POWERPOINTS

A Message from the Executive Manager

NECA Boston Chapter Contractors Power the Future for Biotech and Healthcare

West Newton, MA – The healthcare, biotechnology and life science communities in Greater Boston are internationally respected as pioneers and leaders in their respective fields and disciplines. The great facilities that support the brilliant men and women who provide the finest in health care services and research are indeed state-of-the-art, enabling advancements in these fields that impact our lives and quality of life on a daily basis. Many have been constructed by Boston Chapter NECA members.

World class cancer research and treatment is ongoing at such acclaimed healthcare and research facilities as Dana-Farber Cancer Institute, Mass General Hospital, Brigham & Women’s Hospital, Beth Israel Deaconess Medical Center, Children’s Hospital, New England Medical Center, and Boston Medical Center. The region’s finest educational institutions, including Harvard University and Massachusetts Institute of Technology, are also providing unparalleled research in the life sciences and biotechnology, all at state-of-the-art facilities. World leading biotechnology and pharmaceutical companies, including Amgen, Novartis, Ironwood Pharmaceuticals, and Vertex Pharmaceuticals, to name just a few, all have drugs and product pipelines helping shape a better, healthier way of life.

The Boston Chapter of NECA and our members understand the ever-growing importance of the healthcare and biotechnology markets to the world and our community. Many of our contractors know, firsthand, the significance of building a great facility for the institutions and companies, and physicians and scientists that are continually making technological advancements while delivering the best healthcare available anywhere in the world. The healthcare and biotech communities are indeed bright, growing and vibrant sectors within a world economy looking for a ray of hope.

It is with a sense of great pride and accomplishment, and an unwavering commitment to quality and safety in each construction project, that the electrical contractors of the Boston Chapter NECA provide electrical and tel/data installations that reliably power, light, protect, and secure many of our region’s leading biotech, healthcare and life science facilities. In this issue of Connections, we showcase just some of these outstanding facilities and workmanship recently undertaken by our contractors.

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Eight NECA Boston Chapter Members Provide Electrical, Tel/Data Installations at State-of-the-Art Center for Life Science/Boston in Longwood Medical Area


B oston, MA – The new Center for Life Science/Boston, located at 3 Blackfan Circle in the heart of the Longwood Medical Area, is already regarded as one of the preeminent research facilities in the world. Eight NECA Boston Chapter contractors have recently provided the comprehensive electrical construction and telecommunications services for the facility and its tenants – Bennett Electrical, Inc.; Gaston Electrical Company, Inc.; Mass. Electric Construction Co., Inc.; LAN-TEL Communications, Inc.; Lighthouse Electrical Contracting, Inc.; Infowires Contracting, LLC; J.M. Electrical Company, Inc.; and Viscom Systems, Inc.

The medical research conducted at Center for Life Science/Boston spans diverse areas of medicine, providing the promise and basis for critical medical advancements. As examples, BIDMC bases its Genomics and Proteomics Center and Flow Cytometry Core facility for Dana-Farber/Harvard Cancer Center here. Children's Hospital Boston researches such complex areas as neurological disorders, neurobiological matters, and central nervous system injuries, including optic nerve regeneration and spinal cord injuries. IDI, according to their website, is a world leader in immunology research and is focused on immune defense and inflammation with a concentration in adhesion molecules/inflammation; autoimmune/ allergy; genetics of immunodeficiency and cancer and immune defenses against infectious diseases, viruses, and tumors.

Building owner BioMed Realty Trust, Inc. of San Diego recently announced that with the lease of 24,000 square feet to Kowa Company Ltd. of Japan – a pharmaceutical company with a focus on research for cardiovascular disease, and with the recent lease expansion for Children's Hospital Boston, the Center for Life Science/Boston is 91 percent leased. The Life Science Center/Boston has received Gold status pre-certification by the Leadership in Energy and Environmental Design (LEED®) of the U.S. Green Building Council.

Bennett Electrical, Inc. Provides Comprehensive Core and Shell Electrical Construction of Center for Life Science/Boston

Project Team includes Architect: Tsoi/Kobus & Associates, Cambridge, MA;
GC: William A. Berry & Son, Inc., Danvers, MA; EE: AHA Consulting Engineers, Lexington, MA;
Owner: BioMed Realty Trust, Inc., San Diego, CA

B oston, MA – Bennett Electrical, Inc. of Quincy, MA has completed the comprehensive core and shell electrical construction of the newest gleaming addition to the Boston skyline and life science community, the 18-story, 700,000+ square foot Center for Life Science/Boston, and its six-level parking facility, located at 3 Blackfan Circle in the Longwood Medical Area.

