



The electrical and telecommunications industry news in Eastern MA, ME, and NH

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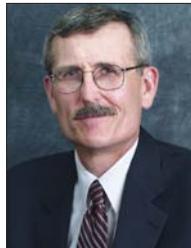
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POWERPOINTS

A Message from the Executive Manager

NECA Boston Chapter Supports Project Labor Agreements (PLAs) for Commonwealth
Employment, wages, training, on-time project delivery, taxpayer savings are among many benefits

While Massachusetts' economy emerges from the Great Recession in better shape than many other states, thousands of people – particularly construction workers – are still unemployed. Thankfully, Gov. Deval Patrick recognizes what some industry insiders, such as the Associated Builders and Contractors of Massachusetts, do not: Project Labor Agreements (PLAs) increase employment pathways and save taxpayers money.



Glenn Kingsbury

An accord between the owner and the contractors, PLAs identify acceptable terms and conditions of employment on a specific construction project. Wages, benefits, schedules, safety expectations and work rules are standardized up front to facilitate the smooth completion of the job on time and on budget. PLAs also foster a positive community impact by encouraging career development, training and outreach programs. They are common around the country, and President Barack Obama endorsed their application on federal projects over \$25 million in value. There are well over 20 studies by academia showing PLAs deliver responsible, cost-effective economic development.

Gov. Patrick recently approved a PLA for the \$260 million second phase of the Longfellow Bridge reconstruction between Boston and Cambridge. Gov. Patrick understands a PLA lays the groundwork for finishing this complex, four-year job as efficiently as possible at a time when commerce relies on stable infrastructure more than ever. For similar reasons, he also recently declared the \$285 million Whittier Memorial Bridge rebuild a PLA job.

Shining PLA examples are abundant in the Commonwealth. The \$80 million Taunton Courthouse was built ahead of schedule and \$6 million under budget. UMass Boston's Integrated Science Building is currently ahead of schedule and has surpassed hiring goals for women, minorities, and Boston residents. Last summer, contractors rebuilt 14 bridges on Interstate 93 over just 10 weekends – all early, \$30 million cheaper than the non-union bid, and with minimal traffic disruptions. Several other Massachusetts entities have utilized PLAs, including the Boston Housing Authority, Bristol-Myers Squibb, Mass General Hospital, Harvard University, Fidelity, the New England Patriots, Northeastern University, the Massachusetts Water Resources Authority, and Logan International Airport.

Through PLAs, contractors – union or not – receive instant access to uninterrupted, on-demand supplies of trained craftspeople. Certified apprenticeships and labor

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INDUSTRY NEWS

J. F. White Electrical Earns Top NECA Safety Honor

Bethesda, MD – NECA Boston Chapter member J. F. White Electrical of Framingham has been awarded NECA's Zero Injury Award. The company was recognized for having worked the entire year without a recordable incident, and one of only 12 contractors in NECA's District 1 (CT, MA, ME, NH, VT, RI, NY and NJ) to have met that standard. All award winners will be recognized in the August issue of *Electrical Contractor* magazine.

MEMIC Honors E.S. Boulos Company for Outstanding Workplace Safety

Portland, ME – In June, E. S. Boulos Company, Inc., of Westbrook, ME, was recognized by workers' compensation insurer Maine Employers' Mutual Insurance Company (MEMIC) for outstanding workplace safety. The NECA contractor received the safety award at MEMIC's annual meeting and was one of only six out of 20,000 policyholders to have been honored. Karl Siegfried, MEMIC Assistant VP for Loss Control and Safety, paid tribute to the awardees.

NECA Contractors Attend MEI Hard Hat Productivity Course

Boston, MA – On June 12 and 13, 27 project managers, supervisors, foremen and safety directors from NECA Boston Chapter member companies attended the "Hard Hat Productivity" Management Education Institute (MEI) course at the JATC Industry Training Center in Boston and in Portsmouth, NH. Employees of J. & M. Brown Company, State Electric Corp., LAN-TEL Communications, J.M. Electrical, E.S. Boulos Company, Scarponi Electric, Yates Electric Service, and Ayer Electric earned CEU credits and enhanced skills in jobsite productivity.

