



Geotechnical

Geotechnics

Environment

Groundwater

Rock Mechanics

Geophysics

Earthworks

Integrated Practical
Solutions



Geotechnical Services



“Multiplex and Douglas Partners have worked collaboratively on numerous projects over the years. This collaboration has seen Douglas Partners provide innovative geotechnical, contamination and hygienist solutions for our projects and they continue to be a valued consultancy firm for our business”

*David Ghannoum
Regional Managing Director
Multiplex Australasia*

Expertise from the Earth’s Surface Down

Douglas Partners provides solutions and expertise for projects that interface with the Earth’s surface. Specialist disciplines include geotechnical engineering, rock mechanics, contaminated land, groundwater, geophysics and earthworks.

We have wide regional coverage, with over 500 staff in 20 branches across Australia including 15 NATA registered laboratories. This allows staff and resources to be available on the ground to service projects quickly and reliably. Our specialist disciplines work closely together to provide integrated and efficient service and solutions.

Quality is a hallmark of our work. Of course we have an ISO9001 accredited QA system, however our dedication to quality runs much deeper than this, it’s part of the culture and can be summed up by our mantra: “Keep it Simple, Get it Right, Do it Well”.

With an in-house team of professional consulting staff specialising in the development, control and protection of environmental resources, Douglas Partners’ highly qualified Environmental specialists provide clients with services and support across a wide range of industries.



Services Across Sectors

Douglas Partners' consulting services provide our clients with a range of integrated and specialist skills with the aim of delivering practical solutions across a large number of business sectors including:



DEFENCE



PROPERTY & BUILDINGS



WASTE MANAGEMENT



ENERGY



RESOURCES



WATER



HEALTHCARE



SPORT & RECREATION



LAND DEVELOPMENT



TRANSPORT



MARINE



TELECOMMUNICATIONS

Integrated Practical Solutions



Geotechnical Services



In order to achieve our client's objectives, Douglas Partners provides one of the most experienced and innovative geotechnical teams in Australia.

With a proven track record in projects ranging from detailed investigations, provision of support services through the design stages of a project, ending in construction supervision and monitoring, our geotechnical team can provide innovative advice and solutions for your project.

Investigations

Whether it be on land, over water or offshore, Douglas Partners has the in-house resources and experience to complete a wide range of geotechnical investigations for a range of projects across all development sectors. Our highly experienced engineers, geologists, geophysicists and technicians can manage projects and call upon extensive additional internal resources to build integrated investigation teams to successfully complete large and challenging projects.

Typically we undertake investigations for:

- Industrial, commercial and residential buildings, both low and high rise;
- Deep basements;
- Roads and railways including pavements, bridges, tunnels, embankments and cuttings;
- Subdivisions and land capability studies;
- Large scale service installations and communications/energy sector studies; and
- Mines and dams, together with associated infrastructure.



Geotechnical Analysis and Design

Douglas Partners can provide geotechnical analysis and design services for a range of building and infrastructure projects that extend our geotechnical involvement beyond the investigation phase.

These services can cover:

- Foundation design (including capacity and settlement of shallow footings, slabs, driven and bored piles, pile testing);
- Retaining structure design (including gravity walls, anchored, propped or cantilevered walls, reinforced soil walls);
- Slopes and excavations (slope stability assessment, soil nail and anchor design);
- Earthworks and embankments (stability analysis and settlement analysis);
- Pavement and container handstand investigation (flexible and rigid);
- Ground improvement techniques and bridging options; and
- Temporary piling platform / crane pad design and assessment.

“Douglas Partners has greatly assisted Enstruct Group on a range of projects involving deep basements and their interaction with roads and rail infrastructure. They have coupled numerical modelling with sound practical advice to manage ground risk.”

*Ross Clarke,
Managing Director
Enstruct Group*



Geotechnical Services



Terrain Evaluation & Land Capability

Douglas Partners provides an integrated range of services to clients who require efficient and practical solutions to problems associated with land development projects:

- Preliminary aerial photography mapping;
- Assessment of available geotechnical, groundwater and environmental data;
- Hazard and risk assessments (e.g. land instability, site contamination);
- Assessment of foundation and road pavement conditions;
- Identification and assessment of potential land contamination and groundwater problem areas;
- Mapping, definition and testing of potentially poor/problematic soil conditions;
- Selection and categorisation of site suitability (e.g. housing, roads, parkland, industrial);
- Definition and mapping of areas that require special/further work;
- Environmental assessments;
- Earthworks quality control testing;
- Coordination of laboratory testing;
- Comprehensive reporting of site data;
- Pavement thickness design; and
- Site classification.





