GUY GROCOTT

BSc (Hons) MSc (Eng Geol)

Country of Citizenship: New Zealand

Educational Qualifications: BSc., Victoria University of Wellington, 1973
BSc. (Hons) (1st Class), Victoria University of Wellington, 1974
(Cotton Memorial Prize) MSc. (Eng. Geol.), University of Canterbury, Christchurch, 1977
Diploma International Marketing, Christchurch Polytechnic, 1994

Professional Associations: New Zealand Geotechnical Society Incorporated, Chairman 2000 -01
New Zealand Coastal Society
Member International Association for Engineering Geology and the Environment

Publications: 22

Languages: English

EMPLOYMENT:

April 2007 – Present
Pells Sullivan Meynink Pty Ltd, Brisbane, Australia. Position: *Principal* - Manager, Brisbane Office

2006 to April 2007
McManus & Grocott Ltd, Christchurch, New Zealand. Position: *Director.* Responsible for engineering geological, geotechnical and environmental services on major government and commercial projects in the hydropower, infrastructure, mining and land development sectors.

1994 to 2005
Golder Associates (NZ) Ltd., Christchurch, New Zealand (Formerly Riddolls & Grocott Ltd.). Position: *Associate and Executive Director.* Responsible for engineering geological, geotechnical and environmental services on major government and commercial projects in the hydropower, infrastructure, mining and land development sectors.

1988 to 1994
Grocott Consultants Ltd.Tauranga, Timaru, New Zealand. Position: *Principal.* Established own engineering geological and geotechnical practice providing specialist technical services to consulting engineers and miners in the private sectors, New Zealand and South East Asia on major government and commercial sector projects in the hydropower, infrastructure, mining and land development sectors.

1981 to 1988
Worley Consultants Ltd., Auckland and Tauranga, New Zealand. Position: *Associate.* Collaborated with the establishment of engineering geological services to commercial sector, local and central government, and in developing countries. Carried out wide range of assignments on major civil and mining engineering projects.

1980 to 1980
George Orr Associates, Pretoria, South Africa. Position: *Associate.* Responsible for engineering geological and geotechnical advice to government and private sector clients on a range of major water resources developments including dams and tunnel projects, and associated facilities such as quarries and canals.

1977 to 1980
Geological Survey of South Africa, Pretoria, South Africa. Position: *Senior Engineering Geologist* Responsible for engineering geological and geotechnical advice to the Department of Water Affairs (Transvaal, Eastern Cape and Orange Free State provinces) on a range of major government water resources developments in the including earthfill and concrete dams and tunnel projects, and associated facilities such as quarries, canals, siphon structures, and to a lesser extent road projects.

PROJECTS RELATED TO HYDROPOWER

Benmore Irrigation Canal	Twizel, New Zealand	Geotechnical studies to confirm technical feasibility of 15 km long irrigation canal, and to provide geotechnical inputs for design and costings.
Lake Coleridge Power Station	Canterbury, New Zealand	Technical reviewer on engineering geological aspects of penstock slope stability on behalf of ECNZ's principal consultant.
Nam Mang 3 Hydro Electric Power Project	Laos	Geotechnical feasibility studies in respect of a 40 MW hydro-power project on behalf of Electricite du Lao, Lao DPR. Asian Development Bank funded project.
Clyde Power Project	Central Otago, New Zealand	Assessment of reservoir stability, involving the project management of all geotechnical and groundwater studies for the remedial works stabilisation of the Brewery Creek (capital cost M$90), Cairnmuir, Cornish Point, Ripponvale, Bannockburn, Pipeclay Gully Slides and Miners Rockfall, as part of worlds largest landslide stabilisation project (at the time).
Afulilo hydro-electric scheme	Western Samoa	Field leader, advised on hydro-geological factors affecting the leakage potential of the 4MW hydro-electric storage reservoir, ADB and EDF funded project.
Waipaoa Irrigation Scheme	Gisborne, New Zealand	Assistant Project Manager, responsible for field investigations to establish feasibility of embankment dams up to 34 m high.
Mini Hydro Schemes	Indonesia	Geotechnical field leader, responsible for evaluation of six 750KW mini hydro-electric standard set design schemes, involving assessment of foundations and canal excavation cut slope stability, on behalf of the Government of Indonesia; ADB and World Bank funded projects.
Water Retaining Structures	Indonesia	Compiled manual on engineering geological and geotechnical methods and procedures for the investigation of sites for water retaining structures, for use by Government of Indonesia staff as part of transfer of technical knowledge.
Waiere Falls	King Country, New Zealand	Geological inspector for Safety (SEED) Examination of existing concrete dam and penstock structure, Hydro-electric Development.
Karioi hydro-electric scheme	King Country, New Zealand	Geotechnical investigations for design and feasibility of 12MW power scheme.
Water Retention Structure	Wellington, New Zealand	Assessment of the influence of faulting on foundation conditions for a major water treatment plant, and collaboration on a review team to evaluate its performance.

