BSCES NEWS

A MONTHLY PUBLICATION OF THE BOSTON SOCIETY OF CIVIL ENGINEERS SECTION/ASCE

VOL. 41 | NO. 7 | MARCH 2017 CI Boston Chapter / Construction

UPCOMING EVENTS

SEI Boston Chapter Site Tour
April 7, 2017

Government Affairs & Professional Practice Committee Event
April 10, 2017

2017 John R. Freeman Lecture
April 13, 2017

BSCES Program Committee Sponsored NHI Training
April 24–28, 2017

2017 Bertram Berger Seminar
May 24, 2017

BSCES Program Committee Sponsored Training
May 25, 2017

2017 Joseph C. Lawler Lecture
June 15, 2017

BSCES Program Committee Sponsored NHI Training *June 27–29, 2017*

Further Details Inside

What Factors Should an Engineer Consider When Deciding Whether to Use BIM?

by Joseph A. Barra, Partner, Robinson+Cole

We've come a long way since the Leroy® Pen. It can hardly be denied that technology plays a major role in today's design process. By most accounts, Building Information Modeling (BIM) is here to stay. But now what? This note addresses the practical, technological, and financial challenges that designers should consider before jumping into the BIM pool.

BIM is the process of developing a virtual, three-dimensional, information-rich model to design, construct, and maintain a building project. BIM is much more than software used to produce a pretty 3D graphic. Because a variety of information can be embedded into the model, BIM can also be used to manage the project's construction schedule (4D); to track project costs (5D); and once constructed, facility management (6D).

Because BIM is about process and not just software, it gives designers a unique opportunity to eliminate the barriers to collaborative thinking. One example is found in the redundancies inherent in the shop-drawing process. In this case, the goal of the BIM process is to abolish the wasteful practice of having to draw the entire project twice. Because BIM facilitates teamwork, many see BIM as an opportunity to reach out across disciplines and reconsider the traditional paradigm. Make no mistake; we still need experienced designers to deliver a successful project. But in today's BIM-

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President's Report

by Brian A. Morgan, Esq., Legal Counsel, CDM Smith Inc.

America's Infrastructure (overall) was recently graded a "D+" by ASCE. ASCE conducts a comprehensive assessment of the state of our nation's infrastructure across 16 categories and produces an "Infrastructure Report Card" every four years. Through its report card, ASCE also advocates an approach to tackle our infrastructure challenges. Particularly, ASCE believes there are three things that need to be done to meet our nation's infrastructure challenge: (1) investment and planning in the system; (2) bold leadership by our elected officials at the state and federal level; and (3) planning for sustainability and resiliency in our infrastructure.

ASCE provides a state-by-state breakdown of its report card. ASCE found that Massachusetts faces infrastructure challenges of its own. For example, ASCE found that 16% of Massachusetts' 36,423 miles of public roads are in poor condition and 483 of the Commonwealth's 5,171 bridges are structurally deficient. Further, drinking water and wastewater infrastructure needs over 20 years in Massachusetts are an estimated $1.2 billion and $8.35 billion, respectively. ASCE also found that 292 dams are considered to be high-hazard potential, there is $17.23 million of unmet parks system needs and the state's schools have an estimated capital expenditure gap of $1.4 billion. For a more detailed look at Massachusetts' infrastructure challenges, please review the Infrastructure Report Card, which is available on the ASCE website.

Another noteworthy launch by ASCE was the February release of *Dream Big: Engineering Our World*, an IMAX film that showcases the

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For the latest developments and recent trends in all areas of construction law, visit the firm's construction blog at constructionlawzone.com.

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Deciding Whether to Use BIM

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enabled world the process is becoming more collaborative, which in turn redefines the project team's risk profile.

Perhaps the most important factor to consider when deciding whether to implement BIM technology is the establishment of a clearly stated objective. To an owner, the idea of visualizing a space before it is built may be a key goal. To a designer, developing BIM capabilities may ensure staying competitive in the A/E marketplace. To a contractor, the ability to evaluate multiple construction schemes to determine the most efficient approach may give the builder an edge over the competition. Whatever the motivation, participants should have a clear understanding of what they intend to receive from this investment.

In today's market, BIM is a good choice for some projects, but not all. The designer should consider three project-type factors in deciding whether to use BIM. First, the building type can determine whether BIM is the right approach. A complex building, such as a university laboratory is a better BIM candidate than a simple building such as a retail store. Second, the designer should consider the project's construction requirements. A new building is often a better choice for BIM than a tenant fit-out, which could be completed faster and with less rework using existing 2D documents. Finally, size matters. The more square footage, the more likely the project is a viable BIM candidate.

Timing is also an important factor to consider. Ideally, the decision to use BIM should be made prior to commencing design. If, however, the team is well into the design development process, it may not make economical sense to switch to BIM. Another key consideration involves the project team's collective experience using BIM for the specific type of project being developed. For example, the level of detail and coordination necessary to design and construct a hospital is much different than that required for a prison. Accordingly, the "Dream Team" for any BIM project involves a mix of professionals: those who understand how BIM works (including its limitations) as well as those who understand the industry for which the project is being developed.

As with any professional relationship, it is essential that members of the BIM team work and play well with others. Most successful BIM projects require to some degree, that the team co-locate, working side by side in a central location, or virtually use web-hosting technology. Thus, it is essential that you approach team selection as though you are picking a college roommate. If individual team members are territorial about their work product, then despite individual talents, the project will suffer.

The project delivery method also has a direct impact when deciding whether or not to use BIM. Of all of the conventional project delivery methods, design-build is best suited for BIM because it encourages project collaboration and provides an environment where both the designer and the contractor are able to load the model with data in a way that meets both of their requirements.

Projects delivered using the traditional design-bid-build (DBB) method may avail themselves of the benefits of BIM but often require multiple models — one for design and another for construction. Another conventional delivery system, CM at-Risk, has the potential to offer designers an opportunity to shape the model to meet the needs of the entire project team. With CM at-Risk, the contractor may contribute to the model's design while simultaneously providing constructability reviews and pricing information among other tools.

Integrated Project Delivery (IPD) is a new and revolutionary project delivery process that is particularly well suited to BIM. However, the IPD process has only recently taken root and has yet to be widely accepted in the industry.

BIM provides an opportunity for design creativity that may not be possible with traditional 2D tools; however BIM can also result in a false sense of design security. For example, a model that depicts a series of complex mechanical shafts, pipes, and ducts all fitting within the confines of a very tight pipe chase may look good but may not be constructible. Accordingly, designers must be aware of the practical constraints of their design.

While BIM represents cutting-edge technology, it should come as no surprise that the law is still playing catch-up. In fact, the design industry is currently modifying the standard contract forms that seek to address some of the

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Shear Walls for Seismic Stabilization at TVA's Colbert Ash Pond 4

by Jessica DeBellis, PE, Geotechnical Engineer, GEI Consultants, Inc.

The Tennessee Valley Authority (TVA) recently completed improvements to the seismic stability of Ash Pond 4 at the Colbert Fossil Plant (COF) in Tuscumbia, Alabama. The Contractor was a joint venture between Thalle Construction Co. of Hillsborough, North Carolina and GeoSolutions of Kensington, PA. Thalle/GSI constructed a downstream stability berm and soil/cement shear walls built using deep soil mix (DMM) methods along 3,100 feet of dike.

Ash Pond 4 was designed to store sluiced ash from the coal-fired Colbert Fossil Plant, which closed in spring of 2016. The ash pond covers an area of 70 acres, and is enclosed by perimeter dikes approximately 6,700 ft in total length along the crest. The toe of the 2,700 ft long east dike runs parallel to Cane Creek. The dikes were constructed in two stages. The lower dike was built in 1972 with compacted clay and silty sand with gravel. The upper dike was built in 1984 with compacted clay, partially over the lower dike and partially over sluiced fly ash. The dikes retain sluiced bottom ash and stacked ash.

