

# BSCES NEWS

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

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CI Boston Chapter/Economic Outlook

## Mass Economy, Retail Sector Rebounding

by Jerome A. Guerra, Manager of Marketing & Strategic Business Development, Fay, Spofford & Thorndike (FST)

The Great Recession that battered families, businesses and state and local economies began in December 2007 and ended—“officially”—in June 2009. In Massachusetts, we felt the pain, but not as much as many other areas of the country did.

In its Labor Day 2011 report, the Massachusetts Budget and Policy Center wrote, “the US economy is now in a period of weak and fragile recovery, one that features both slow growth and high levels of unemployment. For many Americans, the current recovery feels little different than the recession itself...By many measures, however, Massachusetts has fared far better than most other states during the Great Recession and its aftermath. We have experienced lower rates of unemployment, lost a smaller share of our jobs, and maintained higher median wages for many of our workers.”

Since then, the recovery has slogged along, both nationally and locally, and Massachusetts continues to be among the best performing of the states. Among market sectors, retail has rebounded better than most—net operating income per square foot at U.S. shopping centers



Front entrance to Highland Commons

rose 7% in 2013, the indicator's strongest performance since 2008. The retail market is also indicative of Massachusetts' relative economic strength; real estate consulting firm Cassidy Turley, in its 2014 Retail Forecast, called Greater Boston “one of the hottest retail markets in the nation.”

Highland Commons on the Hudson-Berlin line offers a good illustration of the Massachusetts retail recovery. More than a decade in the planning, the approximately 900,000-square-

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## President's Report

by Reed M. Brockman, PE, Senior Structural Engineer/Coordinating Inspection Team Leader, AECOM



March is here already?!

As civil engineers, it seems like March is the month where we really get to see the worst of our infrastructure: it is peak season for potholes and freeze/thaw problems, and without any overgrowth, you really get to see things for what they are. Our infrastructure really is aging. Sometimes the evidence comes in the obvious form of deterioration. Other times, the age comes in the form of traffic, pollution, or other ways that the public may just accept or not even

notice. Fortunately, we civil engineers are paying close attention to every aspect of the infrastructure and are dedicating our lives to making the world better. We appreciate maintenance, but we also love the opportunity to create brand new infrastructure. We love to stay on top of new technology while at the same time carrying forward knowledge learned in the past. We love the perfect blend of creative solutions mixed with just the right amount of apprehension. We love to think things through and make sure that over the long term we do the right thing.

## UPCOMING EVENTS

**BSCES Constitution and Bylaws Revision Meeting** March 25, 2014

**Committee on Sustainability and Engineering Management Group Event** March 27, 2014

**Environmental & Water Resources Institute Boston Chapter Event** March 29, 2014

**ASCE SEI Structures Congress 2014** April 3-5, 2014

**2014 John R. Freeman Lecture** April 8, 2014

**BSCES Student Night 2014** April 10, 2014

**Younger Member Group Brewery Tour** April 12, 2014

**Francis M. Keville Annual Dinner** April 16, 2014

**Younger Member Group Red Sox Outings** April 29, 2014 and May 20, 2014

**Further Details Inside**



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BSCES is a volunteer organization dedicated to improving the world of civil engineering. We aim to share knowledge amongst ourselves and to assure that there is a future generation just as avid as ourselves to continue with our efforts. We also spend a considerable amount of time and energy promoting a public understanding of our efforts and the many systems that allow our communities to function safely every day through our hard work. These are fairly mammoth undertakings, and to best accomplish our goals, we really need the input of our entire

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## Mass Economy, Retail Sector Rebounding

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foot retail center has added several anchor tenants in recent months, including the first Massachusetts location of Nebraska-based outdoor store Cabela's.

Like many major developments, the process of building Highland Commons took a lot of time and overcame many hurdles. Its progress was complicated by a number of factors, not the least of which was the recession.

Additionally, the initial refusal in 2005 by the town of Berlin to rezone its portion of the site caused developers to redesign the property so that all retail would be on the Hudson side. Berlin's voters, at their 2008 Town Meeting,

eventually agreed to rezone their land to allow retail on the site. But as this occurred in the depths of the recession, when demand for new retail was at historic lows, developers were not immediately able to capitalize on the opportunity.

With the rebounding economy, however, the development plan has come full circle. In addition to Cabela's, the retail center is adding PetSmart, T.J.Maxx and Michaels in the first half of 2014 to join existing anchor stores Market Basket, Lowe's and BJ's Wholesale Club.

Fay, Spofford & Thorndike's involvement in Highland Commons comes through our 2013

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Highland Commons entrance on Coolidge Street in Hudson



Retaining wall along parking area at Highland Commons



Lowe's at Highland Commons



Market Basket at Highland Commons



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## CI/ASCE 38-02 & Subsurface Utility Engineering (SUE)

How SUE Can Provide for Better Design, Cost Savings, and Damage Prevention for America's Future Infrastructure Improvements

by Blake Leclair, Project Manager, BSI Engineering, Inc.

Throughout the engineering community there is no phrase that spawns more animosity amongst project managers and facility owners alike than “change order.” Simply implying that there is a possibility of a change order suggests that someone along the way has made a mistake and it now needs to be corrected for an additional cost. This not only impacts the reputation of the designer, but also directly affects the financial bottom line of the project. Not to mention the potential impacts to the project schedule and the implications to the surrounding community. While not all change orders will result in drastic impacts to the project outcome, more often than not they carry with them the potential for a tremendous impact to project funding and resources that otherwise could have been prevented.

What if certain steps could be taken during the design phase of any given project to help mitigate the potential for change orders while allowing specific strategies to be developed in order to properly manage the risk involved? Questions such as these were the motivating factors that lead to the creation of the ASCE “Collection and Depiction of Existing Subsurface Utility Data” committee. This committee is comprised of a wide array of individuals with varying backgrounds from civil and subsurface utility engineers, to geophysical, department of transportation, and construction industries alike. The goal of the committee was to create a standard system for classifying the quality of existing subsurface utility data that would allow the information to be conveyed from design to construction in order to better manage the risk involved with subsurface utilities. The final outcome from this collaboration of disciplines was the CI/ASCE 38-02 “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data” which was published in 2002.



Non-Destructive Vacuum Excavation Test Pitting—Quality Level A Data

The 38-02 standard has since redefined the way that subsurface utility data is collected, depicted, and otherwise managed by classifying utility data into one of four quality levels, A, B, C, or D. Record utility data such as information obtained from utility and facility owners is now classified as quality level D data while information obtained from a site survey such as a topographic or utility structure survey is now classified as quality level C. Quality levels A and B were established to define utility data that is collected through a convergence of new equipment and data processing technologies. These technologies allow for the collection of additional utility data during the design process rather than discovering utility conflicts during the construction phase where unexpected surprises are not welcome.

These technologies include geophysical prospecting techniques such as electromagnetic, gradiometric, and ground penetrating radar methods. Utility data that is collected by these means that is subsequently survey located and accurately reduced onto engineering documents is classified as quality level B data. Quality level A data identifies precise horizontal and vertical locations of exposed utilities

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Electromagnetic Utility Tracing—Quality Level B Data



Example of a Completed Non-Destructive Vacuum Excavation Test Trench Showing Encountered Utilities—Quality Level A Data

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## What is the Future Economic Impact of America's Current Infrastructure Investment Trends?

by Anthony M. Puntin, PE, BSCES Executive Director

America's infrastructure networks and systems are critical for our economy today and America's economy 20 years from now. To make this point, ASCE commissioned a series of economic reports to clearly show the economic implications if America continues to underinvest in infrastructure. These reports were prepared for ASCE by the Economic Development Research Group of Boston to answer this key question—What is the cost to America's economy if we do not invest in our infrastructure today? The "Failure to Act" series covers four specific areas:

1. Surface Transportation
2. Water and Wastewater
3. Energy Transmission
4. Airports and Marine Ports

Together, these reports cover nine of the 15 categories addressed by the ASCE Report Card for America's Infrastructure. The final Failure to Act Summary Report took a cumulative look at all of these categories together and provides analysis of the overall impact of infrastructure on America's economy by 2020. This report provides

an opportunity to show the big picture economic benefit that comes from infrastructure investment. The investment shortfalls mean that much-needed maintenance and modernization is not getting done, and the infrastructure systems start to deteriorate further. For the most part, this isn't something dramatic we will notice overnight, but a gradual worsening of conditions over time. Our commute may become less reliable or our shipments will take longer. We may experience more electrical outages and water issues.

Each of the reports demonstrated a common theme—deteriorating infrastructure has a cascading impact on the nation's economy, negatively affecting business productivity, gross domestic product (GDP), employment, personal income, and international competitiveness. The message is clear: if we don't invest now, we all end up paying more in the long run. However, the most important information this study provided was a goal number for what we need to invest to change our course and prevent the negative effects of underinvestment. If we as a country address this funding shortfall of \$157

billion a year for our nation's infrastructure, we can prevent all of these effects by 2020:

- \$3.1 trillion in GDP, almost the equivalent of Germany's entire GDP
- \$1.1 trillion in U.S. trade value, equivalent to France's GDP
- 3.5 million jobs in the year 2020 alone
- \$2.4 trillion in consumer spending, comparable to Brazil's GDP
- \$3,000 in personal disposable income per year

This report shows that there is a flip-side to infrastructure—investment today can help our economy and ignoring its needs can hurt our economic output. And while the investment needed may seem daunting, the real story of this report is that we can't afford not to invest. It's almost impossible to fully separate the sectors—transportation, water, ports, and the electric grid—the cumulative impact of failing to invest over time and the interaction between modes ensures that deficiencies in one sector will have an impact on other sectors. We need to invest across the board. A failure to act now will result in more expensive solutions in the future.

## A Report of the 2014 ASCE Annual Multi-Regional Conference for Regions 1, 2, 4 & 5

by Richard A. Matson, EIT, Structural Engineer, AECOM and Ali Touran, PhD, PE, Professor, Northeastern University

On a frigid weekend in early February, ASCE held the annual multi-regional conference in Indianapolis, Indiana for Regions 1, 2, 4 & 5. This leadership conference consisted of the Workshop for Section & Branch Leaders (WSBL), the Eastern Regional Younger Member Council (ERYMC), and the Workshop for Student Chapter Leaders (WSCL). There were hundreds of ASCE members in attendance from the student level to the professional level. BSCES had representation at this conference with members Ali Touran (BSCES President-Elect), Rich Matson (BSCES YMG Chair), and Linda Hager (ASCE Region 1 Governor and BSCES member) all in attendance.

This conference was a great opportunity for members to network and build on leadership development. The sessions encouraged open discussion which allowed for creative ideas to emerge. Within smaller groups, we discussed what each section did well, what we did not do so well and suggestions on how to improve. These groups were great as they let us hear what other sections and branches were up to. We had members from WSBL, ERYMC, and WSCL

attend every meal and break together so that we could meet new people and build on our networking. Additionally, there was a joint social at a local arcade gaming place with laser tag, which was a fun way to meet more students and younger members in a casual setting.

A noteworthy event for us was when BSCES was announced as the recipient of the 2013 "ASCE Outstanding Section and Branch Award for the Very Large Section and Branch Membership Category." BSCES was also recognized with 2013 "Section and Branch Diversity Award" honorable mention. Ali Touran received both awards on behalf of BSCES.

For those that have not attended these types of conferences in the past, we encourage you to do so. There is a vast amount of information that you can learn from the experience of other members. There is typically a keynote speaker at these conferences who provides an inspirational story. At this particular conference we had a gentleman by the name of James Rispoli give the keynote speech. James discussed what a leader is, and at the end of his speech he shared a fascinating story with us about his experience



Pictured (left to right) is BSCES President-Elect Ali Touran, ASCE President Randall Over and BSCES Younger Member Group Chair Rich Matson

meeting with the United States President, Ronald Reagan, on numerous occasions. It is stories like these that are inspiring.

At the end of the weekend we all departed from this city with a few more friends and a shared knowledge of how to become better, not only individually, but also as an organization.

## Municipal Capital Project Budgeting

by David M. Manugian, PE, Public Works Director, Town of Ashland

Late winter is often the time of year when municipalities are preparing capital budgets for the upcoming fiscal year, starting July 1. Many of these capital plans include planning and engineering for local infrastructure projects.

