

MARTIN CULSHAW

Nationality: British
Date of Birth: 27 June 1949
Age: 70
Profession: Engineering Geologist
Specialisms: Geohazard Assessment; Urban Geology; Engineering Geological Mapping
Current employment: Self-employed

QUALIFICATIONS

1965 8 "O" levels in Latin, French, Mathematics, Physics, Chemistry, Geography, English Language, English Literature;
1967 4 "A" levels in Mathematics, Physics, Chemistry, General Studies. Certificate in Use of English;
1970 B.Sc. Hons, Class 2.II Geology, including subsidiaries in Physics and Soil Mechanics, University of Birmingham;
1971 M.Sc. Engineering Geology and Geotechnics, including a dissertation: "The relationship between the water content and mechanical properties of sandstones," University of Leeds;
1991 Chartered Geologist.

AWARDS

1989 Engineering Group Award (Geological Society);
1999-2008 Visiting Professor in Engineering Geology, Department of Civil and Structural Engineering (now the School of the Built Environment), The Nottingham Trent University, UK.
2004 Geological Society Glossop Lecturer and recipient of the Glossop Medal
2006-present Honorary Visiting Professor, Department of Civil Engineering, University of Birmingham, UK
2006 Geological Society of America E.B.Burwell Jr. Award
2008-present Honorary Research Associate, British Geological Survey
2010 International Association for Engineering Geology and the Environment Hans Cloos Medal
2012 Lloyds Science of Risk Prize: Climate change: Runner-up, for paper: Harrison, A.M., Plim, J.F.M., Harrison, M., Jones, L.D., Culshaw, M.G. 2012 The relationship between shrink-swell occurrence and climate in south-east England. *Proceedings of the Geologists' Association*, 123 (4). 556-575. 10.1016/j.pgeola.2012.05.002
2013 Richardson Award of the Geologists' Association for a paper Harrison, A.M., Plim, J.F.M., Harrison, M., Jones, L.D., Culshaw, M.G. 2012 The relationship between shrink-swell occurrence and climate in south-east England. *Proceedings of the Geologists' Association*, 123 (4). 556-575. 10.1016/j.pgeola.2012.05.002

AFFILIATIONS

Fellow of the Geological Society (1972 to present);

Member, International Association for Engineering Geology and the Environment (1989 to present);

Member, Association of Geoscientists for International Development (1989 to 2000);

Member of the Association of Engineering Geologists (USA) (2006 to present);

EXTERNAL ACTIVITIES

Member, Committee of the Engineering Group of the Geological Society (1983 to 1987 and 2003 to 2006);

Member, Civil and Structural Engineering Advisory Board, Nottingham (formerly Trent) Polytechnic (1987-1993);

Editor for Engineering Geology Special Publications of the Geological Society (1989 to 1992);

Ex officio member of the Committee of the Engineering Group of the Geological Society (1989 to 1992 and 2004 to 2008);

Member of the Publications Committee of the Geological Society (1989 to 1992);

Member of the International Association of Engineering Geology Commission on Engineering Geological Maps (1991 to 2007);

Governor, South Nottingham College of Further Education, 1990-1997.

Vice-Chair of the Corporation, South Nottingham College of Further Education, 1993-1996.

Chair, Finance Committee, South Nottingham College of Further Education, 1993-1996.

Chair, Remuneration Committee, South Nottingham College of Further Education, 1993-96.

Chair, Audit Committee, South Nottingham College of Further Education, 1996-97.

Member, Personnel Committee, South Nottingham College of Further Education, 1996-97.

Member, Panel to appoint the Principal, South Nottingham College of Further Education, 1993.

Chair, Panel to appoint the Principal, South Nottingham College of Further Education, 1996.

Vice-Chair of the Engineering Group of the Geological Society (1992-1994).

