

# PHILIP J. N. PELLIS

FTSE BSc(Eng) MSc DSc(Eng) DIC CPEng MASCE FIEAust

- Educational Qualifications:** BSc (Eng), Cape Town, 1966  
MSc (Eng), London, 1968  
DIC (Soil Mechanics), London, 1968  
DSc(Eng), Cape Town, 1993
- Professional Associations:** Fellow, Engineers Australia  
Fellow Australian Academy of Technological Sciences and Engineering  
Member ASCE
- Awards:** 1972 SA Inst of Civil Eng – Best Paper in Transactions  
1993 EH Davies Memorial Lecture, Australian Geomechanics Society  
2003 Australian Centenary Medal for Services to Civil Engineering  
2008 Allen Neyland Award, AusIMM

## FIELDS OF SPECIALISATION:

- tunnels and mining rock mechanics
- earth and rockfill dams, and tailings dams
- hydrogeology
- foundations, slope stability and design of stabilisation works
- haul road and heavy duty pavements

**CAVEAT:** "You are only as good as your last game".

## EMPLOYMENT:

### 2009

Principal, Pells Consulting

### 1993 - 2009

Principal, Pells Sullivan Meynink Pty Ltd  
Adjunct Professor of Civil Engineering, University of NSW

### 1981 - 1993

Director, Coffey Partners Pty Ltd, Sydney  
Manager, New South Wales

### 1975 - 1980

Senior Lecturer in Rock Mechanics, University of Sydney

### 1971 - 1974

Senior Research Officer, Rock Mechanics Division, CSIR  
Senior Research Officer, National Institute for Road Research, CSIR

### 1967 - 1970

Design Engineer, Ninham Shand & Partners, Cape Town - Assistant Resident Engineer, Xonxa Dam

## PROJECTS RELATED TO HARD ROCK TUNNELS, UNDERGROUND MINES AND DEEP BASEMENTS

Drakensberg Pumped Storage Scheme	South Africa	Two and three-dimensional finite element analysis for determining optimum shape and layout of power chamber for 1000MW hydro-electric scheme.
Elura Mine	Cobar, NSW	Design of underground open stope mine, including stress analysis and stability analysis of crown and rib pillars.
Ocean Outfall Tunnels, Malabar, Bondi and North Head	NSW	Engineering geological interpretation, evaluation of stand-up times, design of primary support.
Sydney Harbour Tunnel	Sydney	Geotechnical investigations and geotechnical design studies for the tunnel beneath Sydney Harbour.
Bennelong Car Park	Sydney	Site investigation for 17.5m span underground cavern, rock mechanics analyses, primary and permanent support design, instrumentation installation and monitoring, construction control.
Skitube	Snowy Mountains	Evaluation of permanent support requirements, leading to recommendations for rockbolt positions and spacings and shotcrete requirements.
Bondi Pumping Chamber	Sydney	Design of permanent support of major underground pumping chamber.
Ballarat Goldfield NL	Victoria	Formulation of geotechnical model and design of primary and permanent support for 250m deep 1 in 8 decline in weak rock where ground yielding led to sidewall convergence of up to 600mm.
Eastern Distributor	Sydney	Development of concept of piggyback tunnel including upper carriageway carried on prestressed concrete planks supported by narrow ledges of rock. Design of permanent support for tunnels in project. Provision of technical advice during construction.
Bakun Hydro Tunnel	Philippines	Review of the requirements for steel lining of the high pressure tunnels; assessment of permanent support requirements for non-steel lined length of headrace tunnel.
Burnley Tunnel, City Link	Melbourne	Retained in December 1999 to review the causes of failure of the nearly completed 3.5km long, 3-lane tunnel. In April 2000 retained as principal consultant responsible for design and construction supervision of remedial structural works and subsequent cement and chemical grouting of the stabilised lining.
Brisbane North South Bypass Tunnel	Queensland	Chairman of Engineering Taskforce established by the Mayor of Brisbane to assess technical feasibility, construction programme, construction costs and project risks.

