**For immediate release:**

ACEC of Maine

Engineering Excellence Awards Announced

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FREEPORT - The American Council of Engineering Companies (ACEC) of Maine presented its prestigious 2023 Engineering Excellence Awards at its Annual Fall Forum on November 10, 2022 in Freeport, Maine. As a prelude to the national ACEC competition for the most innovative engineering projects in the country, these awards recognize engineering projects which exemplify quality, innovation, value, and client satisfaction.

**Grand Conceptor Award**

*WBRC and Thornton Tomasetti*

WBRC and Thornton Tomasetti have together received the *Grand Conceptor* award for the *Ferland Engineering Education and Design Center (EEDC) at the University of Maine*.

The 107,000 square foot, $78 million Ferland EEDC is designed to advance engineering education, innovation, and research at Maine’s flagship university. It is a strategic, technology-rich configuration of laboratories, hands-on learning classrooms, collaborative areas, and public spaces. While several departments utilize the facility, it specifically supports UMaine’s Mechanical Engineering and Biomedical Engineering programs. Ferland EEDC also serves as a Welcome Center for visiting school children, prospective students, and guests of the University.

WBRC provided Civil, Mechanical, Electrical, and Plumbing Engineering for the project. Thornton Tomasetti provided Structural Engineering and Sustainable Design and LEED Consulting. Other key members of the design team include WBRC, Architect of Record and Ellenzweig, Design Architect and Lab Planner. Construction was provided by Consigli Construction Company and over 70 subcontractors, many of them local or regional.

The central design theme is “engineering on display.” Designed to a LEED Silver minimum target, the building and site include many sustainable features, including a continuous skylight with fritted glazing; outdoor lighting that mitigates light pollution; low flow water fixtures inside and out; and utilizing only existing campus parking, greatly reducing the need for new non-pervious pavement. In addition to generous glazing, inside and out, Ferland EEDC makes use of exposed structural elements throughout, providing both a teaching tool and expanded sightlines. The design also includes a robust heat recovery system, recovering up to 81% of the energy from exhausted air. Other innovations include overhead power and infrastructure grids that make it easy to reconfigure lab furniture. To create a more orderly systems pathway, the team created prefabricated mechanical chases which channel the building’s infrastructure through the main air ducts. Ferland EEDC also incorporates exposed structural elements throughout, providing a teaching tool and expanded sightlines.

**Special Recognition for Public Engagement and Innovative Technology**

*HNTB*

HNTB was presented with a *Special Recognition for Public Engagement and Innovative Technology* award for the *I-295 Over Veranda Street Bridge Replacement* project.

The I-295 over Veranda Street Bridge is a critical transportation link between the City of Portland and communities to the north, providing service for up to 70,000 vehicles per day. The three-span bridge reached the end of its service life after nearly 60 years and needed replacement due to structural deterioration. The typical challenges of such a project were magnified by the urban location, extensive modifications to the local roadway network, substantial traffic volumes and significant public attention this high-profile project garnered.

HNTB first completed a feasibility study, evaluating the use of accelerated bridge construction (ABC), rather than conventional construction techniques in 2017. The study identified a series of strong benefits associated with using ABC and a reconfiguring Veranda Street and the adjacent I-295 ramps to reduce motorist impacts, improve safety, simplify roadways, enhance bicycle and pedestrian accommodations, and lessen long-term operations and maintenance costs. This also provided benefits such as cutting the construction duration by half, significantly reducing motorist delays and impacts to the surrounding community, improving safety for construction workers and the public, and improving the overall quality and durability of the bridge – all for a cost similar to that of conventional construction. The innovative approach allowed the most disruptive portions of the work to be completed during a 60 hour, single weekend closure of I-295. During this time, the existing bridge was rapidly demolished, and the new bridges were driven into place with exacting precision. Project completion is scheduled for November 18, 2022.

**Honor Award for Application of Complex Design for a Challenging Environment**

*Haley & Aldrich*

Haley & Aldrich received an *Honor Award for Application of Complex Design for a Challenging Environment* for the *Beals Island Bridge Replacement* project.

Haley & Aldrich provided geotechnical engineering services to the Maine Department of Transportation (MaineDOT) and Vanasse Hangen Brustlin (VHB) on the design and construction of the Beals Island Replacement Bridge, the only roadway linking residents of Beals to the mainland. The structure replaced a previous bridge, built in the 1950s, that suffered from severe pile section loss at several pier locations. MaineDOT wanted the replacement bridge to qualify as a “forever bridge,” with a design life of at least 100 years - a challenge that had to be met in a coastal environment with 12‐foot tidal fluctuations, strong currents, high boat traffic, deep water, heavy scour, and highly variable soil and bedrock conditions. The team addressed those difficulties through a collaborative and technically rigorous approach, while also engaging extensively with the communities directly impacted by the bridge.

