

**ENVIRONMENTAL AND
INDUSTRIAL GEOPHYSICS GROUP**

**FORENSIC GEOLOGY
GROUP**



Two day meetings at Burlington House, Piccadilly, London: 19th–20th December 2006

19th December: *Recent Work in Archaeological Geophysics*

Shallow geophysical techniques are playing an increasing role in the evaluation of archaeological sites, in their discovery, interpretation and management. This will be the seventh in a succession of biennial meetings in which contributors from the UK and further afield present and debate the results of recent research and case studies. Suppliers of equipment and software also attend and the meeting therefore represents an invaluable opportunity for both archaeological and geophysical practitioners to take advantage of recent research and developments.

Convenor: Dr Andrew David, English Heritage, Fort Cumberland, Eastney, Portsmouth, PO4 9LD, UK; Tel.: +44 (0)23 9285 6764; email: Andrew.David@english-heritage.org.uk

20th December: *Geoscientists at Crime Scenes*

This follow-on meeting, which aims to capture shared interests between the archaeological, geological, humanitarian and law enforcement communities, will follow a macro- to micro-scale organisation. The initial sessions will include geophysics, aerial, satellite and landscape interpretation. These will be followed by presentations on anthropology, buried materials, trace evidence and innovations in materials analysis.

Convenor: Dr Alastair Ruffell, School of Geography, Archaeology & Palaeoecology, Queen's University, Belfast, N. Ireland, BT7 1NN; Tel.: +44 (0)28 9097 340 email: a.ruffell@qub.ac.uk

Attendance will be free to members of the Geological Society. Non-members will be asked to pay £20 to attend a single day or £30 for both days. Registered students can attend for £10 or £20, respectively. A further charge will be made for commercial exhibitors.

Pre-registration and payment is preferred and will be possible between 1st July – 1st December 2006. Please use the attached registration form and return to: Louise Martin, English Heritage, Fort Cumberland, Eastney, Portsmouth, PO4 9LD, UK; email: Louise.Martin@english-heritage.org.uk

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I would like to register for attendance at the following day meeting(s):

19th December: *Recent Work in Archaeological Geophysics*

20th December: *Geoscientists at Crime Scenes*

Participant details:

Title First name Surname

Address:

Telephone number:

Email address:

Method of payment: (unfortunately we cannot accept credit/debit card payments)

I am enclosing a cheque (made payable to EIGG). I understand that this will not be cashed until after the day meetings have taken place.

I wish to pay on the day (by cash or cheque)

Registration fee:

Geological Society member – membership number:	Free	<input type="checkbox"/>
Non-member – 1 day	£20	<input type="checkbox"/>
Non-member – 2 days	£30	<input type="checkbox"/>
Student – 1 day	£10	<input type="checkbox"/>
Student – 2 days	£20	<input type="checkbox"/>

Signature:

Date:

Please return to: Louise Martin, English Heritage, Fort Cumberland, Eastney, Portsmouth, PO4 9LD, UK by 1st December 2006.

RECENT WORK IN ARCHAEOLOGICAL GEOPHYSICS

GEOLOGICAL SOCIETY, BURLINGTON HOUSE, LONDON, 19 DECEMBER 2006

Lecture Programme:

- 0930-1000 Registration and Coffee.
- 1000-1005 Introduction.
- 1005-1025 *Magnetic surveying of the archaeological sites in the Nile Delta, Egypt.* Tomasz Herbich.
- 1030-1050 *The Corridor of the Great Hunting Scene, Villa del Casale (Piazza Armerina)* P.L. Cosentino, P. Capizzi, G. Fiandaca, G. Graziano, R. Martorana, P. Messina, L. Pellegrino, I. Razo Amoroz, E. Scalone.
- 1055-1115 *Survey on Rome's Northern Frontier: results from the Antonine Wall.* Richard Jones, Alan Leslie and Chris Nelson.
- 1120-1150 Coffee
- 1150-1210 *Seabed Prehistory.* Louise Tizzard.
- 1215-1235 *Wrecks on the Seabed.* Paul Baggaley.
- 1240-1300 *Underwater GPR.* Alastair Ruffell.
- 1305-1420 Lunch
- 1420-1440 *Hod Hill Reappraised – A multi-method geophysical analysis to assess the effects plough damage and implications for the investigation of hillfort settlement zonation using magnetic methods.* Dave Stewart and Paul Cheetham.
- 1445-1505 *A SQUID-based system for fast and sensitive geomagnetic archaeometry.* Volkmar Schultze, Sven Linzen, Tim Schüler, Andreas Chwala, Ronny Stolz, Marco Schulz, Hans-Georg Meyer.
- 1510-1530 *From Prospection to Reconstruction.* Wolfgang Neubauer.
- 1535-1605 Tea
- 1605-1625 *Slack Roman Fort: Making sense of magnetic noise.* Armin Schmidt, Rob Vernon, Roger Walker, Lieven Verdonck and Arnold Aspinall.
- 1630-1650 *Geophysical Investigation 17th Century Copper Workings at Levers Water Mine, Cumbria, UK.* Jack Walpole, Phil Meredith & Ruth Siddall.
- 1655-1715 *Buckingham – Holyroodhouse – Windsor. Investigations at three Royal Palaces.* GSB Prospection and Geoscan Research.
- 1720-1740 *It's been a long walk - 1000 hectares of magnetic surveying in the Vale of Pickering.* James Lyall.

1745 Conclusion
1800 Close
1800-1900 ISAP AGM

Posters:

In the Shadow of the Hill: Geophysical investigations of the environs and moat area of the prehistoric mound at Silbury Hill: Neil Linford, Paul Linford, Louise Martin and Andrew Payne.