## PROJECTS RELATED TO HARD ROCK TUNNELS, UNDERGROUND MINES AND DEEP BASEMENTS

Cable Tunnel, Surry Hills to Haymarket	Sydney	Advice to the Principal regarding groundwater inflows, grouting and a potential Latent Conditions Claim.
Transgrid Cable Tunnel, St Peters to Ultimo	Sydney	Expert advice to Principal in regard to ground and groundwater conditions encountered in 3.6m diameter TBM drive.
City West Cable Tunnel	Sydney	Development of Geotechnical Baseline Report for inclusion in contract.
RTA, Hume Highway	Picton	Assessment of subsidence impacts of proposed longwall mining, at a depth of 450m, on the highway pavements and bridge structures.
MK1 Transfer Station Chuquicamata	Chile	Independent investigation and reporting in regard to the collapse of the MK1 Cavern that stopped production from the in-pit crushers. Work done together with SRK Chile.
Hunter Water Corporation	Newcastle NSW	Study and risk assessment of Balikera Tunnel feeding Grahamstown dam, and designation of remedial measures.
Wynyard Walk Tunnel	Sydney	Review and technical advice on tenders. Peer review of support design prior to and during construction.

## DESIGN AND CONSTRUCTION OF SOFT GROUND TUNNELS

Prospect	NSW	Design and construction phase advice for twin jacked culverts through clay fill and weathered shale beneath twin line railway.
Cannington Decline	North Queensland	Investigation, preparation of geotechnical model, design of support system and construction supervision for a 300m length of 1 in 8 decline through fissured and sheared, reactive hard clays.
Ballarat Goldfield, NL	Victoria	Formulation of geotechnical model and design of primary and permanent support for 250m deep 1 in 8 decline in squeezing ground.
New Southern Railway	Sydney	Feasibility level geotechnical assessment of tunnel route through Botany sands, alluvial clay and Hawkesbury Sandstone. Establishment for the EPA of absolute and differential settlement criteria for the project.
Eastern Distributor	Sydney	Design and construction supervision of 120m of pipe canopy supported tunnel through alluvial and residual clays, and two 10m lengths of pipe canopy through extremely weathered Great Sydney Dyke.
Epping to Chatswood Rail Tunnel	Sydney	Part of PSM team responsible for design and construction implementation of twin 120m long Chatswood Dive tunnels in residual and weathered shales.
Prominent Hill Mine	South Australia	Peer review of design of declined through sands and reactive hard clays.
Hume Highway	Sydney	Initial design for pipe canopy support for railway tunnel with very shallow tunnel under 5 lanes of highway.

## PROJECTS RELATED TO THE FOUNDATIONS OF BRIDGES, MAJOR BUILDINGS AND MARITIME STRUCTURES

Diepsloot Arch Bridges	Johannesburg	Detailed investigation and analysis of foundation displacements for two, 1 km long three span arch bridges.
Bobbejaansrivier Gorge Bridge	Cape Province	Rock foundation behaviour for large span arch bridge carrying eight lane freeway.
Gateway Bridge	Brisbane	Investigation, design recommendations and construction advice and inspections for rock socketed foundations for Pier 7.
State Bank	Martin Place, Sydney	Site investigation, design recommendations for foundations, checking of foundation conditions during construction.
D2 Development	Harrington Street, Sydney	Site investigation, design recommendations for 30 m deep excavation, and foundations, analysis of effect of excavation on existing rail tunnel.
Aussat Earth Station	Belrose, Sydney	Site investigation, design recommendations for antennae foundations on fill, supervision of earthworks.
Nepean River Bridge, Maldon-Port Kembla Railway	NSW	Geotechnical investigation, design recommendations for foundations and excavations, subsidence analysis.
Selangor Turf club	Kuala Lumpur	Site selection for proposed new race course at Sungei Besi, evaluation of settlements and earthworks requirements for construction on an abandoned tin mine site.
East Arm Wharf	Darwin	Geotechnical design and review consultant for the Thiess Barclay Mowlem JV for the 480m long x 23m high sheet pile wall wharf structure.
Andoom Dump Facility	Weipa	Assessment of geotechnical and groundwater conditions which caused the major failure of the inground facilities in March 1996.
Yandicoogina Bridge, Area C, Pilbara	WA	Specialist advice in regard to stability against toppling and sliding of pier foundation on edge of gorge, including recommendations for rock mass reinforcement.
Village Cinema Site Redevelopment	Sydney	Site investigation, advice on shoring and rock mass reinforcement for 24m deep basement and associated tower structure.
BHP Billiton Site Hunter River	Newcastle	Specialist review of sheet pile wall stability and design of SBMA system in sand.

