E-learning Archaeology

Appendix

Case studies

Marjolijn Kok
Heleen van Londen
Arkadiusz Marciniak (eds)

THEMATA 5
UNIVERSITY OF AMSTERDAM • 2012

Table of Contents

01 CASE STUDY 1

LU Ancient Monuments (Protection) Act 1882

by Kenneth Aitchison

SCO Introduction

'Mr Labouchere (Northampton) said: he noticed that there was an item in the Estimates for the inspection of ancient monuments. He objected to this as utter nonsense. He believed there was a Schedule of some of the ancient monuments. They knew there were any number of ancient monuments about the country, and why were all these monuments not to be in the Schedule? Why there should be an Inspector to look after four or five of these monuments he could not understand.

For his part, he did not care sixpence about Stonehenge. He thought that they must have been fools who carried huge stones a long distance in order to place them in circles. Now, although they had an Inspector, they did not seem to give him work to do; they did not tell him to look after all the ancient monuments, but empowered him to choose half-a-dozen monuments to look after. What had this Inspector been doing? How had he looked after monuments? Did he live in London? What was he? He would like some explanation on this point' (quote: Hansard, 8 November 1888).

What Henry Labouchere, the Liberal Member of Parliament for Northampton, was drawing attention to was the existence of the post of the Inspector of Ancient Monuments, the first true professional archaeological post in the United Kingdom, which had been created under the Ancient Monuments (Protection) Act 1882. This was the first Act of Parliament in the United Kingdom to protect archaeological sites.It created a Schedule of Ancient Monuments, a list of nationally important archaeological sites which were protected by law against any unauthorised changes.

The goal of this case study is to examine the social and political conditions that allowed the first legislation to protect archaeological remains in the United Kingdom to be passed.

SCO Case study

An MP (Member of Parliament) called John Lubbock was the driving force behind the Act, and he had first tried to introduce legislation to protect ancient monuments in 1870. As a young man, Lubbock was 'blessed with not one, but two fathers' – Sir John Lubbock, baronet, and the family neighbour, Charles Darwin, who taught Lubbock to be his research assistant in entomology. He was strongly influenced by Darwin's work – On the Origin of Species was first published in 1859 – and in particular the recognition that humanity might have greater antiquity than had been presented in biblical texts.

By the time the Act was passed, the idea of preservationism had been developing amongst the British middle classes since the 1850s, with concerns being raised about the damage being done by 'amateurs' to archaeological sites. In 1881 The Edinburgh Review deplored the 'well-meaning spades and pick-axes of 'the free-lances of archaeology'.

The main objection to the Bill that would become the 1882 Act was that it interfered with private property rights – a monument could be entered onto the Schedule irrespective of who owned it. In the 1860s the electoral franchise was extended (under the Second Reform Act of 1867, which doubled the number of people allowed to vote in UK elections from one million to two million), and this may have contributed to allowing parliamentarians to feel comfortable with approving the Act. In many ways it was a remarkable achievement – the concept of restricting use or enjoyment of private property for the greater public benefit was novel, controversial, and in itself an early step towards recognising the historic environment as a public asset.

The first Inspector of Ancient Monuments was Augustus Henry Lane Fox Pitt Rivers, who took up his duties on 1st January 1883; from 1883-1890 he received a salary of £250 per year, but from 1890 until his death in 1900 he declined to take the salary and so the post was honorary. Pitt Rivers' great philosophical contribution was to reject the antiquarian concept of archaeology as treasure-hunting in favour of accepting the value of everyday objects.

SCO Technical Discussion

The Act did not require the landowners who owned the land that the monuments were on to allow public access to the sites, nor did it include any provisions for financial assistance to conserve the sites.

The provisions of the Act were expanded and refined in 1900, 1910, 1913, 1931 and 1979, with the 1979 Ancient Monuments and Archaeological Areas Act remaining the primary legislation relating to archaeology in England and Wales. The Act originally applied in England, Scotland, Wales and all parts of Ireland (Ireland was not partitioned until 1920). It did not apply in British colonies, although it formed the basis for several pieces of colonial legislation such as the Indian Ancient Monuments Preservation Act, 1904.

The establishment of an Inspectorate, rather than positioning antiquarian or scientific societies as the Act's administrators, was firstly a demonstration of Government's desire to control the operation of the Act. It was also based on the opinions of influential parliamentarians that those who were 'not overcome by sentimental attachment to the remains' would better administer the Act (Murray1989, 61) – dispassionate professionals were preferred to the vested interests of specialist groups.

However, this was not initially being done to investigate the physical remains of past human lives – and it was not until the twentieth century until attitudes began to change towards ancient monuments, 'to treat them not as objects of sentimental pilgrimage but as potential sources of historical knowledge' (Collingwood, 1939, 127) – and that professional archaeologists were needed to identify and extract this value for the public benefit.

SCO Conclusion

Before 1882, there was no way that archaeological sites could be legally protected in the United Kingdom. The passage of the 1882 Act was very significant because it created a precedent for the state to have an interest in something that remained in private ownership, and so allowed the state – through a technical corps, 'The Inspectorate' – to control what landowners could do with their own property. That this happened and was publicly supported in a society where land ownership is very highly prized – metaphorically, 'An Englishman's Home is His Castle' – was all the more significant, and reflected a changing public and political attitude to the past.

No comparable legislation relating to the natural environment would be passed in the United Kingdom until after the Second World War, with the National Parks and Access to the Countryside Act 1949.

'Inspector of Ancient Monuments' remains the post title held by senior staff at English Heritage, the quasi-autonomous non-governmental organisation which was created in 1983, taking on responsibilities formerly held by the state and that now advises the UK government on the historic environment in England.

> SCO Test

SCO References

- Collingwood, R.G. ,1939, *An Autobiography*, Oxford, Oxford University Press.
- Hansard, 1888, Commons Sitting, Class II. – Salaries and Expenses of Civil Departments, *Hansard*, 8 November,
- Murray, T. ,1989, The history, philosophy and sociology of archaeology: the case of the Ancient Monuments Protection Act (1882), In: V. Pinsky, A. Wylie, (eds), *Critical Traditions in Contemporary Archaeology: essays in the philosophy, history and socio-politics of archaeology*, Cambridge, Cambridge University Press, 55-67

→ LU Further Reading

- Kehoe, A.B., 1998, *The Land of Prehistory: a critical history of American archaeology*, London & New York, Routledge
- Lubbock, J., 1865, *Pre-historic times, as illustrated by ancient remains, and the manners and customs of modern savages*, London, Williams & Norgate
- Thompson, M.W.,1977, *General Pitt-Rivers: evolution and archaeology in the nineteenth century*, Bradford-on-Avon, Moonraker Press

01 CASE STUDY 2

LU Memory use and misuse of Franco's dictatorship *by Mikel Errazkin*

sco Introduction

This case study will analyse how collective memory may be led and designed by political powers in their own interests. After the Spanish Civil War, Franco's regime built up a new common collective (material and immaterial) identity-creating memory aimed to promote and disseminate their ideology and values, and banishing any memory from the previous period or relating to the vanquished.

sco Historical background

The Spanish Civil War (1936-1939) began after a military rebellion by part of the army against the elected government of the Second Spanish Republic on 17th and 18th July 1936. The war ended the 1st April 1939 and the insurgent troops established a dictatorship with General Francisco Franco as head of the state which lasted until 1975.

The insurgents made the beginning of the war, 18th July 1936, the starting point of a 'New Spain'. Military figures, war events and places became memory objects in cities, calendars, monuments, commemorations, school manuals, etc. The war was the glorious memory of the victors. Once in the power, they imposed this official discourse by force. They silenced and destroyed all references to the Second Spanish Republic (government, figures, political reforms, holidays, monuments, etc.), in such a way that it was banished from the historical memory for more than 40 years. They erased all reference to the 'others'– the defeated. Among the practices used to impose the oblivion we can highlight material destruction, repression, exile, censure and silence.

Both the memory policy and symbols used by Franco's dictatorship had four main objectives:

> to banish any symbolic presence of the Second Spanish Republic, as well as its memory.
> to become a propaganda tool for the new regime, especially for praising Franco's figure as their leader.
> to define public space according to the new political, ideological and religious postulates
> to legitimate the new regime and authorities.

Thus, in order to create a new collective memory, Franco's regime put every effort into dominating time, space and people.

sco The memory of time: the calendar

The insurgents established a new era; a new dating system was used during the war: I, II or III Triumphal Year (1936, 1937, and 1938). Once in the power, they created a new official calendar, which regulated the time of political, religious, social and everyday life. Therefore it was an excellent tool to influence the society. Memorable dates for the Republican period were replaced by others appropriated for the new era. For instance, celebrations as the day of the Republic (14th April), Carnival and Workers' day (1st May) were eliminated. Other patriotic and religious celebrations linked to the Spanish tradition were established:

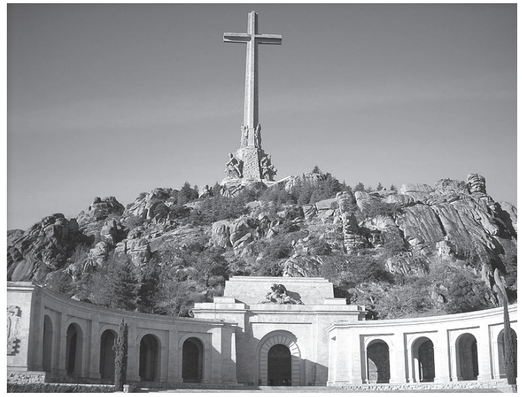
> Religious celebrations such as Corpus Christi or the Epiphany (6th January), Santiago the apostle (St. James, patron saint of Spain) or Pilar Virgen (Race Day). In some cases previous traditions already existed, the novelty was to link them to the political ideology of the regime, as well as to a national state character,
> War related celebrations: Uprising day, Caudillo day, Victory's day, the Fallen day or the capture of several towns,
> Celebrations to socialise and promote the values and the ideology of the new state: the fallen student celebration, Falange and JONS union (Falangist organisations supporting Franco).

sco Memory of space: the street map

The public use of memory in space was intended to be present in the most important public spaces with their own references. So, the regime disseminated names, dates and Franco's regime values, while eliminating those of the previous period. This appropriation of the public space meant a military and social use of propaganda through renaming streets or public buildings.

Place, squares and streets are important public spaces in Mediterranean societies; they became a key tool for remembering people, values and events. With this process they tried to create a new history of people and dates by means of some common criteria:

> References to insurgent figures with active participation in the war (Generals Franco, MOLA, Sanjurjo, Queipo de Llano…),
> Names for the fallen heroes (General MOLA, José Antonio Primo de Rivera…) or anonymous collective heroes (Toledo Fortress Heroes). Sometimes they combined heroism with martyrdom, stressing the soldierly and Christian virtues,



> Recuperation of military figures representing the glorious past from other times, for example the Reconquest (expulsion of the Muslims during the Middle Ages) or the Carlists Wars (dynastic wars in 19th century which represented the movement against the liberal reforms in Spain).

sco Memory of persons: monuments

Monuments to those 'Fallen for God and Spain' (Caídos por Dios y por España) spread out across all of the country. These monuments were present in cemeteries and places of almost every important town. Commemorative plaques were also placed in the church listing the local fallen.

In this sense, specific requirements were also established (who could appear, processes, characteristics and texts, etc.) This points out the willingness to collaborate of the Spanish Catholic Church, which let their facilities exhibit one of the most acknowledged symbols of Franco's regime: the commemorative plaques.

sco El Valle de los Caídos (The Valley of the Fallen)

Among the monuments to be highlighted is the largest and most symbolic of all: el Valle de los Caídos (The Valley of the Fallen). Located in the mountains near Madrid and only few kilometres from El Escorial (royal site where Spanish kings and queens have been buried since the 16th century). Franco himself conceived the monument, where he and José Antonio Primo de Rivera (founder of the fascist party Falange Española) are buried. Started in 1940, the works went on until 1959. It needed a great investment and part of the workforce was political prisoners confined in concentration camps.

The monument is made of a towering 150 meter-high cross and weighs 200,000 tons, erected over a granite outcrop 150 meters above the basilica esplanade, situated over the 130,000 cubic meters of rubble generated when terraforming the mountain. A Benedictine abbey was also built next to the basilica. The complex is owned and operated by the Spanish governmental heritage agency. It has been closed to visitors since 2009 and the basilica was closed for masses in 2010.

Figure 1 Valle de los Caídos. Valley of the Fallen. Cross and basilica. *(image by Pablo Forcén Soler, public domain)*

sco Discussion

The Spanish Historical Memory Law entered into force in October 2007. The law was approved 32 years after Franco's death and 30 years after the first democratic elections. In the transition to democracy political parties tried not to stir up the past. This tacit agreement facilitated the consolidation of democracy and coexistence during the first years. But an official condemnation of Franco's dictatorship, as well as recognition that Franco's crimes were committed against the entire society and humanity was demanded by a part of the society.

Together with the exhumation of the first mass grave (in 2000) associations and organisations started to actively demand official support to recuperate from oblivion the historical memory of those repressed, killed or exiled. Other groups opposed this, considering that the silence adopted during the transition was to be kept and there was no necessity for such a law. It was a public debate which is still open in Spanish society.

On the one side, the law recognises the rights and establishes measures for those who suffered persecution or violence during the Spanish Civil War (1936-1939) and the Franco dictatorship (1936-1975). It includes recognition of all the victims of the Civil War, the victims of the dictatorship, but not the official opening of mass graves, remains of reprisal which have been located by private entities (such as Aranzadi Society of Sciences) or public authorities.

On the other side, it contains two provisions related to the cultural heritage of the period:

> Prohibition of political events at the Valley of the Fallen,
> Franco's burial place,
> The removal symbols from public buildings and spaces,

Exceptions may be given for artistic or architectural reasons, or in the case of religious spaces.

The first of these puts an end to commemorations that used to take place in the monument by Franco's supporters, neo-nazi and fascist groups. A part of the Spanish society wants to change the monument, considering it to be an offense to democratic values. What use could there be for this controversial monument?

The second provision refers not only to sculptures or symbols in facades, such as shields, badges, plaques and other commemorative objects or references of the Civil War, but also

names of streets and places. Except for some cases, which have recently been removed, most of the symbols had gradually been eliminated from public space.
It is important to highlight one of the exceptions established by the law: 'artistic reasons'. Who decides that a political symbol has cultural value? When should a monument or symbol be considered as cultural heritage and when as political legacy? Our cultural heritage and our collective memory are made of monuments and symbols created to praise, commemorate or legitimise political figures and regimes, but most of them are conveniently placed in a far past. How to approach the cultural heritage of the contemporary past with relevant political connotations?

SCO References

- Aguilar Fernandez, P., 2008, *Políticas de la memoria y memorias de la política,* Madrid, Alianza Editorial
- Andres Sanz, J. de , 2006, Los símbolos y la memoria del Franquismo, *Estudios de Progreso,Fundación Alternativas*, 23
- Carreras Ares, J.J., C. Forcadell Álvarez, 2003, "Introducción. Historia y política: los usos", In: J.J. Carreras Ares, C. Forcadell Álvarez, (eds), 2003, *Usos públicos de la Historia*, Madrid, Marcial Pons
- Cuesta Bustillo, J., 2005, Memoria de la Guerra Civil Española. Discursos, conflictividades y prácticas en torno a la historia y la memoria, *Actas del Seminario Internacional sobre Memoria e Historia*, Guatemala
- amer, J. H., 1984, Identity, Process, and Reinterpretation. The Past Made Present and the Present Made Past, *Anthropos*, 89, 81-190
- Le Goff, J., 1991, *El orden de la memoria*, Barcelona, Paidós
- Massa, P., 1998, Antropología y patrimonio cultural. Un estudio sobre los monumentos a los caídos, *Alteridades*, 8(16), 85-94
- Molinero, C., 2006, '*Lugares de memoria y políticas de memoria'*, In: F. Gomez Isa (ed.), ,2006, *El derecho a la memoria*, Bilbao, Instituto de Derechos Humanos Pedro Arrupe
- Todorov, T., 2000, *Los abusos de la memoria*, Barcelona, Paidós

→ **LU** Further Reading

- Argul, S., 2003, *Lugares de memoria y transición española, http://biblioteca2.uclm.es/biblioteca/ceclm/websCecLM/transici%C3%B3n/pdf/04-01.%20Texto.pdf*
- Ballart, J.,1997, *El patrimonio histórico y arqueológico,* Barcelona, Ariel Patrimonio Histórico
- Benavides Solis, J., 1995, Siete enunciados sobre la teoría general del Patrimonio cultural, *PH Boletín del Instituto Andaluz del Patrimonio Histórico* 12 *http://personal.us.es/orodriguez/ph12-32.pdf*
- Martin Pallin, J.A.,R. Escudero Alday, (eds), 2008, *Derecho y memoria histórica*,Editorial Trotta
- Nora, P. (ed.), 1996, *Realms of memory: rethinking the French past*, 1, New York, Columbia University Press
- Porro Gutierrez, J.M., 1995, Patrimonio y cultura: dos términos en interacción, *PH Boletín del Instituto Andaluz del Patrimonio Histórico* 12 *http://personal.us.es/orodriguez/ph12-27.pdf*

02 CASE STUDY 1

LU Altamira: management and preservation of Palaeolithic cave art *by Marcos García & José Antonio Lasheras*

SCO Introduction

Palaeolithic art is one of the most exceptional archaeological expressions due to its historical relevance and aesthetic quality. Drawings, paintings, engravings and sculptures are the first evidence of human artistic activity, symbolic and abstract thinking. They were made by Homo sapiens between 35,000 and 11,000 years ago.

Its antiquity is what makes this art exceptional. Different natural and human phenomena have contributed to their deterioration. Its location (caves, shelters or open-air), its antiquity and the materials used mean that paintings have specific problems for their management and preservation. The natural agents and processes responsible for this deterioration are:

> global climate change (variations in sea level),
> water on the walls (washing of surfaces and concretions),
> problems in supporting physical fall (detachment and flaking),
> biological agents (microorganisms) and orientation and environmental exposure (insulation and abrupt temperature changes).

Figure 1 Altamira polychrome bison

However, the most significant agent in degradation is human activity. Our actions are diverse: vandalism (breaking protection systems, graffiti, theft of paintings); research activities (direct tracing, inadequate lighting); pollution (emissions, spilling, dumping, farming activities); changes in the vegetal cover (reforestation which modifies the underground water system), fires, infrastructures, works for adapting the site for visits (casting, entrances and excessive lighting) and the actual visits (both controlled and uncontrolled).

As archaeological heritage, Palaeolithic art is protected by national legal frameworks. In Spain, the Law on Historical Heritage states that cave art is an element to be protected without the need for further administrative or legal procedures. Thus, its particularity and exceptionality are legally recognised. Furthermore, laws also promote its social dissemination and transmission to future generations. UNESCO has designated 21 cave art sites to be World Heritage sites, almost 2.3% of all designations.

