Client: Langan Engineering

Location: Bronx, NY

Service Provided:
- Automated instrumentation and monitoring
- Monitored vibration to minimize damage to adjacent structures during construction operation

Value Provided:
- Real-time crack, tilt, and vibration monitoring (with auto-email alerts) during construction was provided to meet NYCDOB and FDNY standards

Background & Project Challenges

The Robin Hood Foundation and the New York City Department of Education have partnered to fund the construction of K.I.P.P. High School. A new charter school which will be LEED-certified – adding to NYC’s growing list of “Green Buildings.” The new structure will have a footprint of approximately 132,500 square feet and will educate approximately 1,000 students annually. The challenge was how to monitor the tilt, vibration, and existing cracks in the façade of an historic six story church building that is within 50 feet of the construction site.

The site posed significant monitoring challenges. Geocomp’s real-time performance monitoring had to capture deformation to surrounding historical structures.

Geocomp Role & Accomplishments

Geocomp provided real-time instrumentation monitoring during construction for Langan Engineering at the new NYC college preparatory high school in Bronx, NY. Geocomp provided automated monitoring of the adjacent structure’s foundation and North/West facades during the excavation and soldier pile driving phases of the project. A data logger was setup to remotely send tiltmeter and digital crackmeter data hourly for several months. Also, continuous vibration monitoring of the North and West foundation walls was provided which consisted of auto email alerts to whomever the client requested. Once all data was received, it was displayed and plotted on Geocomp’s web-based iSiteCentral™ system with data reports ready to be delivered upon the client’s request. This allowed the client to save money on surveyors and personnel who would have had to manually monitor the tilt, vibration, and existing cracks in the facades in various locations of the adjacent building.

The monitoring was performed to validate the integrity of the historic church was not disturbed during construction of the new structure, in compliance with the FDNY/NYCDOB standards. This was successfully done and the data Geocomp provided was able to prevent any unnecessary stoppages of work.