Each city and town has its own process, but all municipalities prepare budgets for the fiscal year starting July 1. For many towns this includes review by a citizen-led finance committee and capital planning committee, which works with boards of selectmen and town administrators/ managers to negotiate a final warrant for town meeting.

Capital purchases typically include the development and refurbishment of physical assets that have a life longer than one year and a larger cost threshold than normal operating assets. Unlike the municipal operating budget, they are often funded through debt service as their useful life can be collateralized against the debt. Massachusetts General Laws chapter 59 section 21C typically limits tax assessments to a 2.5% increase each year without an override (a 2/3 vote at a town meeting (where applicable) and a 2/3 vote at the ballot); however, capital project debt may be excluded from the 2.5% increase for the life of the debt.

In the Town of Arlington the town manager and school superintendent typically manage the capital improvement implementation. Department heads request capital purchases or assets to their respective bosses. A capital planning committee reviews recommendations, discusses the requests, and recommends a budget and plan to the finance committee and town meeting. The capital planning committee members represent the finance committee, treasurer, school department, town manager, comptroller, and town meeting and citizens.

New tools are being developed to provide information on municipal budgets. The Town of Arlington is working with Involution Studios to create a "visual budget." This interactive tool allows the user to enter their estimated tax burden and see how it is used to fund the town's programs.

The Town of Winchester also has a capital planning committee and provides a five year projection of anticipated capital needs. Infrastructure categories include roads and sidewalks, drainage, flooding, and water/sewer improvements. In the Town's fiscal year 2015 town manager's financial plan, the capital improvement requests summary reflects flooding as a top concern for the committee and the town, and it anticipates spending over \$9 million in

the next five years to address major flooding concerns around the town.

Meg White, a project manager with the office of the town engineer in Winchester, helps coordinate capital requests for town departments in Winchester. These requests are forwarded to the capital planning committee which then reviews them and makes a recommendation to the town manager. Requests then go to the board of selectmen and ultimately to town meeting.

"The capital program and recommendations become an integral part of the Finance Committee's budget report to Town Meeting. This process leads to the development of a comprehensive plan for maintaining and improving the Town infrastructure and assets" stated Ms. White.

The Town of Ashland is instituting a new program where departments provide estimates of capital needs to a municipal improvements committee. Working with the Town's finance director, the Committee will determine the amount available for the upcoming fiscal year and then work with departments to prioritize projects based on available funds. The Town also seeks grants and other loan programs to supplement local funds.

### Call for Papers

*Civil Engineering Practice*, the Journal of BSCES welcomes papers for review and publication. We are looking for papers on topics in all areas of civil engineering that, while comprehensive in scope, remain readily understandable to the non-specialist. Click [here](#) for general guidelines for submittal of papers. You may also submit your contribution to James Lambrechts at [lambrechtsj@wit.edu](mailto:lambrechtsj@wit.edu).

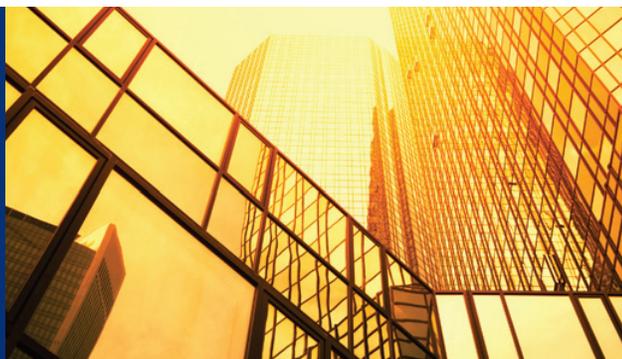
### Submit an Article to BSCESNews

The BSCES Newsletter Editorial Board invites BSCES members to write and submit an article for publication in *BSCESNews*. Typically 300 to 700 words, *BSCESNews* featured articles are about technical topics or professional matters of interest to civil engineers. The May 2014 issue of the newsletter for example, will highlight the ASCE Coasts, Oceans, Ports and Rivers Institute Boston Chapter and feature one or more articles on the topic of Emergency Preparedness.

Email your article in Microsoft Word format to BSCES Newsletter Editorial Board Chair Mike Cunningham at [mcunningham@kleinfelder.com](mailto:mcunningham@kleinfelder.com) or BSCES Association Manager Rich Keenan at [rkeenan@engineers.org](mailto:rkeenan@engineers.org).

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## Featured Group

### ASCE Construction Institute Boston Chapter

by Gregory R. Imbaro, PE, Senior Project Manager, Simpson Gumpertz & Heger Inc., Chair

On January 6, 2014, the formerly-named BSCES Construction Group became the ASCE Construction Institute (CI) Boston Chapter of ASCE. It is a goal of both BSCES and ASCE to align the local technical groups with the national institutes to strengthen the link between the local and national efforts and to increase the resources available to the local chapters. The CI Boston Chapter is the fifth local technical group to align with a national institute after the Boston Chapters of the Coats, Oceans, Ports and Rivers Institute, Engineering & Water Resources Institute, Geo-Institute and the Structural Engineering Institute. We look forward to the increased opportunities and interest that our new affiliation will bring.

The mission of the ASCE Construction Institute Boston Chapter is to advance the state-of-the-art of construction technology, equipment and techniques; to provide and encourage the advancement of education and research in construction engineering; to provide a forum for the exchange of ideas between all who have an interest in the engineered project; and to encourage interaction between designers, contractors, owners, educators and other professionals associated in the construction industry. We promote the exchange of ideas to hear, debate, and discuss current issues and the future of the profession and offer possible solutions across our industry sectors. In the past year, we have furthered our mission through several successful dinner meeting presentations. Two of these events were co-sponsored by other BSCES technical groups and institute chapters.

On March 27, 2013, Mary Ainsley, director of the MBTA Design and Construction Department and the HDR/Gilbane Team discussed the MBTA Green Line Extension. The proposed service consists of two distinct branches: a "mainline" branch which will operate within the existing right-of-way for the MBTA Lowell Line, beginning at a relocated Lechmere Station in Cambridge and traveling north to Medford; and a branch line operating within the existing right-of-way for the MBTA Fitchburg Line to Union Square in Somerville. There will be seven new stations constructed as

part of the project, including the relocated Lechmere Station. A vehicle storage and maintenance facility will also be constructed. In addition to the infrastructure needs of the project, MassDOT will prepare final engineering for the proposed extension of the Somerville Community Path between Lowell Street and Inner Belt Road in Somerville. Once completed, trains will operate every five to six minutes in the peak periods, providing fast and efficient service to downtown Boston.

On September 18, 2013, Giuliana Zelada, senior project manager, Simpson Gumpertz & Heger Inc., and Drew Floyd, vice-president and regional manager—New England, Moretrench, gave an excellent presentation titled "Prevention of Additional Building Settlement Due to Adjacent Construction at St. Francis Hospital and Medical Center in Hartford, CT." During excavation for the foundation of the new John T. O'Connell North Tower at the St. Francis Hospital and Medical Center Campus (SFHMC), in Hartford, Connecticut in 2008, Building 3, an immediately adjacent five-story brick masonry building, suddenly settled up to 1.5 in. and moved laterally about 5/8-in., resulting in severe cracking of interior and exterior bearing walls and floor slabs. Ms. Zelada and Mr. Floyd presented the results of the forensic investigation and condition assessment of the distressed building as background for a detailed discussion of the alternate construction processes implemented to control further movement. Over 60 people attended the event that was co-sponsored by the Geo-Institute.

The Engineering Management Group co-sponsored our next event on quantitative risk assessment on January 30, 2014. We were honored to have Alfred Moergeli, moergeli consulting, LLC and Philip Sander, PhD, RiskConsult GmbH fly in from Switzerland to present practical construction risk management applications using techniques they developed. Using the example of estimating the final construction cost on a large-scale project, they showed the audience how to define and control risk by defining your context; qualifying all your relevant risks comprehensively; proceeding from

a qualitative to a quantitative analysis; developing comprehensive mitigation packages; periodically monitoring & adjusting risk mitigations; and closing the information loop with lessons learned. They compared their method to applying contingency percentages to base construction costs and showed how with increasing size and complexity of projects the results of the simpler approach are not very informative. We were further honored to have John Reilly, former president of the American Underground Construction Association and current consultant to the Seattle megaprojects in attendance. A lively discussion followed the main presentation.

For a change of pace, we decided to host our most recent event at the Aldrich Center at The Engineering Center on Beacon Hill in Boston. On March 6, 2014, James F. Noone, PE and Blake Leclair of BSI Engineering, Inc., gave a presentation on CI/ASCE 38-02 "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data." CI/ASCE 38-02 applies to projects where existing utilities will be impacted and requires that the project approach used by engineers be modified in order to conform to the standard.

Mr. Noone and Mr. Leclair presentation showed designers and contractors how to best use the information provided in the standard. Intelligent use of the standard and appropriate incorporation of subsurface utility engineering (SUE) services will result in better designs and enhance damage prevention efforts. This presentation reviewed the details of CI/ASCE 38-02 as applied to a water main replacement project in downtown Boston and then proceeded to discuss how to incorporate it and other SUE services into the design process. It also addressed how to maximize the benefits of CI/ASCE 38-02 on a per project basis and how to budget for SUE services on current and future projects.

We encourage participation in the Construction Institute Chapter Boston Chapter and reach out for new program ideas. If you are interested in joining our group or have any ideas for future meeting topics, please contact me at 781/907-9284 or [grimbaro@sg.com](mailto:grimbaro@sg.com).

## Branch & Committee Reports

### Southeastern Massachusetts Committee Update on Future Events

by John C. Cavanaro, PE, Principal, Cavanaro Consulting

Following the successful completion of our inaugural technical workshop held in September of 2013 in Taunton, MA that covered current Stormwater Policy & Design Guidelines, the BSCES Southeastern Massachusetts Committee (SEMAC) is looking to plan our next pair of featured events in the upcoming months.

SEMAC is a committee within BSCES that is charged with addressing regional and local interests that are generic to civil engineers who practice in the Southeast region of the Commonwealth. The committee will endeavor to promote public awareness of the functions of civil engineers; encourage civil engineers in the region to participate in the public square through community involvement; perform outreach to educational institutions and charitable endeavors; and develop seminars and workshops that will aid practicing engineers with staying current with technology, innovation and regulatory changes.

We have two workshops that we are considering to sponsor through SEMAC: 1.) Floodplain Elevation Evaluation and Analysis and Certificate Preparation for Flood Insurance Purposes and LOMA filings with FEMA, which we expect to schedule for the early spring of 2014; and 2.) Continuing Education Workshop for Title 5 System Inspectors and Soil Evaluators, which we expect to schedule for the late spring/early summer of 2014. We are coordinating our efforts with the New England Interstate Water Pollution Control Commission (NEIWPCC) about having our workshop approved for Continuing Educa-

tion credit for both Title 5 System Inspectors and Approved Soil Evaluators. The goal is to have the workshop approved for a full (8) hours. During a three year license renewal cycle, licensees are required to document a minimum of (10) hours of continuing education. Typically, a licensee would attend a full day workshop and then a half day workshop to attain the required minimum number of hours.

The workshop outline for our full day workshop that we are planning includes: 1) an overview of Department of Environmental Protection (DEP) regulations affecting system inspection and soil evaluation and current trends in I/A systems approval for limited and general use (we will have a representative from MADEP to present this portion); 2) surveying basics and documenting field conditions; 3) determining and documenting seasonal high groundwater (evaluating redox features and review of Frimpter method of groundwater adjustment computations-selecting a reference USGS well); 4) evaluating cesspools; 5) strategies for evaluating septic systems for residences that have not been occupied for more than three to six months; 6) proper method of inspecting & evaluating on-line septic system pumps, including effect of USDA soil texture on dosing cycle; and 7) an example I/A system presentation by a vendor.

We are also open to considering other topics of interest that are presented to the Committee. Please look for more information regarding the SEMAC in upcoming issues of *BSCESNews*, and/or contact any of the folks below for

additional information on becoming active in the SEMAC or suggesting a future workshop topic.

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Committee Clerk/Secretary—John Cavanaro, PE  
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**Boston Society of Civil Engineers Section**  
**American Society of Civil Engineers**

### BSCES Awards Nominations

**Deadline is May 16**

Do you know a worthy award recipient? If so, then download, complete and submit the 2014 BSCES Employer Recognition and/or Section Awards form contained in this newsletter by the Friday, May 16, 2014 submission deadline. Created in 2006, the Large and Small Employer Recognition Awards are given to those organizations who exhibit exemplary support of ASCE and BSCES. The long-standing BSCES Section Awards are given to individuals who have made significant contributions to the profession and their communities.

