

BSCES NEWS

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Transformation of an Abandoned Brownfield to the Site of the Encore Boston Harbor Resort

by Mary Hall, PE, Senior Principal, GZA; Anders Bjarngard, PE Principal, GZA; Matt Smith, PE LSP, Associate Principal, GZA; and Larry Feldman, PhD LSP, Senior Principal, GZA

For commuters on the major highways just north of Boston, the last year has offered an extraordinary spectacle: the steady rise of the \$2.6 billion, 24-story, 670-room Encore Boston Harbor destination resort hotel out of a former industrial area. Situated on the Mystic River in Everett, Massachusetts, with a commanding view of downtown Boston, the Encore Boston Harbor Resort has been widely described as the single largest privately-funded, single-phase development in Massachusetts history. At its peak, construction costs reached \$3 million every 24 hours as Encore pushed to meet a June 23, 2019 grand opening deadline.

Far less visible have been the efforts substantially overseen by GZA GeoEnvironmental, Inc. to turn the contaminated property into a developable 33-acre parcel, and then to overcome the complex geotechnical and environmental challenges involved in creating a 13-acre foundation system with three levels of below-grade parking.



Encore Boston Harbor approaches the end of the construction phase

Site Assessment

Home for over a century to chemical companies that made everything from sulfuric acid to household cleaners and that suffered repeated chemical releases, by the 1960s the site had been heavily contaminated with arsenic, lead, PCBs, and a host of other contaminants. Although it had been essentially abandoned for decades, in 2012 the project's development team was able to

UPCOMING EVENTS

170th Annual BSCES Awards Dinner
July 16, 2019

YMG Red Sox Game at Fenway Park
July 17, 2019

FHWA-NHI-130053 Bridge Inspection
Refresher Training
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Further Details Inside



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President's Report

by Geoffrey B. Schwartz, PE, Sr. Project Manager, GZA



Dear Members,

This is the last month of my term as BSCES President, and I am humbled and grateful to serve you this year, to serve on the Board of Governors for the past 6 years, and prior to that, to serve on the BSCES Geo-Institute for approximately 8 years. It was truly a pleasure to work with, speak with, and get to know so many people that are passionate about giving back to the local civil engineering community and to charitable causes, and I look forward to building on these great relationships and continuing to provide support in any way that I can. I would

like to thank the 2018-2019 Board of Government for their support and all the many volunteers for their time, hard work and dedication. I would also like to thank all of the committee chairs, TECET personnel, and ASCE staff for everyone's tireless efforts to make the year a great success. I wish to thank all of the sponsoring companies and colleges for their financial support to our Society and for the many companies and colleges who provided event space and volunteer services to allow us to put on programs at lower costs. I want to also thank the BSCES Past-President, Malek Al-Khatib, for his mentorship and tutelage last year in preparation for this role, and to GZA for their tremendous

envision the site as the home of an international destination resort.

GZA was initially retained to review environmental studies prepared by the consultants working for previous site owners. That role expanded to include the preparation of several

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support and encouragement in allowing me to take on this important position and for their continuous support to BSCES.

Before reflecting on the past year, I would like to encourage everyone that it's not too late to sign up for our 170th Annual Awards Dinner, which will be held on Tuesday, July 16th, from 5 pm-8 pm at the Royal Sonesta Hotel in Cambridge. We will be thanking all the hard working folks who have contributed to the industry and community, including four BSCES Honorary Members (the highest award that can be bestowed by BSCES). Our 2018-2019 Honorary Members include our keynote speaker

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Boston Society of Civil Engineers

**Encore Boston Harbor Resort***continued from page 1*

sections of the various environmental impact reports and environmental permits required for the site, and then the environmental and geotechnical assessment of the site. The initial pre-characterization program involved the collection of over 1,400 soil samples to evaluate the nature and extent of soil contamination at the site.

Remediation

Before construction began, GZA designed and implemented a remediation program to remove or stabilize the most heavily contaminated soil and groundwater in areas of the site that would otherwise have been unsafe for construction workers without special protective equipment. This included the southern portion of the site jutting out into the Mystic River, where groundwater was highly acidic; the remediation program raised the pH to less dangerous levels, and reduced the flow of contaminated groundwater into the Mystic River.

It was clear from the outset that this project would affect not just the property itself, but the surrounding community. In preparation for the environmental cleanup, the project team interviewed neighbors, community members, and Everett municipal officials to better understand their concerns, and developed a plan to communicate information about the project to these interested parties throughout all phases of the cleanup. David Leone, a GZA Associate Principal and Licensed Site Professional, notes: "We met with people who had been living next to a chemical company, and then an abandoned hazardous waste site, for decades. They were excited that something was finally being done to clean up the property."

Because of the wide variations in the types and concentrations of contaminants in on-site soils, multiple federal and state regulatory requirements constrained where excavated soils could be shipped for proper disposal. When feasible and as required, soils were treated on-site to render them "non-hazardous" and thereby reduce the cost of disposal by over 70 percent. Ultimately, more than 850,000 tons of soil was shipped from the site by rail and truck to 12 different hazardous- and non-hazardous-waste landfills in six different states.

GZA had as many as 10 field engineers simultaneously on-site documenting the foundation construction and remediation efforts, working first and second shifts alongside construction trades. "Something we at GZA are

extremely proud of is that in 65,000 person-hours of work over 18 months at an extremely busy project site filled with all kinds of contamination hazards, we had zero health and safety incidents—zero," says Matthew Smith, P.E., LSP, a GZA Associate Principal and GZA's construction/remediation project director who was co-located on-Site full-time during peak work periods. "Safety is a part of our culture, and our record in Everett has demonstrated the positive impact of that commitment."

Foundation Design

In addition to implementing a remediation program for the wide variety of contaminated soils on the Site, designing the foundation systems for the site proved to be an especially challenging task because the Everett parcel is a blend of a former island, filled tidelands, thick clays, and glacial till. This highly variable geology led to a variety of foundation approaches. The main feature of the resort project, the 370-foot-high hotel tower, is supported by load-bearing elements (LBEs) which consist of large rectangular cast-in-place foundations that extend up to 25 feet into the bedrock. The garage and building area surrounding the tower are supported by slurry walls and a reinforced concrete mat up to four feet thick. The northern Central Utility Plant (CUP) and the convention center portions of the resort are supported on deep piles bearing in the glacial till and bedrock. While the vast majority of the piles were precast prestressed concrete piles, drilled mini-piles were used in close proximity to the slurry wall and active utilities.

With so much filled tideland, groundwater was a major issue for crews conducting excavations, constructing foundations and underground structures, and installing underground utilities. At peak periods, up to 600 gallons per minute of water—over 850,000 gallons per day—had to be pumped from the Site and treated prior to discharge. The building also had to be designed to withstand hydrostatic pressures; to counteract the upward force of groundwater on the garage's concrete mat, GZA Senior Principal Mary Hall, P.E. and her team recommended a system of tiedown anchors to keep the mat in place. "These are essentially giant cable tendons that are spaced every 30 feet, sometimes closer, and grouted 20 to 50 feet into the bedrock," Hall explains.

Subsurface challenges also led GZA to recommend an innovative approach to the foundation for the main approach drive into the

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National Grid Takes on Flood Hardening of Critical Power Infrastructure

by Cody Gibb, EIT, Engineer I, GZA, EMG Chair, Gary McAllister, PE, Principal, GZA, and Richard Costa, PE, Principal Engineer, National Grid

National Grid has 450 substations in New England. As part of their flood hardening program, 31 substations located within mapped Special Flood Hazard Areas were identified, prioritized, and ranked based on relative risk. Of those 31 identified, 19 were selected to be flood-hardened, initiating the planning, design, procurement, construction, oversight, forecasting, emergency response, and maintenance at all 19 facilities as short-term hardening methods until long-term hardening systems could be constructed.

