**, Assistant Professor, Princeton University,  
Princeton, NJ

**Strain Sensing Sheets Based on Large-Area Electronics** **2:05 pm**

**Branko Glisic**, Assistant Professor, Princeton University,  
Princeton, NJ; and **Naven Verma**, Assistant Professor, Princeton  
University

**Low-Cost SHM with Advanced Data Management System** **2:30 pm**

**Yoon-Si Lee**, Assistant Professor of Civil Engineering, West  
Virginia University Institute of Technology, Montgomery, WV;  
and **Faris Malhas**, Bowling Green State University

**SHM Methods to Quantify Steel-Concrete Debonding and  
Residual Capacity of Deteriorating RC Columns** **2:55 pm**

**Paolo Gardoni**, Associate Professor, Texas A&M University, College  
Station, TX; **David Trejo**, Oregon State University; and **Qindan  
Huang** and **Alexander Pagnotta**, Texas A&M University

**Concrete Building, Monitoring Data, and  
Bayesian Epistemology** **3:20 pm**

**Daniele Zonta**, Assistant Professor, University of Trento, Trento,  
Italy; **Branko Glisic**, Princeton University; **Matteo Pozzi**, University  
of Trento; **Daniele Inaudi**, SMARTEC SA; **Joo Ming Lau**, Housing  
and Development Board, Singapore; and **Chor Cheong Fong**, Toa  
Payoh Housing and Development Board, Singapore

**Structural Health Decision-Making and Performance  
Prediction Using Monitoring Technologies** **3:45 pm**

**Helmut Wenzel**, Manager/Director, VCE Vienna Consult  
Engineers, Vienna

**Structural Health Monitoring from a State Bridge  
Owner's Perspective** **4:10 pm**

**Sreenivas Alampalli**, Director of Structures Evaluation Services  
Bureau, NYSDOT, Albany, NY



# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

**Structural Health Monitoring Technologies,  
Part 2 (cont.)**

**C-JUNIOR C**

**Overview of Bridge SHM Applications from the Iowa  
DOT Perspective**

**4:35 pm**

**Ahmad Abu-Hawash**, Chief Structural Engineer, Iowa Department of Transportation, Ames, IA; **Ping Lu**, Iowa Department of Transportation; and **Brent Phares** and **Terry Wipf**, Iowa State University



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

### Technical Session In Honor of Robert Gulyas

**C-JUNIOR B**

Sponsored by ACI Committees 223, Shrinkage-Compensating Concrete; 302, Construction of Concrete Floors; 345, Concrete Bridge Construction, Maintenance, and Repair; 360, Design of Slabs on Ground; and 515, Protective Systems for Concrete

Session Co-Moderators: Fred Goodwin  
Senior Development Scientist  
BASF Construction Chemicals LLC  
Beachwood, OH

Aimee Pergalsky  
Manager, National Business  
Development  
The Euclid Chemical Company  
Cleveland, OH

This symposium is a tribute to the late Robert Gulyas, who devoted his career and life to the betterment of concrete—starting from concept to execution to make it a quality concrete. These sessions will include presentations and highlight his many technical contributions to ACI and the concrete industry in general. Presentations that focus on Gulyas's contributions in the field of flooring investigations; shrinkage-compensating concrete and bridge maintenance; petrography as a forensic tool; and support of concrete technology in Latin America, which will include an overview of construction failure case studies with lessons learned or sometimes not learned. Several presentations will highlight his contributions to concrete construction, the evaluation and repair of concrete structures in general, and transportation structures in particular.

By attending this session, attendees will be able to:

1. Recall developments in shrinkage-compensating concrete, bonded post-tensioning, concrete floor durability, petrographic forensic investigations, and bridge repair;
2. Discuss and disseminate current information and committee work in these and other areas of concrete technology;
3. Share many years of developments toward the current state of the art in self-consolidating, post-tensioned grouting, bridge overlays, and investigations into concrete deterioration; and
4. Describe our mutual experiences toward continued improvements in concrete technology and examples of our learning processes.

# Monday, October 17, 2011

## 2:00 pm - 5:00 pm

Technical Session In Honor of Robert Gulyas (cont.) **C-JUNIOR B**

**One (Hungarian) Concrete Petrographer's Retrospective of the R.J. Gulyas Perspective of Concrete Petrography** **2:00 pm**

**Aimee Pergalsky**, Manager, National Business Development, The Euclid Chemical Company, Cleveland, OH

**The Current State-of-the-Art in Floor Profile**

**Measurement** **2:30 pm**

**Allen Face**, President, Allen Face & Associates, Wilmington, NC

**Robert Gulyas Developed the First High-Performance**

**Tendon Grout** **3:00 pm**

**Michael Sprinkel**, Associate Director, Virginia Center for Transportation Innovation and Research, Charlottesville, VA

**Reynosa-Pharr International Bridge: Rapid Deck Overlay**

**Re-Profiling Project** **3:30 pm**

**Fernando Garcia Ayala**, Engineer, Consultant BASF Mexicana, Tultitlán, Mexico

**Bob's Contribution to ACI Committee 223, Shrinkage-Compensating Concrete** **4:00 pm**

**Henry Russell**, President, Henry G Russell Inc., Glenview, IL

**Open Discussion** **4:30 pm**

**Fred Goodwin**, Senior Development Scientist, BASF Construction Chemicals LLC, Beachwood, OH; and **Jerry Holland**, Structural Services, Inc.



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Monday, October 17, 2011

## 3:30 pm - 5:00 pm

### ★ Guest Social

M-BRONZE A

Hosted by Mrs. Deb Hover

All registered guests are invited to join Mrs. Hover for light refreshments. This is a wonderful opportunity to get to know other registered guests and enjoy a refreshing break! A guest name badge is required to attend this event.



# Monday, October 17, 2011

## 5:00 pm - 6:00 pm

### Women in ACI Reception

**M-CROSSROADS**

All registered convention attendees are invited to attend the Women in ACI Reception. This long-standing ACI tradition is a great opportunity to get to know other women in the concrete industry. A cash bar and light hors d'oeuvres will be available.



# Monday, October 17, 2011

## 5:45 pm - 10:00 pm

✓Riverboat Cruise and Dinner on the  
Ohio River  
\$110 U.S. per person

**DEPART MILLENNIUM**

Take in the sights and sounds along the Ohio River with friends, colleagues, and other convention attendees on a dinner riverboat cruise. This will be an evening of great food, music, and fun that you won't want to miss.

Transportation will be provided from the Millennium Hotel to the boat dock. Buses will begin boarding at 5:45 pm.



***PREREGISTRATION IS REQUIRED TO ATTEND.*** Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability.

✓ = Separate fee required

# Monday, October 17, 2011

## 6:00 pm - 7:00 pm

✓ Reception in Honor of Andy Scanlon  
\$10 U.S. per person

M-COLONNADE B

Please join other ACI attendees in honoring Andy Scanlon for his numerous contributions and accomplishments. A Professor of civil engineering at Pennsylvania State University for the past 24 years, Andy Scanlon has served the industry in many ways, including his role as Chair of ACI Committee 435, Deflection of Concrete Building Structures, and his involvement with ACI Committees 224, Cracking; 348, Structural Reliability and Safety; and 437, Strength Evaluation of Existing Concrete Structures.



In 2011, Andy received the Delmar L. Bloem Distinguished Service Award for his outstanding leadership on ACI Committee 435. He was elected a Fellow of ACI and ASCE in 1998 and 2003, respectively. The purpose of this reception, in addition to the technical sessions in his honor, is to recognize Andy for his outstanding long-time dedication to the concrete industry. Hors d'oeuvres and a cash bar will be available.

***PREREGISTRATION IS REQUIRED TO ATTEND.*** Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability.

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### **ACI 301 - Bridging Codes and Specifications**

**C-JUNIOR C**

Sponsored by ACI Committees 301, Specifications for Concrete, and E707, Specification Education

Session Co-Moderators: Michelle L. Wilson  
Director of Concrete Knowledge  
Portland Cement Association  
Skokie, IL

W. Calvin McCall  
Principal  
Concrete Engineering Specialists  
Charlotte, NC

ACI Committee 301 has just completed a comprehensive revision to the content of ACI 301, "Specifications for Structural Concrete." This revision expanded the scope of ACI 301 and revised many of the requirements that have been in previous versions for many years.

The goal of this session is to show how the construction team should use ACI 301 when it's referenced in project specifications, with an emphasis on bridging codes and specifications. Topics include modifications to many of the default requirements within the specifications and an introduction to new sections.