Stability Analyses and Design

GEI Consultants of Woburn, MA performed preliminary seismic stability analyses, concluding that the alluvial silty sand foundation layer and the sluiced loose, fly ash impounded behind the dike were both subject to shear strength loss during the design earthquake (far-field New Madrid earthquake with 2,500-year return period). The loss of shear strength in these layers resulted in inadequate factors of safety at cross sections cut through the east dike. The probable failure mode during and after the seismic event would present failure surfaces sliding down through the sluiced wet ash, through alluvial clay horizontally along the loose saturated foundation sands that support the dike and then sliding upward and daylighting into Cane Creek. The project team prepared fast track alternatives that identified practical improvements focusing on 1) lowering the upper dike crest to reduce final driving stresses, 2) increasing sliding resistance, 3) reinforcing the liquefiable loose sand foundation zone.

Figure 1: *Colbert Fossil Plant Ash Pond 4*

Figure 2: *DMM Soil-Cement Wall Installation*

Deep soil mixing (DMM) was the selected alternative to reinforce the loose sand zone. This involved injecting grout into soil while mixing, creating soil-cement columns. Thalle/GSI used a 48-inch-diameter, 4-gang wet auger rig mounted on a Manitowoc 4100W Crawler Crane to install DMM walls in a "Y" shaped secant pattern. A single dry auger rig provided additional mixing to the top of bedrock.

Based on the proposed wall geometry, GEI optimized the wall spacing and length, which resulted in walls that were 30 and 40-ft long and approximately 25 to 30 ft deep, bearing on limestone. We reduced the risk of DMM

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TVA's Colbert Ash Pond 4

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crushing at the downstream end of the walls by requiring a wider wall using a wye ("Y") shaped head design in the high stress toe area. This design required the construction of a 50-ft wide, 15-ft high granular working platform/ toe berm to allow equipment access.

QA/QC

GEI, TVA, and Thalle/GSI worked collaboratively to perform construction quality control and quality assurance (CQA) to document the construction process. This allowed GEI as the engineer of record to recommend approval of each wall section to TVA. Each DMM wall had to meet the following criteria to be consistent with the design intent: uniform soil-cement mixing, adequate unconfined compressive strength (UCS) tests on selected representative core samples, and intimate contact between the bottom of the DMM wall and top of bedrock or weathered bedrock. The CQA resulted in a proven Contractor-selected soil-cement mix design (20% Portland cement and 1.5 water: 1 cement grout mix). Installation was monitored at the grout plant and at the rig using automated monitoring equipment.

QC activities included monitoring grout properties and molding grout cube samples for each wall. Wet grab samples were collected from at least one column in each wall, and molded into cylinders for strength testing. A drilling subcontractor was hired to core DMM walls after they cured for a minimum period of time, initially on 10% and finally on 2% of the wall elements. They drilled PQ-size coreholes with a triple barrel wireline system. Triple barrel coring was used to minimize disturbance to the samples while removing them from the core barrel.

GEI was on site full-time to review QC activities, take independent QA samples, observe coring and select samples to be trimmed and sent to a

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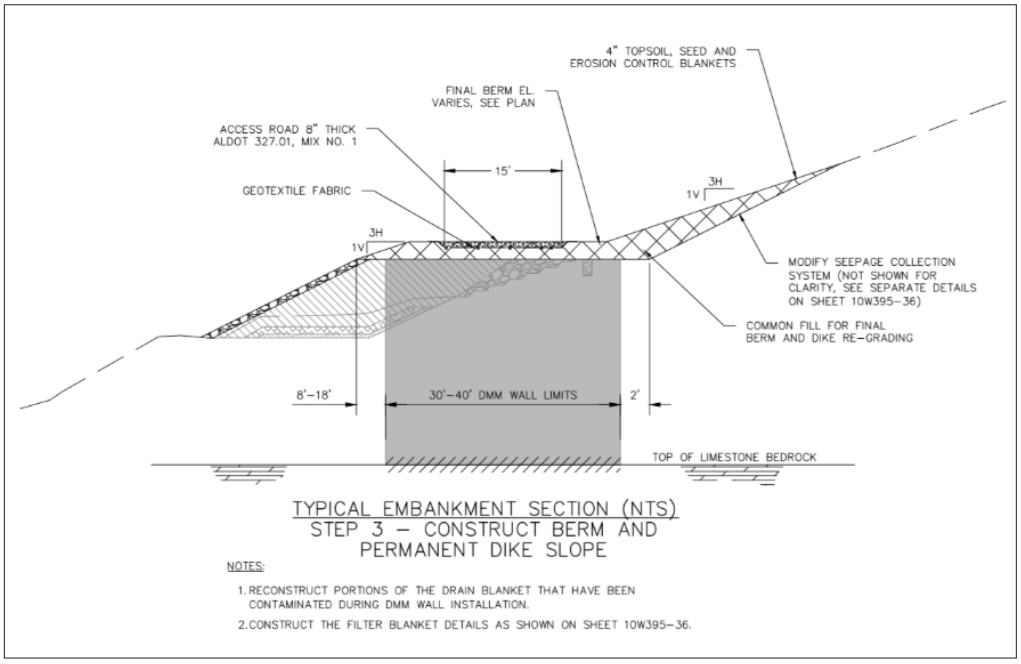

Figure 3: *Typical East Dike Cross Section*

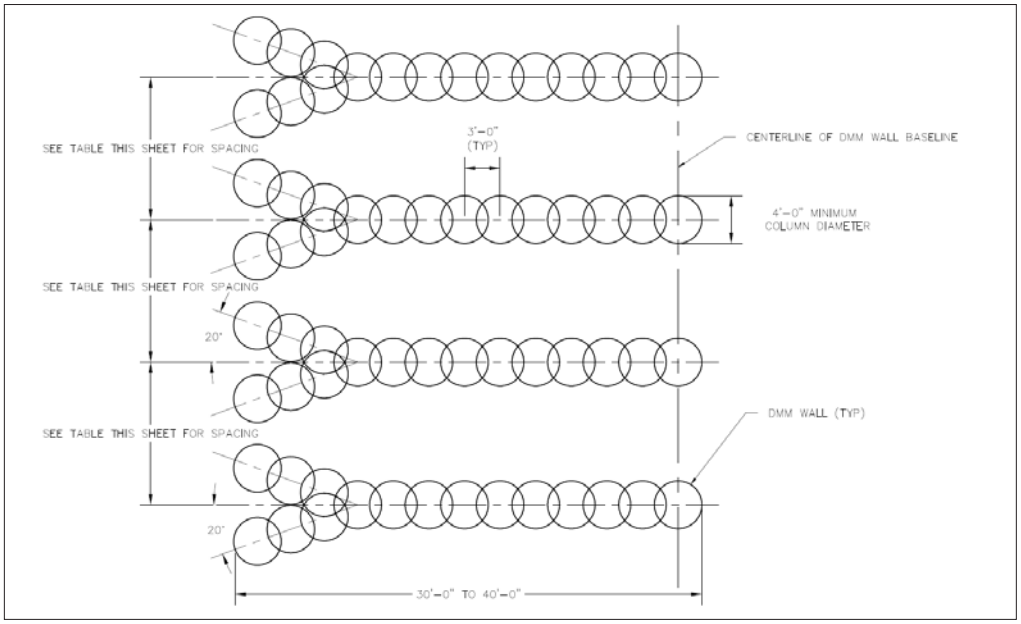

Figure 4: *Typical Plan Y DMM Wall*

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For the latest developments and recent trends in all areas of construction law, visit the firm's construction blog at constructionlawzone.com.

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TVA's Colbert Ash Pond 4

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lab to be testing for compressive strength, and perform downhole video inspections of the coreholes. Reviewing the video inspection proved to be a valuable tool for the entire project team. Due to the difference in strength between the DMM soil-cement mix and the limestone bedrock, the bedrock interface in the core samples was often disturbed during drilling. The video inspection allowed us to view the DMM-bedrock interface in-situ to confirm there was intimate contact. Video inspection also enabled us to view zones where core samples had low recovery.

Once a month the project team met to present and discuss the CQA data in detail. This allowed the group to adjust the soil-mix design and installation process throughout construction. Coring results were reviewed and used to approve DMM walls, develop repair wall schemes for walls in which the design criteria were not met, or determine if more coring and strength data was needed.

