

Walmart SuperCenter

Darlington, South Carolina

Keller designed and installed an earthquake drain system to mitigate liquefaction concerns for a new Walmart SuperCenter.



The project

The new Walmart SuperCenter measured approximately 116,000 square feet in plan dimension. The Darlington, South Carolina site lies within a seismic area influenced by the major fault zone located near Charleston, South Carolina. The seismic design parameters for this site included a local magnitude (ML) of 7.38 and a peak ground acceleration, PGA, of 0.26g.

The challenge

Initial analyses calculated the Liquefaction Potential Index (LPI) for the subject site at 9.0 and liquefaction-induced settlements of up to eleven inches (11 in.). Due to the presence of liquefiable soils through the profile, IBC 2012 dictated that the site be classified as a Seismic Site Class “F”. The challenge was to provide a safe and economical foundation solution accounting for these site conditions.

The solution

Keller designed and installed an Earthquake Drain system to mitigate liquefaction concerns, improve the Seismic Site Class to “D” and minimize seismic settlements to less than two inches.

Project facts

Owner(s)

Walmart Stores, Inc.

Keller business unit(s)

Keller

Main contractor(s)

Gillam & Associates, Inc.

Engineer(s)

Sailors Engineering Associates

Solutions

Liquefaction mitigation

Markets

Commercial

Techniques

Earthquake drains

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