By attending this session, attendees will be able to:

1. Understand the philosophy behind the ACI 301-10 document and define its role as a reference specification;
2. Recognize how the ACI 301-10 specification relates with ACI 318 building code requirements;
3. Explain the roles of the architect, engineer, contractor, and owner with regard to contract documents; and
4. List some of the key default and optional requirements within ACI 301-10.

### **Bridging Codes and Specifications**

**9:00 am**

**W. Calvin McCall**, Principal, Concrete Engineering Specialists, Charlotte, NC

### **General Requirements—The Foundation**

**9:50 am**

**Nicholas J. Carino**, Consultant, Chagrin Falls, OH



# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

**ACI 301 - Bridging Codes and Specifications (cont.)** **C-JUNIOR C**

**Materials and Construction—The Main Span** **10:20 am**

**Kenneth C. Hover**, Stephen Weiss Presidential Fellow, Cornell University, Ithaca, NY

**Special Applications—An Alternate Route** **10:50 am**

**Michelle L. Wilson**, Director of Concrete Knowledge, Portland Cement Association, Skokie, IL

**New Sections—Completing the Bridge** **11:20 am**

**Scott M. Tarr**, Partner, Concrete Engineering Specialists, Dover, NH



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### **Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 4** C-206

Sponsored by ACI Committees 348, Structural Reliability and Safety, and 435, Deflection of Concrete Building Structures

Session Co-Moderators: Peter Bischoff  
Professor  
University of New Brunswick  
Fredericton, NB, Canada

Eric Musselman  
Assistant Professor  
University of Minnesota Duluth  
Duluth, MN

The main objective of this symposium is to present a broad perspective on the important issues related to serviceability (deflection and cracking) and safety of structures from both a theoretical and design perspective. The intent of the symposium is to honor Andy Scanlon's contribution to ACI over his many years of service by focusing on presentations by people who have worked closely with Andy in his areas of interest.

By attending this session, attendees will be able to:

1. Recognize and/or identify the important issues related to serviceability of structures;
2. Recognize and/or identify the important issues related to safety of structures;
3. Analyze the different approaches for assessing deformation and cracking in structures (related to serviceability); and
4. Demonstrate how to evaluate structural failures related to safety.

### **Control of Deflection in Concrete Slabs and Effects of Construction Loads**

9:00 am

**Pericles Stivaros**, Vice President, Feld Kaminetzky & Cohen PC, Jericho, NY

### **Practical Deflection Prediction of Concrete Slabs**

9:30 am

**Jonathan Hirsch**, Manager of Software Development, Bentley Systems, Inc., Seattle, WA; **Eamonn Connolly**, James McHugh Construction Co.; **Allan Bommer**, Bentley Systems, Inc.; and **Flora Calabrese**, Wiss, Janney, Elstner, Associates, Inc.

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

**Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: Theory to Practice, Part 4 (cont.)** **C-206**

**Serviceability and Safety of Multi-Story Flat Plate Buildings: Effect of Lateral Forces** **10:00 am**  
**Amin Ghali**, Emeritus Professor, University of Calgary, Calgary, AB, Canada; and **Ramez Gayed**, Krupp Canada

**Quantifying Deflection Variation in RC Beams Propagated from Microstructural Variability in Concrete Using Homogenization Technique** **10:30 am**  
**Mahmoud Reda Taha**, Assistant Professor, University of New Mexico, Albuquerque, NM; and **Jung Joong Kim** and **Tai Fan**, University of New Mexico

**Serviceability Performance of Concrete Beams with High Strength MMFX Reinforcement** **11:00 am**  
**Faris Malhas**, Professor, Bowling Green State University, Bowling Green, OH; and **Hani H. A. Nassif**, Rutgers, The State University of New Jersey

**Influence of Construction Loading on Long-Term Slab Deflections** **11:30 am**  
**Robert Vollum**, Reader in Concrete Structures, Imperial College London, London, UK



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### **Bridging Theory and Practice in the Greater Miami Valley**

**C-JUNIOR D**

Sponsored by ACI Greater Miami Valley Chapter

Session Moderator: Gregory Wagner  
Principal  
THP Limited Inc.  
Cincinnati, OH

For over a century, design professionals, contractors, and researchers in the Greater Miami Valley have embraced new technologies in the concrete industry, often serving as leaders in the practical application and understanding of new theories.

This session will present historical examples of projects in the region that used progressive technology in their design or construction. This session will also present an overview of ongoing research and testing in the region.

By attending this session, attendees will be able to:

1. Explain the technology associated with the design and construction of early cast-in-place high-rise buildings;
2. Describe specialized formwork and concrete placement techniques for certain architectural cast-in-place concrete elements;
3. Understand the limitations and capabilities of testing large-scale structural components; and
4. Acquire knowledge of recently completed and in-progress in-place tests of cast-in-place concrete pavements.

### **The Ingalls Building: World's First Reinforced Concrete Skyscraper**

**9:00 am**

**T. Michael Baseheart**, Professor of Civil & Environmental Engineering, University of Cincinnati, Cincinnati, OH

### **Rosenthal Contemporary Arts Center**

**9:25 am**

**Daniel Dorfmueller**, President, d. p. dorfmueller co. inc., Lebanon, OH

### **The Ascent at Roebling's Bridge**

**9:50 am**

**Jason Martin**, Structural Engineer, THP Limited Inc., Cincinnati, OH

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

**Bridging Theory and Practice in the Greater  
Miami Valley (cont.)**

**C-JUNIOR D**

**Concrete Pavement Research and Testing in  
Greater Miami Valley**

**10:15 am**

**John Davidson**, Executive Director, Ohio Concrete Southwest,  
Liberty Twp, OH

**University of Cincinnati Large Scale Test Facility**

**10:40 am**

**Bahram Shahrooz**, PhD, PE, FACI, Professor of Structural  
Engineering, University of Cincinnati, Cincinnati, OH

**Roebling Bridge**

**11:05 am**

**Thomas Kolber**, Structural Engineer, Woolpert Inc., Dayton, OH

**Replacement of Jeremiah Morrow Bridge**

**11:30 am**

**James Barnhart**, Senior Engineer, Ohio Ready Mixed Concrete  
Association, Columbus, OH



*The American Institute of Architects (AIA) has approved  
this session for 3 Learning Units. ACI is an AIA/CES  
Registered Provider.*

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 1

**C-JUNIOR B**

Sponsored by ACI Committee 207, Mass Concrete

Session Co-Moderators: Jonathan Poole  
Senior Engineer  
CTLGroup  
Austin, TX

John Gajda  
Senior Engineer  
CTLGroup  
Skokie, IL

Thermal cracking and damage from other temperature-related issues are concerns for the construction of mass concrete in bridges, buildings, and power plants. Durability and, in some cases, structural integrity, can be affected by these issues. Learn about the mechanism of distress and some potential, practical solutions. This session is intended to help owners, designers, contractors, and concrete suppliers understand and address mass concrete concerns.

The presentations at these sessions will be almost equally divided between speakers from Japan and the U.S.

The speakers from Japan will detail a recently published English translation of a 2008 document by the Japanese Concrete Institute (JCI) regarding thermal crack control of mass concrete structures. The JCI guidelines are based on the latest control and analysis technologies for thermal cracking, which were developed from the past two decades of experience. The guidelines are based on the concepts for control of thermal cracking in the original guidelines and adopt a performance-based verification system.

The special features of the guidelines are:

1. The basic principles of control of thermal cracking have been clarified;
2. By using 3D-FEM as a standard analysis technique, a new diagram of probability for thermal cracking relating to thermal crack index was provided;
3. By using the latest data, design values of concretes that used different types of cement were provided, incorporating the physical properties at an early age;

# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### **Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 1 (cont.)**

**C-JUNIOR B**

4. A simple equation for predicting crack width was provided, which uses the reinforcement ratio as a parameter and the thermal crack index; and
5. A simple equation for the thermal crack index was provided.

The speakers from the U.S. will describe a variety of topics related to mass concrete and thermal cracking. Several of the speakers will highlight current large projects and detail their project experiences with mass concrete construction.

By attending this session, attendees will be able to:

1. Acquire lessons learned from case studies of mass concrete placements, including the Snoqualmie Falls Redevelopment project, Holtwood Hydro Station, and the Olmsted Dam;
2. Recognize the distress mechanisms in mass concrete and some potential, practical solutions;
3. Understand the JCI guidelines regarding thermal crack control for mass concrete structures; and
4. Define equivalent age and understand its relevance on the physical properties of mass concrete mixtures.

