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# PROFESSIONAL CURRICULUM VITAE

**Professor David John Williams**  
**Golder Professor of Geomechanics**  
**The University of Queensland**

## Qualifications

1979	PhD, Soil Mechanics	University of Cambridge, England
1975	BE (Hons I), Civil Engineering	Monash University, Australia

## Awards/Distinctions/Fellowships

1996	Japan Society for the Promotion of Science Fellow
1995	The University of Queensland Collaborative Research Travel Grant
1995	Australian Minerals and Energy Environment Foundation (AMEEF) Travelling Scholarship
1993	Australian Research Fellow (Industry)
1992	AMEEF Environmental Excellence Award (Individual)
1990	Masuda Fellow for Collaborative Research in Japan, Jan-Feb
1989	The University of Queensland Collaborative Research Travel Grant

## Memberships

From 1980	Member, Institution of Engineers, Australia
From 1980	Member, Australian Geomechanics Society
From 1984	Member, Queensland Committee, Australian Geomechanics Society, Chair in 1986
1986-1987	Member, National Committee, Australian Geomechanics Society
2007-2008	

## Employment History

2007 – Present	Golder Professor of Geomechanics Golder Geomechanics Centre, School of Engineering The University of Queensland
1994 – 2007	Associate Professor of Geomechanics Department of Civil Engineering The University of Queensland
1990 – 1993	Senior Lecturer in Geomechanics Department of Civil Engineering The University of Queensland
1983 – 1999	Lecturer in Geomechanics Department of Civil Engineering The University of Queensland
1980 – 1983	Geotechnical Engineer Melbourne and Brisbane Golder Associates Pty Ltd
1979 – 1980	Engineer Country Roads Board (CRB) of Victoria
1976 – 1979	Research Student University of Cambridge, England
1972 – 1976	Engineer, Cadet Engineer CRB, Victoria

## Summary of Consulting Commissions

### Peer Reviews of major projects

- Member of the Expert Review Team for Rio Tinto Alcan's Weipa Tailings Storage Facilities in 2009
- Member of the International Technical Advisory Group reporting to the South Australian Government on Rehabilitation of Brukunga Pyrite Mine in 2007/8
- Led International Peer Reviews for the Savage River Rehabilitation Project in Tasmania in 2002, 2005 and 2008
- Led International Peer Review on handling acid generating waste rock dumping and dump closure strategies at Cadia Hill Gold Mine in New South Wales in 2002/3
- Member of the Peer Review Team for Stage 2 of the Stuart Oil Shale Project at Gladstone in Queensland in 2004
- Peer Reviewer of the rehabilitation of the San Manuel Copper Mine tailings facility in Arizona, USA in 2004
- Member of the Peer Review Team of future red mud disposal, containment and rehabilitation at QAL at Gladstone in Queensland in 2005
- Geotechnical Reviewer for Queensland EPA and Golder Associates of the breach of the co-disposal dam at Burton Coal in Queensland in 2005
- Peer Reviewer of the conceptual closure plan for Worsley Alumina red mud storage in Western Australia in 2005
- Peer Reviewer for waste rock dump covers for Zinifex Century Mine in Queensland in 2007
- During 2006 and 2007, David was an advisor to the EIS team for the Olympic Dam Expansion Project in South Australia, providing expert input on disposal, hydrology and closure issues for both waste rock and tailings.

### Expert Witness

- Expert Witness through Corrs Chambers Westgarth Lawyers, in relation to coal washery rejects used as filling for residential sub-division purposes
- Expert Witness through McCullough Robertson Lawyers, in relation to the failure of a concrete arch reclaim tunnel beneath a coal stockpile
- Expert Witness in relation to professional misconduct cases brought by the Queensland Professional Engineers Registration Board
- Numerous expert witness commissions related to residential and commercial building footing failures and slope instability