*Please see the awards nomination forms at the end of this month's newsletter for further details.*

## EASTERN TOPOGRAPHICS

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## Branch & Committee Reports

### We're So Excited (And We Just Can't Hide It): Western MA Branch Happenings

by Christopher A. Cockshaw, PE, LEED AP, Senior Project Manager, Hatch Mott MacDonald

The Western MA Branch of BSCES has had one of its most successful years. Our first meeting of the year, in November, was about sustainability. Don Nusser, from Hatch Mott MacDonald, was the featured speaker and his presentation explored the ways an engineering firm can bring value and lasting benefits to its people, projects, and the business itself through the application of sustainability concepts. The meeting was very well attended and was in a new venue, at UMass Amherst.

The second dinner meeting, in February, was about crest gate installation at dams. Our speakers, Peter Baril and Matt Taylor, of GZA GeoEnvironmental, Inc., presented three case studies from Massachusetts dams where crest gates were installed into existing spillways. The presentation highlighted several lessons learned and it was very well received by the attendees to make it the biggest attendance at a Western MA event in recorded history.

The branch also is continuing its active support of the University of Massachusetts, Amherst Student Chapter of Engineers Without Borders (EWB). The chapter involves engineering students from UMass Amherst, Hampshire College, and Smith College, and is now working on projects in Kenya and Ghana. We will be

helping the group with its 7th Annual EWB UMass Amherst Auction & Social on Saturday, April 12, 2014, hosted by one of our members, Jim Duda, and his wife, Gillian Haven, in the "Duda Barn" in Pelham, MA. The event is always a well-attended and festive occasion, drawing from the business, academic, and philanthropic communities throughout Hampshire County. Last year the group raised \$33,300: \$26,700 from sponsors and \$6,600 from the auction.

With this renewed energy and enthusiasm in the Western MA Branch, we are already planning our third dinner meeting, on April 22. Jim Laurila, City Engineer in Northampton, will discuss the city's new stormwater utility. He'll review the engineering behind the rate structure formation, the public process in taking the utility from the feasibility phase to City approval, and the lesson learned from the implementation of the utility. Save the date: April 22, 2014.

In conjunction with this meeting, the BSCES Board of Government will hold their board meeting at the same venue, so that the Board can interface with the Western MA Branch and collaborate on a strategic plan to grow the region, and capitalize on our increased participation and newfound excitement in the Berkshire region.



Sixth Annual EWB UMass Amherst Auction & Social, April 27, 2013, hosted by Gillian Haven and Jim Duda in their barn in Pelham, MA



Boys enjoying water in January 2014 from the handpump and borehole installed in 2009 by EWB-USA UMass Amherst at the Machakha Polytechnic School in Namawanga, Kenya

#### The Aldrich Center—where history and technology meet on Beacon Hill...



Two blocks from the State House and overlooking Boston Common, the newly refurbished Aldrich Center is the perfect venue for your next event. This historic building accommodates private functions, business meetings, and receptions for up to 75.

For information or reservations, contact Rich Keenan, Aldrich Center Manager at 617/305-4110 or [rkeenan@engineers.org](mailto:rkeenan@engineers.org)

**Aldrich Center**  
ONE WALNUT STREET  
Beacon Hill Boston, MA



Members of the Namawanga Adult Women's Literacy Group, the local NGO for the EWB-USA UMass Amherst Kenya Program, carrying 20-liter jugs of water collected at a nearby springbox (January 2014)

## BSCES Legislative Fellow Update from Beacon Hill— Civil Infrastructure and Economic Development

by David Westerling, PE, PLS, PhD, 2013-14 BSCES Legislative Fellow



History indicates that the introduction of civil infrastructure allows for citizens to pursue activities beyond the search for food and water and the building of shelter. If you include the building of public facilities such as courts, legislative capitols, schools and universities and other public places then civil infrastructure indeed is the lifeblood of our culture. But does the provision of civil infrastructure itself promote economic stimulation or does it reflect the need for infrastructure due to public demand. Let's take a look at some recent examples of civil engineering works in the United States.

A striking example of the relationship of civil infrastructure and our economy was our country's response to the Great Depression in the 1930s. Caught between two world wars, the Great Depression began with the total collapse of the financial markets on Black Tuesday, October 29, 1929. The economic downturn also coincided with the lack of agricultural soil conservation and the subsequent wind erosion of our nation's central valley farmland which was called the "Dust Bowl." Unemployment, starvation and lack of economic promise pushed the United States toward poverty.

The country responded with government programs focusing on our nation's infrastructure. The federal US Route System was promoted and sections of federal highway in each state had upgraded engineering designs including grade separation, horizontal and vertical curve alignment, and substantial highway sub-base and wearing surface improvements. Construction work from Maine to California meant jobs and wages but also the improved roads provided for easy truck deliveries, a long distance bus service system and the movement toward a mobile workforce.

Another part of the response involved the design and construction of large water resource projects across the country. The Grand Coulee Dam, the

Hoover Dam and other power projects on western rivers provided low cost clean energy and irrigation and drinking water for many cities. Electrification of railroads and other public transportation improvements increased the efficiency of systems. Both the Public Works Administration (PWA) and the Works Progress Administration (WPA) provided federal dollars but in many cases did not meet many of their goals.

The onset of World War II moved the US towards a war time economy. One example of this shift is how the availability of electric energy in the Northwest and the Southwest from the WPA power projects provided us with tremendous capability to convert bauxite ore into aluminum, the primary material used to make aircraft. Companies like Boeing Aircraft in Seattle and Lockheed and Douglas Aircraft in Los Angeles made the planes that won the war.

A key component of MassDOT's South Coast Rail proposal is Smart Growth, as it integrates two needs identified by MassDOT for the South Coast region that are related to transportation: economic development and environmental preservation.

*Ref. FEIS/FEIR South Coast Rail, USACE, August 2013*

The second most obvious connection between civil infrastructure and economic development in recent US History has to be President Dwight D. Eisenhower's plan to build a national defense highway system. As a young Lieutenant Colonel, Eisenhower was an officer in a 1919 Expeditionary Force which tried to drive from Washington, DC to San Francisco, California. They left Washington on July 7th and finally arrived in San Francisco on September 6th. Twenty-one men were lost en route. ([Click here](#) for images of the Motor Transport Expedition.)

The memories of this trip were combined with Eisenhower's encounters with swift German troop movements on the high speed, limited access Autobahns. This led him, as President, to oversee the largest public works project ever undertaken by mankind. While it was initially proposed as a national defense measure, an argument can be made that the construction of our Interstate Highway System has had a positive impact on our economy.

Most recently, the economic downturn of 2008, with the total collapse of one Wall Street Brokerage firm and the federal bailout of several large automakers, caused concern over our economic stability. While the Federal Stimulus Program was not a cure all, the call for "Shovel Ready" projects from a backlog of infrastructure needs provided a real-time boost for an otherwise sick economy. We still today suffer the long-term effects of unemployment, job stagnation and public malaise.

Of course the present face of economic development in the Commonwealth currently resides in the Senate as Bill S.2018, "An Act financing improvements to the Commonwealth's transportation system." Passed in the House in January, it awaits Senate approval and conference approval. Among many important projects are funds for the South Coast Rail project, the Green Line extension to Somerville, design improvements at South Station and funds for the Knowledge Rail Corridor which will connect Western Massachusetts to the Northeast Corridor in New Haven, CT.

As Massachusetts and the nation move forward, it is possible to think about the what-ifs. What if we don't continue to invest in our civil infrastructure? What if our past investments in clean drinking water, and clean rivers and streams are lost because we cannot afford to maintain or improve them? What if we rely only on investments made by previous generations and don't look (and plan) to the future? Our economy will surely suffer. Public demand has placed civil engineers as trusted discussion leaders.

## Recent News and Updates

### Bertram Berger Young Engineer Award Nominations Deadline is April 11

The BSCES Transportation Group is now accepting nominations for the 27th Annual Bertram Berger Young Engineer Award which serves to recognize an outstanding younger member of the Boston Society of Civil Engineers Section/ASCE for his or her professional achievements and service to the community. The successful candidate should: 1) be less than 35 years old on April 30, 2014; 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.

The Bertram Berger Young Engineer Award winner will receive a \$2,500 stipend to be used for continuing education and/or professional development. To nominate an individual for the Bertram Berger Young Engineer Award, please submit an up to three page narrative statement describing how the nominee meets the above described criteria by 5:00 PM on Friday, April 11, 2013. Please see the insert at the end of this newsletter for more information.

### \$5,000 SGH Scholarship Applications Deadline is March 31

The application deadline for the \$5,000 Simpson Gumpertz & Heger Inc. Scholarship is 5:00 PM on Monday, March 31, 2014. All undergraduate-level civil engineering majors who are members of an ASCE Student Chapter or Club in Massachusetts, have completed a minimum of two-and-one-half years of a four-year program (or the equivalent portion of a five-year or part-time program), and expect to complete their undergraduate degree in May 2014 or later are eligible to apply for this scholarship. Please see the insert at the end of this newsletter for more information.

### Ernest A. Herzog Award Papers Submission Deadline Extended Until April 18

The deadline for submitting a paper for consideration as the winner of the 2014 Ernest A. Herzog Award has been extended until Friday, April 18, 2014. Award applicants are asked to submit a paper that identifies an infrastructure project, innovation, or idea in which the author was actively involved as an owner, advocate, engineer, or end-user. The paper must address specific benefits to current professional practices, lifestyle, and/or sustainability through the application of existing or innovative technologies or methods. Please see the insert at the end of this newsletter for more information.

**Need some PDH's?** Want to get them for free? One of the many ASCE benefits is access to over 60 on-demand webinars. Your ASCE membership allows you to choose up to five FREE on-demand webinars from the comprehensive "interactive learning" library. Each 60 minute on-demand webinar is worth one PDH. [Click here](#) to take advantage of this special offer.

**With the XXII Winter Games recently completed, it is important to understand the engineering complexities that go into creating such a remarkable event.** Expectations are high for each Olympic Games, with over 6,000 athletes competing this winter from 85 countries in front of thousands of spectators. The costs of developing effective transportation systems, comfortable housing for athletes and coaches, and state of the art venues for the highest level of competition are remarkable. Take a look at the infographic developed by the New Jersey Institute of Technology titled, "[Engineering the Sochi Winter Olympics](#)" to see the vital role that civil engineers played in the recently completed Sochi Olympics.

### TransportationCamp New England 2014

The first "TransportationCamp" is coming to New England. On April 5th, the leaders and innovators in

the transportation community, students, and transit enthusiasts will connect for a day of unplanned conversations and meaningful discussions at the "unconference". The participant-led sessions will be held on Saturday from 9:00 AM – 5:00 PM or visit [www.transportationcamp.org](http://www.transportationcamp.org) for more information. TransportationCamp New England is organized by Cambridge Systematics, Inc. in partnership with MIT, the Boston YPT, and OpenPlans.

### UMass Amherst EWB Student Chapter Sponsorship Appeal

The UMass Amherst EWB Student Chapter just launched their 6th Annual Corporate Sponsorship Appeal mid-February. The deadline for sponsorships is March 21. [Click here](#) to download the forms or contact Wade Stanley at [wstanley@umass.edu](mailto:wstanley@umass.edu) with questions. Corporate Sponsorships can be combined with individual employee gifts to participate at any sponsor level. Also, we accept personal donations of any denomination, either given as a one-time gift or pledged monthly. To donate, [click here](#) and then click the "DONATE" button.

**Did you know that BSCES is "connected?"** As the forms of communication continue to expand, BSCES is trying to keep up with all of the social media outlets. Follow, like, connect, and subscribe to BSCES on [Twitter](#), [Facebook](#), [LinkedIn](#), and [YouTube](#). These sites, in addition to the [BSCES homepage](#), will provide information on upcoming events and highlight BSCES accomplishments.

**As a volunteer based organization, BSCES relies heavily on the time, effort, and financial support of individuals and companies within the civil engineering industry.** BSCES Executive Director Tony Puntin would like to thank you for your time and dedication. As always, please feel free to contact him at [apuntin@engineers.org](mailto:apuntin@engineers.org) if you have any thoughts as to how BSCES can better serve you.

