



**ALEX DURAN**  
MscEng B.E. Hons (Mining)

---

**Country of Citizenship:** Australia

**Educational Qualifications:** M.Sc. in Engineering, Melbourne University, 1986  
B.E. Hons in Mining, Melbourne University, 1982

**Professional Associations:** Member, AUSIMM  
Member, Australian Geomechanics Society

**Publications:** 4

**Languages:** English and Spanish

**FIELDS OF SPECIAL COMPETENCE:**

- Geotechnical aspects of open pit mine design.
- Stability of rock and soil slopes.
- Rock mass classification and shear strength estimation.
- Computer applications.

**EXPERIENCE:**

**2008**

Principal  
Pells Sullivan Meynink Pty Ltd.

**1996 to 2007**

Associate  
Pells Sullivan Meynink Pty Ltd.

**1993-1996**

Senior Open Pit Geotechnical Engineer.  
Porgera Joint Venture, Papua New Guinea.

**1992-1993**

Manager, Mining Geotechnics, Queensland.  
Coffey Partners International Pty Ltd, Brisbane QLD.

**1989-1992**

Senior Geotechnical Engineer  
Coffey Partners International Pty Ltd, Sydney NSW.

**1987-1989**

Geotechnical Engineer  
Coffey & Partners Pty Ltd, Sydney NSW.

## SELECTED PROJECT EXPERIENCE – OPEN CUT

1 of 3

Ernest Henry, QLD	Ongoing slope design and management for 500m deep pit.
Cadia Hill Gold Mine, NSW	Design Studies for final west wall and advice with wall support.
Kidston, QLD	Geotechnical studies for Wises Hill Pit. Hanging wall designed for overall angle of +60 degrees. Utilisation of cable bolting in the footwall allowed saving of some 10Mt of waste stripping.  Geotechnical advice and input for slope management of Eldridge pit.
Porgera (1993-1996) Open Pit Geotechnical Engineer	Planned and carried out investigations for ultimate pit walls up to 500m high with interaction of underground workings. Re-assessed geotechnical models to provide higher confidence in designs. Author of update geotechnical report for design of ultimate pit walls. Increase in overall slope angles will realise a saving of some \$80M to the project in waste stripping. Additional savings realisable in reduction of required fleet and dump space.
Union Reefs Project, NT	Geotechnical assessment for open pit mining to 280m in steeply dipping greywacke with potential for toppling. Ongoing review of design as pit developed.
Mt Keith, WA	Slope design and slope management for staged pits to +500m deep.
Sunrise Dam, WA	Geotechnical studies for open pit mining for a potentially 500m deep pit.
Ensham, QLD	Ongoing geotechnical advice for all aspects of open strip coal mining.
Olympic Dam, SA	Expansion Project design studies to address 800m deep pit. Addressed all laboratory testing, rock mass classification, shear strengths and probabilistic stability analyses for Expansion Project.
MacFarlane, QLD	Detailed feasibility study for open pit mining of oil shale to 400m depth.
Tanami, NT	Slope design and slope management for over 11 pits up to 120m in depth.
Kanowna Belle, WA	Geotechnical assessment for open pit mining to 180m depth.

## SELECTED PROJECT EXPERIENCE – OPEN CUT

2 of 3

Ravenswood, QLD	Slope management for Nolans open pit to 120m depth. Ongoing advice for Sarsfield development.
Gosowong, Indonesia	Slope design and slope management for mining up to 200m depth in very poor quality rock mass in an equatorial environment.
Tarmoola, WA	Slope design and review for open pit mining to depth of 250m.
Gabanintha, WA	Slope design for 3 pits to 100m depth.
Labouchere, WA	Slope design and review of mining of multi-pit operation.
Horsham, VIC	Feasibility study of mineral sands mining.
Tom Price, WA	Studies for Southern Ridge second slice. Stability review of South East Prongs final walls. Review of stability in Southern Ridge area.
Wallgrove Quarry, NSW	Ongoing review of stability issues in a 200m deep basalt quarry.
Kable Sands, NSW	Ongoing review of stability issues in extremely weathered sandstone quarry.
Phosphate Hill, QLD	Ongoing review role for open pit mining.
Maxwell Quarry, NSW	Review of stability issues in a quarry.
Glennies Creek, NSW	Review of pillar stability for new open cut mine.
Attunga Quarry, NSW	Review of stability concerns within a limestone quarry.
Mt Todd, NT	Review of pit designs and advice for 300m deep pit in bedded siltstone/greywacke.
Stuart Oil Shale, QLD	Geotechnical and groundwater studies for open cut mining, potential bedding shears within footwall sequence and faulting in highwall. Recently completed detailed feasibility for commercial project.
Vera, QLD	Advice for pit stability and interaction with decline entrance.
Wallgrove Quarry, NSW	Qualitative risk assessment for long term use of final quarry for backfilling.
Tallawang, NSW	Pit design and ongoing geotechnical input for open pit mining of magnetite.

