

CURRICULUM VITAE

PERSONAL PARTICULARS

NAME : Phillip Murray DIGHT
ADDRESS : 4/43 Rockley Road SOUTH YARRA
3141
DATE OF BIRTH : December 29, 1949
PLACE OF BIRTH : Sydney
NATIONALITY : Australian
ACADEMIC QUALIFICATIONS : Ph.D (1983) Monash University
M. Eng. Science (1977)
University of Melbourne
: B. Eng. (Civil) H2B (1972)
University of Melbourne
PROFESSIONAL ASSOCIATIONS : M.I.E. (Australia)
: Member Australian Geomechanics
Society

EMPLOYMENT HISTORY

November 1982 - Present : BHP COMPANY LIMITED
140 WILLIAM ST, MELBOURNE 3000 TELLEX AA 30408
Senior Systems Engineer/Mine
Planning Analyst
Project Leader Coal Systems

Employed by BHP Company Limited in the Information Systems Development Group as a Mine Planning Analyst. The position has involved working with users of a computer based mine planning system, identifying system requirements, preparation of specifications and developing software. The mine planning group services all BHP coal and metalliferous mines in Australasia.

Software development has been in both Fortran (IV, 5 and F 77) and Extended Basic using Data General hardware. Experience has been gained in long term and short term mine planning in both open cut and strip mines.

Currently I am project leader of the Coal system, supervising two geologists and two programmers.

Employment History (Continued)

March 1979 - October 1982 : MONASH UNIVERSITY

Research Student

Post graduate student, Monash University, working towards a Ph. D. degree in the Department of Civil Engineering. The topic of my thesis was "Improvements to the Stability of Rock Walls in Open Pit Mines", and was supervised by Associate Professor Ian Donald and Professor Lance Endersbee.

The project involved an extensive laboratory investigation into the behaviour of fully grouted rock bolts subject to shear movements. A theory was developed to predict the load-displacement behaviour of reinforcing bars subject to shear and tension. The influence of joint roughness was also investigated and a theory developed and extensively tested using published results. The theory has been applied to the behaviour of side-resistance-only socketed piles and to the pullout behaviour of rock anchors. A numerical study investigated the behaviour of surface reinforcement and its effect in stabilizing unravelling rock slopes. A design, based on probabilistic methods was developed using the above theories and applied to the bench stability at Savage River Mines. A field trial, based on the design was instigated, and results were encouraging. Two papers have already been written on the work described, as detailed in the attached Appendix. The project was sponsored by a scholarship from Savage River Mines.

The thesis was examined by Professor B. Ladanyi of the University of Montreal, Quebec, Canada and Dr. B. McMahon of McMahon Associates, Consulting Geotechnical and Mining Engineers, Sydney, Australia. Their appraisal of the thesis is attached in the Appendix.

During the period of candidature I visited mines in Canada and the U.S. I also attended and presented a paper at the 4th ISRM Congress in Montreaux, and visited research establishments in France, Germany and Norway. I was actively involved in consulting to Savage River Mines on problems of soil, rock and waste stability.

During this period I was also a guest lecturer in Rock Engineering in the graduate program at Monash University.

June 1976 - March 1979 : COMMONWEALTH SCIENTIFIC &
INDUSTRIAL RESEARCH ORGANIZATION
(CSIRO)

Experimental Officer

Employed as an Experimental Officer with CSIRO at the Division of Applied Geomechanics on research into Cemented Fill Requirements. The work was part of the Support and Stabilization of Stopes Project jointly sponsored by CSIRO and the Australian Minerals Industry Research Association (AMIRA).

The work involved finalizing an experimental program using large diameter triaxial tests on simulated fill; design and installation of monitoring equipment in cemented fill stopes at Mount Isa Mines, ZC/NBHC and King Island Scheelite; extensive numerical modelling of initial stresses in the filled stopes and the effect of subsequent mining adjacent to the fill; development of simple limit equilibrium techniques for design of cemented fill. Several publications have been produced from this work as detailed in the attached Appendix. The results from this project have been widely used in Australia, Canada and South Africa.