PROJECTS RELATED TO HYDROPOWER

Lower Fish River	South Africa	Prefeasibility studies for part of the Committees Drift Scheme; geotechnical investigations for 10 m high concrete diversion weirs, alternative tunnel alignments up to 2.4 km long, and 20 m high earth embankments.
Apies River Scheme	Bophuthatswana, South Africa	Feasibility investigations for the raising of an existing concrete water supply dam.
Orange River Project	South Africa	Feasibility studies for part of the Sundays River Canal Scheme; responsible for all field investigations for proposed tunnel alignments up to 1.3 km long, earth dams up to 25 m high, concrete gravity dams up to 40 m high, stability of excavated canal cut slopes 20 m high, river crossing syphon structures, and construction material sources.
Vaal Dam Strengthening	South Africa	Geotechnical investigation and design of a 730 m long gravity drainage tunnel beneath a 57 m high existing concrete gravity dam, including assessment of tunnel support requirements, prediction of tunnel inflows, evaluation of foundation conditions for wall thickening, design of post-tensioned cable anchors and downstream consequences of breaching of an associated earth embankment.
South Ndebele Regional Water Distribution Scheme	South Africa	Pre-feasibility investigations for numerous embankment and concrete dams up to 40 m high, including assessment of excavation and grouting requirements and evaluation of construction materials and evaluation of foundation conditions for sites selected for construction.
Paul Sauer Dam	South Africa	Investigated foundation deformability characteristics for an existing 82 m high double curvature concrete arch dam.
Thrift Dam	South Africa	Preliminary geotechnical assessment of factors affecting the raising of the 15 m high 100 m long dam, South Africa's largest privately owned storage dam.
Crocodile River Scheme	South Africa	Geotechnical investigations to determine the technical feasibility of constructing water supply dams up to 50 m high and 650 m long, with recommendations on types of structures.
Water Supply Dams	South Africa	Geotechnical investigations for proposed dams up to 25 m high on the Swart Kei and Oskraal Rivers, including the evaluation of foundation conditions and construction material sources, with recommendations on types of structures.

PROJECTS RELATED TO TUNNELLING

West Coast Water Supply	Buller, New Zealand	Evaluation of options for proposed upgrading of 100 year old 2 km long water supply tunnel based on assessment of tunnel lining and geologic hazards (including landsliding and sink hole collapse features) affecting existing tunnel structure, on behalf of Buller District Council, New Zealand.
Second Manapouri Tailrace Tunnel Contract 2MTT100	Manapouri, New Zealand	Appointed contractor's geotechnical consultant, responsible for the preparation of documentation associated with NZ$30 million differing site conditions (DSC) claims for a duplicate 10 km long tailrace tunnel for existing power station (under construction). Responsible for supervision of tunnel logging, sampling and materials testing and comparison of "as built" with pre-bid baseline ground conditions. Assisted with preparation of statement of claim documentation (contract value NZ$200).
Coleridge Power Station	Canterbury, New Zealand	Engineering geological logging of soil mass behind existing concrete lining of 2.1 km long, 3.3 m diam. No. 1 tunnel, as part of refurbishment programme to evaluate evidence for tunnel leakage and erosion of ground materials, on behalf of Electricity Corporation of New Zealand.
Clyde Power Project	Central Otago, New Zealand	Geotechnical and hydro-geological studies to assess the reservoir stability of 10 major landslides. Project manager, responsible for engineering geological mapping, logging of drives (3.5 m diam x 3 km long) and shafts (4 m diam. X 75 m deep), field permeability testing, lake fill monitoring. Prediction of tunnelling conditions including support and groundwater inflows to aid contractor performance.
Nam Mang 3 HydroPower Project	Laos P.D.R.	Assessment of geotechnical conditions at proposed MW hydropower project, involving dams, tunnels, penstock and power station, on behalf of Electricite du Lao.
Redoubt Road No. 2 Inlet Tunnel	South Auckland, New Zealand	Responsible for geotechnical investigations for 633 m long 2.6 m diam. Water storage tunnel to assess the influence of slope instability on route selection, and preliminary assessment of tunnel support requirements, Auckland Regional Authority.
Lower Fish Scheme, Committees Drift Scheme	Grahamstown, South Africa	Responsible for geotechnical investigations for numerous alternative tunnel alignments up to 2.4 km long (including diversion weirs and off river storage dams), including engineering geological mapping, logging of drill core, and assessment of rock mass conditions and permeability for prediction of tunnel support requirements.

