

Sir John Knill

Forward-thinking engineering geologist ¹

John Lawrence Knill, engineering geologist: born Wolverhampton, Staffordshire 22 November 1934; Assistant Lecturer, Imperial College, London 1957-59, Lecturer 1959-65, Reader in Engineering Geology 1965-73, Professor 1973-93 (Emeritus), Head of the Department of Geology 1979-88, Dean, Royal School of Mines 1980-83, Senior Research Fellow 1993-2002; Chairman and Chief Executive, Natural Environment Research Council 1988-93; Kt 1994; married 1957 Diane Judge (one son, one daughter); died Newbury, Berkshire 31 December 2002.

John Knill was the leading engineering geologist of his generation. He was involved in the application of geology in the construction industry and in environmental issues for 45 years. He utilised his expertise and experience as a consultant of international repute and imparted his knowledge and understanding to others throughout a distinguished academic career at Imperial College, London.

Knill was born in Wolverhampton in 1934, and was brought up in Croydon, where his father was water engineer to the Croydon corporation. He was educated at Whitgift School, in Croydon, and graduated in Geology from Imperial College, where he then carried out doctoral research into the sedimentology and structure of low grade Dalradian rocks in the south-west Highlands of Scotland. His career as a practising engineering geologist commenced in 1957 in Iran, where he worked initially on the hydrogeology of Tehran for Sir Alexander Gibb & Partners.

His involvement with Gibb on projects in Iran continued until 1982 and included further work on Tehran Water Supply and on dams and hydroelectric projects in the Alborz Mountains. Knill's work on the Latiyan Dam in Iran and on other dams for Gibb formed the basis for his landmark paper on the recording and interpretation of geological conditions in dam foundations published in *Geotechnique* in 1965.

Knill joined the staff of Imperial in 1957 and took over the teaching of engineering geology from F.G.H. Blythe. Knill established the Master of Science Course in Engineering Geology at Imperial College in 1964. This course soon became regarded as the paramount postgraduate course in Engineering Geology in the country and attracted students from the UK and overseas, particularly those with some initial industrial experience. Knill was tireless in offering support and advice to his large number of former students, many of whom became his personal friends.

The quality of the teaching provided by Knill was greatly enhanced by the strong industrial links that he developed, initially through his contacts with Gibb, but subsequently expanded to include a wide range of contractors and consultants in the UK and overseas. The department also developed a strong research group working on such topics as the engineering geology of mudrock formations and the experimental, high-pressure consolidation of clays.

Knill became Professor of Engineering Geology at Imperial in 1973, and then Head of the Department of Geology and Dean of the Royal School of Mines. He left Imperial in 1988 to become Chairman and Chief Executive of the Natural Environment Research Council for five years, becoming responsible for a large part of the UK's environmental research effort.

During the 1980s he was also involved in wider environmental issues at government level including chairing the independent Radioactive Waste Management Advisory Committee for eight years, as well as the national co-ordinating committee for the International Decade of Natural Disaster Reduction, and being a member of the Nature Conservancy Council and then the Joint Nature Conservation Committee for 10 years.

In 1993 he became a freelance engineering geologist, working largely on dispute resolution, risk assessment and failures associated with dams, tunnels and slopes in the Middle East, Africa and the Mediterranean as well as in the United Kingdom. He maintained a strong interest in disaster management, and in 1976 was a co-author of the influential Sau Mau Ping Report.

At Sau Mau Ping in Hong Kong, slope failures had repeatedly occurred following periods of heavy rain and an independent review panel was convened to report on these failures. Knill was a member of this six-person panel, which concluded that inadequate construction methods for the formation of slopes may have been general in Hong Kong and recommended that a special control organisation, with appropriate powers, should be formed within the government. Knill also wrote the independent reports on the two fatal landslides that occurred in Hong Kong in 1995.

After leaving Imperial Knill retained his close contacts with the academic world and was much in demand as a lecturer and teacher of engineering geology. He retained his chair at the college until 1993, thereafter being Emeritus and Senior Research Fellow. He was appointed Visiting Professor in Engineering Hydrogeology at Royal Holloway College and was awarded honorary degrees by the universities of Kingston, Nottingham Trent and East London. He was recognised by the award of the Whitaker Medal (IWEM, 1969), the Aberconway Medal (Institution of Geologists, 1989), the William Smith Medal (The Geological Society of London, 1995), and, most recently, the Hans Cloos Medal (South African Institution of Engineering and Environmental Geology, 2002). He was knighted for his services to science in 1994.

John Knill was a strong advocate of high professional standards and integrity. He played a leading role in establishing the Institution of Geologists in the mid-1970s and was its President from 1981 to 1984. From these roots grew the professional title of Chartered Geologist, with over a thousand geologists having now been awarded this title. Knill was a staunch critic of those who did not meet his own high standards. Many will remember being subjected to John Knill's probing questioning when they had not been entirely honest with him or had not met his own high standards in their professional activities. Knill was ahead of his time in demanding the openness and transparency that is only now becoming the norm within society.

Knill presented the final lecture of his distinguished career in Durban, South Africa, in September 2002 at the Congress of the International Association for Engineering Geology and the Environment. In this, the first Hans Cloos Lecture, he challenged engineering geologists to acknowledge and exploit a series of "core values" that he described. He believed that the role of engineering geology as a discipline should be defined, and the central role of geology has to be re-emphasised by improving the understanding of geological uncertainty in contributing to geotechnical risk. Improved protocols in the formulation of meaningful geological and ground models need to be developed and more systematic methods established for ground-related reporting.

His lecture was warmly received by a large audience including many for whom Knill was a colleague, a mentor and a friend. It is fitting that his final lecture should have been looking to the future development of engineering geology, the discipline that John Knill loved and that owes so much to him for its development over the 45 years of his professional career.

¹ This Obituary was written by Robert Chaplow of Independent Digital News & Media