This case study analyses different aspects encountered in the management at Altamira. They are the same as for most Palaeolithic painting sites, however the importance of Altamira in the history of prehistory and art, increases the pressure of the planners and tourism sector on the management of the site.

SCO Altamira

Altamira is in Santillana del Mar (Cantabria, Spain), in the north of the Iberian Peninsula. In 1879 Marcelino Sanz de Sautuola discovered the paintings and a year later published a book presenting them and affirming their Palaeolithic chronology. It was the first discovery of Palaeolithic art in the world and was followed by polemic discussions in academic and social circles about its authenticity. It was not until 1902, after further discoveries in France, that Palaeolithic dating for Altamira was publicly recognised.

In the cave mouth, there is evidence of human occupation between 22,000 and 23,000 years ago. Cave art is distributed through underground chambers. Animal figures represent horses, bison, aurochs, stags, hinds and goats. Although human representations are a less numerous thematic group, in addition to representations of hands there also are some figures closer to human than animal. As symbols, a variety of lineal and geographical structures are included, such as claviforms, tectiforms or grills.

Altamira is the best example of the earliest human art. Figures and symbols respond to previous ideas, they are consequence of a reflective process which decides what to paint, how to do it and how to distribute the figures. It represents the development of the symbolic imagination

which shows the necessity of transmitting ideas and concepts. It also has an aesthetic value, since it is able to change the sense and the feelings of the observer.

SCO Altamira: preservation and management

Altamira's preservation is directly linked to the management model (opening or closure of the site) that different managing boards adopted. Altamira is not only a reference point in history and art studies, but also in problems and discussions related to the preservation of cave art.

Since the discovery of the cave, when a wooden door was installed until its provisional closure due to the deterioration of the paintings in 1977, many activities took place inside the cave and in its surroundings.

A limestone quarry appears to have been the cause, at least partially, of detachments and deterioration of the cave stability (appearance and enlargement of cracks). Modifications of the vegetal cover (from bushes to meadows) have led to changed water penetration to the cave, and thus the micro-environmental parameters of the cave. Nearby buildings, until recently only a few meters from the cave entrance, have also affected to the general stability of the site.

Modifications in the interior have had a more relevant and bigger impact. Continuous detachments and the low stability of the ceilings, which meant a risk of cave collapse, were the reason for the construction of walls in mock limestone. The aim was to reinforce walls and ceilings, but the artificial division of the cave brought changes to the cave's ventilation and microclimate. There is evidence of the first wall being built in 1902, and even a failed project of underpinning the main chamber's ceiling with iron pillars covered by cement. Aiming to facilitate the transit of visits, lowering and levelling were carried out, eliminating rock blockages and generating new areas where materials that had been accumulated.

Adapting the cave for visits also had negative consequences. In 1905 acetylene lamps were installed with the intention of eliminating candle smoke. Different actions on the lighting system have been implemented, and after trying different electric systems, they were completely withdrawn, due to the proliferation of algae and microorganisms related to light and the increased temperature.

Nevertheless, the most negative impact is the one derived from the lack of compatibility between tourism and preservation, which leads to environmental and microbiological problems. In 1973, 175,000 people visited the cave, obviously this was an overwhelming number but even when the maximum was reduced to 8,500 visitors per year in 1982, problems continued and the environmental balance was not restored. Therefore, in 2002 it was decided that the cave would be closed and new studies on the preservation of the paintings during a period without visitors would be undertaken.

Shortly before the closure, the new Altamira National Museum and Research Centre was inaugurated. It includes a replica of the cave: The Neocueva. This is a 3D reality tool, not a virtual representation: a resource which allows knowledge of the cave in a pleasant and direct way. It was rigorously conceived according to archaeological research and created by applying current technologies in topography and exact reproduction (high resolution scanner). The rest of the rooms contextualise Altamira's art in the European Palaeolithic. The Neocueva, as the rest of the museum, is aimed at disseminating knowledge to meet tourist demands (more than 250,000 visits per year), but strictly, the museum does not affect the preservation of the original cave.

SCO Conclusion

Altamira is an example of protocols and a model for the preservation and management of Palaeolithic Art cave sites. Many studies have been developed from an interdisciplinary point of view, allowing better understand of the geological, water, physical, chemical, climatic and biologic environment as a dynamic system. The aim is to define and control the natural conditions without human presence, the number of people accessing the site, group organisation and length of time in the site, allowing for the preservation of the natural state of the space without any alteration that might damage these artistic expressions.

Therefore, the existing problems in Altamira are still being studied, both those originating from natural processes and those provoked by the tourist overexploitation; current scientific research should determine the convenience of the site being opened again for certain public visits, on a limited and controlled basis, guaranteeing the social enjoyment of heritage and its preservation.

Managers consider both the research and heritage preservation, but also the desire to know and understand. The Neocueva meets a cultural and touristic demand which could not be sustained by the original cave. Additionally, the construction of the whole museum project has eliminated environmental risks and has led to the preventive preservation of the cave.

All decisions are made from the perspective of preventive conservation, based on scientific knowledge. Accordingly, long term measures are adopted that aim to avoid risks and to eliminate potential harm. Therefore the objective is to maintain the conditions which allowed the conservation of the Palaeolithic art until the present, eliminating the elements that have had negative influences on the cave and its environment. Researching, legislating, disseminating and acting accordingly create the necessary conditions for present and future preservation of the heritage.

SCO References

- Altamira Museum: *www.museodealtamira.mcu.es*
- Beltrán, A., (ed.), 1998, *Altamira*, Lunwerg, Madrid
- Fatás Monforte, P., 2004, Estrategias de comunicación en museos. El caso del Museo de Altamira. *VII Jornadas de Museología*. Huelva, Noviembre de 2003, En Museo, 9, Madrid, 131-149
- Fatás Monforte, P., 2009, La cueva de Altamira y su museo: un caso extreme en la relación entre turismo y patrimonio, In: A. Domínguez Arranz (ed.), *El Patrimonio Arqueológico a debate: su valor cultural y económico*, Gobierno de Aragón, Huesca
- Heras Martín, C., 2003, La découverte de l'art paléolithique, In: *Venus et Caïn: Figures de la Préhistoire, 1830-1930*,Réunion des Musées Nationaux, Paris, 70-75
- Heras, C., J. A. Lasheras, 2010, La cueva de Altamira (Santillana del Mar, Cantabria), In: ACDPS (ed.): *Cuevas con arte paleolítico en Cantabria*. Consejería de Cultura, Turismo y Deporte, Gobierno de Cantabria, Santander
- Lasheras, J.A., 2002, *Redescubrir Altamira*, Editorial Turner, Madrid
- Lasheras, J.A., 2006, *El patrimonio prehistórico y arqueológico en la lista mundial: una mirada particular desde Altamira. La representatividad en la lista del Patrimonio Mundial: el Patrimonio Cultural y Natural de Iberoamérica*, Canadá y Estados Unidos, Conaculta-INAH, México, 45-52
- Lasheras, J. A., P. Fatás Monforte, 2006, The new Museum of Altamira: finding solutions to tourism pressure, In: N. Agnew, J. Brigland, (eds), *Of the past, for the future. Integrating Archaeology and Conservation*, Getty Conservation Institute, Los Angeles, 177-183

02 CASE STUDY 2

LU Heathrow terminal 5

by Kenneth Aitchison

SCO Introduction

The very first 'rescue archaeology' undertaken in the United Kingdom took place before the construction of airfields in the years immediately before and then during the Second World War, when approximately 60 sites were excavated by the Ministry of Works. '[T]hese excavations were in the nature of rescue work' (MoW 1949, 7) may be the earliest reference to 'rescue' archaeology in the British literature.

It was also appreciated that this was a novel opportunity in terms of the completeness of these projects – 'The very fact that the site was to be destroyed often caused the excavation to be complete. Frequently in the past lack of funds or other causes have prevented archaeologists from doing more than sampling an ancient site by means of a few trenches ... This is a positive gain, which would have not come so soon to archaeology but for the war' (MoW 1949, 7).

What was considered to be the most important discovery in that entire wartime programme was of an 'early Iron Age temple' at Heathrow near London, excavated by W.F. Grimes. Methodologically and in terms of the history of practice, Grimes' work was also important because of the very early use of a mechanical excavator provided by building contractors – '... a D6 scraper was called in to remove the overburden between the cuttings and in about 10 days the whole of the area of the 'camp' ... [0.97ha] was exposed; a rate of excavation which would have been impossible by any method of hand excavation. (The scraper was provided by the Air Ministry and Messrs Wimpey, the contractors)' (Grimes & Close-Brooks 1993, 308-9).

Sixty years later, the largest and most significant archaeological project undertaken in the UK was again at Heathrow, where BAA, the owner-operators of what is now the UK's biggest airport, contracted Framework Archaeology – a joint venture of Oxford Archaeology and Wessex Archaeology – to undertake work in advance of the construction of Terminal 5. In terms of employment practice and history, Heathrow Terminal 5 was an enormously significant project for archaeology. This was the first major joint venture project in British archaeology, bringing historic and economic rivals Wessex Archaeology and Oxford Archaeology together to work on a very

prestigious construction project, with approximately 60 individuals on site at the fieldwork's peak in 1999.

SCO Case study

The site that was to become Terminal 5 was at Perry Oaks, a sludge works immediately west of Heathrow Airport, located between runways one and two. This was a very large, open-area investigation – '21 hectares were exposed in a single phase in 1999, making it one of the largest open area excavations at the time.' (Framework Archaeology, 2006: 2).

Organisationally and intellectually, this archaeological project was different from any predecessor. The client wanted to set new benchmarks for construction standards inspired by Rethinking Construction (Egan, 1998), and designed an approach to all aspects of the project that minimised and shared risk by encouraging teams to be formed from different companies to work on subprojects.

The 'T5 Agreement' (BAA, n.d.) was the result, a legally binding contract between BAA and its key suppliers. Through the agreement BAA accepted that it carried all of the risk for the construction project, thus allowing the contractors to concentrate on the project and solving problems rather than avoiding possible litigation for problems arising and time delays.

The archaeological contractors used this as an opportunity to work together and to develop an entirely new approach to fieldwork recording and interpretation.

Previously, the accepted guide for archaeological project management, MAP2 (EH, 1991) sought to defer historical interpretation by separating post-excavation analysis from excavation. The Framework system sought to reintegrate interpretation 'at the trowel's edge'. Gill Andrews, as the project consultant, and John Barrett, who had previously considered that to regard the point of data characterisation '… as the end point of our labours or as material which can await interpretation by others, is an abdication of our responsibility' (1995: 8-9), together defined a new methodology of investigation. This aimed to empower '… members of the excavation team to undertake historical research, rather than to require them simply to record archaeological deposits prior to their destruction' (Andrews, Barrett and Lewis, 2000: 526).

The work carried out at Heathrow was chronologically deep and led to the interpretation of landscape, rather than just a site. This extended from the Palaeolithic through to the construction of a monumental cursus in the Neolithic, changing use of hte land in the late prehistory and Roman periods, and extending into the medieval and then post-medieval.

SCO Technical Discussion – Joint Venture

Since the late 1990s, it became increasingly common for major archaeological contractors in the UK to enter into joint venture or consortium agreements, particularly on major infrastructure schemes. In terms of archaeological employment, this has had a very major impact.

The first time this took place between two applied archaeological companies in UK field archaeology was with the establishment of Framework Archaeology, which brought together Oxford Archaeology and Wessex Archaeology to undertake work for BAA (formerly British Airports Authority). Framework Archaeology first worked at Heathrow and subsequently also worked at both Stansted and Edinburgh airports.

A joint venture is a formal legal entity, which can be established for one specific project only (technically making a consortium, which is dissolved when that project's goal has been reached) or as a continuing business relationship. The joint venture agreement will specify the partners' mutual responsibilities and goals, but this does not have to be a precisely equal division of responsibilities (and/or rewards). In some instances, joint ventures have been established at the request of the client (as at Heathrow Terminal 5), wishing to spread the risk particularly where archaeology is seen as a small but crucial project component with potentially fragile partners. This has become an increasingly well understood and widely applied approach (for large scale projects).

SCO Technical discussion – Methodological changes.

The new approach to on-site recording and interpretation used by Framework Archaeology at Heathrow was radical and extremely efficient. It linked severeal forms of survey to excavation, and allowed rapid assessment of discoveries without the need to separate post-excavation processes, but it required considerable amounts of training for staff and ultimately could only be applied in relatively large-scale, high-budget projects. Because of these constraints, it has not become the dominant methodology used in British archaeology.

SCO Technical discussion – Anti-development protest

Before the work began at Heathrow Terminal 5, major archaeological work had been carried out for Manchester Airport's second runway, with Gifford acting in a consultancy role from 1992 and then carrying out fieldwork in 1997 and 1998 (Thompson, 1998). Manchester Airport was also significant because of the protests against its construction, which (chronologically) immediately followed on from anti-roads, 'eco-warrior' protests of the earlier 1990s. Anti-airport expansion campaigning has since continued (although in a different manner), as for virtually every site where proposals have been made, local campaign groups have developed alongside the 'traditional' environmental lobby (anonymous, 2008).

SCO Conclusion

The significance of this project was firstly in the demonstration that commercial archaeological companies could work professionally and effectively as part of a huge construction project. This led to the establishment of joint ventures as an accepted business practice within UK archaeology, allowing the pooling of resources and the sharing of risk – a philosophy that has been successfully exported from the Heathrow project.

Methodologically, Framework Archaeology also operated on behalf of BAA at their other airport sites at Stansted and Edinburgh airports, using the methodology defined for Terminal 5, and while for a while this new methodology looked as though it could potentially replace the standard recording methodologies used in commercial archaeology across the UK, the methods have not percolated into archaeological practice beyond those that were undertaken by Framework on behalf of BAA. Indeed, Oxford Archaeology and Wessex Archaeology continue to work together on other, non-Framework joint ventures as OWA (Oxford Wessex Archaeology), such as on the M6 Toll Road or the East Kent Access Road but without using the Framework methodology.

> SCO Test

SCO References

- Andrews, G., 2006, 'Foreword', In: Framework Archaeology, Landscape Evolution in the Middle Thames Valley: *Heathrow Terminal 5 excavations*, vol. 1, Perry Oaks, Salisbury & Oxford: BAA, Wessex Archaeology & Oxford Archaeology
- Andrews, G., J.C. Barrett, J.S.C. Lewis, 2000, Interpretation not record: the practice of archaeology, *Antiquity*,74, 525-30
- Anonymous, 2008, *Airport expansion*, 28 March, [Online], Available: *http://www.politics.co.uk/briefings-guides/issue-briefs/transport/airport-expansion-$366575.htm, http://www.politics.co.uk/briefings-guides/issue-briefs/transport/airport-expansion-$366575.htm* [23 May 2010]
- BAA, *The T5 Agreement*, [Online], Available: *http://www.baa.com/assets/B2CPortal/Static%20Files/agreement.pdf%20, http://www.baa.com/assets/B2CPortal/Static%20Files/agreement.pdf* [22 February 2010]
- Barrett, J.C.,1995, *Some Challenges in Contemporary Archaeology*, Oxford, Oxbow Books
- Egan, J., 1998, *Rethinking Construction: The report of the Construction Task Force to the Deputy Prime Minister, John Prescott, on the scope for improving the quality and efficiency of UK construction*, London: DTI,
- EH, 1991, *Management of Archaeological Projects*, 2nd edition, London: HBMCE
- Framework Archaeology, 2006, *Landscape Evolution in the Middle Thames Valley: Heathrow Terminal 5 excavations volume 1*, Perry Oaks., Salisbury & Oxford: BAA, Oxford Archaeology & Wessex Archaeology
- Grimes, W.F., J. Close-Brooks, 1993, The excavation of Caesar's Camp, Heathrow, Harmondsworth, Middlesex, 1944, *Proceedings of the Prehistoric Society*, 59, 303-360
- MoW, 1949, *War and Archaeology in Britain: the excavation of ancient sites and the preservation of historic buildings*, London: HMSO
- Thompson, A., 1998, From here to eternity: Manchester airport second runway, *Rescue News*, 75, 1-2

03 CASE STUDY 1

LU Stonehenge as a site and a place in the landscape *by Kenneth Aitchison*

SCO Introduction

'Every generation has the Stonehenge it deserves – or desires' (Hawkes, 1967). Jacquetta Hawkes' well-known quote was actually discussing the recognition and detailed examination of solar and astronomical alignments at Stonehenge in the 1960s, but it has remained retrospectively true since.

Stonehenge is a henge monument (the class of monuments takes its name from this site), located in the southern English county of Wiltshire. It is formed of a series of stone settings within a circular enclosure with an external bank (unusually, the bank is inside, rather than outside, an associated ditch); uniquely, fifteen of these stones are arranged as 'trilithons', two upright stones capped by a third lintel stone. The earliest identified human activities at the site date from the Neolithic (early fourth millennium BC).

Historically, the site has attracted visitors and speculation since Henry of Huntingdon described the place in a medieval history of England, written in about AD 1130. It subsequently gained a place in mythic lore, particularly Arthurian verse romances which often credit the magician Merlin as the monument's builder. In the seventeenth century, John Aubrey and William Stukeley popularised the idea that the monument had been a temple raised bydruids (a priestly caste described by Julius Caesar in the first century BC).

English Heritage, as the state's agency, owns the small parcel of land (15 ha) on which the actual site sits – this was given to the nation by a private owner in 1918 (who received a knighthood in return [Chippendale 1990, 16]), and 700 hectares of land around this (most of which was bought by public subscription in 1927) belong to the National Trust, a non-state charity which has committed to protecting and managing the site's environs 'in perpetuity'.

The site was inscribed on the very first Schedule of Ancient Monuments [cross ref – CS 1882 Ancient Monuments Act] and was first investigated archaeologically in 1901. Its legal standing has meant that relatively little invasive archaeological work has been carried out at the site since, but vast amounts of archaeological and pseudo-archaeological theory has developed concerning the site, its history and its place in the landscape. The identity of its 'builders' has long remained a popular topic for those who reject the interpretations of mainstream academic archaeology.

The site truly has iconic status – the image of a trilithon has become visual shorthand for 'archaeology', and indeed by one measure, the site is more popular than the subject itself: searches on google.co.uk on 20th December 2011 gave 20,100,000 hits for 'Stonehenge', but only 10,700,000 for 'archaeology'.

SCO Case study – The Battle of the Beanfield

From the 1920s, crowds came to the monument on midsummer mornings, partly to watch the sunrise and partly to watch the activities of the neo-pagan modern 'Druids', who consider themselves to be the heirs to the pre-Roman Druids that Stukeley thought had built the monument (the first record of Druids holding meeting at the stones is from 1905 [Chippendale 1990, 29]).

A popular music festival was held at the site from 1974 onwards, and by 1983, there were over 800,000 visitors per year to the site, with a particular concentration of visitors wanting to be at the stones for the festival, which was held around thetime of the summer solstice.

