

## LINTON SPEECHLEY

### EDUCATIONAL QUALIFICATIONS

Bachelor of Engineering, Second Class Honours  
University of Technology, Sydney, 1993.

Master of Engineering Science (Geotechnical Engineering),  
University of New South Wales, 1998

### MEMBERSHIPS

Member, Institution of Engineers, Australia.  
Member Australian Geomechanics Society.



## PROFESSIONAL HISTORY AND EXPERIENCE

### 1993 – Present

**Principal (2008 – Present), formerly Geotechnical and Senior Geotechnical Engineer (1993 – 2008).  
JK Geotechnics, Sydney.**

#### Responsibilities:

- Coordination, supervision and reporting on geotechnical investigations in the Sydney and NSW regions including major construction projects, footing inspections for multi-storey buildings and ground conditions for foundation and pavement designs for residential, industrial and commercial developments. Also infrastructure works for new roadways, replacement rail bridges, sewage treatment works, water pump stations, water reservoirs, detention basins and artificial wetlands.
- Providing in house expertise on computer based retaining wall design, including analysis and design of anchored sheet pile walls, contiguous and soldier pile walls, and soil nail walls using 2D Finite Element software such as WALLAP and PLAXIS.
- Computer based slope stability design and analyses using SLOPE/W for all types of slopes from large existing landslides through to dams, wharves, riverbanks and small residential slopes with various retention systems. Many slope stability analyses have used interaction with 2D Finite Element Seepage analysis using SEEP/W.
- Slope Risk Assessments for RTA slopes (both rock cuts and fill embankments) Trained in the use of the RTA Guide to Slope Risk Assessment.
- Stability assessments including detailed walkover surveys and comprehensive drilling, test pit and sampling programs. Computer analyses have been undertaken to assess the stability of slopes in the existing condition as well as with the effects of erosion, saturation and rapid drawdown, and with stabilisation procedures in place.
- Investigation for new roads, road upgrading and pavement failures involving deflection testing (by Benkelman Beam and Falling Weight Deflectometer testing), borehole drilling and excavation of test pits including insitu density testing (for local councils and industrial property owners).
- Computer based design and analyses using CIRCLY for new and rehabilitated pavements, including comparisons of designs and costs for flexible, rigid and concrete block pavements, incorporating asphaltic concrete, concrete, crushed rock, stabilised materials and sub-standard road building materials.
- Investigation of geotechnically difficult sites including dykes, buried sandstone cliffs undercut by erosion, loose water-charged gravel deposits and deep soft alluvial soils.
- Stabilisation detailing of excavations in sandstone and soils involving rock bolting, shotcrete panels and soil nailing.
- Vibration monitoring of structures (including Heritage buildings) during rock breaking excavations on adjacent sites.
- Dilapidation surveys and damage assessments.
- Geotechnical expert opinion reports



