ISAP NEWS

The newsletter of the International Society for Archaeological Prospection

Issue 13, October 2007

Contents

Editor's Note

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Welcome to the 13th issue of ISAP News, I am grateful to all the contributors for their efforts, and making my life much easier with their timely submissions.

However, I think now is the right time for a gentle reminder that this is your newsletter: without input from you, the members of ISAP, there would be very little content and I would have to ramble on a lot more! So you see, it is very much in your own interests to write a piece for a forthcoming issue. It is your chance to share your news, latest results, innovations or trials and tribulations with an international audience.

So, while you enjoy this edition, have a think about what you could do for ISAP News 14. And then don't forget to email me with your articles or conference announcements by 18th January 2008.

Georadar survey in Borgholm castle, Öland, Sweden

Immo Trinks, Pär Karlsson, Magnus Stibéus, Alois Eder-Hinterleitner, Lars-Inge Larsson
Swedish National Heritage Board, Hägersten, Sweden immo.trinks@raa.se

Borgholm castle on Öland is quite remarkable, reflecting nearly 1000 years of different architectural styles and being one of Sweden's first bastion fortifications. Since a fire ravaged the building in 1806 the castle has been a ruin. In recent years a museum was installed in the main wing. Today Castellan Jim Rudolfsson guides visitors through the eventful histroy of the castle.

In summer 2006 the court yard of Borgholm castle was selected for a high-resolution georadar test survey. The approximately 52m by 52m entirely flat area accomodated perfectly one survey square of 50m side length. Within six hours three people surveyed the entire court yard with a 500 MHz georadar system using 25cm spacing between parallel georadar profiles and 5cm trace spacing in profile direction.

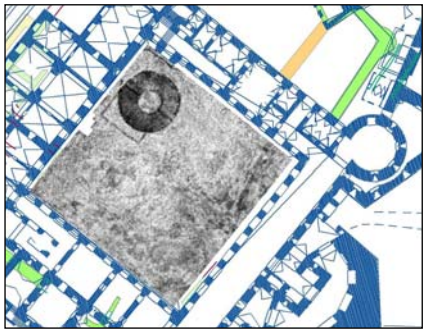
High-resolution georadar survey with a 500 MHz antenna mounted in a cart. The survey conditions in Borgholm castle court yard were excellent: mild weather, live music, low tourist numbers and easy access to ice-cream from the castle's kiosk. (Photo: Magnus Stibéus)

View of Borgholm castle's court yard from north-west. The old castle keep, which had been excavated in 1929, is marked with stone tiles on the ground. (Photo: Magnus Stibéus)

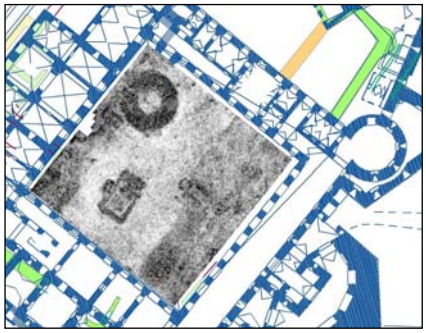
The georadar data clearly shows the reflections from the stone tiles that mark the round keep and adjacent walls (①), which date back to early medieval times (probably built at the end of the 12th century) and which had been excavated in 1929.

At a depth of approximately 90cm under the ground surface the contours of a cellar room can be seen, including an apsis with a stairway at its north-western side (②). Interestingly this cellar is not oriented in the same direction as the current court yard, suggesting an older construction date. Weak reflections in the georadar data indicate that a larger house with two side wings once stood on top of the basement room. East of the cellar we can see reflections from another interesting structure, which shows even clearer at greater depth (③): the continuation of the old castle wall is visible as a dark linear anomaly, and possibly the foundations of a gate building are located in the centre of the court yard. The old castle wall had been excavated outside the court yard.

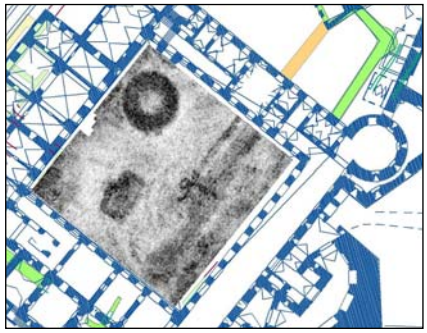
One day of georadar measurements resulted in much new information about the castle's structure and history.



