CURRICULUM VITAE

NAME: Laurence Daniel Wesley
DATE OF BIRTH: 2 September 1936
NATIONALITY: New Zealand
QUALIFICATIONS: 1975 PhD (Soil Mechanics) Imperial College, University of London
1964 MSc(Eng.) DIC, Imperial College, University of London
1958 M.E. University of Auckland
1957 B.E. (Civil, first class honours), University of Auckland
LANGUAGES: English – native
Indonesian – speaking, reading and writing

PROFESSIONAL AFFILIATIONS:

Life Member, American Society of Civil Engineers

PROFESSIONAL EXPERIENCE:

2006 to present Semi-retired, still doing some teaching and consulting work.

1987 to 2006
POSITION HELD: Senior Lecturer (in Geotechnical Engineering)
EMPLOYER: Faculty of Engineering, University of Auckalnd
DUTIES: Undergraduate and postgraduate courses. Research and supervision of student research in the geotechnical field. Principal research interests are the properties of residual soils, especially those of volcanic origin, the properties and behaviour of mine tailings, and seepage and groundwater.

1976 – 1986
POSITION HELD: Senior Geotechnical Engineer,
EMPLOYER: Tonkin and Taylor Consulting Engineers, Auckland
DUTIES: Geotechnical investigations and design for a wide variety of projects including foundations for high rise buildings, earth dams, stability of slopes, earth retaining structures, mini hydro schemes, and tailings embankments.
Overseas work included site investigation and design analysis for a geothermal power station in Indonesia, an earth dam and small hydro schemes in Malaysia, stability of deep highway cuttings in Malaysia, and storage facilities in Bahrain.

1973- 1975
POSITION HELD: Experimental Officer
EMPLOYER: Imperial College, University of London
DUTIES: Research into soft clays on the Thames Estuary under of Prof A W Bishop. Designed the hydraulic "stress path" triaxial cell now marketed by several manufacturers and known as the Bishop-Wesley apparatus. Taught undergraduate course and supervised laboratory classes. Completed PhD degree in 1975.

1969 – 1972
EMPLOYER: New Zealand Government, seconded to Indonesian Public Works Department
DUTIES: Attached to Institute for Soil and Roading Investigations in Bandung, West Java. Upgrading of laboratory and field testing facilities. Training of engineers and technicians for the Bandung Institute and for Regional Laboratories. Production of geotechnical literature, especially laboratory and field testing manuals. Supervision of specific site investigations for projects including bridges, dams, buildings, roads and airfield runways. Wrote basic soil mechanics text book in Indonesian (printed for the seventh time, in 1988). Undertook limited research into local soils (as a side line).

1966 - 1968

POSITION HELD:	Senior Engineer, Soil Mechanics Section, Central Laboratories
EMPLOYER:	New Zealand Ministry of Works
DUTIES:	Supervision of field and laboratory soil investigations and preparation of foundation design reports for a variety of civil engineering projects, including earth dams, motorways, bridges, and buildings. Taught soil mechanics at Petone Technical Institute. Also taught Indonesian at Wellington Girl's College (on a trial basis), when Indonesian was being "pioneered" in N.Z. schools.

1965

EMPLOYER:	New Zealand Ministry of Works Attended M.Sc.(Eng.) course at Imperial College, University of London. Completed M.Sc.(Eng.) degree.

1964

POSITION HELD:	Site Engineer
EMPLOYER:	New Zealand Ministry of Works
DUTIES:	Supervision of site works including roading, sewer and stormwater drains, and construction of a railway overbirdge.

1960 - 1963

POSITION HELD:	Engineer, Soil Mechanics Section,
EMPLOYER:	Indonesian Public Works Department, Bandung, West Java
DUTIES:	Engaged in supervision of field and laboratory soil testing and preparation of foundation design reports for civil engineering projects, mainly buildings, roads and bridges. Also involved in staff training.

1959

POSITION HELD:	Design Engineer
EMPLOYER:	Department of Main Roads, New South Wales, Sydney
DUTIES:	Bridge Design.

