2022 Engineering Excellence Awards

2019
Thomas & Hutton Engineering Co.

2021
Civil Engineering Consulting Services, Inc.

2020
HDR

ACEC

American Council of Engineering Companies
of South Carolina

Engineering Excellence Awards

April 13, 2022
6:30 PM
USC Alumni Center

Engineering Excellence is an annual competition sponsored by the American Council of Engineering Companies (ACEC) and its member organizations. It recognizes engineering achievements which demonstrate the highest degree of merit and ingenuity.

The ACEC-SC Palmetto Award (top overall project) and the five other entries judged to be the best overall are eligible to enter the ACEC National competition. National winners are announced at a gala event in Washington, D.C. later this year.

The ACEC-SC competition is open to all firms engaged in the practice of consulting engineering. Projects must have been designed in the state of South Carolina with construction substantially completed between Nov. 1, 2019 and Oct. 31, 2021. Projects may be constructed anywhere in the world as long as they were designed in South Carolina.

A distinguished panel of judges was selected. Each judge separately reviewed the projects. Criteria for judging included: original or innovative application of new or existing techniques; future value to the engineering profession and perception by the public; social, economic and sustainable design considerations; complexity; and exceeding owner/client needs. We applaud and congratulate all the firms that entered the 2022 Engineering Excellence Awards Competition.

ACEC

American Council of Engineering Companies
of South Carolina

Palmetto Award

ACEC NATIONAL FINALIST · ACEC-SC ENGINEERING EXCELLENCE AWARD

HDR

"I-526 Wando River Bridge Tendon Repairs"

South Carolina Department of Transportation

Structural Systems

Extending from 2016 through 2021, the I-526 Wando River Bridge Tendon Repair Project has completed three phases: Emergency Response, Post-Tensioning Assessment, and Post-Tensioning Rehabilitation. Throughout the bridge, state-of-the-art technologies were leveraged to inspect 600 external tendons comprehensively and efficiently. In the main spans, the team replaced four 1,000-foot-long tendons, added four more 1,000-foot-long supplemental tendons, and developed a unique approach to safely de-tension long, highly stressed tendons. In the approach spans, a one-of-a-kind expandable supplemental post-tensioning system, designed with advanced modeling techniques, was developed and constructed, restoring capacity and adding redundancy to the span with no impact to traffic. The rehabilitation culminated with the installation of South Carolina's first polyester polymer concrete overlay, permanently sealing the bridge from water and chloride penetration. These and other activities performed during this project have reinstated the 75-year lifespan of this critical crossing, ensuring its service to the community for decades to come.

ACEC National Finalists

Civil Engineering Consulting Services, Inc.

"South Carolina 153 Extension, Pickens County, SC"

South Carolina Department of Transportation

Transportation

The CECS design team overcame the challenges facing them through their knowledge of the history of the area and by being creative in their thinking which led to a successful project for SCDOT and Pickens County. More importantly, the traveling public who live near or visit the project area benefit from the reduced congestion and improved level of service that is attractive to businesses in the upstate and safer for the traveling public now that the SC 153 extension is complete.

Additional Award: ACEC-SC Engineering Excellence Award

2022 Engingeering Excellence Awards Gala

Infrastructure Consulting and Engineering, PLLC
"US 21 Over Harbor River Bridge Replacement"
South Carolina Department of Transportation
Structural Systems

The Harbor River Bridge was too narrow, structurally deficient, and a safety hazard for the many motorists traveling to and from Harbor Island, Hunting Island, and Fripp Island. ICE engineers faced multiple challenges when designing the replacement including increased scour potential, seismic design and vessel collision loads, embankment liquefaction, and environmental constraints. To compensate for coastal conditions and to increase the structure's longevity, ICE engineers utilized resources like the 100-year scour profile and impact scenario software to determine the most enduring design. With this project being a large coastal habitat, ICE also made many environmental commitments, like monitoring a bald eagle's nest and implementing the best management practices for sea turtles and manatees, to ensure low impact to the local ecosystem. ICE provided SCDOT with design submittals that were on-time, efficient, and of great quality. This process led to the bridge being successfully completed five months ahead of schedule.