PROJECTS RELATED TO TUNNELLING

Pumped storage potential	South Africa	Collaborated in a major study to assess the hydroelectric pump storage potential of South Africa, providing advice on geotechnical controls affecting major structures including dams and tunnels.
Orange River project, Sundays River Canal Scheme	Sundays River, South Africa	Responsible for geotechnical investigations for numerous proposed tunnel alignments up to 1.3 km long (including concrete dams up to 40 m high, earth dams up to 25 m high, river crossing syphons, canal sidling cut slope stability, and construction materials). Evaluated tunnel support requirements, prediction of groundwater conditions and assessment of the influence of buried alluvial channels on tunnel alignments.
Vaal Dam Strengthening	Transvaal, South Africa	Responsible for geotechnical investigations and design of 730 m long drainage tunnel beneath an existing 57 m high concrete gravity dam structure and storage reservoir, including assessment of support requirements, prediction of groundwater inflows, evaluation of foundation conditions for dam wall thickening and installation of tensioned cable anchor support.

PROJECTS RELATED TO MINES AND QUARRIES

Indooroopilly Underground Mine UoQ	Brisbane	Geotechnical assessment of rock mass and support conditions as part of a condition assessment of an old underground mine.
Queensland Magnesite	Central Queensland	Geotechnical assessment of causes of ROM slope failure and stabilisation options
Cloncurry Copper Project	North west Queensland	Preliminary geotechnical assessment of opencast potential of five copper deposits.
Wahi Gold	Waihi, New Zealand	Geotechnical assessment of controls affecting east and west wall cutbacks
Mikonui Gold prospect	Westland, New Zealand	Project reviewer including extensive data review, site investigation and development of a hydrogeological model for a 50 m deep alluvial gold resource, and prediction of opencast mine dewatering requirements.
Waikaka Gold prospect	Southland, New Zealand	Project reviewer including design and supervision of geotechnical investigation to investigate pit slope stability, waste dump materials handling, and development of hydrogeological site model .for alluvial gold mine. Investigations included desk study, cored drilling, groundwater monitoring, laboratory testing and a trial excavation.
Glenore Gold Mine	Otago, New Zealand	Reviewer of slope stability analysis, risk assessment and management strategy for flooding of the mine pit to launch floating processing plant.
Macraes Gold Mine	Otago, New Zealand	Collection and summary of laboratory shear strength data from various sources in relation to Otago schist rock mass, to assist development of database for use with opencast pit slope stability analysis.
Cascade Creek Coal Mine	Westport, New Zealand	Reviewer, feasibility study of rock slope stability and access requirements at two portal sites for proposed underground mine.
West Coast Regional Council	Westland, New Zealand	Reviewer, slope stability and subsidence issues at Stockton and Strongman Coal Mines on behalf of the regulatory authority responsible for the monitoring of surface effects.
Pigeon Road Quarry	Dunedin, New Zealand	Preparation of technical submissions for resource consent hearing for proposed aggregate quarry.
Pound Road, Parkburn Quarries	Canterbury and Central Otago, New Zealand	Preparation of quarry management plans for existing gravel quarries to support ISO 14001 environmental accreditation and for long term end-of-use land development potential.
Yaldhurst Quarry	Canterbury, New Zealand	Preparation of quarry management plans for existing gravel quarry to support land use resource consent and for long term end-of-use land development planning.

