



Fall 2017 | Anaheim

# The Concrete Convention and Exposition

# Program Book



**October 15-19, 2017**

Disneyland® Hotel, Anaheim, CA, USA

As to Disney properties/artwork: ©Disney.

# Convention Sponsors

Sponsors are listed as of 9/20/17

## Route 66 Sponsor



Southern California Chapter – ACI



Vulcan Materials Company

## Pacific Coast Highway Sponsor



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Largo Concrete Inc.

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National Capital Chapter – ACI  
New Mexico Chapter – ACI  
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Northern California & Western Nevada  
Chapter – ACI  
Ontario Chapter – ACI  
Rocky Mountain Chapter – ACI  
San Diego Chapter – ACI  
Security Paving Company, Inc.

## Lanyard Sponsor

The Conco Companies

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Chris Forster, Largo Concrete, Inc.

### Secretary

Rod Elderton

### Treasurer

Gary Kirk, CalPortland

### Finance

Robert Cleeland, Vulcan Materials Company  
Pat Murena, Solomon Colors  
Ed Luce, Vulcan Materials Company  
Marty Hansberger, Holliday Rock Co., Inc.  
Ken Sears, Boral Resources

### Technical Committee

Paul Heis, BASF Corporation  
Ann Harrer, Wiss, Janney, Elstner Associates, Inc.  
Chris Garcia, Pankow

### Guest Program

Heather Caya, Southern California Chapter – ACI

### Social Program

Tina McIntyre, CalPortland  
Janeen Oliver, CalPortland

### Student Program

Neal Lynch, Cemex  
Josh Hamilton, GCP Applied Technologies

### Exhibits

Charles Kerzic, Trinity Lightweight  
Stefan Reeder, Hi-Grade Materials

### Publicity

George Smith, Holliday Rock Co., Inc  
Jon Sansom, Morley Builders

### Contractors' Day

Donald Kahn, Largo Concrete, Inc.

### Hot Topic

Robert Graine, Associated Ready Mixed Concrete  
David Nau, Cemex

### CC Liaison

Dawn Miller

## Table of Contents

|  |                    |
|--|--------------------|
| ACI President's Welcome .....  | 2                  |
| ACI Sustaining Members.....  | 3                  |
| American Concrete Institute Board of Direction .....                         | 2                  |
| Concrete Mixer .....   | 53                 |
| Contractors' Day Lunch .....   | 48                 |
| Convention Sponsors .....  | Inside Front Cover |
| Daily Program .....  | 13                 |
| Exhibitor Demonstration Schedule .....                                       | 12                 |
| Exhibitor Floor Plan.....  | 11                 |
| Exhibitors .....   | 10                 |
| General Information .....  | 4                  |
| International Lunch.....   | 32                 |
| Meeting Space Maps.....  | 8                  |
| Numerical Committee Meeting Listing .....                                    | 17                 |
| Opening Reception .....  | 35                 |
| Opening Session .....  | 35                 |
| Resort Map.....  | 7                  |
| Sessions & Events .....  | 24                 |
| Southern California Chapter Convention Committee .....                       | Inside Front Cover |
| Student Eco Concrete Competition.....  | 32                 |
| Student Egg Protection Device Competition .....                              | 30                 |
| Student Lunch .....  | 41                 |
| The Concrete Convention and Exposition Spring 2018   Salt Lake City, UT..... | 5                  |
| Where's That Meeting Room? .....   | 6                  |

Download the  
**Convention**  
**App!**



Search "ACI Convention" on  
your Apple or Android device.

Detailed program information and program changes  
can be found in the Convention App!

# American Concrete Institute Board of Direction

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# ACI President's Welcome

ACI Members and Guests:



It is a great pleasure to welcome you to sunny Anaheim, CA, for The ACI Concrete Convention and Exposition. As a premier leisure and business destination, Anaheim continues to grow and evolve in ways that will surprise and delight our attendees. While visiting, make lasting memories at the Disneyland® Resort and discover the city's revitalized downtown, new shops, foodie hotspots, and award-winning craft

breweries at the Anaheim Packing District and Center Street Promenade.

The Southern California Chapter – ACI has been looking forward to hosting this convention and has devoted their time and effort to ensure you enjoy the ACI Convention and Anaheim. Be sure to attend some of their sessions: SoCal Modernism—Preserving Concrete Modernist Structures and Making Connections—The Future of Our Infrastructure. Please join me in thanking the chapter for their exceptional work by stopping by the chapter desk in the exhibit hall.

None of this could be possible without the aid and support from our outstanding exhibitors and sponsors. Anyone who is wearing an exhibitor badge or sponsor ribbon has played an integral role in the success of this convention. Please be sure to thank them while at the convention and stop by their booths to see the newest products and services on the market today.













This week is going to be jam-packed with exciting and interesting sessions, committee meetings, and networking events such as the International Lunch, 10th Anniversary Sustainability Forum, student competitions, and the Opening Session, just to name a few. I encourage you to make the most of your convention experience by participating in these events. On Tuesday, if you are running on empty, cruise on over to the Magic Kingdom lawn for a roaring good time at the Concrete Mixer. The Southern California Chapter – ACI doesn't want to toot their own horn, but they have put together a magical evening that will ignite your imaginations.

On behalf of Latifa and myself, we are honored and excited to be able to share this week with you, and we hope you will enjoy all that Anaheim has to offer. Thank you for attending the convention and for your continued involvement with ACI.

Kind Regards,  
Khaled Awad  
ACI President



# ACI Sustaining Members

|   |
|---|
| <br>Advanced Construction Technology Service |
| <br>American Society of Concrete Contractors |
| <br>Ash Grove Cement Co.                     |
| <br>Baker Concrete Construction, Inc.        |
| <br>Barrier-1 Inc.                           |
| <br>BASF                                    |
| <br>Bauman Landscape & Construction        |
| <br>Boral Resources                        |
| <br>Braun Intertec Corporation             |
| <br>Cantera Concrete Company               |
| <br>CHRYSO, Inc.                           |
| <br>Concrete Reinforcing Steel Institute   |

|   |
|---|
| <br>CTL Group                          |
| <br>Curecrete                          |
| <br>Dayton Superior Corporation        |
| <br>DOKA                               |
| <br>Ductilcrete Slab Systems, LLC      |
| <br>The Euclid Chemical Co.            |
| <br>Fibercon International, Inc.      |
| <br>Full-Tilt Constructors, Inc.     |
| <br>Future Tech Consultants          |
| <br>GCP Applied Technologies         |
| <br>Holcim                           |
| <br>Keystone Structural Concrete LLC |
| <br>Kleinfelder                      |

|  |
|--|
| <br>Kryton International Inc.               |
| <br>Lehigh Hanson                          |
| <br>Lithko Contracting, LLC                |
| <br>Mapei                                  |
| <br>Meadow Burke Products LLC              |
| <br>Metromont Corporation                  |
| <br>Minova USA, Inc.                       |
| <br>MTL                                   |
| <br>Multiquip                             |
| <br>Municipal Testing                     |
| <br>North S. Tarr Concrete Consulting PC |
| <br>Oztec Industries, Inc.               |
| <br>Penetron International Ltd.          |
| <br>Portland Cement Association          |

|   |
|---|
| <br>Precast/Prestressed Concrete Institute |
| <br>Saudi Building Code                    |
| <br>ICC SKGA                               |
| <br>Seretta Construction Inc.              |
| <br>Sika Corporation                       |
| <br>Specialty Products Group, Inc.         |
| <br>STRUCTURAL                           |
| <br>Structural Services, Inc.            |
| <br>Tekna Chem                           |
| <br>TWC Concrete Services, LLC           |
| <br>Twining                              |
| <br>Wacker Neuson                        |
| <br>W. R. Meadows, Inc.                  |

## General Information

For detailed program information and program changes, download the Convention App.

### Convention App

Download the ACI Convention App and have all the information you need for the week ahead at your fingertips. Updated schedules, exhibitor and sponsor information, and more are all available through the app. Search “**ACI Convention**” on your Apple or Android device. This app is the same one from the Detroit Convention.

### Schedule Changes

Cancellations, additions, and location changes to the convention schedule will be posted daily on a monitor in the exhibit area, as well as in the convention app.

### Exhibit Hall Refreshments—D-South Exhibit Hall

Beverages are available courtesy of ACI during the following hours:

|                    |        |                    |
|--------------------|--------|--------------------|
| Saturday           | Soda   | 2:00 pm – 6:00 pm  |
| Sunday – Wednesday | Coffee | 7:00 am – 10:00 am |
| Sunday – Tuesday   | Soda   | 1:00 pm – 4:00 pm  |

### ACI Store—D-South Exhibit Hall

Visit the ACI Store to receive 10% off ACI publications. To learn more about the new ACI membership benefits and how to become a member, visit the ACI Store. The ACI Store is open during the following hours:

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

**ACI University**—A new global and online learning resource providing on-demand access to a wide range of topics on concrete materials, design, and construction. Learn more at the ACI University booth, located near the ACI Store.

**ACI Foundation**—A nonprofit subsidiary of ACI that facilitates industry research, collaboration, and student fellowships/scholarships. Learn more at the ACI Foundation booth, located near the ACI Store.

**Career Center**—ACI’s online job search engine is specifically designed to target jobs in the industry. Learn more at the Career Center, located near the ACI Store.

### ACI Cyber Café and Meeting Spot—D-South Exhibit Hall

Stop by the ACI Cyber Café and Meeting Spot—the perfect place to stay connected with work and family or network with ACI attendees during refreshment breaks. Use the computers to browse the web, print on demand, or catch up on email.

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

### Looking for Exercise?

Meet up with other ACI attendees in the Main Lobby at the Disneyland® Hotel before heading out for your morning run or walk. Local area maps are available at the hotel concierge desk. All are welcome.

|                    |                     |
|--------------------|---------------------|
| Sunday – Wednesday | 5:00 am and 6:00 am |
|--------------------|---------------------|

Morning yoga classes will be offered in D-Sleeping Beauty at the Disneyland® Hotel for those who are interested in putting a little balance into a hectic week. Led by ACI Member and yoga teacher Kimberly Kayler, this intro to yoga class requires no experience. Registration is not required and a limited quantity of yoga mats will be provided.

|                    |                   |
|--------------------|-------------------|
| Monday – Wednesday | 6:00 am – 6:45 am |
|--------------------|-------------------|

*\*Please consult your physician to determine if you are fit for this type of activity. Run/walk at your own risk.*

### Session Handouts on Demand

Handouts are available from speakers who have elected to provide and post them to the ACI website. 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.

### Suitcasing

Attendees, sponsors, or exhibitors found to be “suitcasing” (soliciting business in session and committee meeting rooms, aisles, or the booth of another exhibitor) will be asked by staff to cease this practice. Should this continue, they will be asked to leave the show floor immediately and will forfeit any exhibitor points earned for that show.

### Local Information—D-North Lounge



The Southern California Chapter Convention Committee members will be happy to answer general convention questions and provide information about the local area. Stop by the information desk during the following hours:

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

# General Information

## Resort Dining

### Disneyland® Hotel

#### The Coffee House

Hours: Sunday – Thursday 6:30 am – 12:00 am; Friday – Saturday 6:30 am – 1:00 am

#### Goofy's Kitchen

Hours: Monday - Thursday 7:00 am – 11:30 am and 5:00 pm – 9:00 pm; Friday - Sunday 7:00 am – 1:30 pm and 4:00 pm – 9:00 pm

#### The Lounge at Steakhouse 55

Hours: Monday – Sunday 4:30 pm – 10:30 pm

#### Steakhouse 55

Hours: Monday – Sunday 7:00 am – 11:00 am and 5:00 pm – 10:00 pm

#### Tangaroa Terrace

Hours: Monday – Sunday 7:00 am – 10:00 pm

#### Trader Sam's Enchanted Tiki Bar

Hours: Monday – Sunday 11:30 am – 1:30 am

#### Room Service

Hours: Monday – Sunday 6:00 am – 12:00 am

### Disney's Paradise Pier® Hotel

#### Disney's PCH Grill

Hours: Monday – Thursday 7:00 am – 11:00 am and 5:30 pm – 9:00 pm; Friday – Sunday 7:00 am – 11:30 am and 5:30 pm – 9:00 pm

#### Surfside Lounge

Hours: Monday – Sunday 6:00 am – 12:00 am

#### Room Service

Hours: Monday – Sunday 6:00 am – 11:30 am and 5:30 pm – 12:00 am

### Disney's Grand Californian Hotel® & Spa

#### Hearthstone Lounge

Hours: Monday – Sunday 6:00 am – 1:30 am

#### Napa Rose

Hours: Monday – Sunday 5:30 pm – 10:00 pm

#### Napa Rose Lounge

Hours: Sunday – Thursday 5:00 pm – 10:00 pm; Friday and Saturday 5:00 pm – 11:00 pm

#### Storytellers Café

Hours: Monday – Friday 7:00 am – 11:25 am, 11:30 am – 4:55 pm, and 5:00 pm – 10:00 pm; Saturday and Sunday 7:00 am – 11:25 am, 11:30 am – 1:55 pm, 2:00 pm – 4:55 pm; and 5:00 pm – 10:00 pm

#### Room Service

Hours: Monday – Sunday 12:00 am – 11:59 pm

Additional restaurants are available at Downtown Disney® District. Visit <https://disneyland.disney.go.com/dining/downtown-disney-district/> to view restaurant options and hours.

## Continuing Education



All sessions approved by the American Institute of Architects (AIA) are noted with AIA/CES and the number of hours. ACI is an AIA/CES Registered Provider.

## Earn CEUs/PDHs for Session Attendance

Attend the entire duration of a session and record the codes given out during the session using the spaces provided next to the session details in the program book. In most cases, one contact hour is equal to one Professional Development Hour (PDH). Check with your state board for acceptance criteria. **Please note: ACI does not track and cannot provide documentation confirming attendee participation or attendance at any ACI session held during the convention.**

For attendance certificates:

1. Visit [www.concrete.org](http://www.concrete.org) and sign in.
2. Hover over **My ACI** and click on **My ACI CEU/PDH**.
3. Select the convention, day, and title of the session for which you are submitting session codes.
4. After successfully submitting the session codes, your certificate will be available under the session title.

If you earned a certificate for a session and would like ACI to report your CEUs/PDHs to the Florida Board of Professional Engineers or AIA, email your Professional Engineer's or Architecture license number to Eva Korzeniewski at [emk@concrete.org](mailto:emk@concrete.org).

## Speaker Ready Room—D-South Lounge

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

|                  |                   |
|------------------|-------------------|
| Saturday         | 2:00 pm – 6:00 pm |
| Sunday – Tuesday | 7:00 am – 6:00 pm |
| Wednesday        | 7:00 am – 2:00 pm |

All speakers are requested to check in at the Speaker Ready Room 1 day prior to their session to ensure that their presentations have been uploaded and work properly on the ACI computers.

## The Concrete Convention and Exposition

### Spring 2018 | Salt Lake City, UT—D-North Lounge



Mark your calendars for The Concrete Convention and Exposition in Salt Lake City, UT, March 25-29, 2018, at the Grand America & Little America Hotel. Stop by the Intermountain Chapter Convention Committee desk Saturday through Tuesday to learn more about the convention!

# Where's That Meeting Room?

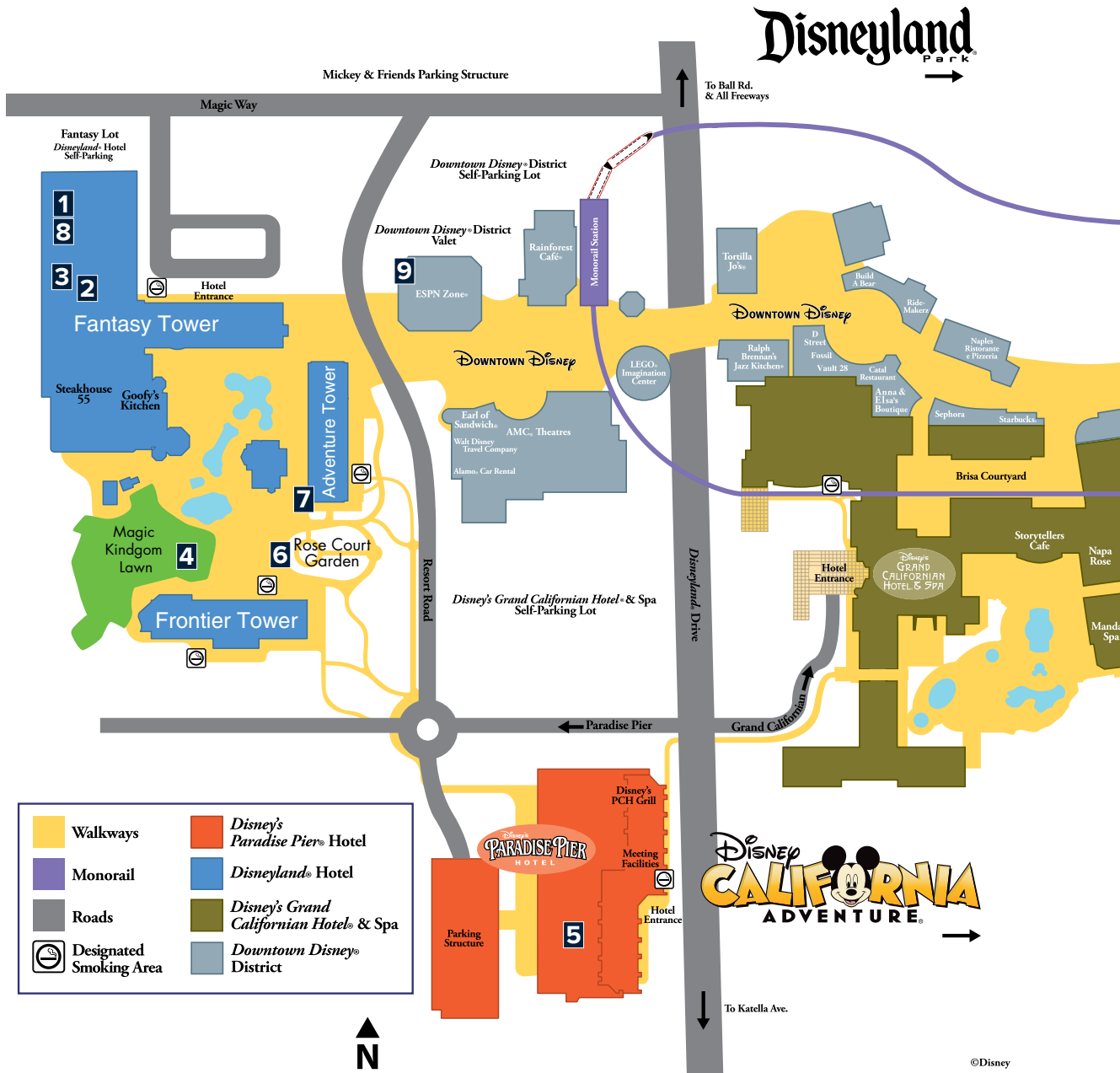
D = Disneyland® Hotel P = Disney's Paradise Pier® Hotel

| Disneyland® Hotel |                       |        |
|-------------------|-----------------------|--------|
|                   | Room Name             | Level  |
| Fantasy Tower     | D-South Exhibit Hall  | Main   |
|                   | D-Disneyland North A  |        |
|                   | D-Disneyland North B  |        |
|                   | D-Disneyland South A  |        |
|                   | D-Disneyland South B  |        |
|                   | D-North Hall F        |        |
|                   | D-North Hall G        |        |
|                   | D-North Hall H        |        |
|                   | D-North Hall I        |        |
|                   | D-North Hall J        |        |
|                   | D-Disneyland Center   |        |
|                   | D-Center Lounge       |        |
|                   | D-North Lounge        |        |
|                   | D-South Lounge        |        |
|                   | D-Magic Kingdom 1     | Second |
|                   | D-Magic Kingdom 2     |        |
|                   | D-Magic Kingdom 3     |        |
|                   | D-Magic Kingdom 4     |        |
|                   | D-Sleeping Beauty     |        |
|                   | D-Monorail A          | Lower  |
| D-Monorail B      |                       |        |
| D-Monorail C      |                       |        |
| D-Castle A        |                       |        |
| D-Castle B        |                       |        |
| D-Castle C        |                       |        |
| Adventure Tower   | D-Adventure           | Main   |
|                   | D-Amazon              |        |
|                   | D-Congo               |        |
|                   | D-Explorer            |        |
|                   | D-Nile                |        |
|                   | D-Oasis               |        |
|                   | D-Outpost             |        |
|                   | D-Safari              |        |
|                   | D-Tiki                |        |
|                   | D-Zambezi             |        |
| Frontier Tower    | D-Mark Twain          | Main   |
|                   | D-Columbia            |        |
|                   | D-Frontier Board Room |        |
|                   | D-Mississippi         |        |
|                   | D-Western             |        |
|                   | D-Wilderness          |        |
| Outside           | D-Rose Court Garden   | Main   |
|                   | D-Magic Kingdom Lawn  |        |

| Disney's Paradise Pier® Hotel |        |
|-------------------------------|--------|
| Room Name                     | Level  |
| P-Pacific Ballroom A          | Main   |
| P-Pacific Ballroom B          |        |
| P-Pacific Ballroom C          |        |
| P-Pacific Ballroom D          |        |
| P-Crystal Cove                |        |
| P-Big Sur                     | Second |
| P-Del Mar                     |        |
| P-Monterey                    |        |
| P-Oceanside                   |        |
| P-Redondo                     |        |
| P-San Diego                   |        |
| P-Santa Monica                |        |



# Resort Map

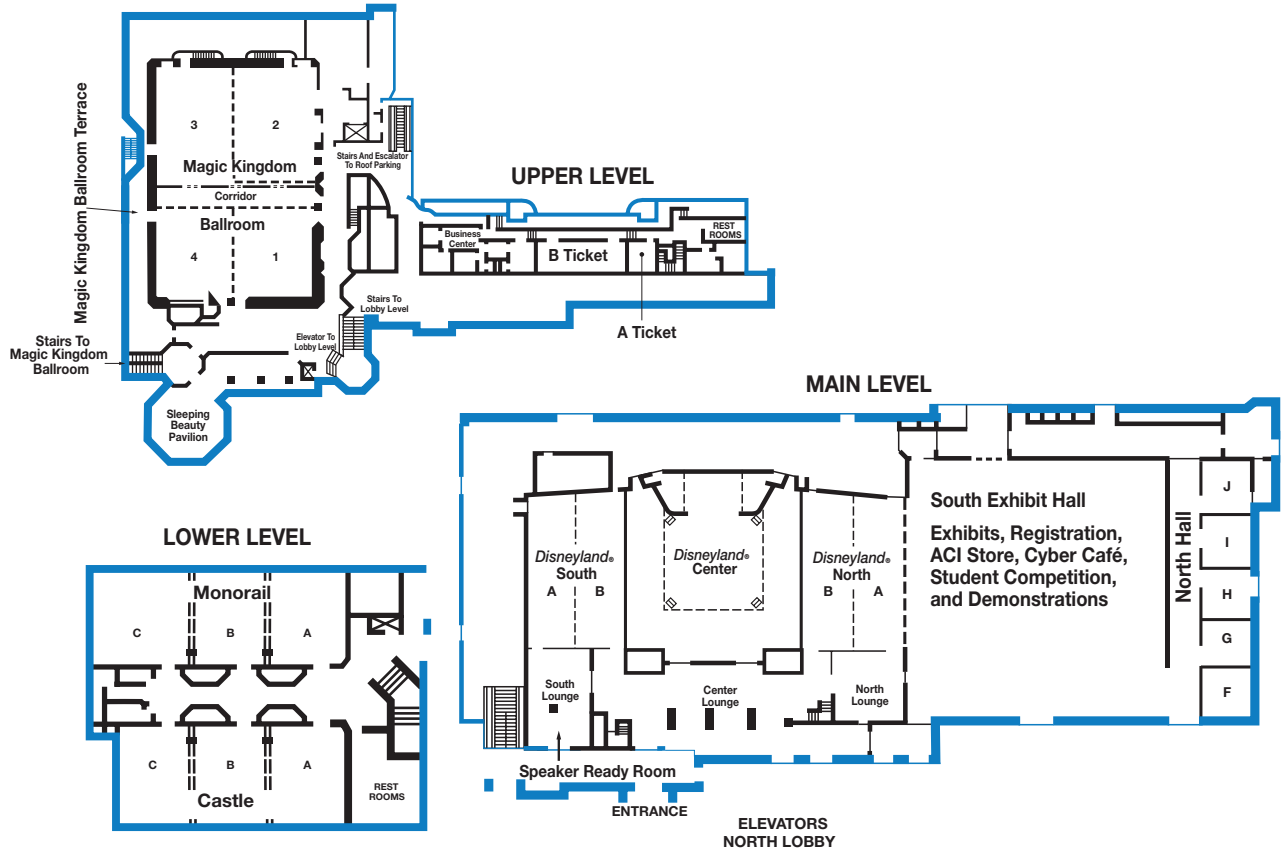


## The ACI Concrete Convention and Exposition – Hotel Map

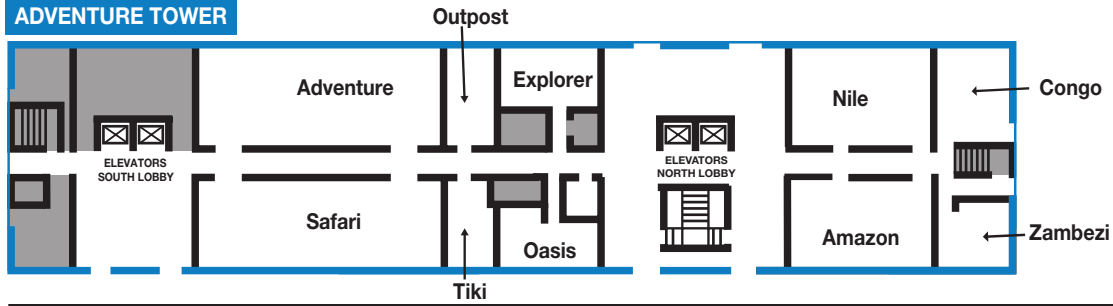
- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><b>1</b> Exhibit Hall, Registration, ACI Store, Student Competition, Beverage Breaks</li> <li><b>2</b> Speaker Ready Room</li> <li><b>3</b> Opening Session, Convention Orientation Breakfast, International Lunch, Student Lunch, Contractors' Day Lunch</li> <li><b>4</b> Concrete Mixer</li> </ul> | <ul style="list-style-type: none"> <li><b>5</b> Child Care Drop-off/Pick-up</li> <li><b>6</b> Guest Social, Women in ACI Reception</li> <li><b>7</b> Speaker Development Breakfast</li> <li><b>8</b> Sessions</li> <li><b>9</b> Young Professional Networking Event</li> </ul> |
|--|--|

# Disneyland® Hotel Meeting Space Maps

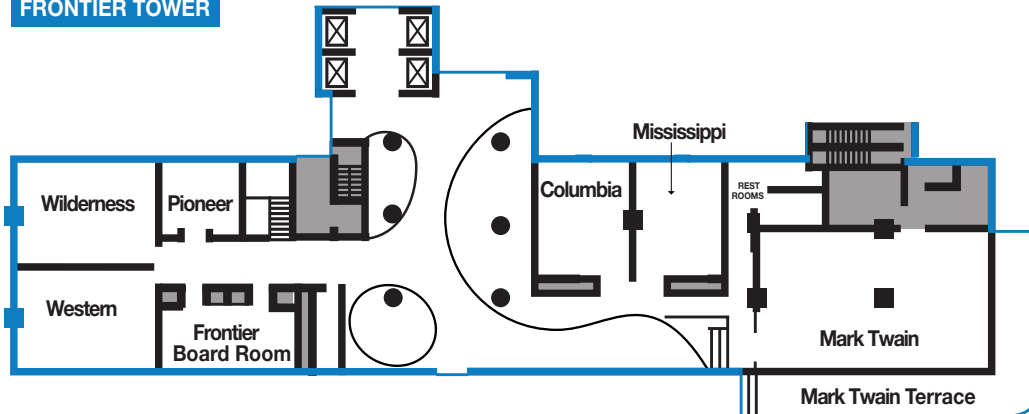
## FANTASY TOWER



## ADVENTURE TOWER



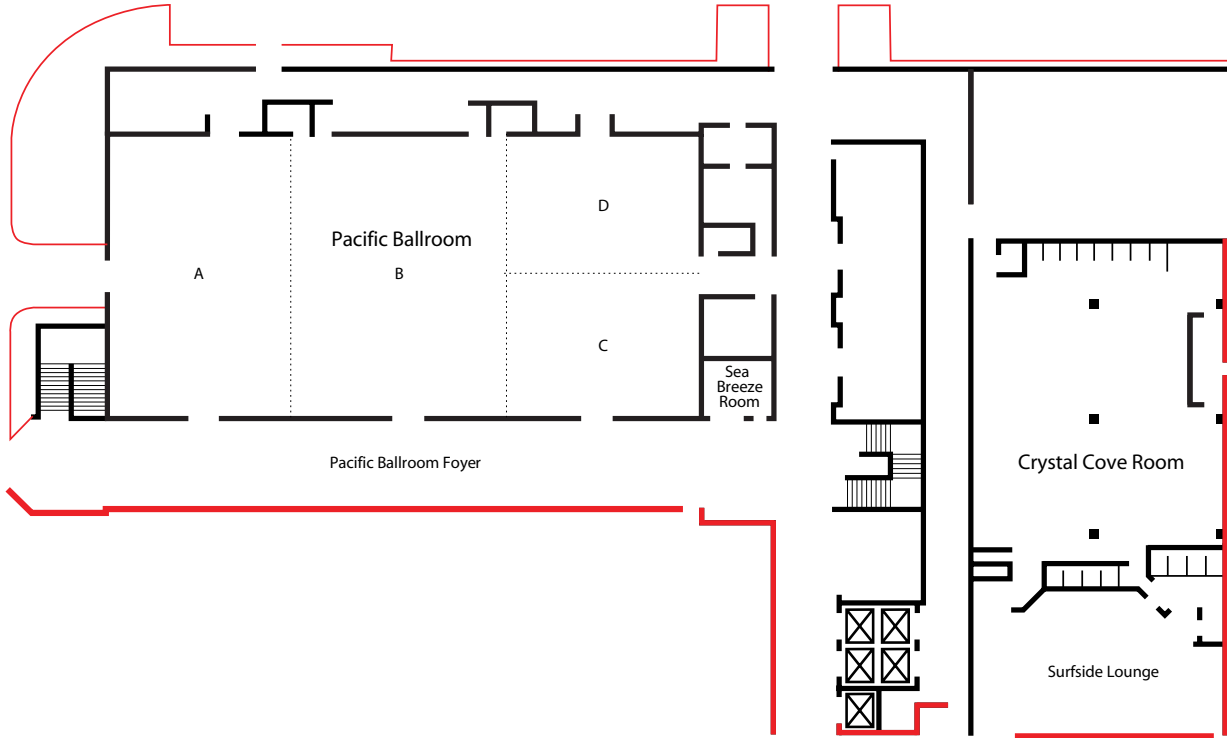
## FRONTIER TOWER



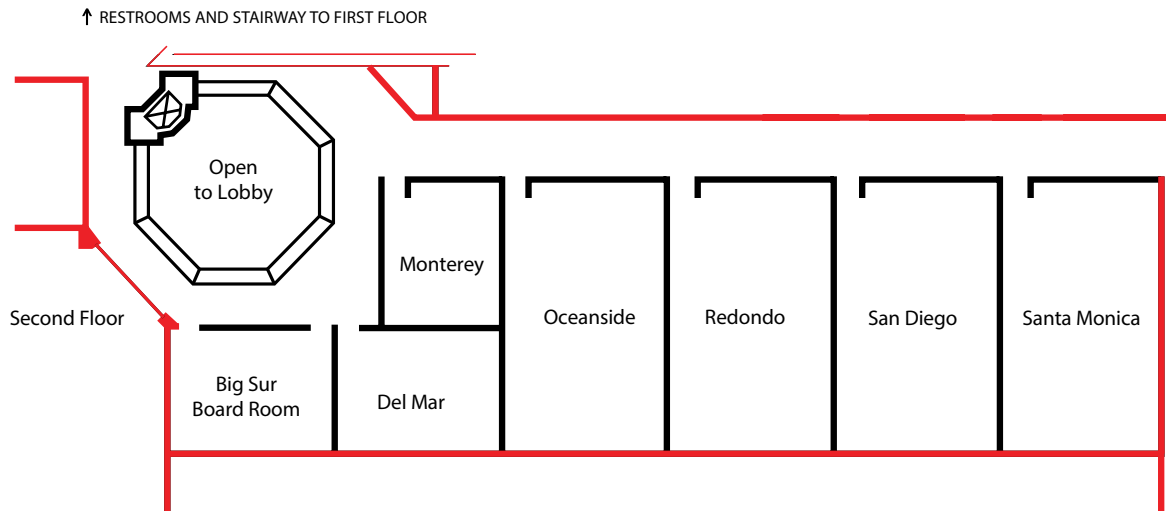
© Disney

# Disney's Paradise Pier® Hotel Meeting Space Maps

## MAIN LEVEL



## SECOND FLOOR



© Disney

# Exhibitors

## D-SOUTH EXHIBIT HALL

ACI would like to thank all exhibitors for their participation in and support of The Concrete Convention and Exposition. To learn more about each of these exhibitors, stop by their booth or visit the convention app.

