Integrated Geotechnical Services

A Firm Foundation of Services
Golder’s full scope of geotechnical consulting services are flexible and comprehensive, ranging from site reconnaissance and subsurface exploration, to detailed engineering design, contract-document preparation, forensic analysis, and construction support services. Our capabilities include, but are not limited to:

- Soft ground engineering
- Soil and rock mechanics
- Marine engineering
- Earthworks/Construction services
- Risk assessment
- Pavement design
- Site characterization
- Engineering geology
- Tunneling
- Piling
- Ground improvement
- Slope stability
- Mining
- Hydrogeology
- Design/Build
- Foundation engineering

Our Commitment to You
To develop and implement creative, solid geotechnical solutions, we’ll work with you to understand the unique engineering and business challenges you face.

By understanding these challenges, we can create site-specific solutions to mitigate risk. As a result, an effective design plan that helps you achieve short- and long-term goals is created and implemented.

Together, we’ll produce sound, innovative structures and assessments to fulfill your project objectives.

More Than Consulting
Golder meets your geotechnical needs all over the world. Our international network of offices allows us to quickly respond to requests, develop innovative strategies, and incorporate new technologies into your projects. We are deeply invested in designing and producing sustainable, high-quality solutions, and committed to your success.

Knowledge of local conditions, cultures, languages and regulatory requirements makes it possible for us to assist clients on a wide range of global projects, including transit systems in North America and Asia, high-rise structures in the Middle East, and mining, oil, and gas operations on six continents.
Top-to-bottom Solutions
Partner with Golder and benefit from:
• In-depth consultation to assess project feasibility, design alternatives, failure forensics, and mitigation/repair options
• Evaluation of site characteristics, engineering analysis, and certified laboratory and construction services
• Site-specific design recommendations, such as soil re-use, foundation capacity, slope stability, ground treatment and preparation of permits and construction-ready plans
• Forensic investigations and litigation support
• Construction monitoring, quality assurance, and quality control

Foundation Engineering
• Norfolk Southern High Bridge Replacement (Portageville, NY): Designed rock blasting, slope stabilization, and foundations for new steel arch bridge spanning the Genesee River.
• Sound Transit/Eastlink Light Rail Project (Bellevue, WA): Project features seven miles of track with 16,200 ft. of aerial guideway, five stations, and thousands of feet of retaining structures. Performed extensive site investigations, provided design recommendations for drilled shaft foundations, and spread footings according to AASHTO LRFD Bridge Design code and IBC building-code formats.

Construction Development
• A residential development in BC required a temporary retaining wall to allow construction of an underground parking structure, reduce dewatering volumes during the construction phase, and minimize the risk of settlement of adjacent structures. Golder used the Cutter Soil Mixing (CSM) technology to enable construction of a continuous combined low permeability cut-off and retaining wall at the perimeter of the property providing low noise impact, reduced vibration, and the risk of potential settlement to adjacent properties was mitigated.

Rock Engineering
• Exchange Place Improvements (Jersey City, NJ): As lead tunnel designer, we restored service to the Exchange Place and World Trade Center PATH subway stations, following September 11, 2001.
• Route 30 Pali Tunnel Hybrid Rockfall Barrier System (Maui, HI): Lead designer on design-build contract to construct an innovative hybrid rockfall barrier system above Pali Tunnel’s western portal.

Earthquake Engineering
• Aurora Avenue Bridge Seismic Retrofit (Seattle, WA): Geotechnical engineer for site investigation, shear wave study and liquefaction assessment for the 3,000 ft. long, 24-pier bridge. A site-specific seismic response analysis provided the structural engineer with ground-motion data.
• Mossyrock Embankment (Tacoma, WA): Geotechnical engineer responsible for seismic assessment of the gravel shell and providing ground-improvement recommendations and quality assessment/quality control during construction.