PROJECTS RELATED TO MINES AND QUARRIES

Greenhills Quarry Resource consent application	Southland, New Zealand	Project manager and responsibility (with others) for preparation of EIA for proposed “greenfields” dunite quarry for fertiliser grade industrial use, including preparation of quarry management plan, ambient air quality, waste water disposal, traffic and landscape management.
Township Opencast, Waikato Coalfield	Huntly, New Zealand	Preparation of engineering geological information obtained from a geotechnical drilling programme (including downhole geophysical logs) and instrumentation monitoring data to assist with the design of proposed 50 – 60 m high northern highwall.
Hilderthorpe Quarry, Oamaru	North Otago New Zealand	Preparation of quarry management plans including end-of-use options for existing gravel quarry and evaluation of pit floor stability as part of an assessment of operational safety considerations.
Aggregate Resources	Waikato and Bay of Plenty, New Zealand	Assessment of the potential for “greenfield” quarry development (greywacke and volcanics) in Waikato and BoP, involving review of geological and quarry production data in relation to existing quarries, and initial field inspection of prospects.
Milburn Quarry, Milton	South Otago New Zealand	Evaluation of stability of 30 m high quarry face in support of mines inspectorate requirements, and preparation of quarry management plans including design of overburden dump and waste water disposal options and ambient air quality.
Makareao Limestone Quarry (Palmerston)	North Otago New Zealand	Assessment for use as a high brightness industrial filler, including geological mapping of the resource, test pitting and resource sampling.
Belmont Quarry	Wellington, New Zealand	Project manager, involving preparation of quarry management plans, evaluation of aggregate resource, and design of 35 m high overburden waste dump including disposal of low strength tailings.
Lignite Resources	Southland and Central Otago, New Zealand	Responsible for engineering geological field investigations as part of a mining pre-feasibility study of six low lignite coal deposits contained at levels up to 100 m in low strength materials. Factors investigated included pit wall, pit floor and spoil pile stability, and groundwater influences. Responsible for ranking of individual deposits based on geotechnical factors influencing mining to select sites for detailed study.
NZ Coal Resources Survey	Kaitangata, New Zealand	Prepared engineering geological logs of drillholes and detailed mapping of existing opencasts together with reporting of results as part of pre-feasibility mining study to determine geotechnical factors affecting opencast coal recovery.
Waikato Coalfield Opencast Research Study	Waikato, New Zealand	Collaborated in a major research study of principal existing opencast mines resulting in the identification of engineering geological factors influencing the highwall stability.

PROJECTS RELATED TO MINES AND QUARRIES

Industrial Minerals Study	New Zealand	Economic study to assess the import substitution potential of New Zealand industrial minerals.
Aggregate Resource Study	Waikato and BoP, New Zealand	Preliminary study of the potential for “greenfield” quarry development (greywacke and volcanics) in the western BoP, involving review of geological and quarry production data in relation to existing quarries, and initial field inspection of prospects, as part of a major pre-purchase evaluation. Detailed site investigations included geophysical surveys to determine resource quality and quantity.
Motumaoho Quarry	Waikato, New Zealand	Pre-purchase evaluation of existing quarry (greywacke) to determine geological constraints to future development. Work included drilling and resource assessment.
Whitehall Quarry	Waikato, New Zealand	Detailed evaluation of existing quarry (greywacke)to determine available rock reserves and quality, and to assess geological constraints to future quarry operations. Work included engineering geological mapping, interpretation of geophysical surveys, and assessment of drillhole data.
Quarry resource evaluation	Waikato and BoP, New Zealand	Detailed evaluation of existing quarries (greywacke and volcanics) to determine available rock reserves and quality, and to assess geological constraints to future quarry operations. Work included geological mapping, interpretation of geophysical surveys, and assessment of drillhole data. Preparation of quarry management plans including benching layouts, design of spoil dumps and water discharge options.
Limestone resource study	Taranaki, New Zealand	Desk study of the limestone potential of the Taranaki region, involving data review and recommendations for detailed study.
Beach shingle evaluation	Napier, New Zealand	Pre-purchase inspection of inspection of an existing beach shingle extraction operation to determine available reserves and long term production potential.
Hinueria Stone quarry	Matamata, New Zealand	Resource assessment to establish the product suitability of ignimbrite as a natural pozzolanic additive for the NZ cement industry. Requirements included establishing the product volume through drilling and field mapping and suitability in terms of NZ and international quality specifications by means of laboratory testing to determine product characteristics.
Monowai underground mine and Maratoto Mill	Coromandel, New Zealand	Assisted with preparation of a detailed EIA including geotechnical assessment of an existing access road providing entry to the underground workings, together with proposals for access road rehabilitation and upgrading.

