



The LiRo Group

Client:

MTA - Metropolitan
Transportation Authority /
East Side Access
2 Broadway
New York, NY

Reference:

Robert Ogierra, P.E.

718-361-1910

Total Project Cost:

\$80,000,000

Completion Date: 2004

Project Overview:

This Design/Build project included the design and construction of a locomotive and multiple unit rail car maintenance facility for the MTA-LIRR. The project included an 80,000 sf shop, power substation, engineering support facility, cold storage facilities, two miles of track and extensive infrastructure improvements. (MTA-LIRR, \$80M, 2004)

MTA East Side Access - Construction Management Services for Arch Street Yard and Shop Long Island City, NY

The Arch St. Yard and Shop is located on approximately twelve acres in Long Island City, New York. This Design/Build project included the design and construction of the



following major elements: Maintenance Equipment Shop; Power Substation Building; Engineering Support Building; Extraordinary Interior Cleaning Platform and Storage Building; Trackwork and Third Rail; and extensive site utilities. The shop and yard was used as a testing and acceptance facility for the LIRR's new M-7 train cars and will now service as an inspection,

maintenance and cleaning facility upon commencement of ESA revenue service in 2010. The Design Build contract was awarded for \$75M with contract duration of 810 ccd's for completion.

A unique aspect of this project lies within the Design/Build delivery system. In order to facilitate project completion within the required time frame, the building was built, in effect, from the outside in. An example can be found in the underground conduit sizing. During the initial design phase as well as during the installation of the piles, footings and structural steel, the exact types of internal machinery, i.e. power requirements, was not known. Conduits could not be sized. Upon acceptance of the machinery, final sizing was determined. This caused the conduit and floor slabs to be installed after the building shell was constructed, contrary to standard construction methodology. During peak construction periods, in excess of 150 trackmen were working on the site. The project required daily coordination, meetings, managed by LiRo, with the LIRR, the designer and the contractor.



A detailed description of the major elements included:

- Yard trackwork and leads - approximately 2.5 miles
- Temporary access tracks
- Maintenance of Equipment (M of E) shop - 60,000 sf
- This facility has 4 double-ended shop tracks and one stub track located within the building. The building is steel frame construction with both masonry and steel panel walls. The building has a capacity of 9 MU cars. Building specifics include:
 - Administrative offices and welfare facilities for 100 employees
 - HVAC storage and repair shop
 - 3500 sf of secured storage
 - 2 C-Frame hoists capable of lifting a combined 320,000 lbs
 - 2, 15-ton capacity powered turntables



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- A truck repair hoist
- 2 overhead cranes with 20 and 3 ton capacities
- 6, 3000 lb capacity scissor lifts
- 3, 3-ton capacity monorail cranes
- Wheel truing machine
- Posted rail within facility
- Extraordinary Interior Cleaning (EIC) Platforms constructed of concrete with electrical supply and hot/cold water. Support building for the EIC are also being constructed.
- Engineering support building - steel construction
- Traction Power and Auxiliary Power Substation
- This facility contains 3-26KV transformers. It will provide 480V 3f power to the facility.
- Construction of a new transformer blockhouse for ConEd along with a complex network protection system
- Extensive traction power construction
- Construction of signal and communications system
- Site improvements including fire protection, security systems, fencing, paving and drainage

This project received a "Mass Transit Award of Merit," Best of 2005, from *New York Construction News* (Dec. 2005).

Key Features:

- Management of D/B contract and delivery system
- Management of a major complex Transit Building construction
- Coordination/Management of LIRR, designer and contractor





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