CONSULTING ACTIVITES SINCE JOINING AUCKLAND UNIVERSITY

(Undertaken through Auckland Uniservices, a University owned company to channel staff consulting work – partial list only)

(a) GENERAL

Geothermal projects in Indonesia. Advice on ground and slope stability with respect to siting of steam delivery lines, drilling platforms, and power stations. Recommendations on foundation options for geothermal power stations.

Hays Creek Dam, Papakura: Geotechnical testing and advice for upgrading measures, in particular the installation of a chimney cut-off drain..

Mangatangi Dam: Member of team undertaking safety evaluation study.

State Highway 1, Albany to Orewa: Review of causes of a slip and planning of remedial measures.

State Highway 1: Mercer to Longswamp Expressway: Review of geotechnical aspects, especially stability of slopes.

Tirohia Landfill: Review of lining measures.

Rotorua Landfill: Review of planned extensions.

(b) PRINCIPAL PEER REVIEW ROLES

Waihi Gold Co Martha Mine: Member of panel with responsibility for geotechnical aspects of the tailings storage facilities (current, since 1990)

Macraes Mine Southern Pit Tailings Dam (Otago): Review of geotechnical aspects of design and construction. (current)

Reefton Gold Project: Devil's Silt Pond Embankment and Fossicker's Creek Tailings Impoundment (Reefton): Review of geotechnical aspects of the design and construction (current).

Opuha Dam (near Fairlie, Canterbury): Review of geotechnical aspects.

Wilson's Dam, Whangarei: Review of geotechnical aspects of proposed design

Forest Hill Reservoir, North Shore City: Review of investigation of slip and proposed remedial measures.

Plywood mill lathe foundation: Review of vibration assessment.

(c) COMMISSIONER ROLE IN RESOURCE CONSENT HEARINGS (UNDER NEW ZEALAND'S RESOURCE MANAGEMENT ACT)

1. Redvale Landfill (Auckland Regional Council - ARC)
2. Mt. Wellington Landfill (ARC)
3. Greenmount Landfill (ARC)
4. Rosedale Road Landfill (ARC)
5. Proposed new landfill at Whitford (ARC)
6. Existing landfill at Whitford (Combined ARC, Manukau City Council hearing)
7. Sewerage disposal system, Waiheke Island (Combined ARC, Auckland City Council hearing)
8. Brittomart Project (ARC)
9. Undergrounding of Quay St (ARC)
10. Queen St Transport terminal – replacement of the Brittomat Project (ARC)
11. Pukekohe flood control proposal (ARC)
12. Three Kings scoria quarry – groundwater lowering and ground settlement.
13. Ihumatao Quarry – groundwater lowering and ground settlement.
14. Whitford quarry and landfill – extension of existing consents.

PUBLICATIONS:

1. 'The use of the Dutch Pentrometer in Clays'. *Proc. Fifth Australia-New Zealand Conference on Soil Mechanics and Foundation Engineering,* Auckland, 1967.

2. 'The use of the Dutch Pentrometer in Indonesia'. *Proc. First Southeast Asian Conference on Soil Mechanics and Foundations Engineering,* Bangkok, 1967.

3. 'Settlement of Embankment Materials in Earth and Rockfill Dams". *New Zealand Engineering,* May 1967.

4. 'Equilibrium Moisture Conditions Beneath Road Pavements in West Java, Indonesia'. *Geotechnical Engineering,* Bangkok, Vol. 3, 1972.

5. ‘Cluster Hypothesis and the Shear Strength of a Tropical Red Clay’. *Geotechnique*, 23 No1. 1973.

6. ‘Some Basic Engineering Properties of Halloysite and Allophane Clays in Java, Indonesia’. *Geotechnique*, 23. No 4, 471 - 494, 1973.

7. ‘Tjipanundjang Dam in West Java, Indonesia’. *ASCE Journal of the Geotechnical Division*, 100, No 5, 1974.

8. ‘A New Hydraulic Triaxial Apparatus’. *Geotechnique* 25. No 4, 657 – 670, 1975 (co-author with Profesor A W Bishop)

9. ‘Soil Mechanics’ (Mekanika Tanah) Soil Mechanics textbook in Indonesian published by Indonesian Public Works Department.