PROJECTS RELATED TO ENVIRONMENT AND SUSTAINABILITY

Rogers Quarry and Blands Bluff Quarries	Canterbury, New Zealand	Project manager for two proposed limestone quarries including preparation of quarry management, plans assessment of environmental effects (including computer simulation modelling for visual effects), consultation with affected parties, procurement of Resource Consents, and attendance at Hearings.
Kate Valley Landfill	Canterbury, New Zealand	Development of a risk-based methodology for establishing an appropriate level of bond setting for the Canterbury Regional landfill, on behalf of the Hurunui District Council.
Pound Road, Parkburn Quarries	Canterbury and Central Otago, New Zealand	Preparation of quarry management plans for existing gravel quarries to support ISO 14001 environmental accreditation and for long-term end-of-use land development potential.
Stockton Opencast	West Coast, New Zealand	Project manager of a study carried out on behalf of Solid Energy South to evaluate the potential options for mitigation of the acid mine generation. Work included the establishment of a major field monitoring programme and identification of management options for reducing acid mine generation effects.
Yaldhurst Quarry	Canterbury, New Zealand	Preparation of quarry management plans for existing gravel quarry to support land use resource consent and for long term end-of-use land development planning.
Hilderthorpe Quarry, Oamaru	North Otago New Zealand	Preparation of quarry management plans including end-of-use options for existing gravel quarry and evaluation of pit floor stability as part of an assessment of operational safety considerations.
West Coast Regional Council	West Coast New Zealand	Review of end-of-mine life closure plans in relation to compliance with mining licence conditions for West Coast coal mines.
Greenhills Quarry Resource consent application	Southland, New Zealand	Project manager and responsibility (with others) for preparation of EIA for proposed “greenfields” dunite quarry for fertiliser grade industrial use, including preparation of quarry management plan, ambient air quality, waste water disposal, traffic and landscape management.

PROJECTS RELATED TO INFRASTRUCTURE

Railway corridor repairs and upgrading	New Zealand	Geotechnical investigations on behalf of ONTRACK (trading name of NZ Railways Corporation) at numerous sites on the North Auckland Line, Midland Line, Stillwater-Westport Line, North Island Main Trunk, Main Line (South Island), Palmerston North-Gisborne Line, Marton-New Plymouth Line, Wairarapa Line, and Stratford-Okahukura Line to provide solutions for the repair of numerous sites affected by storm damage and general land instability. Site investigations and engineering design of railway sections proposed for track upgrading including embankment replacement, bridge replacement, tunnel "daylighting", and curve easements.
Landfill site selection	Canterbury	Preliminary geotechnical investigations for possible regional landfill sites.
Landfill contractual dispute	West Coast	Geotechnical assessment of ground conditions to assist resolution of contractual dispute, on behalf of the engineering designer.
Slope Stability Investigations	New Zealand Wide	Field investigations, slope stability assessment and reporting for numerous residential and light commercial developments on sloping sites. Projects in North Auckland, Canterbury, Westland, Tauranga, Auckland, Nelson, Marlborough and Wellington. Clients have included developers, private homeowners, local authorities, loss adjusters and insurers.
Foundation Investigations	New Zealand	Geotechnical investigations for numerous residential and commercial buildings founded on variable foundation conditions. Desk studies, supervision of site investigations (test pitting; drilling) and *in-situ* testing for determination of soil parameters for foundation design and reporting.
Land subsidence	Central Otago, New Zealand	Assessment of the causes of land subsidence following large scale Clutha River flooding.
Earthquake damage	Bay of Plenty, New Zealand	Geotechnical investigations to assess property and land damage resulting from the 1986 6.2-magnitude Edgecumbe earthquake.
Natural Gas Pipelines	North Island, New Zealand	Route selection studies in relation to geological hazards; projects included Te Kuiti South Lateral, Morrinsville-Tatuanui Lateral, Rotorua Lateral, Kaimiro, Kapuni, Waitara Valley, Waikeria Lateral, Hamilton City Gate No. 4 (Ngaruawahia), and Hawera-Patea South Line loop No. 2.
Iron sand Slurry Pipeline	South Auckland, New Zealand	Route selection studies for ironsand slurry pipeline.