## PROJECTS RELATED TO ROADS AND RAILWAYS

East Hills – Campbelltown Railway	NSW	Geotechnical investigations, materials evaluation and bridge foundation design for new railway through southern and western suburbs of Sydney.
Kaltim Prima Coal, East Kalimantan	Indonesia	Preparation of design charts for haul road pavements for 240 tonne dump trucks.
Rio Tinto Technical Services	International	Preparation of pavement design part of Rio Tinto's design and construction guidelines for haul roads within Rio Tinto's international operations.
RTA New South Wales and BHP Billiton	New South Wales	Analysis of impacts of longwall mining beneath the Hume Highway on pavement performance and design of mitigation measures.
Thiess Mining	Queensland	Design of heavy duty pavements for 797 Cat trucks at Burton Colliery.

## PROJECTS RELATED TO SLOPE STABILITY AND OPEN PIT MINES

De Beers Open Pit Diamond Mine	Kimberley,	Analysis of movements in side slopes of old open pit diamond pipe.
Burraborang Valley	NSW	Analysis of stability of escarpment above Nattal North Colliery, monitoring of slope movements, design of rockfall protection system.
Hassans Walls	Lithgow	Evaluation of ground cracking and cliff falls due to full extraction beneath the Hassans Walls reserve.
State Highway 23	Newcastle, NSW	Design of slope stabilisation measures for two deep cuttings.
State Rail Authority	NSW	Classification of landslip risk areas on the North Coast Line from Maitland to the Queensland border, including the branch line from Casino to Murwillumbah.
Kaltim Prima Coal Mine East Kalimantan	Indonesia	Investigation and measurement of the strengths of weak mud rocks forming major waste dumps up to 120m high; preparation of design charts for the assessment of allowable waste dump angles for use in mine planning.
Bengalon Coal Prospect, East Kalimantan	Indonesia	Terrain evaluation and preparation of detailed designs for out-of-pits waste dumps including catchment diversion requirements and control of acid generation.
Thredbo	NSW	Member of PSM team acting as advisors to the NSW Coroner on the causes of the 1997 landslide at Thredbo. Responsible for all testing and stability analyses. Responsible for all testing and stability analyses.
Hornsby Quarry	Sydney	Team leader for report on geotechnical constraints relevant to possible redevelopment of a 150m deep quarry in the Hornsby diatreame.
Melawan Open Pit, Thiess Indonesia	East Kalimantan	Investigation analysis and reporting on causes of failure of in-pit dump, December 2010.
Satui Open Pit Thiess Indonesia	South Kalimantan	Investigation into causes of failure of the in-pit dump.