Of the natural hazards, flooding represents the most costly in terms of human life and economic impact. Hurricane Katrina in 2005, with its 20+-foot-high storm surge, led to over 1,000 lives lost and \$100B in damage. In 2012, Superstorm Sandy, with a 12-foot-high storm surge, resulted in the loss of over 100 lives and caused \$65B in damage. Maintaining power during natural disasters helps mitigate their effects, offering more resources to first responders and emergency facilities.

Energy facilities support the upstream, midstream, and downstream oil and gas sectors, as well as generation, transmission, and distribution of electricity. Many of these facilities are located within low-lying and coastal areas prone to flooding. Resiliency (i.e., the ability to anticipate, resist, absorb, respond to, adapt to, and recover) against damage such as flooding is a single, yet interdependent component to our need for reliable, cost-effective, and sustainable energy. An array of federal, regional, state, and local entities as well as regional and state quasi-governmental agencies are responsible for the protection of our energy infrastructure. Cooperation among the energy facilities owners and these various regulatory bodies continues to improve as we become more dependent on energy infrastructure and more aware of the natural and man-made threats to that infrastructure.

Design Standards for Flood Resistant Design

Facilities adhering to the building codes directly reference ASCE Standard 24 (ASCE 24) to incorporate flood resiliency in new and substantially new design and construction. ASCE 24 also provides a baseline for hardening existing facilities against flooding. For critical energy facilities, ASCE 24-14 states the minimum design elevation (MDE) of flood protection should be



Seawall protecting substation (out of picture) in Newburyport during Nor'easter Riley in March 2018



Water levels rising around Floodstop® barriers protecting critical energized equipment in Boston Harbor during Nor'easter Riley in March 2018

FEMA's 100-year flood plus 2 feet, FEMA's 500-year flood elevation, or the applicable Community-Specific minimum flood elevation, whichever is greater. In coastal areas, this MDE may be further increased by industry-specific regulatory standards to include additional elevation to account for future sea-level rise.

Once the MDE is established, developing the flood mitigation plan involves an alternatives analysis to evaluate site and project constraints for each of the flood mitigation measures being considered. An alternatives analysis may

consider one, or a combination of measures, such the eight general measures identified in the US Army Corps of Engineers North Atlantic Coast Comprehensive Study (NACCS).

Once a concept or combination of concepts is selected, the permitting, installation, operations, performance, and service-life requirements are identified to assess the feasibility and preliminary cost, schedule, risk, and opportunities of the flood measure alternative(s). This assessment involves a wide range of permitting, ecological, civil, structural, geotechnical, hydraulic,

Enhancing Resilience to Flooding Impacts at Boston City Hall

by Abigail Ericson, Water Resource Engineer, GZA and Samuel Bell, CFM, Senior Resiliency Planner, GZA

The Boston City Hall building lies 2,000 feet west of the Boston Harbor shoreline. Despite the distance from the shoreline, the property's insurance carrier had identified flooding to be a hazard at the building, due to its location within the FEMA Special Flood Hazard Area and the increased magnitude and frequency of flooding experienced in downtown Boston. In early January 2018, stillwater flood elevations in Boston Harbor exceeded the flood elevation of the blizzard of 1978. Later, in March of 2018, Boston Harbor reached the third highest elevation of record. Storm events producing storm surge like the 2018 Nor'easters and coincident with astronomical high tides can result in substantial flooding of Boston. Key findings, summarized by the Boston Research Advisory Group (BRAG), indicate that it is likely Boston can expect sea levels to continue to rise which will only increase the risk of coastal flood inundation to city properties.

To combat this growing risk at the City Hall property, GZA performed a flood vulnerability assessment and assessed flood mitigation alternatives. Over the last three years GZA has been responsible for conducting flood vulnerability assessments and developing flood risk management strategies for several sites in downtown Boston, Massachusetts. To perform this work, GZA follows a four-step approach to mitigation of flooding impacts: 1) evaluate site-specific flood vulnerabilities; 2) identify appropriate flood mitigation alternatives; 3) assess the feasibility of and recommend flood mitigation alternatives; and 4) recommend and

prepare a Flood Emergency Action Plan (FERP). GZA recently completed the first three steps in the flood mitigation approach for Boston's City Hall.

The flood vulnerability assessment assessed building features (e.g. openings including doors, windows, garage entrances, etc.), critical building systems and facilities (e.g. power, wastewater, stormwater, etc.), and building operations and use requirements. Based on the results of the flood vulnerability assessment, GZA found that the first level and basement levels of City Hall are at risk of coastal flooding. While some potentially impacted building systems are not expected to flood in a 100-year flood event, without mitigation action taken, other building openings and systems could experience impacts from flooding during the 100-year event. During such a flood event, the building is susceptible to water entering the building through a variety of building openings and penetrations located on the west side of the building along Congress Street.

Following the building's insurer's guidelines for flood elevations and freeboard requirements, City Hall would need protection of a height of up to 5.5 feet to prevent water from entering the building. GZA considered several flood protection measures for City Hall and assessed the flood mitigation approaches based on considerations such as cost to install, maintain and/or deploy; deployment capabilities; availability of space for storage of equipment; frequency of deployment; level of risk; architectural and aesthetic limitations; access

considerations; and extent of area required to be protected.

Based on this analysis, GZA's recommended approach for flood protection included perimeter flood protection at exterior floodwater entry points to prevent water entry into the interior building space. These flood mitigation measures would prevent flooding from entering the building interior and thus protect critical building systems located within the building in the two basement levels.

Upon providing the recommended flood mitigation measures to the City of Boston, GZA recommended that the flood vulnerability assessment and flood mitigation measure recommendations be discussed in consultation with the building's insurer, a flood mitigation approach be selected and implemented.

Upon selection of the preferred flood mitigation approach, GZA recommended that the City prepare a Flood Emergency Response Plan (FERP) per the building's insurer requirements. The FERP must identify the steps, measures and procedures, roles and responsibilities required to implement flood protection at a specific site based on the site's flood risk. A FERP is structured around the selected flood mitigation measures, personnel capabilities and facility operations, and addresses safety, property loss prevention, operations continuity and rapid recovery. A FERP has the benefit of highlighting what steps are needed and what resources are available to reduce the risk of potential flooding that provides a systematic approach to act in time to reduce potential damages.

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Paving the Way to Better Roads

by Nicholas Read Esq., City of Newton, Chief Procurement Officer

Roadway maintenance is a large part of the City of Newton’s annual \$9½ million budget. The City puts out several types of large paving construction contracts each year. These roadway contracts can be funded with City funds, state funds, or both. If a contract is funded wholly or in part with state funds and has an estimated value of more than \$100,000, it can only be awarded to a contract that has been prequalified by the Massachusetts Department of Transportation (MassDOT). Although the state funding is provided pursuant to M.G.L. c.6C, §4(b), covered contracts are referred to as “Chapter 90 contracts.” When the City issues a contract under the Chapter 90 program, bidders are notified of the prequalification requirements. A list of prequalified contractors is provided by MassDOT prior to the bid opening.

All paving contracts are administered by the Engineering division of the Department of Public Works (DPW). To request a list of qualified contractors for a particular contract, prior to the bid opening date, the Engineering division submits a completed Chapter 90 Form to MassDOT along with (i) the Invitation For Bid (IFB) materials item list, (ii) the IFB Scope of Work and (iii) copies of required advertisements. MassDOT then reviews the submission, requests corrections if applicable, and then issues a list of prequalified contractors prior to the bid opening. Contractors that are not on the MassDOT list cannot bid on the project.