Bennett's scope included the installation of an extensive primary power distribution system which includes two (2) separate NSTAR vaults, the facility's three (3) 2000 kw emergency power back-up generators with paralleling gear, and a 1500 kw life safety generator.

Integral to the project and within Bennett’s scope, were installations of temporary power and site lighting, the facility’s fire alarm system, and interior and exterior lighting and lighting control systems. The base building is equipped with an EST fire alarm system. The NECA Boston Chapter contractor also installed a separate bi-directional amplifier system that provides firefighter communication with the Boston Fire Department from anywhere in the building.

A Lutron lighting control system controls lighting for the lobby and exterior feature lighting. The contemporary exterior of the CLS/B features flood lighting to accent the glass façade's curtain wall. At the top of building, a light wall is illuminated and controlled through the Lutron system. Bennett also provided pedestrian street lighting at the facility.

Bennett's project entailed tel/data installations for the elevators and fire command center within the core and shell electrical project.

Within its electrical work for the base building, the NECA Boston Chapter contractor provided electrical installations for the 6 levels of underground parking, encompassing 373,000 square feet with a footprint slightly larger than the building itself. For the expansive parking area, Bennett's installations included lighting, fire alarm devices and life safety system integration, and ventilation systems, including supply and exhaust fans.

Construction began in October 2005 and Bennett completed the project to meet the owner's, BioMed Realty Trust, Inc., project schedule in April 2008. Throughout construction, Bennett Electrical employed an electrical workforce of 40 foremen, journeymen and apprentices from Local 103, managed by Project Manager Bob Britnell and Project Supervisor Owen Carrel.

The project met the schedule demands, effectively managing labor and equipment deliveries with numerous tradespeople on site handling major tenant fit-ups at the same time as base building electrical construction was being provided.

Bennett Electrical Also Provides Fit-Up for Immune Disease Institute (IDI) Research Lab at CLS/B

B oston, MA – Concurrent to its base building core and shell electrical construction of the Center for Life Science building, Bennett Electrical, Inc. provided electrical installation services for the fit-up of the IDI Research Lab space on the third floor of the facility. The NECA contractor provided power, standby power, lighting – including a daylight harvesting lighting system, and numerous specialty lab equipment installations. Bennett managed a field crew of approximately 20 electrical workers for the fast-track project, which started in Fall 2007 and was completed by April 2008.
BOSTON, MA – Canton based Gaston Electrical Co., Inc., has completed the comprehensive electrical fit-up of Beth Israel Deaconess Medical Center’s (BIDMC) research facility at the Center for Life Science/Boston. The highly customized and complex project encompassed providing integration and installation of power, lighting and lighting control systems, fire alarm system, and a security conduit system at the BIDMC space. Gaston’s project scope included installations in all laboratory and office support areas, as well as within the 8th floor vivarium, which consists of animal holding areas, procedure rooms, cage wash areas, and complete animal watering and bedding systems.

The NECA contractor’s work at the 380,000 square foot lab/office space involves the integration of numerous building systems on seven floors (4th through 10th) at the state-of-the-art life science facility. Specifically, installations included the integration of electrical systems, mechanical equipment, chemical storage areas and support areas to the main building’s systems, which are located on the P-1 level, 1st, 2nd, 13th, and 18th floors, as well as on the roof.

Lighting at the BIDMC life science lab/office facility consisted of direct/indirect fluorescent lighting in all labs and areas and offices. Accent lighting and wall mount architectural lighting in common areas provide general illumination. All floors (except the vivarium) have large conference rooms featuring automated dimming systems that provide control of lights, partitions, shades, and A/V projector equipment. The 8th floor vivarium is equipped with all vapor-proof fluorescent light fixtures in the animal holding rooms, procedure rooms and cage wash areas. Lighting control systems provide optimal lighting efficiency throughout the facility, accomplished through the BMS and motion sensors on all floors except the 8th, where all rooms are controlled by timers and through the BMS.