10. ‘Cost Considerations in Road Construction in Indonesia’. *Regional Seminar on Low Cost Roads*, Bandung, Indonesia, November 1976.

11. ‘Shear Strength Properties of Halloysite and Allophane Clays in Java, Indonesia’, *Geotechnique* 27. No 2, 125 – 136, 1977.

12. ‘Huntly Power Station: Cooling Water Intake Structure’, *Transactions of the New Zealand Institution of Engineers*, Vol. 7, No. 2/CE, July 1980 (co-author with D K Taylor and G A Pickens).

13. ‘The Nature of Anisotrophy in Soft Clays’, *Third Australia – New Zealand Conference on Geomechanics*, Wellington, May 1980.

14. ‘Foundations for Light Industrial Developments’, *Proc. NZ Geom. Society Sym., Piled Foundations for Engineering Structures*, Hamilton, Sept. 1986.

15. ‘Preload and Sandwich Treatment of a Very Soft Clay Site at Prai, Malaysia’, *Proc. 5th Int. Geot. Seminar, Case Histories in Soft Clay, Nanyang Technicological Insitute*, Singapore, Dec. 1987 (co-author with B A Richards).

16. ‘Some Foundations of Interest in the Auckland Area’, *Proc. 5th Aust. – NZ Conference on Geomechanics*, Sydney, August 1988 (co-author with T J E Sinclair and N W Rogers).

17. ‘Compression Index: Misleading Parameter’, *ASCE Journal of Geotechnical Engineering*, June 1988.

18. ‘Engineering Classification of Residual Soils’, *Proc. 2nd Int. Conference on Geomechanics in Tropical Soils*, Singapore, Dec. 1988.

19. ‘Geotechnical Engineering in Volcanic Ash Soils’, *Proc. 2nd Int. Conference on Geomechanics in Tropical Soils Singapore*, Dec. 1988.

20. ‘Volcanic Ash Soils: Problem Soils or Miracle Soils?’
Invited Contribution to Discussion Session 6, 12th Int. Conf. on Soils Mechanics and Foundation Engineering, Rio de Janeiro, Aug., 1989.

21. ‘Influence of Structure and Composition on Residuals Soils’ *ASCE Journal of Geotechnical Engineering*, 116. No 4, 589-603, 1990

22. ‘The Solution of Seepage Problems’ *Groundwater and Seepage Symposium*, , 25-29, Auckland, May, 1990

23. “Computer Analysis of Seepage through an Earth Dam” Groundwater and Seepage Symposium, Auckland 1990 p. 141-147. (Co-authored with Kok C.M.)

24. ‘The Dispersivity of Volcanic Ash Soils’ *Proc. IPENZ Conf.* 1991, Vol. 1, p. 67-76 (Co-authored with Chan S Y)

25. ‘Retention Forces for Cuts in Slopes at Limiting Equilibrium’, *Proc. 3rd International Conf. on Tropical and Residual Soils,* Lesotho., 1991, Vol. 1, p. 49-56 (Co-authored with Lee W H).

26. ‘Some Residual Strength Measurements from New Zealand Soils’, *6th Aust. – NZ Conf. on Geomechanics*, Christchurch. 381-385, Feb. 1992

27. ‘Slope Instability in Tropical Areas’, (Theme report) *6th International Symposium on Landslides*, Christchurch, 1992.

28. ‘The Use of Consolidometer Tests to Estimate Settlement in Residual Soils’, *Thirteenth Int. Conf. on Soil Mechanics and Foundation Engineering*, New Delhi, January, 1994.

29. ‘Slope Stability in Mountainous Tropical Regions’, Geotropika ’94, *Malaysian Cong. In Geotechnical Engineering*, Malacca, August 1994.

30. ‘Aspects of Evidence Presentation at RMA Hearings’, *Geotechnical Aspects of Waste Management Symposium*, Wellington, May 1994.

31. ‘Construction of a Chimney Drain using Bio-polymer Slurry at Hays Creek Dam’, *Water Power and Dam Construction*, February, 1995. (Co-authored with V Jairai).