### Exhibit Hours

Sunday – Tuesday 8:00 am – 5:00 pm

|   |                            |  |                            |
|---|----------------------------|--|----------------------------|
| <b>Aquafin, Inc.</b><br>www.aquafin.net                                       | <b>Booth #55</b>           | <b>Headed Reinforcement Corp. (HRC)</b><br>www.hrc-usa.com   | <b>Booth #19</b>           |
| <b>BASF Corporation</b><br>www.master-builders-solutions.basf.us              | <b>Booth #28</b>           | <b>Humboldt Mfg. Company</b><br>www.humboldtmfg.com  | <b>Booth #37</b>           |
| <b>Bekaert Corporation</b><br>www.bekaert.com                                 | <b>Booths #59 &amp; 60</b> | <b>Hycrete, Inc.</b><br>www.hycrete.com  | <b>Booth #26</b>           |
| <b>Burgess Pigment Company</b><br>www.OPTIPOZZ.com                            | <b>Booth #17</b>           | <b>ICC Evaluation Service</b><br>www.icc-es.org  | <b>Booth #50</b>           |
| <b>Buzzi Unicem USA</b><br>www.buzziunicemusa.com                             | <b>Booth #74</b>           | <b>International Concrete Repair Institute</b><br>www.icri.org   | <b>Booth #54</b>           |
| <b>CalPortland</b><br>www.calportland.com                                     | <b>Booth #7</b>            | <b>International Zinc Association</b><br>www.zinc.org  | <b>Booth #47</b>           |
| <b>Cervenka Consulting</b><br>www.cervenka.cz                                 | <b>Booth #48</b>           | <b>Kryton International Inc.</b><br>www.kryton.com   | <b>Booth #40</b>           |
| <b>ChemCo Systems Inc.</b><br>www.chemcosystems.com                           | <b>Booth #6</b>            | <b>Largo Concrete Inc.</b><br>www.largoconcrete.com  | <b>Booth #2</b>            |
| <b>Clark Construction Group LLC</b><br>www.clarkconstruction.com              | <b>Booth #65</b>           | <b>Matt Construction</b><br>www.mattconstruction.com   | <b>Booth #41</b>           |
| <b>Concrete Reinforcing Steel Institute</b><br>www.crsi.org                   | <b>Booth #29</b>           | <b>Morley Construction Company</b><br>www.morleybuilders.com   | <b>Booths #30 &amp; 31</b> |
| <b>Concrete Sealants, Inc.</b><br>www.conseal.com                             | <b>Booth #56</b>           | <b>Myers Construction Materials Testing Equipment</b><br>www.myerstest.com   | <b>Booth #27</b>           |
| <b>CRC Press, Taylor and Francis</b><br>www.crcpress.com                      | <b>Booth #64</b>           | <b>NASA Centennial Challenges 3D-Printed Habitat</b><br>www.nasa.gov/directorates/spacetech/centennial_challenges/index.html | <b>Booth #8 &amp; 8A</b>   |
| <b>Dayton Superior</b><br>www.daytonsuperior.com                              | <b>Booth #57</b>           | <b>Nickel Institute</b><br>www.nickelinstitute.org   | <b>Booth #20</b>           |
| <b>Decon USA Inc.</b><br>www.deconusa.com                                     | <b>Booth #68</b>           | <b>Owens Corning Infrastructure Solutions LLC</b><br>www.aslanfrp.com  | <b>Booth #33</b>           |
| <b>Design Data</b><br>www.sds2.com  | <b>Booth #69</b>           | <b>Pentair</b><br>www.pentair.com  | <b>Booth #3</b>            |
| <b>DPR Construction</b><br>www.dpr.com  | <b>Booth #61</b>           | <b>PERI Formwork Systems, Inc.</b><br>www.peri-usa.com   | <b>Booths #13 &amp; 14</b> |
| <b>ELE International</b><br>www.ele.com                                       | <b>Booth #58</b>           | <b>Plexxis Software</b><br>www.plexxis.com   | <b>Booths #24 &amp; 25</b> |
| <b>The Euclid Chemical Company</b><br>www.euclidchemical.com                  | <b>Booth #53</b>           | <b>Poraver North America Inc.</b><br>www.poraver.com   | <b>Booth #34</b>           |
| <b>FARO Technologies, Inc.</b><br>www.FARO.com                                | <b>Booth #11</b>           | <b>Portland Cement Association</b><br>www.cement.org   | <b>Booth #18</b>           |
| <b>FiberForce Fibers by ABC Polymers</b><br>www.abcpolymerindustries.com      | <b>Booth #4</b>            | <b>Premier CPG</b><br>www.premiercpg.com   | <b>Booth #66</b>           |
| <b>Foam Concepts Inc./P.A.G Foam</b><br>www.foamconcepts.net; www.pagfoam.com | <b>Booths #22 &amp; 23</b> | <b>Proceq USA, Inc.</b><br>www.proceq.com  | <b>Booth #46</b>           |
| <b>FORTEC STABILIZATION SYSTEMS</b><br>www.fortecstabilization.com            | <b>Booth #32</b>           | <b>Radarview LLC/UCT</b><br>www.radarviewllc.com   | <b>Booth #67</b>           |
| <b>GCP Applied Technologies</b><br>www.gcpat.com/construction/en-us           | <b>Booth #16</b>           | <b>Reinforced Earth</b><br>www.reinforcedearth.com   | <b>Booth #21</b>           |
| <b>Germann Instruments, Inc.</b><br>www.germann.org                           | <b>Booths #9 &amp; 10</b>  |  |                            |
| <b>Giatec Scientific Inc.</b><br>www.giatec.ca                                | <b>Booth #42</b>           |  |                            |

Exhibitors are listed as of 9/20/17.

# Exhibitors

**Sika Corporation**  
www.usa.sika.com

**Silica Fume Association**  
www.silicafume.org

**Slag Cement Association**  
www.slagcement.org

**Smith-Emery**  
www.smithemery.com

**Solomon Colors**  
www.solomoncolors.com

**Speciality Products Group**  
www.spggogreen.com

**Structural Group**  
www.structuralgroup.com

**Technical Consultants Inc.**  
www.fietzconcretetester.com

**Trinity Lightweight**  
www.trinitylightweight.com

**Booths #44 & 45** Twining, Inc.  
www.twininginc.com

**Booth #43** University of Florida  
www.essie.ufl.edu

**Booth #52** Vector Corrosion Technologies Inc.  
www.vector-corrosion.com

**Booth #49** Vulcan Materials Company  
www.vulcanmaterials.com

**Booth #5** Xypex Chemical Corporation  
www.xypex.com

**Booth #72** Wacker Neuson  
www.wackerneuson.com

**Booth #35** Western Speciality Contractors  
www.westernspecialitycontractors.com

**Booth #38** Zircon Corporation  
www.zircon.com

**Booth #15**

**Booth #51**

**Booth #39**

**Booth #36**

**Booths #62 & 63**

**Booth #1**

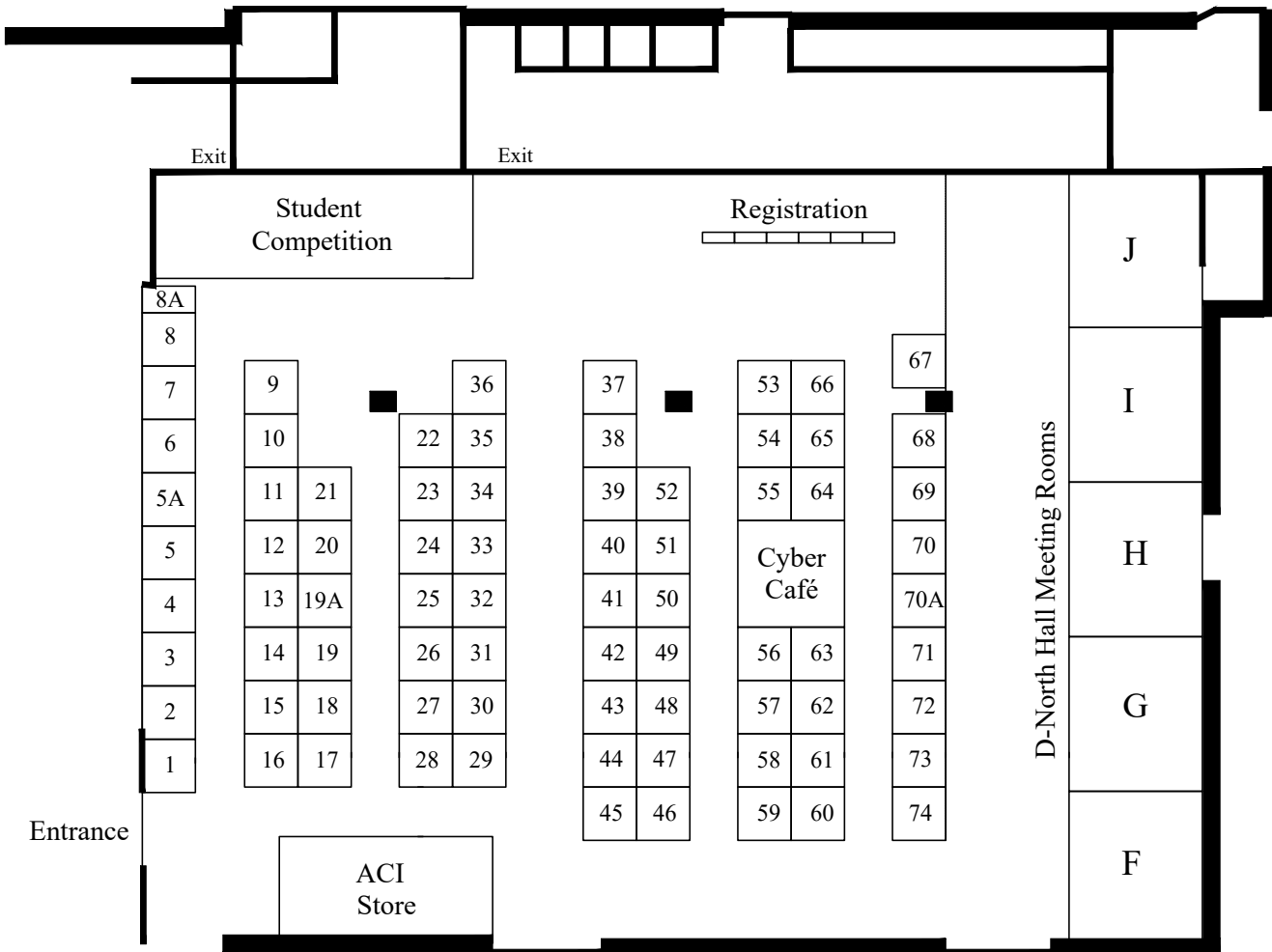
**Booth #12**

**Booth #73**

**Booth #71**

## Exhibitor Floor Plan

DISNEYLAND® HOTEL • SOUTH EXHIBIT HALL





## Exhibitor Demonstration Schedule

### Monday, October 16, 2017

| Time                | Company Organization   | Presentation/Demo Title   |
|---------------------|------------------------|---|
| 12:00 pm – 12:30 pm | Giatic Scientific Inc. | BlueRock—Wireless concrete humidity sensor  |
| 1:45 pm – 2:15 pm   | AQUAFIN Inc.           | Stop Leaks in Concrete with Chemical Grout  |
| 3:30 pm – 4:00 pm*  | Cervenka Consulting    | Come and see how engineers are using advanced FE modeling with ATENA in reinforced concrete design. |

### Tuesday, October 17, 2017

| Time                 | Company Organization           | Presentation/Demo Title  |
|----------------------|--------------------------------|--|
| 9:45 am – 10:15 am   | Trinity Lightweight            | What's New in Lightweight Aggregate and Lightweight Concrete?  |
| 10:30 am – 11:00 am* | Plexxis Software               | The Connected Contractor: Mobile Change Orders, Drawings, Documents and Timecards                            |
| 1:00 pm – 1:30 pm*   | Vulcan Materials               | Concrete Aggregates and Quality Control  |
| 1:45 pm – 2:15 pm    | International Zinc Association | Bend It, Form It—Galvanized Rebar to the Rescue!   |
| 3:30 pm – 4:00 pm*   | Slag Cement Association        | Demonstration of Ready Mixed Concrete Life Cycle Assessment Calculator for Slag Cement and SCA Website Tools |

\*Indicates a time when there is a break in between sessions.

**Demonstration schedule listed as of 9/20/2017. For the most up-to-date list of exhibitor demonstrations, please stop by the ACI Registration Desk or check the digital monitor in the exhibit hall.**

# Daily Program

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D = Disneyland® Hotel P = Disney's Paradise Pier® Hotel

| Friday, October 13, 2017   |   |
|--|---|
| <b>6:30 pm - 9:00 pm</b>   |   |
| Committee Meetings   | See Numeric or Convention App for detailed list |
| Saturday, October 14, 2017   |   |
| <b>7:00 am - 6:00 pm</b>   |   |
| ACI Registration   | D-South Exhibit Hall                            |
| <b>7:00 am - 9:00 pm</b>   |   |
| Committee Meetings   | See Numeric or Convention App for detailed list |
| <b>8:00 am - 10:00 am—Sessions</b>   |   |
| FRPRCS A1—Bond and Anchorage of FRP Bars, Grids, and Laminates to Concrete | D-Disneyland South A                            |
| FRPRCS B1—Strengthening of Concrete Structures Using FRP Systems           | D-Disneyland North A                            |
| <b>8:00 am - 5:15 pm</b>   |   |
| ✓International Workshop on Structural Concrete                             | D-Magic Kingdom 3                               |
| <b>10:15 am - 12:15 pm—Sessions</b>  |   |
| FRPRCS A2—Bond and Anchorage of FRP Bars, Grids, and Laminates to Concrete | D-Disneyland South A                            |
| FRPRCS B2—Testing of FRP Material Characteristics                          | D-Disneyland North A                            |
| <b>12:00 pm - 1:30 pm</b>  |   |
| ✓International Workshop on Structural Concrete Lunch                       | D-Magic Kingdom 4                               |
| <b>1:15 pm - 3:15 pm—Sessions</b>  |   |
| FRPRCS A3—Emerging FRP Systems   | D-Disneyland South A                            |
| FRPRCS B3—Strengthening of Concrete Structures Using FRP Systems           | D-Disneyland North A                            |
| <b>2:00 pm - 6:00 pm</b>   |   |
| ACI Store  | D-South Exhibit Hall                            |
| ACI Cyber Café & Meeting Spot  | D-South Exhibit Hall                            |
| Afternoon Soda Break   | D-South Exhibit Hall                            |
| Speaker Ready Room   | D-South Lounge                                  |
| <b>3:30 pm - 5:30 pm—Sessions</b>  |   |
| FRPRCS A4—Global Codes and Standards                                       | D-Disneyland South A                            |
| FRPRCS B4—Advances in Uses of FRP in Concrete and Masonry                  | D-Disneyland North A                            |
| <b>6:00 pm - 7:30 pm</b>   |   |
| ✓International Workshop on Structural Concrete Reception                   | D-Magic Kingdom 4                               |
| <b>6:00 pm - 8:00 pm</b>   |   |
| ✓FRPRCS Reception  | D-Mark Twain                                    |
| <b>8:00 pm - 10:00 pm</b>  |   |
| Student Networking Reception   | D-Magic Kingdom 1                               |

| Sunday, October 15, 2017  |   |
|---|---|
| <b>5:00 am and 6:00 am</b>  |   |
| Run/Walk Meet-Up  | D-Disneyland Main Lobby                         |
| <b>7:00 am - 10:00 am</b>   |   |
| ★Guest Hospitality  | D-Sleeping Beauty                               |
| Coffee Break  | D-South Exhibit Hall                            |
| <b>7:00 am - 6:00 pm</b>  |   |
| Speaker Ready Room  | D-South Lounge                                  |
| <b>7:30 am - 5:00 pm</b>  |   |
| ACI Registration  | D-South Exhibit Hall                            |
| ACI Cyber Café & Meeting Spot   | D-South Exhibit Hall                            |
| <b>8:00 am - 9:00 am</b>  |   |
| Convention Orientation Breakfast  | D-Magic Kingdom 3                               |
| ★Guest Overview   | D-Sleeping Beauty                               |
| <b>8:00 am - 10:00 am—Sessions</b>  |   |
| Early-Age Property Development in Concrete with Supplementary Cementing Materials, Part 1 of 2                  | D-Disneyland South B                            |
| Field Experience and Structural Performance of Self-Consolidating Concrete in High-Rise and Bridge Construction | D-Disneyland North B                            |
| FRPRCS A5—Seismic Resistance of Concrete Structures Using FRP Materials   | D-Disneyland South A                            |
| FRPRCS B5—Strengthening of Concrete Structures Using FRP Systems  | D-Disneyland North A                            |
| <b>8:00 am - 5:00 pm</b>  |   |
| ACI Store   | D-South Exhibit Hall                            |
| Exhibits  | D-South Exhibit Hall                            |
| <b>8:00 am - 5:30 pm</b>  |   |
| Committee Meetings  | See Numeric or Convention App for detailed list |
| <b>9:00 am - 9:30 am</b>  |   |
| Student Competition Check-In  | D-South Exhibit Hall                            |
| <b>9:30 am - 4:00 pm</b>  |   |
| Student Egg Protection Device Competition   | D-South Exhibit Hall                            |
| <b>10:00 am - 11:30 am</b>  |   |
| ACI International Forum   | D-Magic Kingdom 4                               |
| <b>10:00 am - 9:00 pm</b>   |   |
| ★Guest Lounge   | D-Sleeping Beauty                               |
| <b>10:15 am - 12:15 pm—Sessions</b>   |   |
| FRPRCS A6—FRP Reinforcement of Concrete and Masonry Walls   | D-Disneyland South A                            |
| FRPRCS B6—Field Applications and Case Studies   | D-Disneyland North A                            |
| <b>10:30 am - 12:30 pm—Sessions</b>   |   |
| Early-Age Property Development in Concrete with Supplementary Cementing Materials, Part 2 of 2                  | D-Disneyland South B                            |

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| Sunday, October 15, 2017   |                           |
|--|---------------------------|
| Performance-Based Design   | D-Disneyland North B      |
| <b>11:30 am - 1:30 pm</b>  |                           |
| ✓International Lunch   | D-Magic Kingdom 3         |
| <b>12:30 pm - 4:00 pm</b>  |                           |
| Student Eco Concrete Competition   | D-South Exhibit Hall      |
| <b>1:00 pm - 3:00 pm—Sessions</b>  |                           |
| ACI 201.2R-16: Updated Guidance on Concrete Durability                                       | D-Disneyland South B      |
| Influence of Early-Age Properties on Crack Development and Long-Term Durability, Part 1 of 2 | D-Disneyland North B      |
| <b>1:00 pm - 4:00 pm</b>   |                           |
| Afternoon Soda Break   | D-South Exhibit Hall      |
| <b>1:15 pm - 3:15 pm—Sessions</b>  |                           |
| FRPRCS A7—Effects of Extreme Events on FRP-Reinforced/Strengthened Structures                | D-Disneyland South A      |
| FRPRCS B7—Effect of Environment on Durability  | D-Disneyland North A      |
| <b>3:00 pm - 4:00 pm—Mini Session</b>  |                           |
| Quality in Concrete: Auditing  | P-Crystal Cove            |
| <b>3:30 pm - 5:30 pm—Sessions</b>  |                           |
| FRPRCS A8—Design and Performance Under Long-Term Loading and Environmental Exposure          | D-Disneyland South A      |
| FRPRCS B8—Advances in Uses of FRP in Concrete and Masonry                                    | D-Disneyland North A      |
| Influence of Early-Age Properties on Crack Development and Long-Term Durability, Part 2 of 2 | D-Disneyland North B      |
| SDC—Innovations in Concrete Technology   | D-Disneyland South B      |
| <b>5:45 pm - 7:00 pm</b>   |                           |
| Opening Session & Keynote Presentation   | D-Disneyland Center       |
| <b>7:00 pm - 8:00 pm</b>   |                           |
| Opening Reception  | D-South Exhibit Hall      |
| <b>8:00 pm - 10:00 pm—Session</b>  |                           |
| Hot Topic Session: Modules of Elasticity Impacting Constructability                          | D-Disneyland North A      |
| <b>9:00 pm - 10:30 pm</b>  |                           |
| Young Professional Networking Event  | ESPN Zone—Downtown Disney |
| Monday, October 16, 2017   |                           |
| <b>5:00 am and 6:00 am</b>   |                           |
| Run/Walk Meet-Up   | D-Disneyland Main Lobby   |
| <b>6:00 am - 6:45 am</b>   |                           |
| Morning Yoga Class   | D-Sleeping Beauty         |
| <b>6:30 am - 8:00 am</b>   |                           |
| Workshop for Technical Committee Chairs (by invitation only)                                 | D-Disneyland Center       |

|  |   |
|--|---|
| <b>7:00 am - 8:30 am</b>   |   |
| Speaker Development Breakfast  | D-Safari  |
| <b>7:00 am - 10:00 am</b>  |   |
| ★Guest Hospitality   | D-Sleeping Beauty                               |
| Coffee Break   | D-South Exhibit Hall                            |
| <b>7:00 am - 6:00 pm</b>   |   |
| Speaker Ready Room   | D-South Lounge                                  |
| <b>7:15 am - 7:00 pm</b>   |   |
| Committee Meetings   | See Numeric or Convention App for detailed list |
| <b>7:30 am - 5:00 pm</b>   |   |
| ACI Registration   | D-South Exhibit Hall                            |
| ACI Cyber Café & Meeting Spot  | D-South Exhibit Hall                            |
| <b>8:00 am - 5:00 pm</b>   |   |
| ACI Store  | D-South Exhibit Hall                            |
| Exhibits   | D-South Exhibit Hall                            |
| <b>8:30 am - 10:30 am—Sessions</b>   |   |
| Concrete with Recycled Materials, Part 1 of 3  | D-Disneyland South B                            |
| Research in Progress, Part 1 of 2  | D-Disneyland North A                            |
| Reshoring and Early-Age Building Behavior  | D-Disneyland South A                            |
| What I Wish I Knew: Negotiating Early Job Offers   | D-Disneyland North B                            |
| <b>10:00 am - 11:30 am</b>   |   |
| ACI Student Forum  | D-Safari  |
| <b>10:00 am - 2:00 pm</b>  |   |
| ★Guest Lounge  | D-Sleeping Beauty                               |
| <b>10:30 am - 12:00 pm—Session</b>   |   |
| ACI 123 Concrete Research Poster Session   | D-Center Lounge                                 |
| <b>11:00 am - 1:00 pm—Sessions</b>   |   |
| Concrete and Digital Fabrication: Perspectives, Challenges, and Developments, Part 1 of 2            | D-Disneyland North B                            |
| Concrete with Recycled Materials, Part 2 of 3  | D-Disneyland South B                            |
| Making Connections—The Future of Our Infrastructure  | D-Disneyland South A                            |
| Research in Progress, Part 2 of 2  | D-Disneyland North A                            |
| <b>11:15 am - 12:15 pm—Mini Session</b>  |   |
| Performance Specifications for SCC in a North American Perspective                                   | D-Monorail A-C                                  |
| <b>11:30 am - 1:30 pm</b>  |   |
| ✓Student Lunch   | D-Disneyland Center                             |
| <b>12:00 pm - 12:30 pm—Exhibitor Demo</b>  |   |
| Giatic Scientific Inc.   | D-South Exhibit Hall                            |
| <b>1:00 pm - 1:30 pm—Mini Session</b>  |   |
| Contemporary Design of Building Materials and Structures for Energy Efficiency and Hazard Resilience | P-Redondo                                       |

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|   |  |
|---|--|
| <b>1:00 pm - 2:00 pm—Mini Session</b>   |  |
| Issues in Parking Garage Construction   | P-Pacific Ballroom A   |
| <b>1:00 pm - 4:00 pm</b>  |  |
| Afternoon Soda Break  | D-South Exhibit Hall   |
| <b>1:30 pm - 3:30 pm—Sessions</b>   |  |
| Concrete and Digital Fabrication: Perspectives, Challenges, and Developments, Part 2 of 2     | D-Disneyland North B   |
| Concrete with Recycled Materials, Part 3 of 3   | D-Disneyland South B   |
| Design and Modeling Considerations for Concrete Joints, Connections, and Systems, Part 1 of 2 | D-Disneyland North A   |
| Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 1 of 3          | D-Disneyland South A   |
| <b>1:45 pm - 2:15 pm—Exhibitor Demo</b>   |  |
| AQUAFIN Inc.  | D-South Exhibit Hall   |
| <b>3:30 pm - 4:00 pm—Exhibitor Demo</b>   |  |
| Cervenka Consulting   | D-South Exhibit Hall   |
| <b>3:30 pm - 5:00 pm</b>  |  |
| ★ Guest Social  | D-Rose Court Garden (D-Sleeping Beauty in inclement weather) |
| <b>4:00 pm - 6:00 pm—Sessions</b>   |  |
| Case Studies on Nano-Enhanced Concrete on Commercial Jobsite                                  | D-Disneyland South B   |
| Connecting New Practices to Real World Applications with Soil Cement                          | D-Disneyland North B   |
| Design and Modeling Considerations for Concrete Joints, Connections, and Systems, Part 2 of 2 | D-Disneyland North A   |
| Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 2 of 3          | D-Disneyland South A   |
| <b>5:30 pm - 6:30 pm</b>  |  |
| Women in ACI Reception  | D-Rose Court Garden (D-Sleeping Beauty in inclement weather) |
| <b>6:30 pm - 8:30 pm—Session</b>  |  |
| 123 Forum: Can Structural Health Monitoring Provide Actionable Information?                   | D-Disneyland North A   |
| <b>6:30 pm - 10:00 pm</b>   |  |
| ✓ The Excellence in Concrete Construction Awards Gala (doors open at 5:30 pm)                 | D-Disneyland Center  |
| <b>Tuesday, October 17, 2017</b>  |  |
| <b>5:00 am and 6:00 am</b>  |  |
| Run/Walk Meet-Up  | D-Disneyland Main Lobby                                      |
| <b>6:00 am - 6:45 am</b>  |  |
| Morning Yoga Class  | D-Sleeping Beauty  |

|  |   |
|--|---|
| <b>7:00 am - 6:30 pm</b>   |   |
| Committee Meetings   | See Numeric or Convention App for detailed list |
| <b>7:00 am - 10:00 am</b>  |   |
| ★ Guest Hospitality  | D-Sleeping Beauty                               |
| Coffee Break   | D-South Exhibit Hall                            |
| <b>7:00 am - 6:00 pm</b>   |   |
| Speaker Ready Room   | D-South Lounge                                  |
| <b>7:30 am - 4:00 pm</b>   |   |
| ✓ California Science Center Tour   | D-Disneyland Main Lobby                         |
| <b>7:30 am - 5:00 pm</b>   |   |
| ACI Registration   | D-South Exhibit Hall                            |
| ACI Cyber Café & Meeting Spot  | D-South Exhibit Hall                            |
| <b>8:00 am - 5:00 pm</b>   |   |
| ACI Store  | D-South Exhibit Hall                            |
| Exhibits   | D-South Exhibit Hall                            |
| <b>8:30 am - 9:30 am—Mini Session</b>  |   |
| Flashing Window/Door Openings in ICF Walls, Use of Fiber Reinforcement in ICF Construction | D-North Hall J                                  |
| <b>8:30 am - 10:30 am—Sessions</b>   |   |
| Creep and Shrinkage of Concrete—Honoring Professor Adam Neville, Part 1 of 2               | D-Disneyland South B                            |
| Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 3 of 3       | D-Disneyland South A                            |
| SoCal Modernism—Preserving Concrete Modernist Structures                                   | D-Disneyland North A                            |
| Ward R. Malisch Concrete Construction Symposium, Part 1 of 4                               | D-Disneyland North B                            |
| <b>9:45 am - 10:15 am—Exhibitor Demo</b>   |   |
| Trinity Lightweight  | D-South Exhibit Hall                            |
| <b>10:00 am - 4:00 pm</b>  |   |
| ★ Guest Lounge   | D-Sleeping Beauty                               |
| <b>10:30 am - 11:00 am—Exhibitor Demo</b>  |   |
| Plexxis Software   | D-South Exhibit Hall                            |
| <b>11:00 am - 1:00 pm—Sessions</b>   |   |
| Cracking and Durability in Sustainable Concretes, Part 1 of 2                              | D-Disneyland South A                            |
| Creating Aesthetic Concrete in Southern California   | D-Disneyland North A                            |
| Creep and Shrinkage of Concrete—Honoring Professor Adam Neville, Part 2 of 2               | D-Disneyland South B                            |
| Ward R. Malisch Concrete Construction Symposium, Part 2 of 4                               | D-Disneyland North B                            |
| <b>11:30 am - 1:30 pm</b>  |   |
| ✓ Contractors' Day Lunch   | D-Magic Kingdom 1                               |
| <b>1:00 pm - 3:00 pm—Mini Session</b>  |   |
| Smart Concrete Using Nanocomposites  | P-Pacific Ballroom B                            |

