



**ANDREW DE AMBROSIS**  
PhD, BE Civil (Hons)

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<b>Country of Citizenship:</b>	Australia
<b>Educational Qualifications:</b>	Doctor of Philosophy The University of Sydney, 2005 Bachelor of Engineering (Civil) (Hons – Class I) The University of Sydney, 1996
<b>Professional Associations:</b>	Member of the Australian Geomechanics Society
<b>Publications:</b>	3
<b>Languages:</b>	English

Andrew is an Associate Geotechnical Engineer with Pells Sullivan Meynink Pty Ltd. Andrew's consulting experience has included detailed numerical modelling, geotechnical investigation, analysis and design. He has been involved in a variety of projects ranging from; tunnelling, open cut mining, long distance water pipelines, dams, sewer and wastewater systems, pavements, bridge foundations, road cuttings and residential and commercial development.

**FIELDS OF SPECIAL COMPETENCE:**

- Numerical Analysis.
- Tunnelling.
- Rock – Soil Slope Stability.
- Reinforced Soil Retaining Structures.

**EXPERIENCE:**

**August 2006 - Present**

Pells Sullivan Meynink Pty Ltd, Sydney, Associate.

**November 2004 – August 2006**

Pells Sullivan Meynink Pty Ltd, Sydney, Senior Geotechnical Engineer.

**July 2000 – November 2004**

GHD LongMac, Senior Geotechnical Engineer.

**January 1997 – July 2000**

University of Sydney, Research Student developing a 3D finite element program, capable of simulating the construction of a soil nailed excavation support.

**January 1995 – May 1996**

GHD LongMac, Geotechnical Engineer.

## NUMERICAL ANALYSIS

1 of 1

Batu Hijau, Indonesia	Analysis for the assessment of rockmass strengths, pit wall stability, and design of adits and caverns located within the pit wall.
Burunda Bus Tunnel, Brisbane	Large and small strain 2D analysis for forensic analysis of cracked tunnel lining.
Chuquicamata, Chile	Forensic investigation. Involved review of 3D numerical analyses of cavern within pit slope walls.
Lane Cove Tunnel, Sydney	2D and 3D numerical modelling for the design of various tunnel sections, including dual road tunnels with low rock cover and high surcharge loads and collapse recovery works.
Cross City Tunnel, Sydney CBD	Forensic numerical investigation of cavern failure, using 3D and 2D numerical analyses.
Chatswood to Epping Rail Line, Sydney	Numerical modelling for tender, detailed design and construction stage. Work included integrated 2D and 3D finite and distinct element analyses.
Power Street Bridge, Melbourne	Numerical modelling for design of remedial works. Bridge abutments, approach slabs, piles and wing walls were discretely modelled in 3D.
Multistorey Apartment Basement, Sydney CBD.	Integrated 2D and 3D modelling of a proposed basement excavation adjacent to live rail tunnels.
Tugun Rail, Gold Coast, Qld.	Concept stage design to assess settlement caused by shallow TBM on airport runway.
Multistorey Apartment Foundations, Waterloo, NSW	2D and 3D numerical modelling of pile soil interaction for the design of foundations.
Burnley Tunnel, Melbourne	Review of 2D and 3D analyses conducted for design of tunnel rectification works.
Rail Embankment, Hexham, NSW	Numerical modelling for the design of railway embankments in deep soft soil deposits.

## TUNNELING

1 of 1

Batu Hijau, Indonesia	Rockmass characterisation, analysis and design for pit dewatering tunnels proposed within the walls of the operating open pit mine. The management of risks associated with interaction between the underground works and active pit slopes was a major issue for this work.
Airport Link Tender, Brisbane	Provided technical support for tender design team.
Burunda Bus Tunnel, Brisbane	Forensic analysis of cracked CIP tunnel lining.
Lane Cove Tunnel, Sydney	Analysis and design of tunnel support ranging from multiple heading drives with full sets to pattern bolting with shotcrete. Inputs into the development of the geotechnical model and monitoring programs.
Cross City Tunnel, Sydney CBD	Forensic investigation of cavern failure. Involved input into development of geotechnical model and sensitivity analyses to identify contributing factors.
Chatswood to Epping Rail Line, Sydney	Input for tender, detailed design and construction stage advice. Work included investigation drilling and testing, numerical analysis for tunnel support design and assessment of interaction between surface structures and underlying caverns.
Tugun Rail, Gold Coast, Qld.	Concept stage design to assess settlement caused by shallow TBM constructed tunnel on airport runway.
Burnley Tunnel, Melbourne	Review of design of tunnel rectification works for tunnel contractor.

