RIC RAPID IMPACT COMPACTION

PROJECT REPORT

FORT TOTTEN PARK APARTMENTS EAST

EQUIPMENT:	RIC 7000
PROJECT:	FORT TOTTEN PARK APARTMENTS EAST BUILDINGS 1 & 2
LOCATION:	WASHINGTON, DC, USA
PURPOSE:	FOUNDATION PREPERATION FOR APARTMENTS DEVELOPMENT

RIC improving the ground at site

Artists impression of apartments

GeoStructures used a combination of Rapid Impact Compaction (RIC) and Geopier ground improvement technologies for support of the 308 unit Fort Totten Park Apartments, located near the Fort Totten Metro station.

Loads ranged from 245 to 385 kips for column footings and from 2 to 4.5 kips per foot for wall footings. On-site soils consisted of 7 to 27 feet of silty sand and clayey sand fills with mixed organics, woods, brick, concrete, and glass debris. These existing fill materials were quite variable as N values ranged from 2 to 100 feet, and were not suitable for foundation support.

Contract Specifications	
General Contractor:	Clark Realty Builders
Owner:	St. Colleta of Greater Washington
Developer:	Clark Realty Capital, LLC and Washington Metropolitan Area Transit Authority (WMATA)
Architect:	Burt Hill Kosar Rittelmann Associates
Structural Engineer:	Shemro Engineering Associates, Inc.
Geotechnical Engineer:	GeoConcepts Engineering, Inc.

The ground improvement plan utilized 819 Geopier elements in lieu of timber piles, and approximately 45,000 square feet of RIC. Geopier implementation provided an allowable bearing pressure of 5,000 pounds per square foot for footing support, and RIC reduced the amount of undercutting required for support of the floor slab. RIC was also used to identify weak areas in the fill soils. The combination of Geopier elements and RIC provided an economical and innovative solution to foundation support over uncontrolled fill soils in contrast to the traditional methods of deep foundations and undercut and replace.

THE GEOPIER & RIC ADVANTAGE

- ☐ RIC was successfully used to uniformly densify fill soils and identify previously undefined weak areas within the building footprint.
- ☐ Geopier elements were used instead of timber piles for support of more heavily loaded footings.
- ☐ The combination of Geopier and RIC provided a cost effective solution for foundation and floor slab support on uncontrolled fill soils.

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