Quality Control for Liquefaction Mitigation

Abstract

Ground improvements have been widely used to mitigate soil liquefaction and lateral spreading hazards. In relatively clean sands, vibro stone columns and compaction grouting provide very cost-effective treatments through densifications. In fine grain soils, soil mixing panels, cells and blocks were used under schools, shopping malls, bridge abutments and levees to prevent soil liquefaction and lateral spreading. Since the design earthquake is based on the low probability events, such as 2% probability in 50 years, which is difficult to directly verify the real performance of the ground improvement, the indirect verification tests are widely used in the industry, such as SPT, CPT, and shear wave velocity measurement, etc.

This presentation provides an outline of QC procedures and examples for various ground improvement methods to evaluate the effectiveness of liquefaction mitigation.