32. ‘Aspects of Seepage into Sheet Piled and Open Excavations’ *7th Aust. – NZ Conf. on Geomechanics*, Adelaide, July, 1996. (Co-authored with Ampualam K, Fung K H and Ragunathan V).

33. ‘A Tale of Sludge’ (invited presentation) *7th Aust. – NZ Conf. on Geomechanics*, Adelaide, 1996.

34. ‘Classification of Residual Soils’ *chapter in book: Mechanics of Residual Soils, edited by G E Blight*, Balkema, 1997 (Co-authored with Irfan T Y).

35. ‘Some lessons from geotechnical engineering in volcanic soils’. (invited keynote paper) *International Symposium on Problematic Soils*, Sendai, Japan, October, 1998

36. ‘Stresses and deformations around conduits through embankments’. *Proc. Eighth Australia New Zealand Conf on Geomechanics*, Hobart, February, 1999. (co-authored with Sole W.J. and Marchant P.G).

37. ‘Engineering Properties of a Pumice Sand’. *Proc. Eighth Australia New Zealand Conf on Geomechanics*, Hobart, February, 1999. (co-authored with Meyer,V.D., Satyawan Pranyoto, Pender, M.J., Larkin, T.J., and Duske, G.C.)

38. ‘Influence of particle strength on the properties of a pumice sand’. (invited contribution). *Proc. International Workshop on Soil Crushability*, Ube, Japan, September, 1999

39. ‘Discussion on paper "Influence of in situ factors on dynamic response of Piedmont residual soils’. *ASCE Journal of Geotechnical and Geoenvironmental Engineering*. Vol 126, No 4, 2000.

40. ‘Selection of soil strength parameters for geogrid reinforced walls’. *Proc. Geosynthetics Asia 2000 Conference*, Kuala Lumpur, May, 2000

41. ‘Challenges in geotechnical engineering education’. *Proc. First International Conference on Geotechnical Engineering and Education*, Sinaia, Romania, June, 2000.

42. ‘Shear strength parameters from back-analysis of single slips’. *Geotechnique*, 51, No 4, 373 – 374. 2001.

43. ‘Consolidation behaviour of allophane clays’. *Geotechnique*, 51, No 10, 901 – 904. 2001

44. ‘Coulomb wedge analysis of cuts in steep slopes’. *Canadian Geotechnical Journal*, 38, No 6, 1354 – 1359, 2001

45. ‘Determination of specific gravity and void ratio of pumice materials’. *American Society for Testing Materials Geotechnical Testing Journal*, 418 - 422, 2001.

46. ‘An overview of residual soils in Indonesia and implications for the interpretation of in situ tests’. *Proc International Conf. on In Situ Measurements of Soil Properties*, Bali, Indonesia, May, 2001

47. ‘Issues in the use of clay in reinforced earth construction’. *Proc. International Symposium, Landmarks in Earth Reinforcement*, Fukuoka, Japan 2001.

48. ‘Interpretation of calibration chamber tests involving cone penetrometer tests in sands’. Geotechnique, 52, No 4, 289 – 293. 2002

49. ‘Geotechnical characterization and behaviour of allophane clays’. *Proc. International Workshop on Characterisation and Engineering Properties of Natural Soils.* Singapore, Dec, 2002. Balkema.

50. Geotechnical Properties of Two Volcanic Soils. *Proceedings Geotechnics on the Volcanic Edge*, Tauranga, March, 2003, 225 – 244. 2003

51. Residual strength of clays and correlations using Atterberg Limits. *Geotechnique*, 53, No 7, 669 – 672. 2003.

52. Residual soils, with special reference to residual soils. *Proceedings 5th Chilean National Congress on Geotechnical Engineering*. Santiago, 2004

53. Geotechnical design parameters for use with geosynthetics, with special reference to Indonesian soil conditions. Proc. Seminar on Applications of Geosynthetics with Reference to Indonesian Soil Conditions. Jakarta, February, 2005.

54. Geotechnical characteristics of a pumice sand. *Proc. 2nd International Workshop on Characterisation and Engineering Properties of Natural Soils.* Singapore, Dec, 2006.