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## BSCES Constitution and Bylaws Revisions

by Anthony M. Puntin, PE, BSCES Executive Director

For the past year, BSCES has been conducting a detailed review of our current Constitution and Bylaws. The review was precipitated by the need to update our Bylaws to better reflect the current practices of BSCES. Simply stated, we have outgrown the current documents. For example, the amount called for in the “Operating Reserve Fund” in the current Bylaws is inadequate given the current size of our operations. A committee was formed and necessary changes to the Bylaws were developed. As a section of ASCE, all changes to our governing documents must be approved by the ASCE’s Governing Documents Committee. Before sending the proposed changes to the membership, they were submitted to ASCE for their review. ASCE’s review included only minor comments to the proposed language. However, during their review, ASCE notified us that our current Constitution and Bylaws do not meet the ASCE standard format that is to be utilized by all Sections and Branches. Our current Constitution and Bylaws predate our becoming a Section of ASCE. As a result, the current format utilized by BSCES needs to be revised. In order to ensure our Constitution and Bylaws are correct relative to present day operations and that they conform to ASCE Section formatting requirements, BSCES is proposing modifications to our Constitution and Bylaws. Click the following links to see the revised Constitution and Bylaws documents.

Our current procedures require a membership meeting for the preliminary approval of the revisions to the Constitution and Bylaws. This meeting will be conducted on March 25, 2014 at AECOM office at 66 Long Wharf, Boston, MA beginning at 4:30 PM. All BSCES members are invited to attend this meeting. However, only subscribing members (members that have paid BSCES dues for this year) are allowed to vote.

### Constitution

If the revisions to the Constitution are approved by a majority of those in attendance at the March 25, 2014 meeting, a letter ballot will be sent to all subscribing members to vote on the proposed revisions to the Constitution. The amendments will be approved if a 2/3 affirmative vote is received.

### Bylaws

If the revisions to the Bylaws are approved by a 2/3 vote of those in attendance at the March 25, 2014 meeting, a second meeting will be held. It is anticipated that this next meeting will be held

on May 20, 2014. This date will be confirmed and the membership will be notified. The amendments will be approved if a 2/3 affirmative vote is also received at the second meeting.

Aside from the overall format revision, a summary of the more significant changes is as follows:

- The revised Constitution will include a Conflict of Interest article (Article 10).
- The procedures for amending the Constitution will be revised to allow for the possibility of utilizing other methods besides letter ballots.
- A section will be added to the Bylaws (Article 10) that describes the various funds within BSCES. This Article defines the purpose, usage and limits of these various funds (Operating, Reserve, and Special). As compared to the current version, the revised article removes reference to specific dollar amounts and instead references the BSCES Financial Policy. This will allow BSCES to make revisions to spending policies by a full Board of Government vote when the need

arises without having to revise the Section’s Bylaws (similar to ASCE’s Bylaw).

- The revised Bylaws will provide a more detailed description of the composition and procedures associated with the Nominating Committee.
- The procedures for amending the Bylaws in the future will be revised in order to be in line with other ASCE Sections.
- The voting process in the Bylaws will be revised to allow for the possibility of utilizing other methods besides letter ballots.
- The revised Constitution and Bylaws will reference both BSCES Technical Groups and ASCE Institute Chapters.
- The revised Constitution and Bylaws will provide a more detailed definition of the composition and roles and responsibilities on the Board of Government and Executive Committee.

Please direct any questions to BSCES Executive Director Tony Puntin at [apuntin@engineers.org](mailto:apuntin@engineers.org).



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## President's Report

*continued from page 1*

civil engineering community. While we are a 4,000 member organization, the civil engineering community is actually far greater in size. Also, within our organization, not all of us are actively involved in the organizational end of BSCES.

We need to convince the whole civil engineering community to become part of our efforts and there is a role waiting for each and every one of us.

Members of our nine student chapters are leading competition teams for the steel bridge and concrete canoe competitions, pulling together talks with industry leaders, and spearheading activities to help the next generation understand how their schoolwork applies towards making the world a better place. Just last week, while many of our membership were attending The Engineering Center Education Trust Leadership Dinner, Professor Ed Hadjuk and the UMass Lowell ASCE Student Chapter members, with help from the BSCES Public Awareness & Outreach Committee, led a night of celebration for students at the Lawrence Family Development Charter School, as they culminated months of effort with a triple competition: crushing model bridges, judging the students' Future Cities, and cheering on the young competitors in their egg drop contest. Their efforts need to be lauded, as do the efforts of all our student chapters. If you are a student and not active with your chapter, getting involved is as easy as following [this link](#).

Our Younger Member Group (YMG) is much more than a collection of us that fit a particular demographic. They oversee the efforts that connect our educational organizations to the working professional world, and assure that newer

members of our civil engineering community become the future leaders. Their efforts are generally social. Last month they held the highly attended billiards tournament and helped serve food at a soup kitchen. Upcoming events include a ski trip, Red Sox games, and a brewery tour. The YMG intentionally hold activities with open, casual atmospheres to encourage discussion of the issues that affect them and to allow newer members of our community to become more familiar with the vast number of efforts happening throughout BSCES. We know that our civil engineering community is comprised of people from all over not only Massachusetts, but the whole world, and because we have so much infrastructure growth happening through our area, we have new people in our field coming to Massachusetts all the time. BSCES is a great group for giving new members a warm introduction to all that is civil engineering. While the YMG is on paper aimed at the members of our community under 35 years in age, the activities are open to all and I am positive that every member of our civil engineering field will have a marvelous time at any one of the many events they organize.

All members, without regard to age, geographic location, position in the industry, or any other of the social, demographic or economical divisions there may be, need to be active. BSCES has technical groups/institute chapters as well as committees just waiting for every member of our community to join. The leaders of our technical groups are listed on page 2 of this newsletter, and you can follow [this link](#) for a full list of our many committees.

If you are concerned that your public leaders undervalue the importance of the infrastructure, the Government Affairs & Professional Practice Committee may be for you. If you aim to

encourage engineers to take a broader view of projects to assure that they consider not only the present physical requirements but also the socioeconomic and environmental factors for the future, the Committee on Sustainability may be for you. If you love to talk to your community or to help the K-12 community, the Public Awareness & Outreach Committee may be for you. There truly is something for everybody: setting up training programs, celebrating our history, putting together our newsletter and journal, and a variety of other undertakings. There is no limit to what you can undertake. You can be in the Geo-Institute AND the Younger Members Group. You can be interested in both the efforts of the Environmental and Water Resources Institute AND the Committee on Sustainability.

We need each member of our entire community to see the value in our efforts and to become active. The strength and viability of our entire profession, as well as the infrastructure itself, depends on it. If you are already active, pass this article on to coworkers who are not. If your company has many active members, pass this article on to leaders in your organization who can help make your efforts become recognized and encouraged as part of the corporate culture. If you are not involved and have just come across this article, talk to us! If you don't know where to start, e-mail me at [reed.brockman@aecom.com](mailto:reed.brockman@aecom.com), or our executive director Tony Puntin at [apuntin@engineers.org](mailto:apuntin@engineers.org).

This month, our theme is the economic outlook, and contains a discussion of the ASCE Failure to Act Reports. The Construction Institute Boston Chapter is our featured group. I would like to thank Fay, Spofford & Thorndike (FST) for sponsoring this issue. Enjoy!

## Mass Economy, Retail Sector

*continued from page 2*

acquisition of South Portland, Maine-based DeLuca-Hoffman Associates (DHAI). Project developers Sullivan-Hayes Companies and Benderson Development hired DHAI as lead civil/site engineer for the retail center in 2004, including site design and permitting.

The site development includes about 4,300 parking spaces and supporting infrastructure on a 164-acre parcel of land in Hudson and Berlin. The retail center fronts on Coolidge Street in Hudson, which forms the project's boundary to the north, and is abutted to the east and south by the rear of single family lots on Gates Pond Road. The site also abuts forested land and a modular housing subdivision to the west in Berlin. Most of the undeveloped land was

forested, with a former borrow pit in the southeast corner of the site.

From a technical perspective, the project had (and continues to have) significant challenges. Development involves substantial earthwork and the use of retaining walls to provide more than 125 feet of topographic relief. When complete, the construction will result in the creation of approximately 70 acres of developed area, the movement of approximately 2.5 million cubic yards of earth and rock, the construction of approximately 93,500 square feet of modular block retaining wall, and the installation of over 30,000 linear feet of water and sewer utilities and 20,000 linear feet of drainage pipe.

The project also includes several unique measures for treatment of stormwater runoff. This includes a chemical treatment train using a flocculent agent to aid in the removal of silt and

clay from construction area runoff. Engineers also designed sand filters to address the strict regulatory requirements for the release of stormwater runoff.

Additionally, the project required the removal and replacement of a water tank with an elevated tank to account for the 50 feet of excavation in the area where the tank was previously located. Booster pumps inside the elevated tank riser can deliver about 3,000 gallons per minute to the major tenants for fire suppression.

Highland Commons is still seeking new tenants, including more anchor stores and smaller chain stores, but site design and construction work on the retail center continues as the market rebounds. In a July 30, 2013, article in the *Metrowest Daily News*, Sullivan-Hayes founder Jed Hayes said, "We're happy with the progress up there. The economy getting better certainly helps."

## CI/ASCE 38-02 & Subsurface Utility Engineering (SUE)

*continued from page 3*

typically found through means of test pitting by minimally intrusive or non-destructive methods such as vacuum excavation.

Prior to the creation of the 38-02 standard, quality level C and D data was most commonly developed by the project surveyor and more or less represented the "business as usual" model in the survey industry. The convergence of surface geophysical technologies and the subsequent use of the data obtained for risk management, utility coordination, condition assessment, and development of utility design, forms the core essence of subsurface utility engineering.

In the past, utilities were relatively easy to locate by basic surface geophysical methods as they were generally shallow, metallic, electrically continuous, and logically routed. Technicians with minimal training and limited equipment could produce viable results but that is no longer the case. The underground environment has never been as

complicated and congested as it is today with the advent of new material technologies and new construction methods such as directional drilling. The complexities in today's subsurface utility environment have subsequently brought about the use of improved surface geophysical methods and the need for highly trained SUE Technicians working under the responsible charge of a subsurface utility engineering professional.

The problems faced by today's design engineers will only become more complex as we move forward into the future with the improvement needs of our country's aging infrastructure. The need for reliable utility information to reduce unforeseen utility conflicts and costly change orders has never been so great. According to a 1996 study from Perdue University the average cost savings on DOT projects alone was \$4.62 for every \$1.00 spent on SUE programs. That is on average a 462% return on investment into SUE services.

The 2013 *Report Card for America's Infrastructure* developed by the American Society of Civil Engineers estimates that approximately \$3.6 trillion dollars needs to be invested into infrastructure improvements by 2020 just to get to a grade of B from a current status of D+. That translates into over \$166 billion dollars in potential project cost savings that could be realized through the proper implementation of SUE programs. Potential savings of this magnitude simply cannot be ignored given the growing economic awareness of our society as we continue to climb out of the recent recession. Although there may never be a perfect solution to avoid all subsurface utility conflicts or costs associated with change orders during construction, the proper implementation of SUE programs may currently be the best defense that we have to combat the potentially significant cost of not acting at all.

## Upcoming Events

For more information and to register for events, please visit [www.bsc.es.org](http://www.bsc.es.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.

### Committee on Sustainability and Engineering Management Group Dinner Presentation

**Thursday, March 27, 2014**

Revere Hotel / Boston Common  
200 Stuart Street, Boston, MA

5:30 PM Registration; 6:00 PM Dinner  
6:30 PM Presentation

### Sustainable Infrastructure Planning and Design: Envision™ Rating System and Sustainability Professionals in Action

Dennis J. Stanford, PE, ENV SP, Sustainability Program Lead, City of New York, Dept. of Environmental Protection and Matthew Kennedy, PE, Director of Water Resources, Vanasse Hangen Brustlin, Inc.

Gain insights from regional Envision™ Sustainability Professionals (ENV SPs) in the public and private sectors who will describe how their organizations are enhancing civil infrastructure projects using the Envision™ rating system. Since the launch of Envision in 2012, the New York City Department of Environmental Protection (NYC DEP) is one of the largest public agencies

that have credentialed the highest number of ENV SPs to date. Dennis J. Stanford will present the NYC DEP's business case for sustainability, and how it is being applied to their programs and projects. Matthew Kennedy will present how VHB's dedication to sustainability and to credentialing employees is good for business and addresses clients' Envision rating needs.