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## Tuesday, October 17, 2017

|   |   |
|---|---|
| Vulcan Materials  | D-South Exhibit Hall  |
| <b>1:00 pm - 4:00 pm</b>  |   |
| Afternoon Soda Break  | D-South Exhibit Hall  |
| <b>1:30 pm - 2:30 pm—Mini Session</b>   |   |
| New Research in Lightweight Aggregate Concrete: Service Life Modeling and Lightweight Aggregate for Mass Concrete | D-Castle B  |
| <b>1:30 pm - 3:30 pm—Sessions</b>   |   |
| Contractors' Day Session: Mega Projects—Challenging the Southern California Concrete Industry                     | D-Disneyland South B  |
| Cracking and Durability in Sustainable Concretes, Part 2 of 2   | D-Disneyland South A  |
| Open Topic Session, Part 1 of 2   | D-Disneyland North A  |
| Ward R. Malisch Concrete Construction Symposium, Part 3 of 4  | D-Disneyland North B  |
| <b>1:45 pm - 2:15 pm—Exhibitor Demo</b>   |   |
| International Zinc Association  | D-South Exhibit Hall  |
| <b>2:00 pm - 3:00 pm—Mini Session</b>   |   |
| The Effects of SCMs on Chloride-Induced Corrosion Initiation  | D-Monorail B-C  |
| <b>2:30 pm - 6:10 pm</b>  |   |
| 10th Anniversary Concrete Sustainability Forum  | D-Magic Kingdom 4   |
| <b>3:30 pm - 4:00 pm—Exhibitor Demo</b>   |   |
| Slag Cement Association   | D-South Exhibit Hall  |
| <b>4:00 pm - 6:00 pm—Sessions</b>   |   |
| ACI/JCI Joint Seminar on Existing Structures, Part 1 of 4   | D-Disneyland South A  |
| Contractors' Day Session: 3-D Scanning Technology, The Future is Now  | D-Disneyland South B  |
| Open Topic Session, Part 2 of 2   | D-Disneyland North A  |
| Ward R. Malisch Concrete Construction Symposium, Part 4 of 4  | D-Disneyland North B  |
| <b>5:30 pm - 6:30 pm</b>  |   |
| Faculty Network Reception   | D-Sleeping Beauty   |
| <b>6:30 pm - 8:30 pm</b>  |   |
| Concrete Mixer  | D-Magic Kingdom Lawn (D-Disneyland Center in inclement weather) |

## Wednesday, October 18, 2017

|                            |                         |
|----------------------------|-------------------------|
| <b>5:00 am and 6:00 am</b> |                         |
| Run/Walk Meet-Up           | D-Disneyland Main Lobby |
| <b>6:00 am - 6:45 am</b>   |                         |
| Morning Yoga Class         | D-Sleeping Beauty       |
| <b>7:00 am - 10:00 am</b>  |                         |
| ★ Guest Hospitality        | D-Sleeping Beauty       |
| Coffee Break               | D-South Exhibit Hall    |

|   |  |
|---|--|
| <b>7:00 am - 2:00 pm</b>  |  |
| Speaker Ready Room  | D-South Lounge   |
| <b>7:30 am - 6:00 pm</b>  |  |
| Committee Meetings  | See Numeric or Convention App for detailed list                    |
| <b>8:00 am - 12:00 pm</b>   |  |
| ACI Registration  | D-South Exhibit Hall   |
| ACI Store   | D-South Exhibit Hall   |
| <b>8:00 am - 2:00 pm</b>  |  |
| ACI Cyber Café & Meeting Spot   | D-South Exhibit Hall   |
| <b>8:30 am - 10:30 am—Sessions</b>  |  |
| ACI/JCI Joint Seminar on Existing Structures, Part 2 of 4   | D-Disneyland South A   |
| Evaluation of Concrete Bridge Behavior Through Load Testing—International Perspectives, Part 1 of 2 | D-Disneyland North B   |
| Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 1 of 3                   | D-Disneyland North A   |
| <b>10:00 am - 9:00 pm</b>   |  |
| ★ Guest Lounge  | D-Sleeping Beauty  |
| <b>11:00 am - 1:00 pm—Sessions</b>  |  |
| ACI/JCI Joint Seminar on Existing Structures, Part 3 of 4   | D-Disneyland South A   |
| Evaluation of Concrete Bridge Behavior Through Load Testing—International Perspectives, Part 2 of 2 | D-Disneyland North B   |
| Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 2 of 3                   | D-Disneyland North A   |
| <b>1:30 pm - 3:30 pm—Sessions</b>   |  |
| ACI/JCI Joint Seminar on Existing Structures, Part 4 of 4   | D-Disneyland South A   |
| Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 3 of 3                   | D-Disneyland North A   |
| Load Testing of Existing Concrete Structures  | D-Disneyland North B   |
| <b>6:30 pm - 8:00 pm</b>  |  |
| President's Reception   | D-Magic Kingdom Lawn (D-Disneyland South A-B in inclement weather) |

## Thursday, October 19, 2017

|                           |          |
|---------------------------|----------|
| <b>10:15 am - 5:00 pm</b> |          |
| Board of Direction        | D-Safari |



# Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

D = Disneyland® Hotel P = Disney's Paradise Pier® Hotel

| Code         | Committee  | Day | Time                | Room Name              |
|--------------|--|-----|---------------------|------------------------|
| ACI/ASCE-SEI | ACI/ASCESEI  | Sun | 4:00 pm - 5:30 pm   | D-Western              |
| ACIFdn       | ACI Foundation   | Wed | 8:00 am - 11:30 am  | D-Amazon               |
| BOD          | Board of Direction                                       | Thu | 10:15 am - 5:00 pm  | D-Safari               |
| CAC          | Chapter Activities                                       | Mon | 2:00 pm - 3:00 pm   | D-Wilderness           |
| CAC-TG       | Chapter Activities Committee Student Competition TG      | Wed | 10:00 am - 11:30 am | D-Explorer             |
| CAC-TG       | Chapter Activities Committee International Activities TG | Wed | 1:30 pm - 3:00 pm   | D-Explorer             |
| CC           | Convention Committee                                     | Tue | 3:00 pm - 4:00 pm   | D-Safari               |
| CLC          | Construction Liaison                                     | Sun | 8:00 am - 10:30 am  | D-Castle C             |
| CPC          | Certification Programs                                   | Tue | 2:00 pm - 5:00 pm   | D-Castle A             |
| CRC          | Concrete Research Committee                              | Mon | 5:00 pm - 6:30 pm   | D-Nile                 |
| CRC          | Concrete Research Council                                | Tue | 11:00 am - 1:00 pm  | D-Magic Kingdom 2      |
| CSAO         | Committee on Codes & Standards Advocacy & Outreach       | Mon | 3:30 pm - 5:30 pm   | D-Western              |
| C601         | Certified Quality Technical Manager                      | Mon | 3:00 pm - 4:30 pm   | D-North Hall H         |
| C601-D       | Decorative Concrete Finisher                             | Sun | 10:00 am - 11:30 am | D-Mississippi          |
| C601-E       | Concrete Construction Sustainability                     | Tue | 7:30 am - 9:00 am   | D-North Hall I         |
| C601-F       | NDT Certification  | Mon | 1:00 pm - 3:00 pm   | D-North Hall H         |
| C601-G       | Self-Consolidating Concrete Testing                      | Mon | 11:30 am - 1:00 pm  | D-North Hall H         |
| C601-I       | Shotcrete Inspector Subcommittee                         | Sun | 1:00 pm - 2:00 pm   | P-San Diego            |
| C610         | Field Technician Cert                                    | Mon | 8:30 am - 11:00 am  | P-Pacific Ballroom C-D |
| C620         | Laboratory Tech Cert                                     | Tue | 8:30 am - 10:00 am  | P-Redondo              |
| C621         | Cement Tester Certification                              | Wed | 8:30 am - 9:30 am   | D-Monorial B           |
| C630         | Construction Inspector Cert                              | Mon | 1:00 pm - 2:30 pm   | D-Congo                |
| C631         | Conc Transportation Const Insp                           | Tue | 10:00 am - 11:30 am | P-Redondo              |
| C640         | Craftsman Cert   | Sun | 11:00 am - 2:00 pm  | D-North Hall J         |
| C650         | Tilt-up Certification Committee                          | Sun | 11:30 am - 1:00 pm  | D-Explorer             |
| C655         | Foundation Constructor Certification                     | Mon | 11:30 am - 1:00 pm  | D-Congo                |
| C660         | Shotcrete Nozzleman Cert                                 | Sun | 10:00 am - 12:00 pm | D-Castle B             |
| C670         | Masonry Technician Certification                         | Wed | 9:30 am - 10:30 am  | D-Monorial B           |
| C680         | Adhesive Anchor Installer—Joint CRSI                     | Sun | 11:30 am - 1:00 pm  | D-Safari               |
| C681         | Adhesive Anchor Installation Inspector Certification     | Mon | 4:30 pm - 5:30 pm   | D-North Hall H         |
| C690         | Concrete Quality Technical Manager Certification         | Wed | 10:30 am - 11:30 am | D-Monorial B           |
| EAC          | Educational Activities                                   | Tue | 8:00 am - 12:00 pm  | D-Castle C             |
| EB           | Editorial Board  | Sun | 10:00 am - 11:00 am | D-North Hall G         |
| E701         | Materials for Concrete Construction                      | Sun | 9:00 am - 10:30 am  | D-Amazon               |
| E702         | Designing Concrete Structures                            | Mon | 9:00 am - 10:30 am  | D-Columbia             |
| E703         | Concrete Construction Practices                          | Mon | 4:00 pm - 6:00 pm   | D-Frontier Board Room  |
| E706         | Repair Application Procedures                            | Sun | 8:00 am - 10:00 am  | D-Castle A             |
| E707         | Specification Education                                  | Tue | 11:30 am - 1:00 pm  | D-Congo                |
| E710         | ACI University Programs                                  | Sun | 10:30 am - 12:00 pm | D-Castle A             |
| HTC          | Hot Topic  | Sun | 2:30 pm - 4:00 pm   | D-Castle C             |
| IAC          | International Advisory Committee                         | Tue | 9:30 am - 11:30 am  | D-Adventure            |
| IC-Cert      | International Certification                              | Sun | 1:30 pm - 3:00 pm   | D-Monorial C           |
| IC-Conf      | International Conferences                                | Mon | 7:15 am - 8:30 am   | D-Columbia             |
| IPAC         | International Project Awards Committee                   | Tue | 7:00 am - 8:30 am   | D-Castle A             |
| ITG-10       | Alternative Cementitious Materials                       | Sun | 10:30 am - 1:30 pm  | D-Monorial C           |
| MEMC         | Membership   | Sun | 1:00 pm - 3:00 pm   | D-Mississippi          |
| SYPAC        | Student and Young Professional Activities                | Wed | 8:00 am - 9:30 am   | D-Nile                 |

# Numerical Committee Meeting Listing

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| Code    | Committee  | Day | Time                | Room Name              |
|---------|--|-----|---------------------|------------------------|
| S801    | Student Activities                                       | Sun | 7:30 am - 9:00 am   | D-Amazon               |
| S802    | Teaching Methods and Educational Materials               | Mon | 8:30 am - 9:30 am   | D-North Hall H         |
| S805    | ACI Collegiate Concrete Council CLGE                     | Sun | 4:00 pm - 5:30 pm   | D-Magic Kingdom 4      |
| S806    | Young Professional Activities                            | Mon | 2:00 pm - 3:30 pm   | D-Frontier Board Room  |
| TAC     | Technical Activities                                     | Fri | 6:30 pm - 9:00 pm   | D-Magic Kingdom 1      |
| TAC     | Technical Activities                                     | Sat | 7:00 am - 6:30 pm   | D-Magic Kingdom 1      |
| TAC-RG1 | TAC Review Group 1                                       | Sat | 1:00 pm - 4:00 pm   | D-Castle A             |
| TAC-RG2 | TAC Review Group 2                                       | Sat | 1:00 pm - 4:00 pm   | D-Castle B             |
| TAC-RG3 | TAC Review Group 3                                       | Sat | 1:00 pm - 4:00 pm   | D-Monorail A           |
| TCSC    | TAC Construction Standards Committee                     | Wed | 7:30 am - 9:30 am   | D-Explorer             |
| TRRC    | TAC Repair & Rehab                                       | Tue | 7:00 am - 8:30 am   | D-North Hall H         |
| TTAG    | Technology Transfer Advisory Group                       | Tue | 6:30 am - 8:00 am   | D-Western              |
| 117     | Tolerances   | Tue | 8:00 am - 11:30 am  | P-Pacific Ballroom C-D |
| 117-M   | Movements Affecting Tolerances                           | Mon | 3:00 pm - 6:00 pm   | P-Monterey             |
| 118     | Use of Digital Technology                                | Tue | 2:00 pm - 3:30 pm   | D-Outpost              |
| 120     | History  | Tue | 1:30 pm - 3:00 pm   | D-Castle C             |
| 121     | Quality Assurance Systems                                | Sun | 3:00 pm - 5:00 pm   | P-Crystal Cove         |
| 122     | Energy Efficiency  | Mon | 1:00 pm - 3:00 pm   | P-Redondo              |
| 123     | Research and Current Developments                        | Sun | 4:00 pm - 5:30 pm   | P-Pacific Ballroom A   |
| 124     | Aesthetics   | Mon | 12:30 pm - 2:00 pm  | D-Zambezi              |
| 130     | Sustainability   | Mon | 2:00 pm - 5:00 pm   | D-North Hall F         |
| 130-G   | Education/Certification                                  | Tue | 8:30 am - 9:00 am   | D-Explorer             |
| 130-L   | Liaison Subcommittee                                     | Mon | 10:00 am - 11:00 am | D-Zambezi              |
| 130     | Sustainability of Concrete                               | Tue | 11:00 am - 1:00 pm  | D-Safari               |
| 131     | BIM  | Sat | 8:00 am - 5:00 pm   | D-North Hall G         |
| 131     | BIM  | Tue | 3:00 pm - 5:00 pm   | D-Magic Kingdom 2      |
| 132     | Responsibility (RCC)                                     | Sun | 2:00 pm - 5:00 pm   | D-North Hall J         |
| 133     | Disaster Reconnaissance                                  | Sun | 12:30 pm - 3:30 pm  | D-Castle A             |
| 134     | Concrete Constructability                                | Mon | 8:30 am - 9:30 am   | D-Castle C             |
| 201     | Durability   | Sun | 2:00 pm - 4:00 pm   | D-Monorail A           |
| 201     | Durability   | Tue | 8:00 am - 11:00 am  | D-Magic Kingdom 2      |
| 201-D   | Durability-Oversight Committee                           | Mon | 11:30 am - 1:00 pm  | P-Monterey             |
| 201-TG1 | Aggressive Chemicals                                     | Mon | 3:00 pm - 4:00 pm   | D-North Hall J         |
| 201-TG2 | Physical Salt Attack                                     | Sun | 11:00 am - 12:00 pm | D-North Hall G         |
| 201-TG3 | Alkali-Aggregate Reactivity                              | Sun | 12:00 pm - 2:00 pm  | D-Monorail B           |
| 201-TG5 | Microbially Induced Corrosion of Concrete                | Sun | 10:00 am - 11:00 am | D-Oasis                |
| 207     | Mass Concrete  | Mon | 10:00 am - 1:00 pm  | D-Magic Kingdom 4      |
| 209     | Creep and Shrinkage                                      | Mon | 10:00 am - 1:00 pm  | P-Redondo              |
| 209-C   | Models Applicability and Uncertainty                     | Sun | 11:30 am - 12:30 pm | D-Columbia             |
| 209-D   | Numerical Methods and 3D Analyses                        | Sun | 4:30 pm - 5:30 pm   | D-Castle C             |
| 211     | Proportioning  | Wed | 8:00 am - 10:00 am  | D-Castle A-C           |
| 211-A   | Proportioning-Editorial                                  | Tue | 10:00 am - 12:00 pm | D-Oasis                |
| 211-I   | Assessing Aggregate Gradation                            | Tue | 1:00 pm - 3:00 pm   | D-Explorer             |
| 211-M   | Aggregate Packing Model                                  | Mon | 10:00 am - 11:00 am | D-Frontier Board Room  |
| 211-N   | Proportioning with Ground Limestone and Material Fillers | Tue | 3:00 pm - 5:00 pm   | D-Mississippi          |
| 211-TG1 | Proportioning Concrete with Non Clinker Based Cement     | Tue | 1:00 pm - 3:00 pm   | D-Mississippi          |
| 211-TG2 | Developing & Using a Three Point Curve Task Group        | Tue | 11:30 am - 1:00 pm  | D-Mississippi          |
| 212     | Chemical Admixtures                                      | Mon | 2:00 pm - 5:00 pm   | P-Pacific Ballroom C-D |
| 213     | Lightweight  | Tue | 1:30 pm - 3:30 pm   | D-Castle B             |

# Numerical Committee Meeting Listing

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| Code    | Committee  | Day | Time                | Room Name             |
|---------|--|-----|---------------------|-----------------------|
| 213-TG1 | LightweightEditorial TG  | Tue | 11:00 am - 12:30 pm | D-Explorer            |
| 214     | Strength Tests   | Mon | 3:30 pm - 5:30 pm   | P-Redondo             |
| 214-A   | Document Preparation   | Mon | 12:30 pm - 2:00 pm  | P-Big Sur             |
| 215     | Fatigue  | Sun | 12:00 pm - 2:00 pm  | D-Wilderness          |
| 216     | Fire Resistance  | Mon | 10:00 am - 12:00 pm | D-Nile                |
| 221     | Aggregates   | Tue | 11:00 am - 1:30 pm  | D-North Hall I        |
| 222     | Corrosion of Metals  | Tue | 2:00 pm - 5:00 pm   | D-Monorial B-C        |
| 222-TG1 | Developing Standardized Tests for Chloride Threshold           | Sun | 1:30 pm - 3:00 pm   | P-Pacific Ballroom A  |
| 223     | Shrinkage-Compensating   | Tue | 2:00 pm - 5:00 pm   | D-Western             |
| 224     | Cracking   | Sun | 2:30 pm - 5:00 pm   | D-Wilderness          |
| 225     | Hydraulic Cements  | Mon | 1:00 pm - 5:00 pm   | D-Nile                |
| 228     | Nondestructive Testing   | Sun | 9:30 am - 12:30 pm  | D-Magic Kingdom 2     |
| 228-B   | Visual Inspection  | Sun | 1:00 pm - 3:00 pm   | D-Explorer            |
| 229     | Controlled Low-Strength Materials                              | Tue | 2:00 pm - 5:00 pm   | P-Oceanside           |
| 230     | Soil Cement  | Tue | 8:00 am - 9:30 am   | D-Zambezi             |
| 231     | Early Age  | Mon | 12:30 pm - 2:30 pm  | D-Outpost             |
| 232     | Fly Ash in Concrete  | Mon | 1:00 pm - 4:00 pm   | D-Adventure           |
| 233     | Ground Slag  | Tue | 2:00 pm - 5:00 pm   | P-San Diego           |
| 234     | Silica Fume  | Tue | 2:00 pm - 4:30 pm   | D-North Hall G        |
| 236     | Material Science   | Mon | 4:30 pm - 5:30 pm   | D-Monorial B-C        |
| 236-TG1 | Advanced Analysis Techniques                                   | Sun | 3:00 pm - 4:00 pm   | P-Pacific Ballroom A  |
| 237     | Self-Consolidating Concrete                                    | Mon | 8:15 am - 12:15 pm  | D-Monorial BC         |
| 238     | Workability of Fresh Concrete                                  | Tue | 8:00 am - 10:00 am  | D-North Hall F        |
| 238-A   | Student Workability  | Tue | 10:00 am - 11:30 am | D-Zambezi             |
| 239     | Ultra-High Performance Concrete                                | Mon | 3:30 pm - 6:00 pm   | D-Magic Kingdom 1     |
| 239-A   | Emerging Technology Report                                     | Sun | 1:00 pm - 3:00 pm   | D-Amazon              |
| 239-C   | Structural Design on UHPC                                      | Mon | 10:30 am - 12:30 pm | D-Outpost             |
| 239-D   | Materials & Methods of Construction with UHPC                  | Mon | 1:00 pm - 2:00 pm   | D-Frontier Board Room |
| 240     | Natural Pozzolans  | Mon | 10:00 am - 1:00 pm  | D-Mark Twain          |
| 240-TG1 | Test Methods and Testing of Natural Pozzolans Task Group       | Mon | 8:00 am - 9:30 am   | D-Magic Kingdom 4     |
| 241     | Nanotechnology of Concrete                                     | Sun | 4:00 pm - 5:30 pm   | P-Redondo             |
| 241-A   | The Application and Implementation of Nano-Engineered Concrete | Tue | 1:00 pm - 3:00 pm   | P-Pacific Ballroom B  |
| 241-SC  | Steering Committee   | Sun | 11:00 am - 12:00 pm | D-Oasis               |
| 241-TG1 | Nanotechnology of Concrete                                     | Sun | 2:00 pm - 3:30 pm   | P-Redondo             |
| 301     | Specifications   | Sat | 1:00 pm - 4:00 pm   | D-Adventure           |
| 301     | Specifications   | Sun | 1:00 pm - 4:00 pm   | D-Magic Kingdom 4     |
| 301     | Specifications   | Mon | 1:00 pm - 4:00 pm   | D-Castle A-B          |
| 301-A   | General Requirements, Definitions, and Tolerances - Section 1  | Sun | 8:00 am - 9:30 am   | D-Tiki                |
| 301-B   | Formwork and Formwork Accessories - Section 2                  | Sat | 6:30 pm - 8:30 pm   | D-Castle B            |
| 301-C   | Reinforcement and Reinforcement Supports - Section 3           | Sat | 4:30 pm - 6:30 pm   | D-Monorial C          |
| 301-D   | Concrete Mixtures - Section 4                                  | Sun | 8:00 am - 9:30 am   | D-North Hall I        |
| 301-E   | Handling, Placing, and Constructing - Section 5                | Sat | 4:30 pm - 6:00 pm   | D-Castle B            |
| 301-F   | Architectural Concrete - Section 6                             | Sun | 10:30 am - 12:30 pm | D-Amazon              |
| 301-G   | Lightweight Concrete - Section 7                               | Sun | 8:00 am - 9:00 am   | D-North Hall H        |
| 301-H   | Mass Concrete - Section 8                                      | Sun | 9:30 am - 11:00 am  | D-Outpost             |
| 301-I   | PostTensioned Concrete - Section 9                             | Sun | 8:00 am - 9:30 am   | D-Outpost             |

# Numerical Committee Meeting Listing

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| Code        | Committee  | Day | Time                | Room Name             |
|-------------|--|-----|---------------------|-----------------------|
| 301-J       | Shrinkage Compensating Concrete - Section 10     | Sun | 8:00 am - 9:30 am   | D-Nile                |
| 301-K       | Industrial Floor Slabs - Section 11              | Sun | 9:30 am - 11:00 am  | D-Nile                |
| 301-L       | Tilt-Up Construction - Section 12                | Sun | 7:30 am - 9:30 am   | D-Monorial B          |
| 301-M       | Precast Structural Concrete - Section 13         | Sun | 8:00 am - 9:30 am   | D-Zambezi             |
| 301-N       | Precast Architectural Concrete - Section 14      | Sun | 9:30 am - 11:00 am  | D-Tiki                |
| 301-SC      | Spec-Steering Committee                          | Sat | 11:30 am - 1:00 pm  | D-Adventure           |
| 302         | Construction of Concrete Floors                  | Mon | 8:30 am - 1:00 pm   | D-Magic Kingdom 2     |
| 303         | Architectural Cast-in-Place                      | Mon | 8:30 am - 11:30 am  | P-Crystal Cove        |
| 304         | Measuring/Mix/Trans/Placing                      | Mon | 11:30 am - 1:00 pm  | D-Mississippi         |
| 305         | Hot Weather                                      | Sun | 2:00 pm - 4:00 pm   | D-Columbia            |
| 306         | Cold Weather                                     | Tue | 8:30 am - 11:00 am  | D-Wilderness          |
| 307         | Chimneys   | Mon | 2:00 pm - 5:00 pm   | P-Big Sur             |
| 308         | Curing   | Wed | 10:00 am - 1:00 pm  | D-Monorail C          |
| 308-A       | Curing-Guide                                     | Wed | 8:00 am - 10:00 am  | D-Monorail C          |
| 308-B       | Curing-Specifications                            | Tue | 4:00 pm - 5:30 pm   | D-North-Hall I        |
| 309         | Consolidation                                    | Sun | 3:00 pm - 4:30 pm   | D-Mississippi         |
| 310         | Decorative Concrete                              | Sun | 3:00 pm - 5:30 pm   | D-Mark Twain          |
| 310/308-TG2 | Curing Decorative Concrete Joint TG              | Sun | 2:00 pm - 3:00 pm   | D-Mark Twain          |
| 310-J       | Polished Finishes                                | Tue | 10:00 am - 12:30 pm | P-Pacific Ballroom B  |
| 311         | Inspection                                       | Tue | 12:30 pm - 2:30 pm  | D-Nile                |
| 314         | Simplified Design of Buildings                   | Sun | 8:30 am - 10:30 am  | D-North Hall J        |
| 315         | Details of Concrete Reinforcement                | Sun | 2:00 pm - 5:00 pm   | P-Pacific Ballroom B  |
| 318         | Building Code                                    | Wed | 8:00 am - 6:00 pm   | D-Magic Kingdom 2     |
| 318-A       | General Concrete Construction                    | Tue | 1:30 pm - 6:00 pm   | D-North Hall F        |
| 318-B       | Anchorage and Reinforcement                      | Mon | 2:00 pm - 5:00 pm   | D-Castle C            |
| 318-B       | Anchorage and Reinforcement                      | Tue | 8:00 am - 12:30 pm  | D-Magic Kingdom 3     |
| 318-C       | Serviceability/Safety                            | Tue | 8:00 am - 12:30 pm  | D-Monorial B-C        |
| 318-D       | Members  | Tue | 1:30 pm - 6:00 pm   | P-Redondo             |
| 318-E       | Section and Member Strength                      | Mon | 10:00 am - 1:00 pm  | D-Castle C            |
| 318-E       | Section and Member Strength                      | Tue | 7:30 am - 12:30 pm  | D-Castle B            |
| 318-F       | Foundations                                      | Tue | 8:00 am - 12:30 pm  | D-Nile                |
| 318-G       | Precast and Prestressed Concrete                 | Tue | 8:00 am - 12:30 pm  | P-Pacific Ballroom A  |
| 318-H       | Seismic Provisions                               | Tue | 1:30 pm - 6:00 pm   | D-Adventure           |
| 318-J       | Joints and Connections                           | Tue | 1:30 pm - 6:00 pm   | D-Wilderness          |
| 318-L       | International Liaison                            | Mon | 2:30 pm - 4:00 pm   | D-Congo               |
| 318-N       | Nonlinear Dynamic Analysis                       | Sun | 1:00 pm - 5:00 pm   | D-Adventure           |
| 318-R       | High Strength Reinforcement                      | Tue | 1:30 pm - 6:00 pm   | P-Pacific Ballroom A  |
| 318-S       | Spanish Translation                              | Mon | 11:00 am - 12:30 pm | D-Magic Kingdom 1     |
| 325         | Pavements  | Tue | 3:30 pm - 5:30 pm   | P-Pacific Ballroom B  |
| 325-A       | Pavements-Design                                 | Tue | 9:00 am - 10:00 am  | P-Crystal Cove        |
| 325-C       | Pavements-Prestressed and Precast                | Tue | 10:30 am - 11:30 am | P-Crystal Cove        |
| 325-E       | Accelerated Paving                               | Tue | 2:00 pm - 3:30 pm   | P-Crystal Cove        |
| 325-F       | Concrete Pavement Overlays                       | Tue | 12:00 pm - 1:00 pm  | P-Crystal Cove        |
| 325-TG1     | Task Group on Thin Concrete Pavements            | Tue | 1:00 pm - 2:00 pm   | P-Crystal Cove        |
| 327         | RCC Pavements                                    | Tue | 11:00 am - 1:00 pm  | D-Frontier Board Room |
| 329         | Performance Criteria for Ready Mixed Concrete    | Wed | 9:30 am - 11:30 am  | D-Nile                |
| 330         | Parking Lots and Site Paving                     | Wed | 8:00 am - 12:00 pm  | D-Safari              |
| 332         | Residential Concrete                             | Tue | 1:30 pm - 5:00 pm   | D-Columbia            |
| 332-B       | Residential Concrete Materials and Placement     | Sun | 4:00 pm - 5:30 pm   | D-Castle A            |
| 332-D       | Residential Concrete-Footings & Foundation Walls | Tue | 8:30 am - 11:30 am  | D-Columbia            |

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| Code        | Committee  | Day | Time                | Room Name            |
|-------------|--|-----|---------------------|----------------------|
| 332-E       | Residential Concrete-Above Grade Walls           | Tue | 11:30 am - 1:00 pm  | D-Columbia           |
| 332-F       | Residential Concrete-Slabs                       | Tue | 10:30 am - 12:00 pm | D-North Hall G       |
| 334         | Shells   | Mon | 5:00 pm - 7:00 pm   | D-Congo              |
| 335         | Composite and Hybrid Structures                  | Sun | 11:30 am - 1:00 pm  | D-Mississippi        |
| 336         | Footings, Mats and Drilled Piers                 | Sun | 1:30 pm - 5:30 pm   | D-North Hall H       |
| 341         | Earthquake-Resistant Bridges                     | Sun | 3:00 pm - 5:00 pm   | D-North Hall F       |
| 341-A       | Earthquake Resistant Bridges-Columns             | Sun | 10:00 am - 11:30 am | D-Congo              |
| 341-B       | Earthquake Resistant Bridges-Pier Walls          | Sun | 11:30 am - 12:30 pm | D-Congo              |
| 341-C       | Earthquake Resistant Bridges-Retrofit            | Sun | 1:00 pm - 3:00 pm   | D-Congo              |
| 341-D       | Perf-Based Seismic Design                        | Sun | 9:00 am - 10:00 am  | D-Congo              |
| 342         | Bridge Evaluation                                | Sun | 8:30 am - 10:30 am  | D-Monorail C         |
| 343         | Bridge Design                                    | Mon | 10:00 am - 12:00 pm | P-San Diego          |
| 343-G       | Editorial  | Sun | 3:00 pm - 4:00 pm   | D-Zambezi            |
| 345         | Bridge Construction, Maintenance, and Repair     | Sun | 1:30 pm - 3:30 pm   | D-Nile               |
| 347         | Formwork for Concrete                            | Sat | 2:00 pm - 7:00 pm   | D-North Hall F       |
| 347         | Formwork for Concrete                            | Sun | 8:00 am - 12:00 pm  | D-Western            |
| 348         | Structural Reliability and Safety                | Mon | 2:00 pm - 3:30 pm   | D-Zambezi            |
| 349         | Nuclear Structures                               | Tue | 1:30 pm - 5:00 pm   | D-Magic Kingdom 3    |
| 349/359/370 | 349/359/370 Joint Committee Task Group           | Tue | 10:00 am - 12:00 pm | D-Castle A           |
| 349-A&B     | Nuclear Structures-Design & Materials            | Mon | 1:00 pm - 4:30 pm   | D-Monorial B-C       |
| 349-C       | Nuclear Str-Anchorage                            | Mon | 8:00 am - 11:00 am  | D-Magic Kingdom 1    |
| 350         | Environmental Structures                         | Wed | 8:00 am - 4:00 pm   | D-Magic Kingdom 3    |
| 350-A       | Env Str-General & Concrete                       | Tue | 1:00 pm - 5:00 pm   | D-Congo              |
| 350-B       | Env Str-Durability                               | Mon | 8:30 am - 1:00 pm   | D-Wilderness         |
| 350-C       | Env Str-Reinf & Development                      | Sun | 8:30 am - 11:30 am  | P-Pacific Ballroom C |
| 350-D       | Env Str-Structural                               | Mon | 8:30 am - 6:30 pm   | D-North Hall I       |
| 350-E       | Env Str-Precast/Prestressed                      | Sun | 1:00 pm - 5:00 pm   | P-Pacific Ballroom C |
| 350-F       | Env Str-Seismic                                  | Tue | 8:30 am - 12:30 pm  | P-Del Mar            |
| 350-G&K     | Tightness Testing & Hazardous Materials          | Mon | 8:00 am - 12:00 pm  | D-Oasis              |
| 350-H       | Env Str-Editorial                                | Mon | 12:30 pm - 2:00 pm  | D-Oasis              |
| 350-J       | Env Str-Education                                | Tue | 1:00 pm - 3:00 pm   | D-Tiki               |
| 350-L       | Env Str-Specification                            | Tue | 5:00 pm - 6:00 pm   | D-Oasis              |
| 350-SC      | Env Str-Steering Comm                            | Sun | 11:30 am - 1:00 pm  | P-Pacific Ballroom C |
| 351         | Foundations for Equipment and Machinery          | Tue | 10:00 am - 12:00 pm | P-Oceanside          |
| 351-C       | Equipment Foundations Dynamic Foundations        | Mon | 4:30 pm - 6:30 pm   | D-Columbia           |
| 352         | Joints   | Sun | 2:00 pm - 5:00 pm   | D-Safari             |
| 352-TG1     | Slab-Column Joints & Connections                 | Mon | 12:00 pm - 1:30 pm  | P-Oceanside          |
| 352-TG2     | Beam-Column Joints & Connections                 | Sun | 5:00 pm - 5:30 pm   | D-Safari             |
| 355         | Anchorage  | Sun | 1:30 pm - 5:00 pm   | D-Magic Kingdom 1    |
| 357         | Offshore and Marine                              | Tue | 8:00 am - 11:00 am  | D-Outpost            |
| 360         | Slabs on Ground                                  | Sun | 12:30 pm - 2:00 pm  | D-North Hall F       |
| 360         | Slabs on Ground                                  | Mon | 2:00 pm - 6:30 pm   | D-Magic Kingdom 2    |
| 362         | Parking Structures                               | Mon | 1:00 pm - 5:00 pm   | P-Pacific Ballroom A |
| 362-A       | Updating Guide to Struct Maint of Pkg Struct Doc | Sun | 1:00 pm - 4:00 pm   | D-Western            |
| 363         | High-Strength                                    | Sun | 2:30 pm - 5:00 pm   | D-Monorial B         |
| 363-A       | High-Strength Lightweight Concrete               | Tue | 3:30 pm - 5:00 pm   | D-Outpost            |
| 364         | Rehabilitation                                   | Mon | 1:00 pm - 4:00 pm   | P-Pacific Ballroom B |
| 364-A       | Rehabilitation-Editorial Subcommittee            | Mon | 9:30 am - 11:00 am  | D-Tiki               |
| 364-TG1     | Rehabilitation Guide                             | Mon | 11:00 am - 12:00 pm | D-Tiki               |
| 365         | Service Life                                     | Mon | 9:00 am - 11:00 am  | P-Oceanside          |