A paving bid is based on Item Sheets included in the IFB. Twenty to fifty items, including labor, are typically bid based on estimated quantities provided by the City. Estimated quantities are

determined based on the City’s prior years of related experience and on the contract scope of work. For example, the City of Newton might ask for a price on items such as commonly used Best Management Practices (BMPs) like silt sacks (priced per sack, estimate 140); loam barrow (priced per cubic yard, estimate 240); or other contract items such as pavement milling (priced per square yard, estimate 64,000). The IFB clearly states that the quantities provided by the City are still just estimates and actual quantities may be different. Regardless of the amount of the actual quantities, the unit price(s) shall be that set forth in the Bidder’s Item Sheets.

A Chapter 90 Initiation For Bid must also allow contractors to opt for price adjustments in pricing certain materials, typically fuel and liquid asphalt, when they have been determined to be integral components of the work. This adjustment in price is based on the difference between a **Base Price** and a **Period Price**, both of which are set by MassDOT on a monthly basis. Price adjustments are made at the same interval, but they are only made if the monthly cost change exceeds ±5 percent. Subsequently, each respective price adjustment is made as specified under each applicable and separate payment item. The contractor may either choose to bid their material costs separately or they may otherwise elect to incorporate such costs into other separate bid items. Regardless of where the costs are placed, the contractor’s final bid price must include fuel costs for all goods provided and services rendered un the contract.

The specific regulations distinctions do not stop at the contractual level. There are even distinctions to be made in the terminology used

every day by roadway professionals. Words such as “paving” and “concrete” can be misconstrued by the public but for the roadway professional, there are specific distinctions, to be made.

Types of Paving

- **Micro Surfacing:** Superficial treatment for road in fair condition. Consists of oil and stone mix. Curb to curb;
- **Crack Seal Bituminous Concrete:** Liquid fill for cracks in the pavement. Applied with wand. “Bituminous” refers to petroleum-based binder for material;
- **Cold Planing of Bituminous Concrete:** Removal of the top layer (1½”) of existing pavement prior to repaving. Material disposed of or used by the city at other sites;
- **Bituminous Concrete Overlay:** Final layer—mixture of oil and stone;
- **Bituminous Sand Overlay:** Fine final layer—mixture of oil and sand. Finer than micro surfacing.

Types of Concrete

- **Ready Mix Concrete (Wet):** All concrete is classified as “ready mix.” Ready mix, i.e., NOT “onsite,” is delivered wet to the site, it being mixed in transit. Geography limits the number of potential bidders since ready mix, once wet, is only good for several hours;
- **Onsite Ready Mix Concrete (Dry):** Onsite ready mix is delivered to the site dry, and the components are mixed with water when and where needed. This allows the City to use the ready mix for extended periods and at various locations.

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2019 ASCE Legislative Fly-In

by Kathryn Swanson, PE, Water Resources Engineer, CDM Smith

I had the honor of participating in the 2019 ASCE Legislative Fly-in this past March along with William Levy and Robert Sykes. Held on March 12–13, the Fly-In was an intensive two-day program focused on aviation, water, and transportation advocacy in Washington, DC. In addition to one-on-one meetings with staff at Congressional offices, the conference includes a younger member program, issues briefing sessions, ASCE presentations, and networking opportunities for participants.

During this year’s program, 210 ASCE members met with staff from over 270 Congressional offices to bring attention to issues focused on our national infrastructure. Part of the agreement for the Fly-In is that as a participant, you’re expected to focus on the specific requests that ASCE has chosen for the year during your meetings. This year’s lineup included:

1. Develop and pass a comprehensive infrastructure plan.
2. Provide adequate funding through appropriations of existing federal programs.
3. Fix the Highway Trust Fund.

Not only do these issues impact the Civil Engineering industry, they directly impact the quality of life for all Americans. According to ASCE, the infrastructure deficit costs American families \$3,400 a year. The 2017 ASCE Infrastructure Report Card rated the country as a D+ overall, which is clearly inadequate. These requests aim to address the critical issues with our nation’s infrastructure by pushing Congress to fund necessary federal programs and infrastructure reform. Detailed information on the 2019 priority issues [can be found online](#).



(Right to left) Kathryn Swanson, William Levy and Robert Sykes at the 2019 Legislative Fly-In

I was worried that the ASCE-sponsored requests wouldn’t align with my personal views when I first signed up to participate. The issues briefings and requests are much more detailed than what can possibly be covered in a 15-minute-or-less meeting with Congressional offices, so Fly-In participants can choose which issues means most to them personally to bring up during the meetings. During the issue briefings and training sessions, there’s a clear focus on adding a personal touch to the requests (‘My car got a flat tire last week from the potholes on the street where I live,’ or ‘My town can’t afford to upgrade the water treatment facility to current water quality standards’).

Looking through the issue briefings and informational packed provided to Fly-In participants, I was quickly able to hone-in on requests that are important to me professionally

and personally. As a water resources engineer, I frequently use surface water and groundwater data collected and published by the U.S. Geological Survey (USGS). Each person that I spoke with was unaware of the USGS stream gaging program, so I had the opportunity to take a few moments to tell them about what it is, why it is important, and why Congress should continue to appropriate funding to it. As a private citizen, I look forward to visiting National Parks during my free time (in fact, I’ve just returned from a visit to Glacier Bay National Park in Alaska, which is almost the size of Connecticut and an invaluable resource). I happily found that continued funding for the National Parks was one of the line items on the Appropriations Request, and thus chose this topic to discuss during these meetings.

Overall, I thought that the Fly-In was a positive experience. The ASCE request line-up aligned with my personal requests from the federal government: a commitment to infrastructure investment and support of existing federal programs. It’s worth noting that I have the good fortune of living in a state where my legislators have similar values to my own, so staff responses were generally along the lines of ‘Yes, we agree that these are important issues and that Congress should address them.’ I acknowledge that the influence that I had in my own very brief meetings is likely small, but I hope that the overall effort from the 210 advocates leaves an impression on our legislators. The Fly-In amplifies our voices and makes sure that legislators know our where our priorities stand as civil engineers and as private citizens.

Engineers Beware: The Massachusetts’ Prompt Pay Act Contains Hidden Pitfalls for the Uninformed (Part 2)

by Joseph A. Barra, Esq., Robinsoln + Cole



Massachusetts’ Prompt Pay Act (Massachusetts General Law c.149§29E), sometimes referred to jokingly among the local Construction Bar as “The Construction Lawyers’ Annuity Act,” became effective on

November 8, 2010. Our first note a few months ago addressed how unsuspecting design and construction management professionals could

face significant legal exposure to their clients for failing to process pay requisitions and change orders in accordance with the Statute’s strict requirements.

This note addresses the balance of the Statute’s requirements: the proper use and application of “Pay-if-Paid” clauses; provisions negating a contract obligation that requires a contractor to continue working when an approved payment is more than 30 days late; and contract clauses that

improperly restrict a contractor’s ability to trigger a contract’s dispute clause.

How the Act has Changed the Current Landscape

A key threshold question involves whether the Act applies to your project. As discussed earlier, the Act doesn’t affect all private construction projects, only those whose primary value is \$3 million or more. Further the Act does not apply to residential projects with less than 5 units.

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President's Report

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Stephanie Pollack (Secretary and Chief Executive Officer, MassDOT), Glenn Bell (Senior Principal, SGH), Katie Choe (Chief Engineer/Director of Construction Management, City of Boston Public Works), and Stephen Taylor posthumously (Senior Vice Principal, Mott MacDonald).