## MINING

1 of 1

Batu Hijau, Indonesia	PSM Project Manager for 2007 pit slope management assessment. Work included rockmass domaining and characterisation, assessment of rockmass strengths, review of groundwater modelling, assessment of proposed pit slope stability and recommendations of appropriate final pit walls.
Lihir Gold, PNG	PSM Project Manager for 2008 Geotechnical planning study. Work includes rockmass domaining, characterisation and strength assessment and review of LOM plan with identification of key design issues.
Chuquicamata, Chile	Forensic investigation. Involved review of 3D numerical analyses of cavern within pit slope walls.
North Parkes, NSW	Review of mapping data for assessment of rock mass cavability.
Waihi, NZ	Studies for the design and review of pit slopes constructed in a rock mass altered by caving of abandoned stopes.
Ernest Henry, Qld	Studies to aid programming of mining activities for a 500m deep pit.
Porgera, PNG	Review of pit slope design and cut back measures.
Ensham, QLD	Review of planned open cut mining operations adjacent to the Nagoa River.
Wesfarmers, WA	Review of available geotechnical data to help identify suitable mining horizons.

## FOUNDATIONS AND PILES

1 of 1

Power Street Bridge,  
Melbourne

Forensic study of bridge pile and abutment response as part of remedial work design.

Multistorey Apartment Foundations,  
Waterloo, NSW

Investigation of soil pile interaction for the design of ground improvement measures within a thick clay layer.

Rail Embankment,  
Hexham, NSW

Work for the design of a piled rail embankment in deep, compressible alluvial deposits.

Patrick Container Terminal,  
Port Botany, NSW

Work for the design of piled footings with very small deflection tolerances. Work included an assessment of degradation of pile capacity due to cyclic loading.

Lawrence Hargrave Drive,  
Wollongong, NSW.

Design of unanchored pile wall for the retainment of roadway in an active landslide environment.

## SELECTED SITE INVESTIGATION

1 of 1

Clarence Coffs Water Supply, Coffs Harbour, NSW	Investigation and characterisation of more than 80km of proposed pipeline route through rural and bushland areas.
Energy Australia 132kV Cable Tunnel	Investigation, insitu testing and sampling for an inner city tunnel. Work involved deep coring of vertical and angled holes, insitu permeability testing and collection of samples for chemical and environmental testing.
Sydney Water	Numerous site investigations for Sewage Pumping Station and Sewage Treatment Plant upgrades.
Summerland Way upgrade, Wiangaree	Investigation for the design of piled bridge footings, road cuttings and embankments over soft alluvial deposits.
West Charlestown Bypass	Drilling investigations for the design of major road cutting including installation of inclinometers, extensometers and standpipe piezometers.
Residential Development, Camden	Preliminary and design stage investigations for the construction of two dams in a highly dispersive clay environment. Also included assessment of saline ground conditions.

## PUBLICATIONS

1 of 1

de Ambrosis A. L., 2004, "Numerical Analysis of large Adjacent Caverns for Sydney's Epping to Chatswood Rail Line", *Proc. 6<sup>th</sup> Aust. N.Z. Young Geotechnical Professionals Conference*, Gold Coast, Aust.

de Ambrosis A. L. and Small J. C., 2000, "Modelling Reinforcement Response in a Soil Nailed Excavation", *Australian Geomechanics*, Vol. 35 No. 3, pp.77-82.

Small J. C., Zhang H. H. and de Ambrosis A. L., 2000, "Analysis of Piled Raft Foundations", *Proc. 10<sup>th</sup> Int. Conference of the International Association for Computer Methods and Advances in Geomechanics*, Tucson, Arizona, 7-12 January 2001, Vol.2, pp.1489-1494.