

Real Estate Journal

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J. & M. Brown Completes \$20M Electrical Construction of Museum of Fine Arts, Boston New American Wing

NECA contractor renovates Fenway and Huntington Entrances, Historic Galleries; builds Sharf Visitor Center; Architects: Foster & Partners, London; CBT Architects, Boston, MA; GC: John Moriarty and Associates, Winchester, MA; EE: SEI Companies/WSP Flack & Kurtz, Boston, MA



The MFA's State Street Corporation Fenway Entrance

BOSTON, MA – In the most significant museum expansion and renovation project currently under construction in the U.S., J. & M. Brown Co., Inc. (JMB) of Jamaica Plain has completed the electrical construction of the new American Wing, Sharf Visitor Center, Ruth and Carl J. Shapiro Family Courtyard, and provided renovation of historic entrances and galleries at the Museum of Fine Arts Boston (MFA). The electrical contract for the redesigned MFA totaled approximately \$20,000,000.

Within its extensive project scope, JMB provided the 133,500 sq. ft. museum with comprehensive new power distribution, life safety, lighting, and lighting control systems. A key aspect of the project was the NECA contractor's ability to keep all museum systems operational at all times throughout construction.

Power Distribution Challenges

Primary power distribution included installation and wiring of six (6) major pieces of Cutler Hammer electrical switchgear. Emergency power for the new American Wing and the existing MFA building is provided via a Cummins 1500kW generator. Discussing power installations, JMB Project Manager Robert Carabia said, "The enabling work provided for the new building footprint was a key challenge we met." This required the removal of old distribution equipment, lighting control, and fire alarm from areas now within the new building footprint. The new generator ties in all

systems, including life safety circuits. "The museum never shuts down so a parallel installation process was critical," Carabia said. Planning and coordination of MEP equipment was also crucial to the project, as all equipment was delivered to the basement level of the new building and intricate rigging was necessary in the transporting of systems. Electrical switchgear and the massive generator were first rigged in to electrical rooms, which are the farthest from the basement level rigging point. Air handler units, boilers, and plumbing skids were then transported, as coordinated and planned.

A significantly accelerated work schedule was required for the west end switchgear installation. Here, the existing NSTAR vault required decommissioning to allow for the new west end loading dock. J. & M. Brown coordinated a plan with NSTAR, which entailed installing a separate NSTAR transformer to refeed the existing west end equipment.

The project required four power shutdowns to enable cutovers to new systems. The first occurred with the re-energization of the existing 480V switchgear. This switchgear provides power to all utilities, including chiller and heating systems for the MFA's galleries and exhibitions. Power shutdowns and cutovers were scheduled overnight, during off-hours for the museum – from 5pm to 9:30am. JMB's foreman and night crew of 10 to 12 electricians managed the shutdowns adeptly, without incident.

Concurrent to the new 480V switchgear cutover, JMB also installed and energized the new NSTAR vault for the MFA's new American Wing during mid-winter 2009, as temperature and humidity control was necessary for the installation of wood floors.

Life Safety System Tie-Ins

JMB's intricate life safety system installations entailed tying in the MFA's new EST bi-directional fire alarm system, which the firm wired and equipped in the Fenway and Huntington entrances, the Sharf Visitor Center, and the new American Wing. Under the direction of Tom Rose, Vice President of the Fire Alarm Division, J. & M. Brown integrated the facility's existing Honeywell system and the new EST system. Both life safety systems report to the new EST fire command center, installed in the MFA's Fenway entrance. The existing fire alarm system command center, which had been located more than 600 feet away at the Huntington entrance, was kept fully operational until the new system was integrated.

The MFA's new fire alarm system was fully installed to coincide with completion of the Huntington entrance project phase. System installations included new annunciators, atrium fan control, and a fuel annunciator. JMB also provided fire alarm system programming and testing.

Revitalized Fenway and Huntington Entrances

The fast track construction of the revitalized Fenway entrance was a critical milestone for the project, as it had been closed for two decades and the historic MFA structure is an integral part of Boston's Emerald Necklace. JMB's museum quality work on the Fenway entrance included the fountain lighting, pump control and wind control system; parapet and railing LED lighting; banner lighting; and, the fire alarm system.

Electrical installations for the Sharf Visitor Center included the fire alarm, track lighting, and dynamic digital screens displaying ticketing and exhibit information. JMB commenced electrical construction on the Fenway entrance in January 2009 and this phase was complete by mid-June when the

Fenway entrance and Visitor Center opened to the public.

The next construction phase, the Huntington grand entrance renovation, which preserves the grandeur of the building's classic Beaux Arts architecture, began in June. Here, JMB provided parapet, facade and entrance LED lighting, and life safety system installations to meet the aggressive project schedule. The Huntington entrance reopened in August.

Extensive Lighting Package

Facility lighting was elaborate, as the project incorporated the installation of more than 100 different types of fixtures from various manufacturers, including nearly three (3) miles of specialty museum track lighting from Litelab. JMB installed a sophisticated Lutron lighting control system that provides total function control of lighting in galleries, floor outlets for displays, shade control, and AV systems. JMB handled lighting installations with

tion of the new building, making integration of systems demanding. J. & M. Brown handled their work diligently and adeptly, both from a construction standpoint and administratively. The quality of their work is excellent and



The new American Wing at the MFA

J. & M. Brown is very much a team player. The key to any project's success is assembling a project team that works well together. Credit goes to their entire team, especially David Noon, Bob Carabia and Jim Reidy. In that regard, Foster + Partners, John Moriarty and CBT also have been great team players." Upton added, "The standards for the MFA are very high. The architect, Norman Foster, has great expectations for his firm's design of the facility and the project required an electrical contractor that could meet those standards. J. & M. Brown has done just that."

When it opens in November 2010, the MFA's new American Wing will feature 60,000 sq. ft. of gallery space encompassing 53 galleries designed by Pritzker Prize-winning architects Foster + Partners of London.

J. & M. Brown Company, Inc., founded in 1921, is one of New England's oldest electrical contracting firms. Company principal, David Noon, serves on the NECA Boston Chapter Board of Directors and is a past Treasurer of the Association. JMB provides electrical construction, telecom, fire alarm, and security system services for commercial, industrial, healthcare, pharmaceutical and educational facilities throughout Eastern Massachusetts. The firm has recently completed projects for Harvard University, MIT, Fidelity Investments, Brigham & Women's Hospital, BIDMC, Blackstone Properties, Novartis, Ariad Pharmaceuticals, and IBM.



Sharf Visitor Center

close cooperation from lighting supplier Yale Electric Supply of Boston.

At peak construction in the three-year project, J. & M. Brown managed a field crew of 50 IBEW Local 103 electricians headed by Project Superintendent Jim Reidy.

Budge Upton, MFA Director of Project Development and Construction, Commends Electrical Construction

Budge Upton, Director of Project Development and Construction for the MFA, said of the project, "J. & M. Brown has done an excellent job and they've been a vital part of the project team. The project was especially difficult, as renovation of the existing MFA building was ongoing with construc-