Additional Award: ACEC-SC Engineering Excellence Award

2022 Engingeering Excellence Awards Gala

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Infrastructure Consulting and Engineering, PLLC

"85-385 Gateway Project"

South Carolina Department of Transportation

Special Projects

This Design-Build project made interstate improvements by creating a new interchange within the general footprint of the existing interchange through staging construction of the new lanes, ramps, and bridges while maintaining daily traffic. ICE was selected as the lead onstruction, engineering and inspection firm to assist SCDOT in managing this build. The ICE team provided construction management for all phases and aspects of the work including inspection, testing, and sampling. ICE maintained all project documents including Federal Highway Administration requirements, project materials tracking, summaries of completed work, as well as the prime contractor's monthly pay requests, change orders, and scheduling reports. The ICE team was instrumental in conflict resolution and assisted in managing public expectations through an intensive social media program. ICE enlisted a full-time survey verification team, utility coordinator, traffic control officer, and erosion control officer to ensure the project stayed within state and federal regulations, plans, and specifications.

Additional Award: ACEC-SC Engineering Excellence Award

2022 Engingeering Excellence Awards Gala

Johnson, Mirmiran & Thompson, Inc. (JMT)

"Low Battery Reconstruction Project - Phase 1"

The City of Charleston, SC

Special Projects

Constructed from 1909-1919, Charleston's historic Low Battery seawall is succumbing to environmental attacks from storms, sea level rise, and material deterioration. As much a preservation effort as an engineering challenge, this landmark is being reconstructed to create an improved public realm with underpinned foundations, strengthened wall, and improved drainage and accessibility. JMT, along with a cadre of talented consultants, was selected by the City to assess, analyze, and determine a strategy to address the growing concerns about the wall's condition. After conceptual design, the team pushed forward with construction documents and construction began in late 2019. While rehabilitating the aged infrastructure, the team also created a mile-long linear park to enhance the public realm for citizens and visitors alike. Once completed, the new seawall will serve as one of the City's newest lines of defense against rising sea levels and the constant threat of flooding to the downtown peninsula.

Additional Award: ACEC-SC Engineering Excellence Award

2022 Engingeering Excellence Awards Gala

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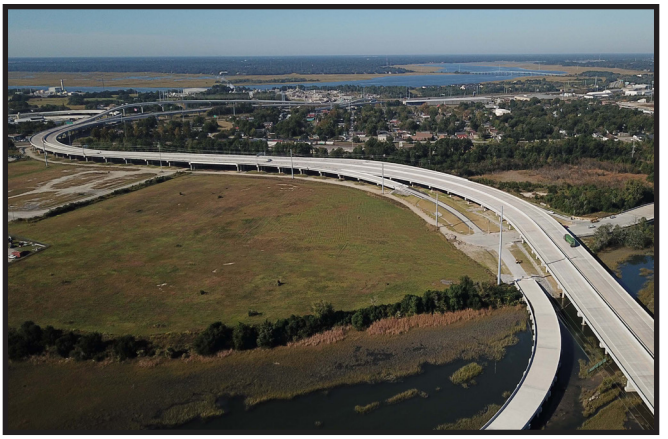

Johnson, Mirmiran & Thompson, Inc. (JMT)
"Engineering Charleston's Port Access Road"
South Carolina Department of Transportation
Structural Systems

The I-26/Port Access Road Interchange connects traffic to the recently opened Hugh Leatherman Container Terminal in North Charleston, South Carolina. This Design-Build project posed several unique challenges including designing for seismic performance and mitigating notoriously poor soils and environmental hazards. The JMT-led engineering team of S&ME, KCI and Davis & Floyd collaborated to design 8 miles of complex bridge structures and associated embankments through highly variable subsurface conditions including uncontrolled fill, liquefiable sand, and highly compressible clay through this historically industrial area.

