

Hesham El Ganainy

Senior Geotechnical Engineer

Expertise

Explicit and Implicit Numerical Modeling, Soil-Structure Interaction, Site-Specific Seismic Hazard Analysis and Design Ground Motions, Ground Response Analysis, Geotechnical and Structural Design of Piles, Design and Analysis of Deep Support of Excavation Systems, Seismic Probabilistic Risk Assessment (SPRA) of Nuclear Power Plants

Education

Ph.D. (Earthquake Engineering), 2012
Rensselaer Polytechnic Institute, Troy, New York, USA
M.Sc. (Earthquake Engineering), 2008
Western University, London, Ontario, Canada
B.Sc. (Civil Engineering), 2004
Alexandria University, Alexandria, Egypt

Registration

Registered Geotechnical Engineer, California (GE-3202)
Registered Professional Engineer - Civil, California (CE-84483)

Professional Affiliations

Member: ASCE, Geo-Institute, Cal OES

Professional Experience

2022 – Present

*Itasca Consulting Group Inc., Minneapolis, Minnesota
Senior Geotechnical Engineer*

2020 – 2022

*Langan Engineering & Environmental Services, San Francisco, California
Geotechnical Project Engineer*

2016 – 2020

*Simpson Gumpertz & Heger Inc., San Francisco, California
Consulting Engineer*

2013 – 2016

*Rizzo Associates, Pittsburgh, Pennsylvania
Engineer – Nuclear Power Generation / Geomechanics*

Project Experience

Seismic Probabilistic Risk Assessment of Nuclear Power Plants (NPP): Experience includes development of 3D numerical models for development of design response spectra and fragility evaluations of NPP structures, and mechanical and electrical equipment. Projects include Fermi 2 NPP, Michigan, and Watts Bar NPP, Tennessee.

Seismic Analysis of Embedded Structures: Experience includes site-specific seismic hazard analysis and development of design ground motions, ground response analysis, and development of numerical models for Seismic Soil-Structure Interaction of embedded structures. Projects include UCSF Ambulatory Care

Center (ACC) Building, San Francisco, California; 88 Bluxome Development, San Francisco, California; and City View Plaza, San Jose, California.

Analysis and Design of Deep Support of Excavation (SOE) Systems: Experience includes developments of numerical models for analysis and design of tiebacks, deep-soil mixing (DSM), sheet pile walls, diaphragm walls, and secant piles. Projects include Sales Force Tower Plaza, San Francisco, California; City View Plaza, San Jose, California; 30 Van Ness Development, San Francisco, California; and Smith Canal Caissons upgrade, Stockton, California.

Tunneling and Underground Engineering: Experience includes development of a 3D numerical model to study the potential effects of 30 Van Ness Development and SOE on adjacent BART and MUNI structures in San Francisco, California.

Landfill Settlement: Experience includes developments of a 3D numerical model for settlement assessment of Santa Clara City Parcel 4 Landfill, Santa Clara, California.

Pile Foundation Analysis and Design: Experience includes analysis and design of Auger-Cast Piles for Berkel & Co. Contractors Inc. Projects include Facebook, MPK22 Campus, Menlo Park, California; Google Charleston East Campus, Mountain View, California; and UCSF Block-23A, San Francisco, California.

Seismic Retrofit of Wharf Structures: Experience includes pile analysis and pushover analysis of ageing wharf structures as part of their seismic retrofit. Projects include Brooklyn Basin Seismic Retrofit, Oakland, California, among other piers in the San Francisco Bay Area.

Karst Stability: Experience includes development of a 3D numerical model to study the stability of Karst caves in Abu Dhabi Municipality and development of design stability charts. The project was part of a geohazard evaluation to develop risk maps for Abu Dhabi Municipality in the United Arab Emirates.

Levee Stability: Experience includes development of numerical models for back analysis and failure prediction for the levee system in the Netherlands. The project was in collaboration with Deltares in the Netherlands in an effort to develop an early warning system for monitoring levee deformations - IJkdijk Project in the Netherlands.