



UNITED STATES

39 Edgeboro Road
East Brunswick, NJ



Owner
IDI Logistics

Engineer
Melick-Tully and Associates

General contractor
RC Andersen, LLC

Dates of work
08/2019 - 10/2019

Main figures
Dynamic compaction
15493 Drop(s)



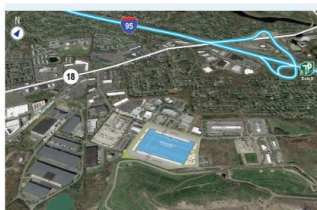
Description

In East Brunswick, NJ, a major redevelopment was proposed for a 30-acre site to increase the township's vitality and visibility, particularly along the northern end of Route 18 near the New Jersey Turnpike.

Once the town's main commercial corridor, East Brunswick struggled to rebound after the recession of the mid-to-late 2000s. The proposed redevelopment would give the region a downtown atmosphere featuring upscale or specialty food markets, medium and high-end restaurants, bike paths, a concert venue, a hotel as the focal point of a Town Center Zone and a community-use building for recreational purposes.

Another significant part of the project was the construction of a 558,000 sq.-ft warehouse at 39 Edgeboro Road. This location offers easy access to I-95, making it an ideal location for local, regional and national distribution. At a height of 40 ft, the warehouse would consist of 281 parking spaces, 150 trailer-parking stalls and 108 docks. The new warehouse would also include built-to-suit office space. Slab loads of 800 psf and maximum column loads of 100 kips were considered for the project.

Due to the loose nature of the fill soils at the site, Menard Group USA was contracted to provide ground improvement to support the modern bulk warehouse – the selected technique was Dynamic Compaction.



Ground conditions

Across most of the site, the soils contained sandy fills to depths of 2-17 ft, underlain by medium dense to dense sandy soils. Borings near a backfilled former pond location revealed deep soft to very soft clayey soils. While Menard proposed an alternate form of ground improvement in this area, such as Vibro Stone Columns or Dynamic Replacement, the owner elected to overexcavate the soft clays that were present in the former pond area. Groundwater was encountered at approximately 11 ft below the ground surface across the site.

Solution

The geotechnical report recommended the removal of existing fills and organic materials to their full depth – extending 10 ft beyond building limits -- before replacing the fill with controlled compacted fill with an option to perform Dynamic Compaction (DC) in the areas with more granular soils.

Menard provided an economical and time-saving solution with DC. The implementation of DC eliminated the need for removing and handling large amounts of spoils.

For this project, Menard used 15,493 high-energy drops and 8,212 ironing-pass drops. The maximum treatment depth was 13 ft, delivering energy of 22 t-m/m³. The design provided for 1 in of post-construction settlement, meeting the building's performance criteria.

Among the project's unique components was the presence of a 3-D printing shop across the street from the site. Menard, mindful of the nearby business, minimized disruptions by alternating drops with its two cranes. Another challenge was the presence of overhead wires (eventually removed by PSE&G). Also, vibrations had to be kept



Buildings



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to a minimum adjacent to the property line of a nearby landfill.

Each challenge was handled with aplomb by Menard, which met the client's requirements for quality, safety and schedule in providing ground improvement for a 558,000 sq. ft warehouse.