Additional Award: ACEC-SC Engineering Excellence Award

2022 Engingeering Excellence Awards Gala

ACEC-SC Engineering Excellence Awards

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AECOM Technical Services, Inc.

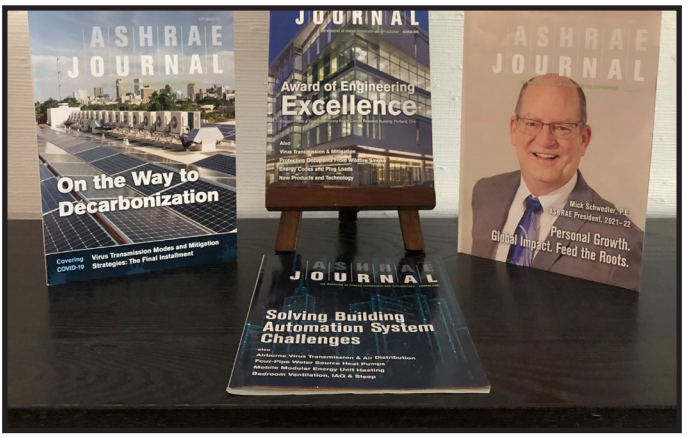
"Columbia's Lake Katherine Sewer Upgrade"

The City of Columbia, SC

Water & Storm Water

This project required commitment by the City of Columbia, knowledge by AECOM, ability by the contractor, and buy-in from the community. All four were necessary for the success of this project, and by working together, all four were achieved. Completion of the sewer line repairs was a win-win for those living along the project route. The newly repaired pipeline prevents spills and overflows and the damage and pollution that goes along with them. Lake Katherine's homeowners found their homes were restored to their pre-construction condition, and the City has a sewer line that is equal to the task for years to come.

EEA



Buford Goff & Associates, Inc.

"The Virus Transmission Modes and Mitigation Strategies"

ASHRAE Journal

Studies, Research & Consulting

This research addressed the current knowledge gap among professionals about virus transmission modes and strategies. The recent COVID-19 crisis made this knowledge gap evident. The project involved the review of hundreds of scientific studies and articles to provide the most beneficial information to the readers. This information addressed the definition of a virus, how they are releasing into the space, the effect of environmental factors such as temperature and humidity, the effect of the air distribution system on the propagation of droplet nuclei, and mitigation strategies that can be employed. As our understanding of how respiratory viruses are transmitted and possible mitigation strategies increases, we can make informed design decisions that can impact our buildings and our society for the better.

Carolina Transportation Engineers & Associates, PC

"Emergency Bridge Package 2020-1 DB"

South Carolina Department of Transportation

Structural Systems

Additional Award: Small Firm Award

CarolinaTEA teamed with Palmetto Infrastructure to win and successfully complete two Emergency Bridge Replacement Projects in 215 days. The Team worked with SCDOT, local landowners, and utility providers to produce a completed project ahead of schedule to the satisfaction of all parties involved. CarolinaTEA performed work at-risk due to circumstances beyond its control to ensure this on-time delivery. CarolinaTEA, working with Holt, Aulick, Vaughn & Melton and F&ME, provided an approved design to the contractor in just a couple weeks after Notice to Proceed that included multiple design innovations. The innovations reduced project cost, minimized environmental impacts, and made the project easier to construct. Palmetto Infrastructure obtained substantial completion on-time, with no additional time required due to the additional scope created by the second flood. Final completion was obtained six months early.