**MAJOR PROJECTS**

<p>North West Rail Link (NWRL)</p>	<p>Project Director responsible for completing geotechnical investigations for the 5.5km of viaducts, overbridges and surface civil works for the North West rail Link from Bella Vista to Rouse Hill. The works were carried out for the contractor Impregilo Salini Joint venture. The investigation included over 125 cored boreholes up to 38m deep. The works were designed to meet the varying demands and constraints at each location and operating up to 4 drilling rigs simultaneously on the project. The works included management of the JK Geotechnics team of geotechnical engineers to produce the fieldwork in a timely and cost effective manner. During Construction Linton will be the project director responsible for providing geotechnical advice to the contractor during all facets of the project, including earthworks and pile drilling.</p>
<p>Port Botany Expansion Project</p>	<p>Member of the Project Verifier Team responsible for the geotechnical discipline. The project involves dredging sand from Botany Bay to form a 63 hectare reclamation area for use as a container terminal. About 1850m of wharf will be created using precast concrete counterfort retaining wall units of about 650 tonnes each. The Project Verifier Role involves detailed review of all geotechnical aspects in relation to the subcontractors proposed design, including the geotechnical model, shear strengths of fissured clays, global stability analysis, sliding, overturning and bearing capacity of retaining walls, settlement of reclamation, 2D finite element deformation analysis of retaining walls and reclamations, and piling.</p>
<p>Yamba Coastline Management Study</p>	<p>Project Engineer for a geotechnical assessment of Pilot Hill at Yamba on the NSW Mid North Coast. The assessment has included walkover survey, historical searches, detailed rainfall analysis, borehole drilling and inclinometer installations, and development of geotechnical and hydrogeological models, in order to provide an assessment of Landslide Risk Zones for Council Implementation Plans and Action Plans and to develop preliminary treatment options. The assessment was critically reviewed and subjected to community consultation and discussions.</p>
<p>Sydney Casino Project</p>	<p>Project Engineer for over 200 cored boreholes for detailed proving of footings, ranging from 0.8MPa to 10MPa, and including footings in, and around, an existing shear zone/dyke.</p>
<p>Jones Bay Wharves 19, 20 and 21</p>	<p>Project Engineer for detailed geotechnical investigations and computer based stability analyses of existing fill embankments below the existing wharf structure prior to redevelopment. The fill embankments were founded on variable thicknesses of very soft clays with depths to rock in excess of 35m at some locations. Analyses of stabilisation options including lateral stability of embankments by piling through embankments. Monitoring during construction included, installation and monitoring of inclinometers in the embankments, surface survey monitoring during pile driving and geotechnical review of all piling records including PDA pile testing and CAPWAP analyses.</p>
<p>Stabilisation design for an existing landslide at Castle Hill.</p>	<p>Investigations included installation of piezometers and inclinometers. Piezometers were installed with electrical data loggers to monitor groundwater responses to rainfall. Seepage analyses was carried out to model existing groundwater levels and to predict groundwater levels with changes in rainfall patterns. Rainfall analyses looking at rainfall return periods were used to model the groundwater and this was compared to data obtained from historical searches of known movement. The seepage model was incorporated into stability modelling to back analyse the overall landslide stability and to assess stability with stabilisation options. Stabilisation options were presented including complete excavation of the landslide material and a drainage solution comprising vertical drainage wells drained by horizontal bores.</p>



Stability Assessments at Thredbo Village.	Following the Thredbo Landslide in July 1997, stability assessments on all individual lodges was required. Currently in excess of 20 individual lodges have been assessed, with all assessments subject to rigorous external peer review.
Howard Park Redevelopment	Geotechnical advice and investigations for redevelopment of an existing tailings pond. Investigations included recommendations for remediation of the very soft pond surface to provide a safe environment, acid sulphate soil management during perimeter earthworks and trials of electro-dewatering with the CSIRO.
Jerrys Plains Rail Spur	Project Engineer for geotechnical investigations for up to 15km of rail line including cuts up to 20m high and major bridge structures. Investigations also included the proposed Coal Loading Terminal with loading bins, conveyors, bulk coal storage areas, and design of small dams.
Glebe Island Berths 5 and 6	Project engineer becoming project director for geotechnical investigations, including stability analysis of existing seawall and embankments, installation and monitoring of inclinometers and review of survey data.
Mackeral Beach NSW	A number of stability assessments for individual residences, some of which backed onto an existing landslip. Assessments included topographical mapping of sandstone cliff lines and identification of potentially unstable boulders. Work included design and supervision of stabilisation measures, such as catch fences and hand breaking up of boulders in difficult terrain.
Sydney Olympic Hockey Stadium	Project geotechnical engineer in charge of geotechnical investigations, reporting and site inspections during construction.
Prince of Wales Hospital	Project Engineer in charge of geotechnical investigations and design advice during construction for site formation, excavation, retention and building footings.

**INVESTIGATION OF OTHER GEOTECHNICALLY DIFFICULT SITES INCLUDING:**

- Botany alluvial sands and peats and several sites underlain by deep soft alluvial soils.
- Sites containing dykes in Sydney and Bondi Junction, NSW.
- Sites containing potentially unstable floaters and boulders.