



No. 7 Subway (Flushing) Line Extension CM Services New York Metropolitan Transportation Authority (MTACC)

Location: New York, New York

Date: 2007 – 2016

Structure: Running Tunnels, Cross Passages, Station Cavern, Shafts, Ancillary Tunnels and Structures

Length: Approximately 1.5 miles (2.4 kilometers) Running Tunnels

Cross-Section: Varies

Geology: Fill, Alluvial and Glacial Sediments, Weathered and Hard Rock (Manhattan Schist); Groundwater Table is Approximately 20 feet (6 meters) Below the Surface

Cost: Approximately \$2.1 Billion

Client: Hill International - Lemley – Liro Frankfurt Daniel (JV)

Owner: Metropolitan Transportation Authority Capital Construction (MTACC)



Figure 1. Station cavern after top heading and bench 1 excavation and support.

Preliminary Design and Construction Inspection and Management Services:

The No. 7 Subway (Flushing) Line Extension extends its services to the terminal station in the vicinity of 25th Street / 11th Avenue. The extension included twin-running TBM tunnels with five cross passages, a 34th Street station cavern, three shafts, and numerous ancillary structures.

Gall Zeidler Consultants (GZ) provided engineering and design services for the preliminary design of the TBM tunnels, caverns and adits. During construction, GZ provided Construction Management (CM) services. These services included design review and construction inspection, safety and quality management related to the underground work. Tunnel excavation and support included SEM (NATM) using drill-and-blast and Tunnel Boring Machines (TBM). GZ's CM services included supervision of instrumentation and monitoring, of waterproofing and of electrical/mechanical systems installation.

This project has received numerous merit awards:

2012 - "Tunnel Achievement Award Project Excellence"

2012 - "Construction Management Project Achievement Award" Program / Phase Infrastructure

2013 - "Construction Project of the Year"

2013 - "Project of the year"

Running Tunnels and Underground Structures

2016 - "Excellence in Civic Space Development"

2016 - "Project of the Year"

2016 - "Grand Award; 2016 Engineering Excellence Award"

2016 - "2016 Project Achievement Award"

(Honorable Mention - Projects Over \$100 Million)



Figure 2. TBM cutter head being lowered into main shaft located in Manhattan.