Figure 5: *Typical Soil-Cement Mix Core Sample*

The remediation of Colbert Ash Pond 4 was completed in December 2016. TVA's approach to early contractor involvement allowed GEI's designs to incorporate contractor feedback which optimized the design, reduced cost and schedule, and improved constructability. The collaborative effort of the project team allowed for changes throughout construction to achieve the goal of reinforcing the loose sand layer to increase the seismic stability of the east dike.

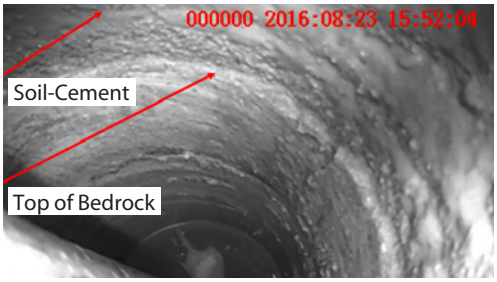

Figure 6: *Screenshot of Bedrock Interface from Downhole Video Inspection*

Deciding Whether to Use BIM

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unique risks associated with a BIM project. Those desiring to use BIM should anticipate spending a little quality time with their attorneys revising such forms to personalize the contract provisions to the designer's risk profile and project's needs. Because case law interpreting standard BIM terms is still a long way off, it is particularly important that contractual risks be clearly allocated during the negotiation process.

The technical requirements needed to implement a BIM system can be intimidating. The size of the electronic files and the horsepower it takes to generate a 3D rendering require in most cases, replacing and/or supplementing existing computer hardware and software. Designers must also consider that BIM requires a significant investment in training. Initially, training may be outsourced, but doing so is not a long-term solution. In the long-term, all employees should be trained to produce a consistent BIM output to meet the designer's custom company standards. Finally, the designer's content and detail libraries must also be adapted to use with BIM software.

Additionally, no "one size fits all" BIM software meets the needs of all parties. The optimum software for designing interior spaces is ill suited for detailing a building's structural elements. Additionally, transferring electronic files across different vendor platforms typically results in a loss of some data. Thus, when deciding to use BIM, the designer must consider the model's intended purpose and carefully evaluate all of their software options.

Projects designed using BIM typically follow a flatter cost curve than those using a conventional 2D design. In 2D, developing the construction documents is typically the most costly aspect of the design because of the energy it takes to develop the details necessary for construction. Not so in BIM. When using BIM, the design team must create the construction details at the same time that it is developing the building's features. Thus, a greater amount of effort (and design fee) is required in the model's early design phases.

It is our desire that this note has provided the reader with a framework in which to consider addressing BIM's practical challenges, technical constraints and cost considerations. If used properly, and to its fullest potential, BIM can be a remarkable design tool. We hope that this article has helped to serve as a metaphorical "blueprint" for your BIM decision making.

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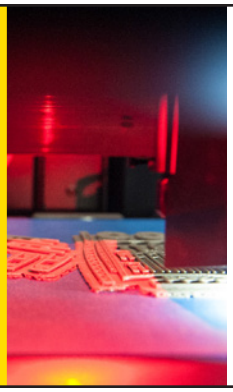

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Volunteer Opportunities—Outreach Volunteers Needed!

by Olivia A. Richards, Assistant Structural Engineer, Gill Engineering and BSCES Public Awareness & Outreach Committee Chair

The BSCES Public Awareness & Outreach Committee is looking for volunteers for our spring events! We have a busy season ahead and could use volunteers for our BSCES booths at upcoming STEM Expos and Fairs.

Please let me know if you are interested in volunteering at any of the following events:

Girls STEM Summit by Jr Tech
Sunday, April 2, 2017

Overview: Girls from all over the state attend this Summit on careers in STEM

Location: Regis College, Weston, MA

Time: 12:30 pm – 2:00 pm

Looking for: Engineering volunteers to help represent civil engineers at the BSCES Expo table. Girls visit tables representing different aspects of STEM and ask us what our careers are like in civil engineering. They are interested in hearing about what we do at our jobs, what we do in college, and how we decided on civil engineering. We will be showcasing aspects of civil engineering and talking to girls about the industry. Please email me if you are interested in attending.

Wellesley STEM Expo
Saturday, April 8, 2017

Overview: Open Expo with exhibits, workshops, and speakers

Location: Wellesley High School, Wellesley, MA

Time: 10:00 am – 2:00 pm

Looking for: Engineering volunteers to help represent civil engineers at the BSCES Expo table. Families in the area attend this open expo showcasing STEM to kids of all ages. We will be doing a couple of bridge building activities and possibly showcase our shake-table. It is a day of fun science and engineering! Please email me if you are interested in attending.

11th Annual Cambridge Science Festival
Saturday, April 15, 2017

Overview: A huge STEM Expo founded by collaborators from MIT, Harvard University, the City of Cambridge and the Museum of Science. Click here for more information.

Location: Cambridge Rindge & Latin Field House, Cambridge Public Library, Broadway and Ellery Street

Time: 12:00 pm – 4:00 pm

Looking for: BSCES will have a booth at the Science Carnival and Robot Zoo Event, which is an expo-style event with almost 100 booths providing hands on activities and demonstrations for the public. It is the largest and most publicized exposition that the BSCES Outreach Group attends. We need volunteers to help with activities relating to bridge building, block towers, etc. All volunteers are welcome—engineers and engineering students. Please email me if you are interested in attending.

President's Report

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essential contributions of civil engineering. Aimed at education and inspiration, the film reminds us of our contributions as civil engineers to society throughout history and inspires the next generation of young students to get excited about engineering. The film tells the stories of engineers, which brings facts and figures behind engineering to life. While the film is scheduled to show at the Boston Museum of Science later this year, the film is currently showing at locations around the US, Canada and Mexico. You can learn more about the film and find locations to see it at www.dreambigfilm.com.

Speaking of inspiring the next generation of civil engineers, the BSCES Younger Member Group and Student Chapter Committee hosted the 105th Student Night in partnership with Simpson Gumpertz & Heger Inc. ("SGH") at Wentworth Institute of Technology on March 28, 2017. The event featured a keynote presentation from Ron Rochon, FAIA, a partner at Mill Hull Partnership, and Justin Stenkamp, an associate at PAE Consulting Engineers, who discussed the "Results from a Living Building: The Bullitt Center." Located in Seattle, Washington, the Bullitt Center was designed to be the world's greenest commercial building, achieving status as a net-zero energy Living Building.

The Student Night event was attended by students from Massachusetts colleges and universities with an ASCE student chapter. At the event, BSCES presented the Howe-Walker Award to eleven students. Assuming they decide to become associate members of ASCE, this award pays the recipients' first year of society and local section membership dues. Further, John Brooks of Northeastern University received the $500 Desmond Fitzgerald Fund Award and Jennifer Skerker from Tufts University received the $500 William P. Morse Fund Award. In addition, SGH awarded a $7,500 scholarship to Clay Harman, who attends Wentworth Institute of Technology. This scholarship was established by the principals of SGH to encourage undergraduate college students who strive for excellence and who aspire to a career in civil engineering.

I would like to thank our Society and Program Sponsors, whose financial support helps enable BSCES and its committees, institute chapter and technical groups to host the numerous networking and professional development events that are planned for this year.

The theme of this month's newsletter is Construction and I urge you learn more about this issue's featured group, Construction Institute Boston Chapter, which is chaired by Christopher Hersey of Skanska Civil Northeast. This issue of *BSCESNews* contains a page 7 article written by Chris. I am very appreciative of Robinson & Cole, LPP, which is a BSCES Society Sponsor and sponsor of this newsletter. Please be sure to read Robinson & Cole's page 1 article titled "What Factors Should an Engineer Consider When Deciding Whether to Use BIM," which was written by Joseph A. Barra, Esq., a partner at Robinson & Cole.

Younger Member Group Needs Volunteers

Monday, May 1, 2017

New England Center and Home for Veterans

17 Center Street, Boston, MA

The BSCES Younger Member Group will be volunteering at the New England Center and Home for Veterans on Monday, May 1st, 2017. We will provide a team of 5–7 volunteers to serve dinner to nearly 400 veterans. If you would like to participate, please email bscesymg@gmail.com.