# Numerical Committee Meeting Listing

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D = Disneyland® Hotel P = Disney's Paradise Pier® Hotel

| Code    | Committee  | Day | Time                | Room Name            |
|---------|--|-----|---------------------|----------------------|
| 369     | Seismic Repair and Rehab   | Mon | 2:00 pm - 6:00 pm   | P-San Diego          |
| 369-A   | General Provision  | Sun | 10:00 am - 12:00 pm | D-Wilderness         |
| 369-C   | Frames   | Sun | 1:00 pm - 3:00 pm   | D-Tiki               |
| 369-D   | Walls  | Sun | 10:00 am - 12:00 pm | D-North Hall H       |
| 369-E   | Diaphragms and Foundations   | Sun | 3:00 pm - 5:30 pm   | D-Tiki               |
| 369-F   | Retrofit   | Sun | 3:00 pm - 5:30 pm   | D-Explorer           |
| 370     | Blast and Impact Load Effects  | Sun | 3:00 pm - 5:00 pm   | D-Castle B           |
| 371     | Elevated Tanks with Concrete Pedestals                                     | Mon | 3:00 pm - 5:00 pm   | D-Outpost            |
| 372     | Tanks Wrapped with Wire/Strand   | Tue | 3:00 pm - 5:00 pm   | D-Oasis              |
| 374     | Seismic Design   | Mon | 8:30 am - 12:00 pm  | D-Castle A-B         |
| 375     | Design for Wind Loads  | Mon | 1:00 pm - 3:30 pm   | P-Crystal Cove       |
| 376     | RLG Containment Structures   | Mon | 1:00 pm - 4:00 pm   | D-Columbia           |
| 376-01  | Steering Subcommittee  | Sun | 10:30 am - 12:00 pm | D-North Hall F       |
| 376-A   | Code, Education & Publication Subcommittee                                 | Mon | 10:00 am - 12:00 pm | D-Explorer           |
| 376-B   | Materials Subcommittee   | Sun | 1:00 pm - 3:00 pm   | D-Outpost            |
| 376-C   | Analysis Subcommittee  | Sun | 3:00 pm - 5:00 pm   | D-Outpost            |
| 376-D   | Design & Construction Subcommittee   | Mon | 8:00 am - 10:00 am  | D-Explorer           |
| 377     | Performance-Based Structural Integrity & Resilience of Concrete Structures | Mon | 10:00 am - 12:30 pm | P-Pacific Ballroom B |
| 378     | Concrete Turbine Tower   | Mon | 8:15 am - 9:30 am   | P-Monterey           |
| 408     | Bond and Development of Steel Reinforcement                                | Sun | 8:30 am - 11:30 am  | D-Magic Kingdom 1    |
| 408-A   | Mechanical Reinforcing Bar Anchorages and Splices                          | Sun | 1:30 pm - 3:30 pm   | P-Oceanside          |
| 421     | Reinf Slabs  | Sun | 10:00 am - 1:00 pm  | D-Adventure          |
| 423     | Prestressed  | Mon | 8:30 am - 12:30 pm  | P-Pacific Ballroom A |
| 423-C   | Corrsn & Repr Grtd Tendons   | Sun | 3:00 pm - 5:00 pm   | D-Amazon             |
| 423-F   | Sustainable Prestressed Concrete   | Sun | 1:00 pm - 3:00 pm   | D-Zambezi            |
| 423-G   | Specification for Unbonded Single-Strand Tendon Materials                  | Mon | 4:00 pm - 6:00 pm   | D-Zambezi            |
| 423/445 | Adhoc Grp on Shear in Prestress Conc                                       | Sun | 4:00 pm - 5:30 pm   | D-Zambezi            |
| 423-TG1 | Unbonded Tendons Task Group  | Sun | 1:00 pm - 3:00 pm   | P-Pacific Ballroom D |
| 423-TG2 | Anchorage Zone Task Group  | Sun | 4:00 pm - 5:30 pm   | P-Pacific Ballroom D |
| 435     | Deflection   | Mon | 3:00 pm - 6:00 pm   | D-Mississippi        |
| 437     | Strength Evaluation  | Mon | 10:30 am - 12:30 pm | D-Columbia           |
| 439     | Steel Reinforcement  | Mon | 8:30 am - 10:30 am  | D-North Hall J       |
| 439-A   | Steel Reinf-Wire   | Sun | 3:30 pm - 5:00 pm   | D-Oasis              |
| 440     | Fiber-Reinforced Polymer   | Tue | 8:00 am - 11:00 am  | D-Disneyland Center  |
| 440-F   | FRP-Repair Strengthening   | Mon | 4:00 pm - 6:00 pm   | D-Magic Kingdom 3    |
| 440-H   | FRP-Reinforced Concrete  | Mon | 12:30 pm - 4:00 pm  | D-Magic Kingdom 3    |
| 440-J   | FRP Stay-in-Place Forms  | Mon | 10:00 am - 11:30 am | D-Magic Kingdom 3    |
| 440-M   | FRP-Repair of Masonry Str  | Mon | 8:30 am - 10:00 am  | D-Magic Kingdom 3    |
| 440-TG3 | Anchorage Task Group   | Mon | 11:00 am - 12:30 pm | D-Adventure          |
| 441     | Reinforced Columns   | Mon | 11:30 am - 2:00 pm  | D-North Hall J       |
| 441-B   | Lateral Reinforcement  | Mon | 9:00 am - 10:00 am  | D-Zambezi            |
| 444     | Structural Health Monitoring and Instrumentation                           | Tue | 8:00 am - 10:00 am  | D-Oasis              |
| 445     | Shear and Torsion  | Mon | 2:00 pm - 6:00 pm   | D-Magic Kingdom 4    |
| 445-A   | Shear & Torsion-Strut & Tie  | Sun | 9:30 am - 12:30 pm  | D-North Hall I       |
| 445-B   | Shear & Torsion-Seismic Shear  | Sun | 9:30 am - 11:30 am  | D-Zambezi            |
| 445-C   | Shear & Torsion-Punching Shear   | Sun | 1:00 pm - 3:00 pm   | D-Castle B           |
| 445-D   | Shear & Torsion-Database   | Sun | 2:00 pm - 5:00 pm   | D-North Hall I       |

# Numerical Committee Meeting Listing

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| Code    | Committee   | Day | Time                | Room Name              |
|---------|---|-----|---------------------|------------------------|
| 445-E   | Shear & Torsion-SOA Torsion                           | Sun | 12:30 pm - 2:00 pm  | D-North Hall I         |
| 446     | Fracture Mechanics                                    | Mon | 8:30 am - 10:00 am  | P-Pacific Ballroom B   |
| 447     | Finite Element Analysis                               | Mon | 11:00 am - 1:30 pm  | P-Pacific Ballroom C-D |
| 506     | Shotcreting   | Tue | 8:30 am - 11:30 am  | P-San Diego            |
| 506-A   | Shotcreting-Evaluation                                | Mon | 12:30 pm - 2:30 pm  | D-Amazon               |
| 506-B   | Shotcreting-Fiber Reinforced                          | Mon | 2:30 pm - 4:00 pm   | D-Amazon               |
| 506-C&E | Shotcreting-Guide & Shotcreting-Specifications        | Mon | 8:30 am - 11:00 am  | D-Amazon               |
| 506-F   | Shotcreting-Underground                               | Mon | 4:00 pm - 5:00 pm   | D-Amazon               |
| 506-H   | Shotcreting-Pools                                     | Sun | 2:00 pm - 3:00 pm   | P-San Diego            |
| 515     | Protective Systems                                    | Tue | 9:00 am - 11:00 am  | D-Explorer             |
| 522     | Pervious Concrete                                     | Tue | 8:00 am - 11:00 am  | D-Safari               |
| 523     | Cellular Concrete                                     | Tue | 8:30 am - 10:30 am  | D-Amazon               |
| 524     | Plastering  | Mon | 8:30 am - 10:00 am  | D-Nile                 |
| 526     | Autoclaved Aerated Concrete                           | Mon | 2:00 pm - 6:00 pm   | D-Tiki                 |
| 526     | Autoclaved Aerated Concrete                           | Tue | 10:30 am - 1:00 pm  | D-Amazon               |
| 533     | Precast Panels  | Mon | 8:30 am - 10:00 am  | P-San Diego            |
| 543     | Piles   | Mon | 8:30 am - 11:30 am  | D-Congo                |
| 544     | Fiber-Reinforced Concrete                             | Tue | 3:00 pm - 5:30 pm   | P-Pacific Ballroom C-D |
| 544-A   | FRC-Production & Applications                         | Mon | 2:00 pm - 5:00 pm   | D-Explorer             |
| 544-C   | FRC-Testing   | Tue | 2:00 pm - 3:00 pm   | P-Pacific Ballroom C-D |
| 544-D   | FRC-Structural Uses                                   | Tue | 12:00 pm - 1:30 pm  | D-Western              |
| 544-E   | FRC-Mechanical Properties                             | Mon | 5:00 pm - 6:30 pm   | D-Explorer             |
| 544-F   | FRC-Durability  | Tue | 10:30 am - 12:00 pm | D-North Hall F         |
| 544-SC  | FRC-Steering Committee                                | Mon | 8:30 am - 10:00 am  | D-Frontier Board Room  |
| 546     | Repair  | Mon | 9:30 am - 11:00 am  | D-Adventure            |
| 546-D   | Bagged Materials                                      | Mon | 8:00 am - 9:30 am   | D-Adventure            |
| 546-E   | Corrosion Studies                                     | Sun | 10:00 am - 11:30 am | D-Explorer             |
| 548     | Polymers and Polymer Adhesives for Concrete           | Tue | 8:30 am - 11:30 am  | D-Western              |
| 548-A   | Polymers-Overlays                                     | Mon | 1:00 pm - 3:00 pm   | P-Del Mar              |
| 548-B   | Adhesives in Concrete                                 | Mon | 3:00 pm - 5:00 pm   | P-Del Mar              |
| 548-TG1 | Updating Guide for the Use of Polymers in Concrete    | Mon | 11:00 am - 12:30 pm | P-Del Mar              |
| 549     | Thin Reinforced Cementitious Products and Ferrocement | Sun | 11:00 am - 1:00 pm  | D-Nile                 |
| 549-L   | Liaison   | Tue | 11:30 am - 5:00 pm  | D-Zambezi              |
| 550     | Precast Structures                                    | Sun | 3:00 pm - 5:00 pm   | D-Monorail C           |
| 551     | Tilt-up   | Sun | 9:00 am - 11:00 am  | D-Safari               |
| 552     | Cementitious Grouting                                 | Tue | 4:00 pm - 5:30 pm   | D-North Hall J         |
| 552-TG1 | Additive Manufacturing                                | Sun | 2:00 pm - 3:30 pm   | D-Frontier Board Room  |
| 555     | Concrete with Recycled Materials                      | Mon | 5:00 pm - 6:30 pm   | D-Amazon               |
| 560     | Design & Constr ICFs                                  | Tue | 8:30 am - 10:30 am  | D-North Hall J         |
| 562     | Evaluation, Repair, and Rehab                         | Sun | 1:00 pm - 5:00 pm   | D-Magic Kingdom 2      |
| 562-A   | General   | Sat | 12:00 pm - 4:00 pm  | D-Nile                 |
| 562-B   | Loads   | Sun | 8:00 am - 10:00 am  | D-Oasis                |
| 562-C   | Evaluation  | Sat | 4:00 pm - 5:00 pm   | D-Monorail A           |
| 562-C   | Evaluation  | Sat | 6:00 pm - 8:00 pm   | D-Monorail A           |
| 562-D   | Design  | Sat | 9:00 am - 12:00 pm  | D-Castle A             |
| 562-E   | Coordination  | Mon | 8:00 am - 10:00 am  | D-Outpost              |
| 562-F   | Durability  | Sat | 6:00 pm - 9:00 pm   | D-Castle A             |
| 563     | Specs Repair of Sruct Concrete in Buildings           | Tue | 1:00 pm - 5:00 pm   | D-Amazon               |

# Sessions & Events

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## Saturday, October 14, 2017

### 8:00 am – 10:00 am

#### **FRPRCS A1—Bond and Anchorage of FRP Bars, Grids, and Laminates to Concrete—D-Disneyland South A**

Sponsored by ACI Committee 440

Moderated by Maria Lopez de Murphy, Modjeski and Masters; and William J. Gold, BASF Corporation

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of the bond and anchorage behavior of FRP bars, plates, and tendons to concrete.

#### **8:00 am: Simulation of Delamination Failures in RC Members Strengthened with CFRP Rod Panels and Laminates**

Issam E. Harik, University of Kentucky; and Akram Jawdhari, University of Kentucky

#### **8:30 am: 2-D Debonding Evolution in FRP Strengthened Plates Under Combined Loading**

Shai Feldfogel, Technion-Israel Institute of Technology; and Oded Rabinovitch, Technion-Israel Institute of Technology

#### **9:00 am: Enhancing FRP-to-Concrete Bond Behavior by Epoxy Interlocking**

Baolin Wan, Marquette University; Cheng Jiang, City University of Hong Kong; and John Omboko, Marquette University

#### **9:30 am: Evaluation and Classification of Anchorage Systems Used to Enhance the Flexural Performance of FRP-Strengthened Concrete Members**

Robin Kalfat, Swinburne University of Technology; Riadh S. Al-Mahaidi, Swinburne University of Technology; and Scott Thomas Smith, Southern Cross University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 8:00 am – 10:00 am

#### **FRPRCS B1—Strengthening of Concrete Structures Using FRP Systems—D-Disneyland North A**

Sponsored by ACI Committee 440

Moderated by Raafat El Hacha, University of Calgary; and Lijuan Cheng, University of California, Davis

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites for the strengthening of reinforced concrete structures.

#### **8:00 am: Post-Tensioned NSM CFRP for Upgrading Concrete Bridges: Modeling, Testing, and Field Application**

Yail Jimmy Kim, University of Colorado Denver; Hee Young Lee and Wonseok Chung, Kyung Hee University; and Yoon Kang, Jong-Sup Park, and Woo-Tai Jung, Korea Institute of Civil Engineering and Building

#### **8:25 am: An Analytical Model to Predict Flexural Behavior of NSM FRP-Strengthened RC Beams Subject to Debonding Failure**

Lijuan Cheng, University of California, Davis; and Cheng Chen, Shenzhen University

#### **8:50 am: Analytical Load-Deflection Behavior of Prestressed Concrete Girders Strengthened with FRP**

Kimberly Waggle Kramer, Kansas State University; and Hayder A. Rasheed, Kansas State University

#### **9:15 am: Experimental Study on Full-Scale Girders Strengthened with Prestressed NSM Tendons**

Woo-Tai Jung, Korea Institute of Civil Engineering and Building Technology; and Jong-Sup Park, Jae-Yoon Kang, and Hee-Beom Park, Korea Institute of Civil Engineering and Building Technology

#### **9:40 am: Influence of the Positioning of CFRP Laminates for Improving Punching Shear Capacity of Column-to-Slab Connections**

Hikmatullah Akhundzada, Kingston University; and Ted Donchev, Diana Petkova, and Abdul Mahboob Samsoor, Kingston University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

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## 8:00 am – 7:30 pm

### ✓ **International Workshop on Structural Concrete and Reception**

\$75 U.S. per person

Sponsored by ACI Committee 318

Co-Chaired by Jack Moehle, University of California, Berkeley; and James Cagley, Cagley & Associates, Inc.

Workshop: 8:00 am – 5:15 pm—*D-Magic Kingdom 3*

Lunch: 12:00 pm – 1:30 pm—*D-Magic Kingdom 4*

Reception: 6:00 pm – 7:30 pm—*D-Magic Kingdom 4*

The International Workshop on Structural Concrete: Technology Advancement and Adoption in the Americas is held every 18 to 24 months in conjunction with The ACI Concrete Convention and Exposition. The primary purpose of this workshop is to gather and share information on the development and application of concrete design standards throughout the Americas and beyond. Following the workshop, network with colleagues at an evening reception featuring a poster session with Young Practicing Engineers. An assortment of food and beverages will be available. Registered guests may attend this reception for an additional fee of \$50.

**PREREGISTRATION IS REQUIRED TO ATTEND.** Tickets may be purchased at the ACI Registration Desk based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.

### 8:00 am – 8:15 am

#### Welcome Remarks

Moderated by James R. Cagley, Cagley & Associates Inc.; and Jack P. Moehle, University of California, Berkeley

### 8:15 am – 9:45 am

#### Session 1—New Tools from ACI

Moderated by James K. Wight, University of Michigan

#### Presentation 1: New Spanish Translations (ACI 301, Tolerances ACI 117, IPS-1 updated to ACI 318-14)

Jose M. Izquierdo Encarnacion, PORTICUS CSP

#### Presentation 2: ACI 318 Chapter 26

Dean A. Browning, Pankow Builders

#### Presentation 3: Update for ACI 318-19

Jack P. Moehle, University of California, Berkeley

#### Discussion

James K. Wight, University of Michigan

### 10:15 am – 12:00 pm

#### Session 2—Nonlinear Analysis in Earthquake-Resistant Design

Moderated by Jack P. Moehle, University of California, Berkeley

#### Presentation 1: USA—Examples

Ronald Klemencic, Magnusson Klemencic Associates

#### Presentation 2: Chile—Examples

Rene F. Lagos, Rene Lagos Engineers

#### Presentation 3: ACI 318 N: Nonlinear Dynamic Analysis

Luis E. Garcia, Universidad de Los Andes

#### Discussion

Jack P. Moehle, University of California, Berkeley

### 12:00 pm – 1:30 pm

#### International Workshop on Structural Concrete Lunch—*D-Magic Kingdom 4*

#### BIM (Building Information Modeling)

William Klorman, Klorman Construction

### 1:30 pm – 3:00 pm

#### Session 3—Seismic Design of Walls

Moderated by Kenneth B. Bondy, Consulting Structural Engineer

#### Presentation 1: Chile—Use of 318 14 and Walls

Leonardo M. Massone, University of Chile

#### Presentation 2: Colombia—Thin Walls

Carlos Arteta, Universidad Del Norte

#### Presentation 3: Mexico—318 14 and Walls

Roberto Stark, Prodigy Network

#### Presentation 4: Summary of the Speakers and Where 318-H is Headed

Andrew G. Taylor, KPFF Consulting Engineers

#### Discussion

Kenneth B. Bondy, Consulting Structural Engineer

### 3:30 pm – 5:00 pm

#### Session 4 – New News

Sponsored by ACI Committee 318

Moderated by James R. Cagley, Cagley & Associates Inc.

#### Presentation 1: Strut and Tie Update

Lawrence C. Novak, Portland Cement Association

#### Presentation 2: High Strength Reinforcing

Dominic J. Kelly, Simpson Gumpertz & Heger

#### Presentation 3: A First Look at the M8.2 Tehuantepec Mexico Earthquake of September 7, 2017

Sergio Alcocer, National University of Mexico

#### Discussion

James R. Cagley, Cagley & Associates Inc.

### 5:00 pm – 5:15 pm

#### Closing Remarks

Moderated by James R. Cagley, Cagley & Associates Inc.; and Jack P. Moehle, University of California, Berkeley

### 6:00 pm – 7:00 pm

#### International Workshop on Structural Concrete Reception featuring the Young Practicing Engineers Poster Session—*D-Magic Kingdom 4*

#### Retrofit and Revitalization of Historic Southern Pacific Warehouse Building

Eric Velazquez, Englekirk Structural Engineers

#### Ministry of Taxation, Baku, Azerbaijan

Lizabeth DuBay, Thornton Tomasetti

#### Westfield University Town Center

Andy Luu, KPFF

#### Cable Stay Bridge Over the Magdalena River—Colombia

Francisco A. Galvis, Universidad de los Andes

#### Museu do Amanha

Rafael Timerman, Engeti-Consultora and Fabricio Gustavo Tardivo, Engeti-Consultora

#### SOMA Hotel

Catherine Chen, ARUP

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## Saturday, October 14, 2017

### 10:15 am – 12:15 pm

#### **FRPRCS A2—Bond and Anchorage of FRP Bars, Grids, and Laminates to Concrete—D-Disneyland South A**

Sponsored by ACI Committee 440

Moderated by Shawn P. Gross Villanova University; and Scott Thomas Smith, Southern Cross University

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of the bond behavior of different FRP-concrete systems.

#### **10:15 am: Quantitative Image Analysis of Concrete-Epoxy Fracture Surfaces**

Yoseok Jeong, Chungnam National University; Maria Lopez de Murphy, Modjeski and Masters; and Charles E. Bakis, Pennsylvania State University

#### **10:45 am: Improving Bond Behavior of Corroded Reinforced Concrete Beams with FRCM Repair**

Rania Al-Hammoud, University of Waterloo; and Miranda Susanne. Anderson, University of Minnesota–Duluth

#### **11:15 am: FRP Bond Strength to Concrete Using Bio-Sourced Resin Wet Layup**

Anne McLissac, Queen's University; and Amir Fam, Queen's University

#### **11:45 am: Effect of Surface Characteristics of FRP Bars on Bond Behavior**

Sandor Solyom, Budapest University of Technology and Economics; and Matteo Di Benedetti and Gyorgy L. Balazs, Budapest University of Technology and Economics



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 10:15 am – 12:15 pm

#### **FRPRCS B2—Testing of FRP Material Characteristics—D-Disneyland North A**

Sponsored by ACI Committee 440

Moderated by Sami Rizkalla, North Carolina State University; and Radhouane Masmoudi, University of Sherbrooke

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of FRP material characteristics.

#### **10:15 am: Nonlinear Angle-Ply Model for Stay-in-Place Tubes by Inverse Mechanics Approach**

Hayder A. Rasheed, Kansas State University

#### **10:45 am: Deterioration of Tensile and Shear Strength of GFRP Bar**

Maria A. Polak, University of Waterloo; and Paulina Arczewska and Alexander Penlidis, University of Waterloo

#### **11:15 am: Bond Behavior of CFRP Bars Prestressed in Self-Consolidating Concrete Beams**

Slamah S. Krem, University of Waterloo; and Khaled A. Soudki, University of Waterloo

#### **11:45 am: Statistical Characterization of Unidirectional Tensile Strength of FRP Composites**

Yihua Zeng, Ghent University; Robby Caspeele, Stijn Matthys and Luc R. Taerwe, Ghent University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 1:15 pm – 3:15 pm

#### **FRPRCS A3—Emerging FRP Systems—D-Disneyland South A**

Sponsored by ACI Committee 440

Moderated by Yail Jimmy Kim, University of Colorado; and John J. Myers, Missouri University of Science and Technology

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using emergent FRP systems in concrete infrastructure.

#### **1:15 pm: Development of a Multifunctional Photovoltaic Integrated Insulated Concrete Sandwich Panel**

An Chen, Iowa State University; and Mostafa Yossef and Austin Downey, Iowa State University

#### **1:40 pm: A Hybrid FRP-Reinforced Slab-On-Truss Girder System for Short and Medium Span Bridges**

Mamdouh M. El-Badry, University of Calgary; Mohammad Moravvej, University of Calgary; and Parham Joulani, COWI North American

#### **2:05 pm: Novel Composites Jacket for Repair of Concrete Structures**

Allan Manalo, University of Southern Queensland; and Ali Abdulkareem Mohammed and Gingshi Maranan, University of Southern Queensland

#### **2:30 pm: Steel-Free Multi-Girder Hybrid Deck System—Design Considerations and Construction Challenges**

Raafat El-Hacha, University of Calgary

#### **2:55 pm: Flexure Strengthening of Reinforced Concrete Beams with Fabric Reinforced Cementitious Mortar (FRCM)**

Trevor N.S. Billows, University of British Columbia; and Ahmad Rteil, University of British Columbia



2 AIA/CES LU

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# Sessions & Events

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## 1:15 pm – 3:15 pm

### **FRPRCS B3—Strengthening of Concrete Structures Using FRP Systems—D-Disneyland North A**

Sponsored by ACI Committee 440

Moderated by Pedro F. Silva, George Washington University; and Hayder A. Rasheed, Kansas State University

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites for the strengthening of reinforced concrete structures.

#### **1:15 pm: Strengthening Short Concrete Columns using Longitudinally Bonded CFRP Laminates**

Pedram Sadeghian, Dalhousie University; and Koosha Khorramian, Dalhousie University

#### **1:40 pm: Shear Strengthening of RC Beams with NSM FRP—Influencing Parameters and a Theoretical Model**

Amir Mofidi, McGill University; Lijuan Cheng, University of California, Davis; Omar Chaallal, University of Quebec; and Yixin Shao, McGill University

#### **2:05 pm: Shear Strengthening of Large-Scale Concrete Bridge Sections Using CFRP Sheets and Anchors, and Quality-Control Procedures**

Wassim M. Ghannoum, University of Texas at San Antonio; Nawak K. Alotaibi, Kuwait University; Chang Hyuk Kim, Sungkyunkwan University, Yungon Kim, Daegu University, Douglas Pudleiner, Intelligent Engineering Services; Kevin Quinn, Haris Engineering; Neil Satrom, Dudley Williams and Associates, William Shekarchi, Jacobs Engineering; Wei Sun, Lanzhou University; Helen Wang, Bechtel OG&C, Inc.; and Jose Garcia and James O. Jirsa, University of Texas at Austin

#### **2:30 pm: Analysis of the Role of Horizontal and Vertical Component of CFRP Grid in Shear Strengthening for RC Beam**

Ngoc Linh Vu, Tokyo Metropolitan University; and Kimitaka Uji, Tokyo Metropolitan University

#### **2:55 pm: Strengthening of Damaged Reinforced Concrete Beams using Externally Bonded Fiber Reinforced Polymer**

Salah Altoubat, University of Sharjah; and Abdul Saboor Karzada and Mohammed Maaleja, University of Sharjah



2 AIA/CES LU

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## 3:30 pm – 5:30 pm

### **FRPRCS A4—Global Codes and Standards—D-Disneyland South A**

Sponsored by ACI Committee 440

Moderated by Vicki Brown, Widener University; and Ravindra Kanitkar, KL Structures Group

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP-reinforced or -strengthened concrete structures and will be aimed at providing insights needed for improving existing design guidelines.

#### **3:30 pm: Effect of GFRP Compression Reinforcement on Long-Term Deflections**

Stephanie L. Walkup, Villanova University; and Shawn P. Gross and Eric S. Musselman, Villanova University

#### **4:00 pm: ACI 440.2R and the New Seismic Strengthening Guidelines using FRP**

Pedro F. Silva, The George Washington University; and Ravindra Kanitkar, KL Structures Group

#### **4:30 pm: Case-Specific Parametric Analysis as Research-Directing Tool for Analysis and Design of GFRP-RC Structures**

Marco Rossini, University of Miami; Eleonora Bruschi and Antonio Nanni, University of Miami; and Fabio Matta, University of South Carolina

#### **5:00 pm: Confinement Model for Concrete Columns Reinforced with GFRP Spirals**

Priyank Sankholkar, Concrete Timber Steel Engineering Ltd.; and Chris P. Pantelides, University of Utah



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 3:30 pm – 5:30 pm

### **FRPRCS B4—Advances in Uses of FRP in Concrete and Masonry—D-Disneyland North A**

Sponsored by ACI Committee 440

Moderated by Issam E. Harik, University of Kentucky; and Pedram Sadeghian, Dalhousie University

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP in concrete and masonry structures.

#### **3:30 pm: Confinement of Concrete Elements with FRM Composites: What Do We Know So Far?**

Lesley H. Sneed, Missouri University of Science and Technology; and Jamie Gonzales-Libreros, Carlo Pellegrino, Cristian Sabau, and Gabriel Sas, Lulea University of Technology



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## Saturday, October 14, 2017

### 4:00 pm: Experimental and Analytical Investigations on CFFT Columns with FRP Internal Bars Under Axial Cyclic Compression Loading

Radhouane Masmoudi, University of Sherbrooke; and Asmaa Abdeldaim Ahmed, University of Sherbrooke

### 4:30 pm: Review of FRCM Strengthening Solutions for Structural Wall Panels

Cristian Sabau, Lulea University of Technology; and Cosmin Popescu, Gabriel Sas, Thomas Blanksvard, and Bjorn Taljsten, Lulea University of Technology

### 5:00 pm: Research and Development of Concrete-Infilled FRP Pultruded Tubes

Thiru Aravinthan, University of Southern Queensland; and Weena Lokug and Ali Umran Alsaddi, University of Southern Queensland



2 AIA/CES LU

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## 6:00 pm – 8:00 pm

### ✓ FRPRCS Reception—D-Mark Twain

#### \$54 U.S. per person

Sponsored by ACI Committee 440

Join us after the first day of sessions for a cocktail reception. The reception will provide great networking opportunities with global leaders in the use of FRP for concrete and masonry structures. You can interact directly with speakers and gain valuable insight into the research and applications of FRP reinforcement and strengthening of structures.

**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.

## 8:00 pm – 10:00 pm

### Student Networking Reception—D-Magic Kingdom 1

Sponsored by ACI Student and Young Professional Activities Committee

The ACI Student and Young Professional Activities Committee (SYPAC) invites all students, faculty advisors, and convention mentors to the Student Networking Reception. This casual and fun environment is an opportunity to engage with future concrete professionals and professors. Students will be entered into a drawing for door prizes. In addition, pizza and beverages will be provided for free on a first-come, first-served basis.

## Sunday, October 15, 2017

### 8:00 am – 9:00 am

#### Convention Orientation Breakfast—D-Magic Kingdom 3

Moderated by Lawrence Homer Taber, Black & Veatch.

