

Geotechnical engineering

Geotechnical engineering is the art and science of designing structures in or on the ground and using soil or rock as construction materials. Arup offers the full spectrum of geotechnical consulting services. We are able to identify and understand geotechnical issues and hazards present in the ground in order to optimise designs and minimise the risk of potential financial loss, damage to property, or threat to life.

Our aim is to help our clients to identify, avoid or manage the risks associated with ground engineering. Our success is based on our innovative approach, supported by the knowledge and experience of our staff, and the ability to provide appropriate solutions that are integrated into the project parameters to meet our clients' needs.

Through consultation from an early stage in a project, we can understand the particular site conditions and advise our clients how to get the best value out of the ground. We continuously develop our skills by working on interesting and technically challenging projects for a broad client base. This has given us experience in all aspects of geotechnical engineering, and in a wide range of ground conditions around the globe. Our core business skills are:

- Risk and value management
- Desk studies and ground investigations
- Foundations and retaining walls
- Basements and substructure design
- Slope stability studies
- Resource development engineering
- Seismic engineering
- Energy and offshore projects
- Earthworks
- Roads and rail
- Tunnels
- Water
- Contaminated land
- Geotechnical assistance for contractors
- Investigation of failures and problem solving
- Litigation advice



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Nundah Bypass, Brisbane



Barrow Island, Western Australia

Our range of supporting skills include:

- Archaeology
- Remote sensing
- Geophysical testing
- Applied geology/hydrogeology
- Soil mechanics/rock mechanics
- Soil dynamics
- Numerical skills
- Research and development