Harvard-Smithsonian Ctr. Connects with NECA Boston for Electrical Usage and Safety Video

Boston, MA – Ronald Koning, Jr., president of State Electric Corp., served as the electrical industry spokesperson in the educational video produced by the Smithsonian-Harvard Center for Astrophysics. It was filmed in May at the JATC Training Center in Boston. Koning serves on the Chapter's Board of Directors and chairs the Education Committee. Smithsonian will launch the video on a special site later this summer. Preview at <http://youtu.be/MCJ6gkhSAJY>.



CONNECTIONS

CONNECTIONS is a quarterly publication of the Boston Chapter of the National Electrical Contractors Association / Electrical Contractors Association of Greater Boston, Inc., 106 River Street, West Newton, MA 02465. Phone 617-969-2521.

Mission: CONNECTIONS is designed to provide information relating to current happenings in the electrical construction industry in Eastern Massachusetts, Maine, and New Hampshire and to report activities of the Boston Chapter of NECA and its members. Your comments are welcome. We can be reached via e-mail at: info@bostonneca.org



INSTALLATIONS

An inside look at recent projects completed by NECA Greater Boston Chapter members

J. & M. Brown Company Awarded Electrical Construction of 11-story Longwood Center

GC: John Moriarty & Associates, Winchester, MA; Architect: Elkus Manfredi Architects, Boston, MA

Boston, MA – Boston's vibrant life science and health care community will have a dynamic new facility in the heart of the Longwood Medical area, as Alexandria Real Estate Equities, Inc. has begun construction of the 414,000 square foot, 11-story Longwood Center tower at the intersection of Longwood and Brookline Avenues. NECA Boston Chapter contractor J. & M. Brown Company, of Jamaica Plain, MA, is underway with the project's electrical construction.

Dana-Farber Cancer Institute will be the anchor tenant, occupying 154,000 square feet in the mixed-use life science center. Designed by Elkus



Rendering: Elkus Manfredi Architects

Manfredi Architects of Boston, the facility will have nine floors of lab, research, and medical office

space, with retail at street level. Two mechanical floors will accommodate laboratory requirements and the building will have three floors of underground parking.

The Longwood Center is a joint venture consisting of Alexandria Real Estate Equities, based in California, National Development of Newton, MA, Charles River Realty Investors, of Newton Lower Falls, MA, and Clarion Partners of New York.

J. & M. Brown is on a project team headed by general contractor John Moriarty & Associates of Winchester, MA. The project is targeted for completion in the fall of 2014. ■

Mass Bay Electrical Underway with \$1.1M Electrical Construction of New MBTA Yawkey Rail Station

GC: Walsh Construction, Canton, MA and Chicago, IL; Developer: Meredith Management, Newton, MA

Boston, MA – Construction of the Massachusetts Bay Transportation Authority's new Yawkey Station, adjacent to Fenway Park, is underway. The \$13.5 million, state-funded commuter rail station project is being developed by Meredith Management Corp. of Newton, MA. NECA contractor Mass Bay Electrical Construction of East Boston was awarded the \$1.1 million electrical subcontract and is in early phase electrical construction of the facility. Mass Bay's scope includes:

- New Underground Electrical Service: installation of the facility's (UG) 400A, 277/480V 3-phase, 4-wire electrical service;
- Power Distribution throughout the station;



Rendering: Meredith Management

- Emergency 225KVA generator;
- Interior and Platform Lighting as well as LED luminaire lighting on exterior poles;
- Security/Communications System – CCTV, Access Control system; PA System, electronic signs; passenger emergency; and,
- Fire Alarm System

Mass Bay Project Manager Gordon Whitaker will supervise the electrical project. The NECA contractor will manage a field crew ranging from three to five IBEW electricians throughout the 18-month project, which has a targeted completion in September 2013. Walsh Construction of Canton, MA, and headquartered in Chicago, IL, is the project's general contractor.