## SELECTED PROJECT EXPERIENCE – OPEN CUT

3 of 3

Jubilee Gold Mine, WA	Slope designs for open pit mining. Toppling in high strength foliated schists and rock mass failure in low rock mass strength ultramafic rocks.
Hidden Valley Gold, PNG	Slope design for open pit in poor rock mass conditions. Analyses utilised statistical techniques coupled with Hoek-Brown rock mass strength criteria.
Macraes, NZ	Slope Design Studies.
The Granites, NT	Geotechnical review of pit slope designs and assessment of designs for three pits with planned depths of up to 120m.
Kelian Gold Project, Indonesia	Geotechnical investigations for slope design.
Muja Coal Mine, WA	Geotechnical study to assess designs with and without cable bolting of low strength and sheared low wall strata. FLAC analyses to assess potential movements behind major fault in Archaean rocks and within Permian sediments in low wall.
Cosmo Howley, NT	Slope design for Woolwonga and Chinese Howley pits in greywacke with potential for toppling.
Marandoo, WA	Geotechnical assessment of excavatability of materials with various mining systems.
Reefton, NZ	Feasibility level studies for open cut mining.
Meekatharra, WA	Slope design and slope management for over 15 pits up to 120m in depth.
Freeport, Indonesia	Slope design studies and training in pit slope management.
Batu Hijau, Indonesia	Studies for slope stability.
Penjom, Malaysia	Review of pit slope designs.
Palmarejo, Mexico	Feasibility studies for open pit mining.
Mt Leyshon, QLD	Slope design studies.
Waihi, NZ	Studies for review of caving potential.

## PROJECT EXPERIENCE - UNDERGROUND

1 of 1

Tallawang, NSW	Studies for underground mining and ongoing design.
Cross City Tunnel, NSW	Review role for ground support determination of ventilation tunnel.
Osborne, QLD	Feasibility study for Kulthor deposit, decline and stope design.
Tanami Mine, NT	Feasibility study for underground mining and vent raises of Carbine Deeps.
Ravenswood Gold Mine, QLD	Studies for underground mining of Nolans.
Vera, QLD	Studies for underground declines and vent raises.
Parramatta Rail link	Analyses for station cavern design.
Cross City Tunnel, NSW	Advisor to State Rail Authority in interaction issues with Cross City Tunnel.
Broken Hill, NSW	Field studies for potential decline.

## PROJECT EXPERIENCE – COMPUTER APPLICATIONS

1 of 1

Olympic Dam, SA	Implemented geotechnical logging system and EXCEL spreadsheet to present all data graphically as well as assessing rock mass classification. Currently assisting in implementation of ACQUIRE logging system.
Pells Sullivan Meynink	Development of numerous EXCEL spreadsheets/Macros to allow management, presentation and analysis of geotechnical information.
Rio Tinto, WA	Development of geotechnical logging system. Utilising EXCEL spreadsheet with full automatic validation for latter entry into gINT for presentation of logging.
Stability Analyses	Literate in majority of computer applications utilised in the assessment of slope stability.

## PUBLICATIONS

1 of 1

Duran, A. (2003), "Characterising Rock Masses". Ground Control in Mining – Technology & Practice. UNSW November 2003. pp 167-177.

Duran A. and Douglas K. (2000). "Experience with Empirical Rock Slope Design". GeoEng 2000, Melbourne.

Duran A. and Douglas K. (1999). "Do Slopes Designed with Empirical Rock Mass Strength Stand Up?", 9<sup>th</sup> ISRM Conference, Paris, 1999. pp 87–90.

Sullivan T.D., Duran A. and Eggers M.J. (1992). "The Use and Abuse of Oriented Core in Open Pit Mine Design". Third Large Open Pit Mining Conf., Mackay 1992, pp. 387-395.