GEOTECHNICAL ENGINEERING
CAPABILITY STATEMENT

Services

- Site investigation and reporting
- Lot classification in accordance with AS2870-2011 for shallow footing design
- Foundation design
- Excavation shoring design
- Pavement assessment and earthworks design
- Landslide, slope stability and rock face stability studies
- Groundwater infiltration and groundwater management
- Geotechnical/ geological hazard and terrain assessment
- Desktop studies
- Site characterisation, including salinity, thermal resistivity, durability
- Acid Sulfate Soils assessment
- Design support for contractors
- Construction support
- Vibration, settlement & noise monitoring
- Construction QA/QC services
- Construction aggregate, quarry and borrow studies

Areas of Expertise

- Geotechnical Engineering
- Engineering Geology
- Hydrogeology
- Regulatory Approval
- Construction Processes

Industry Sectors

- Land development / urban renewal
- Rail, road & utilities infrastructure
- Industrial & manufacturing
- Telecommunications
- Power generation & transmission
- Oil & gas
- Government

Our Mission

EI Australia (EI) geotechnical mission is to provide technically excellent and practical solutions to our client's geotechnical problems.

Geotechnical Team

Since 1994, EI's multi-disciplinary team of engineers and earth scientists has provided state-of-art solutions in response to challenging ground engineering problems.

With experience in a range of projects and conditions including geotechnical investigations for land subdivisions, structures and pavements along with engineering design, construction supervision, construction verification and risk assessment, EI's team of professionals is committed to expediting project completion with the aim of limiting whole-of-life project risks.

EI provides specialist expertise to engineer solutions and manage a wide range of geological and geotechnical challenges, including land instability, deep excavations in soil, rock and groundwater, adverse foundation and subgrade conditions and land remediation. Our geotechnical team is developing a strong reputation for delivering innovative, technically excellent and cost effective engineering solutions for design of land, transport and utilities infrastructure, earth dams, soil slope and rock face stabilisation measures, remedial works and underground service excavations.

Our team includes Chartered Professional Engineers with the Institute of Engineers, Australia and RMS approved Slope Risk Assessors. Members of our team are registered on the National Professional Engineers Register.

Our clients include, amongst others, private land developers, local governments, engineers and architects.

About EI

For more than 25 years, EI has provided geotechnical engineering services alongside its contaminated land management capabilities to a range of industry sectors, helping our clients meet their operational and development goals.

On-going responsiveness to client needs is a top priority at EI and this is reflected in our consistent growth, repeat business and ongoing referrals. Many of our projects combine geotechnical, hazardous materials and contaminated land services to the benefit of our clients.

EI pursues high safety standards in all work activities and is committed to maintaining excellence in client services and it is very committed to its QMS.

EI's commitment to the professional growth of its staff translates into a company-wide commitment to developing effective contaminated land solutions, managing risk and overcoming complex environmental challenges.

Head Office

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Established 1994

GEOTECHNICAL ENGINEERING
KEY PROJECTS

Residential Development Camperdown, NSW (2014)

Redevelopment of a 0.66 ha site including construction of nine residential buildings up to seven-storeys high over two basement levels. Site challenges involved uncontrolled fill up to 6 m depth under the building footprints, varying geology across the site and proximity to two major roads which required direct consultation with NSW RMS by EI. Investigations involved borehole drilling, test pit excavation, site mapping and laboratory testing. EI formulated a detailed site model and provided design advice for foundations and basement retention. EI also carried out

detailed design of a soil nail wall approximately 150 m long and up to 8 m high and underpinning of a neighbouring eight-storey structure.

St Basils Aged Care Facility Randwick, NSW (2014)

EI provided geotechnical services for the construction of an aged care facility comprising 73 independent living units and 113 residential aged care beds. The site was underlain by Aeolian sand deposits up to 12 m thick with elevated groundwater levels. Basement retention had to be designed to limit ground movement which had the potential to damage heritage structures adjacent to the excavation. EI's involvement included a review of existing geotechnical data for the site and design of working platforms and temporary roadways for construction

plant. EI supervised the installation of a contiguous shoring pile retention system and foundation piles for the development.