Featured Group

Construction Institute Boston Chapter: ASCE from National Education to Local Implementation: Boston Day-Summit

by Christopher P. Hersey, Project Manager, Skanska, and Chair, Construction Institute Boston Chapter

For those of us who work in the design and construction industry, the status of the nation's infrastructure seems self-evident and urgent. While this is discussed as a national issue, it also distills down into a state and local problem. Estimates of the necessary repairs to the crumbling infrastructure vary, however there is general agreement that the costs will be in the multiple trillions of dollars over multiple years. The American Society of Civil Engineers estimates it will take approximately 4.6 trillion dollars over the next decade to bring US infrastructure up to an acceptable level of service.

The 2017 *Infrastructure Report Card* reveals that we have made some incremental progress toward restoring our nation's infrastructure. Unfortunately, as a nation we are currently rating a cumulative grade of D+, which was the same grade from the last report four years ago in 2013. This highlights that we are maintaining the current level infrastructure without significant improvement.

Some of the metrics that are utilized by this report as a rating system are startling in their clear message. Here are a few national snippets:

- The US has 614,387 bridges, almost four in 10 of which are 50 years or older.
- The average age of the 90,580 dams in the country is 56 years. Due to the lack of investment, the number of deficient high-hazard potential dams has also climbed to an estimated 2,170 or more.
- More than two out of every five miles of America's urban interstates are congested and traffic delays cost the country $160 billion in wasted time and fuel in 2014.
- There are still an estimated 240,000 water main breaks per year in the United States, wasting over two trillion gallons of treated drinking water. Many of those pipes were laid in the early to mid-20th century with a lifespan of 75 to 100 years.

Locally, Massachusetts infrastructure issues mirror those of the nation. As detailed in the state report card "driving on roads in need of repair in Massachusetts costs each driver $539 per year, and 14.4% of bridges are rated structurally deficient. Drinking water needs in Massachusetts are an estimated $1.2 billion, and wastewater needs total $8.35 billion. 292 dams are considered to be high-hazard potential. The state's schools have an estimated capital expenditure gap of $1.4 billion."

There is a promising Trillion Dollar Federal Infrastructure Plan that is currently being developed by the Trump Administration. At this point it raises more questions than answers. Can the labor market support this endeavor over a 10 year plan? Reports seem to point to a labor shortage. Will this be private funding that is utilized by private industries unilaterally? What is a public/private scheme and what is the expectation that private entities will effectively disburse funding? How much of this will go into actual infrastructure development and how much is privatized tax?

What is clear is that infrastructure funding, design and construction is needed and that much of the solution will come down to state and local methods to solve the problem. ASCE's fundamental approach to education and research (such as the Infrastructure Scorecard) on a national level, lays the groundwork for local grassroots implementation and development of these ideas. It is here, within the local chapters, where our technical groups dive into the practical, provincial application of national studies.

One of the essential goals of the Construction Institute Boston Chapter is to communicate our core message to multiple factions including engineers, planners, architects, construction managers, general contractors, and others:

"The mission of the Construction Institute Boston Chapter is to advance the state of construction technology, equipment and techniques. The chapter encourages the advancement of education and research in construction engineering and provides a forum for the exchange of ideas particularly between designers, contractors, owners and other professionals associated in the construction industry."

The Boston Construction Institute Chapter hosted a full day Summit on December 2, 2016 that attracted over 90 members, guests and exhibitors. This was an ambitious undertaking for the local chapter with planning that started as early as 2015. Our intent was to develop a program that encompassed the multifaceted disciplines within the Construction Institute through diverse speaker presentations tied together by the thread of local construction and informed by the national ASCE message.

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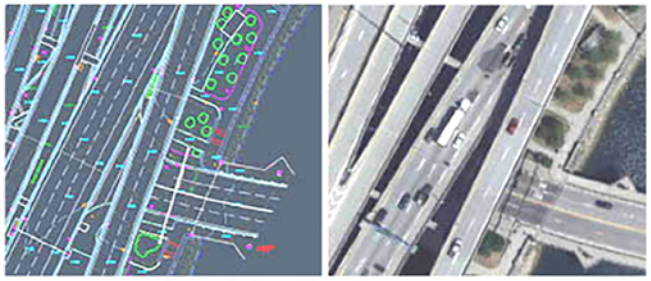
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Recent News and Updates

$5,000 Jonathan B. Golden Fund Scholarship Applications Deadline is April 4, 2017

The BSCES Environmental & Water Resources Institute is accepting applications for the 2017 Jonathan B. Golden Scholarship. Applicants must be enrolled in a graduate Environmental Engineering program (or related field) during the fall 2016 semester and be committed to continuing in full-time graduate study through at least the spring 2017 semester. The scholarship award amount is $5,000. Scholarship applications are due by Tuesday, April 4, 2017. Please click here or see the insert at the end of this newsletter for more information.

2017 Bertram Berger Young Engineer Award Nominations Deadline is April 14, 2017

This is a reminder that the BSCES Transportation & Development Institute Boston Chapter is accepting nominations for the 2017 Bertram Berger Young Engineer Award through Friday, April 14, 2017. Please click here or see the insert at the end of this month's newsletter for award eligibility guidelines and nomination submission instructions.

BSCES is Accepting Nominations for the Sustainability in Civil Engineering Award Deadline is May 1, 2017

The BSCES Committee on Sustainability is accepting nominations for the Sustainability in Civil Engineering Award. To be eligible, a project must demonstrate adherence to the principles of economic, social, and environmental sustainability as identified by ASCE/ISI criteria for sustainable infrastructure. Entries must be submitted no later than May 1, 2017. For more information regarding submission guidelines and evaluation criteria for this award, please see the insert at the end of this newsletter or download the BSCES Sustainability Award Form from our website.

BSCES Welcomes its New Members

The BSCES Board of Government is pleased to welcome the following new members who joined BSCES during the month of February, 2017:

Associates

Alice Blayney, EIT, Geosyntec Consultants

Gabrielle Pipp, EIT, TranSystems

Brian N. Skalla, STV, Inc.

Students

Aidan Bates, University of Massachusetts Amherst

Caroline Best, Western New England University

David H. Blake, Marlborough, MA

Jusrin Cadima, University of Maine

Cristina Contreras Casado, Harvard University

Austin H. Currier, University of Massachusetts Amherst

Cody P. Demers, Merrimack College

Kathryn Evasius, University of Massachusetts Lowell

Ryan Fisk, University of Massachusetts Lowell

Matthew C. Ganley, Rochester Institute of Technology

Joshua E. Gittings, University of Massachusetts Lowell

Christian Griffith, Case Western Reserve University

Alanna Grondine, University of Massachusetts Lowell

Christopher R. Hagerman, Worcester Polytechnic Institute

Kevin Hartman, Northeastern University

Matthew Kilpatrick, Western New England University

Ethan B. Lacaire, Western New England University

Jackson Lynch, Northeastern University

Andrew P. Manzi, University of Maine

Fariborz Mirzaie, Northeastern University

Jibreel Mustafa, Worcester Polytechnic Institute

Delaney Selanis, Western New England University

Nicholas B. Shaw, North Chelmsford, MA

Ryan Sullivan, Worcester Polytechnic Institute

Cambria Ung, VHB

Ram Kumar Veeraragavan, Worcester Polytechnic Institute

James Vorosmarti, IV, Worcester Polytechnic Institute

Austin Zannino, Merrimack College

Romina Zylyftari, University of Massachusetts Lowell

Kaklamonos Named One of ASCE's New Faces of Civil Engineering

James Kaklamanos, PhD, EIT has been honored as one of this year's ASCE 2017 New Faces of Civil Engineering. An associate professor at Merrimack College and member of BSCES, Kaklamanos is being recognized for his role as a civil engineering educator. He has served as the faculty advisor for Merrimack's ASCE Student Chapter for five years. His research is focused on models for predicting earthquake-induced ground motions, and he is also active in the ASCE Geo-Institute, the Seismological Society of America, and the Earthquake Engineering Research Institute. ASCE honored Kaklamanos and all 10 New Faces of Civil Engineering at the 2017 OPAL Gala on March 16, 2017 in Arlington, VA. Click here to learn more about the ASCE 2017 New Faces of Civil Engineering.

Earn Rewards through ASCE's Member Referral Program

For 2017, ASCE is making it easier for you to earn rewards for each new member you recruit. Invite your peers to become part of the largest professional civil engineering network in the world. Discover how just by following three easy steps online; click here to start claiming your rewards now.