① *Georadar depth-slice (25-30cm depth) showing the tower and walls marked with stone tiles on the ground as well as some vehicle tracks.*



② *Georadar depth-slice (90-95cm depth) showing a basement room in the western part of the court yard, including an apsis with a stairway at the north-western side of the cellar room.*



③ *Georadar depth-slice (130-135cm depth) showing remnants of the older fortification wall. This wall had been excavated in the area north-east of the court yard (marked with orange colour).*

http://www.raa.se/uv

Survey at the Cathedral of Tarragona, Spain

A. Casas, University of Barcelona, Spain
P. L. Cosentino, University of Palermo, Italy pietro.cosentino@unipa.it
R. Sala, SOT Prospecció Arqueològica, Spain

Last September an archaeological survey was conducted, using geophysical non-invasive techniques, in the Cathedral of Tarragona (Spain). The aim of the survey was to find the remains of the antique roman temple dedicated to Augustus, beneath the pavement of the Cathedral. The modern Tarragona in fact arises on the impressive remains of the Roman city of Tarraco, the main Spanish city of the imperial age. The Roman archeological remains of Tarraco have been declared a Cultural World Heritage Site by the UNESCO, and include the cyclopean walls, the amphitheatre, the circus and the forum. The remains of the Roman temple of the city are still unrevealed but intensely looked for, because this was the first temple of the Roman age dedicated to an emperor, i.e. Augustus. Some historical-archeological sources suggest the presence of the temple beneath the pavement of the Romanesque-Gothic cathedral of the city.

The exterior of the Cathedral of Tarragona.

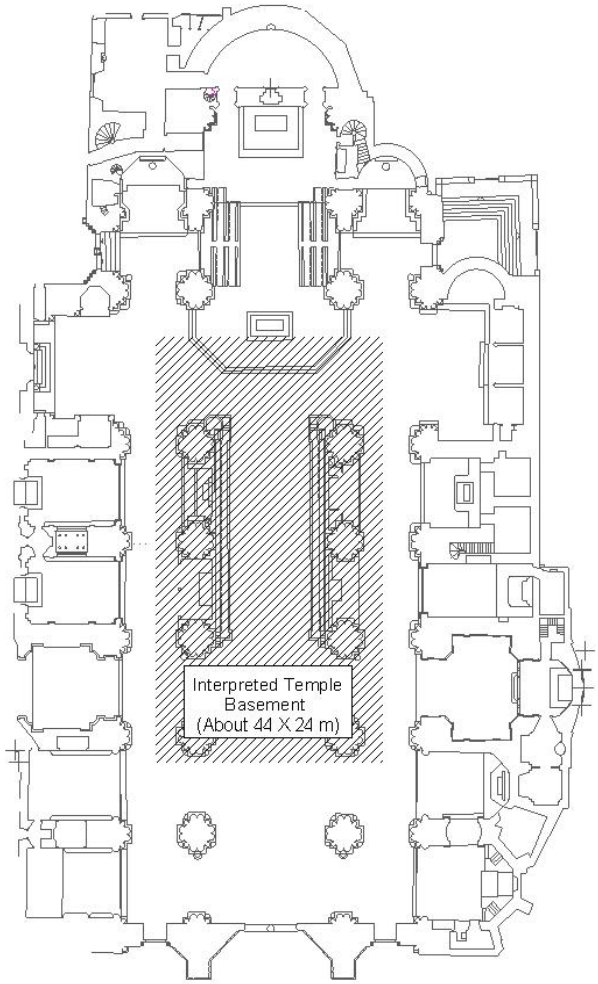
For this reason the ICAC institute (Institut Català d'Arqueologia Clàssica), the archbishopric and the municipal administration of Tarragona planned a geophysical investigation, with the aim of revealing the eventual buried remains without damaging the cathedral pavement. The survey was conducted by three research groups:

1. Prof. A. Casas, Y. Díaz and M. Himi, Dept. GPPG, Universitat de Barcelona (Spain);
2. Prof. P. L. Cosentino, P. Capizzi, G. Fiandaca, R. Martorana, P. Messina and I. Razo Amoroz, Dept. CFTA, Università di Palermo (Italy);
3. R. Sala, E. García and M. Lafuente, SOT Prospecció Arqueològica (Spain).