EEA

Johnson, Mirmiran & Thompson, Inc. (JMT)

"Spring Fishburne US 17 Drainage Improvements PRM"

The City of Charleston, SC

Environmental

JMT assisted the City of Charleston with a permittee-responsible mitigation plan for impacts associated with the Spring/Fishburne Drainage Pump Station. The permittee-responsible mitigation plan was designed to produce the required mitigation credits, which includes salt marsh restoration of approximately 7.9 acres in the Francis Marion National Forest along Guerin Creek and creation of over 1,900 linear feet of oyster reef to expand existing oyster reef sites on the Ashley River. JMT oversaw the removal of planted loblolly pine and grading of the associated forest bed/rows to allow the site to reach an established Mean High-Water level. Over a period of two years, diurnal flushing of the site has allowed seed sources to access the site and establish a thriving cover of representative high tidal marsh species. In addition, JMT oversaw the planting of over 1,900 linear feet of oyster shells that had to be imported from Alabama due to required volume.

Mead & Hunt, Inc.

"SC 9 Through Historic Mill Village"

South Carolina Department of Transportation

Transportation

Mead & Hunt preserved the Town of Lockhart's historic character while maintaining a vital freight corridor that was imminently threatened by four structurally deficient and functionally obsolete bridges. Mead & Hunt navigated complex historic conditions, Federal Energy Regulatory Commission requirements and financial constraints. Because SC 9 crosses a 200-year-old FERC-designated high hazard canal, this project necessitated extensive FERC coordination, a process atypical of transportation projects. Mead & Hunt leveraged dam and levee experts to coordinate with FERC, identify potential risks and maintain the safety of nearby residences. Mead & Hunt coordinated with the State Historic Preservation Office to preserve the Town's historic traits by protecting historic homes and retaining walls. Budgetary constraints required innovative funding solutions met by facilitating the use of Union County Transportation Committee funds while collaborating with Lockhart Power to work during the canal's drawdown schedule. Mead & Hunt delivered a project that preserved the character, safety and economy of this historic mill village.

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Michael Baker International, Inc.

"Voter Registration Road & Parking Lot"

Kershaw County, SC

Small Projects

Kershaw County purchased a new building for the relocation of its Voter Registration Office in Camden. The building is along one of the County's busiest roadways and lacked direct access to the office parking lot. Kershaw County engaged Michael Baker to provide a dedicated access to the new Voter Registration office parking lot and ensure the facilities were Americans with Disabilities Act compliant. The Michael Baker team redesigned the existing parking lot to ensure residents with disabilities would have full access to the new Voter Registration Office. The new entrance roadway design ensures a direct and protected route to access the office and does not require patrons to park along the busy roadway. The design of both the entrance roadway and parking lot ensure safety and accessibility for voters. With limited space and budget, Michael Baker was able to work within the parameters and provide all elements to the owner.

Michael Baker International, Inc.
"Old Charleston Road Paving"
Lexington County, SC, Public Works
Transportation

The Old Charleston Road paving project provided operational improvements and a final connection to a corridor in need. Prior to the work performed by Michael Baker, the public searched for alternative routes around the unpaved portion of Old Charleston Road due to its rough condition. Improvements to this area created a thoroughfare that the public can safely travel. Although the age of survey post-flooding created field discrepancies throughout the project, the Michael Baker team was able to effectively work with the county and the contractor to complete construction with minimal changes. The real-time services provided by Michael Baker's engineering and construction team prevented project delays and provided long term solutions to the area that the property owners and citizens of Lexington County appreciate. The project met the expectations of both the client and the public.

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Michael Baker International, Inc.
"SCDOT Bridge Load Rating Program"
South Carolina Department of Transportation Bridge Maintenance Office
Structural Systems

Michael Baker International was selected by the South Carolina Department of Transportation (SCDOT) to lead the state in analyzing all 9,500 bridges for truck load capacity in under two years. This involved site work at each structure followed by detailed modeling. As the Owner's representative, Michael Baker managed and reviewed assignments for five other firms while also providing training and serving as a liaison with the Federal Highway Administration (FHWA). Great care was taken to minimize impacts to stake holders such as fire and rescue departments, hospitals, schools, commercial enterprises, residents, etc. Michael Baker was responsible for the quality control of the entire program, quality assurance reviews, and oversight of load and material testing, including collaborating with universities, AASHTOWare Bridge Management (BrM) integration, Asset Management (complex structure) bridge inventory load rating with associated inspection plan and rating guidelines, and Oversize/ Overweight (OSOW) truck permitting.