Jump into the Exclusive New Forum ASCE Collaborate

ASCE Collaborate, a new online forum exclusively for Society members, is now live and starting to percolate with member comments, questions, and networking. ASCE Collaborate allows members to connect with other members; participate in discussions with subject matter experts; access a library of resources; and post images, videos and documents to share with others. Logging in is easy—just input your ASCE username and password at asce.org or directly at collaborate.asce.org.

Contribute to updating the Civil Engineering Body of Knowledge

ASCE issued the original *Civil Engineering Body of Knowledge for the 21st Century* in 2004, outlining the knowledge, skills, and attitudes essential for entering the practice of civil engineering at the professional level. The second edition, known as BOK2, followed in 2008. Now, a task committee has begun working on an updated third edition to reflect today's needs. All members are welcome to offer their expertise and perspectives to the committee. Emails expressing an interest in serving as a corresponding member of the committee should be sent to ASCE's Leslie Nolen at lnolen@asce.org.

VHB Names Chief Development Officer and Chief Operating Officer

On February 27, 2017, VHB announced the appointment of Mike McArdle to Chief Development Officer and Bill Ashworth, PE, ENV SP, to Chief Operating Officer. These new roles have been established in response to continued strategic growth and will advance VHB's market connectedness and operations as the firm strategically and successfully evolves to meet increasing client challenges and opportunities.

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SEND US YOUR NEWS! Looking to strengthen the community that is BSCES, the BSCES Executive Committee and Newsletter Editorial Board has decided to expand the content of this *BSCESNews* Recent News and Updates column by including more member news. Have you recently been recognized for a professional accomplishment, passed the Professional Engineer Exam, received a promotion, or changed employers? If so, send your news items to BSCES Newsletter Editorial Board Chair Michael R. Cunningham, PE, Kleinfelder, at mcunningham@kleinfelder.com.

Recent News and Updates (continued from page 8)

MassDOT Accepting Applications for Summer Engineering Internships
The Massachusetts Department of Transportation Highway Division is accepting applications for Summer Engineering Internships. Applicants must have completed at least two years of an engineering program and must be enrolled as a full-time student in both Spring and Fall of 2017. Internship programs are located throughout the state and students are compensated $16.00 per hour for their summer of full-time work. You can find more information about these opportunities on the MassDOT website.

2017 History and Heritage Lecture at the University of Massachusetts Amherst
The Civil and Environmental Engineering Department at UMass is pleased to announce the 2017 History and Heritage Lecture will be presented by Allen Marr, Ph.D, PE, DGE, NAE of GeoComp. The lecture will take place at the Integrate Learning Center (ILC) Building, Room S240 at the University of Massachusetts Amherst on Thursday, April 6, 2017 from 4:00 PM until 5:00 PM. This presentation entitled "Managing Risks to Infrastructure with Real-Time Monitoring of Performance," will discuss the nature of risk to typical infrastructure facilities and how those risks can be mitigated by using sensors, computers and the Internet to provide real-time data on the performance of these facilities. Concepts of risk identification and risk management will be described. Approaches to monitor risks with modern technological tools will be presented. Key points will be illustrated with some case studies from historical failures and with recent and ongoing projects. Some of the challenges presented by using performance monitoring to help manage risks will be discussed. Click here for more information about this event, which is free and open to the public.

Featured Group: Construction Institute Boston Chapter

continued from page 7

The all-day presentations covered an expansive array of construction related topics including case studies, law, design, campus planning, and technical innovations. Thomas Tinlin, highway administrator of the Massachusetts Department of Transportation, provided the hour long keynote at the opening breakfast that focused on the Commonwealth's recent historic upgrades to the all-electronic tolling, which is a groundbreaking initiative to streamline the efficiency of I-90. Other highlights of the event included a second keynote address by Anthony Consigli, CEO of Consigli Construction Company, which focused on The Pending Labor Crunch and How Building Contractors Can Deal with Talent Shortage. As part of the program, 11 exhibitors were setup integrally to the seminar room where attendees would interact throughout the day and during set networking times. As a new program which we hope to make bi-yearly, the seminar was very well received by the attendees as demonstrated by Q&A sessions that offered robust dialogue on the seminar topics.

The diversity and leadership of the Construction Institute and its talented participants are strengths that we need to keep tapping into as we attempt to tackle the planning, funding and eventual reconstruction of local and national infrastructure. Where we are today, reminds me of a James A. Michener quote, "Scientists dream about doing great things. Engineers do them." Where we go tomorrow can use dreaming and doing.

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.

SEI Boston Chapter Site Tour

Friday, April 7, 2017
Oldcastle Precast, 41 Almeida Road
Rehoboth, MA

9:00 AM – 12:00 PM

Oldcastle Precast Concrete Plant Tour

Oldcastle Precast will be hosting a tour of their production facility in Rehoboth, MA. For anyone who is interested in learning about precast and prestressed concrete production, this event is for you! Oldcastle staff will provide a brief presentation on the production of precast and prestressed concrete, followed by a tour of their production facilities.

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

Save the Date!

Wednesday, May 3, 2017

A Legislative Update

The Trump Infrastructure Plan— What's in it for Massachusetts?

Omni Parker House
60 School Street, Boston, MA

One of the biggest promises of Donald Trump's campaign was to revitalize the nation's roads, bridges, and airports. The Legislative Update will include panelists from State agencies that will discuss how the change in the federal administration could affect infrastructure programming in Massachusetts and if there have been any recent developments in the Capital Improvement Program.

Please see the Insert at the end of this month's newsletter and future emails for further details about this event sponsored by the Transportation & Development Institute Boston Chapter.

Government Affairs & Professional Practice Committee Event

Monday, April 10, 2017
Burns & Levinson LLP Conference Center
125 Summer Street, Boston, MA

5:00 PM Reception
6:00 PM Presentation

Public Private Partnerships—The Port Miami Access Tunnel and P3 Developments

Mr. Joseph Aiello, Partner and Board Member, Meridiam Infrastructure

The presentation will include a review of the Port Miami Tunnel Project, a highly complex project which was built through a public-private partnership (P3) that includes the design, build, finance, operation and maintenance. Other topics will include P3 projects and corporate social responsibility (CSR). The program will conclude with a brief look at P3 projects in Massachusetts and Rhode Island, legislative champions and lessons learned.

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

2017 John R. Freeman Lecture

Thursday, April 13, 2017
Massachusetts Institute of Technology
Tang Center (Building E51)
70 Memorial Drive, Cambridge, MA

6:00 PM Reception; 7:00 PM Lecture

Lake Erie's Death, Resurrection, Re-Death, and the Role of Models in Guiding a Re-Resurrection

Don Scavia, PhD, Professor and Director of the Graham Environmental Sustainability Institute, University of Michigan

During the 1960s and 1970s, increased phosphorus inputs caused significant water quality degradation in Lake Erie. The lake responded to subsequent load reductions, but since the mid-1990s, cyanobacteria blooms and hypoxia have returned with a vengeance. Drawing on a suite of model studies, Prof. Don Scavia will explore why this has happened, and what strategies are necessary to re-resurrect Lake Erie.

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

BSCES Program Committee Sponsored NHI Training

Monday – Friday, April 24 – 28, 2017
Hilton Garden Inn Worcester
35 Major Taylor Boulevard, Worcester, MA

8:00 AM – 4:30 PM

FHWA-NHI-130110 Tunnel Safety Inspection

This five-day course is highly interactive and builds upon participants' prior knowledge of tunnel and/or bridge inspection. The course covers the entire breadth of knowledge necessary to manage or execute a successful tunnel inspection based on the National Tunnel Inspection Standards (NTIS), Tunnel Operations, Maintenance, Inspection and Evaluation (TOMIE) Manual and Specifications for the National Tunnel Inventory (SNTI). During the course, the instructor will lead participants through a series of case studies and a virtual tunnel inspection. Please note that to take this course, participants must show that they have passed one of the following pre-requisite courses: FHWA-NHI-130054, Engineering Concepts for Bridge Inspectors; FHWA-NHI-130101, Introduction to Safety Inspection of In-Service Bridges; or FHWA-NHI-130101A, Prerequisite Assessment for Safety Inspection of In-Service Bridges.