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

### Environmental and Water Resources Institute Boston Chapter Event

**Saturday, March 29, 2014**

Landmark Center, Boston, MA

1:00 PM presentation; 2:00 PM site walk

### Muddy River Restoration Project Field Trip

Michael Keegan, PE, US Army Corps of Engineers

The 3.5 mile-long Muddy River flows from Jamaica Pond to its confluence with the Charles River near the Charles Gate Area in Boston. Historically, the River has been highly modified to allow for commercial and residential development in Boston and Brookline, including

culverts, channelization, and a gatehouse. The Muddy River Restoration Project will restore much of the river to a more natural condition. Project goals include improved flood control and water quality, and enhanced aquatic/riparian habitat. Michael Keegan, project manager of this phase of the restoration project will give a presentation on the overall project and then lead us on a walk of the site.

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

*continued on page 14*

### BSCES Constitution and Bylaws Revision Meeting

Tuesday, March 25, 2014 at 4:30 PM

AECOM Office, 66 Long Wharf, Boston

All BSCES members are invited to attend this membership meeting for the preliminary approval of the proposed revisions to the BSCES Constitution and Bylaws

See the article on page 11 of this newsletter for further details.

## Upcoming Events *(continued from page 13)*

### 2014 John R. Freeman Lecture

*Sponsored by the John R. Freeman Fund Committee and Environmental & Water Resources Institute Boston Chapter*

**Tuesday, April 8, 2014**

MIT Tang Center (E51)  
70 Memorial Drive, Cambridge, MA

6:00 PM Reception

7:00 PM Lecture

#### **Capturing Domestic Wastewater's Resource Potentials**

*Perry L. McCarty, Silas H. Palmer Professor, Stanford University*

Today, wastewater can be looked upon more as a resource than as a waste, a resource not only for water, but also for energy and fertilizer nutrients. This lecture will discuss using wastewater as a resource to help address the problems of population growth, consumption of finite resources, and climate change from use of fossil fuel.

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

### Register Now

#### **Structures Congress**

*Sponsored by the Structural Engineering Institute of ASCE*

**April 3–5, 2014**

Sheraton Boston Hotel and Hynes Convention Center

Attend the Structures Congress 2014 where you can choose from more than 120 dynamic technical sessions, take part in the Council of American Structural Engineers (CASE) Spring Risk Management Convocation, and take advantage of numerous opportunities to network with colleagues. [Click here to register.](#)

You can also attend a Structures Congress pre-conference seminar and earn additional PDHs.

*See the Insert at the end of this newsletter for details on the pre-conference seminars.*

### Francis M. Keville Annual Dinner

**Wednesday, April 16, 2014**

Revere Hotel / Boston Common  
200 Stuart Street, Boston, MA

5:30 PM Reception

6:30 PM Dinner

7:30 PM Speaker

#### **Joint Meeting of the Construction Institute Boston Chapter and Transportation Group**

*Thomas P Glynn, Chief Executive Officer, Massachusetts Port Authority*

This joint meeting is dedicated to the memory of Francis M. Keville who, as Director of Construction for the MBTA, made an outstanding contribution to the transportation and construction fields.

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

### Register Now

#### **BSCES Younger Member Group Brewery Tour and Tasting**

Saturday, April 12, 2014 at 4:00 PM

Cambridge Brewing Co.

Ticket includes tour, tasting and food.

*See the Insert at the end of this newsletter for further details.*

### BSCES Student Night 2014

*Sponsored by the Younger Member Group and Student Affairs Committee*

**Thursday, April 10, 2014**

Wentworth Institute of Technology  
Evans Way Auditorium  
550 Huntington Avenue, Boston MA

5:30 PM Social

6:30 PM Dinner

7:30 PM Presentation

#### **Road Tripping through America's Infrastructure: 11,000 miles in 1949 Detroit Lead-Sled Advocating for the Rebuilding of the Nation**

*Dan McNichol, PhD*

Offered for BSCES student members and other Society members who are looking to network with future engineers, BSCES Student Night 2014 will feature Dan McNichol, best-selling author, journalist and thought-leader on infrastructure. Mr. McNichol will discuss his 11,000-mile circumnavigation of the United States in his 1949 Hudson and the need to re-invest, re-build and re-envision our nation's great infrastructural systems.

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

### Mark Your Calendar

#### **2014 Bertram Berger Seminar Delivering Projects in a New Era**

Wednesday, May 21, 2014

Courtyard by Marriott  
275 Tremont Street, Boston

*See the Insert at the end of this newsletter for further details.*

### Purchase Your Tickets

#### **BSCES Younger Member Group Annual Red Sox Outings**

Tuesday, April 29, 2014 at 7:10 PM

**Boston Red Sox vs. Tampa Bay Rays**

Tuesday, May 20, 2014 at 7:10 PM

**Boston Red Sox vs. Toronto Blue Jays**

*See the Insert at the end of this newsletter for further details.*

## Classifieds

### CDM Smith

#### Structural Engineers: will your career have REAL IMPACT?

CDM Smith provides lasting and integrated solutions in water, environment, transportation, energy and facilities to public and private clients worldwide. As a full-service consulting, engineering, construction, and operations firm, we deliver exceptional client service, quality results and enduring value across the entire project life cycle.

Responsibilities include supervising a team of structural engineers and drafters engaged in the analysis and design of structures for water and wastewater treatment, and other facilities. Develop structural design criteria for projects. Prepare scope of work and budget estimates. Forecast workload and schedules.

Requirements: BSCE with 7–10 minimum years of experience and a PE License.

CDM Smith is an equal opportunity employer. To Apply: <http://bit.ly/1dW6RSX>

### Town of Framingham Department of Public Works

#### Senior Project Manager—Utilities

The Town of Framingham Department of Public Works seeks qualified candidates for the position of Senior Project Manager for Utilities. The successful candidate will join a team of project managers as part of the Department's Capital Improvement Program. This position will be responsible for managing water, wastewater & stormwater design and construction projects. Other duties to include: designing water, wastewater & stormwater system improvements, running hydraulic models, & reviewing proposed connections to municipal utilities. Qualified candidates will possess a BSCE, be a registered P.E. in Massachusetts & have 8 years exp. in civil or environmental engineering. The salary range for the position is \$68,351–\$81,693 with an excellent benefits package. Mail cover letter and resume to Human Resources, 150 Concord St., Framingham, MA 01702, fax to (508) 532-5497 or email to [human.resources@framinghamma.gov](mailto:human.resources@framinghamma.gov). This position will remain open until a suitable candidate is chosen. AA/EOE

### Gale Associates, Inc.

#### Registered Architects/Engineers

Gale Associates, Inc., specializing in building envelope consulting services (roofs, walls, windows, sealants, waterproofing, air barriers, etc.), seeks a registered Architect or Engineer for each of its Weymouth, MA and Glastonbury, CT offices. Qualified candidates will have a pertinent Bachelor's degree (architecture, civil, construction or structural engineering) and a minimum of 5 years' experience in exterior building envelope renovations, analysis, design and construction administration. Typical tasks will emphasize moisture intrusion evaluations and renovation designs. Project management ability, excellent writing/presentation skills, and proficient computer capabilities (MS Office, CAD, Outlook) are required. Technical expertise in building envelope systems is essential. Gale offers a competitive salary and full array of benefits to include first-day coverage for health insurance with BCBS, Delta Dental insurance and fully-paid Life/Disability insurance, as well as 401(k) participation, a Flex Spending Account (FSA), several annual paid holidays, vacation and sick time accrual, tuition reimbursement and the opportunity for professional growth and career advancement. Please learn more about us at [www.galeassociates.com](http://www.galeassociates.com). Interested candidates should send resume and salary requirements to: [kaf@gainc.com](mailto:kaf@gainc.com). Gale is an Affirmative Action/Equal Employment Opportunity Employer.

## Part-time Lecturer CAD

Department of Civil and Environmental Engineering, Tufts University



**Tufts**  
UNIVERSITY

School of Engineering

The Department of Civil and Environmental Engineering at Tufts University seeks candidates for a non-tenure track, part-time lecturer position starting in September 2014. The successful candidate will teach one introductory and one advanced course in Computer Aided Design (CAD). Candidates must possess a bachelor's or master's degree from an accredited engineering program. Priority will be given to candidates with experience in the use of CAD technology for civil engineering applications. Extensive hands-on experience with at least two of the following programs is essential: AutoCAD/Civil 3D, Revit, 3DS Max, and Inventor. Additional requirements include professional experience, teaching experience, and excellent communication skills.

Questions about the position should be addressed to Lee Minardi, search committee chair, [lee.minardi@tufts.edu](mailto:lee.minardi@tufts.edu). Candidates should submit their application, including a cover letter, resume, statement of teaching objectives, and contact information for three references to Academic Jobs Online (<https://academicjobsonline.org/ajo/jobs/3735>). Review of applications will begin on January 15, 2013 and will continue until the position is filled. Tufts University is an Affirmative Action/Equal Opportunity Employer. We are committed to increasing the diversity of our faculty, and thus, women and members of underrepresented groups are strongly encouraged to apply.



*Committee on Sustainability/  
Engineering Management Group*

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Thursday, March 27, 2014

## **Sustainable Infrastructure Planning and Design: Envision™ Rating System and Sustainability Professionals in Action**

**Dennis J. Stanford, PE, ENV SP, Environmental Engineer, Sustainability  
Program Lead, Dept. of Environmental Protection, City of New York**

**Matthew Kennedy, PE, Director of Water Resources  
Vanasse Hangen Brustlin, Inc. (VHB)**

**Revere Hotel / Boston Common, 200 Stuart Street, Boston, MA  
5:30 PM Social/Registration; 6:00 PM Dinner; 6:30 PM Presentation**

**\$85 Members, \$95 Non-Members**

**\$75 Public Sector Members, \$85 Public Sector Non-Members**

**\$35 Student Members, \$70 Senior Members (65+)**

Gain insights from regional Envision™ Sustainability Professionals (ENV SPs) in the public and private sectors who will describe how their organizations are enhancing civil infrastructure projects using the Envision™ rating system. ISI credentialed practitioners are trained to use the Envision rating system as a guide to address sustainability dimensions in the design, construction, and operation of an infrastructure project. Since the launch of Envision in 2012, the New York City Department of Environmental Protection (NYC DEP) is one of the largest public agencies that have credentialed the highest number of ENV SPs to date. Dennis J. Stanford will present the NYC DEP's business case for sustainability, and how it is being applied to their programs and projects. In the private sector, VHB is a consulting firm that has credentialed nearly 100 ENV SPs to date. Matthew Kennedy will present how VHB's dedication to sustainability and to credentialing employees is good for business and addresses clients' Envision rating needs.

### **Registration Deadline: Friday, March 21, 2014**

**Information/Registration:** Register to attend this meeting and pay by credit card online at <http://bit.ly/Sustainability03-27-14>. 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 available at [http://www.bsces.org/bsces/file/BSCSEEventRegForm\(1\).pdf](http://www.bsces.org/bsces/file/BSCSEEventRegForm(1).pdf). Then mail or email this form with payment, to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108 or [bscesreg@engineers.org](mailto:bscesreg@engineers.org), respectively. Cancellations received after March 21, 2014 and no-shows will be billed.



**This presentation provides  
1.0 Professional Development  
Contact Hours (PDH)**



*Environmental & Water  
Resources Institute Boston  
Chapter*

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Saturday, March 29, 2014

## **Muddy River Restoration Project Field Trip**

**Michael Keegan, PE  
US Army Corps of Engineers**

**\*New Meeting Location\***

**2nd Floor of Landmark Center at 401 Park Street, Boston, MA  
(at the Fenway T Stop)**

**1:00 PM presentation; 2:00 PM site walk**

**No charge!**

The 3.5 mile-long Muddy River flows from Jamaica Pond to its confluence with the Charles River near the Charles Gate Area in Boston. Historically, the River has been highly modified to allow for commercial and residential development in Boston and Brookline. This has included culverts, channelization, and a gatehouse. The Muddy River Restoration Project will restore much of the river to a more natural condition. Project goals include improved flood control and water quality, and enhanced aquatic/riparian habitat. Phase I of the restoration project involves day-lighting of an enclosed stretch of the river between Brookline Avenue and Avenue de Louis Pasteur. Michael Keegan, project manager of this phase of the restoration project will give a presentation on the overall project and then lead us on a walk of the site.