**Details of the JCI Guidelines and the Special Features** 9:00 am  
**Ryoichi Sato**, Professor, Hiroshima University, Higashi-Hiroshima, Japan

**High-Strength Mass Concrete and Fast Track Construction: Approach and Methodologies That Have Been Successfully Utilized** 9:15 am  
**Steve Williamson**, Quality Control Director, Claxton Smith and Sons Concrete, Poca, WV

**Basis of Thermal Crack Control and Planning for Control of Thermal Cracking** 9:45 am  
**Takafumi Noguchi**, Associate Professor, University of Tokyo, Tokyo, Japan

**Equivalent Age and Physical Properties of Mass Concrete** 10:15 am  
**Christopher Ferraro**, Assistant in Engineering, University of Florida, Gainesville, FL; and **Mang Tia** and **Adrian Lawrence**, University of Florida

**Tuesday, October 18, 2011**

**9:00 am - 12:00 pm**

**Mass Concrete and Thermal Cracking, a Joint ACI-JCI  
Seminar, Part 1 (cont.)**

**C-JUNIOR B**

**Design Values of Materials' Properties and  
Their Backgrounds**

**10:45 am**

**Shigo Miyazawa, Research Associate, Ashikaga Institute of  
Technology, Ashikaga, Japan**





# Tuesday, October 18, 2011

## 9:00 am - 12:00 pm

### **Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 1**

**C-JUNIOR A**

Sponsored by Joint ACI-ASCE Committee 421, Design of Reinforced Concrete Slabs

Session Co-Moderators: Mustafa Mahamid  
Structural Engineer  
GRAEF-USA  
Chicago, IL

Faris A. Malhas  
Dean and Professor  
Bowling Green State University  
Bowling Green, OH

Reinforced concrete slabs have a complex behavior and are vulnerable to different types of failures. In designing slabs, provisions for shear, shear reinforcement requirements, and moment transfer at the support are areas of continued research and advancement. Also, serviceability issues are important to the designers, especially with the advancement in materials used in concrete. As concrete slabs are the most widely used floor systems, it is essential to highlight the recent advancements in the analysis and design of this system. This session focuses on the recent developments, research, practical analysis, and design and serviceability issues encountered in studies performed on reinforced concrete slabs and in practice.

By attending this session, attendees will be able to:

1. Recognize the recent advances in analysis and design of concrete slab systems;
2. Identify the serviceability issues relevant to designers;
3. Understand the punching shear capacity failure mode for concrete slabs and how to evaluate it; and
4. Trace the historical development of code provisions for two-way slab design.

### **Performance of Reinforced Concrete Slab-Column Connections with Shearbands**

**9:00 am**

**Thomas Kang**, Assistant Professor, Seoul National University, Seoul, Korea

# Tuesday, October 18, 2011

## 9:30 am - 11:30 am

**Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 1** **C-JUNIOR A**

**Unbonded Post-Tensioned Slabs Development and Repair Systems Using CFRP** **9:35 am**  
**Pinaki Chakrabarti**, Professor, California State University, Fullerton, CA

**Evaluating Punching Shear Strength of Slabs without Shear Reinforcement Using Artificial Neural Networks** **10:10 am**  
**Aly Said**, Assistant Professor, University of Nevada, Las Vegas, Las Vegas, NV

**Punching Shear Capacity of Reinforced Concrete Flat Slabs: A Comparison between Analytical and Experimental Analysis** **10:45 am**  
**Himat Solanki**, Professional Engineer, Sarasota County Government, Sarasota, FL

**Structural Evaluation of Reinforced Concrete One-Way Slab by In-Situ Load Testing** **11:20 am**  
**Antonio De Luca**, Post-Doctoral Associate, University of Miami, Coral Gables, FL

# Tuesday, October 18, 2011

## 9:00 am - 3:30 pm

### Exhibitor Demonstrations

**C-BALLROOM FOYER**

Exhibitors will demonstrate the capabilities of their products and services. Presentations may demonstrate equipment operation, introduce new products, demonstrate software capabilities, or describe the service provided by each participating company. These presentations may include PowerPoint shows, videos, and hands-on workshops. Each demonstration will conclude with a question and answer period. Attendees representing all areas of the concrete industry will find the demonstrations both interesting and educational. Learn more about the products and services offered by the following companies.

| <b>Tuesday Exhibitor Demonstration Schedule</b> |                             |  |
|---|-----------------------------|--|
| <b>Time</b>                                     | <b>Exhibitor</b>            | <b>Presentation/Demo Title</b>                                       |
| 9:45 am   | SIMCO<br>Technologies, Inc. | Concrete Characterization<br>for Service Life with<br>STADIUM® Lab   |
| 10:30 am  | Sensors & Software,<br>Inc. | Capabilities of Conquest<br>Ground Penetrating Radar<br>(GPR) System |
| 11:15 am  | GSSI                        | Latest Advancements in<br>Ground Penetrating Radar                   |

**Additional demonstrations may be added following  
the printing of the convention program book.  
Please see an updated schedule in the demo area.**

# Tuesday, October 18, 2011

## 12:00 pm - 2:00 pm

✓ **Contractors' Day Lunch**

**C-233**

**\$34 U.S. per person**

Hosted by the ACI Greater Miami Valley Chapter and the Construction Liaison Committee

Speaker:

David F. Cooper  
Chief Warrant Officer  
U.S. Army Special  
Operations  
Fort Bragg, NC



### **Topic: Quitting is Never an Option**

Join other ACI attendees and contractors for the Contractors' Day Lunch. Enjoy a special presentation from featured speaker Chief Warrant Officer 5, David F. Cooper. He will discuss lessons learned from Iraq combat missions that apply to all of us.

Chief Warrant Officer 5 David F. Cooper, a Cincinnati, Ohio, area native, volunteered for military service in March 1985. After completing basic training at Fort Jackson, South Carolina, he attended the Warrant Officer Basic Course and Army Flight School at Fort Rucker, Alabama, and then the AH-64 Apache Aircraft Qualification Course. In 1994, Cooper applied to and successfully assessed for service with the 160th Special Operation Aviation Regiment (Airborne) at Fort Campbell, Kentucky. Since qualifying on the AH-6 Little Bird helicopter in 1995, his assignments as a Night Stalker have included Fully Mission Qualified Pilot, Instructor Pilot, Operations Officer, and Battalion Flight Lead. Cooper previously served as the 160th SOAR (A) Regiment Senior Warrant Officer. He currently serves as the Regiment's Strategic Communications Officer.

Cooper is a combat veteran with numerous deployments in support of operations Desert Storm, Enduring Freedom-Afghanistan, and Iraqi Freedom.

***PREREGISTRATION IS REQUIRED TO ATTEND.*** Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.

✓ = separate fee required

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

### **Achieving Sustainability with Prestressed Concrete** **C-JUNIOR C**

Sponsored by ACI Committee 363, High-Strength Concrete, and Joint ACI-ASCE Committee 423, Prestressed Concrete

Session Co-Moderators: Micah Hale  
Associate Professor  
University of Arkansas  
Fayetteville, AR

John Myers  
Associate Professor  
Missouri University of Science &  
Technology  
Rolla, MO

This session focuses on achieving sustainability through the use of high-strength/high-performance concrete in prestressed concrete members.

This session will benefit practicing engineers who are interested in the sustainability options that prestressed concrete offers.

By attending this session, attendees will be able to:

1. Identify potential energy and environmental benefits from using precast/prestressed or post-tensioned concrete;
2. Determine the types of prestressed concrete applications that can most effectively use sustainable benefits;
3. Select concrete mixture proportions to increase the design life and reduce the maintenance costs of a structure; and
4. Quantify the sustainable benefits of using precast/prestressed or post-tensioned concrete structures.

*This session is pending approval from USGBC for 3 GBCI CE hours toward the LEED Credentialing Maintenance Program. To receive credit you must record the codes given throughout the session.*

### **Prestressed Concrete Applications for Sustainability** **2:00 pm**

**Andrea Schokker**, Professor and Head of Civil Engineering,  
University of Minnesota Duluth, Duluth, MN

### **Sustainable Attributes of Recent Precast/Prestressed Concrete Projects**

**2:30 pm**

**Dean Frank**, Director of Quality Programs, Precast/Prestressed Concrete Institute, Plainfield, IL

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

**Achieving Sustainability with Prestressed  
Concrete (cont.)**

**C-JUNIOR C**

**Potential LEED Considerations for Post-Tensioned  
Concrete Structures**

**3:00 pm**

**Thomas Kang**, Assistant Professor, Department of Architecture and Architectural Engineering, Seoul National University, Seoul, Korea; **Amy Backel**, University of Oklahoma; and **Martin Maingot**, Cary Kopczynski and Inc.

