Ocoee City Center Project

VIBRO STONE COLUMNS AND COMPACTION GROUT PROJECT

Project

The project is a multi-use complex, including retail space, office space, restaurants, multi-level condominiums/ apartments (9 stories tall), a 9-story hotel, and two 5 to 6-story parking garages with a clubhouse/pool area overlying the larger of the two parking garage structures. The Geotechnical Engineer of Record recommended a ground improvement solution of vibro-compaction/stone columns and compaction grout pumped to improve the load bearing capacity of the existing soils at the site.

Challenge

- Sandy/Silty conditions were in loose condition up to 40 feet
- Underlying clay soils were in soft condition up to 70 feet

Solution

Helicon worked alongside the geotechnical design team to develop a vibro stone column and compaction grout program designed to meet the building code load criteria. The spacing of the stone columns were typically on the order of 5 to 7 feet on center. An allowable bearing pressure on the order of 6,000 to 8,000 pounds per square foot was achieved. The injection of a cementitious grout mixture, under pressure, through the clay formation further compacted the clay soils thereby reducing the total settlement through the layer. As a consequence, the use of stone columns in conjunction with a deep cement grout program was the best course of action. Efficient planning & coordination was key to overcoming the challenges & limitations. Helicon collaborated with the Geotechnical Engineer of Record throughout the work and confirmed all recommended criteria were followed. The vibro stone columns and compaction grout applications were completed on time and within budget.

Client: Randall Construction
Engineer: Raad-Tannous Engineering Group
Market: Commercial
Solution: Ground Improvement
Services: Vibro Stone Columns and Compaction Grout

844-HELICON
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