**Registration Deadline: Monday, March 24, 2014**

**Information/Registration:** Register to attend this meeting at <https://www.surveymonkey.com/s/EWRIFieldTrip03-31-14>. Register by mail or email downloading the registration form at <http://bit.ly/BSCESRegForm>. Then mail or email this form to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108 or [bscesreg@engineers.org](mailto:bscesreg@engineers.org), respectively.



**This presentation provides  
1.0 Professional Development  
Contact Hours (PDH)**

Supported by the staff of the Engineering Center Education Trust



Two pre-conference seminars to choose from on  
Wednesday, April 2, 2014  
Sheraton Boston Hotel

**Post-disaster Safety Evaluations, in cooperation with California Office of Emergency Services (CalOES) & Applied Technology Council (ATC)**

9:00 a.m. - 4:00 p.m.

6.0 PDHs

Engineers, architects, and code-enforcement professions will learn skills required to perform safety assessment of structures following disasters. Registrants possessing an engineering, architect, or building inspector license or certification who complete the seminar will be eligible to be registered as California Office of Emergency Services (CalOES) Safety Assessment Program (SAP) Evaluators.

**PRESENTERS:**

- David Grandpre, P.E., SECB, CA Pretzer Associates
- Robert E. Leach, AIA, NCARB, Newport Collaborative Architects
- Jeffrey A. Hatcher, AIA, NCARB, LEED AP BD+C, RGB Architects

**PLEASE NOTE:** Registration for this event can only be accepted until March 10. No onsite registration can be accommodated. Registration Fee: EB: \$175 / ADV: \$250  
Lunch and course materials are included in the registration fee.

**Design of Sustainable Thermal Breaks**

1:00 - 5:00 p.m.

3.5 PDHs

A structural engineer's common tasks are designing exposed projections of the superstructure or foundation, supporting enveloping facades, and attaching exterior equipment - all conduits for thermal bridges from or to the outside, detrimental to the building's life time energy efficiency and environmental performance. This workshop will focus on providing practitioners with state of the-art strategies and methods for undertaking and implementing thermal break connections. Although not commonly addressed in structural guides, strategies for participating in these design elements will be discussed. Design and construction examples that will be shown are part of the SEI Sustainability Committee's Thermal Bridging subcommittee design guide, in development. In addition, an architect and a mechanical engineer will present on why

thermal break connections are important building science, as well as how to respond to overall energy modeling effects and ASHRAE's recent reporting on building envelope details. New design developments will also be covered.

MODERATOR: Mark Webster, P.E., LEED AP BD+C, Simpson Gumpertz & Heger Inc.

SPEAKERS:

- James A. D'Aloisio, P.E., SECB, LEED AP BD+C, Klepper Hahn & Hyatt
- Dave DeLong, S.E., LEED AP, Halvorson & Partners
- Andrea Love, Building Scientist, Payette
- Russ Miller-Johnson, P.E., Engineering Ventures
- Raquel Ranieri, S.E., LEED AP, Walter P Moore & Associates
- Chris Schaffner, P.E., LEED Fellow, The Green Engineer

PLEASE NOTE: Application for AIA Educational Credits has been submitted, but is not yet confirmed.

Registration Fee: EB: \$99 / ADV: \$175 / ONS: \$250

**Consider adding a pre-conference seminar to your Structures Congress 2014 registration or if you are local come just for the day. Great way to earn extra PDH's.**

Registration is easy – [register online](#)

Learn more about the [Structures Congress](#).



*Environmental and Water  
Resources Group*

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Presented by



Department of  
**Civil & Environmental Engineering**  
Massachusetts Institute of Technology

**Tuesday, APRIL 8, 2014**

**ANNUAL JOHN R. FREEMAN LECTURE:  
Capturing Domestic Wastewater's Resource Potentials**

**Perry L. McCarty**

**Silas H. Palmer Professor, Stanford University**

**MIT's Tang Center (E51) 70 Memorial Drive Cambridge, MA 02139**

**Reception: 6:00 PM | Lecture: 7:00 PM**

**Admission: Free**

Today, wastewater can be looked upon more as a resource than as a waste, a resource not only for water, but also for energy and fertilizer nutrients. Using wastewater as a resource can help address the problems of population growth, consumption of finite resources, and climate change from use of fossil fuel. What emerging processes offer the most promise for capturing all of wastewater's resource potential? Treated wastewater is widely used today in agriculture and industry. It can be treated additionally with modern membrane technology for indirect potable reuse and to meet stringent industrial requirements, though energy requirements for the latter can be quite high. Energy can be obtained from wastewater's organic content as well as from its thermal content. Microbial fuel cells offer potential for direct biological conversion of wastewater's organic content into electricity. However, significant improvements are needed for this process to be competitive with anaerobic biological conversion of wastewater organics into biogas, a renewable fuel that can be used for generation of electricity. Available physical and chemical processes can be used to capture phosphorus and nitrogen for reuse, and bio-solids can be applied to agricultural fields or used for landscaping and parks, helping offset the high-energy costs of synthetic fertilizers.

**102nd BSCES Student Night**

**Thursday, April 10, 2014**

**Road Tripping through America's Infrastructure:**  
*11,000-miles in 1949 Detroit Lead-Sled Advocating for the Rebuilding  
of the Nation*

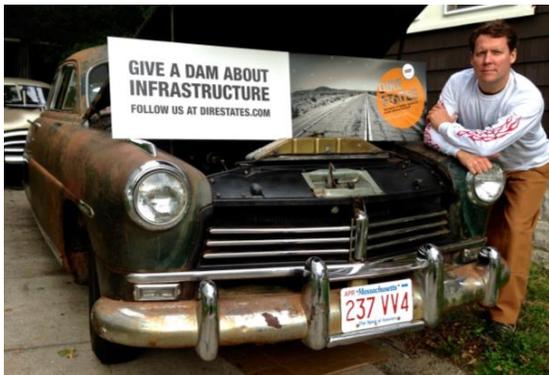
**Dan McNichol, PhD (Hon)**

**Wentworth Institute of Technology, Evans Way Auditorium  
550 Huntington Ave, Boston MA 02115**

**5:30 PM Social; 6:30 PM Dinner; 7:30 PM Presentation**

**\$20 Students**

**\$55 BSCES Members and Public Sector Non-Members,  
\$65 Non-Members, \$45 BSCES Public Sector Members, \$25 Senior Members (+65)**

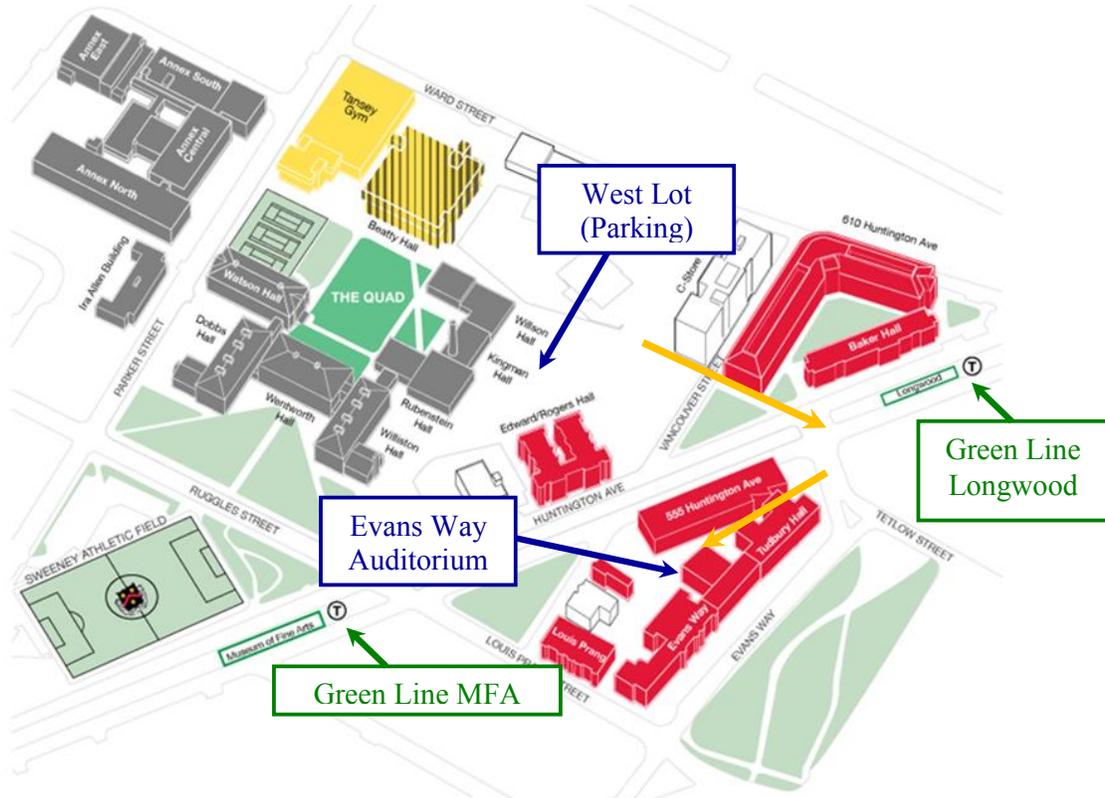


Dan McNichol is a best-selling author, journalist and thought-leader on infrastructure. Weeks ago on President's Day 2014 he completed his 11,000-mile circumnavigation of the United States in his 1949 Hudson while advocating for the rebuilding of America's infrastructure. As a White House Appointee, Dan was assigned to the United States Department of Transportation as a senior manager in the Federal oversight of the nation's transportation infrastructure.

The History Channel, Discovery Channel, and National Geographic amongst others, have illuminated McNichol's popular books in documentary form, bringing visual excitement to some of the nation's modern and most ambitious engineering undertakings. Recently, however, McNichol has been focusing on the need to re-invest, re-build and re-envision our nation's great infrastructural systems. During his 5 month journey to each corner of the country, McNichol sought out the good, the bad and the ugly that are our most vital civil systems. The American Society of Civil Engineers is supporting his efforts along with other powerful organizations such as the United States Chamber of Commerce and the Associated General Contractors of America. But it's the local initiatives that McNichol believes might prove pivotal in the race to rebuild as the world marches forward with modern facilities that are making ours antiquated.

# 102nd BSCES Student Night, Thursday, April 10, 2014

Wentworth Institute of Technology, Evans Way Auditorium  
550 Huntington Ave, Boston, MA02115



## Registration Deadline: Thursday, April 3, 2014

**Information/Registration:** Register to attend this meeting and pay by credit card online at <http://bit.ly/StudentNight2014>. 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 or if you have difficulties registering online 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 available at [www.bsces.org/downloads/bsceseventregform.pdf](http://www.bsces.org/downloads/bsceseventregform.pdf). Then mail or email this form with payment, to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108 or [bscesreg@engineers.org](mailto:bscesreg@engineers.org), respectively. Cancellations received after April 3 and no-shows will be billed.

Sponsored by the *BSCES Student Affairs Committee*,  
*Wentworth Institute of Technology ASCE Student Chapter*, and  
*Simpson Gumpertz & Heger Inc.*



Student Affairs Committee



American Society of Civil Engineers  
ASCE Student Chapter

SIMPSON GUMPERTZ & HEGER

Engineering of Structures  
and Building Enclosures





*Please Join Us for the...*

# YMGBrewery Tour and Tasting

Saturday, April 12, 2014 @ 4:00 PM

## Details:

- \$20 for members, \$30 for non-members, \$15 for students
- Ticket includes tour, tasting and food
- Tour and tasting includes 4 different samples of beer (beer is optional to attendees)
- Food will consist of appetizers which will be served directly after the tour
- A cash bar will be available after the tour



## **To Register:**

Register to attend this event and pay by credit card online at <http://bit.ly/YMG04-12-14>. 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 available at <http://bit.ly/BSCESRegForm> and follow the submission instructions.