**Improving Sustainability and Durability Using Supplementary  
Cementitious Materials in Prestressed Concrete**

**3:30 pm**

**Trey Hamilton**, Associate Professor, University of Florida, Gainesville, FL

**Use of High-Strength Self-Consolidating Prestressed Concrete for  
Achieving Sustainability under Rapid Construction**

**4:00 pm**

**John Myers**, Associate Professor, Missouri University of Science & Technology, Rolla, MO; and **Kurt Bloch** and **Wei Zheng**, Missouri University of Science & Technology

**Sustainable Design of Concrete Buildings with  
Post-Tensioning**

**4:30 pm**

**Pawan Gupta**, Technical Director, URS Corporation, Metairie, LA; and **C. Nicholas Watry**, URS Corporation



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

### **Contractors' Day Session: Challenges and Other Endurances for the Concrete Contractor**

**C-JUNIOR D**

Sponsored by the ACI Greater Miami Valley Chapter

Session Moderator: Dan Baker  
President  
Baker Concrete Construction, Inc.  
Monroe, OH

This special session addresses many of the issues that we as contractors are faced with on a daily basis.

By attending this session, attendees will be able to:

1. Identify weather considerations relevant to concrete placement that affect the concrete crew;
2. Understand the causes and remedies for concrete cracking;
3. Recognize the importance of an air-void system to freezing-and-thawing durability; and
4. Understand strategies to coordinate equipment, materials, and staffing for large concrete pours.

#### **Concrete and the Concrete Crew Weather Considerations 2:00 pm**

**Kenneth C. Hover**, Professor of Civil and Environmental Engineering, Cornell University, Ithaca, NY

#### **Concrete and the Concrete Crack 2:30 pm**

**Kim Basham**, Senior Structural Engineer, KB Engineering LLC, Cheyenne, WY

#### **Freeze Thaw—A Closer Look 3:00 pm**

**James Fletcher**, Vice President and Director of Laboratory Services, Bowser-Morner, Inc., Dayton, OH

#### **Beam Strength Testing—Reduce the Trauma! 3:30 pm**

**Ross Martin**, President, Ross Martin Consultants, Naples, FL

#### **Really Big Pours 4:00 pm**

**Ronald Kozikowski**, Materials Engineer, Concrete Engineering Specialists, Dover, NH

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

**Contractors' Day Session: Challenges and Other Endurances  
for the Concrete Contractor (cont.)**

**C-JUNIOR D**

**Corrosion of Steel in Concrete**

**4:30 pm**

**Jorge Costa**, Vice President, Structural Technologies, Pompano  
Beach, FL





# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

### Open Paper Session

C-206

Sponsored by ACI Committee 123, Research and Current Developments

Session Co-Moderators: Sulapha Peethamparan  
Assistant Professor  
Clarkson University  
Potsdam, NY

Jinying Zhu  
Assistant Professor  
University of Texas at Austin  
Austin, TX

The Open Paper Session is a forum for presenting recent technical information that could not be scheduled into other convention sessions.

By attending these sessions, attendees will be able to:

1. Recognize new and emerging technology in the design and evaluation of concrete systems;
2. Understand the potential benefits and applications for new materials;
3. Acquire information on recent advances in concrete technology; and
4. Get up-to-date information on the latest research trends in the concrete industry.

### Damage Characterization of Concrete Structures Using Acoustic Emission

2:00 pm

**Aaron Larosche**, Graduate Research Assistant, University of South Carolina, Columbia, SC; and **Jesè Mangual**, University of South Carolina

### Tension Stiffening Behavior of Steel Fiber Reinforced Concrete with Conventional Rebar

2:20 pm

**Seong-Cheol Lee**, Postdoctoral Researcher, Department of Civil Engineering, University of Toronto, Toronto, ON, Canada; **Jae-Yeol Cho**, Seoul National University; and **Frank J. Vecchio**, University of Toronto

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

Open Paper Session (cont.)

C-206

**High-Performance Lightweight Concrete (100-Year Service Life) for IHNC Bypass: Barge Gate** 2:40 pm

**Dale Berner**, President, Ben C. Gerwick, Inc., Oakland, CA; and **Earl Piermattei** and **David Harder**, Ben C. Gerwick Inc.

**Full-Scale Testing of Florida I-Beams** 3:00 pm

**Brandon E. Ross**, Graduate Research Assistant, Department of Civil and Coastal Engineering, University of Florida, Gainesville, FL

**Early-Age Creep Modeling of Concrete** 3:20 pm

**Benjamin E. Byard**, Graduate Research Assistant, 101F Harbert Engineering Center, Auburn University, Alabama; and **Anton K. Schindler**, Auburn University

**Simplified Axial-Flexural Interaction Curves of Concrete-Filled FRP Tubes for Design Guidelines** 3:40 pm

**Pedram Sadeghian**, Postdoctoral Fellow, Department of Civil Engineering, Queen's University, Kingston, ON, Canada; and **Amir Fam**, Queen's University

**Modification of Standard Chemical Shrinkage Test for Cementitious Systems: Implications on Internal Curing for High Performance Concrete** 4:00 pm

**Tengfei Fu**, Graduate Research Assistant, Oregon State University, School of Civil & Construction Engineering, Corvallis, OR; and **Tyler Deboodt** and **Jason H. Ideker**, Oregon State University

**Structural Health Monitoring of Concrete Structures Using a Carbon Nanotube-Based Composite Sensing Layer** 4:20 pm

**Thomas Schumacher**, Assistant Professor, Department of Civil and Environmental Engineering and Center for Innovative Bridge Engineering, University of Delaware, Newark, DE; and **Erik T. Thostenson**, University of Delaware

**Tomography of Concrete by Air-Coupled Ultrasonic Measurements** 4:40 pm

**Kerry S. Hall**, Graduate Research Assistant, Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL; and **John S. Popovics**, University of Illinois at Urbana-Champaign

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

### **Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 2**

**C-JUNIOR B**

Sponsored by ACI Committee 207, Mass Concrete

Session Co-Moderators: Jonathan Poole  
Senior Engineer  
CTLGroup  
Cedar Park, TX

Darrell Elliott  
Manager of Technical Services  
Buzzi Unicem USA  
Metairie, LA

Thermal cracking and damage from other temperature-related issues are concerns for the construction of mass concrete in bridges, buildings, and power plants. Durability and, in some cases, structural integrity, can be affected by these issues. Learn about the mechanism of distress and some potential, practical solutions. This session is intended to help owners, designers, contractors, and concrete suppliers understand and address mass concrete concerns.

The presentations at these sessions will be almost equally divided between speakers from Japan and the U.S.

The speakers from Japan will detail a recently published English translation of a 2008 document by the Japanese Concrete Institute (JCI) regarding thermal crack control of mass concrete structures. The JCI guidelines are based on the latest control and analysis technologies for thermal cracking, which were developed from the past two decades of experience. The guidelines are based on the concepts for control of thermal cracking in the original guidelines and adopt a performance-based verification system. The special features of the guidelines are:

1. The basic principles of control of thermal cracking have been clarified;
2. By using 3D-FEM as a standard analysis technique, a new diagram of probability for thermal cracking relating to thermal crack index was provided;
3. By using the latest data, design values of concretes that used different types of cement were provided, incorporating the physical properties at an early age.

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

**Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 2 (cont.)**

**C-JUNIOR B**

4. A simple equation for predicting crack width was provided, which uses the reinforcement ratio as a parameter and the thermal crack index; and
5. A simple equation for the thermal crack index was provided. The speakers from the US will describe a variety of topics related to mass concrete and thermal cracking. Several of the speakers will highlight current large projects and detail their project experiences with mass concrete construction.

By attending this session, attendees will be able to:

1. Acquire lessons learned from case studies of mass concrete placements, including the Snoqualmie Falls Redevelopment project, Holtwood Hydro Station, and the Olmsted Dam;
2. Recognize the distress mechanisms in mass concrete and some potential, practical solutions;
3. Understand the JCI guidelines regarding thermal crack control for mass concrete structures; and
4. Define equivalent age and understand its relevance on the physical properties of mass concrete mixtures.

