



Areas of expertise

Slope stabilisation, retaining wall design, earthworks, hydrogeology and groundwater flow, soft clay engineering, pile foundations, grout injection and ground stabilisation techniques, tunnel construction, shallow and deep-water ground investigation, and seismic design of earth structures.

Education and Career

Since 1984: GCG, London

1979: MSc (Distinction), Imperial College London, UK.

1976-83: Ministry of Works and Development, New Zealand and Beca Carter Hollings and Ferner.

1975: BEng (1st Class), University of Auckland, New Zealand.

Professional Qualifications and Memberships

Since 2004: Fellow of the Institution of Civil Engineers, UK.

Since 1994: Member of the Institution of Civil Engineers, UK.

Since 1983: Member of the Institution of Professional Engineers, New Zealand.

Since 1983: Member of the British Tunnelling Association, UK.

Since 1983: Member of the British Geotechnical Association, UK.

Service on technical / professional bodies

2003-05: Chairman of the British Geotechnical Association.

Since 2011: Trustee of the British Geotechnical Association.

2007-11: Institution of Structural Engineers committee for the implementation of Eurocodes.

Experience with GCG

Mr Bracegirdle joined GCG in 1984, becoming a Director in 1988 and then a Senior Partner when the company became a LLP in 2011. He has advised on a wide range of civil engineering and marine works which have included the rock and soft ground tunnelling, stabilisation of large landslides, foundations, storage tanks, deep excavations, and oil and gas pipelines.

Recent work on hydro power includes an investigation into the collapse of a 350m high raisebore during its construction in the Dominican Republic in 2011; the collapse of a shotcrete lined hydro power headrace tunnel in Chile which occurred after two years of peak-power operation in 2013; tunnel collapses Algeria and Georgia. He is currently undertaking a forensic analysis of a flooding incident that occurred during the construction of a Metro project in Brazil. His investigations have identified inadequacies in standard design methods, and problems initiated by shotcrete fatigue, adverse geology and mineralogy.

He has wide experience in embankment and slope stability. In 1984 he assisted Skempton and Vaughan in the investigation of the collapse of Carsington Dam. Since then he has worked on numerous highway and rail embankments and advised on construction over landslides and the remediation of large active landslides. Remediation techniques have included active and passive drainage systems, anchors and piles.

His work on foundations includes a wide range of techniques including the use of a wide range of pile types, and ground improvement. He has recently provided evidence to an ICC Arbitration concerning a highway project in Georgia in which stone columns were used to control the settlement of high embankments on deep soft clay. Other applications of stone columns include the control of settlement of warehouse floors on poor ground.

He has been involved with other forms of ground treatment including the application of jet grouting, permeation grouting compensation grouting, and the design and construction of prefabricated vertical drains.

Countries worked

UK and Channel Islands, Algeria, Ireland, France, Zimbabwe, Libya, Ethiopia, France, Georgia, Denmark, Portugal, Nepal, Singapore, Indonesia, Australia, New Zealand, Russia, USA, Dominican Republic, Brazil, Chile, Peru, UAE, Iraq, Turkey, Serbia, Hungary, Slovakia, Norway, Greece, Oman, South Africa, Kazakhstan, and Hong Kong.

Languages

English

Work on marine structures include port development, piling and work on large quay walls in the UK and abroad, shallow- and deep-water pipelines, outfalls, and intakes. Recently, he gave evidence in an arbitration concerning the construction of a jetty at Um Qsar, Iraq.

He has been involved with the investigation of mining subsidence and sinkhole activity in the UK and South Africa and the settlement of deep fills.

Other recent assignments include due diligence and earthquake PML analysis and geotechnical design in respect of major investments Eastern Europe and Turkey.

Mr Bracegirdle has been retained as an expert witness in cases involving soil and rock slope stability, tunnel construction in hard and soft ground, and peat, cofferdam and retaining wall construction, building and storage tank foundations, quay walls, groundwater flow, ground improvement, earthworks, and seismic risk, presenting evidence to the ICJ, ICC, LCIA, JIDRC and UK Technology Courts. He has recently acted as a sole expert for an International Arbitration in Oman involving the construction of a pipeline in difficult ground conditions.

He has published papers about ground movements due to tunnel construction and their influence on buried services, slope and pit slope stability, seismic design of reinforced earth, construction of cofferdams, and pile foundations.

Previous experience

On graduation and until 1978, Mr Bracegirdle worked as a Section Engineer on the construction of surface hydraulic structures, rock and mixed ground tunnelling and underground civil works in the development of a major hydro-electricity project in the North Island of New Zealand. During this time, he was primarily involved with the construction of the 60m high Moawhango Dam, and penstock and surge chamber construction at the underground Rangipo North powerhouse. This work involved rock excavation, support and grouting works.

In 1979 he attended a post-graduate course in Soil Mechanics and Engineering Seismology at Imperial College, London. Between 1980 and 1983, he undertook research and development and consultancy in geotechnical and earthquake engineering for the NZ Ministry of Works and Development. During this period, he was responsible for the investigation, design and technical specification of the geotechnical aspects of civil works which included opencast coal mining, industrial structures, large petrochemical storage tanks, bridge substructures and slope stabilisation schemes.