## **Contact Info:**

If you have difficulties registering online, please call (617)227-5551  
For all other questions please email: [bscesymg@gmail.com](mailto:bscesymg@gmail.com)

Supported by the staff of The Engineering Center Education Trust

[www.bsces.org](http://www.bsces.org)



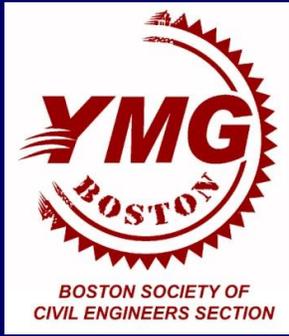
## FRANCIS M. KEVILLE ANNUAL DINNER

### JOINT MEETING – TRANSPORTATION AND CONSTRUCTION GROUPS

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- DATE:** Wednesday, April 16, 2014
- SPEAKER:** Thomas P Glynn  
Chief Executive Officer  
Massachusetts Port Authority
- PLACE:** Revere Hotel/Boston Common, Carver Ballroom  
200 Stuart Street, Boston, MA
- TIME:** Reception: 5:30 PM  
Dinner: 6:30 PM  
Speaker: 7:30 PM
- MENU:** Roasted Sirloin of Beef  
Table of 8: \$600  
BSCES Member: \$75  
Non-Member: \$85  
Public Sector Member: \$65  
Public Sector Non-Member: \$75  
Seniors: \$60  
Students: \$55
- REGISTRATION:** **Register by Friday, April 11, 2013.** Register to attend this meeting and pay by credit card online at <http://bit.ly/KevilleDinner2014>. 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 617/2275551. You can also register for this event by mail or email by downloading and completing a BSCES Event Registration Form at [http://www.bsces.org/bsces/file/BSCSEventRegForm\(1\).pdf](http://www.bsces.org/bsces/file/BSCSEventRegForm(1).pdf). Then mail or email this form with payment, to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108 or [bscesreg@engineers.org](mailto:bscesreg@engineers.org), respectively. Cancellations received after April 11 and no-shows will be billed.
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This joint meeting is dedicated to the memory of Francis M. Keville who, as Director of Construction at the MBTA, made an outstanding contribution to the transportation and construction fields.



*Please join us!*

# Red Sox Game at Fenway Park

Tuesday, April 29 or Tuesday, May 20, 2014

***Tuesday, April 29th***

vs. Tampa Bay Rays

7:10 PM

Bleachers Section 35 – \$30 per ticket

<http://bit.ly/YMGRedSox04-29>

***Tuesday, May 20th***

vs. Toronto Blue Jays

7:10 PM

Grandstand Section 2 – \$30 per ticket

<http://bit.ly/YMGRedSox05-20>

## ***To Register:***

*Register online by following the respective links above. Follow the link for information on paying by check. Tickets will be mailed at least 2 weeks prior to the game. Details for a pregame social will be enclosed with your tickets. Here's to a great 2014 season!*

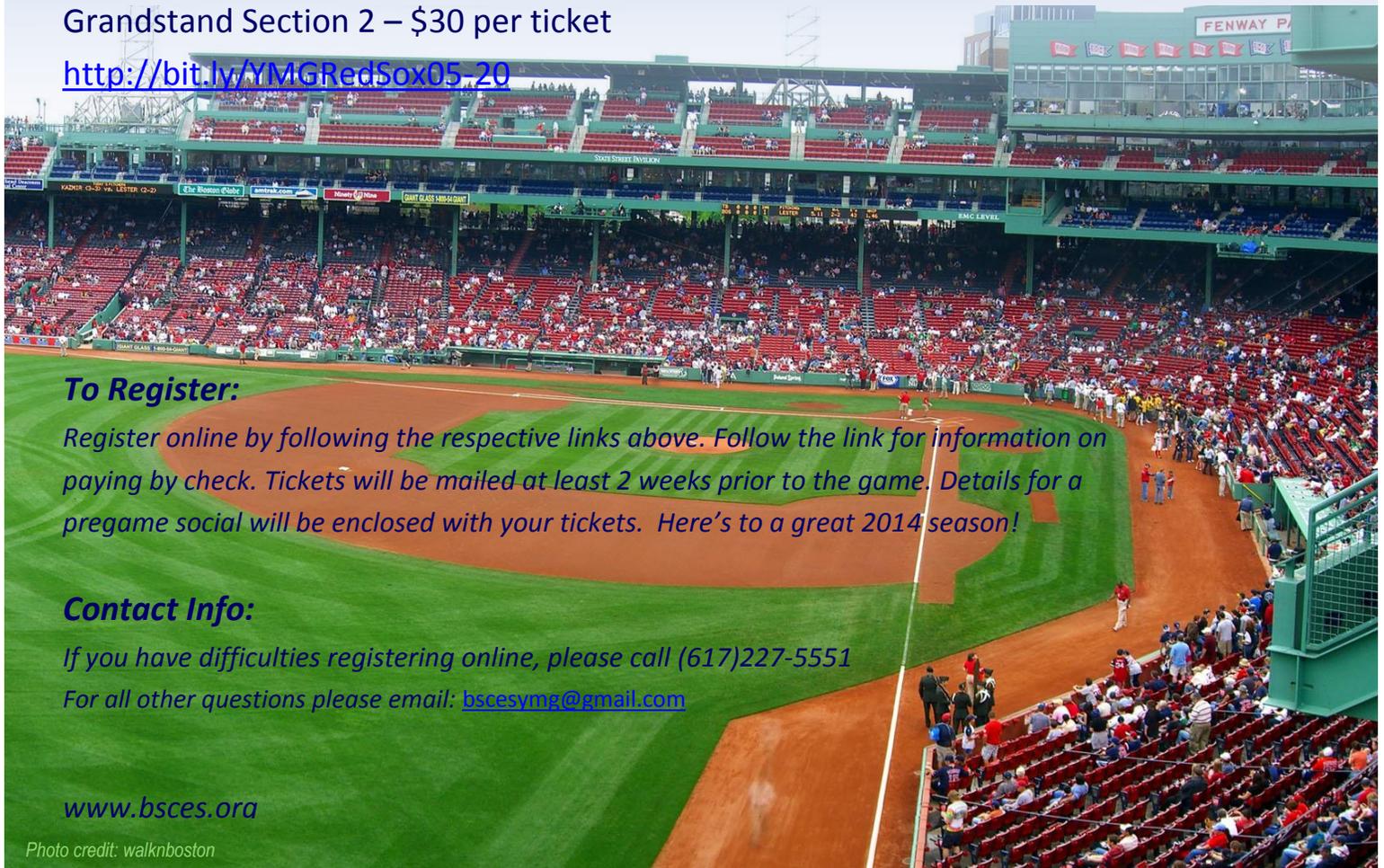
## ***Contact Info:***

*If you have difficulties registering online, please call (617)227-5551*

*For all other questions please email: [bscesymg@gmail.com](mailto:bscesymg@gmail.com)*

[www.bsces.org](http://www.bsces.org)

Photo credit: walknboston





*Boston Society of Civil Engineers Section  
American Society of Civil Engineers*

## **2014 EMPLOYER RECOGNITION AWARDS**

**To Publicly Reward Employers for Exemplary Employee Support**

*The Boston Society of Civil Engineers Section of the American Society of Civil Engineers Awards Committee invites you to nominate an organization to receive the Small Employer Recognition Award or the Large Employer Recognition Award. Please see the following awards description and page 2 of this form for nomination instructions. To be eligible to receive this award your award nomination must be received by the BSCES Awards Committee no later than Friday, June 7, 2013.*

As a means of fostering participation in Society activities, the Boston Society of Civil Engineers Section/ASCE has established an award to recognize those employers who encourage their engineers to actively participate in ASCE and BSCES. Special recognition will go to those organizations who exhibit exemplary support as evidenced by:

- Providing a model for involvement through organization-wide participation in local, regional, and national ASCE and BSCES activities.
- Allowing engineers time off to attend ASCE and BSCES meetings and seminars.
- Being sponsors of ASCE and BSCES meetings/ seminars or being sponsors of the BSCES Newsletter.
- Supporting and encouraging technical and professional growth.
- Encouraging engineers to prepare articles for publication in the BSCES Newsletter or ASCE and BSCES professional and technical journals.
- Assisting in the payment of ASCE and BSCES dues.

Members who want their organization to be considered for recognition should fill out the attached nomination form which describes their organization's level of support to ASCE and BSCES. The awards committee will review the nominations and select an exemplary small employer and a large employer in the Section. Organizations with less than 50 employees are eligible for the Small Employer Award. Awards will be presented at the 166th BSCES Annual Awards Dinner in the fall. Successful recipients will be considered for endorsement as potential (future) applicants for the ASCE Employer Recognition Award. No organization will be eligible to receive the award in consecutive years.

**NAME OF EMPLOYER:** \_\_\_\_\_

# Boston Society of Civil Engineers Section/ASCE 2014 EMPLOYER RECOGNITION AWARDS

*Complete and return this nomination form and attachment to the BSCES Awards Committee no later than Friday, May 16, 2014 to be eligible for the award.*

Nominator/Title: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Employer: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Title: \_\_\_\_\_

Office Address: \_\_\_\_\_ Website: \_\_\_\_\_

Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Please answer the following questions:

How many employees do you have? \_\_\_\_\_

How many are civil engineers? \_\_\_\_\_

How many civil engineers are members of ASCE?                      BSCES? \_\_\_\_\_

How many times in the last year have you provided sponsorship of BSCES meetings/seminars or sponsorship of the BSCES Newsletter? \_\_\_\_\_

Please attach a list of ASCE and BSCES Members in your organization.

For those engineers who are ASCE and BSCES Members, please answer the following questions:

What percentage of ASCE and BSCES dues are paid by the employer? \_\_\_\_\_

Does the employer pay for subscriptions to ASCE and BSCES technical or professional journals? \_\_\_\_\_

On average, how many Technical/Professional seminars (one day or longer) does each of your engineers attend annually? \_\_\_\_\_

Does the employer allow time for members to attend ASCE and BSCES activities? \_\_\_\_\_

How many technical/professional articles were published by your engineers within the last two years? \_\_\_\_\_

How many of your engineers are active on an:

BSCES Board of Government \_\_\_\_\_

BSCES Technical Group or Committee \_\_\_\_\_

ASCE Regional (District) Council \_\_\_\_\_

ASCE National Committee \_\_\_\_\_

*Please attach one 8.5 x 11 inch sheet (double sided) and describe any specific activities or policies which demonstrate your organization's support for involvement in ASCE and BSCES.*

Please return this completed form and the additional page if needed no later than Friday, May 16, 2014 to: BSCES Awards Committee, Boston Society of Civil Engineers Section/ASCE, The Engineering Center, One Walnut Street, Boston, MA 02108-3616. For questions contact BSCES Awards Committee Chair Robert Rottenbucher at 617/635-4863 or [robert.rottenbucher@boston.gov](mailto:robert.rottenbucher@boston.gov).

Thank you for your continued support of ASCE and BSCES.



# 2014 INDIVIDUAL SECTION AWARDS

Each year, BSCES presents awards to deserving individuals in the Section or in the community who are nominated by their peers in recognition of their service. **Here is your opportunity to nominate a co-worker, friend, or someone who you think deserves special recognition.** To submit a nomination, complete this form and return it to:

**BSCES Awards Committee, Boston Society of Civil Engineers Section/ASCE,  
The Engineering Center, One Walnut Street, Boston, MA 02108-3616**

The Nominations Deadline is **Friday, May 16, 2014**. The Awards Committee will review all nominations and present a list of candidates for selection by the Board of Government at their May meeting. Awards will be presented at the 166th BSCES Annual Awards Dinner in the fall.

I would like to nominate \_\_\_\_\_ For the:

\_\_\_\_\_ **CITIZEN ENGINEER AWARD:** This award is presented to a BSCES member or registered professional engineer for outstanding public involvement in local or national legislation, education (at any level), non-profit volunteer organizations, community activities, or similar activities improving the image of ASCE, BSCES and the civil engineering profession.

\_\_\_\_\_ **LESTER GAYNOR AWARD:** This award is presented to a BSCES member or registered professional engineer for part-time elected or appointed service as a city or town official, whose reimbursement for this service has not been more than an honorarium.

\_\_\_\_\_ **GOVERNMENT CIVIL ENGINEER AWARD:** This award is presented to a BSCES member who is serving as a paid public sector engineer at a federal, state, or municipal agency, department, or authority in Massachusetts.

\_\_\_\_\_ **CLEMENS HERSCHEL AWARD:** This award recognizes those individuals who have published papers, not necessarily published in the BSCES Journal, that have been useful, commendable, and worthy of grateful acknowledgment. If nominating for the Clemens Herschel Award, please attach the name of the paper and names of all authors, if co-authored.