The fire alarm system is an extension of the base building life safety system for the Center for Life Science, and is integrated throughout the BIDMC space. Gaston installed necessary equipment additions to enable control of tenant-related HVAC and also tenant door control systems.

Gaston commenced work in March 2007 and in meeting project timelines, completed the project in August 2008. The contractor overcame numerous challenges in the fast-track, 16-month schedule. The project was handled in coordination with, and concurrent to, base building construction – e.g. curtain walls had not yet been installed when the BIDMC build-out project began. Scheduling of labor and materials were challenging and adeptly met by Gaston, as various permit approvals were attained throughout construction and certain change orders were mandated to meet new end-user requirements. These new requirements, and issues arising from them, necessitated the general contractor, William A. Berry & Son, Inc. of Danvers, MA, to proceed in a revised construction schedule which required extremely close coordination with all trades.

Throughout the project, Gaston Electrical supervised a field crew comprised of 22 electricians (on average) from IBEW Local 103, managed by Project Executive and Company Principal, William E. Weber, Jr., Project Manager Mark Johnson, and General Foreman James Reen, Jr. The electrical crew consisted of a general foreman, three foremen, 14 journeymen, and four apprentice electricians.

According to the Beth Israel Deaconess Medical Center website, the healthcare organization will conduct some of the most expansive rheumatology clinical research in the U.S. in the field of Systemic Lupus Erythematosus at the Center for Life Science facility. It will also serve the Harvard affiliated healthcare organization in numerous other medical research capacities.

Lighthouse Electrical is also handling CT and Radiology Department projects as well as installations for Dana-Farber Cancer Institute laboratory space on the main campus – 44 Binney Street.
Mass. Electric Adept in Fast-Track Electrical Construction of Children’s Hospital of Boston Research Facility at Center for Life Science/Boston


LAN-TEL Communications Provides Installation and Integration of Tel/Data System for BIDMC at Longwood Medical Area’s Center for Life Science

BOSTON, MA – Mass. Electric Construction Co. (MEC) of Boston has completed the 80,000 square foot tenant fit-up of the Children's Hospital of Boston (CHB) lab research facility at the Center for Life Science/Boston. The NECA contractor's fast-track project scope encompassed electrical installations and integration of power, lighting and lighting systems, and fire alarm system for three new floors of lab research areas (floors 12 - 14), as well as a remote mechanical room. The electrical construction company also installed conduit and cable trays for the lab's tel/data systems and cabling for the Lenel security system and the CCTV security cameras.

The CHB facility required a large custom order of Wiremold conduit which included custom engraving of all devices. Each device was custom cut to length and factory engraved, requiring that each piece be measured and identified prior to installation. Significant pre-planning and coordination between the electrical engineering firm Bard, Rao + Athanas, CHB project management, the general contractor William A. Berry & Son, Inc., and Mass. Electric enabled the NECA firm to meet tight project deadlines.

Mass. Electric installed four Russelectric 600A bypass switches that tie into the Center for Life Science building's emergency power system. For primary power, GE distribution switchgear was installed and tied into the base building's primary power system. The build-out required installation of sophisticated, specialty research equipment, including X-OMAT photography equipment, Buxton glass-wash and sterilizers, cryostats, -40°C and -80°C freezers, fly incubators, a frog room with tanks and scheduled lighting, DAC fume hoods, a Mass Spectrometer, RODI water system controls and power, a Draeger oxygen depletion alarm system, and an Environmental room (cold and warm).

A large and advanced Lutron dimming system was installed, allowing for light harvesting.

A unique requirement within Mass. Electric's scope was the construction of a bridge on the 12th floor. The bridge adjoins the new research facility to an existing Children's Hospital site (the Karp Building). Within this aspect of the project, Mass. Electric connected the CHB addressable Simplex fire alarm system at the Karp Building to the new facility for cross-zoning with the Life Science Center's base building ESL fire alarm system.

Chief among the project challenges were the logistical demands of managing material delivery schedules and the labor force, as Mass. Electric provided construction concurrent with the 18-story building's construction. In addition, 11 of the 18 stories were simultaneously being fit-out by other NECA contractors and tradesworkers. Midway through the project, significant change orders were addressed to accommodate new requirements.

Upon certification of occupancy, Mass. Electric also provided a customized build-out for approximately 20 distinct areas of research on the three floors for CHB scientists.

To ensure Children's Hospital's smooth transition during the course of the move-in, which lasted approximately one month, MEC provided an electrical crew as the equipment was being delivered.