### Consultancies

Professor David John Williams is widely sought for his expert input, in particular to mine waste disposal and mine site rehabilitation and remediation at operating mines throughout Australia and overseas. In Australia, he has consulted on numerous coal mines throughout Queensland and New South Wales; on Red Dome Gold Mine closure, Kidston closure, Osborne waste disposal, Ivanhoe Cloncurry mine closure, Phosphate Hill gypsum disposal, QERL processed waste storage facility closure, and Century Zinc Mine waste rock dumping in Queensland; Cadia Hill Gold Mine waste rock dumping and dump closure in New South Wales; Mt Morgans Gold Mine co-disposal, WMC Resources' nickel operations tailings closure and Minara heap leaching in Western Australia; waste disposal issues at the Ballarat East and Heathcote gold mines in Victoria; and a review of ARD treatments at Savage River Mine in Tasmania. Overseas he has consulted on tailings depositional design and water balance for the Kori Kollo Mine in Bolivia, a review of co-disposal of tailings and waste rock at Porgera Gold Mine and the closure of Misima Gold Mine in PNG, waste disposal design for the Goro Nickel project in New Caledonia, and advice on co-disposal for the Martabe Project in Indonesia.

David has been involved in material characterisation testing and the design of numerous mine waste covers throughout Australia, and the design, installation and monitoring of lysimeters and mine waste

covers at Kidston Gold Mines, WMC Resources' Mt Keith Nickel Operations, QERL's Stuart Oil Shale Project, a large-scale trial waste rock dump at Cadia Hill Gold Mine, and a large-scale trial tailings cell at Jubilee Nickel Mine.

David has been invited to visit numerous mining regions and individual mines throughout Australia, and in Canada, the USA, Brazil, South Africa, UK, China, Chile, PNG, New Caledonia, and Spain.

## **Major Research Achievements**

From 1996, David developed the store/release cover system suited to seasonally dry climates, for application to covering acid generating rock dumps at Kidston Gold Mine in north Queensland, and has had a long-term involvement in researching and monitoring this cover system, as evidenced by his numerous papers on his research on this topic. The store/release cover system on the tops of the Kidston rock dumps has been shown to limit percolation to less than 1% of rainfall, and to support a sustainable vegetation cover comparable to that occurring along water courses in the area. He was also involved in the development of a rehabilitation strategy for the side slopes of the rock dumps at Kidston designed to maximise geotechnical and erosional stability while promoting vegetation, and analysed the wetting up by rainfall infiltration and subsequent drain-down of and seepage from the rock dumps. Store/release covers have now been adopted at numerous mine sites in dry climates worldwide.

From 1999 to 2001, Professor Williams led ACARP Project C8039 to develop a risk assessment and cost-effectiveness analysis for the rehabilitation of Bowen Basin coal mine spoil. The results of the project were reported in a Literature Review and Commentary and Project Final Report, plus a spreadsheet-based risk assessment and cost-effectiveness analysis, available at: [www.uq.edu.au/civil/](http://www.uq.edu.au/civil/). In 2006, David undertook a closure study for Xstrata's new Rolleston Coal Project in the Bowen Basin Coalfields.

David has since 2000 been involved in the closure design for the waste rock dump at Cadia Hill Gold Mine in New South Wales, including studies on the use of mixtures of benign trafficked rock and tailings as an alternative cover material, to overcome the shortage of suitable natural materials. In 2002/3, he led an international peer review of the rock dumping operation and closure plan. In 2004, David was successful in an ARC Linkage grant application with Cadia totalling over \$ 700,000 over 3 years, which has led to the construction of a 15 m high, world-class, demonstration, instrumented rock dump covering 7,000 m<sup>2</sup>. The instrumentation includes a full weather station, 24 lysimeters at the base of the dump to monitor seepage, lysimeters on the top surface to monitor rainfall infiltration and three store/release trial covers constructed using natural and mine waste materials. To date it has shown that about 70% of the rainfall incident on the traffic-compacted top of the dump infiltrates, with the majority going into storage within the dump during the first year, and only small amounts percolating to the base of the dump. The behaviour of the cover trials has to date been dominated by the moisture state at which they were constructed. Monitoring of the instrumented rock dump is expected to continue for at least 10 years.

From 2000 to 2003, David was a principal researcher into the physical and geochemical nature of acid generating waste rock dumps in Southern Carolina, USA (Rio Tinto's Ridgeway Mine) and Sudbury, Canada (Inco's Whistle Dump), sampled as they were being excavated and moved to a pit.

From 2001 to 2005, David led an ARC Spirt research project with industry partner WMC Resources focussed on an assessment of the long-term seepage and runoff from mine tailings storage facilities, to facilitate lease surrender. This included the monitoring of trial covers on tailings over the duration of the project and large-scale laboratory column testing and numerical analyses. Natural salt pan and rocky slope analogues under the same climatic and similar geochemical conditions were also studied to point to sustainable approaches for rehabilitating the tailings storage facilities.