STV, Inc.

"Restricted Crossing U-Turn Intersection"

South Carolina Department of Transportation

Transportation

The Moores Mill Road/Laughlin Road at US 76 intersection in Marion County had frequent and severe crashes, mostly right-angle collisions. SCDOT engaged STV to assess existing conditions, evaluate and develop alternatives, and develop a design solution for this intersection. STV evaluated three traffic control alternatives: signalization, a multi-lane roundabout, and a Restricted Crossing U-Turn Intersection ("R-CUT"). Existing traffic conditions and anticipated future demands were considered, as were costs and impacts to surrounding properties. The team determined that the safest, most efficient, and economical engineering approach that would minimize impacts to the public was a Restricted Crossing U-Turn Intersection. An R-CUT eliminates left turns by requiring cross-street vehicles to turn right onto the main road and then make a U-turn at a designated one-way median opening after the intersection. The R-CUT at this location reduced intersection conflict points by nearly 50 percent without reducing travel speeds on US 76.

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TranSystems

"North Charleston: Parking Garage at Coliseum Complex"

The City of North Charleston, SC

Structural Systems

The North Charleston Coliseum Complex is in the heart of North Charleston. In order to accommodate a high number of visitors to the Coliseum as well as the adjacent Performing Arts Center and Convention Center, a new five-level structure comprising of approximately 710,000 square feet was constructed. TranSystems was selected by the City of North Charleston to provide preliminary design services for the design-build construction of the parking garage in addition to a 7,000-square-foot office building, and associated site work improvements at the North Charleston Convention Center Complex. TranSystems provided full construction, engineering, and inspection services throughout construction duration. The new parking garage helps alleviate the parking deficit in the area by almost doubling the parking spaces at the complex and brings opportunity for additional development in and around the Coliseum by freeing up surface parking.

2023 Engineering Excellence Awards

Notice of Intent

ACEC
American Council of Engineering Companies
of South Carolina

Notice of Intent

DEADLINE: October 5, 2022

To submit an entry for the ACEC-SC 2023 Engineering Excellence Awards competition, please complete this form and return it to the ACEC-SC Headquarters with your entry fee* no later than Wednesday, October 5, 2022. Project entries will be due at ACEC-SC Headquarters by 5 p.m. Wednesday, November 9, 2022.

Form available at acecsc.org.

Firm _____

Contact Person _____

Address _____

Phone _____ FAX _____

E-mail address _____

Project title (limited to 40 characters) _____

Project client/ owner _____

Project location _____

Brief Description (include services involved) _____

ACEC
American Council of Engineering Companies
of South Carolina

Send to:
ACEC-SC
826 Assembly Street
Columbia, SC 29201
(803) 771-4271 FAX (803) 771-4272

*Entry fees are $450 for ACEC-SC members and $900 for non-ACEC-SC member firms and are nonrefundable. Please make checks payable to ACEC-SC. Entry fees are required for each project submitted. To submit more than one entry, please make copies of the Notice of Intent and Official Registration forms and use separate forms for each project.

Judges

A special thank you is extended to the competition judges who volunteered valuable time to carefully review each project.

William J. Davis, Ph.D., P.E.
Deptartment Head & D. Graham Copeland Professor of
Civil Engineering
Civil & Environmental Engineering, Construction
Engineering
The Citadel

Robert "Bob" King, PE
SCDHEC Retired

Robert Mullen, Ph.D., P.E.
Professor
Civil & Environmental Engineering Department
College of Engineering & Computing
University of South Carolina

American Council of Engineering Companies of South Carolina (ACEC-SC) is a member organization of the American Council of Engineering Companies. For information on ACEC-SC or the Engineering Excellence Awards competition, please contact us at
826 Assembly Street, Columbia, SC 29201
(803) 771-4271 | www.acecsc.org