I also would like to highlight that we are in the middle of our Annual Sponsorship Drive, where we solicit Society Sponsors and Program Sponsors to help support the 2019-2020 BSCES operations. Please consider becoming a sponsor!

We accomplished a lot last year, our 171st year of the Society's existence. Among the highlights;

- We have succeeded in turning the corner on running annual deficit to self-sustaining our operations. The draft annual financial report will not be available until August, however, all indications are that we will break even, if not ending up with surplus this year. With this strong fiscal foundation, we are well positioned to begin profitability and improved sustainability.
- We have revisited our special funds policies and have made great progress, and still have work to do. We have been looking back at what the special funds were set up for and how we can honor these intents going forward.
- We established and succeeded in the creation of an improved BSCES email system. This enhanced communication with BSCES leaders, ensures a smooth transition with new leaders year to year. You will be able to continue to communicate with the BSCES President at all times with the same email address president@bsces.org.
- We strengthened the partnership between ASCE and BSCES officers and volunteers. We established much stronger ties with ASCE and through enhanced collaboration, exchange of information, and ASCE services we are able to tap into many benefits, services and resources ASCE provides.

- We revitalized our Fundraising Committee to focus on strategies for increasing our revenues to support all of our programming. We have reached out to more BSCES volunteers to help support our annual sponsorship drive and are looking at additional creative ways to generate fundraising. We were able to increase our sponsorship fundraising to an all-time high, and hope to increase that total this upcoming year. Thank you to Ron Burns for accepting chairmanship of this important committee.
- We shifted our technical events to company and university space to the maximum extent practical. This provided members with opportunities to connect with business and academic professionals when attending technical functions. In addition to greater exposure for our members to the business and academic professionals, we also kept our own event cost down.
- We performed a membership survey and received over 200 responses (thank you!) and will be using the information collected to help shape our programs.
- We drafted documents for creation of a BSCES Advisory Board to strengthen and support the leadership, and have those on file should the Board decide to advance this.
- We have teamed up with SeaMASS and AIA Massachusetts to develop the Massachusetts Architects and Engineers Emergency Response Task Force (MA AEER TF) and are currently developing the by-laws and planning training classes for this upcoming year.
- We have revitalized our BSCES Diversity and Inclusion Task Force, and the Western Massachusetts Branch and are planning meetings for this upcoming year. Please let us know if you wish to get involved, we are looking for volunteers. Thanks to Alyson Stuer for offering to chair this committee.
- We have added references to how to become a BSCES mentor or a BSCES mentee on welcome pamphlets for new members.

We also started discussion on a few key initiatives that will be picked up in this upcoming year, including:

- Development of a Massachusetts State Infrastructure Report Card consistent with other ASCE State infrastructure report cards.
- Development of our BSCES FY2020 – 2024 5-year Strategic Plan, which will pave a path forward in regards to initiatives, goals, and problem-solving.

A special thanks to Joe Barra of Robinson + Cole for contributing two newsletter articles in the past year to help engineers struggling to understand the complex legal framework that affects our work.

The June *BSCESNews* theme is Emergency Preparedness and the featured group is the COPRI Boston Chapter. Please read the page 10 article by the group's chair Bryan N. Jones, PE, from HDR, Inc. If you are interested in submitting an article, please contact our Newsletter Committee chair, Bruce Jacobs, at sr.vp1@bsces.org.

I'd like to thank our Society Sponsor GZA GeoEnvironmental, which is the sponsor of this month's newsletter. I'd also like to thank GZA for contributing articles to this issue of *BSCESNews* entitled "Transformation of an Abandoned Brownfield to the Site of the Encore Boston Harbor Resort," "National Grid Takes on Flood Hardening of Critical Power Infrastructure," and "Enhancing Resilience to Flooding Impacts at Boston City Hall."

Lastly, one takeaway I had from my experiences serving BSCES is that things don't get accomplished without a lot of effort by dedicated and passionate volunteers. I am excited for the 2019–2020 year and I hope everyone gets a chance to communicate with the incoming President, Richard Maher. I will support Rich and his programs for the upcoming year in the role of Past-President, and I wish Rich and BSCES continued success for generations to come.

BSCES is your organization, and if you have any feedback or suggestions on how we can improve, please contact the BSCES President directly at president@bsces.org.

Respectfully submitted,
Geoffrey



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Two blocks from the State House and overlooking Boston Common, the Aldrich Center is the perfect venue for your next event. This historic building accommodates private functions and business meetings. BSCES members receive a 20% discount off our room rental rates.

Visit www.aldrichcenter.org for more information.

Aldrich Center
ONE WALNUT STREET
Beacon Hill Boston, MA

Encore Boston Harbor Resort

continued from page 2

resort hotel's distinctive porte cochère entrance, constructed 15 feet above the pre-construction ground surface. Expanded polystyrene (EPS) blocks, a form of foam that is functionally as strong as concrete despite weighing just 1/50th as much as soil, were used to construct the embankment supporting the ramps to the porte cochère; the soft soils underlying the former tidelands would have caused a traditional soil embankment to settle several inches or even feet over time. Use of the EPS roadway structure mitigated this risk and was a less costly solution than driving additional piles to support the entrance ramp.

Shoreline Improvements

Beyond all the work on the “land side,” GZA also played a key role in designing the “water side” of the project. In its industrial days, the Everett site was regularly served by ships delivering raw materials for the chemical manufacturing operations, but after decades of inactivity the existing timber bulkhead was in a state of disrepair. For the Encore project, the

shoreline was stabilized through the construction of a new sheet-pile bulkhead secured by ties to a “deadman” wall sunk deep into the upland side of the parcel. The bulkhead supports a public harbor walk, which is also partially supported by a timber pile load transfer platform and a 14-inch precast concrete pile-supported wharf.

The resort operators anticipate that a substantial percentage of their future patrons will be arriving by water taxi, but installing handicapped-accessible ferry terminals and gangways at the project site is complicated by the 8-foot rise and fall of harbor levels between high and low tides—up to 12 feet during “King Tides” corresponding to ultra-full moons. The concrete float dock system is designed to accommodate water taxis and custom-designed ferries, as well as Everett Fire and Police Department vessels and smaller transient recreational crafts.

GZA worked with regulators and the Mystic River Watershed Association during the MEPA

public comment period to develop the concept of a “living shoreline” along approximately 600 linear feet of formerly sterile, contaminated shoreline. The final living shoreline consists of a hybrid system which maximizes coastal bank and salt marsh planting while still providing a reasonable degree of protection by utilizing a cobble sill at the high-water line, buried cobbles protecting harbor walk retaining walls, and various biodegradable construction materials.

Says GZA CEO Patrick Sheehan, “Encore Boston Harbor is destined to be an iconic element of the skyline around Boston and an exciting new attraction for visitors from the city, state, region, country, and world. When we talk about GZA being known for excellence and built on trust, those words really epitomize how my colleagues worked so diligently and thoughtfully on this project. It will always be an honor—and a thrill—to visit Encore Boston Harbor and know that GZA helped bring this transformational project to reality.”

Flood Hardening

continued from page 3

hydrologic, mechanical, and other technical disciplines with an understanding of the specific energy facility. Early and thorough stakeholder input is vital to quickly focus efforts on more preferred and technically feasible alternatives.

Implementation of Flood Hardening at National Grid Substations

Following a series of field tests with various barrier systems, Floodstop® barriers were selected as the preferred barrier at most substations. Yard drains, sumps, pumps, generators, storage, and other ancillary seepage controls were selected, sized, and incorporated into the flood hardening systems.

Following construction, As-builts, Activation, and Operation & Maintenance Plans were developed. The Activation Plans were designed for use by personnel with a general understanding of the substation, and no prior familiarity with barrier or pump systems to activate the equipment; the goal being that training was not a prerequisite to respond.

