

PROJECT DESCRIPTION

PROJECT: Parking Structure for 24-Hour Fitness
LOCATION: West Covina, California
DESIGN TEAM: *Architect:* Sy Art Parking Structures, Inc.
Structural Engineer: Witemberg & Associates, Inc.
Geotechnical Engineer: R.T. Frankian & Associates
CONTRACTOR: PARR Contracting Company



DESCRIPTION:

- 2-level reinforced concrete parking deck
- Column loads = 200 to 570 kips

Subsurface conditions at the site consist of alluvial deposits of sandy silt, silty sand and fine to medium sand occurring in random layers and extending to a depth of at least 75'. The borings revealed the upper several feet of these deposits to be too loose for footing support. Groundwater was not encountered within the 75' exploration depth.

The project geotechnical report recommended 7'-9' of overexcavation and replacement filling beneath conventional spread footings, and a maximum design bearing pressure of 4000 psf. The Geopier system was selected as a Value Engineering alternative to eliminate the overexcavation and structural fill.

Geopier elements were 30" diameter. Piers were subjected to compression loading only and extended to a depth of 8' below bottom of footing. For the Geopier design, a bearing pressure of 6000 psf was assigned to the Geopier-reinforced soils; however, a full-scale on-site test revealed an allowable footing bearing pressure of 8000 psf would have been feasible.

For internal research purposes, Geopier Foundation Company – NW performed a pullout test on the pier used for the compression testing. The results revealed an ultimate pullout capacity for the 8' pier to be 70 kips, with an allowable design value of 50 kips.

A total of 175 Geopier elements were constructed in only 5 working days on-site

REFERENCES:

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