Railway Deviation	North Auckland, New Zealand	Route selection studies for 11 km railway deviation and investigation and remedial works design of landslide areas affecting existing tunnels.
Main Trunk Railway Electrification	North Island, New Zealand	Investigations for electrification alignment improvements, including the feasibility of daylighting existing tunnels to form 50 m high cut.

PROJECTS RELATED TO HIGHWAYS AND RAILWAYS

Railway corridor repairs and upgrading	New Zealand	Geotechnical investigations on behalf of ONTRACK (trading name of NZ Railways Corporation) at numerous sites on the North Auckland Line, Midland Line, Stillwater-Westport Line, North Island Main Trunk, Main Line (South Island), Palmerston North-Gisborne Line, Marton-New Plymouth Line, Wairarapa Line, and Stratford-Okahukura Line to provide solutions for the repair of numerous sites affected by storm damage and general land instability. Site investigations and engineering design of railway sections proposed for track upgrading including embankment replacement, bridge replacement, tunnel "daylighting", and curve easements.
Expert Advisors Contract, Transit NZ	New Zealand	Appointed geotechnical expert advisor (one of four nationally) under Contract TNZ HO 06-240 to assist Transit in the delivery of its major projects programme (appointment to 2008).
Transmission Gully Motorway	Wellington, New Zealand	Geotechnical review for Stage 1 to assist Transit NZ with preparation of the RFT, specific advice on the geotechnical testing programme, technical assistance to the Tender Evaluation Team, and peer review of consultants work (estimated contract cost NZ$900M).
Southern Arterial Motorway	Christchurch, New Zealand	Geotechnical review of the scope and the requirements for geotechnical investigations for a proposed duplication and extension of an arterial ring road (estimated contract cost NZ$120M).
State Highway 73	Canterbury, New Zealand	Project manager, assessment of cost optimal highway slope failure maintenance programme using risk assessment and benefit cost methods developed as part of the Transfund NZ 1997/99 research programme.
Strategy Study SH1	Kaikoura – Christchurch, New Zealand	Assessment of geotechnical issues and slope stability constraints affecting the existing highway and evaluation of possible remedial measures including the need for any monitoring.
Research Project, Transfund	Auckland, New Zealand	Probabilistic Techniques for Optimising Cut Slope Earthworks. Investigation of a methodology for optimisation of cut slope design through risk-based economic evaluation and a consideration of geotechnical uncertainty, and to determine how probabilistic techniques could be used to provide more realistic cost estimates and contingencies for road construction projects with significant cut slope components.