David has been sponsored by mining companies and consultants to visit numerous mining regions and mine sites worldwide, both to impart and extend his knowledge. Since 2000, he has developed a relationship with the International Network for Acid Prevention (INAP), and has contributed to INAP-

sponsored research and development projects and workshops involving mine sites in the USA, Canada, Australia and PNG.

Research funding has totalled over \$ 5 million, including funding from ARC, ARC-SPIRT, ARC Linkage, NERDDC, ACARP-AMIRA, ACARP, MIM CRA-ATD, Kidston Gold Mines, BHP Coal and WMC Resources, Cadia Holdings, Jubilee Mines NL. Professor Williams has about 200 refereed publications, with about two-thirds of them in the mine waste field.

## Selected Publications

### Book Chapters

- Williams, D.J. (2005). Chapter 17: Placing covers on soft tailings. In: *Ground Improvement-Case Histories*, 491-512. Eds B. Indraratna and Chu Jian. Elsevier.
- Williams, D.J. (2001). Chapter 30: Assessment of Embankment Parameters. In: *Slope Stability in Surface Mining*, 275-284. Eds W.A. Hustrulid, M.J. McCarter and D.J.A Van Zyl. Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado, USA.
- Williams, D.J. (1996). Chapter 7: Minimisation and Management of Solid Wastes. In: *Environmental Management in the Australian Minerals and Energy Industry*, 157-188. Ed D.R. Mulligan. Sydney, UNSW Press in association with Australian Minerals and Energy Environment Foundation, 1996.

### Selected Refereed Journal Articles

- Williams, D.J. (2002). Engineering closure of an open pit gold operation in a semi-arid climate. *International Journal of Surface Mining and Reclamation, Special Edition on Mining and the Environment*, 35-50.
- Williams, D.J. (2001). Prediction of erosion from steep mine slopes. *International Journal of Environmental Management and Health*, **12:1**, 35-50.
- Morris, P.H. and Williams, D.J. (2000). A revision of Blight's model of field vane testing. *Canadian Geotechnical Journal*, **37**, 1089-1098.
- Morris, P.H. and Williams, D.J. (1999). Segregation of co-disposed coal mine washery wastes. *Canadian Institute of Mining Bulletin*, **92**, 72-76.
- Rassam, D.W. and Williams, D.J. (1999). A numerical study of steady state evaporative conditions applied to mine tailings. *Canadian Geotechnical Journal*, **36**, 640-650.
- Rassam, D.W. and Williams, D.J. (1999). Bearing capacity of desiccated tailings. *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, **125:7**, 600-610.
- Rassam, D.W. and Williams, D.J. (1999). Three-dimensional effects on slope stability of high waste rock dumps. *International Journal of Surface Mining, Reclamation and Environment*, **13**, 19-24.
- Rassam, D.W. and Williams, D.J. (1999). Unsaturated hydraulic conductivity of mine tailings under wetting and drying conditions. *ASTM Geotechnical Testing Journal*, **2:2**, 138-146.
- Mahalinga-Iyer, U. and Williams, D.J. (1997). Properties and performance of lateritic soil in road pavements. *Engineering Geology*, **46:2**, 71-80.
- Morris, P.H. and Williams, D.J. (1997). Co-disposal of washery wastes at Jeebropilly Colliery, Queensland, Australia. *Transactions IMM, A: Mining Industry*, **106**, A25-A29.
- Morris, P.H. and Williams, D.J. (1997). Hydraulic sorting of co-disposed coarse and fine coal wastes. *Transactions IMM, C: Mineral Processing*, **106**, C21-C26.
- Morris, P.H. and Williams, D.J. (1997). Results of field trials of co-disposal of coarse and fine coal wastes. *Transactions IMM, A: Mining Industry*, **106**, A38-A41.
- Naderian, A.R. and Williams, D.J. (1997). Bearing capacity of open-cut coal-mine backfill materials. *Transactions IMM, A: Mining Industry*, **106**, A30-A33.
- Morris, P.H. and Williams, D.J. (1996). Prediction of mine tailings delta profiles. *Transactions IMM, A: Mining Industry*, **105**, A63-A68.

