

EUROPEAN LANDSCAPES

past, present and future

Culture 2000 Project Ref. No. CH-A2-UK-2077

FINAL REPORT

1 October 2004 – 31 October 2007



Through satellite imagery, airborne survey, fieldwork, geophysics and excavation, the aim of the project is to promote the exploration, public appreciation and conservation of heritage sites and landscapes across Europe.



Education and Culture

Culture 2000



ENGLISH HERITAGE

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The complete Final Report or individual reports from partners can be downloaded from:

e-landscapes.com or

<http://www.muzarp.poznan.pl/EuLandscapes/EuLandscapes/index.htm>

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LANDSCAPE SURVEY, PRESENTATION AND PROTECTION IN BARANYA COUNTY, HUNGARY

Gabor Bertok, for the Directorate of the Museums of Baranya County, Pécs, Hungary

Background and objectives

Despite recognition of their importance by Hungarian archaeologists, aerial photography and other modern methods such as GIS and computer-based research databases have until recently been little used in archaeological research and museum work in Hungary. As a result, aerial images and their interpretation have appeared only infrequently in museum displays and other presentations for the general public.

Through the Culture 2000 project the Directorate of the Museums of Baranya County, based at Pécs in south-western Hungary, has been able to demonstrate the use and importance of aerial photography and non-destructive archaeological methods such as geophysical survey in the presentation and protection of the national heritage. By doing so the Directorate has aimed to improve the quality of its own work, both in research and in presentation of the landscape and archaeological heritage to schoolchildren and the general public.

Finally, the Directorate hopes that the better availability of its research results, together with the demonstrated usefulness of aerial survey in archaeological and landscape recording and presentation, will enhance the longer-term use of aerial archaeology in Hungarian heritage research, presentation and conservation.

The Directorate has pursued these objectives in four main ways:

- By setting up a three-year landscape survey project in Central Baranya County to undertake aerial and field survey and archaeological landscape mapping, using heritage information from the County and National Museums as well as the archive of the Hungarian Military Mapping Agency and satellite imagery freely available on the Internet.
- By setting up a GIS-based database for publication on the Internet, making the results of the project immediately available to young people, the general public and researchers.
- By creating a travelling exhibition on the importance of aerial survey and other non-destructive methods in the interpretation and understanding of the landscape heritage.
- By taking part in meetings and exchanges with Culture 2000 co-partners and others, and by organising a workshop centred on the Directorate's work within the project (in the event this was deferred because of pressure from other meetings in the final year of the project).

Regional research: aerial survey and field observation

Forty hours of aerial reconnaissance during the project succeeded in identifying 172 potentially 'new' archaeological sites, as well as photographing (in most cases for the first time) numerous already-known sites, typical landscapes and townscape views. Site maps were made using orthorectified aerial images. Sixty-nine of the newly-identified sites were examined in the field in a programme of visits that will continue after the end of the Culture 2000 project.

As a result of this campaign of integrated aerial and field survey it has been possible to build up an archaeological database of the study area, pairing detailed site plans with information gained on the ground – a method rarely applied in Hungary in the past. Apart from a few cemeteries and burials, most of the 'new' sites are either settlements of various types or linear features such as roads, field-divisions and settlement boundaries. Further research into the linear features *between* the settlements may be included in future research projects, to enhance understanding of the interrelationship between the sites in various archaeological periods.

An unexpectedly large number (18) of the newly-discovered sites, apparently of various ages and functions, were surrounded by defensive or enclosure ditches. Ten of the 18 appeared, on



Left: The Szemely-Hegybes henges, with the smaller one in the background of the picture. Above: One of the other circular enclosures revealed during the exploratory flights, as marks in the ripening grain-crop. Below: The larger of the Szemely-Hegybes henges, with the trial excavations undertaken as part of the Culture 2000 project.