Yawkey Station will be the first "zero net energy" MBTA facility in the state. The station is the closest stop to the Longwood Medical area and Fenway Park and will access South Station traveling eastbound, and Framingham/Worcester traveling westbound. ■

E.S. Boulos Completes Bigelow Laboratory for Ocean Sciences - Building B in East Boothbay, Maine

CM: Consigli Construction of Portland, ME; Ocean Biogeochemistry and Climate Change Facility (OBCC)

East Boothbay, ME – E.S. Boulos Company (ESB) of Westbrook, ME completed the \$600,000 electrical construction of Bigelow Laboratory for Ocean Sciences - Ocean Biogeochemistry and Climate Change (OBCC) facility in East Boothbay. Bigelow Laboratories took occupancy of the facility in June.

The NECA Boston Chapter/Maine Division contractor teamed with CM Consigli Construction in the fast-track 11-month project. The Bigelow Laboratory, Building B is an 18,500 square foot, two-floor facility and an integral part of a multi-phased new build-out project for Bigelow Laboratory's Ocean and Science Education Campus.

The project scope included installation of new electrical service, primary power distribution equipment, state-of-the-art lighting and lighting



controls, security system, fire alarm system, as well as the facility's generator and emergency power system. ESB Project Manager Joe Bradley and General Foreman Gene Flaherty supervised a field crew of IBEW Local 567 electricians, based in Lewiston, ME. Steve Saucier served as ESB's

Project Engineer. The Bigelow OBCC project has been performed with strict compliance to all American Reinvestment and Recovery Act (ARRA) guidelines.

Bigelow Laboratory for Ocean Sciences seeks to understand key processes driving global ocean ecosystems, their evolution, and their fundamental relationship to life on Earth. The Laboratory's research ranges from microbial oceanography — examining biological productivity and phytoplankton community dynamics in the world's oceans at the molecular level — to the large-scale biogeochemical processes that drive interactions between ocean ecosystems and global environmental conditions. (Source: Bigelow Laboratory for Ocean Sciences website) ■

INSTALLATIONS

An inside look at recent projects completed by NECA Greater Boston Chapter members

Broadway Electrical Awarded Design/Build of 44 Energy Systems Totaling 49 MW of Solar Power On Cape Cod and Martha's Vineyard

NECA Boston Chapter contractor partners with Cape and Vineyard Electric Cooperative

Barnstable, MA – In April, Broadway Electrical Company of Boston was awarded the Cape and Vineyard Electric Cooperative (CVEC) Round II solar photovoltaic (PV) contract. The award consists of two tiers: Tier I is 25.833 MW of solar, while Tier II is an additional 23.538 MW.

The announcement of the major renewable initiative was held at Barnstable Village Superior Courthouse and was attended by state and local officials, including Massachusetts Department of Energy Resources Commissioner Mark Sylvia. (See photo above.)

Broadway was selected to design and install 44 solar PV systems totaling 49 MW of solar energy throughout Cape Cod and Martha's Vineyard. The systems will provide Cape and Vineyard



Photo: CVEC

municipal entities electricity at a defined - fixed for 20 years - per kilowatt hour rate, helping protect town budgets from future volatile energy prices.

"CVEC selected Broadway Electrical as its partner for round II of the PV contract because of their wide-ranging track record in facilities around New England, their comprehensive approach to solar projects, and their strong record in meeting performance guarantees," said

Charles McLaughlin, President and Town of Barnstable Director, Cape & Vineyard Electric Cooperative. "This project is a significant contribution towards a sustainable Cape Cod and Martha's Vineyard. The groundwork laid by this project and its project investors will pay great dividends for our town in the years to come."

The project is expected to result in significant annual cost savings to all of the CVEC member towns and counties. McLaughlin said the first set of 31 projects is expected to generate 31 million kilowatt hours of electricity, saving cooperative members more than \$2 million per year.

"This project would not have been possible without CVEC's commitment and dedication to renewable energy," said Jonathan Wienslaw, President, Broadway Electrical Company, Inc. "These projects will provide a more efficient energy system to the community and will continue to help reduce the towns' utility bills throughout the upcoming years."