First-time convention attendees are invited to join a member of the ACI Convention Committee for a continental breakfast and brief session to orient you to the week ahead. Attendees will have the opportunity to meet other first-time convention attendees, connect with convention mentors, and learn about what The ACI Convention and Exposition has to offer.

### 8:00 am – 10:00 am

#### Early-Age Property Development in Concrete with Supplementary Cementing Materials, Part 1 of 2—D-Disneyland South B

Sponsored by ACI Committees 231, 232, and 236

Moderated by Narayanan Neithalath, Arizona State University; and Gaurav N. Sant, University of California, Los Angeles

A wide variety of cement replacement materials are being used in concrete. It is important to understand and predict the early-age response of concrete containing these materials. This session will cover all aspects of early-age property development in concrete with supplementary cementing/cement replacement materials, including laboratory investigations and field practices. The session will provide attendees with state-of-the-art information on early-age response of concretes with multiple-blend binders, advances in early-age property characterization methods, and simulation of the early-age response, in an effort to design and proportion sustainable binders.

#### 8:00 am: X-Ray Fluorescence to Measure Composition of Cementitious Pore Solutions Containing Supplementary Cementitious Materials

W. Jason Weiss, Oregon State University; Prannoy Suraneni, ETH Zürich; and Marisol Chung, Oregon State University

#### 8:20 am: Experimental and Numerical Methods Quantifying Tricalcium Silicate Hydration with Metakaolin and Silica Fume

Aditya Kumar, Missouri University of Science and Technology; Rachel Cook, Arizona State University; and Jonathan Lapeyre and Dimitri Feyes, Missouri University of Science and Technology

#### 8:40 am: Investigating the Functionality of Limestone Powders as Mineral Plasticizers in Cement-Based Materials

Scott Z. Jones, National Institute of Standards and Technology; Didier Lootens, Sika Technology AG; and Dale P. Bentz and Paul Stutzmann, National Institute of Standards and Technology

#### 9:00 am: Analytical and Quantitative Measurement of Surface Moisture Transport, Strain Distribution, and Plastic Shrinkage Cracking in Early-Age Mortar with Wollastonite

Barzin Mobasher, Arizona State University; Mehdi Bakshi, AECOM; Yiming Yao and Mansour Zenouzi, Arizona State University; and Amir Bonakdar, The Euclid Chemical Company

#### 9:20 am: Early-Age Behavior of Metakaolin-PLC Combinations

Behnaz H. Zaribaf, Georgia Institute of Technology; and Kimberly E. Kurtis, Georgia Institute of Technology

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## 9:40 am: Early-Age Fracture Resistance of Cementitious Materials, An Experimental Investigation

Christian Hoover, Arizona State University



2 AIA/CES LU

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## 8:00 am – 10:00 am

### Field Experience and Structural Performance of Self-Consolidating Concrete in High-Rise and Bridge Construction—D-Disneyland North B

Sponsored by ACI Committee 237

Moderated by Kamal H. Khayat, Missouri University of Science and Technology

The use of self-consolidating concrete (SCC) in precast and cast-in-place applications has been growing steadily worldwide, with SCC becoming the material of choice to facilitate concrete placement in highly restricted sections and in extreme placement conditions. This includes high-rise building construction, such as the One World Trade Center in New York City, Burj Khalifa in Dubai, and the Jeddah Tower in Saudi Arabia. The objective of this session is to highlight recent projects involving design and construction of SCC for high-rise building and major bridge construction projects, and the potential obstacles to further implementation of SCC. Lessons learned for concrete producers, structural designers and architects, and contractors will be addressed. Several important examples regarding the structural performance of SCC will be highlighted, including strength development, elastic moduli, bond strength to embedded steel, prestress losses, shrinkage, and permeability. The session will be beneficial to practicing professionals dealing with the structural design and construction of SCC.

### 8:00 am: Successful High-Performance Concrete for Tall Buildings in North America

William S. Phelan, The Euclid Chemical Company

### 8:20 am: Performance of Self-Consolidating Concrete Developed for Iconic and High-Rise Structures in North America

Van K. Bui, BASF Construction

### 8:40 am: VDOT's SCC Applications in Beams and Lessons Learned

H. Celik Ozyildirim, Virginia Transportation Research Council

### 9:00 am: Shear and Bond Strength of Self-Consolidating Concrete for Cast-in-Place Bridge Applications

George Morcouc, University of Nebraska–Lincoln

### 9:20 am: Structural Performance of Alabama's First SCC Precast, Prestressed Girder Bridge

Samuel Keske, Wiss, Janney, Elstner Associates, Inc.; and Robert Barnes and Anton Karel Schindler, Auburn University

### 9:40 am: Effect of Fiber Type on Engineering Properties and Structural Performance of Fiber-Reinforced Self-Consolidating Concrete

Kamal H. Khayat, Missouri University of Science and Technology; and Ahmed Abdelrazik, Missouri University of Science and Technology



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:00 am – 10:00 am

### FRPRCS A5—Seismic Resistance of Concrete Structures Using FRP Materials—D-Disneyland South A

Sponsored by ACI Committee 440

Moderated by Lijuan Cheng, University of California, Davis; and William J. Gold, BASF Corporation

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites in seismic structural applications.

### 8:00 am: Rapid Seismic Repair of Severely Damaged Precast Reinforced Concrete Bridge Piers with CFRP Shell

Chris P. Pantelides, University of Utah; and Ruoyang Wu, University of Utah

### 8:30 am: Seismic Performance of Interior GFRP-RC Beam-Column Joints

Ehab F. El-Salakawy, University of Manitoba; and Shervin Khalili Ghomi, University of Manitoba

### 9:00 am: Seismic Evaluation of RC Frame Members Strengthened with CFRP NSM Bars

Elias I. Saqan, American University in Dubai; Hayder A. Rasheed, Kansas State University; and Tarek Alkhrdaji, Structural Technologies

### 9:30 am: Seismic Strengthening of Reinforced Concrete Columns with Straight Carbon Fiber-Reinforced Polymer (CFRP) Anchors

Enrique Del Rey Castillo, University of Auckland; Jason Ingham, University of Auckland, and Michael Griffith, The University of Adelaide



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:00 am – 10:00 am

### FRPRCS B5—Strengthening of Concrete Structures Using FRP Systems—D-Disneyland North A

Sponsored by ACI Committee 440

Moderated by Raafat El-Hacha, University of Calgary; and Maria Lopez de Murphy, Modjeski and Masters

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites for the strengthening of reinforced concrete structures.

### 8:00 am: Investigation of CFRP Torsional Strengthening of RC Beams Using DIC Photography

Ghaidak Ahmed Fadhil Al-Bayati, Swinburne Institute of Technology; and Riyadh S. Al-Mahaidi and Robin Kalfat, Swinburne University of Technology

# Sessions & Events

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## Sunday, October 15, 2017

### 8:30 am: Shear Strengthening of Reinforced Concrete Beams Using Externally Bonded Small-Diameter Carbon Strands

Judy Soliman, Ain Shams University; Tarek K. Hassan, Ain Shams University; and Sami H. Rizkalla, North Carolina State University

### 9:00 am: Behavior of Concrete Columns Under the Confinement of Lateral Steel Hoops and FRP

Ahmed Abd El Fattah, King Fahd University of Petroleum and Minerals; Mukhtar Azeez King Fahd, University of Petroleum and Minerals; and Hayder A. Rasheed, Kansas State University

### 9:30 am: Influence of EB-CFRP on Cracks for Reinforced Concrete Beams Strengthening

Emmanuel Ferrier, Claude Bernard University Lyon 1; and Carmelo Caggegi and Laurent Michel, Claude Bernard University Lyon 1



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 9:30 am – 4:00 pm

### Student Egg Protection Device Competition— D-South Exhibit Hall

Sponsored by ACI Committee S801  
Moderated by Walter H. Flood IV, Flood Testing Labs Inc.

The objective of this competition is to design and build the highest-impact, load-resistant, plain or reinforced concrete egg protection device (EPD). Students will learn about and report on concrete's impact resistance, reinforcing steel design, and other real-life aspects that an EPD simulates. Testing will begin early and continue until only crushed EPDs and mangled reinforcing bar remain. The winners will be announced during the Student Lunch, and the top three entries will receive prizes. Check-in for this competition begins at 9:00 am.

## 10:00 am – 11:30 am

### ACI International Forum—D-Magic Kingdom 4

Chaired by Vice President David A. Lange, University of Illinois

The ACI International Forum provides an opportunity for convention attendees to meet and learn from ACI international partners, ACI chapter representatives, and ACI leadership about worldwide events, activities, initiatives, and common themes of interest to the concrete materials, design, and construction industry.

Speakers include: Hasan J. Al Nawadi and Rafal Anay Wadee, Iraq Chapter – ACI; Chang-Sik Choi, Korea Concrete Institute (KCI); Paolo Casadei, Italy Chapter – ACI; Hitoshi Shiohara, Japan Concrete Institute (JCI); Surendra Manjrekar, India Chapter – ACI; Nemkumar Banthia, Canada India Research Center of Excellence; Jordan Concrete Association/Jordan Engineering Association (JCA/JEA) speakers; Andres Lee, INCYC Nicaragua; and others.

## 10:15 am – 12:15 pm

### FRPRCS A6—FRP Reinforcement of Concrete and Masonry Walls—D-Disneyland South A

Sponsored by ACI Committee 440  
Moderated by Carol Shield, University of Minnesota; and Rudi Seracino, North Carolina State University

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites for the reinforcement of concrete and masonry walls.

### 10:15 am: Assessment of FRP Strengthening Configurations and Anchorage Systems for URM Walls Under In-Plane Loading

Nancy Torres, Escuela Colombiana de Ingenieria; and Julio Garavito and Gustavo Tumialan, Simpson Gumpertz & Heger Inc., and Camilo Vega, Ingetec Ingenieros Consultores

### 10:45 am: Evaluation of FRP and FRCM Composites for the Strengthening of Reinforced Masonry Walls

John J. Myers, Missouri University of Science and Technology; and Zuhair K. Al-Jaberi and Mohamed A. ElGawady, Missouri University of Science & Technology

### 11:15 am: Masonry Walls Reinforced with FRP Bars Subjected to Out-of-Plane Loading

Gustavo Tumialan, Simpson Gumpertz & Heger Inc.; and Nancy Torres and Alfonso Quintana, Escuela Colombiana de Ingenieria, and Juilo Garavito and Antonio Nanni, University of Miami



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 10:15 am – 12:15 pm

### FRPRCS B6—Field Applications and Case Studies—D-Disneyland North A

Sponsored by ACI Committee 440  
Moderated by John Busel, American Composites Manufacturers Association; and Sarah Witt, Consultant

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize field applications and case studies of using FRP composites for internal reinforcement of concrete.

### 10:15 am: Implementation of Closed GFRP Stirrups in FRP-RC Design of Traffic Barriers

Paolo Rocchetti, University of Miami; and Guillermo Claire, Francisco de Caso y Basalo, and Antonio Nanni, University of Miami

# Sessions & Events

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## 10:45 am: A Design Approach for FRP Anchors in FRP-Strengthened RC Structures

Enrique del Rey Castillo, University of Auckland; Jason Ingham, University of Auckland; Scott Thomas Smith, Southern Cross University; Ravi Kanitkar, KL Structures Group; and Michael Griffith, University of Adelaide

## 11:15 am: State-of-the-Practice of Global Manufacturing of FRP Rebar and Specifications

Alvaro Ruiz Empanaza, University of Miami; Raphael Kampmann, Florida State University; and Francisco de Caso y Basalo, University of Miami

## 11:45 am: Evaluation of Prestress Stress Relaxation Losses and Harping Strength Reduction of Prestressing CFRP Cables and Bars

Abdeldjelil Belarbi, University of Houston; Hamidreza Tahsiri and Mina M. R. Dawood, University of Houston; and Bora Gencturk, University of Southern California



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 10:30 am – 12:30 pm

### *Early-Age Property Development in Concrete with Supplementary Cementing Materials, Part 2 of 2—D-Disneyland South B*

Sponsored by ACI Committees 231, 232, and 236  
Moderated by Narayanan Neithalath, Arizona State University; and Gaurav N. Sant, University of California, Los Angeles

The session description for this session may be found in the Part 1 listing; refer to page 28.

### 10:30 am: Influence of Silica Fume and PCE Dispersant on Hydration Mechanisms of Cement

Aditya Kumar, Missouri University of Science and Technology; and Piyush Lunkad, Kamal H. Khayat, and Weina Meng, Missouri University of Science and Technology

### 10:45 am: The Filler Effect: The Influence of Filler Content and Type on the Hydration Rate of Tricalcium Silicate

Gaurav N. Sant, University of California, Los Angeles; Jeffrey W. Bullard, National Institute of Standards and Technology; Tandre Oey, University of California, Los Angeles; and Aditya Kumar, Missouri University of Science and Technology

### 11:00 am: Impact of Remediated and Reclaimed Fly Ash on Early-Age Properties

Maria G. Juenger, University of Texas at Austin; and Raissa P. Ferron, Saif Al-Shmaisani, and Ryan Kalina, University of Texas at Austin

### 11:15 am: The Effect of Temperature and Supplementary Cementing Materials on the Strength Development of Concrete

Anton Karel Schindler, Auburn University

### 11:30 am: The Influence of Curing on the Early-Age Properties of Ternary Concrete

Jan Olek, Purdue University; Tommy Edward Nantung, Indiana DOT; and Mateusz Radlinski, Exponent

### 11:45 am: High-Volume Fly Ash Concrete—Early-Age Properties and Specifications

Karthik H. Obla, National Ready Mixed Concrete Association

## 12:00 pm: The Effect of Slag Cement Composition on Concrete Early-Age Properties

Kyle Austin Riding, University of Florida; and Abba Zayed, Ananya Markandeya, and Natalia Shanahan, University of Florida



2 AIA/CES LU

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## 10:30 am – 12:30 pm

### *Performance-Based Design—D-Disneyland North B*

Sponsored by ACI Committee 341  
Moderated by Shahria Alam, University of British Columbia; and Ahmed M. Abdel-Mohti, Ohio Northern University

This session aims to provide the current knowledge in performance-based design of bridges. Bridges are a critical component of our infrastructure system and failure of bridges is a safety issue. More progress has been made in performance-based design in seismic analysis of buildings than that of bridges. AASHTO seismic requirements are based on the level of ductility of structural members, importance of the structure, level of deformation, and soil conditions. On the other hand, performance-based design is based on having bridge performance achieve defined performance criteria such as strength, ductility, or deformation. The session contains presentations of experimental and/or analytical research focusing on the performance-based design of bridges and bridge components.

### 10:30 am: Design Alternatives and Evaluation of Performance-Based Designed Bridge Pier

Shahria Alam, University of British Columbia

### 10:50 am: Seismic Design of Shape Memory Alloy Reinforced Concrete Bridge Pier

AHM Muntasir Billah, University of British Columbia; and Shahria Alam, University of British Columbia

### 11:10 am: A Probabilistic Approach to Evaluate the Effect of Viscous Damping Modeling Characteristics of Concrete Bridges on the Seismic Demands

Mohamed Moustafa, University of Nevada, Reno

### 11:30 am: Comparing the Seismic Performance of Conventional and Novel Structural Systems Using PBEE

Dawn E. Lehman, University of Washington; Charles W. Roeder, University of Washington; and Max Stephens, Stephens & Johnson Operating Company

### 11:50 am: Performance of Horizontally Curved Highway Bridge with Seismic Isolation

Eric V. Monzon, University of Nevada, Reno

### 12:10 pm: Performance Limit States of Reinforced Concrete Filled Steel Tube Drilled Shafts

Diego A. Aguirre-Realpe, North Carolina State University



2 AIA/CES LU

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# Sessions & Events

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## Sunday, October 15, 2017

### 11:30 am – 1:30 pm

#### ✓ *International Lunch—D-Magic Kingdom 3*

\$30 U.S. per person

#### **Topic: Cooperative Efforts between Academia and Industry for the Development of Concrete Technology in Korea**

Sponsored by the ACI International Advisory Committee  
Speakers: Jae-Hoon Lee, Yeungnam University; and Hong Gun Park, Seoul National University

This presentation will introduce Korean experience in developing national standards and concrete technology since the 1960s, when large-scale construction of buildings and infrastructures began. At the early stage as a developing country, a lot of effort was needed due to very limited knowledge and information on concrete technology. During the last two decades, various research programs have been conducted to develop more rational design code and concrete technology, which enables Korean engineers to design and construct diverse civil structures and buildings in Korea. Particularly, in this presentation, the roles of the Korea Concrete Institute and universities on the development of concrete technology and construction of Korea will be presented, showing several instances of infrastructures and mega-buildings.

**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.

### 12:30 pm – 4:00 pm

#### **Student Eco Concrete Competition—D-South Exhibit Hall**

Sponsored by ACI Committee S801 and ACI Subcommittee 130-G  
Moderated by Walter H. Flood IV, Flood Testing Labs Inc.

This new student competition aims to promote the idea of environmental performance in concrete mixture design as an important aspect of sustainability. For the first-time run of the new student competition, 20 teams have the mission to develop an innovative concrete mixture that must have the lowest possible environmental impact while maintaining optimal mechanical and durability performance. After designing their concrete mixture, teams are asked to perform a simplified lifecycle assessment (LCA) and present their results in a written report. At the competition, teams will have a poster to present their innovative concrete to the audience and judges, with an emphasis on environmental aspects considered in their design, and their mixture will be checked for durability by testing the resistivity. Winners will be announced on Monday at the Student Lunch. Check-in for this competition begins at 9:00 am.

### 1:00 pm – 3:00 pm

#### **ACI 201.2R-16: Updated Guidance on Concrete Durability—D-Disneyland South B**

Sponsored by ACI Committee 201

Moderated by Thomas J. Van Dam, Nichols Consulting Engineers; and R. Doug Hooton, University of Toronto

This session is organized to introduce the new ACI 201.2R-16, "Guide to Durable Concrete." In the presentations, the chapter leaders discuss various aspects of what makes concrete "durable." Topics include mass transport, susceptibility to freezing and thawing, alkali-aggregate reactivity, sulfate attack, aggressive chemicals, physical salt attack, corrosion, and abrasion. All engineers and contractors responsible for designing, specifying, and constructing with concrete should attend to learn about the most recent findings with regards to concrete durability.

#### **1:00 pm: Introduction: What is Durable Concrete?**

Thomas J. Van Dam, Nichols Consulting Engineers

#### **1:15 pm: Mass Transport in Concrete**

Rachel J. Detwiler, Beton Consulting Engineers, LLC; and Tyler Ley, Oklahoma State University

#### **1:30 pm: Freezing and Thawing of Concrete**

Donald J. Janssen, University of Washington; and Tyler Ley, Oklahoma State University

#### **1:45 pm: Alkali-Aggregate Reactivity**

Michael D. A. Thomas, University of New Brunswick

#### **2:00 pm: Sulfate Attack**

R. Doug Hooton, University of Toronto

#### **2:15 pm: Chemical Attack**

David A. Rothstein, DRP Consulting Inc.

#### **2:30 pm: Corrosions of Metals**

David Trejo, Oregon State University

#### **2:45 pm: Physical Salt Attack**

Harvey H. Haynes, Haynes & Associates; and Mohamed Basuoni, University of Manitoba



2 AIA/CES LU

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### 1:00 pm – 3:00 pm

#### **Influence of Early-Age Properties on Crack Development and Long-Term Durability, Part 1 of 2—D-Disneyland North B**

Sponsored by ACI Committees 201, 211, 224, 225, 231, 232, 233, 325, and 365

Moderated by Jussara Tanesi, SES Group Associates; and Benjamin E. Byard, Tennessee Valley Authority

The causes for concrete pavement cracking and how they are related to the development of early-age properties and their effect on long-term durability will be explored during this session. This includes:

- The effect of mixture design (including materials used and proportion of materials) on early-age properties and bridge deck and/or concrete pavement cracking

# Sessions & Events

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- The influence of construction practices on early-age properties and bridge deck and/or concrete pavement cracking
- The impact of specifications on early-age properties and bridge deck and/or concrete pavement cracking
- The relation between bridge deck and/or concrete pavement cracking caused by early-age properties development and the reduction of long-term durability
- Early-age measurement techniques that can evaluate early-age properties that are most related to bridge deck and/or concrete pavement cracking
- Quality assurance practices to prevent cracking
- Case studies

## 1:00 pm: Application of Non-Contact Ultrasonic System for Estimating Saw Cut Timing Window of Concretes

Quang Ngoc Vinh Tran, University of Illinois at Urbana-Champaign; and John S. Popovics and Jeffery R. Roesler, University of Illinois at Urbana-Champaign

## 1:20 pm: Use of Superabsorbent Polymers to Reduce Shrinkage Cracking in Concrete Elements

W. Jason Weiss, Oregon State University; Armen Amirkhanian, University of Illinois at Urbana-Champaign; Luca Montanari, Oregon State University; and Prannoy Suraneni, ETH Zürich

## 1:45 pm: Early-Age Temperature Evolution in Concrete Pavements Containing Microencapsulated Phase Change Materials: Design Insights from Finite Element Modeling

Gabriel Falzone, University of California, Los Angeles; Benjamin Young, Zhenhua Wei, Laurent Pilon, and Gaurav Sant, University of California, Los Angeles; and Narayanan Neithalath, Arizona State University

## 2:10 pm: A Case Study of Very Early-Age Concrete Cracking in Airfield Pavement

Mateusz Radlinski, Exponent; Brian McDonald, Exponent; and Amal Puthur-Jayapalan, Georgia Institute of Technology

## 2:35 pm: A Field and Laboratory Study of the Effect of Early-Age Cracking Mitigation Measures on Stress Development in Realistic Concrete Mixtures

Dhanushika Vidarshanee Gunatilake, University of South Florida; and Ananya Markandeya, Ahmadreza Sedaghat, Natallia Shanahan, K.A. Riding, and A. Zayed, University of South Florida



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:15 pm – 3:15 pm

### FRPRCS A7—Effects of Extreme Events on FRP-Reinforced/Strengthened Structures—D-Disneyland South A

Sponsored by ACI Committee 440

Moderated by DJ Belarbi, University of Houston; and Hakim Bouadi, Walter P Moore

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of extreme events on FRP-reinforced or -strengthened concrete.

## 1:15 pm: Post-Fire Evaluation of FRP Reinforcement in RC Slabs

Guillermo Claire, University of Miami; and Francisco de Caso y Basalo and Antonio Nanni, University of Miami

## 1:45 pm: Numerical Simulation of AFRP Rod NSM RC Beams Under Falling-Weight Impact Loading

Masato Komuro, Muroran Institute of Technology, Japan; Yusuke Kurihashi and Tomoki Kawarai, Muroran Institute of Technology; and Norimitsu Kishi, National Institute of Technology, Japan

## 2:15 pm: Impact Tests of RC Beams Flexurally Strengthened with CFRP Material

Norimitsu Kishi, National Institute of Technology, Japan; Masato Komuro and Yusuke Kurihashi, Muroran Institute of Technology, Japan; and Hiroshi Mikami, TRI of Sumitomo-Mitsui Construction Co., Ltd

## 2:45 pm: CFRP Repairing System at Openings in Reinforced Concrete T-Beams Cracked by Impact Loads

Nazar Oukaili, University of Baghdad; and Abeer Al-Shammari, University of Baghdad



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:15 pm – 3:15 pm

### FRPRCS B7—Effect of Environment on Durability—D-Disneyland North A

Sponsored by ACI Committee 440

Moderated by Brahim Benmokrane, University of Sherbrooke; and Maria A. Polak, University of Waterloo

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of the effects of the environment on the durability of FRP-reinforced or -strengthened concrete structures.

## 1:15 pm: Advantages of Pre-Saturated FRP Systems for Extending Service Life of Concrete Members in Wet and Dry Environments

Erblina Vokshi, Neptune Research Inc.

## 1:45 pm: Interface between Carbon Fiber-Reinforced Polymer Sheets and Concrete Exposed to Freeze-Thaw Cycles

Wanting Wang, University of Colorado, Denver; and Yail Jimmy Kim, University of Colorado, Denver

## 2:15 pm: Characteristics of FRP Pretensioned Concrete Beams after Long-Term Exposure

Hirofumi Watanabe, Kawada Construction Company, Ltd.; Hiroshi Nakai, Maeda Kohsen Co., Ltd; and Tsuyoshi Enomoto, Tokyo Rope Company, Ltd.; and Taketo Uomoto, Public Works Research Institute

## 2:45 pm: Flexural Behavior of GFRP-UFC Composite Beams under Moderately High Temperature

Isuru Sanjaya Kumara Wijayawardane, Saitama University; and Hiroshi Mutsuyoshi, Saitama University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_



# Sessions & Events

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## Sunday, October 15, 2017

### 3:00 pm – 4:00 pm

#### **MINI SESSION: Quality in Concrete: Auditing—P-Crystal Cove**

Sponsored by ACI Committee 121

Moderated by Michelle E. Walters, Hatch

How can we determine the health of an organization in terms of an organized approach, efficiency, and control of processes? What is the role of quality in the organization? How far-reaching is the Quality Management System? Does it concern only quality control, or does it look beyond testing and inspection, and into overall management of the organization to include continuous improvement, customer feedback, and employee training and involvement? Does the scale of it fit the organization? Is it for real or only a dusty old book on a shelf? Auditing is one tool of an overall quality management program that can indicate the health of a system by checking the earmarks of good practices. How does an audit occur? What questions do you ask? This mini-session will address the audit process of various disciplines within the concrete industry, including both the Contractor and Architect-Engineer, and provide examples of audit processes on projects.

#### **3:00 pm: Introductions**

Michelle E. Walters, Hatch

#### **3:10 pm: 121.1R-16 – Guide to Quality Management Auditing in the Concrete Industry**

Thomas G. Tyler, Skanska USA Civil Northeast

#### **3:30 pm: Quality Auditing Guide and Industry Practices**

Jinesh K. Mehta, Alta Vista Solutions, Inc.; and Divyesh B. Vora, California Department of Transportation



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 3:30 pm – 5:00 pm

#### **FRPRCS A8—Design and Performance Under Long-Term Loading and Environmental Exposure—D-Disneyland South A**

Sponsored by ACI Committee 440

Moderated by Antonio Nanni, University of Miami and Doug Gremel, Owens Corning Infrastructure Solutions, LLC

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of FRP-reinforced or strengthened concrete structures under long term loading and environmental exposure.

#### **3:30 pm: Very Stiff Pultruded FRP Elements for Non-Continuous Reinforcement of Concrete**

Ardavan Yazdanbakhsh, City College of New York; and Lawrence C. Bank, City College of New York

#### **4:00 pm: Durability of GFRP Reinforcement in Seawater Concrete**

Morteza Khatibmasjedi, University of Miami; and Antonio Nanni, University of Miami

#### **4:30 pm: Meso-Scale Concrete Model for Failure Simulation in Glass FRP Reinforced Concrete Structures**

Sina Khodaie, University of South Carolina; and Fabio Matta, University of South Carolina



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 3:30 pm – 5:30 pm

#### **FRPRCS B8—Advances in Uses of FRP in Concrete and Masonry—D-Disneyland North A**

Sponsored by ACI Committee 440

Moderated by Amir Fam, Queen's University and Stephanie L. Walkup, Villanova University

This international symposium attracts interest from researchers, practitioners, and manufacturers involved in the use of fiber-reinforced polymers (FRPs) as reinforcement for concrete structures. This includes the use of FRP reinforcement in new construction and FRP for strengthening and rehabilitation of existing structures. This session will emphasize the experimental, analytical, and numerical validations of using FRP composites for concrete and masonry structures.

#### **3:30 pm: Testing and Finite Element Analysis of GFRP Reinforced Concrete Frame Joints**

Nader Sleiman, University of Waterloo; and Ryan Barrage, Graeme J. Milligan, and Maria A. Polak, University of Waterloo

#### **4:00 pm: FRP Shear Friction Reinforcement for Concrete Joints**

Amr Abdel Fattah El Ragaby, University of Windsor; and Faouzi Ghrib, Jihad Alkatan, and Mofrhe Alruwaili, University of Windsor

#### **4:30 pm: Column-Footing Connection Evaluation of Hollow-Core Composite Bridge Columns**

Mohamed A. ElGawady, Missouri University of Science and Technology; and Mohanad M. Abdulazeez, Ahmed Ghen, and Omar I. Abdelkarim, Missouri University of Science and Technology

#### **5:00 pm: Size Effect in FRP RC Beams with and without Shear Reinforcement**

Szymon Cholostiakow, University of Sheffield; Matteo Di Benedetti and Maurizio Guadagnini, University of Sheffield; and Emanuele Zappa, Polytechnic University of Milan



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 3:30 pm – 5:30 pm

### ***Influence of Early-Age Properties on Crack Development and Long-Term Durability, Part 2 of 2—D-Disneyland North B***

Sponsored by ACI Committees 201, 211, 224, 225, 231, 232, 233, 325, and 365

Moderated by Jussara Tanesi, SES Group Associate; and Benjamin E. Byard, Tennessee Valley Authority

The session description for this session may be found in the Part 1 listing; refer to page 32.

#### **3:30 pm: Low-Shrinkage Fiber-Reinforced Concrete for Improved Crack Control and Durability**

Amir Bonakdar, The Euclid Chemical Company

#### **3:50 pm: Evaluating Crack-Reduction Technologies for Settlement Cracking in Concrete Bridge Decks**

James D. Lafikes, University of Kansas; and Rouzbeh Khajehdehi, Muzai Feng, Eman Khalid Ibrahim, Matthew O'Reilly, and Dave Darwin, University of Kansas

#### **4:10 pm: Modified ASTM C157 Test Method to Measure Early-Age Deformation of Concrete**

Muzai Feng, University of Kansas; and Eman Khalid Ibrahim, Rouzbeh Khajehdehi, James D. Lafikes, Matthew O'Reilly, and David Darwin, University of Kansas

#### **4:30 pm: Field Evaluation of Early-Age Cracking in Concrete Bridge Decks and its Impact on Long-Term Durability**


Aleksandra Radlinska, Pennsylvania State University; and Farshad Rajabipour, Pennsylvania State University

#### **4:50 pm: Early-Age Thermal Cracking in Concrete Structures: Mechanisms and Control**

Vinh Dao, The University of Queensland; and Pietro Lura, EMPA Switzerland

#### **5:10 pm: Thermal Effects on Early-Age Bridge Deck Cracking —A Case Study**

Todd D. Nelson, Wiss, Janney, Elstner Associates, Inc.

 2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 3:30 pm – 5:30 pm

### ***SDC—Innovations in Concrete Technology—D-Disneyland South B***

Sponsored by TTAG

Moderated by Steven H. Kosmatka, Portland Cement Association; and Anik Delagrave, Lafarge Holcim

The ACI Foundation's Strategic Development Council (SDC) collaborates across the concrete industry to address challenges and creates a forum for the introduction and nurturing of new technologies. The Innovations in Concrete Technology Session showcases emerging concrete technologies that the SDC perceives as having positive productivity or economic impacts on the industry.

#### **3:30 pm: Zero Thermal—Algae-Based Supplementary Binder and Additive**

Alex Martin, Oceans Technology Group, Inc.

#### **4:00 pm: Utilization of CO<sub>2</sub> for Limestone Aggregate**


Brent Richard Constantz, Blue Planet, Ltd.

#### **4:30 pm: Advancing Space Exploration Technology**

Tony Kim, Sargent & Lundy

#### **5:00 pm: Transforming Construction by Carbon-Neutral Cementation and Digital Fabrication (TRANSCEND)**

Gaurav N. Sant, University of California, Los Angeles

 2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 5:45 pm – 7:00 pm

### ***Opening Session & Keynote Presentation—Disrupt or be Disrupted—D-Disneyland Center***

The Opening Session is the official start to the ACI Convention and will begin with a welcome address by ACI President Khaled Awad. Next, the emcee for the night, George Seegebrecht, will introduce our featured keynote speaker, Josh Linkner, who will give a presentation on "Disrupt or be Disrupted." Linkner will present fresh approaches to innovation, growth, and transformation. Linkner is passionate about helping people and organizations seize their full potential. He consistently brings the perfect balance of an energizing performance blended with real-world experience and credibility. This is an Opening Session you don't want to miss!