The project commenced in August 2007 and was completed, as scheduled, by August 2008. Mass. Electric's Project Manager Ed Latwas, Superintendent Mike Leonardo, and Foremen Rich Tringale, D.J. Nadeau, and Mark Delisle managed an electrical crew of 22 IBEW Local 103 electricians. Commenting on the project, Superintendent Leonardo said, "Critical to the success of the project was Mass. Electric's project team's ability to maintain the high standards of Children's Hospital while meeting logistical challenges on a tight schedule."

Children's Hospital conducts research in neurology, neurobiology, central nervous system injuries, and other highly specialized areas of medicine at the Center for Life Science/Boston.
Recent NECA Boston Chapter Member Projects for Biotechnology, Healthcare and Life Science Facilities

West Newton, MA – NECA Boston Chapter members are responsible for the electrical and telecommunications construction of many of the region’s leading facilities that serve the biotechnology, healthcare and life science markets. In addition to the Center for Life Science/Boston, here are just a few of the outstanding medical and research facilities at which our contractors have recently completed projects or in which construction is underway.

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<th>Project</th>
<th>Electrical Contractor</th>
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<td>Amgen Center, Cambridge</td>
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<td>Beth Israel/Deaconess Medical Center (BIDMC)</td>
<td>Broadway Electrical Co., Inc.</td>
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<td>Boston Medical Center/ Yawkee Center and Newton Pavilion</td>
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<td>Brigham &amp; Women’s Hospital/ BICOR Imaging Facility</td>
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<td>BU Medical Center, National Emerging Infectious Disease Laboratory (NEIDL)</td>
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<td>Dana-Farber Cancer Institute Jimmy Fund Building</td>
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<td>Dana-Farber Cancer Institute</td>
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<td>Harvard School of Dental Medicine</td>
<td>J. &amp; M. Brown Company, Inc.</td>
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<tr>
<td>Harvard University, Northwest Science Building</td>
<td>Broadway Electrical Co., Inc.</td>
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| Harvard University, Holyoke Center Ironwood Pharmaceuticals, Cambridge Maine Medical Center Massachusetts Eye and Ear Infirmary Mercy Hospital, Fore River Campus, Portland, ME MSPCA Angel Animal Hospital MIT Cancer Research Center MIT Picower/Brain & Cognitive Center MIT Building E25 – Whitaker College Laboratory Newton Wellesley Hospital – Emergency Power System Newton Wellesley Hospital One Hampshire at Kendall Square, Cambridge UMass Medical Center, Worcester Rheumatology Lab Vertex Pharmaceuticals, Cambridge

Teaming with leading architectural firms, general contractors and electrical engineers, NECA contractors consistently deliver electrical workmanship that meets the highest standards with critical attention to all project requirements.

**NECA Contractors’ Services** (a partial listing):
- Shell & Core Construction
- Primary Power
- Emergency Power
- Fire Alarm/Life Safety Systems
- Lighting Systems
- Renovations
- Tel/Data Systems
- Security Systems
- Building Automation Systems
- A/V Systems
- Customized Electrical Fit-up
- Site Power & Lighting

For a complete directory of NECA Greater Boston Chapter member firms, call 1-877-NECA-IBEW or visit us at [www.bostonneca.org](http://www.bostonneca.org).
Portland, ME – E.S. Boulos Company (ESB), headquartered in Westbrook, Maine, has completed electrical construction of the $4,000,000 Maine Medical Center, Women and Infants Building in Portland, Maine. The new East Tower, a six-story addition, is integral to the Maine Medical Center's Charles Street Expansion project.

The facility houses the most contemporary and well-equipped birthing and maternity facilities in the state of Maine and Northern New England, including the region's most advanced Neonatal Intensive Care Unit (NICU). The new building is designed to ensure the most appropriate setting for high risk deliveries and is equipped with the latest technology, including isolettes, cardiac monitors, radiant warmers, respirators, and oxygen saturation monitors. The Birth Center consists of 10 labor and delivery rooms, 2 C-Section operating rooms, and 6 nursing stations.

E.S. Boulos' electrical project scope entailed providing installation of the facility's primary and critical power systems, life safety systems, lighting and lighting control systems, advanced nurse call/paging systems, and tel/data network installations. ESB has provided complex installations for all surgery, birthing, and special care units. In addition, ESB provided installations for the Maine Medical Center's childbirth educational classrooms, conference space, and resident doctors' work stations.