These efforts paid off between January and March 2018, when a series of five named nor'easters within seven weeks struck New England. Early forecasting of storm surge and waves provided the basis for National Grid's go/no-go decision to mobilize crews in advance of the storms to four substations located in Narraganset Bay, Boston Harbor, Newburyport Harbor, and Nantucket Harbor. Continual tracking days and hours ahead of the storms enabled the high-water levels to be successfully estimated within one foot of the observed levels at the facilities. Blizzard conditions during Winter Storm Grayson (Jan 4, 2018) challenged field crews; however, the systems were successfully activated with only small crews at each substation. At one National Grid substation in Boston Harbor, concerns of flood damage at a critical high voltage facility were alleviated, even as the record-setting storm tide crested the seawall and approached the barriers protecting critical equipment.

Winter Storm Riley (March 2 and 3, 2018) threatened to beat Grayson's record with storm surge and waves pushed by 93-mph wind gusts. Flood hardening was successfully activated at six substations, including two more located in Lynn Harbor. Storm tides crested seawalls and roads and entered through the gates at most of these substations; however, activation of the flood hardening systems allowed substation operators to continue to run the substations without concern for shutting down the facility to protect energized equipment from water intrusion.

With the ever-increasing severity of storms and rising ocean levels, more and more essential facilities will be susceptible to flooding. The current and projected risk of flooding during the lifespan of the facility needs to be considered during the development of flood hardening systems. Comprehensive analysis by experienced technical disciplines guided by thorough stakeholder input as well as early and continued forecasting and user-friendly Activation Plans have proven vital to the success of National Grid's flood hardening systems.

Massachusetts Architects & Engineers Emergency Response Task Force Prepares Engineering Community to Respond to Disasters

by Gregory Mirliss, Coordinating Team Leader Bridge and Tunnel Inspections, AECOM

A year and a half ago, members of BSCES, American Institute of Architects Massachusetts (AIA MA), and Structural Engineers Association of Massachusetts (SEAMass) reignited the initiative to have an organization of trained engineers and architects ready to serve as second responders in the event the Commonwealth is stricken with a natural or manmade disaster. From conversations and numerous meetings, the Massachusetts Architects and Engineers Emergency Responders Task Force (MA AEER TF) was formed.

This followed an earlier joint effort initiated by the Structural Engineering Institute Boston Chapter, which continued from 2013 to 2017. One of the main goals of this effort was to have the Massachusetts State General Court pass the Good Samaritan Law providing protection to both engineers and architects. Thanks to the leadership provided by the American Council of Engineering Companies of Massachusetts (ACEC/MA) and with the Good Samaritan Law in place, engineers and architects now had the legal protection to serve as disaster responders in the event of an emergency.

With the legal protection in place, conversations started on the next steps of figuring out how to proceed. BSCES joined these conversations and from conversations came an agreement between BSCES, AIA MA, and SEAMASS and the formation of MA AEER TF.

The full mission of MA AEER TF is to be a second responder disaster organization resource, available to the Commonwealth of Massachusetts Emergency Management Agency, herein referred to as "MEMA", for rapid mobilization when activated and readied for deployment during times of natural disaster and catastrophes pursuant to Massachusetts General Laws Chapter 112, Section 60Q.

Task Force volunteers, when officially deployed through MEMA, become disaster response workers, for the purpose of providing technical expertise relative to public health, safety and welfare as it pertains to disaster response. Additionally, Task Force members may be available to assist MEMA and/or other State or Massachusetts Town/City agencies on technical matters regarding disaster preparedness, on an "as needed" basis.

BSCES's role in the organization is twofold and the same as AIA MA and SEAMASS. The first part and the most important is to provide information to its members about the organization and encourage them to participate in training and sign up as volunteers. The second part is to provide three representatives to the nine-member board. Reed Brockman, Gregory Mirliss, and Mehrdad Sasani were elected by the BSCES Board of Government to each serve a three year term on the MA AEER Board.

The MA AEER Board is organized into three categories consisting of a Training Committee, an Massachusetts Emergency Support Function Liaison Committee, and the officer positions. One representative from each parent organization serves in each of these categories.

All of the members and their respective committees are working on next steps to ensure that the MA AEER TF is ready to deploy when called upon. The next steps are the creation of a responder database, an agreement with MEMA, and the scheduling of trainings. Look for more announcements for a training being planned for the fall.

Engineers Beware

continued from page 6

I'll pay you when I get it: The Act effectively invalidates commonly used "Pay-if Paid" provisions. However, the Statute does allow such provisions in two limited exceptions: First if the work performed by the party owed money is defective. The second exception allows the clause to be enforced if the upstream payer is insolvent. However, this last exception also requires that the party to whom money is owed has previously recorded a Notice of Contract before submitting its first payment application. Notably, both exceptions must be expressly provided for in the contract.

I don't work for free: The Act renders unenforceable any contract provision that requires a party to continue working when an approved payment is more than 30 days late. However, like any rule, there are exceptions. For

example, such clauses will be considered enforceable when the creditor is in default of its contract obligations or if there is a legitimate dispute regarding the quality or quantity of the creditor's work. Notably, these exceptions apply only if the creditor has received prior written notice of the controversy and has been paid all amounts not in dispute.

See you in Court...maybe: The Act limits the reach of a contract provision that restricts an aggrieved parties' ability to trigger the contract's dispute resolution remedies. No longer can one party require a creditor to wait until the end of the project in order to resolve a dispute regarding payment or contract changes.

The Act's Impact on Current Practice

It is essential that project participants understand how the Act renders unenforceable, certain contract provisions and common methods of practice. For example:

- The time-honored payment response "I don't have to pay you because I haven't been paid" is virtually a thing of the past.
- Upstream payers need to purchase a calendar, as a failure to pay undisputed invoices provides the unpaid creditor with a statutory remedy to stop work 30 days from when payment is due.
- Payers who rely upon contract provisions that restrict a creditor's right to trigger the contract's dispute clause must now put their construction attorney on speed-dial as a failure to timely pay undisputed invoices could trigger a formal dispute.

Mr. Barra is a degreed civil engineer and a construction partner in the Boston office of Robinson + Cole, LLP. He is a graduate of the Virginia Military Institute and Touro College, Jacob D. Fuchsberg Law Center. He would like to acknowledge the efforts of his colleague, Jonathan Hausner, Esq., for his contributions in preparing this article.

Featured Group

Engineers and Post-Disaster Roles

by Bryan N. Jones, PE, D.PE, D.CE, M. ASCE, HDR, Inc. and COPRI Boston Chairperson

“Engineers Serve a Critical Role in Post-Disaster Response and Recovery.”

Man-made and natural disasters in recent years, including the Midwest floods in March of this year, the California wildfires of last November, and Hurricanes Harvey and Irma in 2017, have highlighted critical vulnerabilities with our nation’s infrastructure. The civil engineering profession can, and does, provide leadership and expertise in support of search and rescue efforts and in emergency response and recovery activities in the aftermath of disasters. Civil engineers and constructors have a critical role as first responders to assist federal, state and local governments by providing technical expertise in emergency response and recovery activities, such as structural damage assessments of buildings, bridges, and other transportation and water resources infrastructure.

The ASCE Board of Direction approved Policy Statement 499—Emergency Preparedness and Response on July 13, 2018 which states:

“The American Society of Civil Engineers (ASCE) supports comprehensive planning, education, and training initiatives that increase the ability and readiness of civil engineers to quickly and effectively respond to all events that impact the nation’s physical infrastructure (i.e., the nation’s built environment, including water, energy, utilities, transportation, communication, and building systems).”