Access to the stones was becoming increasingly difficult, with contested interpretations and perceived appropriation becoming matters of dispute.After disturbances at the 1984 festival, the National Trust and English Heritage declared that no festival would be allowed in 1985. The site was fenced off with barbed wire, a legally-enforceable 'exclusion zone' was established four miles (6.4 km) around Stonehenge, and a heavy police presence intended to dissuade would-be festival goers from attending.

During the afternoon of 1st June 1985 a convoy of 140 vehicles carrying approximately 450 people which was headed for Stonehenge was stopped at a police road block 11 km from the site. It was then contained in a field before being attacked by up to 1000 police officers in what became known as 'The Battle of the Beanfield'. Almost all of the members of the convoy were arrested, and numerous eye-witness accounts reported the police using violent tactics against men, women and children, including pregnant women (Worthington, 2005). The police were employing tactics that had been developed during the 1984-85 Miners' Strike, the longest and bitterest industrial dispute in late twentieth century Britain.

The police denied all of the allegations against them, and because they had been wearing riot gear without distinguishing numbers it was almost impossible for individual police officers to be prosecuted. However, six years later, 21 people won cases against the police force (Wiltshire Police) for wrongful arrest, assault and criminal damage as a result of the damage to themselves and their property.

A further 200 arrests took place in 1986, at a time when Douglas Hurd, the then Home Secretary, described the travellers as 'nothing more than a band of medieval brigands who have no respect for the law or the rights of others', and on June 5th, Margaret Thatcher told the nation that her government was 'only too delighted to do anything we can to make life difficult for such things as hippy convoys' (Carey 1995).

By 1987 plans to hold further Festivals had been abandoned. English Heritage's ban on access to the stones remained in place until 2000.

SCO Technical Discussion

Issues relating to Stonehenge are common with other archaeological sites where the right of access is contested.

'On one side are those that argue that the site is Britain's best and most important prehistoric monument, part of a World Heritage Site, and so should be easily accessible to the public with appropriate explanations of what is known about it. On the other side are those who argue that it is all so important and precious that nobody should be allowed near the good bits in case they damage them in some way, and that if people really want to see it then the infrastructure to transport them around must be so well hidden that it does not spoil any views or get too close to the stones' (Darvill 1999, 312).

Following the very public confrontations of the 1980s over access to Stonehenge, key decision-making responsibilities continue to lie with two organisations, English Heritage and the National Trust, who have to ensure that their purposes – which are to both protect sites and to promote public appreciation –are delivered for the public benefit.

English Heritage is the main advisory bodyto the Government on all matters concerning theconservation of England's historic environment. The body was 'created to secure the preservation and enhancement of the man-made heritage of England for the benefit of future generations, and to encourage people to enjoy and understand their historic environment' (English Heritage no date). English Heritage is (on the Government's behalf) the owner of the stones at Stonehenge.

The National Trust wasfounded in 1895, and was incorporated by the National Trust Act 1907 topromote 'the permanent preservation for the benefit of the nation of lands… of beauty or historic interest'. A keyaspect of the 1907 Act is that land placed under theNational Trust's ownership can be declared 'inalienable'.This is the case for the original 587 hectares of the Trust's estate surrounding the stones at Stonehenge. Such inalienable land cannot be disposed of by the National Trust except through special parliamentary procedure.

During the 1990s, there was little public action by English Heritage or the National Trust to reorganise rights of access to Stonehenge, until English Heritage published a Management Plan in 2000 (EH 2000), which proposed the replacement of the visitor centre, the closure of one of the roads immediately beside the site and concealing the other adjacent road (A303) in a tunnel.

This immediately led to considerable public outcry; as well as concerns over the potential impact of such a tunnel development (which would have been constructed using a 'cut and cover' approach, which would have effectively opened a 2.9 km trench across the landscape), there was potential for mass protest. In the 1990s, there were a series of very public protests against the construction of new roads, and a similar protest at Stonehenge would have had the potential to be conflagratory with many of the anti-roads protesters sharing ideas and attitudes with the travellers who were confronted by the police at Stonehenge in the 1980s.

Subsequently, after a series of reviews, in December 2007, the Government announced that 'there are no acceptable alternatives to the 2.1 km bored tunnel scheme promoted by the Highways Agency'. The bored tunnel would have less immediate impact on the archaeological landscape than the previously proposed 'cut and cover' tunnel. 'However, when set against wider objectives and priorities, the Government had concluded thatallocating more than £500 million for the implementation ofthis scheme could not be justified and would not represent best use of taxpayers' money' (Department for Transport, 2007).

In 2010, the newly elected Government initiated a series of public expenditure cuts, which included putting the plans for the Stonehenge visitor centre into abeyance (BBC News Wiltshire 2010).So both the proposed tunnel and the new visitor centre were abandoned due to costs.

The site has become more accessible since 2000, and English Heritage feels able to state that 'Visitors to the Stones generally cause few problems to farmers and landowners. However, this has not always been the case. In the 1980s, mass summer solstice gatherings were banned by the authorities'. The consequence of this, as English Heritage saw it, was that 'Many pagan and druid groups felt their rights to worship were being violated as they were prevented from entering the monument at this time, and subsequently they took the issue to the Courts' (English Heritage 2009, 9.4.1), and therefore the risk was that English Heritage was exposing itself to legal challenge.

The monument (but not the central stone circles) is now open all year round. However, this access remains firmly controlled 'There are strict rules of entry which are agreed by the interested groups in advance to ensure a safe and enjoyable environment, and promote an attitude of respect for the monument and other attendees' (English Heritage 2009, 9.4.2). A limited number of paying visitors can enter the stone circle before and after the monument is open to the general public.

SCO Conclusion

'The Stonehenge conflict, at any one time or simultaneously, has consisted, depending on one's point of view, of law and order versus chaos, goodies versus baddies. Thatcher's Britain versus the dispossessed in (and drop-outs from) its selfish society, police versus brigands, landowners versus travellers, scroungers versus worthy tax-paying folk, a watery Christianity versus a ludicrously romantic paganism, stuffy Establishment versus the liberating forces of Light, archaeologists versus lunatic fringe, youth versus anything. And the atmosphere has often been one of folk devils and the moral panic they may cause' (Fowler 1990, 145-6).

The 'moral panic' experienced by the authorities was a term used by the National Council for Civil Liberties in its report on the events of 1985 and 1986: '… the background to the convoy is a 'moral panic' in which all travellers are identified as a unified whole … and characterized as medieval brigands, carriers of Aids or hepatitis' (NCCL 1986). These undesirable, diseased threats to social order were '… classed as 'hippies', but many are too young to have been part of the San Francisco generation' (NCCL 1986). Margaret Thatcher made reference to 'hippy convoys', and the headline of the BBC's report on the Battle of the Beanfield was 'hippies clash with police' (BBC 1985).

The damage done by the festivalgoers to the archaeology of the site was minimal, particularly considering that the field in which the festival was held had been continuously deep-ploughed and even used for testing ploughs from after the second world war until the early 1970s (Fowler 1990, 147), while the 'official' side dug deep trenches across access roads to the Festival site in 1985 and 1989.

The Festival was banned on the basis that was damaging the archaeology of the Stonehenge area, but the real reasons for the ban were about a Government's desire to control the actions of a non-conformist, fringe part of society.

SCO References

- BBC 1985, *Hippies clash with police*, at *http://news.bbc.co.uk/onthisday/hi/dates/stories/june/1/newsid_2493000/2493267.stm*
- BBC News Wiltshire, 2010, *Government funding for Stonehenge visitor centre axed*, 17 June, at *http://www.bbc.co.uk/news/10343945*
- Carey, J., 1995, *A criminal culture?*, originally published in Squall *http://dreamflesh.com/essays/crimculture/*
- Chippendale, C., 1983, *Stonehenge Complete* (1st edn), London, Thames & Hudson
- Chippendale, C.,1990, The Stonehenge phenomenon, In: C. Chippendale. (ed.). *Who Owns Stonehenge?*, London. B.T. Batsford. 9-34
- Darvill, T., 1999, Reeling in the years: the past in the present, In: J. Hunter & I. Ralston, (eds), *The Archaeology of Britain: an introduction from the upper Palaeolithic to the Industrial Revolution*, Routledge: London & New York, 297-315
- Department for Transport, 2007, Written Ministerial Statement to Parliament on the A303 Stonehenge Improvement Scheme, *Hansard*, 6 December 2007
- English Heritage, No date, *History of English Heritage. http://www.english-heritage.org.uk/about/who-we-are/how-we-are-run/history-of-english-heritage/*
- English Heritage, 2000, *Stonehenge World Heritage Site Management Plan*, English Heritage. *http://www.english-heritage.org.uk/content/imported-docs/p-t/stonehengemgtplanfull.pdf*
- English Heritage, 2009, T*he Stonehenge World Heritage Site Management Plan, http://www.english-heritage.org.uk/publications/stonehenge-management-plan-2009/sh-manplano9-full-screen.pdf*
- Fowler, P.J., 1990, Stonehenge in a democratic society, In: C. Chippendale, (ed.), *Who Owns Stonehenge?*, London, B.T. Batsford,139-159
- Hawkes, J., 1967, God in the machine, *Antiquity* 41/163, 174-180
- NCCL (National Council for Civil Liberties), 1986, *Stonehenge: A Report Into the Civil Liberties Implications of the Events Relating to the Convoys of Summer 1985 and 1986,* London, NCCL
- Worthington, A. (ed.), 2005, *The Battle of the Beanfield*, London, Enabler Publications

03 CASE STUDY 2

LU *Las Médulas:* AH management based on the spatial valorization

by Rosa Martínez

SCO Introduction

Las Médulas is an archaeological site located in the province of León in the North West of Spain. It is considered to have been the largest open-cast gold mine in the Roman Empire. Its exploitation began shortly after the complete domination of Hispania by Augustus and lasted until the end of the 3rd century AD. During this time around 5,000 kg of gold were obtained using the Ruina Montium, a hydraulic mining technique described by Pliny the Elder. It consisted of digging a set of tunnels, galleries and pits through which a great mass of water was released, collapsing the mountain and allowing the workers to wash the alluvium and separate the gold from the waste.

This mining technique produces an important change in the landscape, with the total surface area transformed by mining being 1,228 hectares.
But the impact of the mining exploitation goes beyond the mining landscape itself; also to be considered are the entire hydraulic network (supply canals and reservoirs) and the impact on the local population and the development of a new territorial organisation (administration, communications, military presence, etc.).

The three elements, the mining site, the hydraulic network and the settlements, both those that existed before the Romans and those created during and after the exploitation make up what it has been defined as Zona Arqueológica de las Médulas (Archaeological Area of Las Médulas). This cultural landscape was listed by UNESCO in 1997 as a World Heritage Site.

SCO From the oblivion and legend to a cultural landscape

Fight of Northern People against Romans and its heroic resistance in the mytic mountain of Medulio.

As mining activity was never resumed after the Roman period, the remains of the exploitation became, over centuries, the object of legends and myths created by the popular culture (King Medulio, Muslims stories, etc). It was only when Renaissance scholars rediscovered the classic sources that Las Médulas started to have some historical interpretation.
It was the romantic writer Gil y Carrasco who identified the remains of the Roman mining and valued them accordingly. He also included the landscape of Las Médulas in his novels, describing and creating real itineraries for his medieval stories. Until the 1980s, it was only the mining aspect of the site which attracted the attention and the efforts of both heritage public authorities and scientific community.

The evolution of the concept and approaches of Historical Heritage, as well as the influence of landscape valorisation, have led Las Médulas to be recognised as a cultural landscape beyond its value as the remains of the greatest gold mine of the Roman Empire. Nowadays, Las Médulas is studied not only in terms of the mining technology, but as the driving force behind the transformation of local communities in terms of territorial organisation and social changes.

SCO Research projects

Since 1988 a research project has been conducted by the Institute of History of the Spanish National Research Council (CSIC), aimed at explaining the historical process of transformation and the inter-relation of political, administrative, social and territorial aspects in the impact of mining exploitation upon the landscape and the local communities. The research team Estructura Social y Territorio – Arqueología del Paisaje (Social Structure and Territory – Landscape Archaeology) has been directed since 1988 by F.- Javier Sánchez-Palencia.

One of the most recent projects developed has been the Spatial Data Infrastructure of the Archaeological Zone of Las Médulas (IDEZAM). Through a map viewer one can access scientific information on the cultural landscape of Las Médulas in a direct, dynamic and easy way.

This project is a theoretical and methodological proposal to apply a new paradigm of geomatics, Spatial Data Infrastructures (SDIS) to historical and archaeological heritage.

A map viewer is based on the Web Map Service of the Las Médulas' SDI, which has strictly followed the criteria of the European initiative INSPIRE and the recommendations of the Spanish SDI Working Group (GT IDEE) to develop SDIS in Europe and in Spain.

SCO An Archaeological park and cultural itineraries: a model of management

An archaeological park may be defined as a tool for the protection, management and socialisation of archaeological heritage. The concept is linked to the need to provide scientific research with a social dimension. It should be an open and

dynamic tool to approach the cultural, social and economical value of the cultural landscape, including and combining new research trends and new ways of communication. (Orejas, 2001: 3, 6).

This makes sense in a context where cultural and archaeological heritage is considered to be a resource. This means that the management of such heritage should be balanced between research interests, education purposes, profitability and cultural entertainment (Sanchez Palencia and Fernandez-Posse, 2001:5).

Las Médulas archaeological park was set up in 1999. Since the beginning the main problem for its management has been the different administrative and political levels involved: regional government, local council, county authority and municipalities, all of them having different responsibilities and legal implications for the territory management.
In order to coordinate all actions carried out by both public bodies and private entities a foundation was created, with responsibilities including political decisions, conservation, valorisation (promotion) and dissemination actions, as well as research projects.

As results of this coordination, an initial plan for Las Médulas archaeological park was produced which included three main points to develop:

1 Las Médulas Archaeological Information Centre which provides all the necessary information for understanding of site (chronological and geographical context, mining techniques, etc);

2 Definition of cultural itineraries, as the best way of understanding the spatial valorisation of Las Médulas. Besides the highly recommended visit to the Mirador de Orellán, a viewpoint from which one can admire one of the best panoramic views of the Las Médulas;

Three itineraries are proposed:
Itinerary 1: Before the Romans. This offers the possibility of visiting two pre-Roman hill-forts. The aim here is to learn about the life of the local communities that settled there from the 3rd century BC,
Itinerary 2: The Roman mine. Six information points along 11.5 km giving explanation of all the different mining activities: the hydraulic infrastructure, the gold washing and the evacuation of the waste material,
Itinerary 3: The villages of the Roman era. Visit to the metal-working village of Orellán, linked to the mining work;

3 Printed documentation and elaboration of archaeological guide of Las Médulas (available on the Information Centre).

In December 2010, the archaeological park was declared to be Cultural Space by the regional government of Castilla y León. This legal status will allow the regional government to assume all the responsibility in the management and protection of the space as cultural object and ensure its future protection and promotion.

SCO Conclusion

Las Médulas is a clear example of spatial valorisation. The current approach not only reviews the archaeology based on evidence and artefacts, but also goes further than studying only the mining remains, since it analyses from a historical point of view the impact of such activity upon the natural and cultural landscape of the region.

The status as World Heritage Site, together with the creation of the archaeological park, has had a remarkably impact on the tourism sector of the region. Nevertheless, the difficulties arisen from the territory management, involving several levels of public authorities, have slowed down the definition of a global strategy for preserving and promoting the landscape. The actions described above are clearly insufficient to ensure the appropriate exploitation and conservation of the site. Some of the challenges that will have to be faced in the future are to improve access to the main entrance of the park, to improve and increase the services for visitors as well as to control and monitor visitors to the park.

Figure 1 Panoramic view from the viewpoint

SCO References

- Gil y Carrasco, E., (ed.), 1992, *El señor de Bembibre.* El Lago de Carucedo Valladolid, Ambito
- Orejas Saco Ddel Valle, A., 2001, Los parques arqueológicos y el paisaje como patrimonio In: *Arqueoweb*,3. (Online) Available a *http://www.ucm.es/info/arqueoweb/numero3_1/conjunto3_1.htm*
- Sanchez-Palencia, F.J., M.D. Fernandez-Posse, 2001, Las médulas como paisaje cultural. Tinerarios por el parquearqueológico In: *Arqueoweb*, 3, (online) Available at *http://www.ucm.es/info/arqueoweb/numero3_1/conjunto3_1.htm*
- Sanchez-Palencia, F.J., M.D. Fernandez-Posse, J. Fernandez Manzano, A. Orejas, 1999, *La Zona Arqueológica de Las Médulas (León).* Guía Arqueológica Salamanca, Junta de Castilla y León – Instituto de Estudios Bercianos
- Sanchez-Palencia, F.J.,(ed.), 2000, *Las Médulas (León). Un paisaje cultural en la Asturia Augustana* (Las Médulas (León), León, Instituto Leonés de Cultura

- *www.fundacionlasmedulas.com*
- *www.idezam.es*

03 CASE STUDY 3

LU Landscape archaeology in Midden-Delfland *by Heleen van Londen*

SCO A covered Roman landscape in the western Netherlands

The Midden-Delfland region in the Netherlands is an example of a layered historical-archaeological landscape from the Neolithic to the present day. These layers are the result of dynamic land formation by the sea and peat growth. Only the younger layers are visible to the untrained eye. Due to the massive pressure of development in the metropolitan west, these invisible landscapes are very vulnerable. It is extremely difficult to find protective measures that match the scale of old landscapes. At best the clearly defined areas like settlements get a chance to be preserved. During a research programme organised by the University of Amsterdam (1991-1999) attention was given to integrating the archaeologically traced Roman landscape in the new planning designs. Archaeological fieldwork was combined with activities in the realm of planning on a daily basis. At present, large areas of the Roman landscape are incorporated in present day land use. And new development schemes are already planned for the future. Planning is an ongoing business and as a result heritage managers must adjust to constant change of landscape. But then again, landscape has been designed over numerous centuries. Among the new plans is an initiative to flood a few polders and create a large water basin. The water pressure in the west is increasing due to climate change. Water management remains a vital function in the area.

SCO Roman land division

It is generally believed that Roman land division is not represented in the Dutch archaeological record with the possible exception of the province of Limburg. However, long-term research of the Roman Landscape in Midden-Delfland near Delft and Rotterdam gives evidence for the presence of a systematic and large-scale field system on clay soils extending well into the fenland areas from the second century onwards. Through the mapping of these field systems, analysis could be done on the character of the systematic approach. Field systems were oriented along the winding creeks and stretch

over vast areas forming a Roman reclamation of the wetlands north of the Meuse estuary close to the capital of the Cananefates, Forum Hadriani. Moreover, the major ditches of the field system are often found placed directly over the trajectory of channels, thereby pointing to the usage of the natural drainage towards the sea. Clear patterns were found in land division that show the use of the Golden Section ratio. The Golden Section divides a line of unit length in the ratio 0.382: 0.618. The ratio can be constructed in various ways, such as the pentagram, the 'golden triangle' or the 'golden rectangle'. The ratio allows natural formations to be followed, as a precondition for drainage, and also allow the use of normal units of Roman land division, such as the actus. This hypothesis implies that use of the Golden Section may be seen as a land division strategy of a wetland area. The appearance of the field systems in the second century coincides with the large-scale restructuring of the Limes road and the heightened status of Forum Hadriani. The reclamation of the wetland area is believed to be part of centralised planning allowing for the raising of taxes and is closely related to the role of the region's capital.