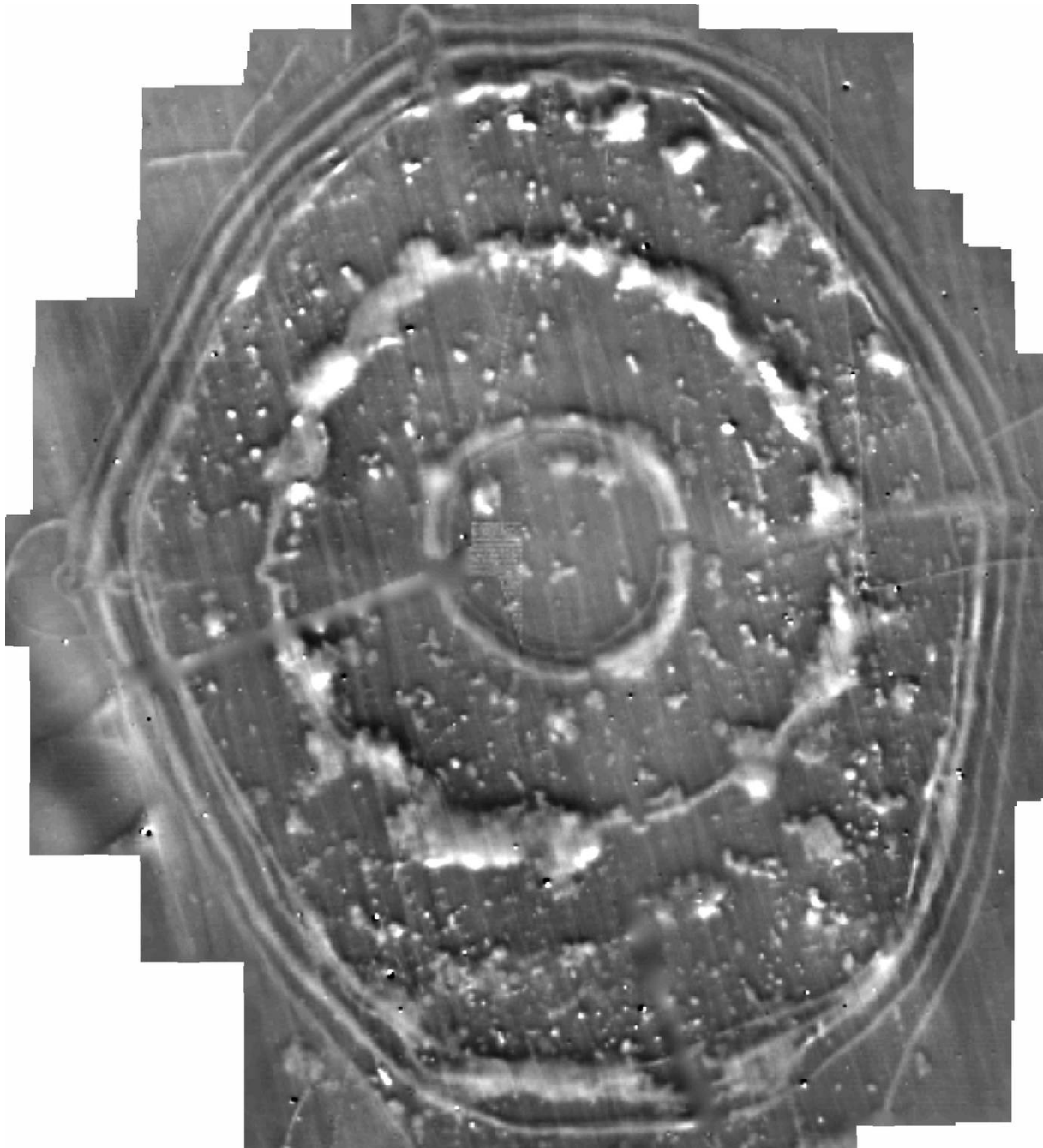


the basis of archaeological material brought to the surface by ploughing, to belong to the Central European Lengyel Culture of the Late Neolithic/Early Copper Age, dating from around 6500 to 6000 years ago. From these discoveries there is beginning to emerge an entirely new picture of the Late Neolithic landscape in this part of Hungary. Moreover, these sites will serve as a framework for further research into the region's landscape archaeology.

Targeted research at Szemely-Hegybes

In keeping with the original research design it was decided to concentrate on one of the so-called 'henge' monuments or fortified settlements for a more detailed investigation, using a variety of non-invasive techniques as well as sample excavation. The henge at Szemely-Hegybes was the most significant of the newly discovered sites, being the largest known feature of this type in Europe. (Unknown to the Museum it had in fact been seen a few years earlier by Dr. Otto Braash during one of his aerial excursions into Hungary.)

Preliminary non-destructive investigation included aerial survey and mapping, creation of a digital terrain model to determine whether the traces detected from the air still survived as surface relief, boring to establish a basic stratigraphy of the site, and magnetometer survey to create a detailed plan of the site. Later, two trial excavations, 2 m wide and 360 m long, were set out at right angles to cross the interior of the site and its perimeter of three massive and roughly concentric sets of ditches. Post-excavation work included radio-carbon dating of two charcoal samples to refine the site's chronology. Also undertaken were comparative pottery analyses and the study of bone remains to gain information on animal husbandry and hunting.