ASCE regularly participates in the development and implementation of emergency preparedness and response strategies to mitigate the impact of future disasters on public health, safety, and welfare. ASCE additionally has a Disaster Response and Recovery Committee with a long history of sending volunteer teams of technical professionals to evaluate disaster areas and render assistance in the response and recovery planning for designing resilient infrastructure.

Over the past 15 years alone, ASCE volunteer response teams have been called into action to support recovery efforts for numerous events, both nationally and internationally, including:

- 2019—Midwest US Floods in March
- 2018—Northern California “Camp” Wildfires
- 2017—Hurricanes Harvey, Irma, Maria and Nate (Texas, Florida, Puerto Rico, US Virgin Islands)
- 2012—Hurricane Sandy (New York and New Jersey)

- 2011—Tohoku Earthquake and Tsunami (Japan)
- 2009—Padang Indonesian Tsunami (Sumatra)
- 2007—Hurricane Katrina (US Gulf Coast)

Engineering professionals responding to these events help out in a variety of ways, from performing critical structural inspections to conducting general surveys of damaged infrastructure to assess failure mechanisms and develop “lessons learned” for future design guidance. In all cases, these volunteer professionals are making big differences in their communities as people return to their homes and businesses to start the recovery process.

As a recent example, ASCE Region 9’s Disaster Preparedness Chair recently worked year-round in 2018 to train and certify more than 500 members statewide as Safety Assessment Program (SAP) evaluators with the California Office of Emergency Services. As California was contending with the deadliest wildfires in its history last year (40 deaths and more than 8,000 structures destroyed), a team of 10 ASCE volunteers was quickly assembled to assess residential and commercial building structures affected by the blaze and determine whether they were safe to occupy; not adequate to occupy but safe enough to go in and get possessions; or unsafe for entry or occupancy.

From my own experience, I participated in one of seven ASCE volunteer teams that responded after the 2011 Tohoku Earthquake and Tsunami in Japan. Each of the teams was tasked with surveying a specific type of infrastructure, including roadways and bridges, buildings, rail and port structures among others. My team spent a week visiting devastated communities and surveying damage to coastal structures along a section of the coast between the cities of Hachinohe and Sendai; roughly equivalent to the distance between Boston and New York.

Arriving nearly two months after the event, our goal was to document and evaluate how and why certain coastal seawalls and breakwater structures failed, while others survived. Japanese coastal engineering colleagues and researchers escorted us along the way, serving as interpreters, as well as allowing us to collaborate directly; enabling us to share our ideas and differences in design approaches—particularly with respect to the probabilistic determination of design water

levels. In the US, we tend to focus on the 1% annual probability (i.e. 100-year storm) event, whereas the Japanese approach is to design for historic observations from past events. I found the experience very rewarding and would encourage other professionals to volunteer when approached to support post-disaster efforts.

Most states have a division of emergency management offices that implement programs to increase public awareness about emergencies, threats, and hazards, coordinate emergency planning, and provide an extensive array of specialized training for emergency responders. Locally, the Massachusetts Architects & Engineers Emergency Response (MA AEER) Task Force was formed in the Fall of 2018 to support the Massachusetts Emergency Management Agency (MEMA). The MA AEER Task Force is a joint committee with a Governing Board that consists of three BSCES members, three American Institute of Architects (AIA) Massachusetts Chapter members, and three Structural Engineers Association of Massachusetts (SEAMass) members. There is a rotating executive committee between the three founding entities, whose terms expire after three years. The Governing Board is currently developing By-laws and a mission statement, MA AEER hosted its first “Disaster Assistance Building Evaluator Training Workshop”, last November, which certified the Professional Architects, Engineers, and Building Inspectors in attendance as Building Evaluators in the nationally recognized Safety Assessment Program (SAP). These Evaluators will assist local governments and perform safety evaluations of the built environment in the aftermath of a natural disaster or catastrophe. The training included instruction in the performance of rapid damage assessments of structures affected by earthquakes, as well as wind and water damage. The participants received a nationally recognized Cal OES registration ID card from the state of California.

One of the most important things we, as engineering professionals, can do in response to disasters is to be a source of credible information. Civil engineers play critical roles in the resilience of our communities, so we must not be bashful. Engage immediately following an event to the best we can, and lead our communities back to recovery. We will all be better for it.

Recent News and Updates

BSCES Announces 2019–2020 Sponsorship Program

BSCES leaders are pleased to unveil the 2019–2020 BSCES Sponsorship Program, which runs through June 30, 2020. We are looking forward to BSCES accomplishing more and continuing to advance the civil engineering profession. This can only be achieved with the continued support of our members and sponsors. 2019–2020 BSCES Sponsors help BSCES achieve its financial goals while receiving great organizational visibility among thousands of professionals.

The 2019–2020 BSCES sponsorship program offers two sponsorship options—Society Sponsor and Program Sponsor. Looking to give sponsors maximum exposure, BSCES is offering a broad array of promotional benefits. Please see the insert included at the end of this newsletter for program details.

BSCES Diversity and Inclusion Task Force Looking for Volunteers

BSCES has reformed the Diversity and Inclusion Task Force after a few years of dormancy and appointed Alyson Stuer, PE, Alfred Benesch & Company, as its chair. The task force's primary objective is to create a culture within BSCES that values diversity, inclusion, and equity, whose members are reflective of the communities we serve. Ensuring that BSCES is inviting and open to all members of the civil engineering community is in line with the BSCES mission. If this excites you and you want to learn more, email Alyson at AStuer@benesch.com.

BSCES Welcomes its New Members

The BSCES Board of Government is pleased to welcome the following new members who joined BSCES during April and May 2019:

Affiliate Members:

Peter Enright
Steve Findlen, McMahan Associates
Julius Ofurie, City of Everett
Heather Shields, GEI Consultants, Inc.

Associate Members:

Andrew Boynton
Ryan Green, Weston & Sampson Engineers, Inc.
Ravi Kadam
Elaine Kehoe
Michael Knodler, University of Massachusetts Amherst
David Magee
Samuel Taugher, Tighe & Bond

Member:

John Digiaco, Town of Natick DPW

Student Members:

Fernando Aguiluz
Fadel Antypas, Merrimack College
George Antypas, Merrimack College
Timothy Bailey, Massachusetts Maritime Academy
Dylan Brown, University of Massachusetts Amherst
Aaron Chabot, University of Massachusetts Dartmouth
Robert Creighton, University of Massachusetts Lowell
Carson Deman, Wentworth Institute of Technology
Connor Elmy, Merrimack College
Emma Gately, Merrimack College
Gregory Gniadek, University of Massachusetts Amherst
Andrew Heinz, University of Massachusetts Amherst
Brian Herwing
Zachary Hymowitz, Merrimack College
Ed Keenan, Villanova University
Gregory Laporte, Pennsylvania State University—University Park
Kayla Mollica, Norwich University
Ethan Moore
Matthew Perry, Wentworth Institute of Technology

Marla Rhuma, Smith College
Zachary Ronnow, University of Massachusetts Amherst
Rebekah Rose, University of Massachusetts Dartmouth
William Roseberry, University of Massachusetts Lowell
Casey Saitow, Merrimack College
Cielo Sharkus, Worcester Polytechnic Institute
Margaret Turner
Sara Vargas, Bunker Hill Community College
Kshama Vyas, University of Massachusetts Amherst
Tarek Zaki, Northwestern University

ASCE Election Results: Briaud to Be 2020 President-Elect

Thanks to all of you who voted in the annual ASCE election. You and your fellow ASCE members elected Jean-Louis Briaud, PE, PhD, D.GE, Dist.M.ASCE, as the 2020 president-elect. [Click here](#) to learn more about Jean-Louis and see the rest of the election results.