Electrical rooms for the facility, which house primary and emergency power, are located in the sub-basement area. Here, two (2) 15KV power sources feed and tie to the new campus-wide 3Meg 4,160 volt emergency generator, installed by E.S. Boulos under a prior project and contract.

As a safeguard to keep all facility systems operational at all times, five automatic transfer switches have been installed at the Maine Medical Center Women and Infants building and an additional transfer switch has been installed for the emergency department.

The medical facility is equipped with a highly advanced Hunnewell fire alarm system. Lighting installations included an extensive array of specialty lighting for healthcare facilities, as well as exterior and signage lighting.

At peak construction, E.S. Boulos supervised a field crew of more than 30 electricians from Local 567 in Lewiston, Maine. The contractor commenced construction in Fall 2006 and through an aggressive work schedule and adept project management, the facility opened as planned in September 2008.

J. & M. Brown Provides Electrical Construction of BWH BICOR Imaging Facility

Boston, MA – J. & M. Brown Company, Inc. of Jamaica Plain, MA has provided comprehensive electrical installations for Brigham and Women’s Hospital's new Biomedical Imaging Core Resources (BICOR) Nuclear Medicine Imaging facility. The project was completed on schedule in early 2008. The BICOR facility, housed in three contiguous buildings on the BWH campus, features the Longwood Medical Area's only cyclotron, which employs sophisticated technology used in PET scanning for cancer imaging. The cyclotron equipment and radiochemistry labs are located in a single-story building between the Thorn Research and MRI Buildings. The Thorn Building is outfitted with advanced radiopharmaceutical capabilities and a small-animal PET imaging device. A new PET/CT scanner was installed in the BWH MRI Building. PET/Cyclotron technology is a powerful tool in the field of functional and molecular imaging. The BICOR facility is serving as a valuable resource for neuroscience, cardiovascular, cancer and musculoskeletal researchers. BWH, the Harvard Center for Neurodegeneration, and Dana-Farber Cancer Institute jointly contributed to the project and will share access to the facility's technology.

State Electric Completes BMC's Phlebotomy/Pediatric Radiology Renovation Project atYawkey Center – Boston, MA – State Electric Corp. of Woburn, MA has completed this two-phase, fast-track project which included installations for a new GE MRI room and a renovated phlebotomy lab all within an active hospital environment. State Electric was on a project team with general contractor Wise Construction of Winchester, MA.

Broadway Electrical in Progress with Children's Hospital Plastic Surgery Center project in Waltham, MA. The Boston based NECA member is providing electrical construction in tandem with general contractor G. Greene Construction of Boston.

Penney Electric and Viscom Systems, Inc. in Final Stage Construction of BU Medical Center NEIDL Lab – Boston, MA – John A. Penney Company, Inc. of Cambridge and Security Division Viscom Systems of Watertown are nearing completion of the electrical and security system installations for BU Medical Center's National Emerging Infectious Disease Laboratory (NEIDL).

McPhee Electric Provides MIT Building E-25 Whitaker College Laboratory Renovation – Cambridge, MA – McPhee Electric, Ltd. of Medford handled comprehensive power and electrical infrastructure requirements in the renovation of the 6-story, approx. 100,000 square foot MIT Whitaker College Laboratory, completing the project in early 2008. The contractor maintained constant power to active scientific laboratories. Whitaker College includes MIT’s Center for Environmental Health Sciences, Clinical Research Center, the Harvard-MIT Division of Health Sciences and Technology, and MIT’s Division of Comparative Medicine.

NECA Powers the Future for Biotech and Healthcare

As Greater Boston continues to be the hub of healthcare, biotechnology, and education, NECA Boston Chapter welcomes the opportunity to provide electrical and telecom installations to facilities that will meet the challenges and needs of our medical and research communities. Utilizing the latest in green building, energy efficient products and technologies, and with the most highly skilled labor force in the industry, NECA contractors connect the scientific communities in facilities that enable great advancements in wide-ranging areas of medicine and healthcare. In handling the diverse and complex power, lighting, life safety, security, and tel/data systems for these facilities, NECA continues to deliver excellence and set the industry standard for safety while meeting project requirements, timelines, and budgets.