Referee for applications to The British Council (France) ALLIANCE research programme (1992 to 2000);

Chair of the International Association for Engineering Geology and the Environment (IAEG) Commission on Engineering Geological Maps. Two projects initiated on the production of guides to maps for the locating of waste disposal sites and geohazard maps (1993 to 2007);

Member of the Council of the IAEG (1993 to 2007 and 2013 to 2018)

Chair of the Engineering Group of the Geological Society (1994 to 1996);

Member of the Institution of Civil Engineers' Steering Committee for an applied research project on "Structures to withstand disasters" (1994 to 1996);

Chair of the Natural Environment Research Council Review Panel for MSc courses in engineering geology and allied subjects (1995 to 1996);

Member of the Department for Trade and Industry Construction Foresight Panel (1996 to 1997);

Member of the Natural Environment Research Council Earth Sciences Research Grants and Training Awards Committee (from 1998, the Earth Sciences Peer Review Committee) (1996 to 1999);

Chair of the Engineering Group of the Geological Society Second Working Party on "Engineering Geological Mapping" (1996 to 2004);

Member of the Engineering Group of the Geological Society Second Working Party on "Engineering Geophysics" (1996 to 2001);

Chair of the Construction Industry Research and Information Association Steering Group on "The Use of Geophysical Methods in Civil Engineering" (1997 to 2001);

Member of the Institution of Civil Engineers' Steering Committee for an applied research project on "Managing geotechnical risk" (1998 to 2000);

Member of the Committee of the East Midlands Regional Group of the Geological Society (1999 to 2002);

Chair of the East Midlands Regional Group of the Geological Society (2000 to 2002).

Member of the Advisory Group to the Department of Earth Sciences, University of Durham (2002 to 2008).

Member of the Editorial Board of the Quarterly Journal of Engineering Geology and Hydrogeology (2002 to 2006 and 2009 to 2012).

Assistant Editor, Quarterly Journal of Engineering Geology and Hydrogeology (2009 to 2012).

Member of the Editorial Board of Engineering Geology (Elsevier) (2001 to 2007).

IAEG UK National Representative (2003 to 2007)

Member of the Council and Trustee of the Geological Society (2005 to 2009).

Member of the Publications Management Committee of the Geological Society (2005 to 2007).

Member of the Management and Finance Committee of the Geological Society (2006 to 2009).

Vice President (for Regional Groups) of the Geological Society (2007 to 2009)

Member of the Professional Committee of the Geological Society (2007 to 2009)

Chair of the Regional Groups Coordinating Committee of the Geological Society (2007 to 2009)

Member of the Editorial Board of GeoRisk (2006 to 2009).

Member of the CIRIA Steering Group for Project RP940 “Abandoned Mineworkings Manual” (2010-2019)

Member of the International Association for Engineering Geology and the Environment Commission on The Use of Engineering Geological Models (2009 onwards).

Member of the International Association for Engineering Geology and the Environment Commission on Rock Slope Stability (2010-2011).

Member of the Engineering Group of the Geological Society Working Party on “Geohazards” (2012-2019);

Member of the Engineering Group of the Geological Society Working Party on “Glacial and Periglacial soils” (2012-2017);

Co-Director, NATO Science for Peace and Security Programme Advanced Research Workshop on “Environmental security of the European cross-border energy supply infrastructure,” Moscow, Russia, 30-31 October 2012.

Editor-in-Chief of the Bulletin of Engineering Geology and the Environment (January 2013 – December 2018).

Member of the Executive of the International Association for Engineering Geology and the Environment (2013 -2018).

Editor-in-Chief (for 2018 papers) of the Bulletin of Engineering Geology and the Environment (January 2019 – January 2020).

EXTERNAL EXAMINING

External examiner, Department of Geology, Imperial College, University of London, PhD thesis by C P Nathanail: Systematic modelling and analysis of digital data for slope and foundation engineering (Dec 1993);

External examiner, Department of Geology, University of Portsmouth, BEng in Engineering Geology and Geotechnics (1999 to 2003);

External examiner, Department of Geology, University of Manchester, MSc in Urban Geoscience (2000 to 2002);

External examiner, Department of Civil Engineering, University of Edinburgh, PhD thesis by M R Clark: Non-destructive and geotechnical testing of railway track bed ballast (Apr 2001);

External examiner, Department of Civil Engineering, University of Newcastle, MSc in Engineering Geology (2002 to 2006);

External examiner, Department of Geology, University of Pretoria (South Africa), MSc dissertation by I Kleinmans: A critical appraisal of regional geotechnical mapping in South Africa (Jan 2003).

External examiner, Department of Geology, University of Sheffield, PhD thesis by P Fernandes da Silva: The use of structural geology in regionalisation schemes for engineering purposes (May 2003).