## 7:00 pm – 8:00 pm

### ***Opening Reception—D-South Exhibit Hall***

Immediately following the Opening Session and Keynote Presentation, attendees are invited to the South Exhibit Hall for this evening reception. Reunite with colleagues, network with new acquaintances, and learn about the products and services offered by the exhibitors. A cash bar and light refreshments will be available.

# Sessions & Events

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## Sunday, October 15, 2017

### 8:00 pm – 10:00 pm

#### **Hot Topic Session: Modules of Elasticity Impacting Constructability—D-Disneyland North A**

Sponsored by Hot Topic Committee

Moderated by Kirk L. McDonald, CalPortland

Modulus of elasticity (MoE) has become a more widely specified design and testing parameter in the concrete building market. This session brings together experts in the fields of design, testing and building to discuss details of MoE in relationship to their areas of expertise. Additionally, we will be given a perspective of constructability and an introduction to ACI's newly formed Committee 134, Concrete Constructability.

#### **8:00 pm: Welcome and Presentation #1 Introduction**

Kirk L. McDonald, CalPortland

#### **8:05 pm: What it is, Why it Matters, and How to Spec it**

Cary Kopczynski, Cary Kopczynski Corporation; and Joe Ferzli, Cary Kopczynski Corporation

#### **8:30 pm: Should We Specify Modulus of Elasticity of Concrete?**

Boris Stein, Twinning Laboratories

#### **8:55 pm: Contractor Perspective of MOE**

Chris Roesch, Largo Construction

#### **9:20 pm: ACI New Constructability Committee Formation**

Bruce Suprenant, American Society of Concrete Contractors; and Jim Cornell, The Beck Group

#### **9:45 pm: Panel Discussion**

Kirk L. McDonald, Cal Portland; Cary Kopczynski and Joe Ferzli, Cary Kopczynski Corporation; Boris Stein, Twinning Laboratories; Chris Roesch, Largo Construction; Bruce Suprenant, American Society of Concrete Contractors; and Jim Cornell, The Beck Group



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 9:00 pm – 10:30 pm

#### **Young Professional Networking Event—ESPN Zone—Downtown Disney**

Sponsored by the ACI Student and Young Professional Activities Committee

The Student and Young Professional Activities Committee invites all young professionals and convention mentors to a casual networking exchange following the Opening Reception. Attendees will establish connections with fellow young professionals, SYPAC members, ACI staff, and mentors. ACI will have a reserved area inside ESPN Zone. Attendees will need to pass through security to enter the area. Please wear your ACI convention badge and bring your business card to be entered into a drawing for door prizes.

## Monday, October 16, 2017

### 6:30 am – 8:00 am

#### **Workshop for Technical Committee Chairs (by invitation only)—D-Disneyland Center**

Sponsored by the ACI Technical Activities Committee (TAC)

Moderated by H. R. Trey Hamilton, University of Florida

ACI technical committee Chairs are expected to attend this breakfast workshop to meet with fellow Chairs, TAC members, and ACI staff 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. **Attendance is by invitation only.**

### 7:00 am – 8:30 am

#### **Speaker Development Breakfast—D-Safari**

Sponsored by ACI Committee S802

Moderated by Arsenio Caceres-Fernandez, University of Puerto Rico

**Speaker:** Bonni Stachowiak, Vanguard University of Southern California

**Topic:** How to make over your slide deck for maximum engagement and comprehension.

Presentation slides are often known for putting people to sleep. They can also over-complicate a message and actually reduce comprehension. This workshop will demonstrate how to do a "makeover" on your slide decks to engage your audience and make your message clear. In this session, you'll have a chance to see some slide make-over examples and make some suggestions of your own. You'll also walk away with an online resources page for additional follow up. This session is geared toward those who deliver technical presentations, as well as those in teaching professions.

### 8:30 am – 10:30 am

#### **Concrete with Recycled Materials, Part 1 of 3—D-Disneyland South B**

Sponsored by ACI Committee 555

Moderated by Mohamed A. Mahgoub, New Jersey Institute of Technology; and Ahmed Ibrahim, University of Idaho

Concrete is one of the most widely used construction materials in the world. However, the production of portland cement, an essential constituent of concrete, leads to the release of a significant amount of CO<sub>2</sub>, a greenhouse gas. One ton of portland cement clinker production is said to create approximately 1 ton of CO<sub>2</sub> and other greenhouse gases. Environmental issues are playing an important role in the sustainable development of the cement and concrete industry, which reduce energy use in the CO<sub>2</sub> emissions from calcinations. A sustainable concrete structure is one that is constructed so that the total environmental impact during its entire life cycle, including during its use, is minimal. Concrete is considered a sustainable material because it has very low inherent energy.

# Sessions & Events

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**8:30 am: Self-Consolidating Concrete (SCC) with Hybrid Fibers**  
Ahmed Ibrahim, University of Idaho

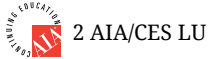
**8:50 am: Is the Use of RCA in Concrete Environmentally Sustainable?**  
Ardavan Yazdanbakhsh, City College

**9:10 am: Sustainable Pavement Technology Using Concrete with High Recycled Content**  
Moncef L. Nehdi, Western University

**9:30 am: A Practical Approach to Promote the Use of RCA in a Number of Applications**  
Medhat H. Shehata, Ryerson University

**9:50 am: Effect of Original Concrete Properties on Performance of RCA Concrete**  
Martin Noel, University of Ottawa

**10:10 am: Modulus of Elasticity of Concretes Containing Recycled Concrete Aggregate**  
Daniel C. Jansen, California Polytechnic State University; and Brett Schoppe, TRC Engineers, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:30 am – 10:30 am

### **Research in Progress, Part 1 of 2—D-Disneyland North A**

Sponsored by ACI Committee 123

Moderated by Matthew O'Reilly, University of Kansas; and Ali Ghahremaninezhad, University of Miami

This session will feature presentations of original, unpublished results from ongoing research projects and leading-edge concrete technology and research throughout the world.

#### **8:30 am: Modifying Concrete Mixture Proportions to Minimize Thermal Deformation**

Robert J. Thomas, Utah State University; and Andrew D. Sorensen and Marc Maguire, Utah State University

#### **8:45 am: Carbonation of Portland Limestone Cement (PLC) Concrete Systems**

Jose Eduardo Garcia, University of Texas at Austin; and Nicolas B. Tiburzi, Thano Drimalas, and Kevin J. Folliard, University of Texas at Austin

#### **9:00 am: Toward a Better Understanding of the Placement of Shotcrete: Nozzles and Velocities**

Pierre Siccardi, Laval University; and Benoit Bissonnette, Simon Berube, and Marc Jolin, Laval University

#### **9:15 am: Effect of Superplasticizer Combinations and Retempering on Properties of High Performance SCC: A Case Study of Natural Pozzolan Blended Cement**

Hessam Azarijafari, University of Sherbrooke; and Javad Berenjjan, Tabari Institute of Higher Education

#### **9:30 am: Durability of Seawater Mixed Concrete against Rebar Corrosion in Cold Temperature Condition**

Aung Kyaw Min, Chiyoda Corporation; Nobuaki Otsuki, Tokyo and Mitsugasu Iwanami, Institute of Technology; and Keisuke Matsukawa, Chiyoda Corporation

#### **9:45 am: Thermal Properties of Geopolymer Concrete at Elevated Temperatures**

Casey J. Sundberg, University of Minnesota Duluth; and Mary U. Christiansen, University of Minnesota Duluth

**10:00 am: Effect of Curing Method on Concrete Resistivity Testing**

Wassay Gulrez, Oklahoma State University

#### **10:15 am: Alkali Leaching Properties of Waste Glass-Based Geopolymers**

Corey Schlosser, University of Minnesota Duluth; and Mary U. Christiansen, University of Minnesota Duluth



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:30 am – 10:30 am

### **Reshoring and Early-Age Building Behavior—D-Disneyland South A**

Sponsored by ACI Committees 347 and 435

Moderated by Phil Jones, EllisDon

This cosponsored session will provide progressive learning for reshoring designers, contractors, and base building engineers in several key areas of reshoring design and early-age building performance, illustrating relationships with the base building deflection design assumptions, early-age concrete, and construction tolerances. The session will detail an overview to the updated ACI 347.2R, "Guide to Shoring/Reshoring of Concrete Multistory Buildings," exemplifying best practices to reshoring design by better understanding early-age concrete behaviors, limitations of existing code and standards, and early-age loading effects on deflections.

#### **8:30 am: Introduction to ACI 347.2R-17, Guide to Shoring/Reshoring of Concrete Multistory Buildings**

Robert G. McCracken, EFCO Corporation

#### **8:50 am: Shoring/Reshoring Operations—Economy and Safety**

Pericles C. Stivaros, GEI Consultants, Inc.

#### **9:10 am: Post-Tensioning Effects on Reshore Design**

Mary Bordner-Tanck, RH Bordner Engineering Company

#### **9:30 am: Early-Age Concrete Behavior & Properties**

Hani H. Nassif, Rutgers, The State University of New Jersey

#### **9:50 am: Surveyed Performance of RC and PT Flat Slabs in Multi-Story Buildings: Implications for Design**

David Shook, Skidmore, Owings & Merrill LLP; and Mark P. Sarkisian, Skidmore, Owings & Merrill LLP

#### **10:10 am: Deflection Modeling, Monitoring, and Investigation**

Eamonn F. Connolly, James McHugh Construction Company; Michael E. Ahern, Pivot Engineers, and Aaron K. Larosche, Pivot Engineers



2 AIA/CES LU

PDH Codes: \_\_\_\_\_



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## Monday, October 16, 2017

### 8:30 am – 10:30 am

#### **What I Wish I Knew: Negotiating Early Job Offers— D-Disneyland North B**

Sponsored by ACI Committee S806

Moderated by Matthew P. Adams, New Jersey Institute of Technology; and Megan Huberty, American Engineering Testing, Inc.

Whether negotiating your very first job offer or transferring jobs early in your career, this session will be a great, interactive panel discussion with young professionals and young faculty who have recently gone through this process themselves.

#### **8:30 am: Panel Discussion**

Lauren G. McCauley, Balfour Beatty Construction; Somaye Nassiri, Washington State University; Matthew P. Adams, New Jersey Institute of Technology; Destry Kenning, Nox-Crete; and Megan Huberty and Patrick Barnhouse, American Engineering Testing, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 10:00 am – 11:30 am

#### **ACI Student Forum—D-Safari**

Sponsored by the ACI Student and Young Professional Activities Committee

Moderated by Kanette S. Worlds, American Concrete Institute

The ACI Student Forum provides an opportunity for student chapters and competition teams to exchange ideas and best practices. Student speakers will deliver presentations about the activities and achievements of their student chapter or competition team. A limited number of presentation spots are available. Speakers may present as a group or individually.

### 10:30 am – 12:00 pm

#### **ACI 123 Concrete Research Poster Session— D-Center Lounge**

Sponsored by ACI Committee 123

Moderated by Robert J. Thomas, Utah State University; and Jan Vosahlik, CTL Group

The ACI 123 Concrete Research Poster Session complements the existing Research in Progress and Open Topic sessions and provides further opportunity for the presentation of original, unpublished results from ongoing research projects and leading-edge concrete technology throughout the world.

#### **Non-Destructive In-Place Concrete Compressive Strength Estimating Using Post-Installed Concrete Pullout Test— Methodology and Field Experience**

Zhengqi Li, Terracon Consultants Inc.; and Jigar B. Desai, Terracon Consultants Inc.

#### **Behavior of Precast Pretensioned I-Girders Employing 0.7-in. Diameter Strands Under Shear-Critical Loadings**

Hyun Su Kim, University of Texas at Austin; Hossein Yousefpour, Babol Noshirvani University of Technology; and Rodolfo Bonetti, Alistair Longshaw, Trevor Hrynyk, and Oguzhan Bayrak, University of Texas at Austin

#### **Prediction of Shear Cracks in RC Flexural Beams Using a Rigorous Nonlinear Approach**

Alaaeldin Abouelleil, Kansas State University; and Hayder A. Rasheed, Kansas State University

#### **Review on Electro-Kinetic Decontamination for Radioactivate Concrete Waste**

Chanyong Kim, Ulsan National Institute of Science and Technology; and Myoungsu Shin, Ulsan National Institute of Science and Technology

#### **Effect of Compositional Variation on the Compressive Strength of Glass as a Pozzolan in Concrete**

Colton Moore, University of Minnesota Duluth; and Mary Christiansen, University of Minnesota Duluth

#### **On the Interaction Between Superabsorbent Polymers (SAPs) and a Cementitious Matrix**

Khashayar Fazanian, University of Miami; and Ali Ghahremaninezhad, University of Miami

#### **Functionization of Cement-Based Materials with Silica-Based Hybrid Nanoparticles by Surface Treatment**

Pengkun Hou, University of Jinan

#### **Cost-Effective and Sustainable Rehabilitation of Infrastructure in Mid-Atlantic Region Using Fiber-Reinforced Polymer (FRP) Wraps**

Hai Nguyen, Marshall University; and Wael Zatar, Marshall University

#### **Flexural Stress-Strain Responses of Micro Fiber-Reinforced Sulfur Polymer Composites**

Myoungsu Shin, Ulsan National Institute of Science and Technology; and Seongwoo Gwon, Seung-Pil Kim, Chanyoung Kim, and Enjong Ahn, Ulsan National Institute of Science and Technology

#### **Effectiveness of Diffuse Ultrasound on Nondestructive Evaluation of Micro-Damage Condition in Concrete**

Eunjong Ahn, Ulsan National Institute of Science and Technology; and Seongwoo Gwon, Seung-Pil Kim, Chanyoung Kim, and Myoungsu Shin, Ulsan National Institute of Science and Technology; and John Popovics, University of Illinois at Urbana-Champaign

#### **Hydration Characteristics of CSA Cement Systems Containing Redispersible Polymer Powder**

Seongwoo Gwon, Ulsan National Institute of Science and Technology; and Myoungsu Shin, Ulsan National Institute of Science and Technology

#### **Effects of Curing Time and Mixture Design on Real-Time Formation Factor and Pore System Parameters**

Somayeh Nassiri, Washington State University; and Milena Rengelov, Washington State University

#### **Activation of Copper Tailing for Use as a Supplementary Cementitious Material**

Felipe Vargas, Pontifical Catholic University of Chile; and Mauricio Lopez, Pontifical Catholic University of Chile

#### **Durable High-Early-Strength Concrete**

Yadira Alejandra Porras, Kansas State University

#### **The Use of UHPC as a Laminate for Tensile Reinforcement on Precast Concrete Beams**

Alexander Alvarado, Virginia Military Institute; and Matthew Swenty, Virginia Military Institute

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## 11:00 am – 1:00 pm

### **Concrete and Digital Fabrication: Perspectives, Challenges, and Developments, Part 1 of 2—D-Disneyland North B**

Sponsored by ACI Committees 236 and 238  
Moderated by Sean Monkman, CarbonCure Technologies; and Mohammed Sonebi, Queen's University Belfast

This pair of sessions, co-organized with RILEM (Technical Committee DFC: Digital fabrication with cement-based materials and RILEM 266-MRP – Measuring Rheological Properties of Cement-Based Materials) seeks to present the latest developments on the topic of 3-D printing of concrete. This new frontier in building materials technology investigates methods and materials that will allow concrete to be made rapidly, at a lower cost, in unique designs and without formwork. This revolutionary idea exists at an intersection between concrete materials science and advanced processing technologies.

#### **11:00 am: Digital Construction with Cementitious Materials: Activities of the RILEM Technical Committee**

Nicolas Roussel, French Institute of Science and Technology for Transport, Spatial Planning, Development and Networks

#### **11:20 am: 3-D Printing of Concrete Structures—Challenges, Opportunities and Advantages of the Selective Binding Method**

Dirk Lowke, Braunschweig University of Technology; and Daniel Weger and Christoph Gehlen, Technical University of Munich

#### **11:45 am: Optimizing Fresh Properties of Concrete for Extrusion 3-D Printing**

Arnaud Perrot, Blaise Pascal University; Mohammed Sonebi, Queen's University Belfast; Sofiane Amziane, Blaise Pascal University; and Damien Rängeard, Institute National des Sciences Appliquées de Lyon

#### **12:10 pm: Additive Manufacturing with Cementitious Materials**

Scott Z. Jones, National Institute of Standards and Technology

#### **12:35 pm: Printing Concrete in Four Dimensions: Time-Dependent Rheology and Strength Development**

Peter Stynoski, U.S. Army Construction Engineering Research Laboratory; and Ghassan Al-Chaar and Michael Case, U.S. Army Construction Engineering Research Laboratory



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:00 am – 1:00 pm

### **Concrete with Recycled Materials, Part 2 of 3—D-Disneyland South B**

Sponsored by ACI Committee 555  
Moderated by Mohamed A. Mahgoub, New Jersey Institute of Technology; and Ahmed Ibrahim, University of Idaho

The session description for this session may be found in the Part 1 listing; refer to page 36.

#### **11:00 am: Property Evaluation and Characterization of Fiber-Reinforced Rubberized Concrete**

Jiaqing Wang, Michigan Technological University; and Ruizhe Si, Shuaicheng Guo, and Qingli Dai, Michigan Technological University

#### **11:20 am: The Use of Animal Fibers to Reinforce Cementitious Composites**

Alessandro P. Fantilli, Polytechnic University of Turin

#### **11:40 am: Flowable Fill Using Recycled Concrete Aggregate (RCA)**

Mohab Hussein, New Jersey Institute of Technology; and David Washington, New Jersey Institute of Technology

#### **12:00 pm: Long-Term Service Load Deformations of Prestressed RCA Concrete Beams: Measured and Predicted Behavior**

Yahya C. Kurama, University of Notre Dame

#### **12:20 pm: Durability Aspects of RCA Concrete—Alkali-Silica Reactivity and FreezeThaw Behavior**

Michael McGinnis, University of Texas at Tyler

#### **12:40 pm: Strength and Durability Properties of the Concrete Containing Recycled Ground Glass Fiber and Recycled Glass Powder as Supplementary Cementitious Materials**

Prasad Rao Rangaraju, Clemson University; and Hassan Rashidian-Dezfouli and Kaveh Afshinnia, Clemson University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_



# Sessions & Events

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D = Disneyland® Hotel P = Disney's Paradise Pier® Hotel

## Monday, October 16, 2017

### 11:00 am – 1:00 pm

#### **Making Connections—The Future of Our Infrastructure—D-Disneyland South A**

Sponsored by ACI Chapter Activities Committee and ACI Subcommittee 325-C

Moderated by Chris Garcia, Pankow Builders; and Paul Heis, BASF

This session will highlight a diverse range of infrastructure project types on the U.S. West Coast and the innovative uses of precast concrete, cast-in-place concrete, and grout to solve complex engineering issues. Various applications of concrete pavements will also be discussed from both the client and designer perspective to understand the current serviceability challenges and advancements geared toward producing longer-lasting concrete pavements.

**11:00 am: Caltrans' Approach to Longer-Lasting Pavements**  
Thomas Pyle, Caltrans

**11:20 am: Airfield Pavements—A Growing Crisis**  
Robert Gilbert, Los Angeles World Airports

**11:45 am: Concrete in the Tunneling Industry—Present & Future**  
Chad Mathes, Dragados USA; and Francisco Gonzalez-Fernandez, Dragados USA

**12:10 pm: Concrete Applications for the Gerald Desmond Bridge Project**  
Tanya Wyckoff, Caltrans; and Zephaniah Varley, WSP/Parsons Brinckerhoff

**12:35 pm: Cementitious and Non-Cementitious Grouting Techniques for Underground Construction**  
Luis Piek, Walsh-Shea Corridor Constructors



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 11:00 am – 1:00 pm

#### **Research in Progress, Part 2 of 2—D-Disneyland North A**

Sponsored by ACI Committee 123

Moderated by Matthew O'Reilly, University of Kansas; and Ali Ghahremaninezhad, University of Miami

The session description for this session may be found in the Part 1 listing; refer to page 37.

**11:00 am: Towards Developing a Mechanistic Design Procedure for Pervious Concrete Pavements**  
Somayeh Nassiri, Washington State University; and Othman Alshareedah, Washington State University

**11:15 am: Application of Automated Image Classification Tool for Post-Earthquake Assessment**  
Anahid Behrouzi, University of Illinois at Urbana-Champaign; and Maria Pantoja, California Polytechnic State University

**11:30 am: Shear Capacity of Hollow-Core Slabs with Concrete Filled Cores**  
Matthew Ryan McDermott, University of Minnesota Duluth

**11:45 am: The Effect of Concrete Compressive Strength and Embedment Depth on the Bond**

#### **Behavior of Post-Installed GFRP**

Muhammad S. Bajwa, University of Minnesota Duluth; Rania Al-Hammoud, University of Waterloo; and Ben Dymond, University of Minnesota Duluth

**12:00 pm: Evaluation on the Effect of Bottom Bar Splice Location on Performance of Beams in Reinforced Concrete Perimeter Frames**

Jorge A. Rivera Cruz, University of Massachusetts Amherst; and Sergio F. Brena, University of Massachusetts Amherst

**12:15 pm: Macrosynthetic Fibers for End Region Crack Control**

Glenda Diaz Acosta, University of Florida; and H. R. Trey Hamilton, University of Florida

**12:30 pm: Establishing Selection Criteria for Structural Fibers in Thin Concrete Overlays**

Manik Barman, University of Minnesota Duluth; and Bryce R. Hansen, University of Minnesota Duluth

**12:45 pm: Assessment of Portland-Limestone Cement for Structural Applications**

Ahmad A. Shalan, Georgia Institute of Technology; and Lawrence F. Kahn and Kimberly E. Kurtis, Georgia Institute of Technology



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 11:15 am – 12:15 pm

#### **MINI SESSION: Performance Specifications for SCC in a North American Perspective—D-Monorail A-C**

Sponsored by ACI Committees 237 and 329

Moderated by Claude Bedard, Euclid Admixture Canada, Inc.

This is a second of two mini sessions on Specifications for SCC. The first one was presented in Detroit by two RILEM speakers and this one will be presented by three North American speakers. This is co-sponsored by ACI Committees 237 and 329 and RILEM TC on Performance Specifications. ACI Committee 237 and 329 members should attend, as the topics include discussions pertinent for future development of their state-of-the-art reports. Design engineers will learn how to put in practice performance specifications using the material developed by both TCs. The objective is to simplify the specifications of SCC as a new construction material and promote its use in the field through simplification of designing a valid specification document.

**11:15 am: Profiles in Performance**

James Gibbons, PCA

**11:33 am: Performance Specifications for SCC at City of Montreal**

Richard Morin, City of Montreal; and Pierre Lacroix, City of Montreal

**11:51 am: Self-Consolidating Concrete in North America Today**

Borys I. Hayda, DeSimone Consulting



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 11:30 am – 1:30 pm

### ✓ Student Lunch—D-Disneyland Center

\$47 U.S. per person

**Topic: Unexpected Journeys in Engineering: A Conversation across Generations**

Sponsored by Baker Concrete Construction Company, Inc.



Coordinated by Southern California Chapter – ACI

Speakers: Conrad Paulson, Ann Harrer, and Adrienne Goetz, Wiss, Janney, Elstner Associates, Inc.

Three engineering colleagues, with tenures in their career ranging from 5 years to 35 years, will discuss both technical and personal perspectives about their careers in engineering and the construction industry. What has changed over time? What has been the influence of technology in the industry? And, what hasn't changed and why? The discussion will be enlivened by anecdotes of personal experiences and project case studies.

All are welcome to register for the lunch. Following the lecture, the results of the student competition will be announced.

**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.

## 1:00 pm – 1:30 pm

### **MINI SESSION: Contemporary Design of Building Materials and Structures for Energy Efficiency and Hazard Resilience—P-Redondo**

Sponsored by ACI Committee 122

Moderated by Jeffrey F. Speck, Trinity Lightweight

Thermally massive building structures (for example, reinforced concrete) have enormous capability to store thermal energy, providing potential to reduce buildings' energy consumption and adapt to today's fast-changing environment. However, conventional building practice follows a point-based process where the primary focuses of structural design are not related to other aspects of building performance (for example, energy efficiency). As a result, the structural system has very limited impact on a building's energy efficiency during operation. This session addresses an energy solution for thermally massive buildings by rethinking the role of the building structural system in its life-cycle energy strategy. The goal is to leverage the thermal mass embodied in heavy building elements and imbue the building structure with dual roles: it serves both as the primary load-bearing system and thermal system. A holistic structural-energy design paradigm will be discussed that strategically utilizes the mechanical and thermophysical properties of construction materials and structural components for a building's structural resilience and energy efficiency.

### **1:00 pm: Mechanical and Thermophysical Properties of Concrete and Cementitious Composites**

Hongyu Zhou, University of Alabama in Huntsville

## 1:00 pm – 2:00 pm

### **MINI SESSION: Issues in Parking Garage Construction—P-Pacific Ballroom A**

Sponsored by ACI Committee 362

Moderated by James P. Donnelly, Wiss, Janney, Elstner Associates, Inc.

This session will present and discuss current hot topics in the design and construction of parking structures, with a focus on information learned from the investigation of these issues and from experience with their construction. This is a mini-session that will be informative for individuals involved in the design, construction, evaluation, and repair of parking structures.

### **1:00 pm: Diaphragms in Precast Concrete Parking Structures** Ned Cleland, Blue Ridge Design, Inc.

### **1:20 pm: Adaptive Reuse of Parking Structures** Rashid Ahmed, Walker Parking Consultants

### **1:40 pm: Shoring and Reshoring Considerations in Parking Structures** Jeff Jack, RedBuilt, LLC

 1 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:30 pm – 3:30 pm

### **Concrete and Digital Fabrication: Perspectives, Challenges and Developments, Part 2 of 2—D-Disneyland North B**

Sponsored by ACI Committees 236 and 238

Moderated by Sean Monkman, CarbonCure Technologies; and Raissa Douglas Ferron, University of Texas at Austin

The session description for this session may be found in the Part 1 listing; refer to page 39.

### **1:30 pm: Digital Concrete at ETH Zurich**

Timothy Wangler, ETH Zurich; and Ena Lloret, Norman Hack, and Lex Reiter, ETH Zurich

### **1:50 pm: 3-D Printing Concrete—Workability and Rheology** Mohammed Sonebi, Queen's University Belfast; Sofiane Amziane, Blaise Pascal University; Damien Rängeard, National Institute of Applied Sciences; and Arnaud Perrot, Université de Bretagne-Sud

### **2:15 pm: Challenges and Opportunities within 3-D Concrete Printing**

Wilson Ricardo Leal da Silva, Danish Technological Institute Concrete Centre

### **2:40 pm: CONPrint3D®—Concrete On-Site 3-D Printing: Concept and the State of Work**

Viktor Mechtcherine, Dresden University of Technology; Lars Nyholm, Thrane, Danish Technological Institute; and Thomas Juul Andersen, Institute of Construction Materials

### **3:05 pm: Cementitious Materials for Construction-Scale 3-D Printing: Laboratory Testing of Fresh Printing Mixture**

Ali Kazemian, University of Southern California; and Xiao Yuan, Department of Industrial and Systems Engineering

 2 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## Monday, October 16, 2017

### 1:30 pm – 3:30 pm

#### **Concrete with Recycled Materials, Part 3 of 3— D-Disneyland South B**

Sponsored by ACI Committee 555

Moderated by Mohamed A. Mahgoub, New Jersey Institute of Technology; and Ahmed Ibrahim, University of Idaho

The session description for this session may be found in the Part 1 listing; refer to page 36.

#### **1:30 pm: An Assessment of Efficiency Factors of Recycled Aggregate Concrete Bottle Shaped Struts**

Anantray Parghi, Sardar Vallabhbhai National Institute of Technology, Surat; Shivanand Suryawanshi, B. Kondraivndhan; and C.D. Modhersa, Sardar Vallabhbhai National Institute of Technology, Surat

#### **1:50 pm: Behavior and Efficiency of Recycled Aggregate Concrete Isolated Bottle-Shaped Struts**

Anant Parghi, Indian Institute of Technology Roorkee; and Suryawanshi SR, Bhupinder Singh, and Pradeep Bhargava, Indian Institute of Technology Roorkee

#### **2:10 pm: Mechanical Properties of Cementitious Composites Containing Recycled Glass Powder (RGP) as a Partial Replacement of Cement**

Anant Parghi, University of British Columbia; and Shahria Alam, University of British Columbia

#### **2:30 pm: Durability and Behavior of Concrete Incorporating Amorphous Silica Residue**

Arezki Tagnit-Hamou, University of Sherbrooke

#### **2:50 pm: Recycling Fresh Concrete and Utilizing Recycled Asphalt and Concrete as Aggregate**

Juan Gonzalez and Alana Guzzetta

#### **3:10 pm: High-Strength Recycled Aggregate Concrete (HRAC)**

Mohamed A. Mahgoub, New Jersey Institute of Technology



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 1:30 pm – 3:30 pm

#### **Design and Modeling Considerations for Concrete Joints, Connections, and Systems, Part 1 of 2— D-Disneyland North A**

Sponsored by Joint ACI-ASCE Committee 352

Moderated by Thomas Kang, Seoul National University

This session includes a variety of topics regarding design and modeling considerations for concrete joints, connections, and frame systems, as well as their in-service and near-collapse behavior. In large part, the session deals with performance-based earthquake engineering and seismic rehabilitation of cast-in-place and precast concrete joints, connections, and systems. The components that are covered are reinforced concrete beam-column joints and connections, reinforced concrete slab-edge barrier wall joints of parking structures, precast concrete member connections with cast-in-place concrete, and reinforced concrete beam-column and slab-column frame systems.

#### **1:30 pm: Reinforced Concrete Building Exterior Joints with Substandard Details**

Chris P. Pantelides, University of Utah; Lawrence D. Reaveley, University of Utah; and M. J. Ameli, University of Utah

#### **1:50 pm: Seismic Design of Slab-Column Connections: Requirements and Recommendations**

Mary Beth D. Hueste, Texas A&M University; and Damon R. Fick, Montana State University

#### **2:15 pm: Strength and Ductility of Beam-Column Connections with High-Strength Steel Reinforcement**

Hung-Jen Lee, National Yunlin University of Science and Technology

#### **2:40 pm: Design and Detailing Considerations for Precast Diaphragm Connectors and Reinforcement**

Robert B. Fleischman, University of Arizona; and Dichuan Zhang, Nazarbayev University

#### **3:05 pm: Design Considerations for Slab-Wall Joints in Edge Barriers in Parking Structures**

Mohammad Iqbal, Iqbal Group



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 1:30 pm – 3:30 pm

#### **Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 1 of 3—D-Disneyland South A**

Sponsored by ACI Committee 374

Moderated by Jeffrey J. Dragovich, Consulting Structural Engineer; and Insung Kim, Degenkolb Engineers

This session presents the state of practice for the performance-based seismic design (PBSD) of reinforced concrete buildings. The use of PBSD for new construction is expanding, as evidenced by the design guidelines that are available and the stock of completed building projects. These presentations bring together the implementation of PBSD through state-of-the-art project examples, the current design guidelines employed, and research that supports PBSD.

#### **1:30 pm: The Performance-Based Seismic Design of the New Tocumen International Airport South Terminal in Panama City, Panama**

Xiaonian Duan, Foster + Partners; Andrea Soligon and Jeng Neo, Foster + Partners; and Anindya Dutta, Simpson Gumpertz & Heger Inc.

