Penn Park

Philadelphia, PA

Penn Park, an expansive sports complex, will be easily accessible via raised paths and pedestrian bridges being supported by Menard Controlled Columns™ used in conjunction with Reinforced Earth walls and Nicholson micropiles.

Menard leveraged its partnership with Reinforced Earth and Nicholson Construction and to redesign the ground improvement for the major sports complex

Project Summary

When Menard was asked to bid vibro concrete columns for a ground improvement project at Penn Park, a $40 million, 24-acre sports complex at the University of Pennsylvania in Philadelphia, the company proposed an entire redesign for all of the vertical support and earth retention on the project. The alternative design — using Menard Controlled Modulus Columns™ (CMC), Reinforced Earth walls and Nicholson Construction micropiles — provided significant cost-savings that resulted in Menard's client, Turner Construction, being awarded the project, and Menard receiving the subcontract.

Ground Conditions

The park, which is in a very constrained area between the main campus, main rail lines and highway, integrates two athletic fields, a 12-court tennis center and a softball stadium. The complex is designed with 25- to 30-foot-tall elevated landforms (embankments) and pedestrian bridges in order to allow easy access and movement in the park.

Ground Improvement Solution

Menard's innovative design - leveraging the synergy of the three companies: Menard, Nicholson, and The Reinforced Earth Company — changed the use of concrete retaining walls on driven piles to Reinforced Earth walls on CMCs. In addition, the alternative design provided support to stadium bleachers, tennis facilities and pedestrian bridges with two types of piles made using the CMC technique — CMCP (CMC Piles) using reinforcing cages under a structure in the tennis facility, and PCMCP (CMC Piles reinforced with a pipe) used under the pedestrian bridges. The majority of the redesign was changing the support of the landforms and raised bleachers (embankments) from vibro concrete columns with a very expensive load transfer platform to a CMC design that used a much more economical load transfer platform with significant cost savings. In the end, Menard's expertise in ground improvement and foundation support allowed the project to move forward without any compromise on schedule, budget or quality.

Developer/Owner: *University of Pennsylvania*
General Contractor: *Turner Construction*
Geotechnical Engineer: *Hayley & Aldrich*
Ground Improvement Contractor: *Menard*

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