The inspiration for some BGA Prizes and Awards

'The British Geotechnical Association (BGA) has several awards named after individuals. I think we sometimes forget that not everyone knows why these individuals were important and inspiring, and it is important to share this with the next generation of geotechnical professionals'

Dr Martin Preene, BGA Chair 2017–19.

Rankine Lecture

The Rankine Lecture is held every year, and had its 60th edition in 2022. It is named after William John Maquorn Rankine.

Rankine was born in Edinburgh on 5th July 1820. He is best known to geotechnical engineers for his theory on earth pressures, which was published in 1857. However, he was also one of the founding fathers of thermodynamics, a world authority on ship design and an instigator of the first engineering degree course at a British University.

At the start of his career, he practiced as a civil engineer working for railway companies and consultants but from 1848 on, a much greater part of his time was spent working on theoretic physics which gained him his fellowship of the Royal Society of London (1853). In 1855 he was appointed to the chair of civil engineering and mechanics at the University of Glasgow. His inaugural lecture was entitled "The harmony between theory and practice" in which he distinguished between theoretical and practical science.

He was widely recognised for his contributions to engineering science; amongst many tributes paid to him during his life and after, Timoshenko recognised him as being the first person to define stress and strain rigorously.

In 1961, the British Geotechnical Society (BGS, the predecessor to the BGA), instigated the internationally recognised annual Rankine Lecture as recognition of his contribution to soil mechanics.

William John Maquorn Rankine

Cooling Prize

The Cooling Prize competition is held annually by the British Geotechnical Association (BGA), and had its 50th anniversary in 2019.

The Cooling Prize is named after Dr Leonard Cooling, who is widely regarded as the 'Father of British Soil Mechanics' after he set up the first proper soil mechanics laboratory at the Building Research Station (BRS) in 1934. His role as pioneer is clear when it is remembered he was the sole British representative at the 1st ISSMFE conference in 1936 at Harvard University, presenting three papers, compared to the 2nd ISSMFE conference in Rotterdam in 1947, where there were 74 British delegates with 57 papers. During this period of growth in soil mechanics the BRS played a key role, led by Cooling.

He was also an important figure in early geotechnical practice in the UK. In 1940 he started an informal discussion group at the ICE which later became the British Geotechnical Society (BGS, now the BGA) and was BGS Chair from 1955–9. He served on the editorial panel of Géotechnique from its inception for 20 years, and was chair for 3 years. In 1962 he was the first British Rankine Lecturer.

Cooling was invariably unpretentious, good humoured and approachable, and was enthusiastic in his support and encouragement of young geotechnical professionals. Undoubtedly a hard worker, and possessing a sharp intellect, Cooling found time to be a keen sportsman, and played football for England and West Bromwich Albion at amateur level and was a Midland Counties Champion runner.

Dr Leonard Cooling (photograph courtesy of Christine Cooling)

Fleming Award

The Fleming Award is annual project award to commemorate the life and work of Dr Ken Fleming, who was chief engineer at Cementation Skanska Foundation.

Ken Fleming was born on Wednesday 1st February 1933 in Northern Ireland. Son of a Canon his strong Christian faith helped shape and sustain him through a long, fruitful and influential career in Geotechnical (and particularly Foundation) Engineering.

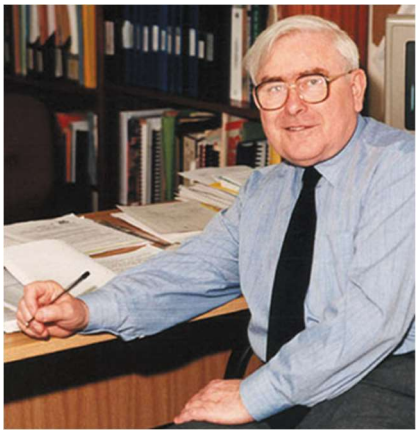
Ken graduated with a first from the Queens University, Belfast in 1955, became an Assistant Lecturer and in 1958 was awarded his PhD for work on "The Bearing Capacity of Pile Groups". In 1968 Ken joined Cementation where he remained until retirement, bringing together Greenwood, Slivinski and Fleming, a formidable trio who did much to influence and shape early British Geotechnical practice.