Encourage Others to Join ASCE and See the Rewards

Do you have colleagues that have not yet joined ASCE? Participate in ASCE's Member Referral Program and receive a \$50 Amazon gift card for each new member that you recruit. [Click here](#) to learn more about ASCE's Member Get a Member Program.

New ASCE Benefit Can Help You Refinance Student Loans

Are you still paying off student loans or high-interest rate debt? ASCE's commitment to supporting members' careers now extends to helping to reduce student loan burdens. A new refinancing program in partnership with the online personal finance company SoFi could save you thousands of dollars. To learn more, [click here](#).

Upcoming Events

For more information and to register for events, please visit www.bsces.org

To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your BSCES member login information, call 617/227-5551.

170th Annual BSCES Awards Dinner

Sponsored by the Awards Committee

Tuesday, June 16, 2019

Royal Sonesta Boston, Cambridge, MA

5:00 PM Registration & Reception

6:00 PM Keynote Address

6:30 PM Dinner

7:00 PM Remaining Program

Keynote Speaker: Stephanie Pollack, Secretary and Chief Executive Officer, Massachusetts Department of Transportation

Please join us for an evening celebrating BSCES and the engineering profession. BSCES will recognize volunteer leaders, present annual awards, celebrate ASCE Life Members, and honor our newest Honorary Members, Stephanie Pollack, Secretary & CEO, MassDOT, Glenn Bell, C.Eng, Sr. Principal, Simpson Gumpertz & Heger Inc., Katie J. Choe, CCM, Chief Engineer/Director of Construction Management, City of Boston Public Works, and Stephen Taylor (posthumous), CBE, PE, Sr. Vice President, Mott MacDonald, LLC. Space is limited for this event, so please register today!

Please see the Insert at the end of this month's newsletter for further details.

YMG Red Sox Game at Fenway Park

Sponsored by the Younger Member Group

Wednesday, July 17, 2019

Fenway Park, Boston, MA

7:10 Game with Social before

Join the Younger Member Group to watch the Boston Red Sox play against the Toronto Blue Jays. Registration fee includes ticket to game and pregame social food (no drinks included). Seats are in the bleachers.

Please see the Insert at the end of this month's newsletter for further details.

FHWA-NHI-130053 Bridge Inspection Refresher Training

Sponsored by the Program Committee

Tuesday–Thursday, October 1–3, 2019

AECOM, Boston, MA

8:00 AM - 4:30 PM

The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors. This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated 2006), with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

Please see the Insert at the end of this month's newsletter for further details.

Suggest a Seminar Topic

Is there an engineering topic that you would like BSCES to feature in an upcoming seminar? If so, members of the BSCES Program Committee would like to hear from you.

Charged with developing technical training programs that address members' professional development needs, the Program Committee oversees the Society's National Highway Institute training, spring and fall Professional Engineer Refresher Courses and other topical workshops. If you have a technical topic that you would like the Program Committee to consider, send your suggestion to BSCES Program Committee Chair Jeff Lewis at jlewis@garofaloassociates.com or BSCES Association Manager Rich Keenan at rkeen@engineers.org.

ASCE Webinars

ASCE WEBINARS

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Use WEBBOSSEC to have
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Are you planning to take an ASCE webinar? Sign up with the code WEBBOSSEC and 20% of your registration fee will be donated to the Boston Society of Civil Engineers Section/ASCE.

For a full listing of ASCE Webinars, [click here](#).

2018–2019 BSCES Program Sponsors

Alfred Benesch & Co. | CIANBRO | Dewberry | Eastern Topographics | GEI Consultants, Inc. | Green International Affiliates, Inc. | Haley & Aldrich, Inc. | Hayward Baker, Inc. | Helical Drilling | HNTB | Horsley Witten Group | Howard Stein Hudson | Hoyle, Tanner & Associates | Jacobs | Kleinfelder | McMillen Jacobs Associates | Nitsch Engineering | Department of Civil and Environmental Engineering, Northeastern University | Patrick Engineering Inc. | Perry Associates | PMA Consultants | Skanska | Stantec | Subsurface Constructors, Inc. | Tighe & Bond | TranSystems | Tufts University | VHB | Wentworth Institute of Technology B.S. and M. Eng. in Civil Engineering Programs | Weston & Sampson | WSP

The Boston Society of Civil Engineers Section/ASCE is pleased to announce its 2019-2020 Sponsorship Program. Promote your organization while demonstrating your support of BSCES by becoming a Society or Program Sponsor before the July 30, 2019 registration deadline. Sponsor promotional benefits and costs are as follows:

BSCES Society Sponsor - \$5,000

BSCES Society Sponsors are recognized as the premier sponsors of BSCES for a 12-month period. Promotional benefits include:

1. *Sponsor listing on the BSCES Website:*

- Organization logo with hyperlink to homepage included as one of the revolving sponsor logos that appear on the main navigation pages of the BSCES website, www.bsces.org.

2. Sponsor Promotion at BSCES Events and Activities

- Organization name included among the society sponsors listing that appears on all BSCES broadcast emails to members for a period of 12 months.
- Organization name included in the program sponsor listing that appears on all BSCES committee, institute chapter, and technical group developed event flyers.
- Organization logo included in the society sponsor listing on signage displayed at all events (excluding outdoor activities and multi-day Program Committee courses).
- Organization recognized as a society sponsor and thanked during introductory remarks at applicable BSCES events.
- Organization name included in the society sponsor listing that appears in the end credits of the BSCES Public Awareness & Outreach Committee hosted "Civil Engineering Today" television show for a period of 12 months. This show airs monthly on the Boston Neighborhood Network and gets streamed on YouTube.



3. Sponsor Promotion via BSCES Member Newsletter, *BSCESNews*:

- Organization logo with hyperlink to homepage included in society sponsor logo box on page 1 of 10 monthly issues of *BSCESNews* published during the fiscal year.
- Organization recognized as a society sponsor and thanked for its sponsorship in the first issue of *BSCESNews* released during the fiscal year.
- Organization is a featured sponsor of one issue of *BSCESNews* and receives two advertisements in that issue plus the opportunity to submit an article for publication in that newsletter.
- Organization recognized as a society sponsor and thanked for its sponsorship in its featured issue of *BSCESNews*' President's Report.

4. Sponsor Promotion at the 171st BSCES Annual Awards Dinner:

- Two complimentary seats at the BSCES annual awards dinner (or to any other BSCES dinner event).
- Organization logo included in the society sponsor listing on signage displayed at the awards dinner.
- Organization logo included in the society sponsor listing that appears in recurring dinner reception slideshow.
- Organization recognized as a society sponsor and thanked during introductory remarks at the dinner.

5. BSCES Leadership Reception Invitation:

- Two organization representatives included among the list of invitees to the annual BSCES leadership reception with the president-elect of ASCE.

BSCES Program Sponsor – \$2,500

BSCES program sponsors are recognized as sponsors of all BSCES committee, institute chapter and technical group developed programs that occur during the current fiscal year. Promotional benefits Include:

1. Broadcast Email Listing:

- Organization name included among the program sponsors listing that appears on all BSCES event-related broadcast emails to members for a period of 12 months.

2. BSCES Member Newsletter, *BSCESNews*, Listing:

- Organization name included among the program sponsor listing that appears on the first page of the Upcoming Events section of 10 monthly issues of *BSCESNews* published during the fiscal year.
- Organization recognized as a program sponsor and thanked for its sponsorship in the first issue of *BSCESNews* released during the fiscal year.