SCO Wetlands

Roman authors who describe the coastal landscape in the Netherlands focus on the extreme wetland conditions. Caius Plinius Secundus (AD 23-79) who served in the Army under Corbulo mentions that the sea washed over land twice a day with huge waves and continues that one could very well wonder if the soil belonged to land or sea (Hist. Nat. XVI 2 e.g.).

This wetland character can still be appreciated by looking at the satellite shot of the Meuse delta and Rotterdam harbour Directly north of the Meuse estuary lie fenlands cut by several creek systems. The creeks are formed by transgressions and as such bear witness to the forces of the sea. Tacitus (AD 55-120) writes about the Meuse estuary and refers to it as the os immensum - the gigantic delta (Ann. II 6). And so, the image is created of a vast marshland area behind the dunes intersected by river deltas of the Scheldt, Meuse and Rhine.

SCO Excavations

From 1991 until 1999, within the framework of rural planning by the government, several large-scale excavations and surveys were conducted by the Amsterdam Archaeological Centre of the University of Amsterdam.

Midden-Delfland is wedged in between the cities of Delft, Rotterdam, Vlaardingen, Naaldwijk and Rijswijk and measures about 6,700 hectares. The land was traditionally used for cattle farming and greenhouse agriculture, but has recently become an area for nature development and recreation. In the 1970s and early 80s the government set out to protect the green character against the growth of the cities and this marked the beginning of large-scale reconstruction of rural land. The pastures bordering the city limits were to be linked to them and changed into woodlands, golf courses and small lakes. Vast areas were to be covered with glass to modernise greenhouse production.

When the research by the University of Amsterdam started in 1991 the assignment was to excavate five Roman Native sites. Since the early 1970s the research tradition in Dutch archaeology has been focussed on long term regional research, so in this case research was confined to settlement sites only for the first year. After that, areas measuring 70 hectares or more were examined, looking into the sites as well as the surroundings. As a result, the research was directed towards the theme of cultural landscapes. The wealth of evidence that was collected on the Roman landscape made this strategic turn a logical step.

The fenlands in the vicinity of Rotterdam were occupied during the Iron Age. Many settlements have been found and settlement continues well into the early Roman Period of the first century AD. However, from the middle of the first century onwards settlement moved towards the creeks of the Gantel system that were fossilized by then. The fenlands became increasingly wet and the creeks changed into ribbons of settlement. From the first century until the third century field systems were developed in order to drain the land. The second and third century landscape is characterised by systematic reclamation. Many ditches were dug for the purpose of water management, but also for land division.

After analysing the major development phase of the Roman period field system, it is clear that the general measurement unit of Roman land division, the Actus (35.5m), was used. Apart from that, another pattern was found, the use of the Golden Section ratio. The use of the Golden Section in Roman land division is shown prior on the bronze map fragment (forma) of Lacimurga in Spain.

> ***Animation***
Midden-Delfland: Lage Abtwoudse polder. A close-knit web of ditches dominates the plan. Roman period ditches are shown in red, the creeks are a light grey. Research trenches are projected in dark grey. There are differences in complexity although ditches are found throughout the area. The plan shows a concentration of smaller fields set within an extensive wider field system. It seems that there is a centre versus periphery in the order of fields. The field system has distinct orientations related to the natural landscape elements present. At the point where two levees were split, two according orientations were found in the field system. Settlements are located on the north-eastern creek every 500 metres.
The Roman period landscape in Midden-Delfland is a covered by sediments dating to the late medieval period. Our present day environment is still characterised by late medieval polders. The topography in clearly shows the long stretches of NNE-SSW oriented fields.
It can be concluded that the local landscape history tells about long term reclamation, water management and agricultural use. This landscape characterisation must be understood within the context of typical wetland conditions.
A pair of dividers dating to the Roman period, found at the native settlement in Schiedam Polderweg.
Midden-Delfland. Woudse Polder. The Roman settlement visible in the right hand corner is connected to an extended field system illustrated by a long ditch leading to the horizon.

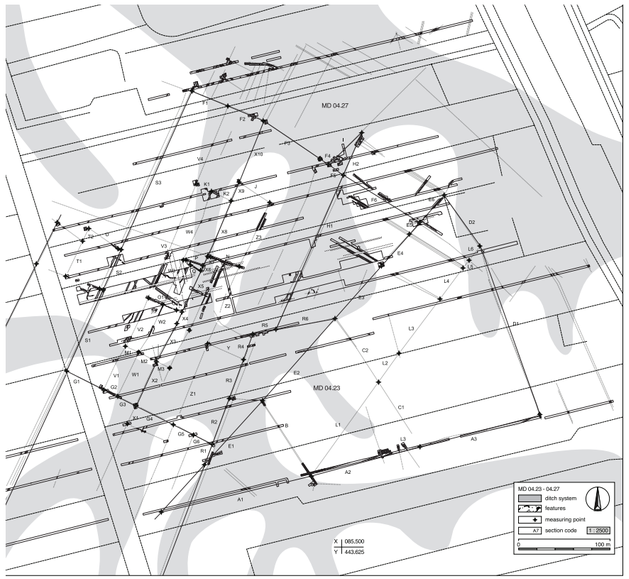


Figure 1 Midden-Delfland: Lage Abtwoudse polder. A close-knit web of ditches dominates the plan. Roman period ditches are shown in red, the creeks is a light grey.

SCO References

- Clavel-Lévêque, M., 1993, Une forma à l'échelle: le fragment de Lacimurga, *Estudios de la Antigüedad*, 6/7, 175-182
- Londen, van, H., 2001, Landscape and water management: Midden-Delfand, a region south of the Limes, In: T. Grünewald (ed.), *Germania Inferior, Besiedlung, Gesellschaft und Wirtschaft an der Grenze der römisch-germanischen Welt*, Berlin/New York, 169-185
- Londen, van, H., 2006, *Midden-Delfland, The Roman Native Landscape Past and Present*, Amsterdam (dissertation University of Amsterdam)
- Tacitus, *Annales*, II, 6
- Plinius, *Historia Naturalis*, XVI, 2

04 CASE STUDY 1

LU Aerial photography and heritage management in West-Friesland

by Marjolijn Kok

SCO Introduction

In this learning unit we will look at how aerial photography can be used to assess the influence of land consolidation on archaeological remains. The case study focusses on the region of West-Friesland in the Netherlands.

Willy Metz studied in Cambridge and was taught the interpretation of aerial photography by professor St Joseph, was then asked to organise aerial photography at the archaeology department of the University of Amsterdam. Her work (including a dissertation) led to the recognition that aerial photography could be used as a tool in Dutch archaeological heritage management. The case-study presented here is based on her work. Unfortunately with a specialised technique like aerial photography the widespread application of the method can be closely linked to one person; while Metz did everything she could to spread her knowledge and educate others in the field of aerial photography, after she left the profession aerial photography came to a near standstill in Dutch archaeology. Another development at the start of this century has led to a reduction in the popularity of aerial photography. Through aerial measurements the height of the ground level of the entire Netherlands has been measured and compiled into a map (Actuele Hoogte Kaart AHN). This new tool, which is freely available, has taken prominence in survey and monitoring techniques. As the AHN-map gives a detailed image of the landscape, archaeological features and old landscapes can be detected. However, this only applies to archaeological features that leave height differences in the landscape. Aerial photography can also be used to examine crop and soil marks and should not be forgotten. With this learning unit we hope to revive an interest in aerial photography in the Netherlands and in general show its potential as a non-destructive monitoring and surveying tool.

SCO Case study – West-Friesland

Large scale land consolidation has taken place in West-Friesland from the early 1960s until the present day. From the start it was recognised that land consolidation posed a threat to the archaeological remains in the area, especially as it was often combined with the flattening of the landscape and intensification of agricultural practice. It was thought that after the land consolidation had taken place almost all of the archaeological remains would be destroyed. Aerial photography was seen as an important tool to monitor this development, especially as its outcome can be tested against other survey techniques and excavations. The interesting outcome of the research was the assessment that although destruction took place there were still a reasonable amount of archaeological remains present, which needed management in the future.

SCO History of aerial photography in the area

The oldest aerial photographs of the area were made in the 1930s for cartographic purposes. These photographs sometimes show archaeological features.

During the Second World War the RAF took aerial photos for strategic purposes. They did not wait for optimal conditions but took aerial photographs whenever possible. This has led to some unique images as the conditions during the war led to exceptional situations. For example, some areas were flooded (inundation) for strategic goals, but sometimes also due to the lack of pumping facilities. Old water channels became visible in this way. Furthermore the photographs were taken throughout the year which made the winter pictures with long shadows and/or snow/frost suitable for the study of archaeological features shown in micro-relief.

In 1950 Wensink discovered five tumuli between the three tumuli Van Giffen had excavated in 1949 at Grootebroek. Wensink used aerial photos taken by cartographers in the 1930s.

In 1956/7 van Giffen used photos taken from a kite for illustrative purposes.

During the late 1950s and 60s a water tower was used to visually scan the area for archaeological remains and as a platform to take photographs of excavations.

In 1963 Ente, while researching the soil conditions, discovered old ditches on aerial photos taken by the RAF
In the 1960s some aerial photos were taken. The main purpose was to photograph excavations.

From 1974 until 1993 regular flights were made by the University of Amsterdam to systematically survey the area through the use of aerial photography. Other parts of the Netherlands were also surveyed.
After the University of Amsterdam stopped undertaking aerial photography this aspect of archaeological survey has become rare in Dutch archaeology as a whole.

SCO pecific conditions

There are several reasons why aerial photography in West-Friesland is especially useful.

1 The discontinuity of settlement. In prehistory habitation only took place for relatively short period, followed by a long period of less intensive or no use. Aerial photos therefore show only the traces left of a specific period (Middle to Late Bronze Age) with no disturbances dating from later periods,

2 Lack of sedimentation in the area has led to the close proximity of archaeological features to the surface. A later thick peat covering has shielded the features from erosion but has mostly disappeared in recent centuries,

3 The medieval field systems had a different orientation and structure to the earlier features, which make them easily distinguishable from the prehistoric remains,

4 The geological subsoil is favourable for soil marks which can be distinguished on aerial photographs,

5 The land use is mainly pasture. Since aerial photography has taken place the region is gradually moving towards agricultural cultivation. Old photos can therefore be used to monitor this process.

> ***Animation***
> Shadow marks occur when the sun is low and slight elevations or depressions in the landscape stand out. Shadow marks are especially useful for the detection of old field systems and the prehistoric landscape. The RAF aerial photographs are best suited for detecting this type of mark as they were taken before many areas were flattened for cultivation.
> Snow marks occur when there is a light dusting of snow which has started to melt but remains visible in depressions. Snow marks are of limited interest because of the few days with snow each year, and when it does snow flying conditions are often poor. There are only a few photographs with snow marks which show field systems.
> Crop marks occur where the features underneath the surface result in different humidity conditions and alter the growth of crops. Crop marks do not often occur in West-Friesland due to the fairly large amount of water used for sprinkling in dry periods. Furthermore the types of plants used for agriculture in this area are not prone to create crop marks.
> Soil marks occur when archaeological features are a different colour from the general soil and erosion or ploughing makes these different colours visible.
> Soil marks are the most useful type of mark to detect prehistoric traces in West-Friesland due to the type of soil and the activities that have taken place during the land consolidation. Most archaeological features are dark and the natural soil has a light colour, which give a good contrast in the images taken.

SCO Archaeological heritage management

The advantage of aerial photographical survey is that a relatively large area can be researched for a fairly low cost in a short time in comparison with fieldwalking or excavation, especially in areas where archaeological knowledge is limited. In West-Friesland it became clear through the use of aerial photography that there were more archaeological remains than previously recognised. It also showed that where land consolidation had taken place in combination with deep ploughing and flattening of the land archaeological remains were badly damaged.

In areas that were still undergoing the process of land consolidation more informed decisions could be made regarding the protection or excavation of archaeological remains. Furthermore the effects of (deep) ploughing were made visible. For heritage management an important effect was that there was visual documentation of many sites in the region. Some fields were designated as archaeological monuments. This often means that the cultivation on these fields has some restrictions, for example forbidding the use of deep ploughs. On the surface it is not always easy to assess the effects that adjusting agricultural use has on the monuments.

In 1993 the State Service wanted to evaluate the state of the monuments. Aerial photography was seen as a quick and relatively cheap way to achieve this. Flights were carried out and fortunately most monuments were still in good condition. However, some sites showed clear signs of deep ploughing or land flattening and intensive use (including the building of agricultural sheds). Action could be undertaken with the photographical evidence and some of the monuments were able to be saved from further destruction.

As this case-study shows, when conditions are right aerial photography can be a useful tool, not only for the detection of sites, but also for the monitoring of monuments. Aerial photography can be used to record the state of a monument over time. It gives a clear reference which can also be used in legal disputes concerning land-use over and around archaeological monuments. Furthermore, an aerial photograph (especially with clear soil marks) often appeals to the public and can be used to enhance wider knowledge of and the commitment to the archaeological monuments. This is especially relevant for the landowners who may not be completely aware of the archaeological remains present in their fields.

> SCO Test

SCO References

Metz, W.H. 1993. Luchtfoto-archeologie in oostelijk West-Friesland. Mogelijkheden en resultaten van archeologische Remote Sensing in een verdwijnend prehistorisch cultuurlandschap. Amsterdam, thesis (PhD).
Metz, W.H. 1997. Aerial Archaeology an Indispensible Tool in Prospecting, Monitoring and Protecting the Soil Archive in the Netherlands. In: W.J.H. Willems, H. Kars and D.P. Hallewas eds. Archaeological Heritage Management in the Netherlands. Fifty Years State Service for Archaeological Investigations. Amersfoort, 192-216.

→ **LU** Further Reading

Seuer, C. 2006. Remote sensing voor archeologische prospectie en monitoring. RAAP-rapport 1261, Amsterdam.
Brophy, K. and Cowley, D. (eds). 2005. From the air: understanding aerial archaeology.
London: The History Press Ltd. Riley, D. N. 1987. Air photography and archaeology. University of Pennsylvania.

http://www.kennislink.nl/publicaties/remote-sensing-in-archeologie
http://www.decars.nl
http://www.rafluchtfoto.nl
http://www.watwaswaar.nl

04 CASE STUDY 2

LU Segeda Archaeological Area (Spain) *by Juan Gregorio Rejas Ayuga*

SCO Introduction

In this unit we will see how different methods of aerial prospection can help to detect buried structures and support archaeological excavations. The case study refers to the archaeological area of Segeda, in the northern centre of Spain.

The use of photographs from the air with archaeological purposes has been explored since the very beginning of the history of photography. In recent decades, in addition to digital photography, new aerial sensors, frame cameras and scanners have been developed. These do not only take images of the Visible Electromagnetic Spectrum (VIS), the portion of the electromagnetic spectrum that can be detected by the human eye; but also allow data to be obtained in other windows of the emissivity spectrum far beyond the human response region such as Near Infrared (NIR) and Short Wavelength Infrared (SWIR) of the Reflectivity Spectrum, as well as Thermal Images (TIR). This has expanded the application of these technologies to archaeological research, with their use facilitates the processes of detecting, mapping, delimiting, representing and studying non-visible archaeological heritage over large areas.

SCO Segeda

Segeda Archaeological Area is in Zaragoza province. Classical sources describe the historical importance of the Celtiberian town, with the enlargement of city and its walls given as the reason for the war with Rome in 153 BC (Apiano Iber., 45), which at that time was expanding its influence in the Iberian Peninsula. The city was abandoned and a new settlement was built on a nearby site under Roman influence (Segeda II).

Segeda is an interesting area for the application of aerial survey technologies because of the large extent of the area (around 40ha), the location of the settlements and the typological variety of the remains and materials used (gypsum, limestone, quartzite, adobe, etc.), as well as the size and range of building elements (structural walls, perimeter and dividing walls, mosaic, tiling, etc.) Thus, information on large areas as well as high resolution spatial and spectral data are needed.

However, the most interesting aspect in the assessment of passive and active aerial technologies is the different thickness of the deposits covering archaeological structures: from less than 30cm to more than 2m as in Area 3 of Segeda I. (Burillo 2006).

Hence, regarding aerial survey technologies, this archaeological site is a suitable experimental area for developing and testing different methodologies, since its accessibility and the incipient state of the excavations, allows comparisons to be made with the results with the on-going archaeological fieldwork.

SCO Aerial survey methodology in Segeda

The strategy used takes into account the micro-, medium- and large-scale, focusing on artefacts, the site and the region. Multisource data have been retrieved accordingly: images obtained with different devices placed on aerial platforms. The aim was to spatially correlate the archaeological elements with bio-physical parameters, which are mainly obtained from materials' reflectivity and the emissivity of land coverings. According to this, and the necessity for the Segeda project to have historical and updated information to support the excavation process across the whole area, aerial survey has been carried out since 2005 using passive (digital camera and hyperspectral sensors) and active technologies (SAR – Synthetic Aperture Radar), as well as combining them with land methods (spectrometry and geophysical technologies). The study carried out focused mainly in thermal spectrum, since according to previous experience (Farjas et al. 2003; Rejas et al. 2006), this is where one may better distinguish phenomena affecting buried archaeological structures.

Figure 1 Aerial Orthophoto of Segeda i, resolution 0.5 m

SCO Specific technologies

Aerial digital photography and aerial hyperspectral images have been obtained from Segeda. Photographs have a spatial resolution of 0.5 m and the hyperspectral data set corresponds to 80 image bands in the electromagnetic spectrum, 20 in VIS, 40 in NIR-SWIR and 20 in TIR. Spatial resolution of these images is 3.5m, in a land strip 2,700m wide and 20 km long. The aim is to combine the spectral information from hyperspectral data with the detail of the aerial photographs. Aiming to map buried or partially buried archaeological remains, two different analyses of the data have been carried out:

First, spectral anomalies in the ground have been identified using a thermal index (Rejas et al. 2006) based on the capacity of the thermal bands to separate this type of spectral clusters. Thanks to this analysis, the walls of Segeda Roman city (Segeda II), together with the cardus and decumanus maximus were identified. Also, a thermal anomaly has been detected which presents a round concentric pattern. Firstly, due to its location and morphology it was thought to be a Celtiberian necropolis. Subsequently, thanks to land prospection, it was dated to the Early Imperial Roman period, being confirmed as a Roman villa (Rejas et al. 2008) with significant pottery production remains. This highlights the fact that this area had not been noticed by the archaeological team. Another spectral anomaly detected corresponds to a settlement of the Titos people beside the limits of the city, and whose remains appeared 3m underground.