Detailed site map of the Szemely-Hegyes henge based on the geophysical survey results.

As result of these investigations it is now possible to set out a complete plan and basic stratigraphical and chronological scheme for the site. Although it has not been possible so far to shed light on the *function* of the henge, a number of clues have been uncovered that may contribute to understanding of the site. The innermost area is largely empty but – unlike most similar sites – contains a limited number of carefully placed features, perhaps implying that the core of the site had a special role, be it sacred, social or otherwise. The longer axis of the henge also points exactly at the summit of Szársomlyó, a hill of triangular silhouette that is visible from all directions within the local landscape. The hill may therefore have had a significant role for the people who constructed the henge. Future research work at Szársomlyó may clarify the

possible connection with the Szemely henge. Aerial survey, field survey and excavations have revealed several other settlements of the Lengyel Culture in the vicinity of the Szemely henge. The vast dimensions and complexity of the ditch system at Szemely may indicate that it had a special importance, a central role, among the earthworks of similar age in this vicinity.

Exhibition, publicity and publications

In February 2007 an exhibition entitled *Aerial Archaeology Survey of Baranya County* was mounted in the largest shopping mall in Pécs, visited by 30,000 people every day. Posters of the exhibition have since been displayed at various other locations. The posters, and possibly the exhibition itself, will continue to circulate throughout Baranya County and beyond after the end of the Culture 2000 project. Images and text were also provided for the international exhibition in Prague which formed one of the final events of the Culture 2000 project.

The results of the project were also presented on Hungarian State Television, at the annual conference of the Aerial Archaeology Research Group in the UK in 2006 and at the final meeting of the Culture 2000 co-partners in Prague in October 2007. Publications on the work at Szemely-Hegybes have appeared, or will shortly do so, in prestigious academic journals in Hungary. A bilingual web page (in Hungarian and English) explaining the project's results has been set up at <http://neolithic-henges.baranya.hu> and <http://korarok.baranya.hu>. Material from Hungary has also appeared on the Culture 2000 project's central website.

'Spin-off' benefits of the Culture 2000 project

As a result of experience in the application of GIS and geophysical methods during the Culture 2000 project the Directorate was invited to participate in the on-going work of the Syrian-Hungarian Archaeological Mission. Work done in Syria through this link included survey of a Crusader settlement in 2005-2006 and prospection in 2007 using ground-penetrating radar at Margat Castle, near Baniyas in the coastal region. In September 2006 a presentation was given at Sabboura, near Damascus, during a conference on Remote Sensing and Assisting Systems promoted by the General Organization of Remote Sensing, the civil mapping and surveying agency of the Syrian Arab Republic (see <http://www.gors-sy.org/conference.htm>).

General assessment and future prospects

The Culture 2000 project has enabled the Museum Directorate to make significant discoveries in Hungary, to refine its research and presentation work, and to enhance its scientific contacts in Europe and beyond, including in Syria. Although the project has now come to an end the Directorate hopes to continue many aspects of the work begun as a result of the grant.



The results of the project on display in the Pécs shopping mall (left) and the Prague exhibition (right).



HIGHLIGHTS 2004-2007

Belgium Air photographs uncover the battlefields of Ypres

Czech Republic Air survey, excavation and a grand exhibition

English Heritage Air photo training schools at home and abroad

Estonia Estonian archaeologists take to the air

Germany (Mecklenburg-Vorpommern) Seeing beneath the waves

Germany (Baden-Württemberg) Iron Age fortresses in their landscape setting

Germany (Freiburg) Airborne laser scanning to 'see through the trees'

Hungary Combining techniques to explore the Neolithic

Italy (Puglia) Uncovering and mapping the past through aerial survey

Italy (Salento) Modern techniques and a Roman harbour

Italy (Tuscany) Air survey, laser scanning and geophysics

Lithuania Raising awareness through aerial archaeology

Poland New discoveries and new systems for heritage conservation

Slovakia Stone Age monuments from the air and on the ground



A LOST TOWN RE-FOUND

Szamotuly, in Poland is a medieval town, its originally open market square now filled with later buildings (top). Until recently historians believed that the town always occupied its present site. This view changed dramatically in July 2006 when spectacular air photographs, taken as part of the Culture 2000 project, revealed its original location at Mutowo, 2.5km away, where it had stood before a disastrous fire in the 14th century. One of the photographs is shown here (centre), rectified to fit the present-day map. In the bottom image the town's large open square, outlined by the dark marks of cellars beneath its surrounding buildings, has been plotted on the rectified photograph, along with the presumed lines of the linking streets.

