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GeoTech Foundation Company - West

GeoTech Foundation Company - West®
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PROJECT DESCRIPTION

PROJECT: University of San Diego Science & Technology Center

LOCATION: San Diego, California

DESIGN TEAM:

Architect:	Carrier Johnson
Structural Engineer:	Hope Engineering
Geotechnical Engineer:	Kleinfelder

CONTRACTOR: Rudolph & Sletten

DESCRIPTION:

- Undocumented fill up to 25' deep
- 4-story cast-in-place concrete structure
- Shear wall gravity loads up to..... 2300 kips
- Interior column loads up to..... 1100 kips

The project geotechnical report considered Geopier® System, over-excavation, and minimum 8' long cast-in-drilled-hole (CDIH) piles extending into the underlying San Diego Formation (a weakly cemented sandstone). The Geopier system was selected as a Value Engineering alternative.

The Rammed Aggregate Pier® (RAP) elements were 30" in diameter and extended 1' to 4' into the San Diego Formation. Pier lengths ranged from 4' to 25'.

By reinforcing the undocumented fill with RAP elements, a design static bearing pressure of 8000 psf was allowed for proportioning the footings. A maximum edge pressure of 11,000 psf was allowed on the interior shear wall footings. Individual design loads up to 130 kips per pier were utilized on the RAP elements. A full-scale field load test confirmed these design capacities.

The undocumented fill included unexpected nests and layers of cobbles and boulders; however, the RAP installation proceeded without causing delay. A total of 336 RAP elements were constructed in only 8 working days allowing Geopier Foundation Company – West to complete our portion of the project one full week ahead of schedule.

REFERENCES:

Kris Specht	Kevin Crennan, P.E.	Kraig Klausen, S.E.
Rudolph & Sletten, Inc.	Kleinfelder	Hope Engineering
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