## WATER SUPPLY DAMS, AND TAILINGS DAMS

Xonxa Dam	South Africa	Design of 60m high rockfill dam including reinforcement layout for downstream face. Assistant Resident Engineer during construction.
Laing Dam	South Africa	Design of post-tensioned cable system for stabilising existing 45m high concrete gravity wall.
Upper Smoke Creek Silt Control Dam, Argyle Mine	WA	Design and documentation of silt control dam - 8 m high flow through rockfill dam and 75 m wide spillway.
Palmer River Gold Project	Queensland	Site selection, survey and embankment design and documentation for alluvial mine water supply dam. Superintendent for construction of the dam (26m high).
Cacow Gold Mine	Queensland	Design and documentation for a 30m high membrane face rock fill tailings dam. Superintendent for construction.
Cowarra Creek Gold Mine	NSW	Engineering advice during construction of membrane faced rock fill dam for gold tailings.
Kaltim Prima coal Mine, East Kalimantan	Indonesia	Investigation, design and construction supervision for 35m high Murung earthfill dam and associated 1.9km long pipeline/channel river diversion system.
Kaltim Prima Coal Mine, East Kalimantan	Indonesia	Investigation and design of 40m high Mentari earth dam.
Kelian Gold Mine, East Kalimantan	Indonesia	Project manager for site investigation design and construction of 55m high earth/rock fill dam for tailings storage.
Kelian Gold Mine, East Kalimantan	Indonesia	Site investigation, design and construction advice for a 120m high sloping clay core rock fill dam completed in October 1996.
Golden Cross Gold Mine	New Zealand	Assessment of major landslide causing movement of an existing 80m high tailings dam.
Cadia Mine Tailings Dam	NSW	Investigation, design and construction supervision of 45m high earth/rockfill starter embankment.
Possum Skin Dam, Glennies Creek	Hunter Valley, NSW	Investigation, design and technical supervision for 122 ML saline water storage dam.
Xstrata Coal	Australia	Preparation of corporate guidelines for the capping and remediation of coal tailings deposit.
Hume Dam Murray River	NSW	Specialist advice in respect to foundation of the spillway training wall.
Hazelwood Cooling Pond Dam	Victoria	Review of dam safety.



## PROJECTS RELATED TO KARST FORMATIONS

Yuen Long Development	Hong Kong	Advice to contractor regarding the risks associated with alternative foundation systems proposed for the LRT terminal at Yuen Long.
Lot 10 Jalan Sultan Ishmael	Kuala Lumpur	Site investigation and foundation design for 10 storey development located above the Kuala Lumpur limestone. Risks associated with alternative foundation systems assessed.
Goliath Cement Factory	Tasmania	Geotechnical facets of design of clinker storage facility.

### Other Projects

- Darwin - Alice Springs Natural Gas Pipeline, NT
- Tindal Airforce Base, NT
- BP Refinery, Kwinana, Perth, WA
- Grain Silo, Transvaal, South Africa
- Kelian Gold Project, East Kalimantan , Indonesia

## EXPERT OPINION IN ARBITRATION, MEDIATION AND LITIGATION

Monasavu Hydro-Electric Scheme	Fiji	Relating to rock mass conditions within the 800 m long, 2.3 m diameter, 45° inclined penstock shaft; settled out of court.
Newlands Mine	Queensland	Rock conditions for drilling of bored piles for infrastructure at the Newlands Mine; case heard in Brisbane.
Wheao Tunnel	New Zealand	Tunnelling conditions and tunnel support; settled out of court.
Boomerang Creek Tunnel	Wyong NSW	Compressive and shear failure under high horizontal stresses in 20km 3m diameter tunnel; assistance in preparation of contractual claim; case heard in Sydney.
Tahmoor Colliery	NSW	Construction claims for excavation of the No. 3 shaft; settled out of court.
Crinum Mine	Queensland	Excavation of the conveyor drift and men and materials drift; the drifts pass through a sequence comprising a basalt capping overlying Tertiary clays and Permian sediments; settled out of court.
Transfield Tunnelling NW Sewer	Melbourne	A 4km section of 4m diameter TBM tunnel in mixed face of basalt, sand and quartzite with high water inflows; settled out of court.
Kooragang Island	Newcastle, NSW	A piled foundation for a silo, case heard in Sydney.
Tahmoor Colliery	NSW	Construction claims for excavation of the No. 3 shaft.
Thredbo	NSW	Member of PSM team acting as advisors to the NSW Coroner on the causes of the 1997 landslide at Thredbo; case heard in Sydney.
Glenorie	NSW	A 55m high waste fill, case heard in Sydney.
Pekanbaru	Sumatra	Collapse of wharf structure on the Siak River; case heard in Singapore.
Baal Bone Colliery	NSW	Insurance claim in relation to road pavement failure.
Cataract River	NSW	Action by local residents, against an operating longwall colliery, arising from cracking and damage to the valley of the Cataract River; hearing in Picton, NSW.
Rushcutters Bay	Sydney	Damage to an adjacent building arising out of construction of a basement for a new development in alluvial sediments and sandstone; heard in Sydney.
City West Link	Sydney	Claim for unforeseen foundation conditions for a 260m long insitu arch over an old railway cutting.