CVEC will grant Broadway rights to design, procure, install, test, commission, own, operate, and maintain the PV system at the 44 sites. Broadway is responsible for all permits and approvals necessary to develop the PV systems at the sites, including MA DEP post-closure use of landfills. Operation of the first projects could begin by the start of 2013. ■

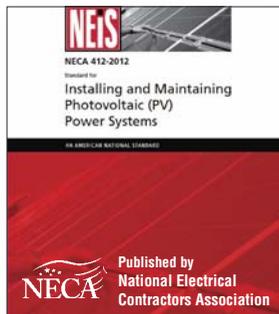
SOLAR INSTALLATION NEWS

NECA's Standard on Solar Photovoltaic System Installation Available

NECA 412-2012 Installation Standard Designed to Help Keep Building Owners, Occupants Safe

Bethesda, MD – NECA 412-2012, Standard for Installing and Maintaining Photovoltaic Systems (ANSI) is now available from the National Electrical Contractors Association (NECA). This highly anticipated standard describes the application procedures for installing photovoltaic (PV) power systems and components. NECA 412 complements the National Electrical Code (NEC) rules with essential information about quality and performance aspects of the photovoltaic equipment that transforms solar energy into electric power. This installation standard covers performing site assessments, designing PV systems, and determining the correct PV equipment to ensure desired results, quality, and acceptable returns on investment customers expect.

The new NEIS™ will assist professionals



"Photovoltaic installation is a type of electrical installation that should be always performed by qualified installers and qualified contractors, as required in the NEC. Customers should never forget that they're essentially installing a power generating station on their building. To protect the property and the occupants, they should always have a qualified electrical contractor oversee the installation."

- Michael Johnston, NECA Executive Director of Standards and Safety

and contractors alike in understanding appropriate positioning of PV arrays, calculating the amount of PV needed for a given facility, and essential information related to necessary interconnections for interactive systems. NECA 412 is a must for organizations involved with providing solar photovoltaic power system installation and maintenance services.

NECA 412 applies to the installation of low-voltage AC and DC photovoltaic power systems, rated 1000V and less, for grid-connected and stand-alone operation for residential, commercial,

and industrial applications.

To order, visit <http://www.necanet.org/store> under "Codes and Standards" publications, or call NECA at (301) 215-4504.

About NEIS: NEIS™ are the only ANSI-approved performance and workmanship industry standards for electrical construction. NEIS are used by construction owners, specifiers, and contractors to clearly illustrate the performance and workmanship standards essential for different types of electrical construction. NEIS are also referenced throughout the National Electrical Code. ■

Continued from page 1 POWERPOINTS NECA Boston Chapter Supports PLAs for Commonwealth

dispatching services are time-tested PLA hallmarks prevalent in the unionized building trades and lend well to complicated projects that require varying amounts of specialized manpower.

Sadly, PLA opponents cannot overcome their

anti-union sentiments to see that PLAs prescribe what our recovering economy needs most – local jobs, fair wages, training opportunities, and responsible spending of taxpayer funds. The 100-plus Massachusetts-based employer-mem-

bers of the National Electrical Contractors Association proudly join Gov. Patrick in supporting PLAs for the Commonwealth. ■

SHOPTALK

An interview conducted with electrical industry professionals on issues impacting the construction industry.

The Importance of Building Information Modeling (BIM) Technology in Project Estimating, Planning and Construction

Building Information Modeling (BIM) is rapidly becoming a mainstream technology utilized in many construction projects in Greater Boston and throughout the U.S. In a recent interview, **Vicki Fortino, project coordinator for Boston NECA contractor E.G. Sawyer Company, of Weymouth, MA, discussed the benefits of working projects with a BIM platform.** Editor's note: E.G. Sawyer Company, founded in 1864, is the nation's oldest continuously operating electrical construction company.

Q Does E.G. Sawyer have a team dedicated to BIM and are the team members both on the design and project management sides of the business?