External examiner, Department of Civil Engineering, Imperial College London, MSc in Engineering Geology (2006 to 2009).

External examiner, School of Geological Sciences, University of KwaZulu-Natal, PhD thesis by E M Vicente: Engineering geology

and geotechnical characteristics of the soil formations of Maputo City, Mozambique (February 2010).

External examiner, School of Geography, Geology and Environmental Science, Kingston University, BSc Geology (2010-2014).

External examiner, Department of Geology, University of Brighton, PhD thesis on: "Chalk catchment ground models in Northern France and Southern England" by Neil Hadlow (May 2012)

External examiner, School of University of Portsmouth, PhD thesis on: "The impact of urban landslides on house prices: case studies from England and Wales 1995-2012" by William John Disberry (May 2016)

PhD SUPERVISION

2002-2006	Myong-Hwan Yu, Nottingham Trent University/University of Birmingham
2004-2011	Tim Duffy, University of Edinburgh (part time)
2005-2013	Simon Ferley, University of Birmingham
2007-2011	Azimun Madun, University of Birmingham
2014-2018	Atiku Sadiq, University of Birmingham

PUBLICATIONS AND RELATED ACTIVITIES

160+ papers in refereed journals and conference proceedings, books, edited books and articles in magazines; 120+ reports and maps for the BGS, UK government departments and overseas governments. Over 120 lectures and presentations given and conference sessions chaired. Member of the organising committees for 10 national and international conferences.

KEY EXPERTISE

The assessment of geological hazards; the development of digital geohazard information systems for the housing transaction market; the provision of geoscientific information on the urban environment; the engineering geology of UK soil and rock formations; engineering geological mapping; the application of geophysics in site investigation.

CAREER SUMMARY

Management and promotion

April 2008 onwards	Independent researcher, consultant and scientific editor in engineering geology.
March 2008 onwards	Retired from the British Geological Survey; appointed Honorary Research Associate.
July 2006	Appointed Director of Environment and Hazards, British Geological Survey, responsible for seven Programmes covering groundwater, environmental contamination and pollution, geohazards, engineering geology, urban geoscience, sustainable

	energy, and sustainable soils. Member of the Executive Committee.
April 2000	Appointed Manager of the Urban Geoscience and Geological Hazards Programme, responsible for projects worth c.£2.5m in engineering geology, urban geology and geohazards. Also deputise for the Director of the Environment and Hazards Directorate during his absence.
January-March 2000	Appointed Acting Assistant Director, Geological and Hydrogeological Surveys Division.
April 1997	Manager for Coastal and Engineering Geology Group, responsible for all engineering geological, engineering geophysical and coastal geological activities and twenty five staff. Also deputise for Assistant Director during his absence.
July 1996	Promoted to Senior Principal Scientific Officer (Grade 6).
July 1995	Appointed Acting Manager for Engineering Geology and Geophysics Group, responsible for all engineering geological and applied geophysical activities and twenty seven staff.
January 1991	Appointed Deputy Manager for Engineering Geology and Geophysics Group, responsible for all engineering geology activities and eleven staff.
November 1989	Appointed Manager for Engineering Geology Research Group, responsible for ten staff.
October 1988	Appointed Acting Manager for Engineering Geology Research Group, responsible for nine staff.
October 1988	Promoted to Principal Scientific Officer (Grade 7).
April 1985	Appointed Section Leader for Engineering Geology responsible for eight staff.
June 1978	Promoted to Senior Scientific Officer.
June 1976	Promoted to Higher Scientific Officer.
December 1971	Joined BGS (then IGS) as Scientific Officer.

Major Projects (BGS)

2008 onwards	Confidential consultancy projects; Editor-in-Chief, Bulletin of Engineering Geology and the Environment
2008 to 2011	International expert reviewer for University of Lisbon research project: GeoSIS_Lx (3D geological and geotechnical modelling and mapping in urban areas – application to Lisbon)
2003 to 2004	Core User Group member for a European Space Agency-funded project on the application of InSAR data (TerraFirma).
2001 to 2005	Advisor to the BGS project to create a UK GeoHazarD information system.
2000 to 2008	Senior Principal Investigator (Project Manager) for a Natural Environment Research Council (NERC) and Department of the Environment, Transport and the Regions (DETR) funded applied research project on “Environmental Information Systems for Sustainable Urban Planning, Regeneration and Management.” Also Phase II project funded by NERC and Phase III project funded by Department for Communities and Local Government (DCLG).