A ground penetrating radar survey at Gayton Thorpe, Norfolk: Tim Dennis, M de Bootman, J Simmons and J Shepherd.

Where is It? Using Multiple Geophysical Techniques and GIS Data Enhancement in the Search for a 18th Century Paper Mill, Lisburn, N.Ireland: Paul McCarthy, Alastair Ruffell, Steve Trick, Lorraine Barry, Alison Muir, John McKinley, Jennifer McKinley.

Improving definition: GPR investigations at Westminster Abbey: Erica Utsi.

Electrical Fast Imaging for Wide Areas, Test Over an Archaeological Site and Application Over a 50ha Site (in less than a month). M. Dabas, A. Favard.

Using multi-sensor surveys for archaeological applications: case studies using different sensors, and different survey modes: Ian Hill and Chris Leech.

Geophysical prospection at the Pre-Roman site of Satricum (central Italy): the multi-scale applications of electrical resistivity tomography for geo-archaeological investigations: R Abdul Fattah.

The Greenhouse Effect: the addition of nutrients to clay soils and its Influence on resistivity survey: Michiel Dekker

Intra-site Magnetic Susceptibility - survey of a Herefordshire Enigma: Martin and Anne Roseveare

Ground Penetrating Radar in Urban Areas - Friars Lane, Great Yarmouth: Ken Hamilton

Three-Dimensional, Multi-Offset GPR Imaging of Archaeological Targets: Groundwell Ridge, Swindon: Adam Booth

Archaeological prospection in the Raganello watershed: magnetic susceptibility instruments versus a largely invisible archaeological record: Alet Kattenberg, Martijn van Leusen, Rik Feiken.

Commercial displays:

Allied Associates Geophysical Ltd
Geoscan Research Ltd
Stratascan Ltd

Geomatrix Earth Science Ltd
Bartington Instruments Ltd.
D W Consulting

THE GEOSCIENTIST AT CRIME SCENES

GEOLOGICAL SOCIETY, BURLINGTON HOUSE, LONDON, 20 DECEMBER 2006

Lecture Programme:

9.20-9.30 Welcome to the conference and the Forensic Geology Group
Laurance Donnelly, Halcrow Ltd & President FGG.

9.30-9.45 Mass graves in Iraq. Roland Wessling, Margaret Cox and InForce.

9.45-10.00 Integrated approach to mass grave detection. J Hunter, A Reddick and J Sterenberg, University of Birmingham.

10-10.15 Multi-disciplinary studies and taught site material on a simulated clandestine grave site. Pringle, J.K., Cassella, J.P., Middleton, H., Rogers, D., Summers, R. & Cassidy, N.J. School of Physical & Geographical Sciences, Keele University & Faculty of Health & Sciences, Staffordshire University.

10.15-10.30 An assessment of geophysical methods for locating animal mass graves and observations pertinent to their use in locating human mass graves. Adele L. Tempest and Paul N. Cheetham, School of Conservation Sciences, Bournemouth University.

10.30-10.45 Geomaterials from Civil to Criminal Law; one small step for the Geoscientist. Andrew S Smith, Materials Group Manager, CERAM Building Technology.

Coffee 10.45-11.15

11.15-11.30 Search Methodologies. Mark Harrison MBE National Centre for Policing Excellence, Wyboston Lakes.

11.30-11.45 Different scales of spatial sampling in forensic investigations: case studies from the macro to micro scale. Jennifer McKinley, Antoinette Keaney, Queen's University, Belfast.

11.45-12.00 Lets get physical: the applicability of trace soil analysis techniques in forensic enquiry. Ruth Morgan and Peter Bull, University of Oxford.

12.00-12.15 Anthropogenic destruction of a city's water supply: the crime and punishment. Wayne C. Isphording, University of South Alabama.

12.15-12.30 Application of Field Portable X-ray Fluorescence (FPXRF) Spectrometry in Forensic and Environmental Geology. Elisa Bergslien, Peter Bush & Mary Bush. Earth Sciences and Science Education, Buffalo State College; South Campus Instrument Center, School of Dental Medicine, SUNY at Buffalo & Department of Restorative Dentistry, School of Dental Medicine.

12.30-12.45 Diversity, resolution, and scale in forensic palynology and botany Patricia Wiltshire, University of Aberdeen.

LUNCH 12.45 – 14.00

14.00-14.45 The effect of the habitual wearing of footwear on the pollen content of adherent materials. James B Riding, Barry G. Rawlins, Kirsten H Coley. British Geological Survey (Keyworth) and Royal Holloway (London).

14.45-15.00 A forensic geologist's experiences in Italy. Gianni Lombardini, Dipartimento di Scienze della Terra, Università degli Studi di Roma "La Sapienza", Rome.

15.00-15.15 Integration of Soil Fingerprinting Techniques for Forensic Application. Lorna Dawson & Lynne Macdonald Macaulay Institute, Aberdeen/SoilFit Programme.

15.15-15.30 QemScan. Duncan Pirrie & Matt Power, Camborne School of Mines, University of Exeter.

TEA 15.30 – 16.00

16.00-16.45 Evaluation of the significance of geological and soil trace evidence. Ken Pye, Ken Pye & Associates, Crowthorne, Berkshire.

16.45-17.00 Altered biotite as an index of forensic discrimination of granitic saprolite. Ritsuko Sugita.

17.00-17.15 A geoscientist's role in forensic casework: Intelligence provision during search and recovery operations Matt Higginson, LGC Forensics

Posters

Application of micro-Raman spectroscopy in Forensic Geosciences. Alexandra Guedes, Armanda Dória and Fernando Noronha

Dendrogram utility in forensic geology. Martin Molina, Sandra Reyes & Maria Ballesteros, Colômbia.