Two different geophysical methodologies were carried out: Georadar and ERT (Electrical Resistivity Tomography). The Georadar survey was performed with two different antennas (centre frequency respectively of 270 MHz and 100 MHz). The ERT survey was performed using classical 2D profiles and an innovative "Full 3D" array, denominated MYG (Maximum Yield Grid), able to significantly diminish the acquisition time, even in comparison with 2D investigation, retaining an excellent resolution power.

The survey area

The complete results of the investigation are going to be presented on December to the ICAC institute and the local administration. However, preliminary data analysis strongly suggests the presence of the temple basement beneath the Cathedral, and the inferred hypotheses are exposed in preliminary papers submitted to some scientific Meetings.



A sketch of the preliminary results

Conference, Seminar and Course Announcements

Aerial Archaeology, Computer Visualisation and Past Landscapes: An International Workshop

The HIVE, University of Hull, UK, 12 December 2007

Organised by the Aerial Archaeology Research Group and the SimVis Research Group, University of Hull

Aerial archaeology continues to play a leading role in the understanding of the landscapes of the past. Advances in computer hardware and software are making the acquisition of large datasets and their manipulation much more accessible. The results of aerial survey can be combined with other methods of remote sensing to facilitate interactive exploration and analysis of large areas of past landscape in new ways. This workshop will bring together workers active in these fields from Britain and beyond in the Hull Immersive Visualization Environment (HIVE), a purpose-built facility in the University of Hull dedicated to the research and presentation of 3D stereoscopic and other methods of visualising data for a range of users including industry, medicine and the Heritage sector.

For a provisional programme, registration form and details of student bursaries (closing date for applications 31/10/07) go to the AARG website: http://www.univie.ac.at/aarg/php/cms/News/

Or download the flyer: http://aarg.univie.ac.at/news/AARGhull.pdf

Annual Workshop in Forensic Archaeology and Anthropology

Cranfield University, Shrivenham Campus, UK, 10- 14th March 2008

The Annual Workshop in Forensic Archaeology and Anthropology runs just before Easter at the Shrivenham campus of Cranfield University. It is a week-long residential course aimed to provide an introduction to Forensic Archaeology and Forensic Anthropology through lectures, practical laboratory and field-based sessions.

It features Cranfield University's special strengths in mass fatality incidents and the examination of explosions and ballistic injuries. It provides an understanding of the many ways in which the scientific techniques and principles of the disciplines can contribute to the forensic investigation of crime. The course covers topics such as forensic skeletal analysis, forensic DNA and isotope techniques, mass disasters and human rights violations, theoretical and practical ballistics, decay and taphonomic processes and many more.

Many internationally-renown speakers contribute to the course each year, and often stay for the conference dinner half-way through the week to speak personally with the delegates. These have included Patricia

Wiltshire (forensic palynologist), Professor Helen Muir (air safety investigator) and Dr Martin Hall (forensic entomologist) in the past, and will now also include Professor Margaret Cox (forensic anthropologist).
The course is very intensive and 'jam-packed' with activities such as field-based practical geophysical surveying and live firing on the ranges. The course is extremely popular and delegate numbers are restricted, so apply to the Cranfield University Short Course centre on +44 (0) 1793 785371 to reserve your place!
http://www.cranfield.ac.uk/forensics

The 37th International Symposium of Archaeometry

Siena , Italy, 12-16 May 2008

The aim of the Symposium is to promote the development and use of scientific techniques in order to extract archaeological and historical information from cultural heritage and the paleoenvironment. It involves all natural sciences and all types of objects and materials related to human activity.

In general, papers submitted should deal with the development and/or application of scientific techniques for extracting information related to human activities of the past, including the biological nature of human and the environments in which they lived. Topical sessions include field archaeology (i.e., remote Sensing and geophysical prospecting, sampling and fieldwalking strategies, in situ observations of preservation, and site monitoring).

Papers that deal with weathering and deterioration of archaeological objects or monuments will be welcome provided they are relevant to one of the main themes of the Symposium.

You can also visit our website at www.unisi.it/eventi/isa2008/
Please note that the deadline for abstract submission is. December 1st, 2007.