**In-Situ Temperature Rise in Reinforced Structural Mass Concrete**

**2:00 pm**

**Katie Bartojay**, Civil Engineer, U.S. Bureau of Reclamation, Denver, Co

**Thermal Stress Analysis and Verification Procedures for Thermal Cracking and Their Backgrounds**

**2:30 pm**

**Toshiaki Mizobuchi**, Professor, Hosei University, Tokyo, Japan

**Temperature Control and Cracking, Snoqualmie Falls Redevelopment Project**

**3:00 pm**

**Nick Patch**, Project Engineer, Barnard Construction Company Inc., Bozeman, MT

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

**Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 2 (cont.)**

**C-JUNIOR B**

**Construction Practice, Inspection, and Verification Examples**

**3:30 pm**

**Tomoko Ishida**, Scientist, Obayaski Corporation, Nagara, Switzerland

**Shear and Tensile Testing of Large RCC Blocks**

**4:00 pm**

**Stephen Tatro**, Principal, Tatro Hinds Advanced Concrete Engineering, Walla Walla, WA; and **Jim Hinds**, Tatro Hinds Advanced Concrete Engineering

**Experiences with Mass Concrete Construction at the Holtwood Hydro Station**

**4:30 pm**

**Joseph DeFiore**, Assistant Project Manager, Walsh Construction Company, Holtwood, PA; and **Alison Bernero**, Walsh Construction Company

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

### **Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 2**

**C-JUNIOR A**

Sponsored by Joint ACI-ASCE Committee 421, Design of Reinforced Concrete Slabs

Session Moderator: Mustafa Mahamid  
Structural Engineer  
GRAEF-USA  
Chicago, IL

Reinforced concrete slabs have a complex behavior and are vulnerable to different types of failures. In designing slabs, provisions for shear, shear reinforcement requirements, and moment transfer at the support is an area of continues research and advancement. Also, serviceability issues are important to the designers, especially with the advancement in materials used in concrete. As concrete slabs are the most widely used floor system, it is essential to highlight the recent advancements in the analysis and design of this system. This session focuses on the recent developments, research, practical analysis and design issues, and serviceability issues encountered in studies performed on reinforced concrete slabs and in practice.

By attending this session, attendees will be able to:

1. Recognize the recent advances in analysis and design of concrete slab systems;
2. Identify the serviceability issues relevant to designers;
3. Understand the punching shear capacity failure mode for concrete slabs and how to evaluate it; and
4. Trace the historical development of code provisions for two-way slab design.

### **Reinforced Concrete Slab Design of the St. Cloud**

**Hospital East Addition**

**2:00 pm**

**Matthew Smith**, Graduate Engineer, Meyer Borgman Johnson, Minneapolis, MN

# Tuesday, October 18, 2011

## 2:00 pm - 5:00 pm

**Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 2 (cont.)**

**C-JUNIOR A**

**Flexural Reinforcement Essential for Punching**

**Shear Resistance of Slabs**

**2:30 pm**

**Amin Ghali**, Professor and PhD, University of Calgary, Calgary, AB, Canada

**Design & Construction of Steel Fiber Reinforced Pile Supported Slabs**

**3:00 pm**

**Jeffrey Novak**, Technical Manager—Dramix Steel Fibers, Bekaert Corporation, Marietta, GA

**Requirements for Seismic-Resistant Flat Plates:**

**Strength and Ductility**

**3:30 pm**

**Amin Ghali**, Professor and PhD, University of Calgary, Calgary, Alberta, Canada

**Shear Capacity of Reinforced Concrete Slabs Loaded Close to the Support: Laboratory Investigation**

**4:00 pm**

**Eva Lantsoght**, Student, Delft University of Technology, Delft, the Netherlands

**Historical Perspective on the Evolution of Two-Way**

**Slab Design**

**4:30 pm**

**Mahmoud Kamara**, Senior Structural Engineer, Portland Cement Association, Skokie, IL

# Tuesday, October 18, 2011

## 5:00 pm - 6:00 pm

### Faculty Network Reception

**M-CROSSROADS**

Faculty members and students are invited to attend this informal reception. During this time, you will have an opportunity to exchange ideas and network. Light hors d'oeuvres and a cash bar will be available.





# Tuesday, October 18, 2011

## 6:00 pm - 9:00 pm

**Concrete Mixer**

**UNION TERMINAL**

Sponsored by the ACI Greater Miami Valley Chapter

Originally built in 1933 as the Union Terminal train station, the building was declared a National Historic Landmark in 1977. In the late 1980s, the building was renovated and then reopened as Cincinnati Museum Center in 1990. Attendees will be greeted by the 10-story, arched, limestone and glass façade of the building. Upon entering, you will be able to stroll through the museum exhibits while enjoying hors d'oeuvres and drinks and networking with fellow convention attendees. Hosted by the ACI Greater Miami Valley Chapter, this is a Concrete Mixer you won't want to miss as you explore the history of the Midwest. Buses will depart from 5th Street outside the Millennium Hotel, beginning at 6:00 pm.

**Buses will begin departing from the Convention Center at 5:30 pm.**



# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

### CLSM from Practice to Theory

**C-JUNIOR A**

Sponsored by ACI Committee 229, Controlled Low-Strength Materials

Session Moderator: Charles Pierce  
Associate Professor  
University of South Carolina  
Columbia, SC

Controlled low-strength material (CLSM) is a versatile construction material that can be used to solve challenging problems where conventional concrete or earthen fills do not provide the optimal solutions. The development of CLSM products for a broad range of applications is often practice-driven. This session will demonstrate how the unique properties of CLSM can be adjusted through the selection and proportioning of its components to meet project demands.

By attending this session, attendees will be able to:

1. Explain sustainable benefits of CLSMs;
2. Compare the mixture components and mixture proportions of conventional (unfoamed) and low-density (foamed) CLSMs;
3. Recognize how to adjust engineering properties of CLSMs to meet performance specifications in a diverse range of applications; and
4. Identify the various placement and assessment methods for CLSMs.

**Introduction** **9:00 am**

**Charles Pierce**, Associate Professor, University of South Carolina, Columbia, SC

**Production and Use of Green CLSM for Sustainability** **9:05 am**

**Bruce Ramme**, Vice President, We Energies, Milwaukee, WI

**Low-Density Controlled Low-Strength Material...**

**How Practice Leads to Theory** **9:30 am**

**Edward Glysson**, Director of Research & Operations, Elastizell Corporation of America, Dexter, MI; and **Milton Gomez**, Cellular Concrete LLC

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

**CLSM from Practice to Theory (cont.)**

**C-JUNIOR A**

**Use of CLSM as Bedding Materials for Large-Sized**

**Steel Penstock**

**9:55 am**

**Nausherwan Hasan**, Consulting Engineer, URS Corporation, New York, NY

**Radioactive Waste Encapsulation with Flowable CLSM** **10:20 am**

**Peter Yen**, Principal Engineer, Bechtel National Inc., San Francisco, CA; and **Georg Bergemann**, Construction Techniques Inc.

**Development of a CLSM to Simulate Wet Soil**

**Conditions or Mud**

**10:45 am**

**Brian Green**, Research Geologist, USAE Engineer Research and Development Center, Vicksburg, MS

**CLSM Challenges and Successes in Hawaii**

**11:10 am**

**Timothy Folks**, Manager of Technical Services, Hawaiian Cement, Aiea, HI

**Effects of Shape and Texture of Recycled Organic**

**Aggregate on CLSM Properties**

**11:35 am**

**Charles Pierce**, Associate Professor, University of South Carolina, Columbia, SC; and **Larry Brown**, Professional Service Industries, Inc.



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

### **Multi-Type Durability Attack, Part 1**

**C-JUNIOR B**

Sponsored by Committees 201, Durability of Concrete, and 236,  
Material Science of Concrete

Session Co-Moderators: Tyler Ley

Assistant Professor of Civil and  
Environmental Engineering  
Oklahoma State University  
Stillwater, OK

Donald J. Janssen

Associate Professor of Civil Engineering  
University of Washington  
Seattle, WA

Concrete durability is often examined one mechanism at a time. For example, freezing-and- thawing attack could be examined or alkali-silica reaction could be examined. But natural exposure conditions can simultaneously subject concrete to multiple attack mechanisms, which can result in a more severe attack than if the mechanisms were evaluated separately. These sessions will present information on the combined effects of different durability mechanisms that could be present at the same time in actual concrete installations.

By attending these sessions, attendees will be able to:

1. Recognize a variety of different durability-related deterioration mechanisms;
2. Appreciate the potential interactions between durability mechanisms;
3. Understand why laboratory and field behaviors can differ when durability is concerned; and
4. Develop approaches for producing durable concrete when more than one durability-attack mechanism could be involved.