The second method used was a principle components analysis (PCA) focused on the photograph fused with hyperspectral images. The first four principal components of the thermal bands allowed the detection of a line with a sudden turn to the south-west, which could be identified with a fortification wall.

Other detected remains proved to be also positive, but corresponding to a latter chronology than that which the Segeda research project is focused on (Celtiberian and Roman period).

SCO Conclusion

This case study is a review of consecutive aerial survey technologies and methodologies, implemented in Segeda Archaeological Area with different types of camera and sensors. The results focus on the spatial and thermal correlation between surfaces and materials as support to the archaeological excavations. Aerial digital photographs and hyperspectral images have been combined and integrated in order to combine the main features of each data: best spatial resolution

(details accuracy) and high spectral resolution (number of electromagnetic spectrum bands) respectively.
As a result, spatial relations between archaeological elements and biophysical parameters have allowed the detection of buried or partially buried archaeological heritage elements. The research in Segeda, using aerial survey and spatial multi-source technologies, is still ongoing, since the results are validated annually thanks to the on-going archaeological excavations, and expanded with new study and archaeological areas.

SCO References

Burillo Mozota, F., 2006. 'Segeda and Rome. The historical development of a Celtiberian city-state'. Ed. L. Abad; S. Ramallo & S. Keay, Early Roman Town in Hispania Tarraconensis Journal Of Roman Archaeology. Supplementary Series Number 62, Portsmouth Rhode Island. Pp. 159-170.
Farjas M. and Rejas J.G., 2003. 'Airborne Multispectral Remote Sensing Application In Archaeological Areas'. CAA 2003, The E-way into the four Dimensions of Cultural Heritage, Vienna (Austria).
Rejas Ayuga, J.G., Burillo Mozota, F., López, R. and Farjas Abadía, M., 2006. 'Hyperspectral remote sensing application in the Celtiberian city of Segeda'. From Space to Place, 2nd International Conference on Remote Sensing Archaeology, Rome (Italy) 4-7 December 2006, BAR S1568 2006.
Rejas, J.G., Farjas, M., Burillo, F., López, R., Cano, M.A., Sáiz, M.E., Mostaza, T. and Zancajo J.J., 2008. 'Comparative archaeometric analysis through 3d laser, short range photogrammetry, and hyperspectral remote sensing applied to the Celtiberian city-state of Segeda'. 37th International Symposium on Archaeometry, Siena (Italy), May 2008.
Rejas, J.G., Burillo, F., López, R., Cano, M.A., Sáiz, M.E. and Farjas, M., 2009. 'Integrating SAR data and hyperspectral analysis for the archaeological survey of the Segeda city, Spain'. III International Conference on Remote Sensing in Archaeology, Space Time and Place 2009, 17-21 August, Tiruchirapalli (India).

- *http://www.segeda.net, website of the Segeda research project.*

05 CASE STUDY 1

LU Visibility and topography in Neolithic Falbygden, southwest Sweden *by Tony Axelsson*

SCO Introduction

Falbygden, in central Västergötland, is home to one of northern Europe's largest concentrations of megalithic graves from the Neolithic period. Roughly 250 graves from the period of about 5,300-5,000 years ago, associated with the so-called Funnel Beaker Culture, are visible as monumental constructions in the landscape. The passage graves are often located in groups, and are oriented along the landscape's characteristic projections in rows or small clusters. They are distributed over more or less all of the Falbygden limestone plateaus, but with concentrations in Karleby, Falköping, and Gökhem (for example). Often they are on low ridges or near break-points in the landscape where several types of rock meet. Falbygden is a complex natural and cultural landscape that has many properties unique for Sweden.

The passage graves of Falbygden have been subject to several studies with different approaches and aims, such as Sjögren (2003), Tilley (1996 & 1999), Axelsson (2004, 2010a & 2010b), Axelsson & May (2008) and Axelsson & Strinnholm (2003).

SCO Visibility

Through the development of GIS in the 1990s the possibilities for analysing visibility in a landscape increased. With the use of GIS it became possible to analyse large amounts of data quickly and there was an increase in papers based on different types of visibility calculations (e.g. line of sight, viewshed, multiple viewshed and cumulative viewshed) - see for example, Haas & Creamer (1993), Gaffney & Stancic (1991), Gaffney & van Leusen (1995), Lock & Harris (1996), Persson & Sjögren (2001:197ff), Sjögren (2003), von Hakwitz (2009), Wheatley (1995, 1996), Baldwin (1998), Llobera (2007 & 2006).

Originally there was perhaps too strong a belief in the possibilities of visibility analysis or, as Wheatley & Gillings (2000:12) state, '…in a sense that if you throw enough accumulated viewsheds at a problem it is bound to go away'.

Today several papers discuss both opportunities and difficulties with GIS and visibility studies, such as Kvamme (1999), Wheatley & Gillings (2000), Lock (2000) Llobera (2007) and Axelsson (2010a).

When discussing visibility one will always in some way touch upon questions regarding perception and how seeing can be culturally determined. There are studies that argue that archaeology is perhaps too 'visually-oriented' and, in many cases based on western perceptions (Axelsson 2010: chapter 6-7, Axelsson & May 2008). How a landscape is perceived is not determined solely by what is seen or not seen – our other senses play an equal role here. A great number of viewsheds will never solely solve an archaeological problem but can contribute significantly to the discussion of prehistoric landscapes.

SCO Visibility and topography

Sjögren has analysed the visibility of the passage graves on Falbygden (Sjögren & Persson 2001, Sjögren 2003). In these studies it is concluded that the graves are not located in places with maximum visibility, but on the contrary the locations can be characterised as being hidden. This analysis answers the questions of what areas are seen from the passage graves (and in reverse, from where it is possible to see the graves). To further problematise these calculations it is possible to calculate what can be termed as background visibility. The background visibility will provide a indication of how high or low visibility is in the surrounding landscape.

SCO Background visibility

In order to determine background visibility, calculations of visibility have been made from a large number of locations within the areas of interest. The points used are placed evenly within the area of analysis (in this case one point every 50 metres.). The background visibility ranges from 6.4 to 8.3 percent of the theoretical visible maximum. The visibility for the passage graves ranged from 14.1 to 29.0 percent. The parameters used are: observation height 1.7 meters, radius/distance 3000 meters and 360 degrees around the point. Calculations with a radius of only 300 meters showed that the background visibility was 51 to 52 percent and for the passage graves 59 percent. Based on these calculations one could argue that the passage graves are placed in locations with fairly higher visibility than in the nearby surroundings.

SCO Visibility in Karleby and Högstena

There are several ways of differentiate visibility in visibility analysis, see for example (Gaffney & van Leusen 1995, Wheatley & Gillings (2000). One way is to study the directionality of visibility (for procedure see Wheatley & Gillings 2000). The directionality of visibility can offer many interesting insights to where and how a monument is located. In this cases the directionality of visibility were calculated in two areas on Falbygden. The calculations were based on the same parameters as described above.

The first area is Karleby where twelve passage graves are situated. The directionality of the visibility was calculated for each of the passage graves in the area and the result was more or less the same for all of the passage graves. The visibility is directed towards northeast, east and southeast, see figure 1. In the second area, Högstena, where nine passage graves are situated, the same type of analysis were carried out but with an almost opposite result, with visibility directed towards north, southeast and west, see figure 2.

The passages of the graves are normally directed towards east or east-south-east and there have been discussions regarding whether or not the passages were pointing at special features in the landscape or in other ways related to visibility. From this analysis it as appears that the visibility depends on the topography and is not related to the direction of the passage.

The same type of calculations was made with the alteration of the radius to 300 meters (from 3000 meter). This alteration turned back a more diverse result, see figures 3 and 4.

SCO Conclusion

The conclusions from these two examples are that there is not one unified way to address directionality of visibility. It appears that visibility is a result of local topographic features rather than a conscious choice by the builders. Another conclusion worth stressing is that it seems as if visibility in the area close to the passage grave is more diverse and even more dependent upon the local topography. Visibility in these two cases appears not to have been important, at least not in such a way that it is directed in the same way all over Falbygden.

SCO References

Axelsson T
2004 Past places and African savannahs. Coast to coast - arrival: results and reflections: proceedings of the final Coast to Coast Conference, 1-5 October 2002 in Falköping, Sweden. s. 73-84
2010a Lanskap – Visuella & rumsliga relationer i Falbygdens neolitikum. Gotarc series B. Gothenburg Archaeological Theses nr 53.
2010b Fynd och visibilitetsberäkningar från Falbygdens gånggrifter. Sammanställningar framtagna i arbetet med avhandlingen: Landskap - visuella & rumsliga relationer i Falbygdens neolitikum. www.visuellalandskap.se
Axelsson, T. & May, S.
2008 Constructed Landscapes in Zoos and Heritage, International

Journal of Heritage Studies Vol. 14, No. 1, January 2008, s. 43–59
Axelsson, T. & Strinnholm, A.
2003 Beads of Belonging and Tokens of Trust. Neolithic Amber Beads from Megaliths in Sweden. Amber in Archaeology. Proceedings of the fourth international conference on amber in archaeology, Talsi 2001, sid 116-125 Riga
Baldwin, J.
1998 Applying GIS to determine mystery in landscapes. I Carver S. (red), Innovations in GIS 5. Selected Papers from the Fifth National Conference on GIS Research UK (GISRUK), School of Geography, University of Leeds, Taylor and Francis group, London, s.179-186
Gaffney, V. & Stancic, Z.
1991 GIS Approaches to Regional Analysis: A Case study of the Island of Hvar, Znanstveni Institut Filozofske Fakultete. Ljubljana.
Gaffney, V. & van Leusen, P. M.
1995 Postscript: GIS, environmental determinism and archaeology. I: Lock G. & Stancic Z., Archaeology and Geographical Information Systems: A European Perspective, Taylor and Francis, London.
Haas, J. & Creamer, W.
1993 Stress and Warfare Among the Kayenta Anasazi of the Thirteenth Century AD, Fieldiana Anthropology New Series, No 21, Field Museum of Anthropology, Chicago.
Hackwitz, K. von
2009 Längs med Hjälmarens stränder och förbi – relationen mellan den gropkeramiska kulturen och båtyxekulturen Stockholm studies in archaeology 51.
Kvamme, K. L.
1999 Recent Directions and Developments in Geographical Information Systems. I Journal of Archaeological Research Vol. 7, No. 2, 1999.
Llobera, M.
2007 Reconstructing visual landscapes. World Archaeology 39(1): 51-69.
2006 The nature of everyday experience: examples on the study of visual space. In Re-Presenting GIS (Unwin, D. Fisher, P., eds.). London: John Wiley & Sons, pp. 127-134.
Lock, G.
2000 Beyond the map. Archaeology and spatial Technologies. IOS press Amsterdam.
Lock, G. & Harris, T.
1996 Danebury revisited: An English Iron Age hillfort in a digital landscape. I. Aldenderfer M, och Maschner, H.D.G,. (red) Anthropology, Space and Geographic Information Systems, Oxford University Press New York.
Persson, P. & Sjögren, K.G
2001 Falbygdens gånggrifter. [D. 1], Undersökningar 1985-1998. Göteborg: Institutionen för arkeologi, Univ.
Sjögren K-G
2003a 'Mångfalldige uhrminnes grafvar- ': megalitgravar och samhälle i Västsverige. Diss. Göteborg : Univ., 2003.
Sjögren, Karl-Göran, T Douglas Price & Torbjörn Ahlström
2009 Megaliths and mobility in south-western Sweden. Investigating relations between a local society and its neighbours using strontium isotopes. Journal of Anthropological Archaeology 28:85-101.
Tilley C
1996 An Ethnography of the Neolithic: early prehistoric societies in southern Scandinavia. Cambridge. New studies in archaeology.
1999 The dolmens and passage graves of Sweden. An introduction and guide. London: Institute of Archaeology, University College London.
Wheatley, D.
1995 Cumulative viewshed analysis: A GIS based method for investigating intervisibility, and its archaeological application. I: Lock G. & Stancic Z. (red) Archaeology and Geographical Information Systems: A European Perspective, Taylor and Francis, London.
1996 The use of GIS to understand regional variation in earlier Neolithic Wessex. I: Maschner H. D. G. (red) New Methods, Old Problems: Geographic Information Systems in Modern Archaeological Research, Occasional Paper, no 23, Center for Archaeological Investigations, Southern Illinois University, Carbondale, s. 75-103.
Wheatley, D. & Gillings, M.
2000 Vision, Perception and GIS: developing enriched approaches to the study of archaeological visibility. I: Lock G. (red), Beyond the map. Archaeology and spatial Technologies. IOS press Amsterdam, s. 1-27.

05 CASE STUDY 2

LU GIS for heritage management by public authorities: Barcelona and Region of Murcia

by Rosa Martínez

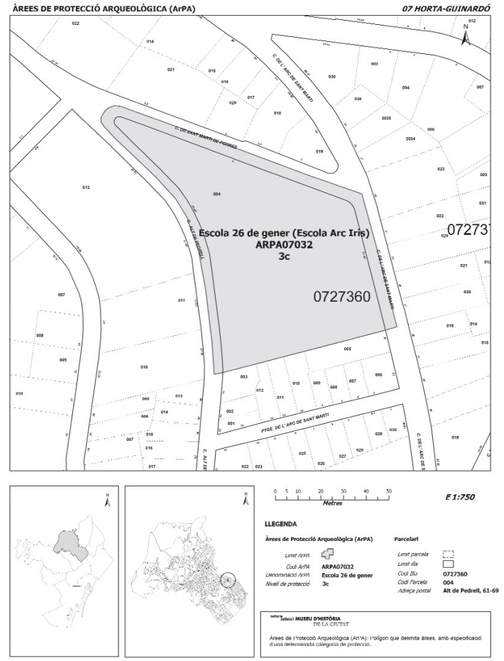
SCO Introduction

This case study analyses two GIS applications used by public authorities in Spain for archaeological heritage management. Firstly, we will describe each application, pointing out their objectives and target groups. Then, differences between the two models will be analysed taking into account the context in which each GIS was developed.
There are not many publications on archaeological GIS developed by Spanish public authorities. Together with the present examples, only Andalusia has published on the subject of its heritage GIS.

SCO SIGBARQ

Barcelona municipality has a surface of 100 km², inhabited since prehistory; the origin of the town is a Roman colony (Barcino, 15 BC). As historic city, evidence and vestiges of transformation within centuries are present in its streets and territory.

> ***Animation***
>
> Urban archaeology in Barcelona is approached by considering the entire city as one single site, aimed at defining urban space evolution. The city is not only studied via the realm of interventions in the subsoil, but also by taking into account existing buildings. A Geographic Information System known as SIGBARQ has been developed by the City History Museum of Barcelona, aimed to support Barcelona's archaeological heritage management and research. It has not been conceived just as a management tool, but also as a tool for considering city's development.
> SIGBARQ's primary use is as a tool for scientific research, analysis and management of urban space by archaeologists. Archaeological information is integrated and put into relation with other areas of town council management (infrastructures, services, security etc) As result, SIGBARQ



will become a main tool for assessing archaeological heritage in urban planning; it will facilitate archaeological interventions, planning and prevent the destruction of archaeological heritage. Finally, it is intended to be accessible for anyone, whether or not they are an archaeological professional, in order to disseminate archaeological knowledge about the city.
There are four areas of information for which cartographic and alphanumeric databases were created:

> Mapping and characteristics of archaeological heritage,
> Protection inventory,
> Archaeological urban interventions, management and monitoring,
> Urban works and development plans.

Archaeological heritage information is organised in two main groups, which are the basic units of management: Areas of archaeological knowledge. They are places where actual or potential archaeological heritage exists. Alphanumeric databases associated to archaeological elements are created from a specific thesaurus designed for Barcelona's history (chronology and typology). Complementary tables inform about the state, conservation and level of protection for every area with archaeological evidence.

Figure 1 Example of Area of archaeological protection
Source Cabral V., Miro C. (2006)

Initially, existing data have been dropped into the system, but the project plans to carry out an exhaustive documentary research (archives, historical cartography and sources, ownership documents etc), as well as a field examination of the areas in order to better understand the existing archaeological heritage in the city.
Areas of archaeological protection: These are delimited around the areas of archaeological knowledge. The system defines them by irregular polygons adapted to urban plots, occupying between 50-100 metres around areas of archaeological evidence. Updating the protection areas is a continuous process, depending on the new information generated. However, the trend is to increase the number of archaeological areas, as a result of a better knowledge of the archaeological heritage existing in the city, but reducing the size of the individual protection areas.

SCO SIPMUR

Murcia Region is located in the south-eastern coast of Spain. As with any other Mediterranean region, its heritage is rich and varied: prehistoric, Iberian, Carthaginian, Roman and Islamic sites are numerous within its territory.

The regional heritage department needed to improve the administrative management derived from excavation and archaeological heritage protection. A simple and quick system which could eliminate paper format was needed. The solution was to develop SIPMUR (Sistema de Información del Patrimonio de la Región de Murcia – Heritage Information System for Murcia Region).

The approach was to start from existing data, paper cards, documents and maps; and transform them to vector, raster and alphanumeric information. As well as giving quick access to information for administrative management, the system was also expected to analyse data in order to obtain new conclusions and approaches to existing knowledge.

Thus, according to the organisational requirements, the goals of this GIS application were:

> Administrative agility (queries, updating, avoiding inconsistencies etc.),
> Database revision (check the information available for each site),
> Improvement of data reliability (one single database),
> Spatial analysis,
> Public access (via Web Map Service).

The archaeological chart of the region was loaded into the system and divided in three sections: mapping, environment of the archaeological site and administration (bibliography, files, reports etc.) SIPMUR includes or will include other heritage databases: tangible and intangible culture, palaeontological, and architectural and industrial heritage. Other necessary information for daily management was also uploaded to the system: property register, municipal limits, topographic maps etc.

As for the spatial study the Heritage Department has mainly focused on quantitative and statistical analysis at administrative level, without interpreting the data, such as density maps of typology and interpolation: off site-archaeology, relationships between culture and soils or altitude; rock art studies, visibility, and other geostatistical analysis.

SCO Conclusions

Apart from research purposes, GIS applications are a useful tool for supporting archaeological heritage management and other decision-making processes involving archaeological heritage (infrastructures, security, urban development etc). The examples above reflect two different approaches to archaeological heritage management: the first one based on preventive archaeology, involving archaeological knowledge in the planning of development plans; the second one as a management tool for technical and administrative aspects of heritage.

SIGBARQ is aimed to contribute to a better knowledge of Barcelona's archaeological heritage, including a later research stage for identifying unknown heritage. Also, planners are considered as target group of the application, and one its goals is making archaeological information available to decision makers.

At the contrary, heritage GIS in Murcia region is mainly targeted at Heritage Department staff in order to facilitate their daily administrative tasks and improve the quality and accuracy information of regional heritage. No reference to decision-makers or planners is made, nor to archaeological heritage management.