- Naderian, A.R. and Williams, D.J. (1996). Simulation of groundwater rise and its effects on settlements of open-cut coal mine back-fills. *International Journal of Surface Mining, Reclamation, and Environment*, **10**, 83-89.
- Naderian, A.R., Williams, D.J. and Clark, I.H. (1996). Numerical modelling of settlements in back-filled open-cut mines. *International Journal of Surface Mining, Reclamation, and Environment*, **10**, 25-29.
- Mahalinga-lyer, U. and Williams, D.J. (1995). Unsaturated strength behaviour of compacted lateritic soils. *Geotechnique*, **45:2**, 317-320.
- Zou, J.Z., Williams, D.J. and Xiong, W.L. (1995). Search for critical slip surfaces based on finite element method. *Canadian Geotechnical Journal*, **32:2**, 233-246.
- Morris, P.H., Graham, J. and Williams, D.J. (1994). Depths of cracks in drying soils using elastic fracture mechanics. *ASCE Geotechnical Special Publication No. 43, Fracture Mechanics Applied to Geotechnical Engineering*, 40-53.
- Morris, P.H. and Williams, D.J. (1994). Effective stress vane shear strength correction factor correlations. *Canadian Geotechnical Journal*, **31**, 335-342.
- Mahalinga-lyer, M. and Williams, D.J. (1993). Consolidation and shear strength properties of a lateritic soil. *Engineering Geology*, **38**, 53-63.
- Mahalinga-lyer, M. and Williams, D.J. (1993). Road construction using lateritic soil. *Engineering Geology*, **37**, 199-209.
- Morris, P.H. and Williams, D.J. (1993). A new model of vane shear strength testing in soils. *Geotechnique*, **43:3**, 489-500.
- Wong, K.Y. and Williams, D.J. (1993). Methods of interpreting structural incompatibility in bored pier uplift test. *ASCE, Journal Geotechnical Engineering Division*, **GT119:12**, 1892-1909.
- Morris, P.H., Graham, J. and Williams, D.J. (1992). Cracking in clays undergoing drying. *Canadian Geotechnical Journal*, **29**, 263-277.
- Williams, D.J. and Kuganathan, V. (1992). Co-disposal of fine and coarse grained coal mine washery wastes by combined pumping. *International Journal of Environmental Issues in Minerals and Energy Industry*, 53-58.
- Williams, D.J. and Sibley, J.W. (1992). Behaviour at the shrinkage limit of clay undergoing drying. *ASTM, Geotechnical Testing Journal*, **15:3**, 217-222.
- Morris, P.H. and Williams, D.J. (1990). Generalised calibration for the nuclear moisture/density gauge. *ASTM, Geotechnical Testing Journal*, **13:1**, 24-35.
- Morris, P.H. and Williams, D.J. (1990). Sample size selection for laboratory calibration of subsurface neutron moisture gauges. *ASTM, Geotechnical Testing Journal*, **14:1**, 71-77.
- Sibley, J.W. and Williams, D.J. (1990). A new filter material for measuring soil suction. *ASTM, Geotechnical Testing Journal*, **13:4**, 381-383.
- Williams, D.J. (1989). Geotechnical input to a major bridge project. *ASCE, Journal Geotechnical Engineering Division*, **GT115:3**, 322-339.
- Sibley, J.W. and Williams, D.J. (1989). A procedure for determining volumetric shrinkage of an unsaturated soil. *ASTM, Geotechnical Testing Journal*, **12:3**, 181-187.
- Williams, D.J. and Morris, P.H. (1989). Comparison of two models for the sub-aerial deposition of mine tailings. *Transactions IMM, A: Mining Industry*, **98**, A73-A77.
- Williams, D.J. (1988). Potential engineering risks in the earthquake hazard to the east coast of Queensland. *IEAust, Civil Engineering Transactions*, **CE30/5**, 307-317.
- Williams, D.J. and Parry, R.H.G. (1985). Experimentally determined distribution of stress around a horizontally loaded model pile in dense sand. *IEAust, Civil Engineering Transactions*, **CE27/3**, 263-268.
- Williams, D.J. and Walker, L.K. (1985). Laboratory and field strength of mine waste rock. *IEAust, Civil Engineering Transactions*, **CE27/3**, 299-305.