## EXPERT OPINION IN ARBITRATION, MEDIATION AND LITIGATION

West Ryde Tunnel	Sydney	Latent Conditions Claim for Arbitration on a tunnel project; case heard in Sydney.
City Link Project	Melbourne	Professional Indemnity Claim arising from the design of the Burnley Tunnel.
Esperanza Mine	Gunpowder, Qld	Latent Conditions claim arising from a contract for excavation of overburden in an open cut mine; settled in Mediation.
Waste Fill	Glenorie, NSW	Provision of expert evidence on behalf of EPA in Criminal Trial.
Proposed Hillside Basement and Building	Rose Bay, Sydney	On behalf of Objectors in Land and Environment Court Hearing; Construction Certificate Refused.
Proposed Hotel	Rose Bay, Sydney	For Developer at Land and Environment Court Hearing; Development Approved.
EA Cable Tunnel	Sydney	Latent conditions claim in regard to water ingress.
Karuah Bypass	NSW	Expert report on behalf of Roads and Traffic Authority for mediation regarding foundation conditions.
Gas Pipeline	Tasmania	Claim by McConnell Dowell against Duke Energy regarding trenching conditions.
TransGrid TBM Cable Tunnel	Sydney	Latent Conditions claim by the Contractor.
Bulk Liquids Berth	Dampier, WA	Foundation conditions for trestle wharf structure.
Fatality, Cross City Tunnel	Sydney	Causes of a fatal roof collapse.
Chuquicamata Mine Codelco	Chile	Collapse of underground transfer chamber on the M1-K1 ore transport system.
Thalanga Copper Mine	Queensland	Open pit landslip and its impact on adjacent public road
Ashton Coal Mine Hunter Valley	NSW	Highwall slip and its impact on Glennies Creek Road.
Festival Site Central Coast	NSW	In respect to site conditions following period of heavy rains.
Offshore Pipeline Great Ocean Road	Victoria	Latent conditions claim affecting a directionally drilled pipeline.
Road Collapse Somersby, Central Coast	NSW	Part of team providing expert opinion to RTA in respect to the causes of the collapse that resulted in five deaths.
Senoko to Gambas Tunnel	Singapore	Dispute regarding design and construction facets of two shafts and a TBM tunnel, in relation to insurance claims.

## EXPERT OPINION IN ARBITRATION, MEDIATION AND LITIGATION

Private House, Maitland	NSW	Existing house built above mine workings in the Greta Seam, outside a proclaimed Mine Subsidence District.
Basement, Dee Why	NSW	Dispute in regards to inflows through and beneath a secant pile retention system in sand.
Basement, Geelong	Victoria	Dispute in regard to performance of a secant pile wall in alluvium.
Basement, Brisbane	Queensland	Insurance claim in respect to anchors supporting a six level basement in soil and rock.
Marina, Bribie Island	Queensland	PI claim resulting from a landslip during development of the marina.
Sydney Opera House Car Park	NSW	Dispute in respect to land tax, requiring assessment of extent of excavation and support thereof.
Open Pit, Thalanga	Queensland	Insurance claim in relation to damage to Gregory Development road adjacent to the completed open pit.
Open Pit, Aston Hunter Valley	NSW	Insurance claim in relation to damage to Glennies Creek Road as a result of a pit wall failure.
Embankments on soft clay, Gateway 2, Brisbane	QLD	Dispute in respect to design and construction of new freeway embankments on soft estuarine clay.
Yallourn Mine, Morwell River Diversion	Victoria	Factual and expert opinion reports in respect to collapse of the MRD in 2013.
Mandelong Mine, Centennial Coal	NSW	Expert report in respect to R&D taxation claim.
Ichthys Project, Darwin	NT	Expert report in respect to claim by Contractor for ground conditions at Blayden Point.
Sheet Pile Wall, Perth	WA	Expert report in respect to PI claim against a design engineer.
Aurizon Rail Project, Hunter Valley	NSW	Expert report in respect to rock classification for bored piles.