### **Durability of Concrete to Sulfate Attack under Combined Cyclic Environments and Flexural Loading**

**9:00 am**

**Mohamed Tamer Bassuoni**, Lecturer in Concrete Structure, University of Nottingham, Nottingham, UK; and **Moncef Nehdi**, University of Western Ontario

### **Durability of Concrete Subjected to Potassium**

**Acetate Deicer**

**9:30 am**

**Prasad Rangaraju**, Assistant Professor, Clemson University, Clemson, SC; and **David Wingard**, Clemson University

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

**Multi-Type Durability Attack, Part 1 (cont.)**

**C-JUNIOR B**

**Sulfate Attack and Physical Salt Attack on Concrete** 10:00 am

**Harvey Haynes**, Consulting Concrete Engineer, Haynes & Associates, Oakland, CA

**Chemical, Biological, and Physical Deterioration Mechanisms in Concrete Piling Along Georgia's Coastline** 10:30 am

**R. Brett Holland**, PhD Candidate, Georgia Institute of Technology, Atlanta, GA; and **Robert D. Moser**, **Lawrence F. Kahn**, and **Kimberly Kurtis**, Georgia Institute of Technology

**Combined Physical and Chemical Effects of Deicers on Concrete** 11:00 am

**R. Doug Hooton**, Professor, University of Toronto, Toronto, ON, Canada; **Gustavo Julio-Betancourt**, Holcim Canada, Inc.; and **Sonia Ghajar**, University of Toronto

**The Interplay between Alkali-Silica Reaction (ASR) and Delayed Ettringite Formation (DEF) in Laboratory and Field Concrete** 11:30 am

**Kevin Folliard**, Professor of Civil Engineering, University of Texas at Austin, Austin, TX; **Michael Thomas**, University of New Brunswick; and **Thano Drimalas**, University of Texas at Austin



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

### **Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 1**

**C-JUNIOR C**

Sponsored by ACI Committees 228, Nondestructive Testing of Concrete, and 342, Evaluation of Concrete Bridges and Bridge Elements

Session Co-Moderators: Jeffrey Smith  
Structures Engineer  
Federal Highway Administration,  
KY Division  
Frankfort, KY

Jacob Bice  
Associate  
Structural Diagnostic Services,  
Walter P Moore  
Houston, TX

Visual inspection is the primary tool used to inspect and assess the condition of concrete bridge decks. However, current policies and practices of many state DOTs may affect the accuracy and reliability of visual inspections. The public is demanding that lane closures and traffic restrictions for any reason be minimal; and, in some cases, they are not acceptable. This can severely impact the bridge owner's ability to obtain the information on the condition of bridge components necessary to make good, informed decisions for maintenance and rehabilitation. This is especially true for bridges decks that are being subjected to increasingly larger live loads and deicer applications. Nondestructive testing (NDT) techniques can be used to identify bridge deck deterioration—including probable causes while reducing traffic.

Such techniques can also be used to monitor bridge deck performance, determine proper maintenance strategies, and improve the design and construction of bridge deck rehabilitations. The data obtained can be used in asset management systems to help provide a longer-lasting, more durable, and ultimately a more sustainable infrastructure.

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

### **Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 1 (cont.)**

**C-JUNIOR C**

By attending this session, attendees will be able to:

1. Name NDT techniques that can be used to identify bridge deck deterioration;
2. Recognize differences between various NDT techniques;
3. Describe how NDT techniques can be used to monitor bridge deck performance; and
4. Summarize how NDT results can be used.

#### **Introduction**

**9:00 am**

**Jeffrey Smith**, Structures Engineer, Federal Highway Administration, Frankfort, KY

#### **High-Speed Bridge Deck Condition Scanning for Rehabilitation Planning and Prioritization**

**9:05 am**

**Kenneth Maser**, President, Infrasense Inc., Arlington, MA

#### **Ultra-Efficient, Complete Bridge Asset Management Information**

**9:45 am**

**Gary Weil**, Chief Technology Officer, EnTech Engineering, Inc., St. Louis, MO

#### **Vehicle-Mounted Bridge Deck Scanner**

**10:25 am**

**Yajai Tinkey**, Research Engineer, Olson Engineering, Wheat Ridge, CO

#### **Implementation of a Rapid Acoustic Scanning Method for Bridge Deck NDE**

**11:05 am**

**John S. Popovics**, Associate Professor, University of Illinois, Urbana, IL



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

### **Silica Fume Concrete Field Applications and Performance** C-206

Sponsored by ACI Committee 234, Silica Fume in Concrete

Session Moderator: Robert Hoopes  
Senior Technical Services Engineer  
W. R. Grace & Co.  
Cambridge, MA

Topics will include the use and performance of silica fume concrete in parking structures, bridges, marine structures, self-consolidating concrete, tall towers, grouts, and underwater concrete.

By attending this session, attendees will be able to:

1. Understand and explain the many current applications of silica fume in concrete;
2. Discuss the impact of silica fume on rheology when used in concrete, self-consolidating concrete, grout, and shotcrete;
3. Access methods to successfully pump silica fume concrete in tall towers; and
4. Demonstrate how using silica fume concrete in bridges and parking structures can increase their service life and reduce life-cycle costs.

#### **Parking Structures** 9:00 am

**Anthony Kojundic**, Business Manager, Elkem Materials Inc.,  
Pittsburgh, PA

#### **Use of Silica Fume Concrete in Bridges** 9:30 am

**Tarif Jaber**, President and Principal, Jaber Engineering Consulting  
Inc., Scottsdale, AZ

#### **Rheology and Silica Fume (Practical)** 10:00 am

**Eckart Buhler**, Manager Engineering, Norchem, Inc., Jupiter, FL

#### **Effect of Silica Fume on Rheology and Workability of Cement Based Materials** 10:30 am

**Kamal Khayat**, Professor, University of Sherbrooke, Sherbrooke,  
QC, Canada



# Wednesday, October 19, 2011

## 9:00 am - 12:00 pm

**Silica Fume Concrete Field Applications and Performance (cont.)**

**C-206**

**Modeling the Performance Advantages of Concretes Containing Silica Fume**

**11:00 am**

**Neal S. Berke**, Vice President, Materials Science, Tourney Consulting Group, Kalamazoo, MI

**Tall Towers (Pumping and Placement)**

**11:30 am**

**James Aldred**, Principal Professional, AECOM, Sydney, Australia; and **Fouad Yazbeck**, Readymix Abu Dhabi



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

### **Multi-Type Durability Attack, Part 2**

**C-JUNIOR B**

Sponsored by ACI Committees 201, Durability of Concrete, and 236, Material Science of Concrete

Session Co-Moderators: Sulapha Peethamparan  
Assistant Professor of Civil and  
Environmental Engineering  
Clarkson University  
Potsdam, NY

Donald J. Janssen  
Associate Professor of Civil Engineering  
University of Washington  
Seattle, WA

Concrete durability is often examined one mechanism at a time. For example, freezing and-thawing attack could be examined or alkali-silica reaction could be examined. But natural exposure conditions can simultaneously subject concrete to multiple attack mechanisms, which can result in a more severe attack than if the mechanisms were evaluated separately. These sessions will present information on the combined effects of different durability mechanisms that could be present at the same time in actual concrete installations.

By attending these sessions, attendees will be able to:

1. Recognize a variety of different durability-related deterioration mechanisms;
2. Appreciate the potential interactions between durability mechanisms;
3. Understand why laboratory and field behaviors can differ when durability is concerned; and
4. Develop approaches for producing durable concrete when more than one durability-attack mechanism could be involved.

### **Durability Interactions and Service Life Modeling**

**2:00 pm**

**Erika Holt**, Research Scientist, VTT Building Technology,  
Espoo, Finland

# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

**Multi-Type Durability Attack, Part 2 (cont.)**

**C-JUNIOR B**

**Performance of Reactive Powder Concrete (RPC) and Ultra-High Performance Concrete (UHPC) in a Marine Environment and Subjected to Freezing and Thawing** 2:30 pm  
**Brian Green**, Research Geologist, USAE Engineer Research and Development Center, Vicksburg, MS; and **Michael Thomas**, University of New Brunswick

**Residual Stress Development in Restrained Concrete Elements and the Role of Micro Cracking and Through Cracking on Fluid Transport and Corrosion** 3:00 pm  
**W. Jason Weiss**, Professor, Purdue University, West Lafayette, IN; and **Kambiz Raoufi, Mohammad Pour-Ghaz, and Tim Barrett**, Purdue University

**ASR and Freeze-Thaw Damage in a Prestressed Water Tank** 3:30 pm  
**David Rothstein**, Petrographer, DRP Consulting Inc., Boulder, CO

**Failures of Jointed Concrete Pavements from a Combination of Mechanisms** 4:00 pm  
**Tyler Ley**, Assistant Professor, Oklahoma State University, Stillwater, OK; and **Robert Frazier**, Oklahoma State University

**Ettringite and Freeze-Thaw Damage** 4:30 pm  
**Tyler Ley**, Assistant Professor, Oklahoma State University, Stillwater, OK; and **Donald J. Janssen**, University of Washington



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

**Promoting the Planning, Design, and Construction of Sustainable Infrastructure: The Institute for Sustainable Infrastructure's envision™ Sustainability Rating System** **C-206**

Sponsored by ACI Committee 130, Sustainability of Concrete

Session Moderator: Larry Rowland  
Manager, Marketing Technical Services  
Lehigh Cement Company  
Allentown, PA

Infrastructure managers are challenged to deliver more sustainable solutions for our nation's transportation, water, and other infrastructure systems. What does that mean and how do we meet that challenge? The envision™ rating system infrastructure rating system, administered by the Institute for Sustainable Infrastructure in conjunction with the American Council of Engineering Companies, American Public Works Association, and American Society of Civil Engineers, will provide an objective framework and guidance to owners, planners, designers, and material and equipment suppliers to deliver desirable solutions. The envision™ addresses a need beyond the approaches developed by the U.S. Green Building Council for the vertical infrastructure market and addresses a broad set of public and project needs associated with horizontal infrastructure projects. This session will provide a valuable forum on the envision™ rating system that is now open for public comment through late 2011. The envision™ is a two-part rating system providing both a guide to the effective planning of sustainable projects and the use of best management practices to achieve more efficient use of materials and resources. The rating system includes a series of 10 primary criteria and 74 sub-criteria along with a graduated performance achievement assessment. Application of the envision™ approach will guide engineers, owners, constructors, regulators, and policymakers to provide more effective levels of reliability, resilience, efficiency, organizational adaptability, and overall project performance. The Institute will have a formal program for assessors who will be trained in the application of the rating systems, and recognition of performance will be through an independent third-party verification process. During this ACI session, participants will be provided a detailed review, description of applications, and a time line for submittal of public comments. Project recognition is expected to begin in 2012.

# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

**Promoting the Planning, Design, and Construction of Sustainable Infrastructure: The Institute for Sustainable Infrastructure's envision™ Sustainability Rating System (cont.)**

**C-206**

By attending this session, attendees will be able to:

1. Name the founding members of the Institute for Sustainable Infrastructure—namely, the American Council of Engineering Companies (ACEC), the American Public Works Association (APWA), and the American Society of Civil Engineers (ASCE);
2. Accurately relate the application process and the time line for submittal of public comments;
3. Identify at least three of the key audiences of the envision™ infrastructure rating system, administered by the Institute for Sustainable Infrastructure;
4. Identify both parts of this two-part rating system, and correctly describe the objectives of envision™ to providing both a guide to the effective planning of sustainable projects and the use of best management practices to achieve more efficient use of materials and resources; and
5. Summarize the verification process employed by the envision™ program.

*This session is pending approval from USGBC for 3 GBCI CE hours toward the LEED Credentialing Maintenance Program. To receive credit you must record the codes given throughout the session.*

**Introduction**

**2:00 pm**

**Larry Rowland**, Manager, Marketing Technical Services, Lehigh Cement Company, Allentown, PA

**Overview**

**2:10 pm**

**Peter Binney**, Director of Sustainable Infrastructure, Merrick & Company, Aurora, CO

**envision™ Program Details**

**3:00 pm**

**Peter Binney**, Director of Sustainable Infrastructure, Merrick & Company, Aurora, CO; and **Howard LaFever**, GHD



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*

**Wednesday, October 19, 2011**

**2:00 pm - 5:00 pm**

**Promoting the Planning, Design, and Construction of Sustainable Infrastructure: The Institute for Sustainable Infrastructure's envision™ Sustainability Rating System (cont.)**

**C-206**

**Question-and-Answer Period**

**4:30 pm**

**Peter Binney**, Director of Sustainable Infrastructure, Merrick & Company, Aurora, CO; and **Howard LaFever**, GHD



# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

### **Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 2**

**C-JUNIOR C**

Sponsored by ACI Committee 228, Nondestructive Testing of Concrete, and 342, Evaluation of Concrete Bridges and Bridge Elements

Session Co-Moderators: Jeffery Smith  
Structures Engineer  
Federal Highway Administration,  
KY Division  
Frankfort, KY

Jacob Bice  
Associate  
Structural Diagnostic Services,  
Walter P Moore  
Houston, TX

Visual Inspection is the primary tool used to inspect and assess the condition of concrete bridge decks. However, current policies and practices of many state DOTs may affect the accuracy and reliability of visual inspections. The public is demanding that lane closures and traffic restrictions for any reason be minimal and, in some cases, they are not acceptable. This can severely impact the bridge owner's ability to obtain the information on the condition of bridge components necessary to make good, informed decisions for maintenance and rehabilitation. This is especially true for bridges, decks that are being subjected to increasingly larger live loads and deicer applications. Nondestructive testing (NDT) techniques can be used to identify bridge deck deterioration—including probable causes—while reducing traffic.

Such techniques can also be used to monitor bridge deck performance, determine proper maintenance strategies, and improve the design and construction of bridge deck rehabilitations. The data obtained can be used in asset management systems to help provide longer-lasting, more durable, and ultimately a more sustainable infrastructure.

# Wednesday, October 19, 2011

## 2:00 pm - 5:00 pm

### **Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 2 (cont.)** **C-JUNIOR C**

By attending this session, attendees will be able to:

1. Name nondestructive testing (NDT) techniques that can be used to identify bridge deck deterioration;
2. Recognize differences between various NDT techniques;
3. Describe how NDT techniques can be used to monitor bridge deck performance; and
4. Summarize how NDT results can be used.

### **Comparison of Low-Speed and High-Speed Ground Penetrating Radar Methods for Bridge Deck Condition Evaluation** **2:00 pm** **Kenneth Maser**, President, Infrasense Inc., Arlington, MA

### **Utilization of Ground Penetrating Radar (GPR) to Determine Bridge Deterioration** **2:35 pm** **Brad Rister**, Project Engineer, Kentucky Transportation Center, Lexington, KY

### **In-Situ Evaluation of Concrete Bridge Decks Using Air-Coupled Impact-Echo Test** **3:10 pm** **Seong-Hoon Kee**, Student, University of Texas at Austin, Austin, TX

### **Comparative Investigation of Chloride-Induced Corrosion Detection Techniques in Reinforced Concrete Structures** **3:45 pm** **Parham Chabi**, Student, University of Ottawa, Ottawa, ON, Canada



*The American Institute of Architects (AIA) has approved this session for 3 Learning Units. ACI is an AIA/CES Registered Provider.*



# Thursday, October 20, 2011

## 8:00 am - 5:00 pm

✓ACI/PCA 318-11 Building Code Seminar

M-STATESMEN

7:45 am Registration; coffee and pastries available

\$597 Nonmember registration fee

\$457 ACI National Member registration fee

\$125 Full-time students (with proof of enrollment)

Speakers:

Mahmoud Kamara

Senior Structural Engineer

Portland Cement Association

Skokie, IL

Lawrence C. Novak

Director of Engineered Buildings

Portland Cement Association

Skokie, IL

This 1-day seminar is for structural engineers, specifiers, building officials, contractors, architects, and inspectors interested in keeping up with the latest information on concrete design and construction. This seminar, which is co-sponsored by ACI and the Portland Cement Association (PCA), will cover all of the major changes in this new edition of the Code. A major portion of the revisions are related to the addition of adhesive anchors in ACI 318 for the first time. In addition to the new anchor design requirements, the seminar will cover adhesive anchor evaluation requirements and new provisions requiring certification of the anchor installer under certain circumstances. Changes to reinforcing steel detailing requirements, allowable grades, and coating types will also be covered. Important topics, such as detailing for structural integrity and designing using the latest in strut-and-tie modeling, will be presented and discussed. Included with the seminar are complimentary copies of ACI's "Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary" and worked examples prepared by PCA—essential items that anyone in the concrete industry will refer to over and over for the next several years.

# Notable Concrete in Cincinnati and Vicinity

Co-Sponsored by: AIA Cincinnati



**Roberts Paideia Academy, Cincinnati Public Schools**

1702 Grand Avenue, Cincinnati, Ohio 45214

**The Office Center at Red Bank Village**

3960 Red Bank Road, Cincinnati, Ohio 45227

**Campus Mall Renovation, Xavier University**

3800 Victory Parkway, Cincinnati, Ohio 45207

**Academy of World Languages**

2030 Fairfax Avenue, Cincinnati, Ohio 45207

**The Ascent at Roebling's Bridge**

1 Roebling Way, Covington, Kentucky 41011

**Cincinnati Financial Corporation Office Campus**

6200 S. Gilmore Rd, Fairfield, Ohio 45014

**Harrison Activity Center, Southwest Local School District**

9860 West Road, Harrison, OH 45030

**North Pointe at Union Centre, Offices for GE Aviation**

6440 and 6380 Aviation Way, West Chester, Ohio 45069

**Two Waterstone Place, Offices for Miller-Valentine Group**

9349 Waterstone Boulevard, Deerfield Township, Ohio 45249

Compiled by ACI Committee 124,  
Concrete Aesthetics



Questions or comments? Please e-mail the editor,  
Michael Paul, at [mpaul@duffnet.com](mailto:mpaul@duffnet.com).

