GeoIst

Geotechnical Earthquake Engineering & Consultancy Inc.

Bıyıklı Mehmet Paşa Sokak, Müge Apartmanı, No:20/7
Etiler, Istanbul 34337, Turkey
Tel: +90-212 203 11 27 Gsm: +90-532 286 95 50
E-mail: geoist@geoist.com.tr

www.geoist.com.tr

GeoIst

Seismic Hazard Analysis

Site Characterization

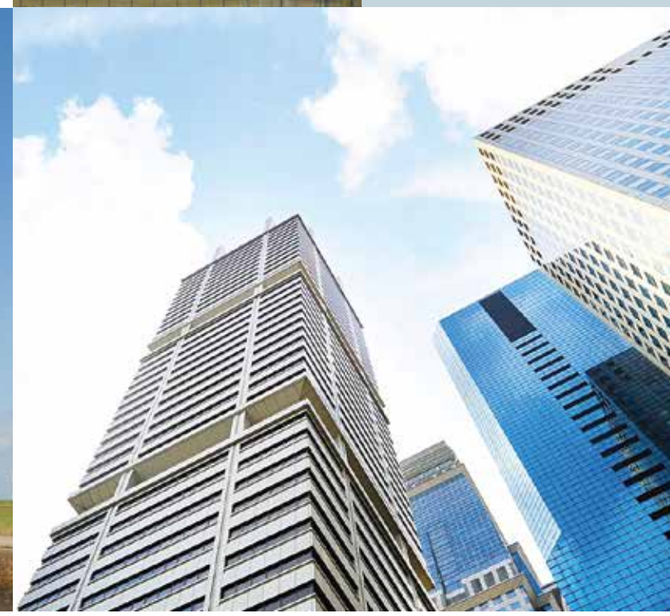
Site Response Analysis

Liquefaction Susceptibility Analysis

Seismic Stability and Deformation Analyses

GeoIst

We provide geotechnical earthquake engineering consultancy services on critical projects, such as tall buildings, power plants, dams, industrial facilities, transportation infrastructure, lifelines, and similar.



Our services include site-specific geotechnical evaluation; assessment of local seismic hazard; site response and liquefaction analyses; seismic slope stability and deformation analyses. In addition, we develop recommendations for earthquake resistant design of foundation systems for buildings and for all other civil engineering structures, including soil improvement methodologies.

Seismic Hazard Analysis

We have the expertise to perform site-specific probabilistic and deterministic seismic hazard analyses to provide estimation of earthquake-induced ground motions and to develop design parameters with respect to target performance levels. We may also provide design ground motion parameters based on several seismic codes. We have significant experience in selecting and scaling recorded earthquake time histories to match design ground motion parameters developed for a specific site.

Site Characterization

We have the capability to plan and guide site-specific geologic, geotechnical and geophysical investigation programs, as well as to interpret the results of such programs to obtain the input data needed for seismic analyses and design.

We have extensive experience and expert knowledge on a variety of field and laboratory methods – ranging from relatively simple methods to state-of-the-art techniques– to evaluate site-specific soil and rock engineering properties for use in seismic response analyses. We also have the expert understanding of seismic monitoring systems and can provide specifications for their implementation along with engineering interpretation of data collected from such systems.

Site Response Analysis

We have the expertise to conduct site-specific response analysis for modeling the effects of local soil conditions on ground response. We are highly experienced in performing one- and two- dimensional site response analyses using equivalent-linear and non-linear soil models. We use well-known computer programs (SHAKE, DEEPSOIL, QUAKEW, FLAC, PLAXIS, and similar) and have the capability to modify these programs towards the realistic solution of a particular problem. We provide ground response time histories for performance-based design of superstructures. We can also perform response analyses considering soil-foundation-structure interaction effects.

Liquefaction Susceptibility Analysis

We can conduct state-of-the-art susceptibility analysis to evaluate liquefaction hazard and liquefaction-induced damage potential at a particular site, including the impact on structures and their foundations. We can also provide an assessment of consequences of liquefaction, and recommendations for ground improvement methods as countermeasures.

Seismic Stability and Deformation Analyses

We can conduct stability and deformation analyses to evaluate the seismic performance of dams, retaining structures, embankments, and natural slopes. We can use a range of approaches varying from simplified methods to sophisticated multi-dimensional non-linear analyses coupled with advanced constitutive soil models to estimate earthquake-induced deformations. We are also able to provide geotechnical recommendations of remedial measures to improve the seismic performance of these structures.