#### **1:50 pm: Revitalizing a Community Space Using Performance-Based Seismic Design**

Saeed Fathali, Structural Technologies; and Bret Lizundia and Francisco Parisi, Rutherford + Chekene

#### **2:15 pm: First Performance-Based Seismic Design Tower in Oakland, CA**

Devin K. Daniel, Magnusson Klemencic Associates Inc.; and Ian S. McFarlane, Magnusson Klemencic Associates Inc.

#### **2:40 pm: Increased Reliability and Cost Efficiencies with Performance-Based Seismic Design**

David Shook, Skidmore, Owings & Merrill LLP; and Mark P. Sarkisian and Eric Long, Skidmore, Owings & Merrill, LLP

#### **3:05 pm: Seismic Design in the New Age of PBD**

Joe Ferzli, Cary Kopczynski & Company; and Mark Whiteley and Cary S. Kopczynski, Cary Kopczynski & Company



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 4:00 pm – 6:00 pm

### **Case Studies on Nano-Enhanced Concrete on Commercial Jobsite—D-Disneyland South B**

Sponsored by ACI Committee 241 and ACI Subcommittee 241-A  
Moderated by Jon S. Belkowitz, Intelligent Concrete, LLC

Nanoparticles designed for cement composites and concrete have been successfully used in limited applications over the last 20 years to enhance both the strength and durability of concrete. The following session will identify case studies on novel technologies, additives, and admixtures for concrete that focus on employment of nanoparticles in concrete meant for commercial projects. Pros and cons will be discussed in the case studies to facilitate a realistic view for new solutions to increase the strength and durability of concrete.

#### **4:00 pm: Colloidal Silica Admixture for ASR in Concrete**

Jon S. Belkowitz, Intelligent Concrete, LLC

#### **4:30 pm: Carbon-Nanotube Enhanced Concrete**

Robert W. Cavaliero, Eden Innovations LLC

#### **5:00 pm: Winter Shield Concrete**

Whitney Belkowitz, Intelligent Concrete, LLC

#### **5:30 pm: Nano-Engineered Finishing Aids**

Jared Murray, Formulations International, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### **Connecting New Practices to Real World Applications with Soil Cement—D-Disneyland North B**

Sponsored by ACI Committee 230  
Moderated by Charles E. Pierce, University of South Carolina; and Katie J. Bartojay, U.S. Bureau of Reclamation

This technical session will provide attendees with knowledge on new practices for soil cement applications and highlight the advantages of soil cement through case studies.

#### **4:00 pm: Flood and Environmental Protection Using Soil Cement**

Mark E. Krebs, PACE – Advanced Water Engineering

#### **4:20 pm: New Guide on Full-Depth Reclamation with Cement**

Wayne S. Adaska, Portland Cement Association

#### **4:45 pm: Full Depth Reclamation (FDR) for Asphalt Streets and Parking Lots in California**

Marco Estrada, Pavement Recycling Systems, Inc.

#### **5:10 pm: Soil-Cement Design and Construction Protocols for Mixed-in-Place Highway Projects**

Isaac Howard, Mississippi State University

#### **5:35 pm: Case Studies in Stabilizing Highly Plastic Clay**

Ben Reese, Raba Kistner



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### **Design and Modeling Considerations for Concrete Joints, Connections, and Systems, Part 2 of 2—D-Disneyland North A**

Sponsored by Joint ACI-ASCE Committee 352  
Moderated by Thomas Kang, Seoul National University

The session description for this session may be found in the Part 1 listing; refer to page 42.

#### **4:00 pm: Analysis as a Tool to Describe Actual Behavior of Reinforced Concrete Structures**

Luis E. Garcia, University of Los Andes

#### **4:20 pm: Modeling of RC Beam-Column Joints for Simulating Disproportionate Collapse of Buildings**

Sashi K. Kunnath, University of California, Davis; and Yihai Bao, National Institute of Standards and Technology

#### **4:45 pm: Shear Strength of Interior Beam-Column Joints for Performance Based Design**

Hong-Gun Park, Seoul National University; and Hyeon Jong Hwang, Hunan University

#### **5:10 pm: Large-Scale Shake-Table Test on Ten-Story Reinforced Concrete Building**

Hitoshi Shiohara, University of Tokyo

#### **5:35 pm: Estimation of Drift in Flat-Plate Test Specimens with a Projection to the Earthquake Environment**

Damon R. Fick, Montana State University; Mete A. Sozen, Purdue University; and Michael E. Kreger, University of Alabama



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### **Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 2 of 3—D-Disneyland South A**

Sponsored by ACI Committee 374  
Moderated by Jeffrey J. Dragovich, Consulting Structural Engineer; and Mary Beth D. Hueste, Texas A&M University

The session description for this session may be found in the Part 1 listing; refer to page 42.

#### **4:00 pm: Design and Modeling Issues Related to Diaphragms of Tall Buildings**

Gian Carlo Piatos, University of California, Los Angeles; John W. Wallace, University of California, Los Angeles; and Kristijan Kolozvari, California State University, Fullerton

#### **4:20 pm: Analysis and Design of Reinforced Cast-in-Place Concrete Diaphragms**

Drew Kirkpatrick, Thornton Tomasetti, Inc.; and Leonard M. Joseph, J. Ola Johansson, and Karem Gulec, Thornton Tomasetti, Inc.

#### **4:45 pm: Study of Increase in Shear Demand in Buildings in Performance Based Design as Compared to Code Level Demands**

Tom C. Xia, DCI Engineers

#### **5:10 pm: Trends in Demands for Concrete Performance-Based Seismic Design Towers**

Kevin Aswegan, Magnusson Klemencic Associates Inc.; and Ian S. McFarlane, Magnusson Klemencic Associates Inc.



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## Monday, October 16, 2017

**5:35 pm: Assessment of a 12-Story Reinforced Concrete Special Moment Frame Building Using Performance-Based Seismic Design Standards and Guidelines: ASCE 41, TBI, and LATBSDC**  
Mustafa K Buniya, Oregon State University; Andre R. Barbosa, Oregon State University; and Siamak Sattar, National Institute of Standards Technology



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 5:30 pm – 6:30 pm

#### *Women in ACI Reception—D-Rose Court Garden*

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. In addition to networking, attendees of this reception will have the opportunity to participate in a silent auction. This auction will feature concrete artwork beautifully created by students. All are welcome at this reception! A cash bar and light hors d'oeuvres will be served. **This reception will be held in D-Sleeping Beauty in inclement weather.**

### 6:30 pm – 8:30 pm

#### *123 Forum: Can Structural Health Monitoring Provide Actionable Information?—D-Disneyland North A*

Sponsored by ACI Committee 123

Moderated by Jacob Henschen, Valparaiso University; and Jan Vosahlik, CTL Group

Structural health monitoring (SHM) is an exciting emerging technique that employs sensor networks in new and existing structures. While the extent of sensor deployment and the range of sensors varies greatly, the goal is for the sensors to provide information on structural damage or ongoing degradation. Often, SHM will use nondestructive testing (NDT) techniques, but these terms are not synonymous. The ongoing monitoring from SHM allows owners to make strategic decisions with regards to maintenance, repair, or retrofitting. While SHM appears to be a path to making our structures “smarter,” large sensor networks and active data collection can lead to an overwhelming amount of data that can be difficult to manage and interpret. If the data do not provide clear, actionable information, owners will not be able to fully utilize the benefits of SHM. This forum will provide basic information on SHM systems that have been deployed, how the data were managed, and the widespread viability of various approaches to SHM.

The forum will focus on the following themes:

- What is SHM? What are key applications and strategies that have been used? What damage or ongoing degradation is able to be characterized?
- How are raw data transformed into actionable information? What data management techniques are commonly employed? What are the key challenges in SHM?
- What are the future research needs or technologies that must be pursued to make SHM more commonplace?

A panel of experts will debate these questions, and more, to provide the audience information regarding the latest developments and implementations of SHM. The forum will start with short presentations by each panelist and be followed by an interactive discussion with the audience.

#### **6:30 pm: ACI 123 Concrete Research Poster Session—Outstanding Poster Award Announcement**

Robert J. Thomas, Utah State University; and Jan Vosahlik, CTLGroup

#### **6:35 pm: Introduction of Panelists and Forum Topic**

Jacob Henschen, Valparaiso University

#### **6:40 pm: A Skeptic's Approach to Structural Health Monitoring**

Michael C. Brown, WSP USA

#### **6:55 pm: Application of SHM for the Assessment and Evaluation of Cracking Potential of Concrete Structures**

Hani Nassif, Rutgers, the State University of New Jersey

#### **7:10 pm: The Case for Structural Health Monitoring Data Normalization**

Brock Hedegaard, University of Wisconsin

#### **7:25 pm: In-Service Monitoring for Actionable Data**

David Kosnik and Dennis McCann, CTLGroup

#### **7:40 pm: Audience Questions and Panel Discussion**

Jacob Henschen, Valparaiso University; Jan Vosahlik, CTLGroup; Michael C. Brown, WSP USA; Hani Nassif, Rutgers University; Brock Hedegaard, University of Wisconsin; David Kosnik/Dennis McCann, CTLGroup



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 6:30 pm – 10:00 pm

#### *✓ The Excellence in Concrete Construction Awards Gala—D-Disneyland Center*

##### **\$85 U.S. per person**

Doors open at 5:30 pm

Awards Dinner: 6:30 pm – 8:30 pm

Reception: 8:30 pm – 10:00 pm

The ACI Excellence in Concrete Construction Awards will honor some of the most creative projects the concrete world has to offer. Chapter- and International Partner-sponsored concrete projects of all types are eligible to receive an award. Entries will be juried by an independent panel of industry professionals uniquely qualified and representing diverse backgrounds, with technical expertise in all award categories. First- and second-place awards may be given in each category. An overall “Excellence” award will be revealed the evening of the gala. Following the Awards Dinner, celebrate the accomplishments of those recognized at the post-reception. 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. Please notify the ACI Registration Desk if you have any dietary restrictions.

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## Tuesday, October 17, 2017

### 7:30 am – 4:00 pm

#### ✓ *California Science Center Tour—D-Disneyland Main Lobby*

\$30 U.S. per person

Departs at 7:30 am, returns to the hotel by 4:00 pm

Join us for a day full of adventure for the entire family as we explore the California Science Center. We will start the day with the Endeavour Experience, getting up close and personal with the space shuttle and artifacts from it. You can then explore on your own! You can enjoy the Ecosystems, World of Life, Creative World, and Air and Space exhibits. Be sure to leave yourself time for a little shopping, too.

**PREREGISTRATION IS REQUIRED TO ATTEND.** Tickets are available for purchase at ACI Registration. Tours are nonrefundable. All tours depart from the Disneyland® Hotel main lobby.

### 8:30 am – 9:30 am

#### **MINI SESSION: Flashing Window/Door Openings in ICF Walls, Use of Fiber Reinforcement in ICF Construction—D-North Hall J**

Sponsored by ACI Committee 560

Moderated by Robert Sculthorpe, Insulating Concrete Form Manufacturers' Association

Results of recent research, conducted in British Columbia, Canada, into the prevention of water and air leakage at window and door openings in ICF walls.

**8:30 am: Flashing Window and Door Openings in ICF Walls**  
Douglas Bennion, Quad-Lock Building Systems Inc.

**8:48 am: Use of Fiber Reinforcement in ICF Construction**  
Michael W. Cook, ICF Concrete Additives, LLC



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 8:30 am – 10:30 am

#### **Creep and Shrinkage of Concrete—Honoring Professor Adam Neville, Part 1 of 2—D-Disneyland South B**

Sponsored by ACI Committee 209

Moderated by Akthem A. Al-Manaseer, San Jose State University; and Hina Habib, San Jose State University

This session honoring Prof. Adam Neville presents a study to evaluate the influence of supplementary cementitious materials on creep behavior of self-consolidating concrete and presents an analysis of creep and shrinkage effects in continuous rigid frame of Sutong Bridge, China. It discusses the absorption and desorption properties of SAP and a new approach to optimize mixture proportions in internally cured concrete. It will also explain the challenges involved in modeling time-dependent deformations in concrete with comprehensive, physics-based rate-type models, and discuss the modeling of tertiary creep and time-dependent fracture behavior of concrete.

**8:30 am: Isolation of the Shrinkage Curvature of Cracked RC Sections Using a Novel Experimental Approach**

John Forth, University of Leeds

**8:45 am: Effect of Concrete Creep and Shrinkage on the Design and Construction of Tall Buildings**

Taehun Ha, Daewoo Engineering and Construction Company, Ltd.; and Sungho Lee, Engineering and Construction Company, Ltd.

**9:00 am: Early-Age Cracking in Concrete Structures: The Role of Shrinkage and Tensile Creep**

Raymond Ian Gilbert, University of New South Wales

**9:15 am: Sensitivity of Creep Code Models to Input Parameters**

Akthem A. Al-Manaseer, San Jose State University; and Hina Habib, San Jose State University

**9:30 am: Basic Compressive Creep Results on High-Performance Concrete (HPC)**

Will Hansen, University of Michigan; and Bo Meng, University of Michigan

**9:45 am: Impact of Concrete Composition on Basic Creep Explored Using Multiscale Modeling**

Brock D. Hedegaard, University of Wisconsin–Madison; and Shuo Wang, Endesco, Inc.

**10:00 am: Creep and Shrinkage Study of High-Strength Concrete Used in Long-Span Bridges**

Chung C. Fu, University of Maryland; and Zhuanfeng Pan, Tongji University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 8:30 am – 10:30 am

#### **Performance-Based Seismic Design of RC Buildings: State of the Practice, Part 3 of 3—D-Disneyland South A**

Sponsored by ACI Committee 374

Moderated by Jeffrey J. Dragovich, Consulting Structural Engineer; and John H. Tessem, DCI Engineers

The session description for this session may be found in the Part 1 listing; refer to page 42.

**8:30 am: Guidelines for Performance-Based Seismic Design of Seismic Category I Concrete Structures in Nuclear Power Plants**

John S. Ma, United States Nuclear Regulatory Commission

**8:50 am: Recommendations for Modeling Nonlinear Response of Slender Reinforced Concrete Walls Using PERFORM-3D**

Laura N. Lowes and Dawn E. Lehman, University of Washington; and Carson Baker, Coughlin Porter Lundeen

**9:15 am: Reliability of Shear Design for Tall Reinforced Concrete Core Wall Buildings**

Sunai Kim, Loyola Marymount University; and John W. Wallace, University of California, Los Angeles

**9:40 am: Interaction of Sliding, Shear, and Flexure for Earthquake Design of Reinforced Concrete Shear Walls**

Burkhardt Trost, Institute of Civil Engineering, FHNW; Bozidar Stojadinovic, Institute of Structural Engineering, ETH Zurich; and Harald Schuler, Institute of Civil Engineering, FHNW



# Sessions & Events

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## Tuesday, October 17, 2017

### 10:05 am: Seismic Performance of Full-Scale Reinforced Concrete Beam-Column Connections Extracted from Earthquake-Damaged Buildings in New Zealand

Giulio Leon Flores, NuScale Power; Reza Farahani, HDR Inc.; Hussien Abdel-Baki, Shocheh Precast; and Paul Rizzo, Rizzo Associates



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:30 am – 10:30 am

### SoCal Modernism—Preserving Concrete Modernist Structures—D-Disneyland North A

Sponsored by ACI Committee 364

Moderated by Ann Harrer, Wiss, Janney, Elstner Associates, Inc.

These presentations will highlight the modernist structures in Southern California as well as throughout the country, including the unique technical challenges associated with preservation, repair, and restoration of these structures. Attendees with an interest and expertise in historic structures will leave with a better understanding of the architectural and construction history of these structures, their inherent challenges, and an overview of successful repair approaches.

### 8:30 am: Challenges and Approaches to Preserving Historic-Modernist Concrete

Susan Macdonald, Getty Conservation Institute

### 8:50 am: Dodger Stadium, Keeping an Icon Relevant

Janet Marie Smith, Los Angeles Dodgers; and Ryan Wilkerson, Nabin Yousset Associates Structural Engineers

### 9:15 am: Conserving the Salk Institute for Biological Studies

Tim Ball, Salk Institute for Biological Studies

### 9:40 am: Assessment and Evaluation of Modernist Structure Facades, a Presentation of Case Studies

Paul E. Gaudette, Wiss, Janney, Elstner Associates, Inc.

### 10:05 am: Seismic Retrofit of the FE Weymouth Water Treatment Plant

Brett Jordan, J.F. Shea Construction Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:30 am – 10:30 am

### Ward R. Malisch Concrete Construction Symposium, Part 1 of 4—D-Disneyland North B

Sponsored by ACI Committee Construction Liaison Committee

Moderated by Beverly A. Garnant, American Society of Concrete Contractors

These sessions bring together important and influential information with respect to concrete construction in honoring Ward R. Malisch, Honorary Member of ACI. Contractors and engineers interested in the application of ACI documents to construction projects and in evaluating construction information with respect to constructability should attend.

### 8:30 am: Building the National Veterans Memorial & Museum (NVMM)

Michael J. Schneider, Baker Concrete Construction Inc.

### 8:50 am: Why are Slab-on-Ground Joints So Troublesome?

Scott M. Tarr, North S.Tarr Concrete Consulting

### 9:10 am: The Un-Shored Composite Slab on Metal Deck: Part I—Construction and Behavior

Eldon G. Tipping, Structural Services Inc.; and Bryan M. Birdwell, Structural Services Inc.

### 9:30 am: Implementation of Best Practices to Improve Quality and Constructability of Hot Weather Concreting

Oscar R. Antommattei, Kiewit Engineering Company

### 9:50 am: Investigation of Silica Fume Concrete Bridge Deck Overlay Failures

Kim D. Basham, KB Engineering LLC

### 10:10 am: Controlling Bridge Deck Cracking

David Darwin, University of Kansas



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:00 am – 1:00 pm

### Cracking and Durability in Sustainable Concretes, Part 1 of 2—D-Disneyland South A

Sponsored by ACI Committees 130 and 224

Moderated by Ralf Leistikow, Wiss, Janney, Elstner, Associates, Inc.; and Kimberly Waggle Kramer, Kansas State University

The objective of the session(s) would be to review the use of innovative mixture designs incorporating sustainable admixtures and supplemental cementitious materials, and the effect these sustainable technologies have on the cracking performance and durability of these concretes. In particular, cracking behavior in sustainable concretes or practices for mitigation of cracking in sustainable concretes will be reviewed. This information will be shared based on completed research and case studies of sustainable concrete mixture designs.

### 11:00 am: Zeolite-Based New-Generation Concrete—Sustainable and Durable Solution for Nation's Infrastructure

Pratanu Ghosh, California State University, Fullerton

### 11:20 am: Freeze-Thaw and Salt Scaling Resistance of a Fly Ash Based Pervious Concrete

Gang Xu, Washington State University; and Xianming Shi, Washington State University

### 11:45 am: Durability of Recycled Aggregate Concrete

Nariman J. Khalil, University of Balamand; and Georges Aouad, University of Balamand

### 12:10 pm: Stress-Induced Cracking, Pore Connectivity, and Durability of Fiber-Reinforced Concrete

Meghdad Hoseini, WSP Canada Inc.; and Vivek Bindiganavile, WSP Canada, Inc.

### 12:35 pm: Mitigating Cracking and Enhancing Durability by Nanofibers

Andrzej Cwirzen, Lulea University of Technology; and K. Habermenhl-Cwirzen, Lulea University of Technology



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 11:00 am – 1:00 pm

### **Creating Aesthetic Concrete in Southern California— D-Disneyland North A**

Sponsored by ACI Committees 124 and 310

Moderated by Anne M. Werner, Southern Illinois University Edwardsville; and Larry Rowland, Lehigh White Cement Company

The purpose of this session is to inform ACI members and the concrete community of the aesthetic potential of concrete. This session will highlight the use of aesthetic concrete in iconic structures in Southern California and the creative possibilities that can be attained with this formable and moldable material. The demand for aesthetically pleasing building materials is increasing, and for some concrete has the reputation for being “heavy and gray.” This session will show that concrete can be shaped, colored, textured, and manipulated into just about anything the architect, designer, builder, or owner desires. It does not have to be heavy and gray, given today’s technology. Architects, designers, contractors, educators, engineers, government employees, material suppliers, and students will benefit from attending this session.

#### **11:00 am: A Successful Decorative Concrete Project— Conception through Completion**

Lance Boyer, Trademark Concrete Systems

#### **11:17 am: What is Architectural Concrete in Southern California?**

Bob J. Stephens, Morley Construction Company | Benchmark Contractors, Inc; and Mark F. Larsen, Morley Construction Company | Benchmark Contractors, Inc.

#### **11:34 am: Overview of Five Innovative Projects in Southern California**

John A. Aube, Lehigh White Cement Company

#### **11:51 am: Concrete Conservation and Restoration of John Anson Ford Theatres, Los Angeles, CA**

Ann Harrer, Wiss, Janney, Elstner Associates, Inc.; and Jeffrey A. Caldwell, Wiss, Janney, Elstner Associates, Inc.

#### **12:08 pm: White Ground Calcium Carbonate for a “Whiter” Concrete**

Bobby Bergman, J.M. Huber Corporation

#### **12:25 pm: Utilizing Spray Ultra-High-Performance Concrete to Push Barrier Panels into a New Dimension**

Kelly Henry, LafargeHolcim; and Michael Ryan, LafargeHolcim

#### **12:42 pm: The Art and Science of Matching (Historic) Concrete**

Amy Lamb Woods, International Masonry Institute



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:00 am – 1:00 pm

### **Creep and Shrinkage of Concrete—Honoring Professor Adam Neville, Part 2 of 2—D-Disneyland South B**

Sponsored by ACI Committee 209

Moderated by Akthem A. Al-Manaseer, San Jose State University; and Hina Habib, San Jose State University

The session description for this session may be found in the Part 1 listing; refer to page 45.

#### **11:00 am: Mixture Proportioning Concepts for Concrete Internally Cured with Super-Absorbent Polymers to Reduce Shrinkage**

W. Jason Weiss, Oregon State University; and Prannoy Suraneni and Luca Montanari, Oregon State University

#### **11:20 am: Shrinkage of Concrete Mixtures with Ceramic Waste Powder**

Mahmoud M. Reda Taha, University of New Mexico; and Amr El-Dieb, Sama Aly, and Dinma Kanan, United Arab Emirates University

#### **11:40 am: Influence of Supplementary Cementitious Materials on the Creep Behavior of Self-Consolidated Concrete**

Hani H. Nassif, Rutgers, The State University of New Jersey; and Raymond Khoury, Shaw-Stone & Webster, Inc.

#### **12:00 pm: Comparison of Drying Shrinkage of Portland Cement and Alternative Cementitious Materials**

Amir Hajibabae and Tyler Ley, Oklahoma State University

#### **12:20 pm: Simulation of Coupled Creep, Drying, Shrinkage and Aging of Concrete: Model Complexity and Uniqueness of Parameter Identification**

Gianluca Cusatis, Northwestern University; Mohammed Alnagger, Rensselaer Polytechnic Institute, and Roman Wendner, University of Natural Resources and Life Sciences

#### **12:40 pm: Modeling Tertiary Creep of Concrete**

Ioannis Boumakis, Christian Dopple Laboratory; Giovanni Di Luzio, Polytechnic University of Milan; and Wan-Wendner, Christian Doppler Laboratory



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:00 am – 1:00 pm

### **Ward R. Malisch Concrete Construction Symposium, Part 2 of 4—D-Disneyland North Ballroom B**

Sponsored by Construction Liaison Committee

Moderated by James N. Cornell, The Beck Group

The session description for this session may be found in the Part 1 listing; refer to page 46.

#### **11:00 am: After Two Hundred Years of Estimating Evaporation, It Is Still a Mystery**

Kenneth C. Hover, Cornell University

#### **11:20 am: The Un-Shored Composite Slab on Metal Deck:**

# Sessions & Events

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## Tuesday, October 17, 2017

### Part II—Ineffective Contract Document Requirements

Eldon G. Tipping, Structural Services Inc.; and Bryan M. Birdwell, Structural Services Inc.

#### 11:40 am: How Will ACI 318-14, Chapter 26 Affect Construction?

Terence C. Holland, Concrete Terry, LLC

#### 12:00 pm: Constructability Challenges

Larry G. Karlson, PCL Constructors Inc.

#### 12:20 pm: The Evolution of Below-Slab Vapor Retarder Location

Peter A. Craig, Concrete Constructive

#### 12:40 pm: Should You Reject the Load of Concrete after 90 Minutes?

Colin L. Lobo, National Ready Mixed Concrete Association



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:30 am – 1:30 pm

### ✓ Contractors' Day Lunch—D-Magic Kingdom Ballroom 1

#### \$49 U.S. per person

Coordinated by Southern California Chapter – ACI

Speaker: Kent Estes, Walt Disney Imagineering

#### Topic: The Happiest Concrete on Earth

Join other ACI attendees and contractors for the Contractors' Day Lunch. Featured speaker Kent Estes from Walt Disney Imagineering will give a presentation titled "The Happiest Concrete on Earth." This presentation will highlight the ongoing expansion at the Disney theme parks, focusing on unique applications of concrete in new construction. Topics to be covered include challenges in design, engineering, and construction.

**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.

## 1:00 pm – 3:00 pm

### MINI SESSION: Smart Concrete Using Nanocomposites—P-Pacific Ballroom B

Sponsored by ACI Committees 241 and 548

Moderated by Mahmoud M. Reda Taha, University of New Mexico

The objective of this mini-session is to present recent research findings of a new class of smart concrete using nanocomposites. Dispersion of nanomaterials in a cement or polymer matrix enables changing the polymer and/or polymer-cement matrix, creating a new class of concrete with very attractive properties such as self-healing, self-sensing, improved strains at failure, superior ductility and improved bond as well as special hydrophobicity. The presentations will cover a wide range of concrete with nanocomposites and their use in new construction and repair applications.

### 1:00 pm: Self-Sensing Polymer Concrete for Bridge Deck Applications Using Carbon Nanotubes

Moneeb Genedy, Ala Douba, and Mahmoud Reda Taha

### 1:30 pm: Tailoring the Piezoresistive Strain Sensing and the Electrochemical Capacitance of CNT Reinforced Mortars

Maria S. Konsta-Gdoutos, Panagiotis Danoglidis, and S.P. Shah

### 2:00 pm: Smart Pultruded GFRP Reinforcement Incorporating Nanomaterials

Rahulreddy Chennareddy, Amr Riad, and Mahmoud Reda Taha

### 2:30 pm: The Design of Ultra-Durable Concrete with Polymethyl-Hydrogen Siloxane Hydrophobic Agents and Nanosilica

Konstantin Sobolev, Marina I. Kozhukhova, Scott W. Muzenski, and Ismael Flores-Vivian



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:30 pm – 2:30 pm

### MINI SESSION: New Research in Lightweight Aggregate Concrete: Service Life Modeling and Lightweight Aggregate for Mass Concrete—D-Castle B

Sponsored by ACI Committee 213

Moderated by Jeffrey F. Speck, Trinity Lightweight

Lightweight aggregates and lightweight concrete are often overlooked when alternatives are being considered for increasing the service life of concrete structures. This mini-session offers two presentations that may surprise many in the concrete industry. The first presentation reports on research on the use of lightweight aggregates in mass concrete. The second presentation reports on a study of the transport properties of concrete with and without lightweight aggregates and the results of service life modeling based on those properties. There are multiple causes of early-age cracking in mass concrete, including the effects of differential temperatures from the interior to the surface. The first presentation looks at the effects of lightweight aggregates on those temperature gradients as well as at their effects on the properties governing the crack resistance of mass concrete. The second presentation reports on a study of the transport properties of concrete with and without lightweight aggregates. Transport properties of concrete have a substantial impact on the durability and service life of concrete structures. The beneficial effects of lightweight aggregates on transport properties and the increase in predicted service life as a result of modeling a hypothetical bridge in the Detroit area are presented.

### 1:30 pm: Effect of Lightweight Aggregate on the Cracking Tendency of Mass Concrete

Anton Karel Schindler, Auburn University

### 2:00 pm: Determination of Transport Properties of Lightweight Aggregate Concrete for Service Life Modeling

Neal S. Berke, Tournay Consulting Group, LLC



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 1:30 pm – 3:30 pm

### **Contractors' Day Session: Mega Projects— Challenging the Southern California Concrete Industry—D-Disneyland South B**

Sponsored by Southern California Chapter – ACI  
Moderated by Donald Kahn, Largo Concrete, Inc.

Presentation of recently constructed or under-construction “Mega Projects” in the southern California area including high-rise, stadium, and infrastructure projects. Discussion will include technical review of concrete mixes, evaluating demands for mass concrete, thermal control plans, design of mixtures for CIP/precast for the concrete structures, challenges related to materials properties to meet structural demands based on seismic requirements, MOE (modulus of elasticity), and ensuring the construction operations are efficient to meet the tight schedule and dollar requirements.

**1:30 pm: Moderator Welcome and Introduction, Presentation #1**  
Donald Kahn, Largo Concrete, Inc.

**1:35 pm: Los Angeles Mega Project—Circa**  
Bryan Peugh, Largo Concrete, Inc.

**1:55 pm: Presentation #1: Question and Answers**  
Bryan Peugh, Largo Concrete, Inc.

**2:05 pm: Moderator Introduction, Presentation #2**  
Donald Kahn, Largo Concrete, Inc.

**2:10 pm: Concrete Dreaming in the Golden State**  
Oscar R. Antommattei, Kiewit Engineering Group

**2:50 pm: Presentation #2: Question and Answers**  
Oscar R. Antommattei, Kiewit Engineering Group

**2:55 pm: Moderator Introduction, Presentation #3**  
Donald Kahn, Largo Concrete, Inc.

**3:00 pm: The Metropolis of Downtown LA**  
Todd Lamberty, Webcor Concrete; and Bill Bramschreiber,  
Charles Pankow Builders

**3:20 pm: Presentation #3: Question and Answers**  
Todd Lamberty, Webcor Concrete; and Bill Bramschreiber,  
Charles Pankow Builders

**3:25 pm: Closing Remarks**  
Donald Kahn, Largo Concrete, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:30 pm – 3:30 pm

### **Cracking and Durability in Sustainable Concretes, Part 2 of 2—D-Disneyland South A**

Sponsored by ACI Committees 130 and 224  
Moderated by Ralf Leistikow, Wiss, Janney, Elstner, Associates  
Inc.; and Kimberly Waggle Kramer, Kansas State University

The session description for this session may be found in the Part 1  
listing; refer to page 46.

#### **1:30 pm: Low-Cracking High-Performance Concrete (LC- HPC) Bridge Decks: Innovative Technologies for Crack Control**

Rouzbeh Khajehdehi, University of Kansas; and David Darwin,  
Matthew O'Reilly, Muzai Feng, James Lafikes, and Eman  
Ibrahim, University of Kansas

#### **1:50 pm: The Shrinkage and Cracking Potential of Alternative Cement Binders**

M. Tyler Ley, Oklahoma State University; Lisa E. Burris,  
Ohio State University; Kimberly E. Kurtis and Prasanth Alpati,  
Georgia Institute of Technology; and Amir Hajbabaee, Oklahoma  
State University

#### **2:15 pm: Influence of SO<sub>3</sub> Amount in Binder Containing High Volume of Blast Furnace Slag on Shrinkage Crack Resistance of Concrete**

Tsuji Daijiro, Takenaka Corporation; Masaro Kojima, Takenaka  
Corporation; and Noguchi Takafumi, Tokyo University

#### **2:40 pm: Shrinkage Cracking in Alkali-Activated Concrete Binder**

Maryam Hojati, Pennsylvania State University; and Aleksandra  
Radlinska and Farshad Rajabipour, Pennsylvania State University

#### **3:05 pm: Performance and Corrosion Resistance of Mortar Incorporated with Ago-Waste Based Green Admixture**

Yu Jiang, Washington State University; and Xianming Shi and  
Zhengxian Yang, Washington State University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_



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## Tuesday, October 17, 2017

### 1:30 pm – 3:30 pm

#### **Open Topic Session, Part 1 of 2—D-Disneyland North A**

Sponsored by ACI Committee 123

Moderated by Feraidon Ataie, California State University, Chico; and Giovanni Loreto, Kennesaw State University

The Open Topic Presentation is a forum for presenting recent technical information that could not be scheduled into other convention sessions.