PROJECTS RELATED TO HIGHWAYS AND RAILWAYS

SH6 Reinstatement, Newmans Lookout	Upper Buller Gorge, New Zealand	Team leader for development of long-term solution to slope instability of 50 , 150 m high slope in closely fractured greywacke, including geotechnical assessment, benefit cost analysis of alternative alignment options, concrete soldier pile retaining walls (x 2), river bank training and erosion protection, immediate maintenance works, and environmental considerations.
Geotechnical Assessment, Eden Creek	Upper Buller Gorge, New Zealand	Assessment of nature of slope instability causing deformation of highway, including implications of survey monitoring data. Consideration of realignment requirements and rock protection structures to reduce river erosion.
Research Study, Transfund NZ	Canterbury, New Zealand	Risk assessment techniques for optimising slope failure preventive maintenance programmes. Project manager; knowledge of the slope stability, accident and maintenance history affecting the site, used to quantify the risk to road users from adverse slope instability affects, and to identify the cost optimal maintenance programme. Closely fractured greywacke batters on SH73 RP 121/4.975-6.380 (Christchurch to Arthur's Pass) were selected as a study area to verify the suitability of the method in the New Zealand road and highway context.
Kopu Bridge Replacement	Hauraki, New Zealand	Peer review of proposed geotechnical site investigations.
Maungaraki Road Deviation	Wairarapa, New Zealand	Geotechnical assessment of causes of instability of 25 m high, 125 m long road embankment, including subsurface investigations, laboratory testing, consideration of embankment performance, and remediation options.
SH7 McKendries Corner – Kaiata	Greymouth, New Zealand	Geotechnical investigations of a section of state highway affected by large scale landsliding, and development of options for remedial works.
SH1 Okiwi Bay	Kaikoura, New Zealand	Geotechnical peer review to determine influence of road widening on the stability of an existing railway tunnel.
SH1 Blue Slip	Kekerengu, New Zealand	Geotechnical assessment of options for remediation of a mud flow landslide and its affect on the highway.
SH6 Arahura Road/Rail Bridge	West Coast, New Zealand	Geotechnical peer review of a proposed programme of geotechnical site investigation for bridge replacement.
SH20 Mt Roskill Extension Project	Auckland, New Zealand	Geotechnical peer review of preliminary earthworks design for new highway construction.
SH1 Hibiscus Coast	Auckland, New Zealand	Geotechnical peer review of proposals to stabilize a landslide affecting the highway at RP288/4.0.

PROJECTS RELATED TO HIGHWAYS AND RAILWAYS

SH3 Okoki Culvert Failure	New Plymouth, New Zealand	Geotechnical peer review of the causes of failure of a new culvert under construction.
SH80 Mt Cook	Otago, New Zealand	Geotechnical peer review of the affects of fibre optic cable mole ploughing on highway stability.
SH6 Birchfield Mining	Ross, West Coast, New Zealand	Geotechnical assessment of revised mining start up to assess the affect of mine highwall on highway stability.
SH1 Winslow Passing Lane	South Canterbury, New Zealand	Geotechnical investigation of ground conditions for new highway passing lane construction.
SH7 Kiwi Point	West Coast, New Zealand	Geotechnical review of the affect of tunnel stabilization options on highway stability.
SH3, Manawatu Gorge landslide	Manawatu, New Zealand	Geotechnical review of slope failure models, proposed remedial works, and risk management strategies for 100 000m^3 deep-seated landslide; closely fractured greywacke.
SH7, Poplars Straight	Lewis Pass, New Zealand	Geotechnical review of options to mitigate effects of active debris flows encroaching on highway, including surface and subsurface drainage, removal of potentially erodible material, bridging, and a deviation ($3.2 million), which was subsequently adopted.

PROJECTS RELATED TO GEOLOGICAL HAZARDS

Spokesperson, geotechnical engineering	National Network of Technological Societies	Appointed spokesperson by the National Network of Technological Societies to comment on issues of geotechnical engineering under the auspices of the Institution of Professional Engineers New Zealand (IPENZ).
Geotechnical Expert Advisor	Transit New Zealand	Appointed geotechnical expert advisor (one of two nationally) under Transit New Zealand Professional Services Contract PA1956 to assist with resolution of geotechnical disputes. The role has been expanded to include peer review of design.
Slope stability assessment	Punakaiki (West Coast), New Zealand	Geotechnical assessment of slope instability (rockfall and debris flow) hazard as part of a planning study to assess constraints to future coastal development.
Slope stability and fault hazard assessment	Westport, New Zealand	Assessment of the risk of faulting (including probability of recurrence and magnitude of offset) and slope instability as part of a study to evaluate options for refurbishment of an existing 100 year old water supply tunnel.
Erosion assessment	Marlborough Sounds, New Zealand	Appointed Member of the Environmental Advisory Team (above tide geomorphology) by New Zealand Rail Ltd. to evaluate environmental effects of fast ferry wash on coastal shoreline stability.
Multi-storied apartment site	Wellington, New Zealand	Geotechnical evaluation and review of slope stability remediation works and ongoing monitoring proposals for Code Compliance under the New Zealand Building Act.
Earthquake Commission Landslip Project	New Zealand	Coordination of case-history study commissioned by EQC to identify geotechnical and development factors involved in landslip insurance claims. Findings included development of guidelines for regulatory authorities to improve practices for processing building consents at construction sites involving slope excavation.
Earthquake Commission Peer Reviews	Nelson and Christchurch, New Zealand	Retained by EQC to peer review geotechnical investigation reports on several landslips for which claims were made following severe storms in the Nelson-Marlborough region. Advice provided on remedial works.
Stability zoning	Papakura, New Zealand	Assessment of stability of hill country proposed for urban development, and recommendations for planning zones.
Slope Stability	Canterbury, New Zealand	Technical reviewer on geological aspects of hydro power station penstock slope stability on behalf of ECNZ's principal consultant.

