



# SC ENGINEERING CONFERENCE & TRADE SHOW

**Embassy Suites Hotel at Kingston Plantation  
Myrtle Beach, South Carolina  
June 3 - 5, 2021**



**The SC Engineering Conference & Trade Show  
will be celebrating its 14th year.**

The mission of the SC Engineering Conference is “timely presentations on various engineering subjects, keynote presentations and enough professional development hours to substantially meet the annual requirement.” Additionally, the conference offers a trade show where products and services engineers use directly or specify are offered with knowledgeable representatives to assist participants.

Conferences are always about more than technical programs and trade shows; the 2021 SC Engineering Conference & Trade Show also realizes the importance of opportunities to meet and converse with fellow professionals. An exhibitor reception on Thursday evening serves as a networking opportunity between engineers and exhibitors. Session breaks, lunches and the banquet are also great times for meeting and talking with fellow professionals.

Due to COVID-19, the Hybrid SC Engineering Conference & Trade Show will have limited attendance for an in-person event with unlimited online participation.

However, we will be offering a virtual aspect for those who cannot attend in person. You will have the option to participate in any of the presentations through the SC Engineering Virtual Conference Platform (same as 2020) during the conference, June 3 - 5, 2021 or you can view the presentations until June 30, 2021 at 5:00 PM.

*\*\*\*All in person attendees must wear a mask at all times and must maintain a social distance. This is required by the state of SC for in person meetings as well as required by the contract signed with the Embassy Suites, Kingston Plantation. If you do not wear the mask at all times except when eating, you will be required to leave.\*\*\**

All attendees, in-person and virtual, will have access to the SC Engineering Virtual Conference Platform.

Pricing will remain the same for both in-person and virtual due to the costs incurred to have a concurrent in-person and virtual conference.

Engineers and other design professionals attending the conference June 3 - 5, 2021 at the Embassy Suites, Kingston Plantation may gain up to 15 PDHs and choose from a variety of more than 20 programs.





# SC ENGINEERING

## CONFERENCE & TRADE SHOW

The 2021 SC Engineering Conference & Trade Show is offering 15 PDH. For attending a program in every time slot, you will be able to accumulate 15 PDH of the 15 required annually.

### Thursday, June 3, 2021

4 PDH for the day

- 8:00 – 9:50 AM** .....ACEC-SC Board and Annual Meeting
- 10:00 – 11:50 AM** .....SCSPE Board and Annual Meeting
- 10:00 – 11:50 AM** .....ASCE-SC Board and Annual Meeting
- 10:00 – 5:00 PM**..... Registration
- 1:00 – 1:50 PM** ..... (1 PDH)  
 SC State Board of Registration for Professional Engineers and Surveyors Update  
 SC State Board of Registration for Professional Engineers and Surveyors
- 2:00 – 2:50 PM** ..... (1 PDH)  
 SCDHEC Update  
 Myra Reece, Director of Environmental Affairs, SCDHEC
- 3:00 – 3:50 PM** ..... (1 PDH)  
 SCDOT Update  
 SCDOT
- 4:00 – 4:50 PM** ..... (1 PDH)  
 Diversity and Inclusion  
 Tricia Hatley, PE, F.NSPE, 2020-2021 President, National Society of .....  
 Professional Engineers (NSPE), Freese and Nichols, Inc.
- 5:00 – 6:00 PM** ..... Trade Show Reception
- Dinner on your Own

### EDUCATION SPONSOR

SC State Board of Registration for Professional Engineers and Surveyors



### GOLD SPONSORS



EXPERIENCE | Transportation



**Friday, June 4, 2021**

7 PDH for the day

7:00 AM – 5:00 PM.....Registration

8:00 AM – 4:20 PM ..... Trade Show

8:00 AM – 4:20 PM.....(1 PDH each) ..... **CONCURRENT SESSIONS**

## **General Engineering Track**

**8:00 - 8:50 AM**

### **The Advancements of Window Systems**

J. Paul Abrams, Business Development Director, Floodproofing.com / Fenex

*The technology of the glass industry is evolving rapidly as natural disaster threats increase, terroristic concerns continue to be significant, and the design community continues to push the limits of what is possible.*

*This course will cover the evolution of glass over the past 5 years, a new generation of specialty windows and skylights which offer the ability to passively withstand impact, fire, and extreme conditions, as well as push the limits of size as it pertains to oversized applications.*

*Upon completion of this course, the participants will have a thorough understanding of the new applications and specifications for oversized, impact, fire rated and specialty window systems and skylights that can be applied today in the rapidly evolving construction industry.*

*Learning Objectives:*

- 1) Explore the pre-existing interlayer technology and look at the advancements with the new innovations being used to push the limits of size and strength.
- 2) Identify the different types of framing materials and extrusions as well as finishes to create rated windows and skylights.
- 3) Explain the different sealants that are being used to create window systems vs. new emerging products being used in oversized specialty & impact windows and skylights.
- 4) Understand the applications for these new systems and how their passive nature can provide organic protection eliminating the need for human intervention during a potential precarious circumstance.