- 1996 to 1998 Project Manager for the BGS component of a joint research project with the University of Reading for the Defence Evaluation Research Agency (DERA).
- 1995 to 1997 Project manager for the BGS component of a joint research project with the University of Leicester for an oil industry consortium.
- 1992 to 1995 Project leader for work to assess ways of presenting information on secondary seismic hazards to planners in developing countries. Hazards include liquefaction, ground motion amplification, seismically induced landslides, tsunamis and ground ruptures. The work was based in Costa Rica China and El Salvador with exchanges of information with Jamaica.
- 1990 to 1995 Joint project leader for the development of a GIS system to provide information on geological hazards in Britain for the insurance industry. Consultant to the project 1995 to 2008.
- 1986 to 1992 Project leader for an investigation into the engineering geology of tropical red soils. The work is principally based in Kenya and Indonesia and has involved overseas visits to establish and maintain collaboration and for field sampling and observation prior to geotechnical testing and mineralogical analysis of the soils.
- 1981 to 1996 Commissioned research and commercial projects including:
 A second site investigation for a geothermal borehole drilling rig foundations, at Southampton. Supervision and analysis of self-boring pressuremeter testing, on Anglesey. Development of a new type of undisturbed sampler for shallow auger drilling. Supervision of a major tunnel site investigation in Ireland (confidential). Environmental geological mapping in SW Essex, Deeside, Wrexham, Stoke-on-Trent and Wigan as part of the Department of the Environment programme for the applied geological mapping of urban areas. Engineering geological aspects of natural and artificial cavities. Development of databases of geotechnical information on personal computer.
 Appointed Divisional Database Co-ordinator, 1991/2, to co-ordinate all Divisional databasing activities.
- 1981 to 1985 Participation in a multi-disciplinary research project on earthquake hazards in Central Greece in collaboration with the Greek Geological Survey. This involved many visits to Greece for periods from a few weeks to three months. The project was concerned with the identification and assessment of the likely effect of secondary seismic hazards such as liquefaction, landslide and tsunami on two highly populated alluvial basins.
- 1979 to 1980 Residential adviser to the Engineering Geology Division of the Irrigation Department, Sri Lanka, on feasibility studies and site investigations for small dams, reservoirs and irrigation works, and to supervise the importation and commissioning of £0.25m worth of geotechnical equipment for the Department.

- 1979 Various small site investigation and applied research projects including a site investigation for the foundations of a large rig for drilling a geothermal borehole, near Southampton.
- 1978 Advisor to the Irrigation Department, Sri Lanka, on improvements to their geotechnical laboratories.
- 1976 to 1978 Residential in Indonesia as project leader to a team of U.K. (2) and Indonesian (6) engineering geologists (from the Geological Survey of Indonesia) carrying out engineering geological surveying of the alluvial basin around Banda Aceh, Northern Sumatra. This involved drilling, Dutch cone soundings, augering, resistivity surveying and mapping, followed by a soils testing programme. All information was stored in a mainframe computer databank, and maps and reports were produced.
- 1971 to 1976 A wide range of commissioned research and commercial projects throughout the U.K. including:
 Supervision of a site investigation for an offshore sewer tunnel in Edinburgh, Scotland.
 Supervision of a site investigation for underground oil storage at Hunterston, Scotland.
 Slope instability investigations at Ironbridge, Lyme Regis, Amberley, Paignton, and Otley in England and near Belfast in Northern Ireland.
 Seismic investigations (cross-hole and refraction) at Foyers in Scotland, Teesdale, Sizewell, Sheffield, Warrington, SE Essex and Cooling Marshes, N. Kent in England, and Llanberis in Wales.
 Resistivity survey at Cooling Marshes in N. Kent, England.
 Investigation on the Island of St. Helena (South Atlantic) to determine the causes of a series of dangerous rockfalls and recommend remedial measures.

LANGUAGES

English	(native)
French	'GCSE' level (Basic)
Indonesian	Basic

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January 2020