This points out the different organisational and sociological contexts in which both applications have been developed. In the case of Barcelona, the GIS application covers an urban territory, whose historical heritage is one of the main sources of income for the city. The promoter is the historical museum of the city, which organises, coordinates and leads the archaeological research in the municipality; being responsible for the coordination of other institutions in the city for including the historical/archaeological knowledge in the urban development plans.

The regional body is, on the contrary, responsible for monitoring archaeological interventions (permissions, records of excavation, custody of material etc) as well for protecting and valuing heritage. In this case, the GIS application covers a vast territory with different human and physical geographical characteristics. Furthermore, development plans are not always carried out by the region itself but by local authorities. Murcia is a region which bases its economy upon irrigation farming and tourism, regulation of both activities, especially during the building boom, which should take into account archaeology knowledge for its development plans.

Although a powerful tool for supporting archaeological heritage management in public administrations, GIS design will depend on the organisational context in which the application is developed and/or used, as well as the heritage policy of the responsible authorities.

SCO References

CABRAL V., MIRO C. (2006) SIBARQ. Un sistema de información geográfica para la gestión e investigación del patrimonio arqueológico de Barcelona in GRAU, I. (Ed) La aplicación de los SIG en la arqueología del paisaje. Serie Arqueología. Universidad de Alicante. 2006.
CABRAL V., MIRO C. (2006) SIBARQ. Un Sistema d'informaciò geográfica per a la gestiò i la recerca del patrimoni arqueològic de Barcelona. QUARHIS. Epoca II, num. 2, 2006.
Martinez J.J (2008) El proyecto SIPMUR. ArqueoMurcia, nº3, Departamento de Patrimonio Histórico de la Región de Murcia, 2008.

05 CASE STUDY 3

LU Geographic Information System in the creation of spatial databases for the preservation and management of archaeological heritage in Poland *by Arkadiusz Klimowicz*

SCO Introduction

In order for conservation services to be carried out efficiently, their officers need access to a complete and up to date record of archaeological sites. The key issue for the formulation of conservation policy and research planning is the correct identification of archaeological heritage resources (Prinke 2002b). Since 1978 the prime method for recording archaeological sites in Poland has been the Archaeological Record of Poland (Archeologiczne Zdjecie Polski – AZP). It is mainly based on a complex method of field walking which enables the identification of archaeological resources in the country. As a result, the record of archaeological sites, which is at the disposal of the conservation offices, is made up of 'manual' catalogued cartographic documentation typical for the represented region.

In order to improve the process of acquiring, storing, processing and presenting data it has been suggested that a Geographic Information System (GIS) should be introduced. The biggest advantage of using this tool is the potential to integrate and analyse varied information as well as consolidating research outcomes into one coherent whole. This is important not only for the growth of archaeology in general, but also for the development of a complex system of research methods, which would incorporate qualitative as well as quantitative data.

SCO Current system of cataloguing archaeological heritage in Poland

The AZP programme is made up of field walking in addition to information gathered from archives, museums and

publications. All data about archaeological sites found this way are catalogued in a standardised filing system of archaeological sites (Karta Ewidencji Stanowiska Archeologicznego – KESA). This system takes into account the location, surface, function and chronology of the site in question (Zin 1981; Konopka 1981). This system of identifying archaeological sites based on the AZP model is still considered to be the standard procedure for cataloguing and documenting archaeological heritage in Poland. It has been pointed out that the system is limited by either the presence or absence of archaeological materials. However, despite this, it would not be wise to underestimate the value of data acquired this way because of the large scale on which this method is used in Poland (see Jaskanis 1996; Raczkowski 2011). Presently the key issue is processing this data in order to acquire, store, process and present it in new and more efficient ways.

SCO New technological solutions for the preservation and management of archaeological heritage

The idea of using new technologies for the preservation of archaeological heritage arose in the mid-1980s. As information and communication technologies developed, the use of new techniques by conservation offices gradually grew (Prinke 1992; 1997; 2002a; 2002b). As a result, some of them began to convert the information stored in KESA into electronic forms. This enabled more efficient work and easier access to the data. At the same time, newly generated textual forms of data did not facilitate the desired analytical possibilities due to its system limitations and the lack of access to recent cartographic data.

SCO Possibilities and goals of using Geographic Information System for the preservation and management of archaeological heritage

Contemporary dangers facing archaeological heritage, caused by urban and industrial development (especially the dynamic change in the spatial development of suburban areas and the extension of small towns, roads and motorways), can be countered by using new technologies, which are crucial for its protection. The tool which enables the problems and limitations of the 'manual' AZP database to be addressed is GIS. This method is also increasingly popular for cataloguing and documenting archaeological heritage, which significantly broadens the spectrum of the so-called geo-spatial data. These include techniques such as electronic tachometry, digital photography, geophysical methods, aerial and satellite photographs. Using GIS enables the creation of an appropriate database system for analysing and archiving various types of information. The latter is strictly connected to the possibility of integrating the outcomes of various research methods, both non-invasive as well as exploratory, and facilitating their innovation. A comprehensive and coherent method of transcribing and integrating data, enriched by cartographic information, is crucial for conservation officers in their bid to find innovative site-identification strategies and to preserve and manage archaeological heritage.

SCO Conclusion

Currently a few Polish research centres (Poznan, Lublin, Torun) are working on projects that aim at creating databases using Geographic Information System, which are directed at both researchers and conservation officers. The intention of the originators is to create a registry system for identified archaeological heritage sites (basing on the AZP system), which enables the addition of new information together with the processing of currently existing archaeological information. This system would also ensure the complementary character of both textual and (geo)spatial components. The relational character of this type of a database, based on the full integration of various types of information, enables access to all of the available information about research carried out at any given archaeological site. It also aids the definition of the forms of its preservation. Using online cartography and local development plans alongside GIS helps to identify the dangers threatening the site in question and its landscape. A result of this is the possibility that existing dangers can be addressed in a more effective manner as well as the appropriate formulation of policies for the preservation and management of archaeological heritage.

SCO References

Jaskanis D. (red.),
1996 Archeologiczne Zdjecie Polski – metoda i doswiadczenia. Próba oceny, Warszawa.
Konopka M.
1981 Instrukcja wypełniania karty ewidencji stanowiska archeologicznego, w: Konopka M., (red.), Zdjecie Archeologiczne Polski, Warszawa, 40–47.
Prinke A.
1992 The Polish National Record of Archaeological Sites: A Computerization, w: Larsen C.U., (red.), Sites & Monuments. National Archaeological Records, Nationalmuseet, Copenhagen, 89–93.
1997 Mapy numeryczne - nowe narzedzie do ochrony i zarzadzania dziedzictwem archeologicznym, w: Prinke A., Poznanskie Zeszyty Archeologiczno-Konserwatorskie, t.6, 67–69.
2002a Introducing Information Technology to Archaeological Resource Management: Towards GIS-Based SMR of Mid-Western Poland, w: García Sanjuán L., Wheatley D. W., (red.), Mapping the Future of the Past. Managing the Spatial Dimension of the European Archaeological Resource, Universidad de Sevilla, Sevilla, 85–96.
2002b Szansa na komputerową mapę archeologiczną Wielkopolski: Program mAZePa – koncepcja i stan zaawansowania, Wielkopolski Biuletyn Konserwatorski, t. 1: 158-168.
Raczkowski W.
2011 Integrating survey data – Polish AZP and beyond, In: D.C. Cowley (ed.), Heritage Management of Farmed and Forested Landscapes in Europe. Occasional Publication of the Aerial Archaeology Research Group No. 3. Brussels. 153-160.
Zin W.
1981 Zasady realizacji zdjęcia archeologicznego w Polsce, w: Konopka M., (red.), Zdjecie Archeologiczne Polski, Warszawa, 129–131

06 CASE STUDY 1

LU Republican Aerodromes of the Spanish Civil War *Ekhine García*

SCO Introduction

This case study explains how the use of different geophysical methods has aided the location and description of non-visible structures of the aerodromes of the Spanish Republic air forces in Penedès (Catalonia) during the Spanish Civil War. The prospection was carried out in the framework of a research project on all the aerodromes, known as 'El Vesper de la Gloriosa', carried out by the Estació Territorial de Recerca del Penedès (Territorial Research Station Penedès – *http://www.aviacioiguerracivil.com*)

SCO El Vesper de la Gloriosa

As a result of the loss of aerodromes in Aragon and the movement of the war front towards Catalonia, the republican air force withdrew towards aerodromes some distance from the front.

From the end of 1937 until the beginning of 1939, the republican air force moved to Penedès and built four military aerodromes, where some squadrons of fighter aircraft were established: Polikarpov I-15 Chatos (Snub-noses) and Polikarpov I-16 Moscas (Flies). The aerodromes were located in Santa Margarida i els Monjos, Santa Oliva, Pacs del Penedès and Sabadell (Torrelavit).

Local workforces participated in their construction, flattening lands and building small structures for command purposes, shelters and protection ditches. When Franco's troops arrived, the aerodromes were dismantled and/or abandoned. After the war, they became farmlands again.

Nowadays, some shelters have been rediscovered as elements of historical heritage, but although they are very recent constructions there is little documentation about them and in many cases their location is unknown, as is how they operated.

SCO Methodology

In view of the large number of sites to describe, research was based on documenting the remains that were still visible and on the location of other unknown or buried structures

through the means of aerial photograph analysis, metal detector prospection and geophysical mapping.

The areas of interest were mapped using contemporary aerial photographs, taken by Italian and German spotter planes which selected military targets and aerial images taken during the bombing to check if the targets were hit. Documentation work by the ETRP-FARE research team provided access to these civil war aerial photographs. The first step of the process was to georeference them in order to compare them with present-day maps and to locate on the ground the possible locations of structures related to the airfields.

The features described in those images were superimposed upon present-day cartography. In some cases, the aerodromes are located in current farmland, but others have been affected by urban development and the structures have been destroyed or covered by buildings. Geophysical surveys were conducted mainly on farmland locations avoiding urban areas where the structures of interest had been destroyed by modern construction.

Researchers from the Didactic Heritage group (University of Barcelona) used metal detectors to infer the functionality of the different parts of the aerodrome, according to the objects recovered: aircraft repairs, machine-gun testing area, etc. The objects were labelled and were georeferenced by GPS. Once cleaned, the characteristics of the objects were recorded in a database, including material, use, grade of conservation and weight. All this information was downloaded to a GIS application to allow it to be mapped and analysed.

Once the targets were mapped, combining the results of both aerial photographs and metal detector surveys, a geophysical survey was scheduled in order to exactly locate and map any possible structures. Researchers from SOT Prospecció Arqueològica had to decide whether to carry out a magnetic or a GPR (Ground Penetrating Radar) survey according to the needs and characteristics of each area. Due to the extent of the area to be prospected, generally the magnetic gradiometer was used to detect possible structures, which was later analysed by GPR. Nevertheless, within vineyards magnetic survey was useless, since the vines are supported by iron wire, which interferes with the signal. In these cases, visual prospection was carried out to detect bricks that had accumulated from the collapse of shelter entrances. Once an accumulation was detected, the georadar was used in order to find the cavity associated with the possible shelter. When a cavity was found, its extent was determined and the georadar used to map it and to produce a 3D visualisation of the buried shelter.

Figure 1 Location of the aerodromes

SCO Results

Thanks to metal detector prospection a lot of material related to the aerodromes' use such as bullets, aircraft pieces, and tools for repairs was recovered, although many farming tools and metal waste were also detected.

As result of the geophysical surveys, 12 unknown air-raid shelters and two ditches have been detected and mapped. The description and mapping of other buried shelters, the location of which was known, was also achieved. The best results were obtained at Pacs and Sabadell aerodromes, where the structures are located on farmland and are well preserved. By contrast, in Santa Margarida i Els Monjos and Santa Oliva the landscape has suffered important modifications and many of the structures have been destroyed or hidden by buildings. But even in these two areas, relevant information was retrieved from the areas that were still accessible.

In general, air-raid shelters have been easy to detect. On the one hand, as they are brick-built, their magnetic trace is higher than their environment, thus they provide a good contrast for magnetic survey. On the other hand, as they have not been filled, they are easily detected by GPR. Also, as the GPR provides both plan and section images, both the shape and size of shelters have been defined. The study concluded that all but one of the shelters were 'simple shelters', built within the limits of the airfield so personnel could access them quickly.

SCO Conclusions

The methodology based on the combination and integration of complementary technologies allowed for the optimised study of the aerodromes. With the georeferencing of the Civil War aerial photographs, the location of possible remains and areas of interest were determined. Thanks to the metal detector surveys, material and artefacts related to the use of the aerodromes were recovered. The GIS analysis of the resulting database, including a geostatistical analysis, allowed further understanding of the use and the geometry of the different areas of the airfields. Finally, the mapped shelters and other buried structures related to the airfields were successfully located and described by magnetic and GPR surveys, enabling the completion of the study for their documentation and possible future rehabilitation.

SCO Acknowledgements

This research project has been possible thanks to the collaboration of different research teams and individuals, listed below:

> DIDPATRI (University of Barcelona): Dr. F. Xavier Hernández, Dr. Xavier Rubio, Gemma Cardona, Tania Polonio, Maria Yubero, Ignasi Fernandez, Albert Espinal (coloborador),
> Penedès Territorial Research Station (ETRP) - Penedès Research Institute (FARE): Ramon Arnabat, David Íñiguez, David Gesalí, Daniel Sancho, Josep Solé Armajach,
> SOT Proscpecció Arqueològica: Roger Sala, Robert Tamba, Ekhine Garcia.

SCO References

Aspinall A.; Gaffney C.; Schmidt A., 2008: Magnetometry for Archaeologists. AltaMira Press

Clark A., 2000 (first published 1990): Seeing Beneath the Soil: Prospecting Methods in Archaeology. Routledge

Coma Quintana L.; Rojo Ariza M., 2010: Arqueología y museografía didáctica en los aeródromos de Guerra (1936-1939). Ebre 38, Núm. 4, pp. 165-177.

Conyers LB; Goodman D., 1997: Ground Penetrating Radar. An introduction for archaeologists. Alta Mira Press: CA.

Hernàndez Cardona, F.X., 2007: Espacios de guerra y campos de batalla. Revista Iber. Didáctica de las Ciencias Sociales, Geografía e Historia, 51, p. 11.

Íñiguez Gràcia D., 2005: El Vesper de la Gloriosa. L'aviació republicana. Calafell: Ed. Llibres de Matrícula.

Íñiguez Gràcia, D., 2007: Los aeródromos de campaña en la Guerra de España, Revista Iber. Didáctica de las Ciencias Sociales, Geografía e Historia, 51, pp. 71-87.

Rubio Campillo, X., 2009: Modelització i simulació aplicades a la recerca i interpretació de camps de batalla. Barcelona: Universitat de Barcelona. (Tesis doctoral inédita).

Sala R.; Garcia E.; Lafuente M., 2008: Prospección geofísica para la arqueología: Contra el bulldozer. Revista de Arqueología, Año nº 29, Nº 328, 2008, pp. 52-63.

Stichelbaut B., 2011: The First Thirty Kilometres of the Western Front 1914-1918: an Aerial Archaeological Approach with Historical Remote Sensing Data. Archaeological Prospection Nº18, pp. 57-66.

06 CASE STUDY 2

LU Geophysical monitoring in Heritage Management, Broekpolder *by Marjolijn Kok*

SCO Introduction

In this learning unit we examine how geophysical methods can aid the management of buried archaeological monuments in situ. A case study is presented of the buried archaeological monument at Beverwijk/Heemskerk-Broekpolder (the Netherlands).

The different types of analyses that can be used are presented. Specific measurements and results are set out which can than be used for further research into this type of archaeological heritage management.

SCO Case study – Archaeological Monument Broekpolder

In advance of the building of a housing project covering 150 hectares, an area of 5.7 hectares was designated as an archaeological monument. The surrounding area was excavated revealing features from the Bronze Age to the present day. On the basis of this research it is estimated that the monument contains a stratified landscape with fields from the Bronze Age and Early Iron Age, settlements from the Middle Iron Age until the medieval Period and traces of agricultural use up to the end of the twentieth century.

The excavations had shown an excellent degree of preservation of organic material, and preservation of metal to a somewhat lesser degree. It was immediately understood that the successful preservation of the archaeological remains would depend on knowledge of the local situation when the monument was formed and the monitoring of conditions over time.

SCO Types of geophysical methods

As several different factors influence the degradation process, several types of geophysical methods were used. It should be remembered that every situation has its own conditions and proper methods should be selected for each monument.

Nine bore holes were distributed across the monument at Broekpolder. The holes were two metres deep, and a pipe was

inserted into each one. The lower part of the pipe contained a filter that is surrounded by small pebbles. This means that water can seep into the filter and the ground water level can be measured. The upper half of the pipe was filled with a bentonite collar to prevent rain water from disturbing the ground water levels. 30cm away from the tube, electrodes were inserted into the ground. The electrodes had platinum points and were connected to a copper thread from which measurements could be taken. At these nine locations the monument was monitored for a year in order to be able to draw up a baseline report.

> ***Animation***

Soil sample

Through core boring a sequenced soil sample was taken. From these samples the depths of the different cultural layers were determined. In this way the depth of the cultural layers could be linked to the other geophysical measurements. The soil taken from the core was also tested for the amount of organic material and chalk. In this process, a sample is heated to 500°C, during which the organic material burns, resulting in a weight loss to the sample. If samples taken through time are measured it can be recognised whether the organic material content remains stable. The amount of chalk is estimated by adding dilute hydrochloric acid and monitoring the chemical reaction to judge the amount of 'fizz' (no fizz: no chalk, hearing fizz: some chalk, seeing fizz: fair amount of chalk present). The amount of chalk is of importance in terms of the buffering effect of a base environment. A stable soil acidity level helps to preserve archaeological remains.

Ground water level

The ground water level is measured by a dipper in a tube. The dipper sends the information via the internet so no fieldtrips are needed to collect data. Ground water levels are related to the amount of seepage that takes place. If the water level is high, more seepage of oxygen-poor ground water occurs. If the water level is low oxygen-rich rainwater penetrates the ground. The infiltration of oxygen-rich water influences preservation conditions negatively. High ground water levels protect organic material against oxidation.

Redox potential

The redox potential is manually measured monthly using electrodes. The response range lies between +800mV and –400mV. Measurements of +800mV indicate bad preservation conditions and measurements of -400mV indicate good preservation condition for organic material.

Acidity

The influence of acidity of the soil on the preservation of archaeological remains is not as one-sided as the other indicators. Different materials require different levels of acidity for good preservation, so therefore it is especially important that acidity levels remain stable over time. Remains that have been preserved until the point at which the measurement is taken will not degrade due to acidity levels. The acidity of the soil is measured at different depths of up to one metre using a core bore

SCO Conclusion

The measurements taken over a year have led to a base line report with recommendations for the preservation of the archaeological remains within the monument. The measurements indicated that many cultural layers were above ground water level, and therefore it was decided that the ground water levels would be heightened by creating a ditch with high water levels surrounding the monument. However, the acidity of the monument has to be monitored as changes in water levels can change the level of acidity. The soil is now a base milieu which has good preservation conditions for flax, an archaeologically rare organic material which was found during the excavations at the Broekpolder. Higher levels of acidity are beginning to be measured in some parts of the monument. This could be counteracted through the deposition of a buffering agency such as chalk.

