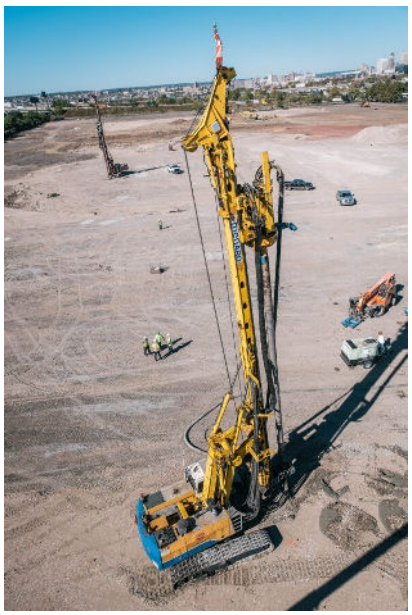
Industry and manufacturing

UNITED STATES

429 Delancy Street
Newark, NJ



Owner
Bridge Development

Engineer
Melick Tully

General contractor
Premier Design Build

Dates of work
September 2017 January 2018

Main figures

Controlled Modulus Columns
7,409 EA.

Description

As part of its ever-expanding footprint, Bridge Development proposed the construction of a 661,000 sq-ft warehouse at a former industrial site in Newark, NJ. The location presented significant challenges, including a building footprint littered with old foundations below the ground surface. Menard worked with the owner and geotechnical engineer to demolish and remove foundations and to replace them with engineered, compacted fill. This eliminated the need for predrilling and minimized significant delays during the execution of ground improvement. During this process, Bridge Development sold the property to Duke Realty. Menard remained on the project and worked closely with the new partners, ensuring the needs of the new owner would be met. Due to the loose and compressible nature of the soils at the site, excessive settlement was predicted within the compressible fill and the underlying lake clay deposits. Menard USA was contracted to provide ground improvement – the selected technique was Controlled Modulus Column (CMC)® rigid inclusions.

Ground conditions

The soil at the site is characterized by 12 to 15 ft of loose to medium dense sands underlain by organic silt and peat. The organic silt and peat is approximately 1- to 2-½- ft thick. Underlying the organic silt and peat is natural soils consisting of occasional thin layers of soft organic clays, silty sands, and varved silts and clays. The site requires improvement of loose fill soils and organic silt/peat to increase bearing capacity and control settlement. Modeling of the geology determined that the underlying natural soils below the anticipated CMC tip elevation are overconsolidated and will not adversely affect the performance of the structure.

Solution

Per the geotechnical report, approximately 50 percent of the proposed warehouse footprint was covered by concrete slabs, pile caps and timber piles. To minimize the impacts of the historical structures, Menard worked with the project team to identify and remove the obstructions prior to ground improvement design and mobilization. Also, special contractual arrangements were made to account for unforeseen conditions.To reduce costs, the contractor provided a survey for locating existing timber piles. Menard would ultimately install 7,409 CMCs to an average depth of 26 ft and a maximum depth of 44 ft. As part of the Health and Safety Plan (HASP), Menard worked with a regional environmental consulting firm that provided the services of a Licensed Site Remediation Professional (LSRP). This was done to identify and minimize airborne exposure to contaminants. The LSRP also provided the following: Utilization of air monitoring throughout the installation of the CMCs; and the creation of an exclusion zone and a decontamination pad to eliminate the off-site transport of contaminants.

Given the synergy between Menard, the general contractor, and the owner, the project was completed ahead of schedule, with no delays due to underground obstructions or contamination. The client commended Menard for its performance and continues to contract Menard on projects. Upon completion of the speculative building, Amazon leased the facility and remains a tenant at the Newark, NJ site.

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