**9:00 - 9:50 AM**

### **Electrical Leak Location (ELL) Services - Surveys & Tests**

Andrew Colby, Department Manager & Junior Engineering Associate,  
Bunnell Lammons Engineering

*Electrical Leak Location (ELL) is a testing procedure used to assist in the detection of containment system potential leak paths.*

*ELL is performed by applying an electrical charge to cover materials or directly to the surface of the containment system, while placing an electrical ground below or outside of the containment system area.*

*A meter is used to observe and monitor electrical current flow. Variations in electrical current flow may indicate the potential of leak paths.*

*ELL improves the chances of locating and eliminating leak paths. ELL may be performed during construction or post construction on exposed or covered containment systems.*

*The goal of this presentation is to provide information on the methods, limits, advantages and sequencing for performing an ELL survey or test.*

**9:50 AM – 10:25 AM: Morning Break**

**10:30 - 11:20 AM**

### **Full Consideration of Risk as a Resilience Requirement**

Michael Flood, National Resilience Lead, WSP

*Past efforts guiding effective climate resilience investments have been limited in their viability as they have utilized generalized vulnerability frameworks that are problematic for engineering professionals, or present/apply data that does not directly address physical risk to the community associated with changing future conditions. These approaches are legacy procedures, developed early on in the development of methods for how to address long-term concerns with limited information. There are a number of efforts underway to directly apply a risk-based approach, utilizing data developed for the purpose of generating answers to key questions: what is changing?, what does that mean in terms of consequences?, and how, based on this information, should we be investing to ensure long-term resilience?. The most viable approach towards addressing these concerns deconstructs common approaches to risk and presents information/data that helps guides more resilient, and cost-effective investments. The best processes present material that key stakeholders can support.*

## **SILVER SPONSORS**



## **BRONZE SPONSORS**



**11:30 AM - 12:20 PM**

### **Business Planning and Protection and Legal Compliance**

Kimberly Raber, Attorney, Kimberly A. Raber, P.A.

Everyone is forming their own business entity, such as LLCs, but they often do not have everything they need to save taxes and protect their personal assets from the debts and liabilities of their business. They also do not know the steps they have to take to maintain their business or what happens if another owner becomes incapacitated or disabled, dies, quits, or wants to sell his or her interest in the business. In this segment, we will discuss how to set up and maintain your business properly, how to deal with a business owner that wants to sell his interest in the company, and how to deal with issues such as incapacity and death of a business owner.

## **Transportation Track**

**8:00 - 8:50 AM**

### **Mobile LiDAR and 3D Laser Scanning for Mapping Roadways and Facilities**

David Headrick, Project Manager, KCI Technologies, Inc.

Advanced surveying technologies have revolutionized the speed, accuracy, and coverage for mapping roadways and facilities. Mobile LiDAR is the culmination of 3D laser scanning, surveying, and photogrammetric technologies. These units can be mounted on any vehicle and collect massive amounts of data, even at highway speeds. This combination of accuracy and speed gives designers, owners, and contractors multiple new tools to be used in asset management, 3D Building Information Modeling (BIM), and Virtual Design and Construction (VDC). The mobile LiDAR outputs can be combined with traditional surveying, drones, and terrestrial scanning to maximize data coverage. In turn, the pointclouds and photos can be converted to 2D CAD, 3D modeling, or a surprising degree of augmented and virtual reality visualizations. Horizontal and vertical assets can also be combined into single platforms for comprehensive asset management, design, and planning. KCI's David Headrick will show how these technologies work, present sample projects, and discuss how these tools can save time, save money, and add value to projects.

Attendees should expect to learn:

1. Basics elements and configurations of mobile LiDAR units
2. Technical aspects of LiDAR (i.e., 3D laser scanning) technologies
3. How other advanced surveying technologies can be combined with the mobile LiDAR outputs
4. CAD, modeling, and visualization deliverables that can be generated from mobile LiDAR outputs
5. Scoping and pricing considerations for mobile LiDAR projects

**9:00 - 9:50 AM**

### **Designing Asphalt Pavements for Commercial Markets**

Kimberly Lyons, Technical Director, SCAPA

This presentation is an overview of how to structurally design asphalt pavements for the commercial market (parking lots, low volume roadways, etc) using the SCDOT specifications.