## LIST OF PUBLICATIONS

### BOOKS

1. **PELLS, P J N (Ed)** – “Structural Foundations on Rock”, Balkema, Rotterdam, 1980.
2. **PELLS, P J N (Ed)** – “Engineering Geology of the Sydney Region”, Balkema, Rotterdam, 1985.
3. **PELLS, P J N and HAMMON, P** – “The Burning Mists of Time”, Phil Square Publishing, Katoomba, 2009.
4. **PELLS, P J N** – “The Sydney Opera House Car Park and The Double Helix”, Phil Square Publishing, Katoomba, 2011.

### REFEREED PUBLICATIONS

5. **SHAND, N and PELLs, P J N** – "Experience in the Design and Construction of Reinforced Rockfill Dams", Trans 10th ICOLD, Q36, R19, Montreal 1970, pp 291-310.
6. **PELLS, P J N** – "The Instrumentation of the Bridle Drift Rockfill Dam", Tans S.A. Inst of Civil Engineers, October 1971.
7. **PELLS, P J N, MIDGLEY, D C and PITMAN, W V** – "Floods in the East London Region", Trans S.A. Inst of Civil Engineers, January 1972, pp 5-12.
8. **PELLS, P J N and BOOTH, A R** – "The Shear Strength of Some Typical Fill Materials", Trans S.A. Inst of Civil Engineers, June 1973, pp 167-168.
9. **PELLS, P J N and MAUREMBRECHER, P M** – "Cutting Failures Near Waterval Boven", Trans S.A. Inst of Civil Engineers, Vol. 16, No. 5, 1974 pp 180-181.
10. **McKELLAR, D C, NUNN, J and PELLs, P J N** – "Instrumentation of Some Embankment Dams in Southern Africa", Field Instrumentation in Geotechnical Engineering, Butterworths, London 1973.
11. **PELLS, P J N** – "The Behaviour of Fully Bonded Rock Bolts", Proc 3rd Int Congress Rock Mechanics, ISRM, Denver 1974, Vol. 11B, pp 1212-1217.
12. **PELLS, P J N** – "Predicted Displacements of the Rock Foundations of a Major Arch Bridge", Proc 6th Regional Conf for Africa on Soil Mechanics and Foundation Engineering, Durban 1975.
13. **PELLS, P J N** – "The Use of the Point Load Test in Predicting the Compressive Strength of Rock Materials", Australian Geomechanics Journal, Vol. G5, No. 1, 1975.
14. **PELLS, P J N** – "Measurement of Engineering Properties of Hawkesbury Sandstone", Australian Geomechanics Journal, Vol. G7, No. 1. 1977.
15. **PELLS, P J N** – "Reinforced Rockfill for Construction Flood Control", Proc ASCE, Construction Division, March 1978.
16. **PELLS, P J N and TURNER, R M** – "Janbu, Bjerrum and Kjaernsli's Chart Reinterpreted", Discussion Canadian Geotechnical Journal Vol. 15, 1978, pp 436-437.
17. **PELLS, P J N, DOUGLAS, D J, RODWAY, B, THORNE, C P and MCMAHON, B K** – "Design Loadings for Foundations on Shale and Sandstone in the Sydney Region", Australian Geomechanics Journal G8, 1978, pp 31-39.
18. **PELLS, P J N and TURNER, R M** – "Elastic Solutions for the Design and Analysis of Rock-Socketed Piles", Canadian Geotechnical Journal, Vol. 16, 1979, pp 481-497.