Residential Subdivision Horningsea Park, NSW (2014)

A residential subdivision of 12 ha, flood prone site, in an area of high salinity risk and with environmentally sensitive vegetation along the existing creek line.

The assessment of the site included auger holes, test pits and dynamic cone penetrometer testing, with geotechnical and salinity testing. EI's report included recommendations for design and construction of foundations, retention systems, pavements and excavation support considering the presence of saline soils and dispersive soils. Advice was provided on management of saline soils in accordance with the Western Sydney Salinity Code of Practice prepared by the Western Sydney Regional Organisation of Councils (WSROC).

Residential Development The Entrance, NSW (2014)

EI assessed soil and rock conditions at the site in order to provide a conceptual site model for input to basement retention and foundation design. The site was underlain by the Patonga Claystone formation which has a tendency to produce sliding failures on siltstone bands at low angles of repose.

EI worked with the structural designers for this project to design a retention system which managed the risk associated with poor ground conditions in a cost effective manner.

Commercial Redevelopment Alexandria, NSW (2013-2014)

Redevelopment of a 1.5 ha industrial site incorporating part of an existing warehouse, over a basement car park. We assessed the results from three Cone Penetrometer Tests and five boreholes up to 29m depth and of laboratory testing on soil and groundwater samples. Our report presented recommendations for design and construction of new shallow footings, piles, pavements, raft slabs and excavation support, re-use of existing columnar support and groundwater management. Challenges included the presence of significant buried services, buildings adjoining the site, shallow groundwater, uncontrolled heterogeneous fill with voids over loose Botany Sands at shallow foundation levels, very dense sand horizons inter-bedded with soft peaty clay at depth and variable bedrock levels.

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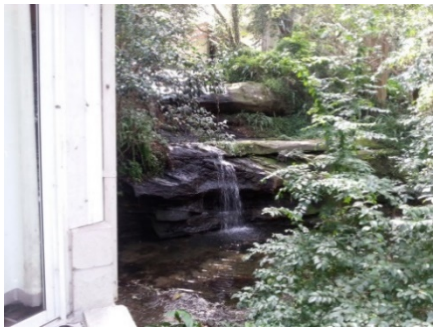
Residential Development Dee Why, NSW (2014)

EI carried out a geotechnical assessment and slope risk assessment for a residential development in Dee Why, NSW. The proposed development straddled a 4 m high waterfall associated with an historic drainage line. The assessment included drilling of 5 boreholes, laboratory testing of collected soil samples and a semi-quantitative rock slope risk assessment according to Australian Geomechanics Society Guidelines. The geotechnical assessment of the site was carried out under tight site access restrictions and with environmental controls in place to prevent the possibility of an environmental incident caused by drilling near a watercourse.



UNSW Mechanical Engineering Building – Kensington, NSW (2014)

Geotechnical supervision of the demolition and construction of a new teaching and workshop facility for the Department of Mechanical and Manufacturing Engineering at the University of New South Wales. EI's involvement included the review of structural designs for footings and shoring, the supervision of piling and on site assessment of working platform design. Specific project challenges included the presence of historic foundations, maintaining the stability of neighbouring structures and a stepped rock profile across the site.

Mixed Use Development – Mascot, NSW (2013-2014)

EI assessed subsurface soil, rock and groundwater conditions at a current industrial site for redevelopment as a nine-storey commercial building over one to two levels of basement parking. Key geotechnical constraints for the site included the presence of deep soil associated with the Botany Basin sands and the proximity of the development to the Airport Link Rail Tunnel. EI's involvement is to include detailed geotechnical investigation, finite element analysis and liaison with Sydney Trains to demonstrate that the proposed development would not impact the rail tunnel.

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