2024

Engineering Excellence Awards

2023
HDR

2022
HDR

2021
CECS, Inc.

ACEC

American Council of Engineering Companies
of South Carolina

Engineering Excellence Awards

February 7, 2024
6:30 PM
Columbia Museum of Art

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 substaintially completed between Nov. 1, 2021 and Oct. 31, 2023. 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 2024 Engineering Excellence Awards Competition.

ACEC
American Council of Engineering Companies
of South Carolina

Palmetto Award

ACEC NATIONAL FINALIST · ACEC-SC ENGINGEERING AWARD

S&ME

“Great Falls-Dearborn Dam Diversion Bypasses”

Duke Energy Carolinas, LLC
Water Resources

The Great Falls Dam Diversion Dam project is a remarkable example of innovative engineering that substantially impacts the local community and environment. This work transformed the Catawba River in Great Falls, South Carolina, returning water to two river channels (long and short bypasses) that were dewatered when the Great Falls Hydro Station was constructed in 1907.

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ACEC National Finalists

Carolina Transportation Engineers & Associates, PC
“Swamp Rabbit Trail Bridges at Laurens and Haywood”

City of Greenville, SC

Special Projects

Small Firm Award

In 2021, the City of Greenville accepted bids for the Swamp Rabbit Trail Green Line Extension. Palmetto Infrastructure Inc. was the low bidder, but all bids were significantly higher than the City’s budget. Palmetto hired Carolina Transportation Engineers & Associates, PC (Carolina TEA) to perform a Value Engineering Study of the original design to determine if savings could be found to help move the project within budget. Carolina TEA implemented multiple changes to the design, including lengthening the bridges to eliminate walls, redesigning foundation elements, replacing the bridge railing, and shifting the bridge alignment which resulted in a contract award. The project was opened to the public in early 2023. The extension is projected to generate $1.5 billion in new property value in the neighborhoods around the trail on top of the trail's existing $6.7 million annual economic impact and the 85% sales boost it gives to trailside businesses.

Additional Award: ACEC-SC Engineering Excellence Award
2024 Engineering Excellence Awards Gala

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HDR Engineering, Inc. of the Carolinas
“Greene Street Bridge”

Richland County Penny, for City of Columbia, SC
Structural Systems

Nearly 30 years in the making, the HDR project team overcame significant challenges to bring the vision of a multi-modal connection from downtown Columbia to Huger Street. Challenges included building consensus of numerous stakeholders with differing interests, navigating an old railroad agreement limiting aspects of the project, working in a confined project corridor, and achieving aesthetic goals resulting in atypical bridge components. Representing an inspiring model of community-driven infrastructure development, the Greene Street Bridge addresses the city’s railroad complaints, improves pedestrian, cyclist, and vehicular traffic flow, encourages economic growth, and connects various communities in the Columbia area. With the bridge’s completion, the City of Columbia is ready for a more promising and well-connected future, while also setting the stage for upcoming river developments.

Additional Award: ACEC-SC Engineering Excellence Award
2024 Engineering Excellence Awards Gala

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McCormick Taylor
“Sand River Stormwater Implementation Plan”
City of Aiken
Water Resources

As part of an ongoing stormwater implementation plan to minimize decades-long, destructive stormwater runoff into the Sand River in Aiken, McCormick Taylor designed two large underground vaults that provide a combined 25-acre feet of storage. The outlets of the vaults are managed by continuous monitoring and adaptive control (CMAC), a forecast-based real time control technology. The CMAC system is estimated to increase the effectiveness of the vaults by two times by retaining water during and after storms, increasing infiltration, and only discharging in preparation for forecasted storm events exceeding the capacity of the vaults. The installation of these underground vaults is the first of its kind in South Carolina. A passive park was also built overtop these facilities as part of the site restoration. The area contains pervious rubber sidewalks, demonstration pollinator gardens, a rain garden, and educational signage that depicts the history of Aiken and Hitchcock Woods.