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### *(REFEREED PUBLICATIONS, CONTINUED)*

19. **ROWE, R K and PELLIS, P J N** – "A Theoretical Study of Pile-Rock Socket Behaviour", Proc Int Conf Structural Foundations on Rock, Sydney, 1980, A. A. Balkema, pp 253-264.
20. **PELLIS, P J N and TURNER, R M** – "Endbearing on Rock with Particular Reference to Sandstone", Int Conf Structural Foundations on Rock, Sydney, 1980, A.A. Balkema, pp 181-190.
21. **PELLIS, P J N, ROWE, R K and TURNER, R M** - "An Experimental Investigation into Side Shear for Socketed Piles in Sandstone", Int Conf Structural Foundations on Rock, Sydney, 1980, A.A. Balkema, pp 291-302.
22. **WILLIAMS, A F and PELLIS, P J N** - "Side Resistance Rock Sockets in Sandstone, Mudstone and Shale", Canadian Geotechnical Journal, Vol 18, No. 4, 1981.
23. **PELLIS, P J N and FERRY, M J** - "the Needless Stringency in Sample Preparation Standards for Laboratory Testing of Weak Rocks", Proceedings Int. congress on Rock Mechanics, Melbourne, Section A, p A203, 1983.
24. **BROWN, B and PELLIS, P J N** - "Analysis of the Stresses in Reinforced Rockfill Dams", Water Power, Vol. 35, No. 8, pp 50-53, August 1983.
25. **PELLIS, P J N** - "The Plate Load Test" in 'In Situ Testing', ed. M.C. Ervin, Balkema, Rotterdam, p 73, 1983.
26. **ERVIN, M C and PELLIS, P J N** - "Performance of Timber Piles in Interbedded Sands and Clays", 11th Int. Conf. Soil Mech. And Fdn. Eng., San Francisco, 1985.
27. **PELLIS, P J N** - "Engineering Properties of Hawkesbury Sandstone" in the Engineering Geology of the Sydney Region, ed. P. Pells, Balkema, Rotterdam, 1985.
28. **PELLIS, P J N** - "Engineering Properties of Rocks of the Narrabeen Group" in The Engineering Geology of the Sydney Region, ed. P. Pells, Balkema, Rotterdam, 1985.
29. **PELLIS, P J N and HIGGINS, P** - "Design and Construction of Pier 7 of the Gateway Bridge". Proc. ISRM congress, Montreal, 1987.
30. **PELLIS, P J N, BRAYBROOKE, J C, KOTZE, G P and MONG, J** - "Cliff line collapse associated with mining activities. Soil Slope Instability and Stabilization". Walker/Fell, AA Balkema, 1987.
31. **PELLIS, P J N and BEST, R J** - "Aspects of Primary Support Design for Tunnels in the Sydney Area", Trans. Inst. Eng. Australia, 1991.
32. **PELLIS, P J N, POULOS, H G and BEST, R J** - "Rock Reinforcement Design for a Shallow Large-Span Cavern". Proceedings 7th Int. Congress on rock Mechanics, Aachen, 1991.
33. **PELLIS, P J N** - "Uniaxial Strength Testing", Volume 3, Chapter 3, Comprehensive Rock Engineering, Pergamon Press, 1993.
34. **PELLIS, P J N** – "Rock Mechanics and Engineering Geology in the Design of Underground Works". The 1993 E.H. Davis Memorial Lecture, Australia.
35. **PELLIS, P J N, BEST, R J and POULOS, H G P** – "Design of Roof Support of the Sydney Opera House Underground Parking Station". Tunnelling and Underground Space Technology, vol 9, No 2, 1994.

