



Mr T. O. Henderson
BSc MSc FICE CEng MHKIE FGS RPE ACI Arb
Director

Key Experience

Tom Henderson is one of the founding Directors of GCG (Asia). He has 25 years experience in the civil engineering profession and has worked extensively in the field of geotechnics as a client, consultant, contractor and academic. He has spent several years in multi disciplinary client and contractor based project teams, managing or advising on the planning, design and construction of major mass transit railway and infrastructure projects in London, Hong Kong, Singapore, Taiwan, Bangkok and Australia. Prior to this he worked in the offshore petroleum industry where he gained experience in the investigation, design and installation of foundations for fixed and floating structures. He has carried out geotechnical research at the University of Oxford, England. He has acted as an expert witness in the resolution of several construction related disputes. His resumé represents a broad base of technical knowledge in the specialist field of geotechnics, combined with experience in management of major civil engineering projects and active participation in dispute resolution.

Career Summary

November 1998 – present: Director, GCG (Asia)

Founding Director of GCG (Asia) Ltd. Responsible for the technical, legal and financial aspects of over sixty projects requiring specialist geotechnical engineering or management services. Work carried out to date includes:

- Appointed to Expert Review Panel for 26 km bored rock tunnel project in Nepal
- Expert Witness to Court of Inquiry investigating tunnel collapse at Nicoll Highway, Singapore
- Independent expert advice on claims related to design and installation of large diameter piles on several infrastructure projects in Hong Kong
- Expert Witness for arbitrations associated with bored pile defects and diaphragm wall installation in Hong Kong
- Expert witness support on Judicial Review associated with drainage impacts in an area of special scientific interest in Hong Kong
- Expert evidence to tribunal in Singapore investigating complaint of professional misconduct
- Independent expert advice for mediations in Hong Kong associated with reclamation construction, pile installation, rock cavern excavation, rock slope stability and unforeseen ground conditions
- Specialist advice on tunnelling, deep excavations/dewatering, building damage assessment, and underpinning works associated with several underground road, railway and station design/construction contracts in Hong Kong, Singapore, mainland China, Taiwan and Australia
- Seconded to Taiwan High Speed Rail as acting Client Geotechnical Manager on the design and construction of a 350 km new rail system involving soft ground and rock tunnels, viaduct foundations, and seismic impact
- Interpretation of pile load test data to substantiate railway viaduct foundation design in Taiwan
- Assessment of settlements associated with the construction of large earth fill embankments on Taiwan High Speed Rail Link
- Independent Review of TBM performance on Singapore Deep Sewer tunnel construction
- Engineering design management for link sewer tunnel project in Singapore
- Value engineering review of options for cross passage tunnel excavations in soft ground
- Value engineering studies leading to alternative designs for retaining walls, piling and soil nailing and earthworks management on major construction projects in Hong Kong

January 1996 – November 1998: Chief Geotechnical Engineer, Gammon Construction Ltd

Working with Lambeth Associates, which represents the engineering design division of the Gammon Group, Mr Henderson was responsible for geotechnical engineering design input to the Gammon Civil and Building Divisions. He has provided engineering services on the following projects:

- Chinatown MRT Station, Singapore (design & construct contract)
- Bangkok MRTA, Stations 13 & 14 cut & cover station construction
- Hong Kong Route 3, Country Park Section embankment construction
- Hong Kong Lung Cheung Road Improvement – large slope works
- Tsing Yi Duplicate South Bridge reinforced earth approach abutments



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November 1992 – December 1996: Senior Geotechnical Engineer, MTRC, Hong Kong

Mr Henderson worked almost exclusively on the planning, design, and construction of the Lantau and Airport Railway. Supervising a team of six engineers and technicians, he was responsible for the management of geotechnical works on eight major civil engineering contracts with a collective construction value in excess of US\$1.5 billion. The technical issues that Mr Henderson dealt with in association with these works primarily comprised:

- Large scale reclamation design and construction
- Geotechnical management of large diameter pile design and construction (over 2000 in number)
- Site investigation
- Ground movement predictions, building damage assessment, instrumentation and monitoring
- Shaft & adit construction in soft ground within a congested urban environment
- Excavations and dewatering for deep basements and retaining structures
- Design and construction of cut and cover tunnels and station boxes, bored tunnels, immersed tube tunnels
- Specifications for ground treatment and dewatering and management of site process

Mr Henderson was also involved in feasibility studies for future MTRC mass transit projects.

May 1990 – October 1992: Senior Geotechnical Engineer, Geotechnical Consulting Group (GCG), London, UK

Mr Henderson was a principal member of the GCG team acting as Specialist Geotechnical Advisor to the Jubilee Line Extension and Cross Rail Project Teams. This involved technical support on site investigation, ground interpretation, settlement predictions and building damage assessment for major urban rail projects. Mr Henderson also advised London Underground on other tunnelling projects including the construction of a new escalator tunnel at Waterloo station including the preparation of the specification for the first commercial use of compensation grouting in the UK. He was also involved in the interpretation of ground movements resulting from the NATM trial tunnel construction at Heathrow.

November 1987 – April 1990: Geotechnical Engineer, Fugro-McClelland Ltd, UK

Mr Henderson worked extensively in the field of offshore geotechnics. This comprised the supervision of site investigation works for offshore structures in the North Sea and Arabian Gulf, foundation design studies, and monitoring deep foundation installations for fixed offshore facilities.

October 1984 – November 1987: Civil Engineering Research Assistant, Oxford University, UK

Soil mechanics research on the in situ testing of soft soils. Also undertook teaching of civil engineering subjects to undergraduates and preparation of short courses for students.

July 1982 – September 1983: Site Engineer, Taylor Woodrow Construction Ltd, UK

Employed on Heysham II Nuclear Power Station site on construction of the turbine hall facility.

Education/Research

Research Assistant, Department of Engineering Science, Oxford University, 1984-87

MSc, Engineering Geology, Durham University, 1984

BSc (Hons), Civil Engineering, Heriot Watt University, Edinburgh, 1982

Professional Qualifications/Awards

Fellow of the Institution of Civil Engineers (FICE)

Registered Professional Engineer (RPE),

Member of Hong Kong Institution of Engineers (MHKIE) (Geotechnical Division)

Fellow of the Geological Society (FGS)

British Geotechnical Society, Cooling Prize Winner,

Associate Member of the Chartered Institution of Arbitrators (ACI Arb)

Associate Member of the Hong Kong Institute of Arbitrators (AHKIA)

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