### Selected Refereed Conference Publications

- Stolberg, D.J and Williams, D.J. (2006). Large-scale column testing of hypersaline tailings. *Proceedings of 5th International Congress on Environmental Geotechnics, Cardiff, Wales, 26-30 June 2006, II*, 976-983. Thomas Telford.
- Williams, D.J. and Stolberg, D.J. (2006). Erosional stability of tailings storage facilities in an arid climate. *Proceedings of 5th International Congress on Environmental Geotechnics, Cardiff, Wales, 26-30 June 2006, II*, 999-1006. Thomas Telford.
- Williams, D.J., Rohde, T.K, Stolberg, D.J. and Pope, G. (2006). Alternative design and instrumentation of covers over potentially acid forming mine wastes. *Proceedings of 5th International Congress on Environmental Geotechnics, Cardiff, Wales, 26-30 June 2006, II*, 1007-1014. Thomas Telford.
- Williams, D.J. and Stolberg, D.J. (2006). Field performance of capillary break covers over hypersaline tailings in an arid climate. *Proceedings of 4th International Conference on Unsaturated Soils, Carefree, Arizona, 2-6 April 2006, 1*, 777-788. ASCE, Geo Institute.
- Williams, D.J., Stolberg, D.J. and Currey, N.A. (2006). Long-term performance of Kidston's "store/release" cover system over potentially acid forming waste rock dumps. *Proceedings of Seventh International Conference on Acid Rock Drainage, St Louis, Missouri, USA, 26-30 March 2006*, 2385-2396.
- Williams, D.J. (2006). The case for revolutionary change to mine waste disposal and rehabilitation. *Proceedings of Second International Seminar on Strategic versus Tactical Approaches to Mining, Perth, Australia, 8-10 March 2006*, 19 pp. ACG.
- Williams, D.J., Loch, R.J. and Vacher, C. (2004). Risk assessment applied to tunnel erosion of mine spoils. *Proceedings 11th International Conference on Tailings and Mine Waste '04, Vail, Colorado, 10-13 October 2004*, 63-70. Balkema.
- Williams, D.J., Currey, N.A. and Ritchie, P.J. (2003). Successful tailings dam design, construction, operation and closure - a case study. *Proceedings of International Symposium on Major Challenges in Tailings Dams (ICOLD 2003), Montréal, Canada, 15 June 2003*, 320-330.
- Fines, P., Wilson, G.W., Williams, D.J., Tran, A.B. and Miller, S. (2003). Field characterisation of two full-scale waste rock piles. *Proceedings of 6th International Conference on Acid Rock Drainage, Cairns, Australia, 14-17 July 2003*, 903-909.
- Tran, A.B., Miller, S., Williams, D.J., Fines, P. and Wilson, G.W. (2003). Geochemical and mineralogical characterisation of two contrasting waste rock dumps - the INAP waste rock dump characterisation project. *Proceedings of 6th International Conference on Acid Rock Drainage, Cairns, Australia, 14-17 July 2003*, 939-947.
- Williams, D.J., Jeffery, J., Gilbert, L., Wilson, G.W., Panidis, C. and Perry, B. (2003). A review of the acid rock drainage potential and hydrological implications of selectively-placed waste rock at a gold mine in NSW, Australia. *Proceedings of 6th International Conference on Acid Rock Drainage, Cairns, Australia, 14-17 July 2003*, 949-956.
- Williams, D.J., Wilson, G.W. and Panidis, C. (2003). Waste rock and tailings mixtures as a possible seal for potentially acid forming waste rock. *Proceedings of 6th International Conference on Acid Rock Drainage, Cairns, Australia, 14-17 July 2003*, 427-435.
- Wilson, G.W., Williams, D.J. and Rykaart, E.M. (2003). The integrity of cover systems - an update. *Proceedings of 6th International Conference on Acid Rock Drainage, Cairns, Australia, 14-17 July 2003*, 445-451.
- Williams, D.J. (2002). Sensitivity analyses of a risk assessment model applied to the rehabilitation of open cut coal mine spoil areas. *Proceedings of 4th International Congress on Environmental Geotechnics, Rio de Janeiro, Brazil, 11-15 August 2002*, 383-387.
- Williams, D.J., Stolberg, D.J., Soole, P. and Poropat, G. (2002). Monitoring erosion off unvegetated mine tailings facilities and natural slopes using high-resolution, digital stereo-photography. *Proceedings of 4th International Congress on Environmental Geotechnics, Rio de Janeiro, Brazil, 11-15 August 2002*, 291-295.