A On E. G. Sawyer projects, the BIM work is a collaboration between the project coordinator, the project manager and the general foreman. The PM is actively engaged as the person most knowledgeable about how the project was estimated. Building the electrical model is a team effort, largely between the coordinator and foreman. That collaboration results in BIM drawings that are effective tools for the field crew in building the job.

Q Has the utilization of BIM made project estimating and project planning more efficient?

A A successful project plan requires detailed thinking about the work, which is exactly what happens during the process of building the model of the electrical installation. Modeling the conduit work and equipment in advance enables problems to be identified and resolved through the RFI and coordination process, long before the field work begins. On the estimating side, there is certainly potential to streamline the take-off process but the model from the design team is generally not available at bid time and may contain inaccuracies that are not apparent on the paper drawings. For change orders, the final coordinated model can be an excellent tool in illustrating the difference between the design intent and the actual conditions that required the change.

Q Please comment on improved conflict identification and resolution in the planning and installation of MEP systems through the use of BIM.

A Most projects now use Navisworks software for model assembly and conflict resolution. It enables a full rendering of architectural, structural, and MEP elements with the ability to walk and fly through the space. Conflicts can often be visually located as the model is being constructed. It is invaluable to us in the electrical industry because we are typically last in line, after the other trades have built their models. With designers leaving less and less space for the MEP

work, it can be nearly impossible to find routes for conduits and cable trays through the maze of mechanical work. Since there are always conflicts that miss the visual inspection, the automated clash detection identifies issues. Most CMs have a skilled virtual technology engineer that manages and groups the clashes and issues reports by trade, often with assignments for the trade designated to move. If there is a commitment to the process, the work can be handed over to the field crew, virtually conflict free.



E.G. Sawyer Co. Project Coordinator Vicki Fortino, PM Rick Goulet, and GF John Cullen (r) review BIM plans at UMASS Boston Integrated Science Center project.

Q How does the BIM process help allow for prefabrication?

A Accurate modeling of conduit systems enables unistrut supports to be prefabricated, support points to be predrilled or imbeds accurately set in the concrete pours, and pull boxes to be predrilled, ready for installation.

Q How is the construction process streamlined in projects that are designed and built using a BIM platform?

A Generally, BIM projects are better planned and organized. When coordination is taken seriously and the design team is actively engaged to help solve problems in the pre-construction phase, the benefit is reduced risk to all stakeholders. Field productivity is improved by minimizing lost time, wasted materials and rework, keeping the project on schedule. One of the biggest benefits of BIM is it enables the work to be properly sequenced. Some CMs effectively use the model to better organize the field work and reduce stacking of trades.

Q From the owner's perspective, what are the major benefits?

A BIM forces the work to be fully planned before construction begins, resulting in a better constructed building for the owner. Space and design problems get fleshed out early in the project, allowing a more thoughtful resolution. Owners do not find out at the finish stage of projects that ceilings need to be lowered to accommodate the MEP work. Fewer surprises keep work schedules on track. Modeling access zones and clearance areas around equipment ensures that facilities personnel have adequate space to maintain the building systems. ■

NECA Contributes to National BIM Standard – Now Available



Washington, DC – The National Institute of Building Sciences' buildingSMART alliance—www.buildingsmart-alliance.org/—recently released the first-ever consensus-based standard governing Building Information Modeling (BIM) for use in the United States. NECA contributed significantly to its development.

National BIM Standard - United States™ NBIMS-US™ Version 2 covers the full life cycle of buildings — from planning, design and construction to operations and sustainment. It was unveiled May 17 during the 2012 American Institute of Architects (AIA) Conference and Expo in Washington, D.C.

The recent widespread adoption of BIM and 3D modeling has necessitated the development of a well-defined and repeatable framework for installation level spatial coordination of mechanical,

electrical, plumbing, and fire protection systems (MEP). NECA, along with the Mechanical Contractors Association of America (MCAA) and the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), co-developed a definition for construction spatial coordination into the new standard. To download the BIM standard, visit www.nationalbimstandard.org/user_questionnaire.php ■

For a complete directory of NECA Greater Boston Chapter members, visit www.bostonneca.org