\_\_\_\_\_ **RALPH HORNE AWARD:** This award is presented to a BSCES member or registered professional engineer for unpaid public service in a municipal, state or federal-elected or appointed post for philanthropic activities in the public interest.

\_\_\_\_\_ **JOURNALISM AWARD:** This award is to be presented to a member of the media who reports on engineering topics, particularly civil engineering, in a manner that benefits the profession. The Public Awareness and Outreach Committee reviews these nominations and recommends the recipient to the Board.

\_\_\_\_\_ **PRE-COLLEGE EDUCATOR AWARD:** This award is to be presented to a member of the K-12 educational community who integrates engineering topics, particularly civil engineering, in a manner that benefits the profession and may promote students to pursue an engineering career. The Public Awareness and Outreach Committee reviews these nominations and recommends the recipient to the Board.

\_\_\_\_\_ **TECHNICAL GROUP AWARD:** This award is given for papers which have been presented at a Technical Group meeting or for papers that were submitted to a Technical Group for review and recommended for publication by its Executive Committee. Each paper should be original (i.e., not contributed or published elsewhere). This award is open to all BSCES members.

\_\_\_\_\_ **YOUNGER MEMBER AWARD:** This award is intended to recognize a member, 35 years of age or younger on February 1 in the year of the award, who has made an outstanding contribution to BSCES.

Name and Company Address of Nominee(s)\*:

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Is this a re-nomination? Yes \_\_\_\_\_ No \_\_\_\_\_

**\*Please attach a brief (no more than one page) explanation of the candidate's qualifications for nomination.**

Your Name: \_\_\_\_\_ Daytime Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

**NOTE:** *If you nominated someone last year who was not selected, you may re-nominate the individual(s).*

**QUESTIONS:** *Contact BSCES Awards Committee Chair Robert Rottenbacher, 617/635-4863, [robert.rottenbacher@boston.gov](mailto:robert.rottenbacher@boston.gov).*



## ***Bertram Berger Young Engineer Award***

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### ***Call For Nominations***

The BSCES Transportation Group is now accepting nominations for the **Bertram Berger Young Engineer Award**. The 27th Annual Bertram Berger Young Engineer Award serves to recognize an outstanding younger member of the Boston Society of Civil Engineers Section/ASCE for his or her professional achievements and service to the community. The successful candidate should: 1) be less than 35 years old on April 30, 2014; 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 2014 and will be presented with the Award at the upcoming Annual Bertram Berger Seminar and Luncheon on May 21, 2014.

To nominate an individual for the Bertram Berger Young Engineer Award, please submit a three (3) or fewer page narrative statement describing how the nominee meets the above described criteria. Nominations will be accepted until 5:00 PM on **Friday, April 11, 2014** and should be submitted via mail or e-mail to:

Mr. Kurt Jelinek, PE, Nobis Engineering, Inc., 585 Middlesex Street, Lowell, MA 01851, e-mail: [kjelinek@nobiseng.com](mailto:kjelinek@nobiseng.com), phone: 978/683-0966.

February 2014

## Announcement of the 2014 \$5,000 Simpson Gumpertz & Heger Scholarship

### To Prospective Applicants:

The Principals of Simpson Gumpertz & Heger Inc. (SGH) have established the Simpson Gumpertz & Heger Scholarship with the Boston Society of Civil Engineers Section/American Society of Civil Engineers (BSCES) to encourage undergraduate college students who strive for excellence and who aspire to a career in civil engineering. It has been our experience as a firm and as individuals that the field of civil engineering provides technically challenging assignments while offering an opportunity to make a significant contribution to society.

SGH supports the civil engineering profession and wishes to encourage gifted students in the pursuit of their careers. We welcome your participation in this scholarship opportunity.

### What is the Simpson Gumpertz & Heger Scholarship?

SGH established this scholarship with BSCES in 1997 to encourage students in the pursuit of civil engineering as a profession. In 2014, the scholarship amount will be \$5,000 in the form of a check presented to the scholarship winner.

### Who may apply?

All undergraduate-level civil engineering majors who are members of an ASCE Student Chapter or Club in Massachusetts, who have completed a minimum of two-and-one-half years of a four-year program (or the equivalent portion of a five-year or part-time program), and who expect to complete their undergraduate degree in May 2014 or later are eligible to apply for this scholarship.

### Review of the Application

Applications will be judged with equal weight given to three categories: professional presentation in the letter of introduction and resume, quality of ideas expressed and clarity of communication demonstrated in the one-page essay, and capabilities reflected in college/university transcript(s).

A three-person committee consisting of two representatives of BSCES and one Principal of SGH will judge applications. Decisions of the committee will be final. Leading candidates may be asked to meet with members of the review committee. BSCES reserves the option of publishing applicants' essays in *BSCES News* and/or *Civil Engineering Practice*.

### Presentation of the Award

The recipient of the scholarship will be announced at the 2014 BSCES Student Night the evening of Thursday, 10 April 2014 at Wentworth Institute of Technology. The award recipient will be notified in advance of the meeting and will be invited to attend Student Night as a guest of SGH.

## Simpson Gumpertz & Heger Scholarship 2014 APPLICATION

### How to apply

Students interested in applying for the Simpson Gumpertz & Heger Scholarship are asked to submit the following:

- A one-page letter introducing the applicant and summarizing their qualifications.
- A resume demonstrating the applicant's academic record, professional employment (in engineering or related fields), other employment, professional activities (membership and participation in professional organizations such as ASCE, SWE, EWB, etc.), and personal items of interest.
- A one-page essay demonstrating the applicant's writing ability and expressing original thought. The topic for the 2014 essay is the following:

The "Greatest Generation" – parents of the baby boomers and grandparents of many of today's college students – built much of the infrastructure we use daily. Their children were key to social changes we take for granted and those still in the works – such as environmental awareness. Those coming of age this millennium have many challenges, not the least of which is re-defining and re-building our decaying infrastructure.

ASCE includes dams, drinking water, hazardous waste, levees, solid waste, wastewater, aviation, bridges, inland waterways, ports, rail, roads, transit, public parks and recreation, schools, and energy in its evaluation of America's infrastructure. In 2013, ASCE issued their latest Report Card for America's Infrastructure (<http://www.infrastructurereportcard.org>), assigning an overall grade of D+ and estimating \$3.6 trillion in infrastructure investment is needed by 2020 to bring US infrastructure up to modern standards.

Identify a *specific* piece or segment of infrastructure from your everyday life that you feel is in need of improvement. (Improvements can be large such re-imagined transportation system, as "concrete" as a bridge replacement, or small such as adding bicycle storage at a public transportation stop to improve utilization.) Propose an improvement scheme and develop an argument to convince the public why this improvement is needed.

Possible points to consider include why the infrastructure is deficient, the design life for the improvement, how the work should be funded, and the impact on the public during and after implementation. Are the costs worth the benefits?

- Official college and/or university transcript(s).

### Send hard copy applications to:

Simpson Gumpertz & Heger Scholarship Committee  
Boston Society of Civil Engineers Section/ASCE  
The Engineering Center  
One Walnut Street  
Boston, MA 02108-3616

### For more information, please contact:

Brent Bass, PE (MA)  
Simpson Gumpertz & Heger Inc.  
781-907-9000 or [bjbass@sgh.com](mailto:bjbass@sgh.com)

Applications can be submitted by hard copy to the address above or e-mailed (PDF format) to Brent Bass at [bjbass@sgh.com](mailto:bjbass@sgh.com) with the subject "SGH Scholarship". Applications must be received by 5:00 p.m. on Monday, 31 March 2014. If submitting electronically, a hard copy application must also be received at the above address no later than 5:00 p.m. on Wednesday, 2 April 2014. Applications will not be returned.



## 2014 ERNEST A. HERZOG AWARD CALL FOR PAPERS

### BACKGROUND

Ernest A. Herzog was a nationally recognized civil engineer. During his career, he served a term as president of the Boston Society of Civil Engineers Section and was also a fellow of the American Society of Civil Engineers (1987).

Mr. Herzog began his career with Spencer, White and Prentis at the atomic energy facility in Oak Ridge, Tennessee. After World War II, he transferred to a Boston-based firm named Chas. T. Main Inc. Eventually, Mr Herzog joined the firm of Alonzo B. Reed Inc. where he progressed into the highest role of president and remained in that role for 20 years thereafter.

While in the transportation field, Mr. Herzog was actively involved in the design and construction of the monorail used at the 1962 Seattle World's Fair. This monorail, which is still in use today, has served as the prototype for several other monorail systems including those at Disney Land in Anaheim, California, Disney World in Orlando, Florida, and one in Tokyo, Japan. In fact, Mr. Herzog was a strong and persistent advocate of a monorail system to serve Boston's south shore communities to relieve the traffic congestion on the Southeast Expressway.

In 1973, Mr. Herzog co-founded Herzog-Hart, a full-service engineering firm that specializes in the design and construction of research and production facilities for the pharmaceutical and process industries.

Mr. Herzog was well known for his generous support of and encouragement to young college students and young professionals just at the onset of their careers. He lectured at Tufts University, Dartmouth College, University of Massachusetts, and Northeastern University. He also wrote and published numerous papers, particularly concerning the effects of transportation systems on society.

In memory of Mr. Herzog's commendable career achievements, the Ernest A. Herzog Award was established to promote an awareness of and to recognize innovative improvements to infrastructure.

### PAPER GUIDELINES

Submitted papers shall present an infrastructure project, innovation, or idea in which the author was actively involved in as an owner, advocate, engineer, or end-user. The paper must be well written and address specific benefits to current professional practices, lifestyle, and/or sustainability through the application of existing or innovative technologies or methods. Areas of application may include design, construction, operation, maintenance, management or financing of infrastructure components or systems.

### RULES

- A. The paper should be original and not be less than 2,000 words and not more than 6,000 words. The paper should clearly describe the project, innovation, or idea and highlight benefits to the current engineering and construction practices. Graphic material including photographs should

be included to highlight specific areas of the project. The paper may have been previously published in a journal.

- B.** 3 copies of the papers shall be submitted to:  
BSCES/ASCE  
The Engineering Center  
One Walnut Street  
Boston, Massachusetts 02108-3616  
Attn: BSCES Infrastructure Group,  
Herzog Award Committee

An electronic copy should also be sent to [paul.savard@parsons.com](mailto:paul.savard@parsons.com)  
Deadline for submittal: **Friday, April 18, 2014.**

- C.** The recipient will be invited to give a short presentation on the paper at the BSCES Infrastructure Group Online Bridge Design Contest Awards Celebration on May 14, 2014. Original papers may be submitted (with authors permission) for publication in the semi-annual BSCES Journal and for BSCES Annual Awards (celebrated in September 2014).

## **REVIEWERS**

The BSCES Infrastructure Group Herzog Award Competition Subcommittee.

## **EVALUATION CRITERIA**

Topics for the papers shall be related to one or more of the fifteen infrastructure systems defined in ASCE's infrastructure report card (see <http://www.infrastructurereportcard.org/>). Papers are evaluated by the reviewers on the basis of the following criteria:

- A.** Technical writing; organization, graphics, grammar, and technical accuracy (30%)
- B.** Benefits to the current design, construction, operation, maintenance, or financing practices of infrastructure (20%)
- C.** Innovation; uniqueness of concepts (10%),
- D.** Benefits to lifestyle of the general public or other end-users (20%)
- E.** Sustainability, life-cycle cost benefits, or cost effectiveness (20%)

## **AWARD**

The award presentation will be made at the BSCES Infrastructure Group Bridge Design Contest Awards Celebration on May 14, 2014. The recipient will receive a \$1000 award and a memorable plaque.

## **BSCES INFRASTRUCTURE GROUP**

Infrastructure is defined as all existing public and publicly regulated facilities necessary to support social and economic need including, but not limited to, the following: roads and highways, bridges, railroads, mass transit, airports, navigable waterways, energy and water supply and distribution systems, wastewater collection and treatment systems, stormwater collection systems, dams and flood control facilities, solid waste disposal systems, parks, electric facilities, natural gas facilities, communications systems and schools. The BSCES Infrastructure has the mission of spreading awareness of infrastructure within and beyond the engineer community. Anyone wishing to join the Infrastructure Group should contact our chair Paul Savard ([paul.savard@parsons.com](mailto:paul.savard@parsons.com)). Meetings are held monthly.