

EagleLIFT Installs (720) Helical Piles for Seismic Upgrade Solution on Sixteen Apartment Buildings in Sunnyvale, CA

Winter/Spring 2015



EAGLELIFT

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Project Name & Location:	Fair Oaks West Apartments - Sunnyvale, CA
Project Date:	Winter/Spring 2015
Project Type:	Helical Pile Foundation Seismic Upgrade
Helical Pile Installation Contractor:	EagleLIFT, Inc. , Rancho Cucamonga, CA
General Contractor:	GE Construction , Yorba Linda, CA
Geotechnical Engineers:	Cornerstone Earth Group - Sunnyvale, CA
Structural Engineers:	Cornerstone Structural - Fresno, CA
Helical Piles Specifications:	(720) 1.75" RCS Helical Piles - Vertical Piles (40 kip loads) with 8",10",12" Helix Bearing Plates - Battered Piles (70 kip loads) with 10",12",14" or 14",14" Helix Bearing Plates; Galvanized - Plus New Construction Brackets
Soils & Embedment Depth:	Sand and Clay. Vertical Piles - 15' - Battered Piles - 30'
Project Timeline:	(16) Weeks or (1) Week per Building
Helical Pile Manufacturer:	MacLean Power Civil Products Group, Fort Mill, SC

[Click Here to Read the Cornerstone Geotechnical Report](#)

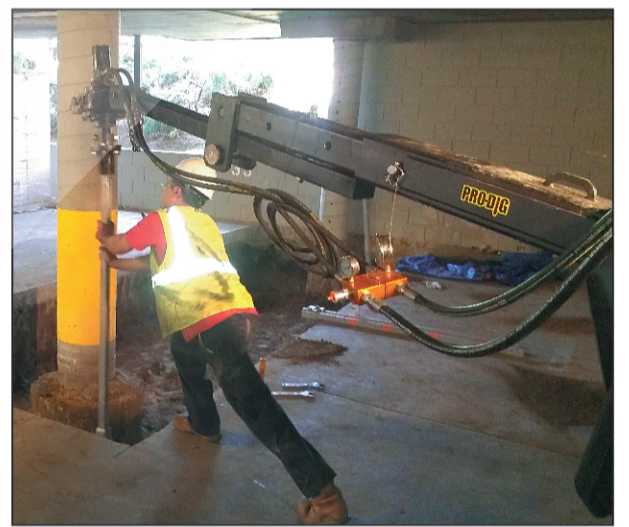
Project Overview

The site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range.

The property owners decided to have seismic upgrades added to all sixteen structures in the complex, and helical piles were selected as the best choice for the upgrades with both vertical and battered piles being included in the upgrade design.



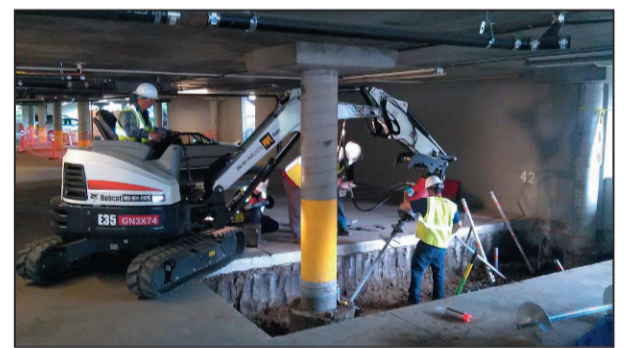
Each apartment building was constructed over a partial subterranean parking level and consist of three levels of wood-framed structures. Some relatively minor settlement had occurred in three of the buildings since they were originally constructed in the 1970's.



Soil borings were conducted in several locations across the site, and boring depths ranged from 6.5 to 40 feet. Variable amounts of sand and medium dense clayey sand was found along with some areas of silt and gravel.



All piles were installed inside the garage level, and the maximum head clearance was 6.6 feet, which necessitated the use of small footprint installation equipment and shorter helical pile section lengths.



Fourteen of the buildings had (4) bays each, and (48) piles were installed in each of those buildings. Two of the buildings had (2) bays each, and (24) piles were installed in each of those buildings. Each bay had (8) vertical piles installed along with (4) battered piles.



The helical piles manufactured by MacLean Power Systems - Civil Products Group were all 1.75" Round Corner Square Bar. The leads used for the vertical piles had 8",10",12" helix bearing plates, and the required load was (40) kips. The leads used for the battered piles had two configurations - 10",12",14" and 14",14", and the required load was (70) kips. One tension load test on a battered pile was required and completed successfully. New construction pile caps were connected to each pile.



EagleLIFT crews completed work for each building in one week, and the entire project was successfully completed in sixteen weeks.



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