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

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Upcoming Events (continued from page 10)

2017 Bertram Berger Seminar

Wednesday, May 24, 2017
Omni Parker House
60 School Street, Boston, MA

1:30 PM Registration
1:50 PM Opening Remark
2:00 PM Panel Discussion
5:00 PM Social
6:00 PM Dinner, Bertram Berger Tribute, Keynote Address, and Awards

Multimodal Transportation for Today's Modern Society

Anna M. Barry, Deputy Commissioner, Connecticut Department of Transportation

Join the Transportation & Development Institute Boston Chapter for the 2017 Bertram Berger Seminar. The annual event focuses on transportation related issues around New England with presentations from experts within our industry.

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

Plan to Attend!

Saturday, May 13, 2017

Infrastructure Day 2017

Fort Point Channel, Boston, Massachusetts

Waterfront Plaza, 290 Congress Street on the Banks of Fort Point Channel, Boston, MA

Bridge Tours, Infrastructure Poster Contest, Historic Walking Tours, Infrastructure Project Displays, Kids Works Engineering and more!

Please see the Insert at the end of this month's newsletter and future emails for further details about this event sponsored jointly by the Past Presidents Committee and the Public Awareness & Outreach Committee.

Need to Take FHWA-NHI-130055 Safety Inspection of In-Service Bridges?

The BSCES Program Committee is trying to determine whether there is enough member need to host the two week-long FHWA-NHI-130055 Safety Inspection of In-Service Bridges course this year. If you need to take this course, please contact Rakaia El-Kasaby at relkasaby@engineers.org as soon as possible so that one may be scheduled.

BSCES Program Committee Sponsored Training

Thursday, May 25, 2017
The Aldrich Center at TEC
One Walnut Street, Boston, MA

12:00 PM Registration & Lunch
1:00 – 5:00 PM Training

Floodplain Management 101

Peter A. Richardson, PE, LEED AP, CFM, ENV SP, Executive Vice President, Green International Affiliates, Inc.

Joy Duperault, CFM, Director, MA DCR Flood Hazard Management Program, State NFIP Coordinator & Hazard Mitigation Officer

Eric Carlson, Assistant Director, MA DCR Flood Hazard Management Program and Environmental Engineer

John Grace, CFM. FEMA Region I Mitigation and Coastal Engineer

This 4-hour course will cover the basics of floodplain management relative to compliance with FEMA regulations under the National Flood Insurance Program (NFIP), 44 CFR60.3 and the Massachusetts Wetland Protection Act 310 CMR 10.00. This course is perfect for engineers who need to know the basics of how FEMA flood maps are prepared, the different types of flood zones shown on the maps and the design requirements for the different types of flood zones (coastal and riverine).

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

2017 Joseph C. Lawler Lecture

Thursday, June 15, 2017
Prudential Tower, 52nd Floor
800 Boylston Street, Boston, MA

6:00 PM Social/Registration
6:45 PM Dinner; Presentation to Follow

Greater Boston's Infrastructure Needs

Rick Dimino, President and CEO, A Better City

Barry Bluestone, Professor of Public Policy and Urban Affairs, Northeastern University

In the 2016 publication, State of the Built Environment: Greater Boston's Infrastructure, A Better City in Partnership with the Dukakis Center for Urban and Regional Policy teamed up to lay out the needs of the region's transportation, energy, water, sewer and waste management systems. In the report, the state of infrastructure in nearly 150 communities surrounding Boston were measured. Join us for this year's Joseph C. Lawler Lecture to hear what the team determined were the major infrastructure needs of greater Boston and to understand how regional leaders and stakeholders can use this information as they plan for projected population and economic growth leading up to 2030.

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

BSCES Program Committee Sponsored NHI Training

Tuesday – Thursday, June 27 – 29, 2017
Hilton Garden Inn Worcester
35 Major Taylor Boulevard, Worcester, MA

8:00 AM – 4:30 PM

FHWA-NHI-130053 Bridge Inspection Refresher Training

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.

ASCE Webinars

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.

Classifieds

Gale Associates, Inc.

Gale Associates, Inc., a well-respected engineering/planning firm celebrating over 50 years in business, seeks candidates for the following positions:

Civil Engineer, Weymouth, MA and Towson, MD—Registered Civil Engineer with 5+ years' experience in civil/site design, land planning and permitting.

Structural Engineers, Weymouth, MA—S.E. Registered with 5+ years' experience in vertical applications/renovations. Part time opportunities are available.

Voted one of Zweig White's 2016 "Best Firms to Work For," Gale offers an excellent salary and full array of great benefits. For details regarding these positions and other openings, please visit our Careers Section at www.galeassociates.com. Please send resumes to: humanresources@gainc.com.

Mott MacDonald

Bridge Engineer III/IV—Mott MacDonald is currently seeking to hire a Bridge Engineer with 5–10 years of experience to join our team in Boston. Interested candidates should visit www.mottmac.com/careers req# 27006

Resident Engineer/Lead Field Inspector—Mott MacDonald is currently seeking a Resident Engineer with at least 10 years of experience to join our team in Boston.

Required Qualifications:

- Minimum 10+ years construction inspection experience on rail and transit projects required.
- B.S. Degree in Engineering preferred.

Interested candidates should visit www.mottmac.com/careers req# 28241

The Town of Natick

The Town of Natick is seeking a **Town Engineer** with seven years' experience as a Civil Engineer in a public works environment with a minimum of two years supervisory experience. This position supervises the Engineering Division at the Public Works. The employee will provide oversight review of plans and specifications for construction and other engineering projects for the Town. Please visit http://natickma.gov/jobs.aspx for more information on this great opportunity or to apply!

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Pare Corporation

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Tufts University

Weston & Sampson Engineers, Inc.

Oldcastle Precast Concrete Plant Tour

Friday, April 7, 2017

Oldcastle Precast, 41 Almeida Rd, Rehoboth, MA 02769

9:00 AM – 12:00 PM

Oldcastle Precast will be hosting a tour of their production facility in Rehoboth, MA. For anyone who is interested in learning about precast and prestressed concrete production, this event is for you! Oldcastle staff will provide a brief presentation on the production of precast and prestressed concrete, followed by a tour of their production facilities. Coffee and muffins will be provided, compliments of the Northeast Chapter of the Precast / Prestressed Concrete Institute (PCINE).

- Safety gear is required - sturdy construction boots are highly recommended! Please bring your own safety glasses, safety vest, and hard hat if you have your own – however these items can be provided for those without.

Oldcastle Precast is a leading precast concrete producer with over 50 locations nationwide. They produce precast and prestressed concrete products for civil applications, buildings, bridges, and more.

Registration Deadline: Monday, April 3, 2017

Registration Fee: FREE! Attendance is limited to 30 persons.

Information/Registration:

Register to attend this event online at bit.ly/SEITour4717. 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.

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Public Private Partnerships – The Port Miami Access Tunnel and P3 Developments

Mr. Joseph Aiello

Partner and Board Member, Meridiam Infrastructure

Joseph Aiello has been involved in numerous mega-projects in the public transportation sector in North America, including Boston's South Station Transportation Center. He was also director of the innovative "Tren Urbano" rail transit project serving the San Juan metropolitan area in Puerto Rico. His experience includes managing the development of large-scale infrastructure and real estate projects, along with operational management and business development roles.

Monday, April 10, 2017

Office of Burns & Levinson LLP Conference Center

125 Summer Street, Boston, MA

5:00 PM Reception; 6:00 PM Presentation

The presentation will include a review of the Port Miami Tunnel project, a highly complex project which was built through a public-private partnership (P3) that includes the design, build, finance, operation and maintenance. It is a 35-year concession agreement between the Florida Department of Transportation and MAT Concessionaire, LLC.

Other topics will include P3 projects and corporate social responsibility (CSR). Also called corporate conscience, corporate citizenship or responsible business, CSR is a form of corporate self-regulation integrated into a business model, and ensures active compliance with the spirit of the law, ethical standards and national or international norms.

The program concludes with a brief look at P3 projects in Massachusetts and Rhode Island, legislative champions and lessons learned. A question and answer period will follow, moderated by Bill Lyons of Fort Hill Infrastructure.

