Geocomp

Technologies to manage risk for infrastructure

Project Brief

Hudson Yards Gateway Tunnel and Platform

Client:

Tutor Perini Corporation

Location:

Manhattan, NY

Service Provided:

Instrumentation, monitoring, and data management system.

Value Provided:

- 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

Background & Project Challenges

The ongoing Hudson Yards project is one of the largest private real-estate developments in US history, currently estimated at $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, which will be 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.

Geocomp Role & Accomplishments

Geocomp is providing instrumentation and monitoring services for two segments of this challenging project, the Hudson Yards Gateway Tunnel Project and the Hudson Yards Platform Project. The Gateway Tunnel 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 is to determine if construction activities have any adverse effects on adjacent structures including, but not limited to, LIRR surface tracks, tunnels and buildings, retaining walls, NYCDOT viaduct and neighboring roadways. Instrumentation used to meet our objectives include:

- inclinometers (14),
- observation wells (8),
- dynamic strain gages (33),
- prisms (25),
- AMTS units (3),
- pre-condition sureys (5)
- tilt meters (7),
- seismographs (30),
- fiber optic strain sensors (26),
- settlement points (50), and
- on-call noise monitoring.

All data is gathered remotely and displayed in real-time on *iSiteCentral*™, our data management system. Data is accessible 24/7 via the internet.