



The Geological Society

The Geological Society of London, Forensic Geosciences Group

www.geolsoc.org.uk/gsl/groups/specialist/forensic

1. The Geological Society

The Geological Society of London was founded in 1807. It is the UK national society for geoscience, & the oldest geological society in the world. The Society provides a wide range of professional and scientific support to around 9500 Fellows (members), about 2000 of whom live overseas. More than 2000 Fellows are also Chartered Geologists.

As well as boasting one of the most important geological libraries in the world, the Geological Society is a global leader in Earth science publishing, & is renowned for its cutting edge science meetings. It is a vital forum in which Earth scientists from a broad spectrum of disciplines and environments can exchange ideas, & is an important communicator of geoscience to government, media, those in education & the broader public.

2. Forensic Geoscience

There are a number of geologists in the UK, and internationally, who currently work with, or have recently worked with the police, other law-enforcers, environmental agencies & humanitarian organisations to help bring some types of crimes to successful conclusions. Some geoscientists have also been involved in forensic investigations in the mining, engineering, minerals & water sectors of industry, or during the investigations of geohazards (also known as natural disasters). The common ground for all these sub-disciplines is that geoscience practice and results may end up as part of a public, international or legal enquiry by government or in courts of law.

Forensic Geoscientists may be broadly divided into two principal fields, depending on their skills, expertise and capabilities. Firstly, there are the laboratory-based geologists who may include for example; geochemists, mineralogists, petrologists, micro-palaeontologists and isotope specialists. These may be involved with forensic investigations to; provide physical evidence for use in court, assist in an investigation, provide intelligence or identify the location of a crime scene. In short, geoscientists may link an offender (or object) to the scene or link the victim to an offender. Secondly, there are field-based geologists, who use their skills in exploration (including for example; geophysics, geochemistry, geomorphology, hydrogeology, environmental geology, remote sensing and geotechnics) to search the ground (to locate murder victim's graves, weapons and other objects).



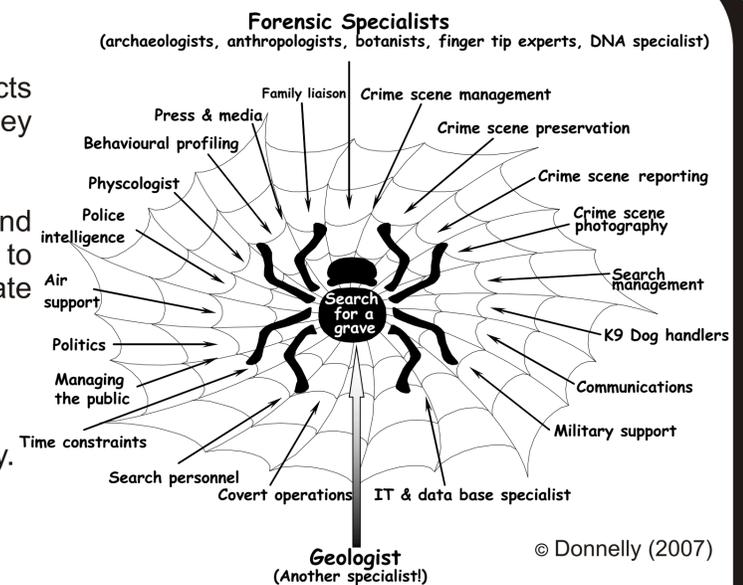
- Recognised by geologist with Afghanistan mapping experience
- Rocks only found in SE Afghanistan in the Katawaz Basin, being soft, coarse, shallow-water, Pliocene sandstones/limestones that tend to form man-made and natural caves
- Rocks crop out over a 93km² area

3. Forensic Geosciences Group Aims

The Geological Society has 23 Specialist Groups and Joint Associations, catering for most aspects of modern Earth science. Members of the Society are free to join as many such groups as they wish. Some groups, including all the Joint Associations, are not restricted to Society members.

The Forensic Geology Group was formed in 2006. Stated aims are: to advance the study and understanding of Forensic Geoscience, by creating a network and framework of geoscientists, to review and share knowledge, to develop inter-disciplinary collaboration & to disseminate knowledge and information. This will be achieved by:

- Holding meetings, conferences, seminars, workshops & field visits.
- Encourage and promote meetings with related forensic science groups.
- Encourage and promote meetings with related specialist groups within the Geological Society.
- Representing the interest & promoting the study and understanding of Forensic Geoscience nationally & internationally.
- Encouraging research, training and teaching in Forensic Geoscience.
- Promote the interests of professional, academic and practising forensic geoscientists & encourage Continuing Professional Development such other means as the Committee may think desirable, subject to the approval of the Council.

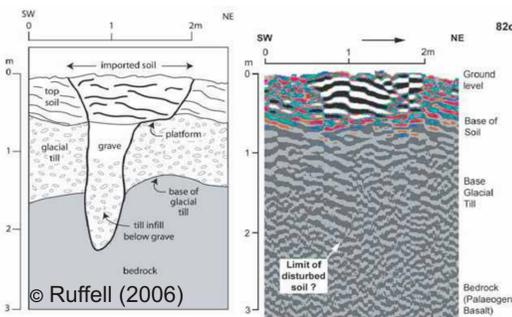


- Specialist geologist effectively communicates to Senior Investigating Officer (SIO), knows limitations & understands role & other expert capabilities

4. FGG Examples



- Side-scan sonar image
- Image shows reflected wave strength (clay = dark, sand = white)
- Murder victim identified.



- (Left) Interpretation from GPR (right) of a gravesite. One of the IRA 'disappeared' was suspected to be at 'platform' position, but determined not to be there, saving police time, church disruption & victim family angst.



- (A) Mud embedded in van tyre suspected of illegal waste dumping
- (B) Mud analysis compared to traditional forensic analyses such as tyre-mark impressions.

5. Contacts & Further Information

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References:

Donnelly, L. (2007) Communication in geology: A personal perspective & lessons from volcanic, mining, exploration, geotechnical & police (forensic) investigations In: Liverman D.G.E, Marker B. & Pereira C.P. (eds.) *Communicating Environmental Geoscience. The Geological Society of London*. Modified after Donnelly L. J., Simpson, B. & Hunter, J (2002), Presentation to the House of Commons, All-Party Parliamentary Group for Earth Science, Westminster Palace, Tuesday 12th March 2002. Barrie Simpson (formerly Senior Investigating Officer with West Midlands Police & now forensic archaeologist & Secretary of the Forensic Search Advisory Group (FSAG)) is acknowledged, who originally used the spider diagram to help communicate with police officers.
 Dupras, T.L., Schultz, J.J., Wheeler, S.M. & Williams, L.J. (2006) Forensic Recovery of Human Remains: Archaeological Approaches. Taylor & Francis Group Pubs., 232pp.
 Ruffell, A. (2006) Forensic Geoscience. *Geology Today*, 22 (2), 68-70.