Registration Deadline: Tuesday, April 4, 2017

Registration Fees: $25 Members, $35 Non-Members, $10 Student Members

Information/Registration:

Register to attend this meeting and pay by credit card online at bit.ly/GAPP041017. 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. 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 received after April 4, 2017 and no-shows will be billed.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

This presentation provides 2.0 Professional Development Hours (PDH)

Supported by the staff of The Engineering Center Education Trust

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Boston Chapter

2017 John R. Freeman Lecture

Lake Erie's Death, Resurrection, Re-Death, and the Role of Models in Guiding a Re-Resurrection

Don Scavia, PhD

Professor & Director, Graham Environ. Sustainability Inst., U. Michigan

Thursday, April 13, 2017
Reception 6:00 PM; Lecture 7:00 PM

Massachusetts Institute of Technology
Tang Center (Building E51)
70 Memorial Drive, Cambridge, MA 02139
View Map

Abstract:
Reducing phosphorus (P) loading is a key management tool for controlling Lake Erie eutrophication. During the 1960s and 1970s, increased phosphorus inputs degraded water quality, stimulated algal blooms, and reduced central basin hypolimnetic oxygen to levels that eliminated thermal habitat vital to cold-water organisms and contributed to the extirpation of important benthic macro invertebrate prey species. In response to load reductions initiated in 1972 under the US/Canada Great Lakes Water Quality Agreement (GLWQA), Lake Erie responded quickly with reduced phytoplankton biomass and bottom-water hypoxia. However, since the mid-1990s, cyanobacteria blooms and hypoxia returned to conditions of the 1970s. In response, a renegotiated GLWQA required the governments to revise P load targets once again.

Using multiple models, we recommended new loading targets to avoid severe cyanobacteria blooms and reduce hypoxia, and those recommendations guided the new binational agreement of an additional 40% P load reduction. Subsequently, we assembled five additional modeling groups to assess load reduction strategies for the agriculturally-dominated Maumee River watershed, the single largest P contributor to Lake Erie toxic algal blooms. While several potential pathways are available to achieve the new target loads, results show that any successful pathway will require significant large-scale implementation of multiple practices.

This is a FREE event funded by the BSCES John R. Freeman Fund as outreach to students and young professionals interested in careers in water resources engineering. All are welcome. To register online click here, or you may register at the door.

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Tufts University

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2017 Jonathan B. Golden Scholarship Application

2017 Scholarship Amount: $5,000

To Prospective Applicants:

The Jonathan B. Golden Scholarship Fund was established in 2002 through donations to honor the memory of Jon Golden, a dedicated wastewater engineer who significantly contributed to the environmental engineering profession. The scholarship is for a graduate student who is pursuing a career in environmental engineering.

Who May Apply?

Full-time Graduate Students enrolled in an accredited Environmental Engineering degree program or related field with a graduation date of Spring 2017 or later.

How To Apply:

Submit the following:

- Introduction letter.
- Official copy of college transcript.
- Enrollment verification letter from the registrar.
- One page biography/resume including GPA and class standing from undergraduate study and graduate study (if available).
- Two letters of recommendation - at least one from a college professor.
- One page essay (500 words maximum) discussing why you are pursuing a career related to environmental engineering and who or what most influenced your decision to pursue a career in environmental engineering.

Transmit Applications To:

Jonathan B. Golden Scholarship
BSCES Environmental & Water Resources Institute
One Walnut Street, Boston, MA 02108-3616
Electronic applications may be submitted to rburns@arcadia-tec.com.

Application Deadline: Tuesday, April 4, 2017

Review of Applications:

Applications will be reviewed by volunteer members of the Environmental & Water Resources Institute Boston Chapter and Mr. Golden's widow, Ms. Carol Fusaro. The award recipient will be announced in early June of 2017.

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Pare Corporation

Skanska Civil

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Tufts University

Weston & Sampson Engineers, Inc.

Save the Date!

2017 Bertram Berger Seminar

Multimodal Transportation in Today's Modern Society

Wednesday, May 24, 2017

Omni Parker House, 60 School Street, Boston, MA

1:30 PM – 7:30 PM

1:30 PM Registration; 1:50 PM Opening Remarks; 2:00 PM Panel Discussion; 5:00 PM Social 6:00 PM Dinner, Bertram Berger Tribute, Keynote Address, and Awards.

More information will follow as the event date approaches.

Young Engineer of the Year Award

Call for Nominations

The BSCES Transportation and Development Institute Boston Chapter is now accepting nominations for the **2017 Bertram Berger Young Engineer Award**. The annual Bertram Berger Young Engineer Award serves to recognize an outstanding younger member of the Boston Society of Civil Engineers for his or her professional achievements and service to the community. The successful candidate should (1) be less than 35 years old on May 1, 2017, (2) have attained exemplary professional achievements as a young engineer, (3) demonstrate leadership in the practice of civil engineering with emphasis on transportation, (4) enhance the stature of civil engineers within the community, (5) be active with professional organizations such as BSCES or similar, and (6) be a registered, or soon-to-be registered, professional engineer.

In addition to recognition within the engineering community, the award winner will receive a **$2,500 stipend** to be used for continuing education and/or professional development. The award winner will be notified by the end of April, 2017 and will be presented with the award at the upcoming annual BSCES Bertram Berger Seminar and Dinner.

To nominate an individual for the 2017 Bertram Berger Young Engineer Award, please submit an up to two (2) page narrative statement describing how the nominee meets the above described criteria. Nominations will be accepted until 5:00 p.m. on **Friday, April 14, 2017** and should be submitted via mail or email to:

Mr. Kurt Jelinek, P.E., Nobis Engineering, Inc., 585 Middlesex Street, Lowell, MA 01851
Email: kjelinek@nobiseng.com, Phone: 978/683-0891.

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Volunteer Opportunity!

Younger Member Group
Veterans Dinner Service

Monday, May 1, 2017

New England Center and Home for Veterans
17 Court Street, Boston, MA 02108
4:15 PM – 5:30 PM

Join the Younger Member Group and volunteer to help serve dinner to Veteran residents of the Greater Boston Area. We will help the kitchen staff serve a prepared meal to Veteran residents. Teams will be engaged behind the line serving the meal, assisting mobility-disabled Veterans with their trays, and providing wait-staff support in the dining hall.

Dinner is served from 4:30 PM to 5:30 PM. Please plan to arrive 15 minutes prior (4:15 PM) to the beginning of the shift for a briefing from the kitchen staff.

We strongly urge the use of public transportation as on-street parking is very limited at our location in the Government Center area.

Please **RSVP** to BSCESYMG@gmail.com by **April 24, 2017** as spots are limited to 7 volunteers and registration is on a first come, first serve basis.

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2017 SUSTAINABILITY IN CIVIL ENGINEERING AWARD

Call for Entries

The purpose of the Sustainability in Civil Engineering Award is to recognize civil engineering infrastructure projects that embody the principles of sustainability espoused by the BSCES Committee on Sustainability, ASCE, and the Institute for Sustainable Infrastructure (ISI). Such projects prominently and creatively incorporate the five sustainability indicators of quality of life, leadership, resource allocation, natural world, and climate risk.

In 2017, awards will be offered in two categories differentiating project scale.

Eligibility

To be eligible, a project must demonstrate adherence to the principles of economic, social and environmental sustainability as identified by ASCE/ISI criteria for sustainable infrastructure. **The project must have been designed by a team of civil engineers based in Massachusetts, and must have been constructed within the last five years.**

Rules for Submission

1. Entries for the award must include:
   - A completed Entry Form (BSCES Sustainability Award Form)
   - A printout of the Envision™ project assessment scoring table from the ISI website completed by an Envision Sustainable Professional (ENV SP).

2. **Entries must be submitted no later than May 1, 2017.** The winner will be announced at the BSCES Annual Awards Dinner event in the Fall of 2017. Entries may be submitted electronically to relkasaby@engineers.org.