Additional Award: ACEC-SC Engineering Excellence Award
2024 Engineering Excellence Awards Gala

Michael Baker International
"I-85 Design-Build Widening MM 98-MM 106 (Phase 3)"
South Carolina Department of Transportation (SCDOT)
Transportation

SCDOT contracted with Lane Construction and their lead engineer, Michael Baker International, to widen the interstate from four lanes to six lanes from MM 98 to the state line at MM 106 (Phase 3). The project also included the reconstruction of interchanges at exits 100, 102, 104 & 106 and the reconstruction of the Norfolk Southern bridge over I-85. Michael Baker International's design employed several innovations that added significant value to the project including: realigning all four interchanges to minimize property impacts both commercial and residential; reducing long-term maintenance efforts for SCDOT via the implementation of a "rooftop" cross-section that removed significant drainage facilities from the median; reducing wetland and stream impacts by approximately 16%; and the use of innovative traffic control shifts to minimize disruption to the traveling public during construction. The I-85 Widening Phase 3 was completed on-time and on budget.

Additional Award: ACEC-SC Engineering Excellence Award
2024 Engineering Excellence Awards Gala

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Thomas & Hutton
“Noisette Creek Pedestrian Bridge”
City of North Charleston
Structural Systems

In North Charleston, SC, the Noisette Creek Pedestrian Bridge’s 55-foot-tall twin arches rise above an industrial skyline and are visible across the tidal waters and marshes from miles away. The bridge, owned by the City of North Charleston and designed by Thomas & Hutton, is the first piece of infrastructure constructed in the redevelopment efforts of several City-owned industrial parcels along the Cooper River. The parcels were previously part of the Charleston Naval Complex. The new pedestrian bridge has already achieved its goal to catalyze the revitalization of the 70-acre waterfront property. The iconic bridge spans Noisette Creek, providing much needed emergency and pedestrian access from the City’s existing Riverfront Park to the community known as Battery Park on the north side of the creek. Although Battery Park is in its early stages, the 800-foot-long curvilinear bridge stands alone as a universally accessible destination for locals and visitors.

Additional Award: ACEC-SC Engineering Excellence Award
2024 Engineering Excellence Awards Gala

ACEC-SC Engineering Excellence Awards

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Davis & Floyd, Inc.
“Brick Chimney Road Improvements- Phase 1”
Georgetown County
Transportation

Davis & Floyd’s team completed Phase 1, a foundation for future phases as part of Georgetown County’s overall goal of connecting US 701 to US 17 Alt using the four-lane Brick Chimney Road. Completion of Phase 1 kicked off the process of alleviating traffic and trucks on residential roads along with improving connectivity. Our team paved 2.4 miles of Brick Chimney’s dirt road and realigned a 90°-angle intersection for safer crossing. We created a cost-effective solution for crossing International Paper Canal by building a new bridge after comparing costs and need of a bypass pump for a box culvert. We designed the bridge with flumes and pipes under the maintenance driveways to prevent runoff from entering the waterway during and after construction. We planned for future phases with acquisition of a 200’ right-of-way corridor and helped surrounding communities with improved roadway connection to encourage future land development of surrounding properties.

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Development Resource Group LLC
“Coastal Carolina University Campus Aerial LIDAR”

Coastal Carolina University
Surveying and Mapping Technology

Coastal Carolina University (CCU) authorized DRG to perform Aerial Survey services using our RTK drone with LiDar equipment. RTK drone and LiDar flights of the entire campus were conducted in close coordination with campus staff, campus security, and Federal Aviation Administration (FAA). The campus was broken up into 14 smaller flight blocks which were each flown individually. This allowed us to collect a high data density on each block, as well as overlap adjacent blocks. Once data collection was complete, the data was processed and a 3D model as well as CAD file was produced. The data was presented to the client both as an Interactive 3D model which was web based, and as a CAD file containing traditional 2-dimensional line work of pertinent site features. The collected data provides planners with an accurate representation of low-lying areas, trees and their associated canopies, and sidewalks and gathering spaces.