# ACI Board Committees and Chairs

|   |                        |
|---|------------------------|
| Certification Programs                    | G. Terry Harris        |
| Chapter Activities                        | Dawn L. Miller         |
| Construction Liaison                      | Michael J. Schneider   |
| Convention                                | Kari L. Yuers          |
| Educational Activities                    | David M. Suchorski     |
| Financial Advisory                        | William E. Rushing Jr. |
| Honors and Awards                         | Thomas D. Verti        |
| International                             | Luke M. Snell          |
| Marketing                                 | Beverly A. Garnant     |
| Membership                                | Matthew R. Sherman     |
| Publications                              | John S. Popovics       |
| Responsibility in Concrete Construction   | Jeffrey W. Coleman     |
| Standards Board                           | Anthony E. Fiorato     |
| Student and Young Professional Activities | George R. Wargo        |
| Technical Activities                      | David A. Lange         |

## **ACI Convention Committee**

Kari L. Yuers, Chair  
Katie Bartojay  
Joseph J. Biernacki  
Ramon L. Carrasquillo  
Mark A. Cheek  
James H. Hanson  
David A. Lange  
William J. Lyons  
Kirk L. McDonald  
Hani H. A. Nassif  
Debrethann R. Orsak  
Aimee Pergalsky  
William E. Rushing Jr.  
David H. Sanders  
Michael J. Schneider  
David M. Suchorski  
Lawrence H. Taber  
Renée J. Lewis, Staff Liaison

# Session Attendance Tracking Form for the ACI Fall 2011 Convention

Cincinnati, OH • October 16-20, 2011

Use this form to track your attendance at ACI sessions. You must be a registered convention attendee to attend sessions. This form may be accepted by state boards that allow self-reporting of continuing education activities as evidence of participation. In most cases, 1 contact hour is equal to 1 Professional Development Hour (PDH). Check with your state board for acceptance criteria.

**Instructions:** Fill in your name, e-mail address, and telephone number below. Check off each session you attend. If a state where you are licensed requires a certificate of attendance, please record the PDH Codes given throughout each session in the boxes provided. You must attend the entire session and sign this form to receive your certificate(s). After you have attended your final session, submit this form to the registration desk located in the Ballroom Foyer at the Duke Energy Convention Center. You may also fax this form to ACI at 248-848-3792 or e-mail it to Mike Tholen (mike.tholen@concrete.org). You must attend the entire session and sign this form to receive a certificate(s). Total the number of PDH credits you earned for each day at the end of this form.

Name (please print): \_\_\_\_\_

E-mail address (please print): \_\_\_\_\_

Telephone number: \_\_\_\_\_

If you are a licensed professional engineer in Florida or North Carolina and would like ACI to report your hours to these state boards or an architect and would like ACI to report your hours to AIA, please provide your license number below.

Florida PE No.: \_\_\_\_\_

North Carolina PE No.: \_\_\_\_\_

Architecture license No.: \_\_\_\_\_

By my signature, I attest that I have attended the entire duration of each of the sessions indicated on this form: \_\_\_\_\_

(signature)

## Saturday, October 15, 2011

### 1:00 PM-5:00 PM

4 PDH

- ACI Concrete Sustainability Forum IV

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

## Sunday, October 16, 2011

### 2:00 PM-5:00 PM (Select one session)

3 PDH

- Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 1 (435/348)
- Emerging Technologies in Civil Infrastructure Application (TTAG-SDC)
- Modeling of FRP Strengthening Techniques in Concrete Infrastructure (447)
- Recent Development in Bond and Splice Tests (408)
- Understanding the Implications of Green Building Codes and Standards on the Concrete and Masonry Industries (122/130)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### 7:30 PM-10:00 PM (Select one session)

2.5 PDH

- 123 Forum (123)
- Hot Topic Session (HTC)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

## Monday, October 17, 2011

### 9:00 AM-12:00 PM (Select one session)

3 PDH

- Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 2 (435/348)
- Evaluation of Existing Structures Prior to Rehabilitation (228)
- Fiber-Reinforced Concrete—Smart Materials and Sensors (544F/544)
- Research in Progress (123)
- Structural Health Monitoring Technologies, Part 1 (444)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### 2:00 PM-5:00 PM (Select one session)

3 PDH

- Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 3 (435/348)
- Concrete Overlays for Pavement Rehabilitation (325)
- Field Guide to Concrete Repair Application Procedures (E706)
- Structural Health Monitoring Technologies, Part 2 (444)
- Technical Session in Honor of Robert Gulyas (223/302/345/360/515)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

## Tuesday, October 18, 2011

### 9:00 AM-12:00 PM (Select one session)

3 PDH

- ACI 301—Bridging Codes and Specifications (E707/301)
- Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures: From Theory to Practice, Part 4 (435/348)
- Bridging Theory and Practice in the Greater Miami Valley (ACI Greater Miami Valley Chapter)
- Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 1 (207)
- Recent Development in Reinforced Concrete Slab Analysis, Design, and Serviceability, Part 1 (421)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### 2:00 PM-5:00 PM (Select one session)

3 PDH

- Achieving Sustainability with Prestressed Concrete (363) Contractors' Day Session—Challenges and Other Endurances for the Concrete Contractor (ACI Greater Miami Valley Chapter)
- Mass Concrete and Thermal Cracking, a Joint ACI-JCI Seminar, Part 2 (207)
- Open Paper Session (123)
- Recent Development in Reinforced Concrete, Slab Analysis, Design, and Serviceability, Part 2 (421)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

# Session Attendance Tracking Form for the ACI Fall 2011 Convention

Cincinnati, OH • October 16-20, 2011

## **Wednesday, October 19, 2011**

### **9:00 AM-12:00 PM (Select one session)**

**3 PDH**

- CLSM from Practice to Theory (229)
- Multi-Type Durability Attack, Part 1 (236)
- Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 1 (342)
- Silica Fume Concrete Field Applications and Performance (234)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### **2:00 PM-5:00 PM (Select one session)**

**3 PDH**

- Multi-Type Durability Attack, Part 2 (236)
- Promoting the Planning, Design and Construction of Sustainable Infrastructure: The Institute for Sustainable Infrastructure's *envision*® Sustainability Rating System (130)
- Rapid Nondestructive Testing of Reinforced Concrete Bridge Decks—From Theory to Practice, Part 2 (342)

PDH Codes for selected session:

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### **Daily PDH Totals:**

Total completed on Saturday, 10/15/11 \_\_\_\_\_

Total completed on Sunday, 10/16/11 \_\_\_\_\_

Total completed on Monday, 10/17/11 \_\_\_\_\_

Total completed on Tuesday, 10/18/11 \_\_\_\_\_

Total completed on Wednesday, 10/19/11 \_\_\_\_\_

Total number of PDHs Completed \_\_\_\_\_

Please submit this form to the registration desk located in the Ballroom Foyer at the Duke Energy Convention Center at the conclusion of the final session you attend. You may also fax this form to ACI at 248-848-3792 or e-mail to Mike Tholen ([mike.tholen@concrete.org](mailto:mike.tholen@concrete.org)).

You will receive your certificate(s) no later than four (4) weeks after the convention. Please ensure you have filled out the correct e-mail address on this form, as that is where your certificate(s) will be sent.

**Experience innovation,  
design, culture and**

# The Art of Concrete

**at the  
ACI Spring 2012 Convention  
March 18-22  
Hyatt Regency Dallas  
Dallas, TX**



## Special Events:

- ACI Opening Session & Awards Program
- Student Competition
- Concrete Mixer at the world-renowned “Gilley’s Dallas”
- and more!

## Tours:

- Discover Dallas City Tour & Sixth Floor Museum
- Dallas Pub & Grub Experience
- High Fashion on the High Plains
- The John Fitzgerald Kennedy Tour
- Cowtown & Culture
- Dallas’ Hallowed Haunts!
- Lone Star Sports Legends, No Where Else But Texas!



**[www.aciconvention.org](http://www.aciconvention.org)**

# Thank you for attending the ACI Fall 2011 Convention!

## Future ACI Conventions



**Spring 2012**  
**The Art of Concrete**  
March 18-22, 2012  
Hyatt Regency Dallas  
Dallas, TX



**Fall 2012**  
**Forming Our Future**  
October 21-25, 2012  
Sheraton Centre  
Toronto, ON, Canada

**Spring 2013**  
April 14-18, Hilton & Minneapolis  
Convention Center,  
Minneapolis, MN



**American Concrete Institute®**  
*Advancing concrete knowledge*

American Concrete Institute  
P.O. Box 9094  
Farmington Hills, MI 48333-9094  
Phone: 248-848-3700  
Fax: 248-848-3701  
[www.concrete.org](http://www.concrete.org)