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36. **PELLS, P J N, MOSTYN, G and WALKER, B F** – “Foundations on Sandstone and Shale in the Sydney Region”. Australian Geomechanics Journal, No 33 Part 3, December 1998.
37. **WALKER, B F and PELLs, P J N** – “The Construction of Bored Piles Socketed into Shale and Sandstone”. Australian Geomechanics Journal, No 33, Part 3, December 1998.
38. **PELLS, P J N** – “An Equational Quick Clay Slide, Sumatra, Indonesia”. 8<sup>th</sup> Aust - NZ Geomechanics Conference, Hobart, 1999.
39. **PELLS, P J N** – “State of Practice for the Design of Socket Piles in Rock”. 8<sup>th</sup> Aust - NZ Geomechanics Conference, Hobart 1999.
40. **DAI, C AND PELLs, P J N** – “Two-dimensional large strain consolidation prediction and incrementally deposited tailings”. Proc. Int. FLAC Symposium on Numerical Modelling, Minneapolis, Balkema, 1999.
41. **PELLS, P J N and HUNTER, M** - The Kelian Waste Rock Storage Dam for the Prevention of Acid Rock Drainage. ANCOLD Bulletin No 115, August 2000.
42. **PELLS, P J N** – “Developments in the design of tunnels and caverns in the Triassic Rocks of the Sydney Region”. International Journal Rock Mechanics and Mining Sciences 39 (2002) 569-587.
43. **BERTUZZI, R and PELLs, P J N** – “Geotechnical parameters of Sydney sandstone and shale”. Australian Geomechanics, Vol 37, No 5, December 2002.
44. **PELLS, P J N** – “Substance and mass properties for the design of engineering structures in the Hawkesbury Sandstone”, Australian Geomechanics Journal, Vol 39, No 3, September 2004.
45. **PELLS, P J N** – “Rock mass grouting to reduce tunnel inflow”, Tunnels and Tunnelling International, March 2004.
46. **CLARKE, S J and PELLs, P J N** – “A large scale cable jacking test for rock modulus measurement, Lucas Heights”, Australia New Zealand Geomechanics Conference, 2006.
47. **PELLS, P J N and BERTUZZI, R** – “Limitations of rock mass classification systems”, Tunnels and Tunnelling International, April 2007.
48. **SMITH, A G and PELLs, P J N** – “Impact of fire on tunnels in Hawkesbury Sandstone”. Underground Space Technology, Elsevier, 2007.
49. **PELLS, P J N** – “What happened to the mechanics in rock mechanics and the geology in engineering geology?” 6<sup>th</sup> Int. Symposium on Ground Support in Mining and Civil Engineering Construction, 2008.
50. **PELLS, P J N** – “Putting the mechanics back into rock mechanics”, 1<sup>st</sup> Southern Hemisphere International Rock Mechanics Symposium, Perth, 2008.
51. **KAY, D J, BUYS, H, DONALD, G S, HOWARD, M D AND PELLs, P J N** – “Management of the Hume Highway Pavement for Subsidence Impacts from Longwall Mining”, 8<sup>th</sup> Triennial MSTs Conference, Hunter Valley, NSW, May 2011.
52. **MACKIE, A AND PELLs, P J N** – “Carl Oscar Schulze: One of Australia’s Finest Engineers”, Journal Royal Australian Historical Society, June 2011.

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### **(REFEREED PUBLICATIONS, CONTINUED)**

53. **PELLS, P J N** – “Against Limit State Design in Rock”, Tunnels and Tunnelling International, February 2011.
54. **PELLS, P J N** – “What Happened to the Mechanics in Rock Mechanics and the Geology and Engineering Geology?” Transactions S.A. Inst. Mining and Metallurgy, Vol 108, June 2008.
55. **PELLS, P J N** – “A Simple Method of Estimating Far Field Movements Associated with Longwall Mining”, Australian Geomechanics Vol 46 No 3 September 2011
56. **PELLS S E and PELLs, P J N** – “Impacts of Longwall Mining and Coal Seam Gas Extraction on Groundwater Regimes in the Sydney Basin. Part 1 – Theory; Part 2 – Practical Applications”, Australian Geomechanics, In Press
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