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Infrastructure Consulting & Engineering, PLLC
"Cross Island Parkway (US 278) Toll Conversion"
South Carolina Department of Transportation (SCDOT)
Transportation

The toll on Cross Island Parkway (US 278) in Beaufort County, South Carolina, expired in 2021. The Cross Island Parkway (US 278) Toll Conversion Design-Build Project involved the removal of the existing toll plaza, including the toll canopy, booths, excess pavement, and concrete filling of the toll access tunnel. The Project included pavement reconstruction of the mainline Cross Island Parkway, interchange ramps, and the roadway realignment between Marshland Road and the bridge over Broad Creek. Additionally, the Project consisted of roadway repairs such as resurfacing, strengthening, and restriping along the parkway and ramps from US 278 Business to the Broad Creek Bridge, pavement strengthening, and bridge rehabilitation tasks such as resealing explanation joints, painting structural steel, and the removal and replacement of the high friction deck overlay.

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Michael Baker International
“Harmon Street Extension/ North Lake Drive Widening”

Town of Lexington
Small Projects

Michael Baker provided engineering services for the Harmon Street Extension and North Lake Drive Widening Project. The initial improvements included relocation of Harmon Street for approximately 0.3 miles from its current intersection with Azalea Drive to North Lake Drive. The additional scope for widening North Lake Drive from Church Street to Dreher Street added a second lane to the only one-lane segment of westbound North Lake Drive in Lexington. This 0.35 mile of roadway widening was a cost-effective way to alleviate this chokepoint for outbound traffic. The completed project has been received very positively by citizens. It has provided much improved traffic operations, rerouted traffic off a residential street, and fixed a poorly aligned intersection. As this project connects two schools, walkability was very important, so sidewalks were included throughout. Michael Baker’s staff were involved with this project from conceptual planning activities through to the final inspection.

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Michael Baker International
“Marion County Stormwater Master Plan”

South Carolina Office of Resilience
Studies, Research, and Consulting Engineering Services

Since 2015, Marion County has been impacted by three presidentially declared disasters. The bulk of the damage from these storms was flooding from rain as well as runoff from upstream rivers, streams, and tributaries. Three storms in four years left communities on the brink of collapse. The SC Office of Resilience sought to bring stability through mitigating future flood damage. Michael Baker developed a stormwater master plan that identifies flooding issues, assesses existing systems, develops and prioritizes 21 projects, and establishes an implementation strategy for the projects. Project prioritization was based on a risk assessment and benefit-cost analysis (BCA) that prioritized high benefit-to-cost projects with positive impacts within low-to-moderate income groups. Michael Baker provided services including hydrologic and hydraulic modeling, stakeholder coordination, public meetings, environmental assessment, project recommendations, BCA’s,GIS services, and field inventory. The final Stormwater Master Plan was completed on time and within budget.

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ACEC State Finalists

Davis & Floyd, Inc.
“Sangaree Pedestrian Bridge & Roundabout”
Berkeley County
Structural Systems

Berkeley County initially contracted with Davis & Floyd’s team to design a roundabout for Sangaree Parkway at Royle Road. However, the project soon expanded to include designs for a pedestrian bridge over Royle Road and a stacking loop for Sangaree Elementary School. Coordinating among the county, school district, and SCDOT, we created a roundabout that reduces congestion and eliminates cross traffic all together. We added a leg for the stacking loop to the school’s parking lot to prevent car lines from backing up onto the road and causing gridlock. For the pedestrian bridge, we innovatively used a prefabricated steel truss bolted to the concrete ramps during installation, removing the conflict of pedestrians crossing the traffic circle. We developed solutions that improved safety for pedestrians and drivers as well as reduced traffic congestion for the area all while meeting regulations for SCDOT roads.