- Williams, D.J. (2001). Mined landform design. *Proceedings of 2nd Australia-New Zealand Conference on Environmental Geotechnics, Newcastle, Australia, 28-30 November 2001*, 18 pp.
- Williams, D.J., Gowan, M.J. and Williams, D.A. (2000). Risk assessment approach to rehabilitation of Bowen Basin open cut coal mine spoil areas. *Proceedings of GeoEng2000 - International Conference on Geotechnical & Geological Engineering, Melbourne, Australia, 19-24 November 2000*, 6 pp.
- Williams, D.J. (2000). The environmental impacts of open pit mining in perspective. *Proceedings of 5th International Symposium on Environmental Geotechnology and Global Sustainable Development, Belo Horizonte, Brazil, 17-23 August 2000*, Paper no. 238:175, 10 pp.
- Li, H. and Williams, D.J. (1996). Physical and numerical modelling of combined sedimentation/consolidation of coal tailings. *Proceedings of 7th Australia - New Zealand Conference on Geomechanics, Adelaide, Australia, 1-5 July 1996*, 808-813. Eds M.B. Jaksa, W.S. Kaggwa and D.A. Cameron. Canberra, IEAust National Conference Publication 96/07.
- Naderian, A.R. and Williams, D.J. (1996). Simulation of open-cut coal mine back-fill behaviour. *Proceedings of National Symposium on the Use of Recycled Materials in Engineering Construction, Sydney, Australia, 30-31 May 1996*, 17-22. Canberra, IEAust National Conference Publication No 96/06.
- Williams, D.J. (1996). Lateral thinking on mine site rehabilitation. *Proceeds of National Environmental Law Association Conference, Coolool, Australia, 8-12 May 1996*, 12.2.1-12.2.9. Eds S. Blain and T. Slater. Canberra, National Environmental Law Association.
- Williams, D.J. (1996). Pumped co-disposal of black coal washery wastes in Australia. *Proceedings of 13th Annual Meeting of American Society for Surface Mining and Reclamation, Knoxville, USA, 18-23 May 1996*, 15-22. Eds W.L. Daniels, J.A. Burger and C.E. Zipper. American Society for Surface Mining and Reclamation and Virginia Tech.
- Look, B.G., Reeves, I. and Williams, D.J. (1994). Application of TDR in the design and construction of roadway embankments. *Proceedings of Symposium and Workshop on Time Domain Reflectometry, Evanston, USA, September 1994*, 410-421. US Department of Interior, Bureau of Mines.
- Look, B.G., Reeves, I. and Williams, D.J. (1994). Field experiences using TDR to monitor moisture changes in road embankments and pavements. *Proceedings of Symposium and Workshop on Time Domain Reflectometry, Evanston, USA, September 1994*, 374-385. US Department of Interior, Bureau of Mines.
- Look, B.G., Reeves, I. and Williams, D.J. (1994). Development of a specification for expansive clay roadway embankments. *Proceedings of 17th ARRB Conference, 2*, 249-263. Melbourne, Australian Road Research Board.
- Williams, D.J., Van Zyl, D. and Gowan, M.J. (1994). Invited Keynote Lecture, Stream C: Waste Management, Tailings Dams. *3rd International Conference on Environmental Issues and Management of Waste in Energy and Mineral Production, Perth, 30 August - 1 September 1994*, 15 pp.
- Williams, D.J., Wong, K.Y., Hawes, H. and Allen, D.R. (1994). Performance evaluation of transmission tower foundations. *Proceedings of International Conference on Large High Voltage Systems, Paris, 28 August - 3 September 1994*, Paper 22-102, 10 pp. Paris, CIGRE.
- Hobbs, G.J., Williams, D.J. and Wong, K.Y. (1993). Settlement behaviour of Brisbane clay. *Proceedings of International Conference on Soft Soil Engineering, Guangzhou, China, 8-11 November 1993*, 756-762.
- Williams, D.J. and Kuganathan, V. (1993). Geotechnical properties relevant to co-disposal of coal washery wastes. *Proceedings of Conference on Geotechnical Management of Waste and Contamination, Sydney, Australia, 22-23 March 1993*, 485-493. Rotterdam, A.A. Balkema.
- Zou, J.-Z., Morris, P.H. and Williams, D.J. (1993). Markov process modelling of local yield and stress redistribution in finite element calculations. *Proceedings of Conference on Probabilistic Methods in Geotechnical Engineering, Canberra, Australia, 10-12 February 1993*, 169-176. Eds K.S. Li and S.-C.R. Lo. Rotterdam, A.A. Balkema.