**9:50 AM – 10:25 AM: Morning Break**

**10:30 - 11:20 AM**

### **ASCE Infrastructure Report Card**

Jonathan Thrasher, Senior Engineer, S&ME

Every four years, the American Society of Civil Engineers issues a Report Card for America's Infrastructure. The report card represents the overall status of American infrastructure with letter grades based on the system's condition and needs for improvement. The report card addresses obvious areas such as roads and bridges, but also ones that may be unexpected such as schools and public parks. This presentation will provide an overview of the findings, a summary of the methodology used to develop the 2021 National Report Card, and solutions for the challenges ahead. In addition, we will consider the role of innovation and resilience in the future of infrastructure. Although the focus will be on the national level, it will include important information related to infrastructure in South Carolina.

**11:30 AM - 12:20 PM**

### **SCDOT Transportation Specifications Update**

Kimberly Lyons, Technical Director, SCAPA

This presentation is an overview of all the updates to the technical specs in the transportation track since January 2020.

**BREAK SPONSOR**



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## Fire Life and Safety

8:00 - 8:50 AM

### High Expansion Foam for Civilian and Military Aircraft Hangers

Brian Berkely, Viking

Go over the different standards for engineering the foam systems, review different requirements for testing systems and how to engineer the correct system

9:00 - 9:50 AM

### Introduction to NFPA 101 Life Safety Code

Rob Hanson

This presentation provides an overview of the application of the NFPA 101 Life Safety Code. Differences between the IBC and NFPA 101 will be highlighted.

9:50 AM – 10:25 AM Morning Break

10:30 AM - 12:20 PM

### Seismic Protection for Sprinkler System

Ralph Foster, Principal FP Engineer, Foster Engineering & Consulting, LLC

The class will provide an overview of the 2016 National Fire Protection Association pamphlet 13 requirements for seismic protection of sprinkler systems. The class will show engineers how to determine when protection is required using the International Building Code default values. The class will cover the six part of seismic protection for sprinkler systems required by NFPA 13.

We will also discuss common pitfalls designers face for new and existing construction. The class will identify key points for people reviewing seismic protection of sprinkler systems.

1:00 – 2:00 PM .....LUNCH and KEYNOTE ADDRESS

### On the Tee: Prepping Kiawah for the 2021 PGA Championship

Frank Harkey, AIA, Vice President, Practice Leader, Sports & Events, Stewart, Inc.  
Frank Mundy, PLS, Stewart, Inc.

In May of 2021, the strongest international field in golf returned to The Ocean Course at Kiawah Island Golf Resort for the 2021 PGA Championship. Originally designed to host the 1991 Ryder Cup, the Pete Dye Ocean Course winds naturally through windswept dunes along the coast of South Carolina, boasting the most seaside holes in North America. This educational session will intimately illustrate how, based on multiple decades of experience in complex local, national, and international events, a major event such as this is designed, constructed, managed, and then deconstructed. Discussion will include planning and design of overlay infrastructure (access, transportation, utilities, crowd and traffic flow, facility design, operations planning, programming, spectator experience, venue site planning, etc.) and event operations (event day timelines, credentialing, emergency action plans, event day communications, etc.) Special emphasis will be given to the effects of COVID-19 on the event planning, operations, and execution.

After Lunch Break 2:00 PM - 2:35 PM

## General Engineering Track

2:30 - 3:20 PM

### The Governing Body and its Influence on Our Profession

Patrick Sadek, Deputy CEO, Aesthetic Concepts, LLC

The session will simply cover the impact of favorable and unfavorable decisions made by elected & non-elected officials and their impact on local economies and innovations & creative thinking of professionals. I will have a presentation that will cover lessons learned, projects, case studies, recommendations, etc.

3:30 - 4:20 PM

### Legal & Ethical Aspects of Practice for Engineers & Firms

Sam Wellborn, Attorney, Robinson Gray Stepp & Laffitte, LLC

This session will equip you and your firm with an understanding of what ethical and legal issues to avoid in your practice as an engineer. The session will cover ethical frameworks, civil liability, contract matters, and regulatory compliance.

TRADESHOW  
PARTICIPANTS



# Transportation Track

2:30 - 3:20 PM

## Innovative Traffic Solutions During Construction

Richard Odynski, Senior Traffic Engineering Manager, WSP

Presentation will discuss innovative ways to manage traffic during construction. Maintaining traffic operations, intersection capacity, and access during construction is often a challenge, especially on high volume facilities and intersections. However, that does not require maintaining the existing configuration. In many cases, a temporary traffic pattern shift can optimize a work area and traffic flow. Project highlights include a temporary superstreet pattern to remove turn lanes at a congested intersection (U-5717, Durham County, NC), conversion of a clover interchange to a temporary diamond for construction of a DDI (I-3802A, Cabarrus County, NC), counter-flow ramp traffic for a proposed turbine interchange (R-2828, Wake County, NC), and staged roundabout construction along a primary highway (U-5908, Mecklenburg County, NC).