National Park Service's 2008 Archaeological Prospection Workshop

Fargo, North Dakota, USA, 19-23 May, 2008

The National Park Service's 2008 workshop on archaeological prospection techniques entitled Current Archaeological Prospection Advances for Non-Destructive Investigations in the 21st Century will be held May 19-23, 2008, at the Kelly Inn, Fargo, North Dakota. Lodging will be at the Best Western Kelly Inn with the meeting room at O'Kelly Event Center at the Kelly Inn. The field exercises will take place at the Biesterfeldt Site (a protohistoric village site on the Sheyenne River). Co-sponsors for the workshop include the National Park Service, the Archaeological Conservancy, Minnesota State University-Moorhead, and the State Historical Society of North Dakota. This will be the eighteenth year of the workshop dedicated to the use of geophysical, aerial photography, and other remote sensing methods as they apply to the identification, evaluation, conservation, and protection of archaeological resources across this Nation. The workshop will present lectures on the theory of operation, methodology, processing, and interpretation with on-hands use of the equipment in the field. The workshop this year will have a special focus on the soil magnetism and on the effects of plowing on geophysical signatures and site integrity. There is a tuition charge of $475.00.

Application forms are available on the Midwest Archaeological Center's web page at
http://www.nps.gov/history/mwac/

For further information, please contact Steven L. DeVore, Archaeologist, National Park Service, Midwest Archaeological Center, Federal Building, Room 474, 100 Centennial Mall North, Lincoln, Nebraska 68508-3873; tel: (402) 437-5392, ext. 141; fax: (402) 437-5098; email: steve_de_vore@nps.gov.

GPR 2008: call for papers

University of Birmingham, UK, 16th – 19th June 2008

GPR2008 CALL FOR PAPERS

The Twelfth International Conference on Ground Penetrating Radar (GPR 2008) will be held at the University of Birmingham, England, from 16th to 19th June 2008

This is the first call for papers. Prospective authors are invited to submit an extended abstract of between 300 and 500 words. Abstracts should present original work not submitted or published elsewhere. The abstract should explain clearly the content and relevance of proposed contribution, and include the conclusions that will be made in the full paper. All abstracts must contain the complete mailing address, e-mail address, telephone and fax numbers of the corresponding author. E-mail submission of abstracts is preferred. Please indicate your preference for oral or poster presentation. PowerPoint will be the preferred method for oral presentations.

Papers are invited on, but not limited to, the following topics relating to ground penetrating radar:

Antennas
Archaeology
Borehole Radar
Concrete/Pavement Evaluation
Data Processing/Display/Interpretation
Environment
Forensics
Geology/Geotechnical Engineering
Glaciology/Ice/Permafrost
Inverse Problems/Tomography
Mining/Tunnelling
NDE/NDI
Numerical Modelling/Analysis
Radar Systems
Sedimentology
Signal/Image Processing
System Performance
Survey Design/Methodology
Utility Detection
UXO/Mine Detection

Deadline for Paper Abstracts: 30th October 2007

The Technical Review Panel will review submissions and the Executive Committee will notify corresponding authors of the acceptance, conditional acceptance (subject to final paper review), or rejection of the paper.

Notification of Acceptance: 14th December 2007

Final Photo-ready Paper Due: 31st April 2008

The full length paper accepted submission (4 to 6 pages) must be received together with payment of the registration fee of the presenting author.

Abstracts, submissions, and all related correspondence should be sent to: submissions@gpr2008.org.uk

Mail: GPR2008 Conference, Institute of Archaeology and Antiquity, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

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www.gpr2008.org.uk

Journal Notifications

Archaeological Prospection

Many of you will have read the current issue (14.3) that contains papers from the ISAP Rome conference (Dr Piro was a guest Editor, thank you Salvatore for your hard work at the conference and on the volume!). I now look forward to contributions from the Nitra conference. Some good news is that it is now much easier to submit a paper as an on-line option is available. If you go to Archaeological Prospection home page (via http://www3.interscience.wiley.com), you will see Online Submission in the 'Journal Home' area. The process is via Manuscript Central, so some of you may have had some experience with this system.

The next issue will include the following articles:

Characterization of buried inundated peat on seismic (Chirp) data, inferred from core information
Ruth Plets et al

Monitoring archaeological sites in a changing landscape-using multitemporal satellite remote sensing as an early warning method for detecting regrowth processes
Stine Barlindhaug et al

Rapid seismic reflection imaging at the Clovis period Gault site in central Texas
John A. Hildebrand et al

Imaging buried landforms using down-hole susceptibility data and three-dimensional GPR visualization software
Rinita A. Dalan and Dean Goodman

Common- and Multioffset Ground Penetrating Radar Study of a Roman Villa, Tourega, Portugal
Brooke A. Berard and J.M. Maillol

Chris Gaffney

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