

PROJECT BRIEF

Hudson Yards Gateway Tunnel Instrumentation & Monitoring

PROJECT PROFILE

CLIENT:

Tutor Perini

LOCATION:

Manhattan, NY

VALUE:

- Ability to evaluate construction effects on the adjacent structures in real-time
- Minimize construction delays due to noise constraints (ambient noise levels higher than specified limits)
- Ability to maintain train operations via real-time data and alarming features

SERVICES PROVIDED:

- Instrumentation, monitoring, data management system
- On-call noise monitoring

“Geocomp’s primary objective was to determine if construction activities have any adverse effects on adjacent structures including: LIRR surface tracks, tunnels, building, retaining walls, NYCDOT viaduct and roadways.”



GEOTECHNICAL INSTRUMENTATION & MONITORING

Geocomp provided instrumentation and monitoring services for two segments of this challenging project, the Hudson Yards Gateway Tunnel and the Hudson Yards Platform. The Gateway Tunnel project is still ongoing and will be built beneath the existing LIRR west side storage yards to provide access to Penn Station, so that a future rail tunnel to New Jersey can be built. The Hudson Yards platform project consists of building a massive concrete platform above the existing LIRR storage yard to act as a base for vertical construction. Geocomp’s primary objective was to determine if construction activities have any adverse effects on adjacent structures including: LIRR surface tracks, tunnels, buildings, retaining walls, NYCDOT viaduct and neighboring roadways. Instrumentation used to meet objectives included: inclinometers (14), observation wells (8), dynamic strain gages (33), prisms (25), AMTS units (3), pre-condition surveys (5), tilt meters (7), seismographs (30), fiber optic strain sensors (26), and settlement ponds (50). All data was gathered remotely and displayed in real-time via *iSiteCentral*®.



BACKGROUND

The Hudson Yards project is one of the largest private real-estate developments in US history, at roughly \$20 billion. Located in the heart of midtown Manhattan, the project encompasses three city blocks (30th through 33rd Street) and two avenues (10th to 12th Avenue). The project, constructed on a concrete platform over the existing Long Island Rail Road (LIRR) west side storage yard, entails 17 buildings (18 million square feet) including, but not limited to: office towers, retail and residential units, hotels, restaurants, entertainment venues and a school.