March 1975 - May 1976 : UNIVERSITY OF MELBOURNE

Research Student

Postgraduate student at the University of Melbourne, working towards a research M. Eng. Science degree, under the supervision of Dr. P.J. Moore. The thesis was "An Experimental Investigation into the Stability of Pipelines buried in Saturated Sands". The problem involved the stability of large diameter natural gas pipelines buried in tidal areas, where the uplift or buoyancy forces had been postulated to cause failure of the pipeline by 'jacking' it to the surface following successive cycles of the tide. The research concluded that the problem could occur when poor construction techniques were employed. The results of this research meant substantial savings in pipe laying costs for the ESSO/BHP pipeline from Bass Strait. Two papers have been published from this work. The research was supported by the John Melvin Memorial Scholarship.

March 1973 - February 1975 : GUTTERIDGE, HASKINS & DAVEY PTY.
LTD.

Assistant Engineer

The work was of a general civil engineering nature involving design, tender preparation, construction and contract administration. Projects included large water and wastewater reticulation and treatment facilities, structural design, small dams and building foundations. During this period I was awarded a Confederation of British Industries Scholarship.

APPENDIX

PUBLICATIONS

- BARRETT, J.R. COULTHARD, M.A. AND DIGHT, P.M. (1978) Determination of Fill Stability 12th Canadian Rock Mech. Symp., Sundbury, 1978, pp. 85-91.
- DIGHT, P.M. & COWLING, R. (1978) Determination of Material Parameters in Cemented Fill. 4th ISRM Congress, Montreux, 1979, Vol 2, pp. 353-359.
- MOORE, P.J. & DIGHT, P.M. (1979) Pipeline Flotation in Sandy Soils, Research Report, University of Melbourne, 29 pp.
- COULTHARD, M.A. & DIGHT, P.M. (1980) Numerical Analysis of Failed Cemented Fill at ZC/NBHC Mine, Broken Hill, 3rd Aust.-N.Z. Conf. Geomech., Wellington, 1980, 7 pp.
- MOORE, P.J. & DIGHT P.M. (1980) A study of Pipeline Stability with an Oscillating Watertable. 3rd Aust.-N.Z. Conf. on Geomech. Wellington, 1980.
- DIGHT, P.M. & CHIU, H.K. (1981) Prediction of Shear Behaviour of Joints Using Profiles. Int. Jnl. Rock Mech. Min. Sci., Vol. 18, pp. 369-386.
- CHIU, H.K. & DIGHT, P.M. (1983) Prediction of the Performance of Rock Socketed Side- Resistance - only Piles using Profiles. Int. Jnl. Rock Mech. Min. Sci. Vol. 20.

CSIRO Reports

GONANO, L.P., KIRKBY, R.W.
& DIGHT, P.M.
(1978)

Triaxial Testing of Cemented
Rockfill. Aust. CSIRO, Div.
Appl. Geomech. Technical Report
No. 72.

DIGHT, P.M., BARRETT, J.R.
& LAKELAND, J., COWLING, R.,
NEINDORF, L.B. & BUCH, C.
(1978)

Deformation Monitoring Techniques
in Cemented Fill. CSIRO Aust.
Div. Appl. Geomech. Technical
Report No. 87.

COULTHARD, M.A., & DIGHT, P.M.
(1978)

Numerical Analysis of Fill
Pillar Stability - Two
Dimensional Calculations of
Initial Stresses. CSIRO aust.
Div. Appl. Geomech. Technical
Report No. 86.

DIGHT, P.M. & COULTHARD, M.A.
(1978)

Numerical Analysis of Fill
Pillar Stability - Two
Dimensional Analysis of
Exposures. CSIRO Aust. Div.
Appl. Geomech. Technical Report
No. 95.