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Harper General Contractors
“Lake Greenwood WTP and Raw Water Intake”
Laurens County Water and Sewer CommissionHaper Water Resources

Laurens County Water and Sewer Commission selected GMC as their design partner and Harper as their CM At-Risk for their new water treatment facility. This unique Greenfield facility exemplifies the tremendous synergy that the Harper/GMC Team share. Harper provided GMP estimates at 30%, 60%, and 90% design and committed to early procurement to lock in pricing and gain trade partner input. The scope of work at the 9MGD raw water intake pump station includes passive intake screens, raw water intake pumps, a pre-engineered metal building, and significant marine work. At the 4MGD water treatment plant, Harper installed an ozone generation and pretreatment system, Super P sedimentation system, Greenleaf filtration system, two pre-stressed clear wells, a high service pump station, an administrative building, and all associated chemical feed facilities. Through the collaborative design process between Harper, GMC, and Laurens County, the plant treats and provides clean, good-tasting drinking water to Laurens County.

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Harper General Contractors
“RB Simms WTF Improvements”
Spartanburg Water System
Water Resources

Spartanburg Water is one of the most established water systems in South Carolina, delivering high-quality drinking water to customers. The RB Simms Water Treatment Facility (RB Simms) was built in 1926 and includes pipes and structural elements that are over one hundred years old. In 2019, Harper came on board and worked closely with the owner and design team to plan work to limit plant impact. This included 3D scans and BIM modeling of existing conditions to avoid impacting plant operations during construction. Procurement was scheduled to avoid traffic on the main plant road that would interfere with chemical deliveries. Harper priced and reviewed routing options to deliver materials early and proposed value engineering options to significantly reduce marine construction costs.

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Neel-Schaffer, Inc.
"ANATS Shared-Use Path"
South Carolina Department of Transportation (SCDOT)
Special Projects

Neel-Schaffer was Engineer of Record for a $4.7 million project that added a new 3 mile long, 10-foot-wide Shared-Use Path on the east and west ends of the existing East-West Greenway in Anderson County, SC. Opened to the public on September 15, 2023, the additions were built parallel to busy roadways in portions and on new alignment in other areas. The improvements extended the total trail length to 6 miles long and added multiple new connections to existing trails and amenities in Anderson County and the City of Anderson. Neel-Schaffer worked with City, County, and South Carolina Department of Transportation staff to design the additions, which have greatly expanded exercise options for Anderson residents and visitors, while also connecting users to a wide variety of amenities, including trails, a hospital, residential neighborhoods, hotels, parks, retail outlets, restaurants, a school, and the Anderson County Sports and Entertainment Complex.

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Rummel, Klepper & Kahl, LLP (RK&K)
"Closed & Load Restricted Bridge Package 2020-1"
South Carolina Department of Transportation (SCDOT)
Structural Systems

In June 2020, the design-build team of RK&K and Sloan Construction (now Reeves Construction) was contracted to replace sixteen (16) individual structures in District 2. This D-B contract is part of SCDOT's efforts to address the backlog of bridge replacements statewide. As low volume structures, the bridges lengths range from 60' to 160', with the vast majority being single span structures. Design services included roadway, bridge, hydraulics, geotechnical, utility coordination, right of way services, surveys, and permitting. In addition to the construction of new bridges, services also include demolition, removal, and disposal of the existing bridge structures. The Team provided SCDOT with the lowest bid ($18 million) and tied for the highest technical score (93), finishing nearly 11 points higher than the second-place team. Design was completed in February of 2022, and construction was complete in April of 2023. The project was completed on budget, and ahead of schedule.

Judges

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

Dr. Juan M. Caicedo
Professor & Chair
Civl and Environmental Engineering
University of South Carolina

Dr. Mary K. Watson
Associate Professor
The Citadel

Robert “Bob” King, PE
SCHEC Retired

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
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