PROJECTS RELATED TO GEOLOGICAL HAZARDS

Slope stability	Central Otago, New Zealand	Assessment of reservoir stability, involving the project management of all geotechnical and groundwater studies for the remedial works stabilisation of the Clyde Power Project's Brewery Creek (capital cost M$90), Cairnmuir, Cornish Point, Ripponvale, Bannockburn, and Pipeclay Gully landslides and Miners rockfall, as part of (at the time) the worlds largest landslide stabilisation project.
Land subsidence	Central Otago, New Zealand	Assessment of the causes of land subsidence following large scale river flooding
Earthquake damage	Bay of Plenty New Zealand	Geotechnical investigations to assess property and land damage resulting from the 1986 6.2 magnitude Edgecumbe earthquake on behalf of the earthquake Commission.
Slope stability, faulting and land subsidence	North Island, New Zealand	Route selection studies in relation to geological hazards including slope instability, faulting and land subsidence for numerous gas pipelines throughout the central North Island.
Slope stability	Manawatu, New Zealand	Geotechnical review of slope failure models, proposed remedial works, and risk management strategies for 100 000 m^3 deep-seated landslide; closely fractured greywacke.
Slope instability	Lewis Pass, New Zealand	Geotechnical review for Transit NZ of options to mitigate effects of active debris flows encroaching on highway, including surface and subsurface drainage, removal of potentially erodible material, bridging, and a deviation ($3.2 million), which was subsequently adopted.
River bank erosion	Upper Buller Gorge, New Zealand	Team leader for development of long-term solution to major river bank erosion of 50º inclined, 150 m high slope in closely fractured greywacke, including geotechnical assessment, benefit cost analysis of alternative alignment options, river bank training and erosion protection, immediate maintenance works, and environmental considerations.
Rockfall	Canterbury, New Zealand	Project manager; assessment of cost optimal highway slope failure maintenance programme using risk assessment and benefit cost methods developed as part of the Transfund NZ 1997/99 research programme.
Rockfall	Kaikoura, New Zealand	Assessment of geotechnical issues and constraints affecting the existing highway and evaluation of possible remedial measures including the need for any monitoring.
Cut slope earthworks stability	Auckland, New Zealand	Assisted with development of probabilistic techniques for optimising cut slope earthworks through risk-based economic evaluation and a consideration of geotechnical uncertainty.

LIST OF PUBLICATIONS

1. **Grocott, G.G.** and Riddolls, B.W., 2002: "Use of As-Built" Engineering Geology for a GBR-Based TBM Claim: The Contractors Perspective. Proc. 9th Intl. Cong. Intl. Assoc. Engng. Geol. & the Environ., 16 – 20 September 2002, Durban, South Africa pp. 1945 – 1952.
2. Leonard, M., **Grocott, G.,** Riddolls, B. & Pullen, D., 2001: Influence of Environmental law on Quarry feasibility in New Zealand. Aggregate 2001 – Environment and Economy. Hosted by Finnish National group of Intl. Assoc. Enging. Geol., Aggregate Commission of IAEG, Helsinki, Finland, pp. 415 – 421.
3. **Grocott, G G**, Horrey, P J**,** Riddolls, B W., 2001: "Calibration studies for landslide quantitative risk assessment" Building Research Association of New Zealand Study Report
4. **Grocott, G G**, Horrey, P J, Riddolls, B W., 2001: "Probabilistic techniques for optimising cut slope earthworks" Transfund New Zealand Research Report No:189.
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