

Marco Island Executive Airport

Naples, Florida

Keller provided a design-build ground improvement solution to support the construction of the new airport.



The project

Collier County Airport Authority (CCAA) planned to construct a new taxiway and apron expansion at its Marco Island Executive Airport. The soil profile included a thick stratum of very weak peat and organic silt extending to a maximum depth of 20 feet below the existing ground surface. Keller needed to provide a design-build ground improvement solution to support the new construction.

The challenge

Placement of new material for the runway and apron combined with the added weight of planes and support equipment would have resulted in unacceptable levels of total and differential settlement of the new pavement systems. Traditional solutions for this include excavation and replacement, preloading, pile-supported structural platforms, and column-supported embankments. While these solutions were technically feasible, each one would either have required too much time or been too costly for this project.

The solution

Treating approximately 43,000 square yards of land, Keller's design-build mass dry soil mixing program stabilized the weak and compressible soils. The program limited short- and long-term settlement of the new taxiway and apron expansion to acceptable levels and provided a stable working platform for minimal subsequent fill placement. The soils were mixed in situ with dry cement and achieved adequate shear strength to support the design loads.

Project facts

Owner(s)

Collier County Airport Authority

Keller business unit(s)

Keller

Main contractor(s)

DeAngelis Diamond

Engineer(s)

GFA International, Inc.
URS Corporation

Solutions

Ground improvement

Markets

Infrastructure
Transportation

Techniques

Dry soil mixing
Mass soil mixing

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