As the highest archaeological remains are just below the surface it would be best if an additional layer of sand was deposited on the monument to protect the surface. However, the effect of this layer on the ground water levels should be monitored.

Furthermore, it has been found that monthly measurements of ground water levels are not enough to get an accurate picture. Dippers that send a measurement four times a day are therefore recommended for future monitoring projects.

It essential to understand the geological formation and cultural layers present to make accurate measurements and interpretation, as different layers have different effects on the measurements. It became clear that the amount of botanical remains present depended strongly on the type of sediment present.

To conclude, it is clear that a base-line report is needed in order to assess the conditions of an archaeological monument. This base-line report can be used as a guide for protective measures. The base-line report is also an important tool for the monitoring of the monument in the long run as new measurements can be compared and the stability of the environment can be assessed.

> SCO Test

SCO References

Van Heeringen, R.M., A. Smit and E.M. Theunissen, 2003. Archeologie in de toekomst: Nulmeting van de fysieke kwaliteit van het archeologisch monument in de Broekpolder, gemeenten Heemskerk en Beverwijk. Amersfoort.

Therkorn, L.L., E.A. Besselsen, M. Diepeveen-Jansen, S. Gerritsen, J. Kaarsemaker, M.S.M. Kok, L. Kubiak-Martens, J. Slopsma en P.C. Vos, 2009. Landscapes in the Broekpolder: excavations around a monument with aspects of the Bronze Age to the Modern, Beverwijk and Heemskerk, Noord-Holland. Amsterdam.

Theunissen, E.M. 2010. Water and the heritage landscape: preserving the resources of past cultural and natural landscapes. In: T. Bloemers, H. Kars, A. van der Valk and M. Wijnen eds. Protection and Development of the Dutch Archaeological-Historical Landscape and its European Dimension. Amsterdam, 227-231.

→ **UNIT 2** Further Reading

Kars, H. and A. Smit (eds) 2003. Handleiding fysiek behoud archeologisch erfgoed: degradatiemechanismen in sporen en materialen: monitoring van de condities van het bodemarchief. Amsterdam.

→ **LU** Value of geophysical archaeological prospection LV

08 CASE STUDY 1

LU How Historic Landscape Characterisation is used in the UK *by Kenneth Aitchison*

SCO Introduction

Historic Landscape Characterisation (HLC) is a historic environment management tool, developed by English Heritage in the early 1990s and subsequently widely applied across England and the rest of the United Kingdom. It developed from the pre-existing technique of landscape character assessment, used by landscape architects and land management agencies to assess current landscape and land use.
It is an approach and a process that recognises that the landscape itself can be historic (in addition to any historic features within it). Recognising the historic character of a landscape is intended to allow the landscape, rather than just landscape features, to be managed and protected within spatial planning processes.

Some landscapes had previously been recognised for their particular value, but this had often been for aesthetic or ecological reasons. The intentions of the developers of HLC were to move away a traditional focus on the identification of 'special' landscapes to be recorded in a national register, and towards an approach based on universal character of all landscapes, serving many conservation purposes (Fairclough, Lambrick and Hopkins 2002, 70).

As a philosophical approach, this treats landscape as material culture, not only as a palimpsest leaving traces on the present-day view, but as a resource with chronological depth. This meant that historic depth and character could be incorporated into the pre-existing process of general landscape assessment, at a time when 'There had been rapid and continual improvements in the ability to manage change to the historic environment at site, monument and building level but there had been little success in extending this work from sites to their wider landscape context or to the whole historic landscape' (ibid., 69).

HLC is a heavily map-based tool, but where traditional tools for managing the historic environment had been based primarily on point- or polygonal-based map data, leaving large areas uncategorised and thus cultural heritage 'white space',

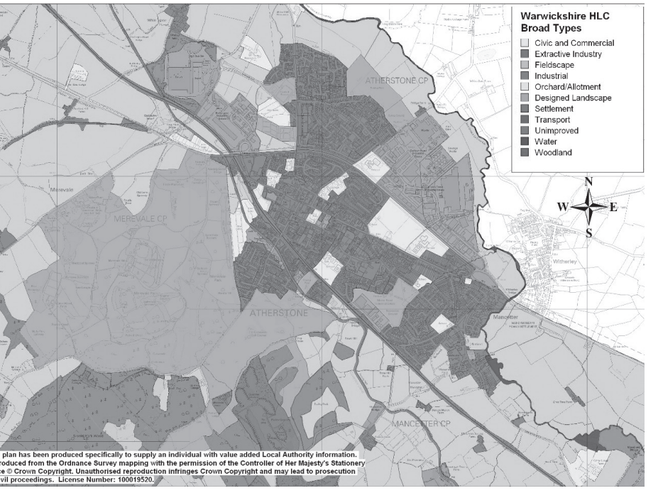


Figure 1 Example of a map used in HLC

HLC uses historical maps to build up GIS layers that categorise the entire past landscape.

SCO Case study – Historic Landscape Characterisation Methodology

The process of conducting a Historic Landscape Characterisation project will normally involve four stages of work:

> setting clear objectives for the study,
> data collection,
> analysis and characterisation,
> making policy recommendation (this does not take place with all HLC projects, but it would be normal for the outcomes of the project to have resulted in new information and understanding that can be used to guide policy).

The detailed methodology for data collection, analysis and characterisation has generally varied in detail from project to project, but whichever approach has been used HLC projects in England have all shared a number of common elements in that they all:

> assess the total landscape,
> look at landscape time depth by assessing surviving features,
> assess landscape change through history,
> assess historic origins of the landscape,
> are usually applied at 1:25,000 scale (the smallest scale that depicts field boundaries),
> apply a well defined (if variable) methodology,
> use a specified range of historic landscape types, grouped into themes or categories for example enclosed land, industrial, 20th century, or single attributes, or types for example field types, by form, patterns woodland types for example ancient woodland (Dyson-Bruce 2007).

The work is primarily carried out as a desk-based exercise, bringing together information from a basic range of sources and collating this in a GIS system.

This data is usually collected and applied on a land 'parcel' by parcel basis, with a single parcel being defined on a basis such as one individual field, and each parcel being ascribed a particular historic landscape characterisation value in each layer of the GIS.

The key datasets that are commonly used are modern Ordnance Survey (the state mapping agency) maps, the mid-19th century first edition of the Ordnance Survey and sometimes intermediary datasets, such as mid-20th century maps and aerial photography. It is important to note that efforts are not normally made to acquire every single piece of available cartographic material – this is not a detailed map regression exercise, such as might be conducted in a detailed desk-based assessment of archaeological potential, but a project to broadly (and rapidly) characterise a large region.

In some areas, and for some projects, additional data is readily available – such as post-medieval Tithe and Enclosure maps – which can be used to significantly enhance the quality of the results, but generally the factors determining what sources will be used are that they must be readily available (in paper or digital format), they must cover the area in question and they must be at an appropriate scale.

The result is then a GIS containing historically defined layers, broadly characterising the historic resource at the regional or sub-regional scale (the first HLC exercises in England were conducted at the County level). These datasets have been collected and analysed following common principles, and which then constitutes a resource which can be used to complement and support other historic datasets (such as a local planning authority's Historic Environment Record [HER]). The degree to which HLC results and HERs are integrated is variable.

SCO Technical discussion

HLC was originally intended to be a technique used in rural, or largely rural, settings – the first application of the technique was in Cornwall, one of the least densely populated counties in England. HLC works well in a rural environment, where land parcels are easily distinguished by field boundaries that often themselves have considerable chronological depth, reappearing on successive maps. The English Heritage-led HLC process only began to be applied to the major urban centres in the Midlands and North of England in the first decade of the 21st century (Quigley & Shaw 2010, 27).

Urban Historic Landscape Characterisation is possible, using essentially the same methodologies as applied in rural contexts, using generalised character types and particular character areas or zones. Given the density of historic construction in urban areas, considerable additional data can be gathered and integrated, such as georeferenced photographs of buildings, although Quigley and Shaw (2010, 48) identify a series of key differences that exist between rural and urban areas that would need to be taken into consideration when designing urban HLC projects – there is a wider diversity of urban landscapes, which have had more complicated (recent) evolutions; the role of buildings and their reuse; and the abundance of linear transport features.

The approach used in England is not universally adopted across the United Kingdom – in Scotland, the process applied is of Historic Landscape Assessment (HLA), rather than Characterisation – here the HLA process assesses the landscape as to current and historic land use as well as historic character, whereas HLC primarily assesses historic character. The HLC process has some key weaknesses – firstly, it has no statutory basis, meaning that the outcomes and recommendations of an HLC project do not have to be taken into account by local planning authorities when making spatial planning decisions. Applying it in these contexts can be difficult because the process through which the data have been collected and analysed involves a degree of subjectivity and generalisation (Fairclough & Wigley 2005, 94).

Creating and populating the HLC requires individual practitioners to have both good GIS skills and a solid understanding of the landscape they are characterising; often the first is prioritised over the second. The process also requires methodologies that can lead to conformity in data quality and content. Within an HLC, there can be great variation between phases in the development of the project's methodology, and between HLCs – even neighbouring projects – there can be great differences in nature, quality and form (Dyson-Bruce 2007).

SCO Conclusion

'HLC is part of a wider landscape study: it aims to provide an archaeologist's perspective which on its own is only part of landscape. Its results need to be considered alongside those of professionals working in other disciplines (e.g. landscape ecologists, geographers, landscape architects, historians or anthropologists), as well as taking into account the non-expert perceptions that make landscape such a powerful common heritage' (Fairclough & Wigley 2005, 93).

HLC as a tool is powerful, but not all-encompassing. It helps create new knowledge and inform action, and has been firmly endorsed by English Heritage as the national heritage agency in England. The European Landscape Convention came in to force in the UK in 2007 and English Heritage subsequently published an action plan for its implementation (2009) which prioritises the national programme of HLC as a way to 'strengthen the understanding, management and enhancement of the historic environment', as well as promoting the understanding and appreciation 'through our programme of urban and metropolitan Historic Landscape Characterisation projects'.

SCO References

Dyson-Bruce, L. 2007. 'E.5 Historic Landscape Conservation' in Gilman, P. & Newman N. (eds), Informing the Future of the Past: Guidelines for Historic Environment Records (2nd edn) http://www.ifp-plus.info/Part_E.htm#E.5 [accessed 26 September 2011]

English Heritage. 2009. European Landscape Convention – The English Heritage Action Plan for Implementation. http://www.helm.org.uk/upload/pdf/ELConv.pdf?1317215479 accessed 28th September 2011.

Fairclough, G., Lambrick, G. & Hopkins, D. 2002. 'Historic Landscape Characterisation in England and a Hampshire case study' in G. Fairclough & S. Rippon (eds) Europe's Cultural Landscape: archaeologists and the management of change. EAC Occasional Paper 2. Brussels: Europae Archaeologiae Consilium.

Fairclough, G. & Wigley, A. 2005. 'Historic Landscape Characterisation: an English approach to landscape understanding and the management of change', in M. Ruiz del Árbol & A. Orejas (eds) Landscapes as Cultural Heritage in the European Research. Proceedings of the Open Workshop, Madrid, 29th October 2004, 87-106. Madrid: Consejo Superior de Investigaciones Científicas.

Quigley, P. & Shaw, M. 2010. 'Characterization in an urban setting: the experience of the Black Country', The Historic Environment: Policy and Practice 1:1, 27-51.

→ LU Further Reading

Clarke, J., Darlington, J. and Fairclough, G. 2004. Using Historic Landscape Characterisation. English Heritage. http://www.english-heritage.org.uk/publications/using-historic-landscape-characterisation/using-historic-landscape-characterisation2004.pdf accessed 27 September 2011.

08 CASE STUDY 2

LU *Igartza:* Cultural biography of historical urban landscape *by Rosa Martínez*

sco Introduction

Igartza is an ensemble of historical buildings dated from 15th century, located in Beasain (Basque Country, Spain). A Renaissance palace, an ironworks, a mill, an inn, together with a bridge and a stone cross, are the remaining elements of the possessions of the Lord of Igartza, who founded the manor in middle ages.

Industrial development in 20th century (1953-1970) led to the degradation of cultural heritage and the loss of identity for Beasain. In the context of Franco's dictatorship, international isolation and political centralization contributed to a process in which historical centres were ignored and neglected, becoming degraded and marginalised areas.

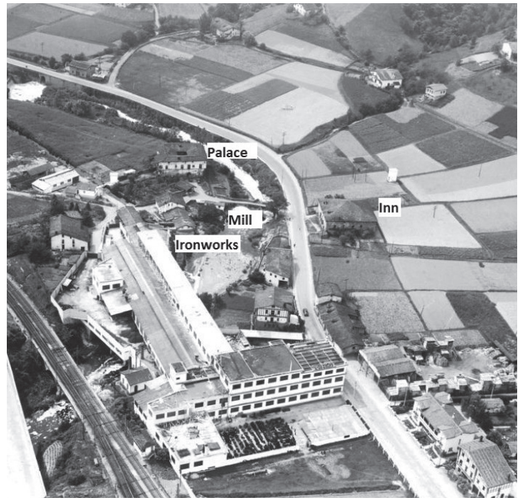
The cultural biography of this ensemble as cultural landscape was the methodology chosen to know Igartza, preserve it and make a decision on its future accordingly.

sco A landscape or a set of individual elements

Urbanisation plans for the area in 1990s were the result of the economic growth and the building boom: hundreds of new apartments buildings were to be built affecting Igartza: the ironworks were to be destroyed and most of the ensemble was to be 'eaten' by a concrete landscape.

Igartza situation was neither ideal at this moment: degraded surroundings (industrial wares and buildings, shacks, rubbish, etc.) and the historical buildings had been abandoned or collapsed. A decision had to be made on how to integrate different elements into the plans. What started as an isolated intervention to recuperate the mill in 1996 (the only element still linked to its function and to the manor) became a more ambitious project for the whole ensemble.

The decision was made to preserve Igartza as a whole, as a historical landscape integrated in the new development plan, but in a respectful way, preserving and valuing the heritage without renouncing urban necessities. As a landscape, the site regained part of the identity it had when all the architectural elements were attached to the Lord of Igartza, and approaching the ensemble as a whole meant building access and



developing surroundings in order to value the heritage through its (immediate) landscape.

sco Cultural biography

The initial scattered actions, study and intervention in the mill and the later research project and young work camps organised to recuperate the palace, were the basis upon which an integral plan for the regeneration of the entire site was conceived. This plan including all architectural elements, needed a narrative or common rationale to make a coherent proposal for integrating the heritage in the town, both physically and socially.

The cultural biography of Igartza provided this common framework: identifying changes within centuries, analysing their relation with historical contexts and economic, social and cultural processes, the different social meaning of the site for Beasain inhabitants were thus defined.

> ***Animation***

Different scales and changes analysed

> Scale: Micro: Each element separately,
> Physical changes: Changes occurred in each of the architectural elements,
> Non-physical changes: Propriety, legal status, uses and purposes,
> Scale: Medium: Igartza as cultural landscape,
> Physical changes: History of historical building (existing and disappeared), surroundings,
> Non-physical changes: Social and economic power of the Lord, relationship with tenants and the town of Beasai,
> Scale: Large: Regional scope,
> Physical changes: Landlords vs. towns, uses of the land, communications,
> Non-physical changes: Lord relation with regional and national powers, strategic importance of the site.

Figure 1 Igartza in 1996

The methodology for data retrieving was mainly archaeology and architecture of archaeology for the physical changes at the micro- and medium- scopes and historical documentation for the rest.

sco Summary of Igartza cultural biography

Before the 14th century the social context of the area was a shepherd based society living in mountains with new communities developing in the valleys.

> ***Animation***

14th century

In the context of local wars confronting landlords' interests and new local community model developing in towns, Igartza was founded with military purposes as a house-tower (typical defensive architecture in the Basque Country in this period).

15th-16th century

As the towns gained more and more influence in the territory; Igartza was reoriented to affirm the economic and social influence in the area. A palace replaced the defensive tower and different services were built such ironworks, a mill, together special houses named after their functions: Usategi (pigeon house), Zapatari (shoemaker), Erramentari (blacksmith) (today no longer existing) and Dolare (apple press, used as inn).

17th century

The owners become a distinguished courtesan family; Igartza is no longer a symbol of social power, but simply an economical resource. Personal relations with tenants disappeared and progressively professional administrators will run Igartza.

18th-19th century

The ironworks is closed; the production model is not sustainable in the new liberal and capitalist system. New lands and farms are needed due to the population increase (cultivation of corn). The palace is rented like any other property.

20th century

Due to the disappearance of primogeniture (entailed propriety), Igartza is split into independent elements; each of them is divided, modified or sold. The site definitively loses its value as a family symbol; it has now the same status as other proprieties in the area. During economical and industrial development, its value as cultural heritage is not taken into account and its original meaning and relationship with Beasain and its inhabitants is fallen into neglect. New development plans in the last decade of the century involves Igartza, however as civil society is now educated and aware of historical heritage, the ensemble is approached differently from 50 years before.

sco Conclusions

Modification of the initial development plans for preserving and valuing cultural heritage intended to creating green space, full of social value. On one side, this contributed to providing the town with an identity landscape, other than the industrial one. Igartza again became a symbol in the region, but not of a landlord but of the town.

And the other side, the works on the site had the objective of creating a landscape, not only to be admired, but also to be used and enjoyed by citizens. The palace is fully equipped for exhibitions and events (conferences, receptions, even weddings!); the ironworks and mill were scientifically reconstructed and become museums. Aiming to highlight the strategic value of Igartza in a communication network with Europe and St. James' Way, the miller's house is now a pilgrim hostel, the bridge has been renovated and old roads have been valued and restored. Finally, the inn (the apple-press house) has maintained its functionality as a 4 stars hotel.

sco References

Agirre-Mauleon, J. (Dir) (2000) Igartza. Historia y patrimonio cultural. Beasaingo paperak. Beasaingo Udalaren Aldizkaria, October 2000

Agirre-Mauleon, J., Zuleta, A. (2011) El Conjunto Histórico de Igartza (Beasain) País Vasco. Recuperando el paisaje cultural e identidad a la ciudad. IX Encuentro Internacional Gestión y Manejo de centros históricos. La Habana, 2011.

www.igartza.org

SOCIEDAD DE CIENCIAS ARANZADI (1996-2010): Aranzadiana. Summaries of the works carried out in Igartza (Beasain).

09 CASE STUDY

LU Implementation of Valletta convention in different European contexts

by A. Klimowicz, Rosa Martínez, Monique van den Dries, Kenneth Aitchison, Anders Gustafssonn & Håkan Karlsson

SCO Introduction

The European Convention on the Protection of the Archaeological Heritage (revised), commonly known as the Valletta Convention, was ratified by the UK government on 21st September 2000 and came into effect six months later, on 20th March 2001.