He settled easily into the Cementation 'family', quickly becoming an engineering 'guru', designer and problem solver, a role which was effectively unchanged throughout his long career as Chief Engineer.

The lasting influences of Ken's work will surely be through his example and inspiration to numerous Cementation Engineers now dispersed throughout the Industry and the world.

Ken had a wider influence, including his participation on a large number of committees where he served to ensure quality and sound practice in construction. This influence was not confined to the UK and Ken published extensively on the global stage. He was principal author of the book "Piling Engineering" which remains a standard reference book around the world.

The BSI awarded Ken its Distinguished Service award and the British Geotechnical Society (BGS, the predecessor to the BGA), honoured him with the prestigious Skempton Medal for lifelong contribution to geotechnical engineering.



Dr Ken Fleming (photograph courtesy of Cementation Skanska Foundations)

Skempton Medal

The Skempton Medal is awarded to a BGA member who has made an outstanding contribution to the practice of geotechnical engineering over a sustained period of time. It is named after Sir Alec Skempton.

Alec Skempton was a scholar of international standing and one of the most important engineers of the 20th century. After achieving a brilliant undergraduate record at Imperial College London, he began his career as a geotechnical engineer at the Building Research Station and was appointed to the Imperial College staff in 1946. He was instrumental in establishing Soil Mechanics as an academic discipline and became one of its leading figures. He also made a great contribution to Quaternary geology and was widely consulted on problems involving landslips, foundations, retaining walls and embankments. Notable among these was his work on the large dam at Mangla in Pakistan and on investigating the failure which developed during construction at the Carsington Dam in 1984. He was elected as the second President of the ISSMFE in 1957.

His interests were very wide, encompassing active participation in engineering history, music, art, rugby and croquet. Single-minded in his devotion to his work, he inspired affection in his colleagues through his enthusiasm for the subject. He was an exacting task-master, set very high standards and worked until shortly before his death in August 2001. He was recognised and honoured throughout the world by National Academies of Science and doctorates: he carried all these honours lightly and modestly. 'Skem' (as he was known) was awarded a knighthood in June 2000 in recognition of his achievements.

Alec Skempton enjoying a beer with young Richard Jardine in 1996 (photograph courtesy of Richard Jardine)

John Mitchell Award

The John Mitchell Award is presented to individuals who in the course of their careers via incremental works have made significant contribution to geotechnical practice, particularly in practical applications of up to date geotechnical concepts or models (rather than advanced theoretical academic practice).

It commemorates the life and work of John Mitchell whose life was cut short suddenly and tragically in a construction site accident in 1990.

John Mitchell's professional life was closely associated with Arup Geotechnics, which he joined in 1968 (having joined Arup two years earlier as a structural engineer). Fred Butler persuaded John to join the post graduate course in Soil Mechanics at Imperial College London, where his dissertation on ground anchors was the start of a life-long interest in the subject. During the 1970s and 1980s John was involved in many deep foundation and basement projects in London (where the Mitchell design chart summarising design shear strengths with depth became a standard Arup reference). He also travelled widely working in Ireland, Cyprus, Gibraltar, Japan and Malaysia, both in design and dispute resolution. He developed an interest in the use and misuse of ground improvement techniques and was the author of key industry guidance on the subject.

In all his dealings John had the rare ability to treat everyone the same way with openness and friendship. Managing Directors of piling firms and gangers alike, directors and graduates appreciated his willingness to communicate and help with problems however busy he was. His extensive knowledge and wisdom based on personal experience and a ready memory made him a constant focus for advice to colleagues. Kindliness and integrity were cornerstones in in life. He was always anxious to face up to difficult issues of risk and responsibility, and ready to help others face them too.

John Mitchell (right) working with Gavin Alexander (left) and Sergio Solera (centre) at South Quay Plaza, Isle of Dogs, 1987 (photograph courtesy of Sergio Solera)

Biographies and images contributed by: Andrew Bell, Christine Cooling, Kelvin Higgins, Richard Jardine, Sergio Solera and Martyn Stroud.