Transport & Power Route Location Studies

Douglas Partners provides advice on preliminary route location by undertaking a review of the following:

- Published topography maps;
- Published maps and in-house information relating to subsurface conditions; and
- Aerial photography.

This information is then utilised to plan, locate and undertake ground truthing intrusive investigations.

Specialist In-Situ Testing, Drilling & Sampling

Douglas Partners owns and operates a comprehensive range of drilling equipment and in-situ testing equipment, ensuring a high standard of service, project control and reliability for our clients.

NATA registered laboratories for testing of soil and rock are attached to most of our offices. We can also set up field laboratories to undertake sampling and field testing on remote sites.

For more information, please read our Earthworks capability brochure.

“Ausgrid has used the services of Douglas Partners on many substation development and sub-transmission upgrade projects over the last 20 years. Douglas Partners’ engineers have made the effort to understand our operating environment and our special requirements and this has enabled them to meet our needs with sensible solutions. I have come to expect timely and innovative responses and good communication from Douglas Partners and have not been disappointed.”

*David Stanbury
Design Development Manager
Civil & Building Design
AUSGRID*



Geotechnical Specialists



“Douglas Partners has worked on a number of small to large scale, and high profile marine projects in Sydney including: Port Botany Expansion, Sydney Metro, Western Harbour Tunnel & Beaches Link, and Sydney Ferry Wharves. These projects have included complex investigations in difficult environments with extensive marine stakeholder engagement.”

*Scott Easton
Principal Geotechnical Engineer
Douglas Partners*

Geomechanics For Near Shore & Offshore Structures

The range of services that we provide for offshore geomechanics includes:

- Geotechnical investigations in the open sea from drilling ships and barges;
- Specialised testing equipment, including a wide range of cone penetration testing gear, soil samplers and environmental monitoring systems;
- Geotechnical design and analysis of: offshore foundations, gravity based structures, well configuration, anchors;
- Marine geophysical exploration;
- Onshore and offshore soils laboratory testing;
- Geotechnical assessment and numerical analysis of soil behaviour;
- Site investigations for pipeline route surveys and assessment of seabed stability;
- Dynamic pile capacity testing;
- Sediment contamination assessments for dredging;
- Offshore geotechnical surveys; and
- Evaluation of liquefaction and site response and site response to seismicity.



Construction Monitoring, Inspections, Testing & Advice

Douglas Partners can provide services during construction in order to verify that ground conditions are consistent with those assumed in design and to assess conditions for temporary works:

- Bored pile / pier inspections;
- Settlement and lateral displacement monitoring;
- Vibration assessment and monitoring;
- Slope creep movement assessment (inclinometers);
- Field testing of foundation soils and rock;
- Assessment of excavation and batter stability;
- Construction advice and analysis for temporary works;
- Groundwater monitoring and dewatering assessment;
- Rock slope mapping and assessment of face support requirements; and
- Earthworks inspection and quality control testing.

Quarry Products & Resource Assessments

Douglas Partners provides an integrated range of services to clients requiring innovative and economic solutions in the quarrying industry.

Our quarrying services include:

- Geological and resource assessments;
- Geological mapping services;
- Provision of field drilling and testing services;
- Laboratory testing by NATA accredited laboratories;
- Excavatability assessment;
- Quarry planning services;
- Geotechnical design and stability analysis
- Environmental assessments;
- Groundwater control, quarry products and resource assessment; and
- Drilling and blasting optimisation studies.



Geotechnical Specialists



“Getting a detailed understanding of your ground conditions and how best to work with them is paramount to a successful project. UGL have worked successfully with Douglas Partners over many years, on numerous substation, transmission and solar projects, to achieve competitive outcomes.”