3. Sponsorship of BSCES Committee, Institute Chapter and Technical Group Developed Events:

- Two complimentary seats at a BSCES committee, institute chapter, or technical group developed event of your choice (excluding BSCES Program Committee developed seminars and courses).
- Organization name included in the program sponsor listing that appears on all BSCES committee, institute chapter, and technical group developed event flyers.
- Organization logo included in the program sponsor listing on signage displayed at all events (excluding outdoor activities and multi-day Program Committee courses).
- Organization recognized as a program sponsor and thanked during introductory remarks at applicable BSCES events.



4. BSCES Television Show, "Civil Engineering Today," Listing:

- Organization name included in the program sponsor listing that appears in the end credits of the BSCES Public Awareness & Outreach Committee hosted "Civil Engineering Today" television show for a period of 12 months. This show airs monthly on the Boston Neighborhood Network and gets streamed on YouTube.



2019-2020 Sponsorship Program

Select Sponsorship Level	Cost
<input type="checkbox"/> BSCES Society Sponsor	\$5,000
<input type="checkbox"/> BSCES Program Sponsor	\$2,500

Total Enclosed: _____

Firm/Organization Name: _____

(As you would like it to appear in sponsorship promotions)

Sponsor Contact: _____

Address: _____

Telephone: _____

Email: _____

Fax (617/227-6783) or email (bsces@engineers.org) this form and credit card information to BSCES by Tuesday, July 30, 2019.

Please bill my (check one): MasterCard Visa American Express

Card Number: _____ Expiration Date: _____

Billing Address: _____

Cardholder Signature: _____

Print Name: _____

OR

Make check payable to BSCES. Mail with this form to Boston Society of Civil Engineers Section/ASCE, The Engineering Center, One Walnut Street, Boston, MA 02108-3616.

If you have any questions, contact Rich Keenan at 617/305-4110 or at rkeenan@engineers.org

Payment Due at Time of Commitment



Keynote Speaker:
Stephanie Pollack
Secretary & CEO
Massachusetts Department
of Transportation

Tuesday, July 16, 2019

Royal Sonesta Boston

40 Edwin H Land Blvd, Cambridge, MA 02142

5:00 PM Registration & Reception; 6:00 PM Keynote Address;

6:30 PM Dinner; 7:00 PM Remaining Program

Stephanie Pollack is the current MassDOT Secretary and CEO. As Secretary, Pollack has led efforts to establish project selection criteria and set investment priorities for a \$13 billion, five-year capital plan that focuses on improving reliability for the traveling public by modernizing Massachusetts' transportation assets. She has focused MassDOT on better serving its customers, with initiatives such as All-Electronic Tolling and reducing wait-times at the Registry of Motor Vehicles. Since July 2015, the leadership of the Massachusetts Bay Transit Authority (MBTA) has also reported to Secretary Pollack, giving her a critical role in steering the ongoing turnaround of the transit system serving eastern Massachusetts. Secretary Pollack leads the Department towards their mission "to find better ways to meet the State's transportation needs, serve customers, spur the Commonwealth's economy and reduce the State's carbon footprint." Serving as Secretary and CEO, she is a member of the Cabinet in the Governor Charlie Baker and Lieutenant Governor Karyn Polito administration, and serves on the MBTA and Massachusetts Port Authority (Massport) boards. In addition to being our keynote speaker, Secretary Pollack is receiving BSCES Honorary Membership for her years of service and leadership in transportation planning and public policy.

Honor Award Winners and Newest Honorary Members:

Please join us for an evening celebrating BSCES and the engineering profession. BSCES will recognize volunteer leaders, present annual awards, celebrate ASCE Life Members, and honor our newest Honorary Members, Stephanie Pollack, Secretary & CEO, MassDOT, Glenn Bell, C.Eng., Sr. Principal, Simpson Gumpertz & Heger Inc., Katie J. Choe, CCM, Chief Engineer/ Director of Construction Management, City of Boston Public Works, and Stephen Taylor (posthumous), CBE, PE, Sr. Vice President, Mott MacDonald, LLC. Space is limited for this event, so please register today!

170th BSCES Annual Awards Dinner:

You can use this form to register one or more attendees. Please fill in the number of people you wish to register for the appropriate price point and add up the total attendees and total amount. If registering multiple attendees, please forward their names and contact information to bscesreg@engineers.org.

Registration Fees:

Type	Fee	Number of Attendees	Amount
<input type="checkbox"/> BSCES Member:	\$185.00	_____	_____
<input type="checkbox"/> Non-Member:	\$235.00	_____	_____
<input type="checkbox"/> Table of 10:	\$1,850.00	_____	_____
Totals:		_____	_____

Register Online: Register and pay by credit card online at <http://bit.ly/BSCESAwards170>. To receive the member price, you must login using your BSCES assigned username and password. If you do not know your login information, call 617/227-5551.

Register by Mail or Email: You may also register by mail or email. To do so, complete the registration form below and email to bscesreg@engineers.org or mail to: BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108-3616.

Registrant Information:

Name (s): _____
 Organization: _____
 Address: _____
 Telephone: _____ Email: _____
 Dietary Restrictions: _____

Credit Card: Please bill my (Check one): Visa MasterCard American Express
 Name on Credit Card: _____
 Credit Card Number: _____ Expiration Date: _____
 Billing Address: _____
 Signature: _____

Check: When paying by check, please make checks payable to "BSCES" and mail with your completed registration form to the above address.

Registration Deadline: Tuesday, July 9, 2019

No-shows and cancellations received after Tuesday, July 9, 2019 will be billed. Please call 617/227-5551 if you have any questions.



Please join us!

YMGB Red Sox Game at Fenway Park

Wednesday July 17th

Wednesday, July 17th

vs. Toronto Blue Jays

7:10 p.m.

Seats are in Bleachers

Register here: <http://bit.ly/YMGBRedSox2019>

PRICING:

Students - \$40/ticket

Members - \$45/ticket

Non-members - \$50/ticket

Registration fee includes ticket to game and pregame social food (no drinks included).

To Register:

Register online by following the respective link above. Contact 617-227-5551 if you have difficulties registering online. Tickets will be handed out at pregame social. Details for a pregame social will be emailed to the group two weeks prior to the game. Food will be included at the social. Here's to a great 2019 season!

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WSP



FHWA-NHI-130053

Bridge Inspection Refresher Training Tuesday, October 1, 2019 – Thursday, October 3, 2019

AECOM, 1 Federal Street, 8th Floor, Boston, MA
Tuesday through Thursday, 8:00AM – 4:30PM

The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors. This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated 2006), with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

Core course topics include inspector qualifications and duties, bridge mechanics, record keeping and documentation, fatigue and fracture in steel bridges, traffic safety features, safety, National Bridge Inventory (NBI) component ratings, superstructure type identification, inspection techniques and case studies for decks, superstructures, bearings, substructures, channels and culverts, and a mock bridge inspection classroom exercise. Optional topics include inspection of truss gusset plates, adjacent box beams, and post-tensioning tendons.

Registration Deadline: Tuesday, September 3, 2019

Registration Fees: \$1,400 Members, \$1,600 Non-Members

Registration fee includes course materials, continental breakfast, breaks, and lunch

Information/Registration:

Attendance for this program is limited to 30 participants. Individuals who attempt to register after the course is closed will be added to a waiting list.

Reservations will be accepted on a first-come first-serve paid reservation basis. Payment must be received with registration to secure a slot. Register to attend this course and pay by credit card online at <http://bit.ly/NHIBridgeRefresherBSCES>. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your login information call 617/227-5551. You can also register for this event by mail or email. To do so, download and complete a [BSCES Event Registration Form](#) and follow the submission instructions. Cancellations or no shows after September 3, 2019 will be billed.