- Williams, D.J. and Zou, J.-Z. (1992). Location of critical slip surfaces in coal mine spoil piles. *Proceedings of 6th Australia - New Zealand Conference on Geomechanics, Christchurch, New Zealand, 3-7 February 1992*, 468-473. Christchurch, New Zealand Geomechanics Society.
- Williams, D.J. and Li, H.-Y. (1991). Numerical analysis of self-weight consolidation of coal mine tailings slurry in a large settling column. *Proceedings of 7th Conference International Association for Computer Methods and Advances in Geomechanics, Cairns, Australia, 6-10 May 1991*, **2**, 1399-1404. Eds G. Beer, J.R. Booker and J.P. Carter. Rotterdam, A.A. Balkema.
- Williams, D.J. Morris, P.H. and Carter, J.P. (1991). Two-dimensional finite element analysis of a trial embankment on coal mine tailings. *Proceedings of 7th Conference International Association for Computer Methods and Advances in Geomechanics, Cairns, Australia, 6-10 May 1991*, **2**, 1405-1410. Eds G. Beer, J.R. Booker and J.P. Carter. Rotterdam, A.A. Balkema.
- Williams, D.J. and Tanaka, Y. (1991). Use of back-analysis to confirm soil parameters. *Proceedings of 7th Conference International Association for Computer Methods and Advances in Geomechanics, Cairns, Australia, 6-10 May 1991*, **2**, 1047-1052. Eds G. Beer, J.R. Booker and J.P. Carter. Rotterdam, A.A. Balkema.
- Williams, D.J. and Zou, J.-Z. (1991). Stochastic finite element analysis of coal mine spoil pile stability. *Proceedings of 7th Conference International Association for Computer Methods and Advances in Geomechanics, Cairns, Australia, 6-10 May 1991*, **2**, 1411-1416. Eds G. Beer, J.R. Booker and J.P. Carter. Rotterdam, A.A. Balkema.
- Williams, D.J. and Zou, J.-Z. (1991). Spatial variability analysis in geotechnical engineering. *Proceedings of 6th International Conference Applications of Statistics and Probability in Civil Engineering, Coyoacan, Mexico, June 1991*, **2**, 713-720.
- Williams, D.J., Zou, J.-Z. and Graham, J. (1991). Reliability index versus safety factor for coal mine spoil pile stability. *Proceedings of International Conference on Slope Stability Engineering, April 1991, Isle of Wight, England*, 63-68.
- Williams, D.J., Carter, J.P. and Morris, P.H. (1989). Modelling numerically the life-cycle of coal mine tailings. *Proceedings of XII International Conference on Soil Mechanics and Foundation Engineering, Rio de Janeiro, Brazil, 13-18 August 1989*, **3**, 1919-1923. Rotterdam, A.A. Balkema.
- Seedsman, R.W., Richards, B.G. and Williams, D.J. (1988). Possibility of Undrained Failure of Bowen Basin Spoil Piles. *Proceedings of 5th Australia - New Zealand Conference on Geomechanics, Sydney, Australia, August 1988*, 404-409. Canberra, IEAust National Conference Publication No 88/11.
- Williams, D.J. (1988). Consolidation, crusting and loading of a soil slurry at 1 and 100 gravities. *Proceedings of 5th Australia - New Zealand Conference on Geomechanics, Sydney, Australia, August 1988*, 202-206. Canberra, IEAust National Conference Publication No 88/11.
- Seedsman, R.W. and Williams, D.J. (1987). Long term stability of rehabilitated strip coal mines. *Proceedings of National Conference on Mining and Environment - A Professional Approach, Brisbane, Australia, July 1987*, 27-32. Melbourne, AusIMM.