*Greg Moller
Technical Services Manager
Utilities & Resources
UGL Pty Limited*

Engineering Geology & Slope Stability Assessments

We have a team of highly experienced engineering geology consultants who provide services and support in the following specialist areas:

- Engineering geology (site evaluation; terrain evaluation and classification; materials sources, suitability and resource estimates; quarry site selection; route evaluation and selection);
- Mining engineering (design of pit slopes and slope stabilisation; shafts, tunnels and underground rock mechanics; subsidence estimation; tailings dams and management systems; infrastructure; mine floor stability);
- Geological mapping of cliff lines and excavation faces for rock fall, wedge failure, residential, commercial and recreational developments in hazardous coastal areas, and deep basements; and
- Assessment and monitoring of deep landslides and design of engineered slopes to rectify long term site stability.





Pavements

Douglas Partners has extensive experience in pavement engineering and cover all aspects of pavement projects for small projects and local roads through to highway infrastructure, container ports, airports and hardstands.

Our capabilities include:

- Design of new flexible, semi rigid and concrete pavements using circly and other design methods applicable to all ports authorities throughout Australia;
- Investigation and assessment of performance of existing pavements for rehabilitation, replacement, widening and overlay;
- Design of new hardstand and heavy duty pavements for ports, airports and container facilities; and
- Insitu testing of pavement deflection by Benkelman Beam.



Integrated Practical Solutions



Geotechnical Specialists



Mining Geotechnics

Our surface mining and underground investigation and geotechnical/earthworks design services include:

- Surface and underground mapping;
- Underground support analysis and design;
- 2D and 3D modelling of stopes and long walls;
- Design of stopes, shafts, declines, drifts and tunnels;
- Subsidence studies;
- Open pit and box cut stability and design;
- Assessment of long wall parameters (including face width, caving characteristics, chock loads and face stability);
- Aerial photograph interpretation;
- Shaft and drift investigation and design;
- Geological outcrop mapping;
- Surface geophysical surveys;
- Hardstand, airstrip and haul road pavement thickness design;
- Clean water, industrial and tailings disposal dams;
- Footing capabilities and settlements for processing plant, conveyors and stocker reclaimer systems; and
- Subgrade preparation, support and improvement for balloon loop rail lines, drop structures and bridges.



Geophysics Services

Douglas Partners also provides geophysical services to clients seeking to determine in situ physical properties of soil and rock masses, and to identify physical property contrasts.

Geophysics may be used during investigation, construction and remedial phases of projects. Projects can vary from general site assessment, where bulk information of the site subsurface permits cost effective selection of targets for further investigation, to measurement of a particular site characteristic including:.

- Surface seismic refraction and shallow refraction profiling;
- Downhole and crosshole P&S wave logging;
- Marine seismic reflection profiling;
- Bathymetric and sidescan sonar mapping;
- Electrical resistivity profiling and vertical electrical sounding;
- Electromagnetic (EM) profiling and magnetometer profiling; and
- Gravity surveys and ground penetrating radar imaging.

For more information, please read our Geophysical Services brochure.

Our 50 years of experience gained from over 100,000 completed projects, combined with our highly skilled and hands-on team of consultants, delivers clients innovative advice and solutions across a wide range of industries.



Metropolitan and Regional Coverage

For information on how Douglas Partners can assist on your project, please contact one of our branches below or email info@douglaspartners.com.au

BALLINA	☎ (02) 6681 1744
BRISBANE	☎ (07) 3237 8900
CAIRNS	☎ (07) 4055 1550
CANBERRA	☎ (02) 6260 2788
CENTRAL COAST	☎ (02) 4351 1422
COFFS HARBOUR	☎ (02) 6650 3200
DARWIN	☎ (08) 8948 6800
GEELONG	☎ (03) 5221 0711
GOULBURN	☎ (02) 4822 8395
GOLD COAST	☎ (07) 5568 8900
MACARTHUR	☎ (02) 4647 0075
MELBOURNE	☎ (03) 9673 3500
NEWCASTLE	☎ (02) 4960 9600
NTH WEST SYDNEY	☎ (02) 4666 0450
PERTH	☎ (08) 9204 3511
PORT MACQUARIE	☎ (02) 6581 5992
SUNSHINE COAST	☎ (07) 5351 0400
SYDNEY	☎ (02) 9809 0666
TOWNSVILLE	☎ (07) 4779 9866
WOLLONGONG	☎ (02) 4271 1836