#### **1:30 pm: Using X-Ray Imaging to Investigate In-Situ Ion Transport in Alternative Cementitious Materials**

Mehdi Khanzadeh Moradillo, Oklahoma State University; and Tyler Ley, Oklahoma State University

#### **1:50 pm: Measuring Rheological Properties of Moderate and Low-Slump Concrete**

Ahmad A. Ghadban, South Dakota State University; Mohammed T. Albahtiti, California State University, Chico; David A. Lange and Jeremy Koch, University of Illinois at Urbana-Champaign; and Kyle A. Riding, University of Florida

#### **2:10 pm: Bond Performance of Eco-Friendly Self-Consolidating Concrete (Concrete with 70% Cement Replacement)**

Hayder H. Alghazali, Missouri University of Science and Technology; and John J. Myers, Missouri University of Science and Technology

#### **2:30 pm: Impact of Cement Type and Curing Temperature on Zinc Oxide Retarding Action**

Feraidon Ataie, California State University, Chico

#### **2:50 pm: Evaluation of Early-Age Properties of Ternary Blended Cement with Limestone Filler, Fly Ash, and Blast-Furnace Slag**

Ahmad A. Shalan, Georgia Institute of Technology; and Kimberly E. Kurtis, Georgia Institute of Technology

#### **3:10 pm: Why Do Waste Transfer Station Concrete Floors Deteriorate Prematurely?**

Sungwoo Park, North Carolina State University; and Lisa Castellano, Morton Barlaz, and Mohammad Pour-Ghaz, North Carolina State University



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 1:30 pm – 3:30 pm

#### **Ward R. Malisch Concrete Construction Symposium, Part 3 of 4—D-Disneyland North B**

Sponsored by Construction Liaison Committee

Moderated by Scott M. Anderson, Keystone Structural Concrete, LLC

The session description for this session may be found in the Part 1 listing; refer to page 46.

#### **1:30 pm: Large-Scale Testing of Cold Curing Water**

Ronald L. Kozikowski, North S.Tarr Concrete Consulting

#### **1:50 pm: The Un-Shored Composite Slab on Metal Deck: Part III—Strategies for Producing Level Deflected Slabs**

Eldon G. Tipping, Structural Services Inc.; and Bryan M. Birdwell, Structural Services Inc.

#### **2:10 pm: Achieving Performance-Based Concrete Challenges for Contractor, Producer and Owner**

Kevin A. MacDonald, Beton Consulting Engineers LLC

#### **2:30 pm: Concrete Specifications: The Good, The Bad, and The Ugly**

Michelle L. Wilson, Portland Cement Association

#### **2:50 pm: Self-Consolidating and Hydration Stabilizer Concrete Revolutionizes NYC with Modern Concrete Technology**

William J. Lyons, The Euclid Chemical Company

#### **3:10 pm: Leveraging 3-D Laser Scanning for Concrete Analysis**

Philip G. Lozenzo, Rithm



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 2:00 pm – 3:00 pm

#### **MINI SESSION: The Effects of SCMs on Chloride-Induced Corrosion Initiation—D-Monorail B-C**

Sponsored by ACI Committee 222

Moderated by David G. Tepke, SKA Consulting Engineers Inc.

With substantial use of supplementary cementitious materials (SCMs) in concrete, there is need to evaluate and understand their effect on chloride penetration and thresholds for corrosion initiation. Rate of penetration and critical chloride thresholds can significantly impact the service life of reinforced concrete structures. The purpose of this session is to inform the audience of recent research in these areas. This session will be useful for researchers, engineers, and consultants to understand the influence of SCMs on long-term penetration of chlorides in concrete, time-to-corrosion and chloride thresholds for corrosion initiation in concrete. Topics also include the influence of SCMs on corrosion rate and properties that influence corrosion propagation in concrete. Thermodynamic considerations associated with bound chlorides, free chlorides, pore solution chemistry, and admixed chloride limits are additional topics.

#### **2:00 pm: Influence of Supplementary Cementing Materials on Chloride Penetration, Chloride Thresholds and Time-to-Corrosion**

Andrew Fahim, University of New Brunswick; and Michael D. A. Thomas and Edward G. Moffatt, University of New Brunswick



# Sessions & Events

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## 2:15 pm: Thermodynamic Perspective on the Role of SCMs on Admixed Chloride Limits

O. Burkan Isgor, Oregon State University; and Vahid Jafari Azad, Oregon State University

## 2:30 pm: Determination of the Chloride Content Threshold to Initiate Steel Corrosion

Eric Samson, SIMCO Technologies; Boyd A. Clark, CTLGroup; and Richard Cantin, SIMCO Technologies

## 2:45 pm: Corrosion Rate and Chloride Threshold for Bare and Epoxy-Coated Reinforcement in Concrete Containing SCMs

Matthew O'Reilly, University of Kansas



1 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 2:30 pm – 6:10 pm

### 10th Anniversary Concrete Sustainability Forum— D-Magic Kingdom 4

Sponsored by ACI Committees 130, 201, 236, and 349  
Moderated by Koji Sakai, Japan Sustainability Institute; and Julie Buffenbarger, Consultant

Topic: Concrete Sustainability: Where We Are Now and Where We Are Going?

ACI Concrete Sustainability Forum series originated as a workshop in St. Louis, MO, in 2008, when ACI Committee 130, Sustainability of Concrete, was formed. In the decade since, there has been significant advancement in technologies and systems on concrete sustainability. To celebrate the 10th ACI Concrete Sustainability Forum and to look to the future, the forum invites the president of ACI and *fib*. In addition, the chairmen of ACI Committee 130 Sustainability of Concrete, *fib* Commission 7 on Sustainability, and ISO/TC71/SC8 on environmental management for concrete and concrete structures will show the essence of their great outcomes for last one decade, by which the participants will be able to understand what's going on in concrete sustainability. Furthermore, the latest "challenges" to technologies for concrete sustainability will be presented. Lastly, we will discuss our future towards next one decade. A variety of significant topics will give the participants a condensed time, which fit the 10th anniversary event.

### 2:30 pm: Introduction and Welcome

Koji Sakai, Japan Sustainability Institute

### 2:35 pm: ACI President Perspectives

Khaled Awad, Advanced Construction Technology Services

### 2:55 pm: *fib* President Perspectives

Hugo Peiretti, FHECOR Ingenieros Consultores

### 3:15 pm: ACI 130, Sustainability of Concrete (Guidelines)

Julie K. Buffenbarger, Consultant

### 3:30 pm: *fib* Commission 7 (Sustainability)

Petr Hajek, Czech Technical University in Prague

### 4:45 pm: ISO/TC71/SC8, Environmental Standards for Concrete Sector

Koji Sakai, Japan Sustainability Institute

## 5:00 pm: "Revolutionary" Systems for the Construction of Long-Life Infrastructures

Akira Hosoda, Yokohama National University

## 5:15 pm: Does Fiber Reinforcement Enhance Concrete Sustainability?

Nemkumar Banthi, University of British Columbia

## 5:30 pm: Global CO<sub>2</sub> Sink by Concrete Carbonation

Fengming Xi, Chinese Academy of Sciences; and Steven J. Davis, Construction and Engineering Services

## 5:45 pm: Discussion—What Actions Should We Take in the Next Decade

Koji Sakai, Japan Sustainability Institute; and Julie K. Buffenbarger, Consultant

## 6:05 pm: Closing Remarks

Julie K. Buffenbarger, Consultant



3.5 AIA/CES LU/HSW

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### ACI/JCI Joint Seminar on Existing Structures, Part 1 of 4—D-Disneyland South A

Sponsored by ACI Committee 562 and Japanese Concrete Institute

Moderated by Keith E. Kesner, CVM Engineers; and Yao Luan, Saitama University

The third ACI/JCI Joint Seminar presents a series of presentations that explore topics related to the challenges in the preservation of existing concrete bridges and building infrastructure. Some of the challenges of preservation of infrastructure include the development of maintenance strategies to address long-term durability concerns, examination of the response to unexpected loadings, and the development of standards for repair/retrofit of existing structures. The final session in the seminar will feature a panel discussion that will develop plans for future collaboration between ACI and JCI to develop strategies for infrastructure preservation. The first session includes a keynote presentation that explores the response of structures under the short-term loading that occurred during the 2011 Great Hanshin Earthquake and under long-term exposure. Development of strategies for the long-term preservations of concrete structures will be examined in all three papers in the session.

### 4:00 pm: Welcome and Opening Address from ACI President

Khaled Awad, Advanced Construction Technology Services

### 4:10 pm: JCI Keynote Presentation—Research Interest in RC Structures – From Mechanical Behaviors to Durability

Kyuichi Maruyama, Nagaoka University of Technology

### 4:55 pm: Discussion

Yao Luan, Saitama University, Japan; and Keith E. Kesner, CVM Engineers

### 5:00 pm: Design and Maintenance of Transportation Structures to Optimize Service Life

Michael C. Brown, WSP USA

# Sessions & Events

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## Tuesday, October 17, 2017

### 5:25 pm: Inspection and Evaluation of Mechanical Performance of Deteriorated Concrete Bridges

Hiroshi Mutsuyoshi, Saitama University

### 5:50 pm: Discussion

Yao Luan, Saitama University, Japan; and Keith E. Kesner, CVM Engineers



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### Contractors' Day Session: 3-D Scanning Technology, The Future is Now—D-Disneyland South B

Sponsored by Southern California Chapter – ACI  
Moderated by Donald Kahn, Largo Concrete, Inc.

A presentation about the use of digital technology for concrete applications. Presentation will cover multiple uses of scanning in concrete construction and highlight the capabilities of the digital technology, equipment and programs including coordination with 3-D imaging, BIM and modeling, MEP coordination, documentation of existing conditions, record keeping and “as-built” verifications.

### 4:00 pm: Moderator Welcome and Introduction

Donald Kahn, Largo Concrete, Inc.

### 4:05 pm: 3-D Scanning Technology, The Future is Now

Loay Hanthel, Largo Concrete, Inc.

### 5:35 pm: Scanning Demonstration

Loay Hanthel, Largo Concrete, Inc.

### 5:50 pm: Session Question and Answer

Loay Hanthel, Largo Concrete, Inc.

### 6:00 pm: Session Conclusion

Donald Kahn, Largo Concrete, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### Open Topic Session, Part 2 of 2—D-Disneyland North A

Sponsored by ACI Committee 123  
Moderated by Feraidon Ataie, California State University, Chico; and Giovanni Loreto, Kennesaw State University

The session description for this session may be found in the Part 1 listing; refer to page 50.

### 4:00 pm: Reliability Analyses of Interface Shear Transfer in AASHTO LRFD and the Alternative Model

Mahmoodreza Soltani, Clemson University; and Giovanni Loreto, Kennesaw State University

### 4:20 pm: Characterization of Damage Mechanisms for Hybrid Composite Systems

Masoud Yekani Fard, School of Engineering of Matter, Transport, and Energy; Brian Raji, Pipes Reconstruction Inc.; and John Micahel Woodward and Aditi Chattopadhyay, School for Engineering of Matter, Transport, and Energy

### 4:40 pm: Evolution of End-Region Cracks in Pretensioned Concrete I-Girders Employing 0.7-in. Diameter Strands

Alistair Thornton Longshaw, University of Texas at Austin; Hossein Yousefpour, Babol Noshirvani University of Technology; and Hyun Su Kim, Rodolfo A. Bonetti, Oguzhan Bayrak, and Trevor D. Hrynyk, University of Texas at Austin

### 5:00 pm: Non-Destructive Assessment of Concrete Construction Condition of Aeration Tank with Ground-Penetrating Radar Testing and Ultrasonic-Echo Tomography Testing – A Case Study

Zhengqi Li, Terracon Consultants Inc.; and Jigar B. Desai, Terracon Consultants Inc.

### 5:20 pm: Predicting Flexural Capacity of AAC Beams Strengthened with Basalt Fiber Composites

Alaa Abd Ali, Rutgers, The State University of New Jersey; and P. N. Balaguru, Rutgers, The State University of New Jersey

### 5:40 pm: Fragility Assessment of Concrete Pile-Supported Port Structures Exposed to Coastal Hazards

Georgios Balomenos, Rice University; and Jamie Padgett, Rice University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 4:00 pm – 6:00 pm

### Ward R. Malisch Concrete Construction Symposium, Part 4 of 4—D-Disneyland North B

Sponsored by Construction Liaison Committee  
Moderated by Bruce A. Suprenant, American Society of Concrete Contractors

The session description for this session may be found in the Part 1 listing; refer to page 46.

### 4:00 pm: Why Are As-Built Measurements Important?

Bruce A. Suprenant, American Society of Concrete Contractors

### 4:20 pm: How the Inter-Relationship Between Concrete Properties and Construction Practices Impacts Surface Appearance

Joseph A. Daczko, BASF Corporation

### 4:40 pm: A Comparison of Floor Tolerance Measuring Approaches F-Numbers, 10-ft Straightedge, and Waviness Index

Richard E. Smith, Structural Services Inc.; and Eldon G. Tipping, Structural Services Inc.

### 5:00 pm: German and European Experiences with “Guides for Formed Concrete Surfaces,” Similar to ACI 347.3R-13

Rolf A. Spahr, MEVA Formwork Systems Inc.

### 5:20 pm: Concrete Surface Void Ratio: Perspective from the Testing Laboratory

Jacob L. Borgerson, Paradigm Consultants, Inc.; and Woodward L. Vogt, Paradigm Consultants Inc.

### 5:40 pm: Can Bugholes Be Evaluated Objectively on Off-the-Form Concrete Surfaces?

Ward R. Malisch, American Society of Concrete Contractors; and Heather J. Brown, Middle Tennessee State University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

# Sessions & Events

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## 5:30 pm – 6:30 pm

### **Faculty Network Reception—D-Sleeping Beauty**

Faculty members and students are invited to attend this informal reception for an opportunity to exchange ideas and network. Light hors d'oeuvres and a cash bar will be available.

## 6:30 pm – 8:30 pm

### **Concrete Mixer—D-Magic Kingdom Lawn**

Join ACI attendees and guests for an evening of networking, entertainment, and great food during the Concrete Mixer. An assortment of food and beverages will be available. **This reception will be held in D-Disneyland Center in inclement weather.**

## Wednesday, October 18, 2017

## 8:30 am – 10:30 am

### **ACI/JCI Joint Seminar on Existing Structures, Part 2 of 4—D-Disneyland South A**

Sponsored by ACI Committee 562

Moderated by Tracy D. Marcotte, CVM Engineers; and Tomohiro Miki, Kobe University

The session description for this session may be found in the Part 1 listing; refer to page 51.

#### **8:30 am: Estimating Reliability of Historic Punching Shear Models**

Gaur Johnson, Moffatt and Nichol

#### **8:55 am: Maintenance Management of RC Deck Slabs in Japan—An Overview of Government Funded Research Project, SIP (Strategic Innovation Project)**

Tetsuya Ishida, University of Tokyo

#### **9:20 am: Seismic Assessment and Retrofit of Substandard Bridge Columns**

M. Saiid Saiidi, University of Nevada, Reno

#### **9:45 am: Several Topics on Strategy for Rehabilitation and Maintenance in Hanshin Expressway Road Network System**

Akinori Sato, Hanshin Expressway

#### **10:10 am: Discussion**

Tomohiro Miki, Kobe University; and Tracy D. Marcotte, CVM Engineers

 2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 8:30 am – 10:30 am

### **Evaluation of Concrete Bridge Behavior Through Load Testing—International Perspectives, Part 1 of 2—D-Disneyland North B**

Sponsored by ACI Committee 342

Moderated by Eva Lantsoght, Universidad San Francisco de Quito

This session will discuss diagnostic and proof load testing for evaluation of concrete bridges, both for new and existing structures through case studies around the world. For new or existing bridges, diagnostic load testing is often required to assess design or analysis assumptions, particularly for atypical bridges. Similarly, proof load testing is often needed to verify the capacity of deteriorating or older bridges with missing information. This session will provide a global perspective on strategies for assessing in-service performance, differences in loads, reserve capacities, structure age, and construction practices between regions. Bridge designers, owners, and researchers will benefit from the session by learning recent developments on international standards for load testing.

#### **8:30 am: Diagnostic Load Testing to Understand Problems Related to High Skew in Prestressed Concrete Bridges**

Mauricio Diaz Arancibia, University at Buffalo, The State University of New York; and Pinar Okumus, University at Buffalo, The State University of New York

#### **8:45 am: Bridge Load Testing in Germany**

Gregor Schacht, GmbH; Marx Krontal, GmbH; and Frederik Wedel and Steffen Marx, Leibniz University of Hanover

#### **9:00 am: Bridge Load Testing and Monitoring for Super-Heavy Permit Loads**

Brett Commander, Bridge Diagnostics, Inc.; and Jesse Sipple, Bridge Diagnostics, Inc.

#### **9:15 am: Highway Bridge Live Load Testing Practice in Turkey and Azerbaijan**

Alp Caner, Middle East Technical University; and Ahmet Turer, Middle East Technical University

#### **9:30 am: Assessment and Loading to Failure of Four Swedish RC Bridges**

Niklas Bagge, WSP; Arto Puurula, Savonia University of Applied Sciences in Kuopio; Thomas Blanksvard, SKANSKA; Anders Carolin, Trafikverket Lulea; and Jonny Nilimaa, Cristian Sabau, Gabriel Sas, Bjorn Taljsten, and Lennart Elfgren, University of Technology

#### **9:45 am: Load Rating of Prestressed Concrete Adjacent Beam Bridges Without Plans in New Mexico**

Carlos Aguilar, New Mexico State University; and David Jauregui, Craig M. Newton, and Brad Weldon, New Mexico State University

#### **10:00 am: On the Way to the Development of Shear Stop Criterion with Acoustic Emission Measurement**

Yuguang Yang, Delft University of Technology; Ane de Boer, Ministry of Infrastructure and the Environment, Netherlands; and Dick Hordijk, Delft University of Technology

 2 AIA/CES LU

PDH Codes: \_\_\_\_\_

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### Wednesday, October 18, 2017

#### 8:30 am – 10:30 am

##### **Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 1 of 3—D-Disneyland North A**

Sponsored by ACI Committee 447

Moderated by Sri Sritharan, Iowa State University

The session will include presentations of modeling of concrete walls subjected to extreme loads such as those due to earthquake and blast. The session will be valuable to academic researchers, consulting engineers, and students interested in finite element analyses of concrete structures.

##### **8:30 am: Detailed Nonlinear Modeling and Time-History Analysis of the Alto Rio Building, Chile**

José I. Restrepo, University of California, San Diego; Jinping Ou, Harbin Institute of Technology; Joel P. Conte, University of California, San Diego; and Peizhou Zhang, Dalian University of Technology

##### **8:46 am: 3-D Inelastic Finite Element Model of a RC Wall Building Damaged During 2010 Chile Earthquake**

R. Jünemann, Pontifical Catholic University of Chile; and Matias Hube and Juan C De La. Llera, Pontifical Catholic University of Chile

##### **9:02 am: Three-Dimensional Beam-Truss Model for Seismic Analysis of Reinforced Concrete Walls and Slabs: Modeling Approach and Validation, for Individual Reinforced Concrete Walls, Slabs, Coupled Walls, and Tall Core-Wall Buildings**

Marios Panagioto, University of California, Berkeley; and Yuan Lu, University of California, Berkeley

##### **9:18 am: Three-Dimensional Finite Element Analysis of Damage and Failure of RC Shear Walls under Cyclic Lateral Loading**

Mohammadreza Moharrami, Virginia Polytechnic Institute and State University; and Ioannis Koutromanos, Virginia Polytechnic Institute and State University

##### **9:34 am: Linking Millimeter Length-Scale Mechanisms to RC Infrastructure: Multiscale Finite Element Analysis of RC Shear Wall Building Exposed to Extreme Seismic**

In Ho Cho, Iowa State University

##### **9:50 am: Assessment of the Capabilities of the Nonlinear Beam Truss Model (NL\_BTM) for Modeling of R/C Walls Subjected to Lateral Loading**

Andrés Felipe Martínez, North University; and Gustavo Araújo and Carlos Arteta, North University

##### **10:06 am: Towards Modeling of ASR-Affected Reinforced Concrete Shear Walls Subjected to Earthquake Loading**

Anca C. Ferche, University of Toronto; and Frank J. Vecchio, University of Toronto



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

#### 11:00 am – 1:00 pm

##### **ACI/JCI Joint Seminar on Existing Structures, Part 3 of 4—D-Disneyland South A**

Sponsored by ACI Committee 562

Moderated by Hitoshi Shiohara, University of Tokyo; and Dylan Freytag, Pivot Engineers

The session description for this session may be found in the Part 1 listing; refer to page 51.

##### **11:00 am: LA City Seismic Retrofit Ordinance**

Garrett R. Hagen, Degenkolb Engineers

##### **11:25 am: Japanese Strategy for Seismic Retrofitting of Existing R/C Buildings**

Koichi Kusunoki, University of Texas at Austin

##### **11:50 am: Development and Use of the ACI 562 Concrete Repair Code**

Gene R. Stevens, JR Harris & Co Structural Engineers

##### **12:15 am: Challenges for Repair, Rehabilitation and Retrofitting of Concrete Structures over the Limit State due to Severe Deterioration**

Takafumi Noguchi, University of Tokyo

##### **12:40 pm: Discussion**

Dylan Freytag, Pivot Engineers; and Hitoshi Shiohara, University of Tokyo



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

#### 11:00 am – 1:00 pm

##### **Evaluation of Concrete Bridge Behavior Through Load Testing—International Perspectives, Part 2 of 2—D-Disneyland North B**

Sponsored by ACI Committee 342

Moderated by Pinar Okumus, University at Buffalo, The State University of New York; and Eva Lantsoght, Universidad San Francisco de Quito

The session description for this session may be found in the Part 1 listing; refer to page 53.

##### **11:00 am: Assessment of Reinforced Concrete Slab Bridges through Proof Load Testing in the Netherlands**

Eva Lantsoght, Universidad San Francisco de Quito and Delft University of Technology; Cor van der Veen, Delft University of Technology; Ane de Boer, Ministry of Infrastructure and the Environment, Netherlands; and Dick Hordijk, Delft University of Technology

##### **11:15 am: Torsional Effects on Load Tests to Quantify Shear Distribution in Prestressed Concrete Girder Bridges**

Ben Dymond, University of Minnesota Duluth; and Catherine E. French and Carol K. Shield, University of Minnesota, Twin Cities

##### **11:30 am: Field Testing of a Three-Span Solid Concrete Slab Bridge from Service Load Conditions to Rupture**

Bruno Massicotte, Ecole Polytechnique of Montreal; and Fabien Lagier, Ecole Polytechnique of Montreal



# Sessions & Events

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## 11:45 am: Execution of a Collaborative Live Load Test on Concrete Bridges in Complex Environments

Matthew Hebdon, Virginia Polytechnic Institute and State University; Devin K. Harris and Mohamad Alipour, University of Virginia; Carin Roberts-Wollmann and Ezra Bin Arif Edwin, Virginia Polytechnic Institute and State University; James Riley, McNary Bergeron & Associates; Abdollah Bagheri, University of Maryland; and Andrei Ramniceanu, Virginia Military Institute

## 12:00 pm: High Magnitude Loading of Concrete Bridges

Jacob W. Schmidt, Technical University of Denmark; Philip S. Halding, Technical University of Denmark; and Thomas W. Jensen and Svend Englund, COWI A/S

## 12:15 pm: Diagnostic Test for Load Rating of a Prestressed SCC Bridge

Eli S. Hernandez, Missouri University of Science and Technology; and John J. Myers, Missouri University of Science and Technology

## 12:30 pm: The Use of Non-Contacting Interferometric Phase Radar for Bridge Load Testing

Larry D. Olson, Olson Engineering, Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 11:00 am – 1:00 pm

### *Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 2 of 3—D-Disneyland North A*

Sponsored by ACI Committee 447

Moderated by Sri Sritharan, Iowa State University

The session description for this session may be found in the Part 1 listing; refer to page 54.

## 11:00 am: Numerical Prediction of the In-Plane Cyclic Behavior of Reinforced Concrete Shear Walls

Gloria Faraone, University of California, San Diego; and Tara C. Hutchinson, University of California, San Diego

## 11:16 am: Finite Element Modeling of Reinforced Concrete Walls under Uniaxial and Biaxial Loading

Kristijan Kolozvari, California State University, Fullerton; Ross Miller, California State University, Fullerton; and Kutay Orakcal, Bogazici University

## 11:32 am: Nonlinear Finite Element Modeling of Out-of-Plane Instability in Slender RC Walls

Pablo Parra, Adolfo Ibáñez University; and Jack P. Moehle, University of California, Berkeley

## 11:48 am: Modeling of Out-of-Plane Deformation in Rectangular Walls under Concentric In-Plane Cyclic Loading

Rajesh P. Dhakal, University of Canterbury; and Stefano Pampanin and Farhad Dashti, University of Canterbury

## 12:04 pm: Fiber-Based Modeling for Instability of Boundary Elements in Ductile RC Structural Walls

Ana Gabriela Haro, North Carolina State University; Mervyn J. Kowalsky, North Carolina State University; and Yuk Hon Chai, University of California, Davis

## 12:20 pm: Numerical Simulation of Out-of-Plane Stability of Thin Reinforced Concrete Walls

Angelica Rosso, Swiss Federal Institute of Technology; and Lisandro A. Jiménez-Roa, João Pacheco De Almeida, and Katrin Beyer, Swiss Federal Institute of Technology

## 12:36 pm: Uncertainty in Prediction of Shear Wall Strength by Finite Element Analysis

Jan Červenka, Cervenka Consulting; and Vladimír Červenka, Cervenka Consulting and Lukáš Kadlec and Tereza Sajdlová, Czech Technical University in Prague



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

## 1:30 pm – 3:30 pm

### *ACI/JCI Joint Seminar on Existing Structures, Part 4 of 4—D-Disneyland South A*

Sponsored by ACI Committee 562

Moderated by Tomoko Ishida, Obayashi Corporation; and Lawrence F. Kahn, Georgia Institute of Technology

The session description for this session may be found in the Part 1 listing; refer to page 51.

## 1:30 pm: ACI 318-14—Revision of a Classic

Randall W. Poston, Pivot Engineers

## 1:55 pm: Study and Challenges for Application to the Structural Member of the Post-Installed Adhesive Anchors in Japan

Hitoshi Hamasaki, Shibaura Institute of Technology; Tomoaki Akiyama, Shibaura Institute of Technology; and Hitoshi Shiohara, University of Tokyo

## 2:20 pm: Discussion

Tomoko Ishida, Obayashi Corporation; and Lawrence F. Kahn, Georgia Institute of Technology

## 2:30 pm: Panel Discussion: Future Collaboration between ACI and JCI for Preservation of Aging Infrastructure

Tomoko Ishida, Obayashi Corporation; and Lawrence F. Kahn, Georgia Institute of Technology



2 AIA/CES LU

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## Wednesday, October 18, 2017

### 1:30 pm – 3:30 pm

#### **Finite Element Modeling of Concrete Walls Subjected to Extreme Loads, Part 3 of 3—D-Disneyland North A**

Sponsored by ACI Committee 447

Moderated by Sri Sritharan, Iowa State University

The session description for this session may be found in the Part 1 listing; refer to page 54.

#### **1:30 pm: Finite Element Analysis of Reinforced Concrete Wall Subjected to Blast Loading**

Ganesh Thiagarajan, University of Missouri–Kansas City; and Akash Iwalekar, Akash Engineers Inc.

#### **1:46 pm: Wind-borne Missile Impact of Reinforced Concrete Panels**

Brian R. Terranova, University of Buffalo, The State University of New York; Leonard E. Schwer, Schwer Engineering and Consulting Services; and Andrew S. Whittaker, University of Buffalo, The State University of New York

#### **2:02 pm: Simulating Post-Earthquake Fire Performance of RC Walls**

Shuna Ni, Texas A&M University; and Anna C. Birely, Texas A&M University

#### **2:18 pm: Axially Equilibrated Displacement-Based beam Element for Simulating the Cyclic Inelastic Behavior of RC Members**

Danilo Tarquin, Swiss Federal Institute of Technology; and Joao Almeida, Katrin Beyer, Swiss Federal Institute of Technology

#### **2:34 pm: Recommendations for and New Design Expressions from High-Resolution Finite Element Modeling of Flexural Walls**

Laura N. Lowes, University of Washington; Dawn E. Lehman, University of Washington; Zachary Whitman, Coughlin Porter Lundeen; and Anahid Behrouzi, University of Illinois at Urbana-Champaign

#### **2:50 pm: Selection Criteria for Finite Element Software for Simulation of Flexural RC Walls**

Alex Shegay, University of Auckland; Christopher Motter, Washington State University; Kenneth J. Elwood and R.S. Henry, University of Auckland; and Dawn E. Lehman, Laura N. Lowes, and Kamal Ahmed, University of Washington

#### **3:06 pm: Size Effect on Strength of Shear Walls Investigated by Experimentally Calibrated Micro-Plane Model M7**

Mohammad Rasoolinejad, Northwestern University; and Gianluca Cusatis and Zdeněk P. Bažant, Northwestern University



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 1:30 pm – 3:30 pm

#### **Load Testing of Existing Concrete Structures—D-Disneyland North B**

Sponsored by ACI Committee 437

Moderated by Mohamed El-Batanouny, Wiss, Janney, Elstner Associates, Inc.; and Aaron Larosche, Pivot Engineers

The goal of the session will be to provide the audience with a summary of the state-of-the-art practices of load testing existing structures. Selected presentations will highlight interesting load testing case studies, review lessons learned during testing, and provide information to audience regarding best practices when load testing.

#### **1:30 pm: Load Testing of a Parking Structure Due to Low Concrete Compressive Strengths**

Frederick D. Heidbrink, Wiss, Janney, Elstner Associates, Inc.; and Robert Kuykendall, Wiss, Janney, Elstner Associates, Inc.

#### **1:50 pm: Cyclic Load Testing for the Safety Assessment of Existing Reinforced Concrete Structures According to ACI 437: Recent Developments and Case Studies**

Antonio Brancaccio, Experimentation S.r.l.; and Antonio Nanni, University of Miami

#### **2:15 pm: Load Testing of Concrete Structures: An Engineer's Perspective**

Filippo Masetti, Simpson Gumpertz & Heger Inc.; and Nestore Galati, Structural Technologies

#### **2:40 pm: Preventing Mistakes in Load Testing**

Predrag L. Popovic, Wiss, Janney, Elstner Associates, Inc.

#### **3:05 pm: Load Testing of Elevated Parking Structure Slabs**

Ashok M. Kakade, Concrete Science Inc.



2 AIA/CES LU

PDH Codes: \_\_\_\_\_

### 6:30 pm – 8:00 pm

#### **President's Reception—D-Magic Kingdom Lawn**

ACI President Khaled Awad invites all convention attendees to the President's Reception, where you'll have the opportunity to network with committee Chairs, chapter Presidents, and international attendees. An assortment of food and beverages will be available **This reception will be held in D-Disneyland South A-B in inclement weather.**



# The Concrete Convention and Exposition



Spring 2018 | Salt Lake City

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Grand America &  
Little America  
Salt Lake City, UT

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