3:30 - 4:20 PM

## Resilient Infrastructure

Tiffany Ferrell, Atlantic Region Product Resources Specialist, Rinker Materials

Resiliency is the new "green". Buzzwords are often over used and underutilized, and resilient and sustainable infrastructure frequently falls in that category. Yet in today's constantly changing climate, engineers must consider the resiliency of their projects to withstand floods, fires, and earthquakes. Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress. Sustainability is meeting our own needs without compromising the ability of future generations to meet their own needs. This session will discuss both resiliency and sustainability, how it relates to infrastructure and why that it is critical to have both resilient and sustainable infrastructure.

# Fire Life and Safety

2:30 - 3:20 PM

## Overview of the ICC Performance Based Design Process

Rob Plonski, Senior Fire Protection Engineer, US Department of Energy, National Nuclear Security Administration (NNSA)

The presentation will provide an overview of the 2018 ICC Performance Code. It will begin with a brief history of prescriptive codes, a review of some of the major events that have driven changes to prescriptive codes, and why performance based solutions, when developed appropriately, can provide an elegant solution to difficult problems

3:30 - 4:20 PM

## Classification of Ignitable Liquids Across Common Standards

Robert Upson, Retired career firefighter and fire marshal, Amentum

The 2021 edition of the NFPA 30 Flammable and Combustible Liquids Code introduced major changes in how we categorize ignitable liquids. This presentation will review how and why those changes came about and discuss some of the issues under discussion for the 2024 edition.

6:30 - 7:00 PM ..... Reception

7:00 - 9:00 PM ..... Banquet

## TRADESHOW PARTICIPANTS



**Saturday, June 4, 2021**

4 PDH for the day

## **General Engineering**

**8:00 - 8:50 AM**

### **Survey Measurement Primer for Engineers**

James Gray Jr, PLS, GISP, Senior Geomatics Project Manager, Stewart Engineering

*The rapid pace of technological advancements has provided professional surveyors with a rich toolbox of options to make measurements to suit a more diverse range of projects and budgets to support engineering and design. Each methodology comes with its own set of assumptions on efficiency, cost savings, and accuracy levels that are crucial to understand when considering project approaches and budgets. The goal of this presentation is to provide a robust set of expectations for the many survey data collection options available while empowering the engineering community with the background needed to make the most applicable choices for their projects.*

**9:00 - 9:50 AM**

### **The Beautiful Structure: Case Studies for Featuring Architecturally-Exposed Structure in Design**

Mark Lorah, Structural Engineer/Partner, Johnson, Laschober & Associates, P.C.

*Structure can be Beautiful. Although often covered by architectural elements never to be seen again, a building's structure has beauty in of itself and many times deserves to be showcased instead. This presentation uses case studies to show how structure can be exposed and featured as striking and beautiful elements. It will discuss working together with your architect and interior designers to develop a concept and work it through to completion. It shows how good design and sometimes happy accidents can become the most striking features of an entire project.*

**10:00 - 10:50 AM**

### **Restrained Joints and Horizontal Directional Drilling**

John Simpson, Regional Engineer, McWane Ductile

*Horizontal Directional Drilling is being utilized often on various construction projects and there are many different technologies required for Horizontal Directional Drilling. It can be a challenge to keep up with existing and new technology. This abstract identifies the various restraint methods that can be utilized for piping and fittings, showing recommended systems in terms of effectiveness and efficiency and applications for Horizontal Directional Drilling. In order to best serve a utility, the understanding and limitations of the horizontal directional drilling process should be understood. This understanding will provide owners a better understanding of horizontal directional drilling applications and material limitations that will maximize the design life and reduce operating and maintenance costs.*

**11:00 - 11:50 AM**

TBD

## **REGISTRATION INFORMATION**

### **Registration Rates**

Full Conference .....	\$350.00
Thursday Only .....	\$108.00
Thursday/Friday .....	\$288.00
Friday/Saturday .....	\$288.00
Friday Only .....	\$175.00
Saturday Only .....	\$96.00
Spouse/Guest .....	\$150.00
Banquet Only .....	\$85.00
Virtual - Full .....	\$350.00
Virtual - One Day .....	\$100.00
Virtual - EIT .....	\$200.00
Virt. - Young Eng. ....	\$250.00

## **REGISTRATION**

**DEADLINE - MAY 26**

To Register for the Conference click on the link below:

[Conference Registration](#)

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## **HOTEL INFORMATION**

Embassy Suites Hotel at  
Kingston Plantation  
9800 Queensway Blvd,  
Myrtle Beach, SC 29572  
(843) 449-0006

[Hotel Registration](#)

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