2016 BSCES Sustainability in Civil Engineering Award Winner

The 2016 award was presented to the Massachusetts Port Authority for its **Logan International Airport Consolidated Rental Car Facility (ConRAC)** project. After three years of construction, the $310M ConRAC successfully opened in September 2013, consolidating all nine rental-car companies (RACs) from the 49-acre Southwest Service Area (SSA) site into one location offering unprecedented technologies and neighborhood conveniences. Features include:

- Reduced shuttle bus congestion and air-emissions by 50%
- Pedestrian/bicycle accommodations
- Extensive landscaped buffer at the neighboring communities
- Enhanced ConRAC employee access to mass transit
- Innovative structural design minimized material quantities
- Planning/collaboration with stakeholders to minimize disruptions
- Provided a new community center (Noddle Island Community Room)

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Save the Date!

A Legislative Update: The Trump Infrastructure Plan - "What is in it for Massachusetts?"

Wednesday, May 3, 2017

Omni Parker House, 60 School Street, Boston, MA

5:30 PM – 8:00 PM

5:30 PM Registration and Social
6:15 PM Dinner
7:00 PM Presentations and Discussions

One of the biggest promises of Donald Trump's campaign was to revitalize the nation's roads, bridges, and airports. The promise was to deliver an infrastructure rebuilding package for massive investments with estimated program costs to exceed $1 trillion. The administration has indicated it will rely on the Public-Private Partnership model to fund the improvements and States must identify priorities on projects that are in fact, ready to go. There is much discussion going on at this time in Congress and the various professional groups as the administration's first budget has been submitted. How are the capital programs and infrastructure plans of Massachusetts to be affected?

The Legislative Update will include panelists from State agencies that will discuss how the change in the federal administration could affect infrastructure programming in Massachusetts and if there have been any recent developments in the Capital Improvement Programs as a result. How the State is preparing will be key.

More information will follow as the event approaches. See future BSCES emails for additional details, or view the event listing at bit.ly/LegislativeUpdate17.

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Save the Date!

Infrastructure Day 2017

Fort Point Channel

Boston, Massachusetts

Saturday, May 13, 2017

Waterfront Plaza

290 Congress Street - on the Banks of the Fort Point Channel

Boston, MA

Bridge Tours, Infrastructure Poster Contest, Historic Walking Tours, Infrastructure Project Displays, Kids Works Engineering and more!

More information is available at www.celebrateinfrastructure.org. Further details will follow as the event approaches.

Participating Organizations:

American Council of Engineering Companies of Massachusetts
Boston By Foot • Boston Landmarks Commission
Boston Society of Architects/AIA • Friends of Fort Point Channel
Massachusetts Association of Land Surveyors & Civil Engineers

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2017 Bertram Berger Seminar

Multimodal Transportation for Today's Modern Society

Keynote Speaker:

Anna M. Barry

Deputy Commissioner, Connecticut Department of Transportation

Wednesday, May 24, 2017

Omni Parker House, 60 School Street, Boston, MA

1:30 PM – 7:30 PM

1:30 PM Registration; 1:50 PM Opening Remarks; 2:00 PM Panel Discussion; 5:00 PM Social; 6:00 PM Dinner, Bertram Berger Tribute, Keynote Address, and Awards.

Join the Transportation & Development Institute Boston Chapter for the 2017 Bertram Berger Seminar. The annual event focuses on transportation related issues around New England with presentations from experts within our industry.

Panel 1: Advocacy for Multimodal Transportation Infrastructure

Moderator: **Luisa Paiewonsky,** *Director, Infrastructure Systems and Technology, U.S. DOT/Volpe Center*

Panelists: **Peter Furth,** *Civil Engineering Professor, Northeastern University*
Wendy Landman, *Executive Director, WalkBoston*
Gina Fiandaca, *Commissioner of the Boston Transportation Department*

Panel 2: Design Challenges to Accommodate Multimodal Transportation

Moderator: **Lisa Brothers,** *Chairman and Chief Executive Officer, Nitsch Engineering*

Panelists: **Andrew Paul,** *MassDOT Highway Design Engineer*
John McCormack, *Project Manager for Silver Line Transit, MBTA*
Wes Guckert, *President and Chief Executive Officer, The Traffic Group*

Registration Deadline: Friday, May 19, 2017

$115 Members, $145 Non-Members
$100 Public Sector Members, $115 Public Sector Non-Members
$85 Senior Members, $40 Student Members
$575 Table of 5, $1,150 Table of 10
$500 Public Sector Table of 5, $1000 Public Sector Table of 10

Information/Registration:

Register to attend this meeting and pay by credit card online at bit.ly/Berger17. 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. 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 received after May 19, 2017 and no-shows will be billed.

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Floodplain Management 101

Peter A. Richardson, PE, LEED AP, CFM, ENV SP
Executive Vice President, Green International Affiliates, Inc.

Joy Duperault, CFM
Director, MA DCR Flood Hazard Management Program, State NFIP Coordinator & Hazard Mitigation Officer

Eric Carlson
Assistant Director, MA DCR Flood Hazard Management Program and Environmental Engineer

John Grace, CFM
Coastal Engineer, FEMA Region I Mitigation (Invited)

Thursday, May 25, 2017

The Aldrich Center at TEC, One Walnut Street, Boston, MA
Registration 12:00 PM; Course 1:00 PM - 5:00 PM

This 4-hour course will cover the basics of floodplain management relative to compliance with FEMA regulations under the National Flood Insurance Program (NFIP), 44 CFR60.3 and the Massachusetts Wetland Protection Act 310 CMR 10.00. This course is perfect for engineers who need to know the basics of how FEMA flood maps are prepared, the different types of flood zones shown on the maps and the design requirements for the different types of flood zones (coastal and riverine). Seating is limited, so please register early.

Registration Deadline: Friday, May 19, 2017

Registration Fees:
$95 Members, $130 Non-Members
$80 Public Sector Members, $95 Public Sector Non-Members
$35 Student Members and Senior Members (65+)

Information/Registration:

Register to attend this meeting and pay by credit card online at bit.ly/FloodplainMgmt101. 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. 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 received after May 19, 2017 and no-shows will be billed.

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2017 Joseph C. Lawler Lecture
Greater Boston's Infrastructure Needs
Thursday, June 15, 2017

Prudential Tower, 52nd Floor, 800 Boylston St, Boston, MA 02199
6:00 PM Social/Registration; 6:45 PM Meal; Presentation to Follow

Rick Dimino

Barry Bluestone

Rick Dimino
President and CEO, A Better City

Barry Bluestone
Professor of Public Policy and Urban Affairs, Northeastern University

In the 2016 publication, *State of the Built Environment: Greater Boston's Infrastructure*, A Better City in Partnership with the Dukakis Center for Urban and Regional Policy teamed up to lay out the needs of the region's transportation, energy, water, sewer and waste management systems. In the report, the state of infrastructure in nearly 150 communities surrounding Boston were measured. Join us for this year's Joseph C. Lawler Lecture to hear what the team determined were the major infrastructure needs of greater Boston and to understand how regional leaders and stakeholders can use this information as they plan for projected population and economic growth leading up to 2030. The executive summary of the report can be found here: bit.ly/ABetterCity

Richard A. Dimino has served as the President and CEO of A Better City since 1995. Prior to leading A Better City, Mr. Dimino served the City of Boston as Commissioner of Transportation from 1985-1993. Barry Bluestone is the *Russell B. and Andrée B. Stearns Trustee Professor of Political Economy* in the School of Public Policy and Urban Affairs at Northeastern University in Boston, Massachusetts and served as the founding Director of the Dukakis Center for Urban and Regional Policy from 1999 to 2015.

Registration Deadline: Friday, June 9, 2017

$100 Members, $125 Non-Members
$85 Public Sector Members, $100 Public Sector Non-Members
$35 Senior Members (65+) & Student Members
$1,000 Table of 10 (Regardless of Membership)

Information/Registration:

Register to attend this meeting and pay by credit card online at bit.ly/Lawler17. 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. 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 received after June 9, 2017 and no-shows will be billed.

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FHWA-NHI-130053

Bridge Inspection Refresher Training

Tuesday, June 27, 2017 – Thursday, June 29, 2017

Hilton Garden Inn Worcester, 35 Major Taylor Boulevard, Worcester, 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: Monday, May 29, 2017

Registration Fees: $1,400 Members, $1,700 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/BridgeRefresher6-17. 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 May 29, 2017 will be billed.

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