The new Beals Island Bridge runs immediately east of the original bridge. It measures approximately 1,062‐feet long and 28‐feet wide and consists of eight pre-stressed concrete girder spans supported on two abutments with shallow foundations and seven piers on drilled shaft foundations. The bridge opened in July 2020 and has an expected lifespan of at least 100 years - 25 years longer than the typical bridge design life.

**Honor Award for Sustainable Design Considerations**

*Haley Ward, Inc.*

Haley Ward, Inc. received an*Honor Award for Sustainable Design Considerations* for its *Arctic Brook Restoration* project.

Haley Ward worked in collaboration with Field Geology Services, LLC to develop a strategy to address artificial straightening, channel incision, bank armoring, and potentially artificial fill in a former wetland impacting habitat conditions for fish, macroinvertebrates, and other aquatic organisms in Artic Brook. This strategy is more economical and consistent with natural growth leading to a more sustainable design over the long term, compared to active reshaping of the channel’s dimensions.

The unique solutions provided by Haley Ward and Field Geology Services will contribute to the City of Bangor’s goal of improving water quality and habitats of Arctic Brook, and water resources downstream of the Arctic Brook watershed. Haley Ward’s team completed surveys, easement preparation, drafting, construction documents and bid preparation. Construction for the project was completed, under budget, in September of 2022.

**Honor Award for Creative Solution to Multimodal Challenges**

*SLR*

SLR International Corporation (SLR) received the *Honor Award for Creative Solution to Multimodal Challenges* for its *Colby College Armstrong Roundabout* project. The SLR Maine office was responsible for providing design, value engineering, and construction phase services on the recently constructed roundabout located at Colby College, at the intersection of Washington Street, Armstrong Drive and Campus Drive in Waterville, Maine. The key to these improvements were ensuring minimal disruption to the campus activities and that the project design accommodated two future projects including additional multi-modal infrastructure along Campus Drive and a new bridge (over I-95) on Armstrong Drive. This fast-track project needed to be constructed without detouring traffic between the beginning of June and the end of August before students and sports teams returned. SLR supported the accelerated schedule with innovative engineering solutions, and close and responsive coordination with the contractor, Sargent Corporation.

The project was focused minimization of impacts to the adjacent Johnson Pond and loss of trees, developing a low-maintenance landscape plan, reclaiming materials where possible, and use of a concrete bike path for increased added resiliency and longevity. Minimizing utility conflicts was a focus of design and construction phases. In addition, a concrete shared use path was designed to improve resiliency, and the project also included a unique application of granite curbing installed using concrete slip forms to allow early paving.

**Honor Award for Excellence in Traffic Management and Planning**

*TYLin*

TYLin was awarded the *Honor Award for Excellence in Traffic Management and Planning* for its work on the *Piscataqua River Bridge Rehabilitation* project.

As the only interstate highway connection between Maine and the rest of the country, the 4,503 foot long, through-arch Piscataqua River Bridge structure is vital to freight traffic, commuters, and tourists. It carries six lanes of Interstate 95 between Portsmouth, NH, and Kittery, ME. An average of 78,000 vehicles cross the bridge each day. In the summer tourist season, daily traffic counts can rise to 130,000 or more, leading to regular traffic jams. The first major rehabilitation of the bridge since its construction in 1972 was recently completed with little to no impact on traffic.

TYLin proposed an intelligent transportation system to dynamically use emergency shoulders as a fourth traffic lane in each direction when needed during peak traffic periods to improve traffic flow. Working closely with MaineDOT, NHDOT, and the Maine Turnpike Authority, TYLin developed an innovative traffic control approach to keep traffic and commerce moving freely every day of construction. The team created an intricate, incentivized traffic control plan identifying when and where the contractor could perform the rehabilitation work with minimal traffic disruption. The project utilized a movable temporary concrete barrier system that allowed lanes to be opened and closed quickly, multiple times each day. This rapid deployment maximized the contractor's time to work, shifting the focus as traffic dictated to keep cars and trucks moving while ensuring the safety of construction workers and the public. This novel approach had never before been utilized on a project in Maine or New Hampshire. The creative solution worked exceptionally well, allowing this massive project to be completed ahead of schedule. This iconic bridge now meets current safety standards and is set to serve for many more years.

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