Its ratification in the UK did not lead to any immediate change in legislation, guidance or government policy. English Heritage, as the Government's advisors on the historic environment in England, issued a position statement which considered that '... the Convention does not require radical changes to the way in which archaeological sites are protected in this country' (English Heritage 2001). Essentially, the legislators considered that the legal system had already anticipated the requirements of the Valletta Convention before it was formally implemented.

SCO Case study – Implementation of the Valletta Convention in the UK

The matter of the Convention's full implementation was raised in Parliament in 2005, and the Minister responsible reconfirmed that the Government considered that:

'Current measures in place in the UK already meet the Convention's requirements. These include legislation such as the provisions of the Ancient Monuments and Archaeological Areas Act 1979; policy guidance e.g. Planning Policy Guidance Note 16: Archaeology and Planning; and organisations such as English Heritage and other state-funded archaeological bodies, county and local authority archaeologists' (Lammy 2005).

Concerns about the ratification of the Convention were very strongly raised by 'amateur', unpaid archaeologists, most vigorously by Current Archaeology magazine and the associated Council for Independent Archaeology, which considered the Valletta Convention to be a 'deeply worrying document [which] appears to outlaw amateur archaeology' and which regretted that 'it was only with the advent of a Socialist government that in 2000 it was finally ratified' (Council for Independent Archaeology, no date).

The professional sector, as represented by the Institute for Archaeologists, the professional association for archaeologists in the UK, welcomed the Convention's ratification, which did not immediately lead to any changes at all is professional practice.

However, the IfA has since been frustrated that its implementation – particularly Article 3, which requires destructive fieldwork to be carried out only by 'qualified, specially authorised persons' – has not led to any sort of legal control on who can be an archaeologist, such as a general licensing system. For the IfA, this would ideally be based upon individuals or organisations' experience and demonstrated ethical commitments (such as is shown by those who have gone through the process of joining the IfA, which is peer-reviewed and which has exactly such requirements).

SCO Technical Discussion

On land across England, Scotland and Wales, there is no general system of licensing the process of archaeological excavation – all that is required is the landowner's permission (with the exception of work on the small number of nationally designated Scheduled Ancient Monuments). The overwhelming majority of archaeological projects are instigated through the spatial planning process when permission is sought to change land use. This process does not place any quality control requirements upon the individuals carrying out the archaeological work, although it does have de facto post-excavation quality control requirements when the reports on their work are then submitted by the developers seeking redevelopment permission. As noted above, the existence of this system has meant that the UK Government (and national Governments in Scotland and Wales) has treated this as being sufficient to accommodate the requirements of the Convention.

In Northern Ireland, through the 1937 Ancient Monuments Act (Northern Ireland) excavations for archaeological purposes are restricted except under licence issued on behalf of the State (Foley 2006, 177) under the Historic Monuments and Archaeological Objects (NI) Order 1995. Because of this licence-granting system, Northern Ireland complies better with Article 3 of the Valletta Convention than any of the other constituent parts of the UK.

SCO Conclusion

Work on the Valletta Convention began in June 1990, with a Committee of Experts appointed by the Council of Europe and chaired by Gustav Trotzig. That committee completed its work in April 1991, and the Convention was signed by European Union Ministers in January 1992 (Wainwright 2000, 933).

Trotzig, the chair of the committee that wrote the Convention, discussed its implementation of the polluter-pays principle, and notes that the text used had to be modified in the adopted version as it had been 'too provocative for certain countries' (Trotzig 1993, 415), and that while it does require the funders to cover publication, it does not necessitate their financing of all post-fieldwork costs (ibid).

Planning Policy Guidance note 16 (PPG16 – Doe 1990) was being drafted simultaneously with both the Valletta Convention and the ICOMOS Lausanne Charter on the protection of archaeological heritage, and English Heritage's representative on the Committee of Experts that prepared Valletta was Geoff Wainwright, the then Chief Inspector of Ancient Monuments (Aitchison forthcoming). Wainwright (1992) discusses the convention in an article that is primarily about PPG16, and describes it as 'a European framework for the principles embodied in PPG16' (Wainwright 1992, 24). There is considerably philosophical overlap, in both directions, between the two key documents.

Wainwright (1992, 24) considers that Article 2.ii of the Valletta Convention – 'by making provision in the budget relating to these schemes in the same way as for the impact necessitated by environmental and regional planning precautions, for preliminary archaeological study and prospection, for a scientific summary record as well as for the full publication and recording of the findings' – 'is important as it conforms with PPG16 in casting on those responsible for development projects the burden of funding archaeological activities necessitated by those projects. Included in these costs are the excavation itself and an assessment phase'. PPG16, Lausanne and Valletta all share common characteristics – and, in the UK, '... brought about a revolution in the concept, planning and management of archaeological projects of all kinds' (Davis et al 2004, 4), as all aim to find a balance between development and preservation of the archaeological heritage, and together represent 'the development and maturing of archaeological practice' (Wainwright 1992, 25).

SCO References

Aitchison, K. (forthcoming) 'No going back – remembering when British archaeology changed forever', in Jameson, J., Eogan, J. and Aitchison, K. (eds) Training and Practice for Modern Archaeologists, New York: Springer.

Council for Independent Archaeology. No date. The Valletta Convention. http://www.independents.org.uk/valetta/index.htm accessed 30 May 2011.

Current Archaeology. 2000. 'Government to outlaw the amateurs?', Current Archaeology 174, pp.241-3.

Davis, M.J., Gdaniec, K.L.A., Brice, M., White, L., with contributions by Price, C.A.I. and Thorne, R. (2004) Mitigation of Construction Impact on Archaeological Remains, London: MOLAS for English Heritage.

DOE (Department of the Environment). 1990. Planning Policy Guidance note 16: Archaeology and Planning. London: HMSO.

English Heritage. 2001. English Heritage Position Statement on the Valletta Convention, 18th July, 2001. http://www.independents.org.uk/valetta/EHPostionStatement.htm accessed 30 May 2011.

Foley, C. 2006. 'Appendix to part two: frameworks – legislation in Northern Ireland' in Hunter & Ralston (eds), Archaeological Resource Management in the UK: an introduction. (2nd edn). Sutton Publishing, 177-178.

Lammy, D. 2005. Written Answer to Robert Key. http://www.publications.parliament.uk/pa/cm200506/cmhansrd/vo051010/text/51010112.htm#51010112.html_wqn4 accessed 30 May 2011.

Trotzig, G. 1993. 'The new European Convention on the protection of the archaeological heritage', Antiquity 67, 414-15.

Wainwright, G. 1992. 'Archaeology and planning', Conservation Bulletin 17, 23-25.

Wainwright, G.J. (2000) 'Time please', Antiquity, 74 (26), pp. 909-43.

SCO Implementation of La Valletta Convention in Spain

The active role of the Spanish delegation regarding the previous reports to the Convention – adoption and the signature of the treaty took place in 1992 – led to an assumption that there would be rapid ratification by the Spanish authorities (Querol and Martinez: 1996). However, the ratification took place only on 31st March 2011, with entry into force foreseen for October 2011.

Spanish legislation on cultural heritage has already taken into account some of the articles of the convention such as the inclusion of archaeological impact within Environmental Impact Studies. Nevertheless, other articles still need to be urgently applied such as the one referring to the use of metal detectors which is a question of major interest for the Spanish archaeological heritage. In this case, the legal frameworks that exist in each Autonomous Community shall include the necessity of prior authorisation for the use of metal detectors and other detection devices.

It should be noted that two of the main contributions of the Convention, on one side the compulsory requirement for authorisation for any archaeological excavation already exists in the Spanish legislation since 1911; and on the other side the public nature of any archaeological object found by chance or within an archaeological excavation or survey, which has to be given to the competent public authority under the Historical Heritage Law in 1985.

The future adaptation of the Spanish heritage legal framework to the Convention requires a reform to the Spanish Historical Heritage Law in order to homogenise the different regional legislations and to coordinate competences and responsibilities, as well as to establish common protection measures and adapting them to the international framework.

SCO References
Querol, M.A. and Martinez DIAZ, B (1996) El patrimonio arqueológico en la normativa internacional in Complutum Extra, 6(11), 1996: 295-306.
MANES, M. (1996) La convención de malta: hacia una arqueología europea in Complutum Extra, 6(11), 1996: 273-282.

SCO The Valletta Convention in Sweden
Sweden had an important role in the creation of the Valletta Convention. The then head of the National Heritage Board's Antiquities Department, Gustaf Trotzig, chaired the work of the Convention. In many ways the antiquarian system in Sweden was seen as a model for the Convention. From this follows that there were no really implementation of the Convention in Sweden since the Swedish antiquarian juridical system already lived up to the intentions with the Convention.

SCO References
Swedish Heritage Conservation Act (1988:950).
http://www.raa.se/cms/showdocument/documents/extern_webbplats/2009/september/kml_eng.pdf
Trotzig, Gustaf. 2001. The European Archaeologist No 15. Summer 2001.

SCO Introduction
The Act on the protection of monuments and the guardianship of monuments was approved by the Government of the Republic of Poland on 23rd July 2003. The contents of this Act are an extended version of a series of regulations stated in the European Convention on the Protection of the Archaeological Heritage (the so-called Malta Convention), taking into consideration peculiarities and rules which are valid in Poland. The Act is now the main statement of the law which regulates procedures concerning the protection and the guardianship of monuments, principles of creation of the national program of monument protection and financing of conservation, restoration and building works related to monuments. Furthermore, it defines the scope of activities and the organisation of monument protection bodies and other institutions (with special reference to self-governing bodies) which are responsible for the protection of archaeological heritage.

SCO Contents and aims
The Act essentially completes the Malta Convention and is effectively its implementation in Poland. In the spirit of the Malta Convention, the Act officially defines the nature of the archaeological heritage in the form of various kinds of monuments. Contrary to previous legal regulations in the country, it acknowledges an extended definition of archaeological objects as being surface, subterranean or underwater remains of human existence and activity, consisting of cultural layers and artefacts or their traces.

> *Animation*

Protection
The Act also regulates the scope of protection and the guardianship of archaeological objects. According to the law, monument protection in Poland particularly consists of activities undertaken by the public administration bodies in order to preserve, manage and maintain the monuments. Special stress is put on the prevention of threats and improper use of monuments. Various ways and manners of monument protection are applied on the executive level. The most common way is the so-called Register of Monuments. This comprises the listing and the location of archaeological sites in a given area. Cultural parks, historic monuments and updated land/spatial management plans are equally important means of protection.

Guardianship
According to Polish law, guardianship consists of ensuring conditions for scientific research and recording of monuments, protecting and maintaining them in the best possible condition. At the same time, permanent preservation of their value must be ensured. A person who exercises guardianship of a monument is also obliged to popularise and disseminate knowledge on the monument and its historical and cultural significance.

Figure 1 Documenting archaeological research

Amendment
Some rules of the original 2003 Act on the protection of monuments and the guardianship of monuments underwent significant changes, especially with regard to the protection of the archaeological heritage. This amendment was related to the adjustment of the legal system to the verdict of the Constitutional Tribunal, which found some regulations of the Act to be contrary to the Constitution. One of these was the clause which bound a developer of building or ground works to fully cover costs of archaeological research in the case of works at an immovable monument which was listed in the register or was under conservation protection. According to the new regulations, the law guarantees a compensation mechanism, which consists of co-financing the archaeological research and documentation from the resources of the Treasury of the State if the costs of this research exceed 2% of planned development expenses.

Ordinances
The adjustment of the Polish law to the EU law required the approval of additional supplementary regulations. From the point of view of the protection of archaeological heritage, the most important supplement is the Ordinance by the Minister of Culture of 9th June 2004 'on carrying out conservation and restoration works, building works, conservation and architectural research, as well as other activities at a monument listed in the register of monuments, archaeological research and searches for concealed or abandoned portable archaeological objects'. This document specifies the means and mechanisms for granting permission to carry out archaeological research. Furthermore, it specifies required qualifications which must be held by individuals in order to be entitled to carry out the aforementioned works.

> SCO Exercises

10 CASE STUDY 1

LU The concept of sustainable development and archaeological heritage: an outline *by Arkadiusz Klimowicz*

SCO Introduction
The concept of sustainable development is currently widely used in multiple fields, both in modern industry and science. At its core lies the ambition to shape the relations between natural resources, society and economy. It is especially beneficial in resolving disputes that arise from seemingly irresolvable conflicts between the interests of economy and the endangered natural environment. Primarily this idea was based on managing renewable and non-renewable natural resources and the problem of their limited nature, while at the same time keeping in mind economic growth demands. This concept is often referred to by different synonyms, such as constant development or eco-development.

The non-renewable character of natural resources seems to correspond to the characteristics of archaeological heritage resources and how they are endangered by the processes of industrialisation and urbanisation. Hence, the concept of sustainable development appears to be the appropriate tool for the preservation and maintenance of archaeological heritage.

SCO The concept of sustainable development
The concept of sustainable development remains not to be precisely defined to this day (Mazur-Wierzbicka 2005: 36). It has been constantly modified and challenged due to ever-changing economic, ecological and social relations. The way this term was shaped, repeatedly scrutinised and changed in meaning did not necessarily involve taking into account the interests of all of the sides in question. It is hence accepted that the concept is not straightforward, but, because of its general socio-economic goals, is implicit in character. The concept of constant development was first coined in the 1975 at the Third Meeting of the Executive Board of the United National Environment Programme.

It has been agreed that development is:
'... such a course of the inevitable and desirable economic growth, which does not significantly and permanently change the social environment, does not lead to the degradation of the biosphere and does not violate the laws of nature, economy and culture'.

The concept of sustainable development became a permanent part of international discourse thanks to the 42nd session of the UN General Assembly report 'Our Common Future'. It was the central issue tackled in the report, which exposed the growing tendency of shrinking natural resources as well as the contemporary aims of the global economy. The document states that achieving the development needed both in the present and for future generations will be possible thanks to sustainable production and consumption, the creation of appropriate systems taking environmental issues into account and providing new models of development. The observations presented in that report formed the basis for modern ways of using natural resources and caring for the environment, in order to ensure ongoing and harmonious economic development. Hence, in general, the core of sustainable development is the harmonization of relationships between economic and non-economic human activity and the natural environment, as well as shaping relations between various social groups (Mazur-Wierzbicka 2005).

Sustainable development is now one of the main aims of European politics (Kopycinska 2005; Mazur-Wierzbicka 2003). An increasingly observable trend is the use of this concept in science as well as in numerous industries. In relation to the preservation and management of archaeological heritage, the concept of sustainable development originally sought to keep the status quo as the qualitative and quantitative resources of archaeological heritage. However, in the course of time it became possible to balance conservation and development needs by shifting the focus of heritage professionals from individual sites to landscapes. This has had a profound impact on archaeological practice resulting in the process of preservation by record and interpretation as a recompense for the resource being lost through development.

A danger that faces archaeological heritage is intensive industrial and urban development, particularly the growing dynamic of spatial development of suburban areas, population growth in small towns and the intensive extension of the network of roads and motorways. In order to counter these threats, conservation services undertake strategies coherent with the concept of sustainable development. These include the simultaneous prevention of archaeological heritage degradation and the permission of harmonious economic development, whilst avoiding social tensions at the same time.

SCO Implementation of the concept of sustainable development for the preservation and management of archaeological heritage

The idea of implementing the concept of sustainable development for archaeological heritage resources is an innovative movement in protection practice. It uses knowledge in the field of relationships between society, economy and the need to preserve archaeological heritage in a positive (unchanging) condition. Particular emphasis is put on the introduction of new methods of organising and managing economic activity and maintaining social action in harmony with identified archaeological heritage sites, so as not to trigger permanent changes. This concept is characterised by a flexible approach to changes and new needs. Maintaining archaeological heritage resources and its landscapes is the priority in this context. At the same time, this is done without holding back economic, infrastructural and architectural growth. This balance is possible by respecting the existing interests of all of the sides involved. The concept of sustainable development is therefore based on the assumption that there exists a compromise solution to all conflicts between economic development and the protection of archaeological heritage resources. As a consequence of this, economic growth is fully coordinated with the aims of scientific and conservation institutions.

The implementation of sustainable development practices is based upon social awareness of the importance of preserving archaeological heritage sites as well as the will to cooperate by both sides. Just as important is maintaining the balance between social, economic and conservation aims and reaching decisions that are acceptable for all sides. In order to achieve sustainable development goals regarding archaeological heritage resources it is crucial to consider this as a corporate part of development processes. Such an approach enables decision-making on development strategies by taking into consideration economic, ecological, social, scientific and conservation aims. Only by focusing on the relationship between them and the interests of all sides can an acceptable consensus be reached.

SCO References

Kopycińska D. (ed.), 2005
Funkcjonowanie gospodarki polskiej w warunkach integracji i globalizacji. Szczecin.
Mazur-Wierzbicka E., 2003
Koncepcja zrównoważonego rozwoju w polskiej polityce społeczno-gospodarczej, w: Kopycińska D. (ed.), Państwo i rynek w gospodarce. Szczecin, s. 15-22.
Mazur-Wierzbicka E., 2005
Koncepcja zrównoważonego rozwoju jako podstawa gospodarowania środowiskiem przyrodniczym, w: Kopycińska D. (ed.), Funkcjonowanie gospodarki polskiej w warunkach integracji i globalizacji. Szczecin, s. 33-44.

10 CASE STUDY 2

LU Environmental assessment (EIA) and wind power in Sweden *by Anders Gustafsson & Håkan Karlsson*

SCO Introduction

The aim of an Environmental Impact Assessment (EIA) is to identify, describe and provide a basis for an overall assessment of the direct and indirect environmental effects and impacts of a planned activity on resource management. This assessment will be done in consultation with all stakeholders, both government agencies and organisations and private individuals and the public. The formal requirements of the law are clear with the relevant regulations and guidelines; in this case the Swedish Environmental Code, Chapter 6 & 7. The Swedish parliament has decided that the Swedish energy system shall be primarily based on renewable energy and the country's wind energy resources must be utilised. The Swedish Parliament has adopted a national planning goal for wind power which means the ambition is for annual production of 10 TWh in 2015.

Developing wind power contributes on several levels to the achievement of many of the 15 national environmental quality objectives adopted by the Swedish Parliament in November 2001, including climate impact, clean air, natural acidification, forests and good built environment. Electric power generated by renewable energy sources firstly replace electricity produced by fossil fuels and can therefore help to reduce emissions of carbon dioxide, sulphur dioxide, nitrogen oxides, methane and other pollutants.

Generally it can be said that the physical impact of a wind farm construction in relation to the archaeological heritage normally is quite easy to avoid. Often the position of the turbines can be changed to avoid conflicts and in reality there is very small physical intervention in relation to the overall development area. An English example has stated that the actual footprint of the turbines and their associated infrastructure in a windfarm area of 14 hectares may be limited to 1% to 2% of the overall area (English Heritage 2005). It is estimated that a wind turbine has a lifespan of c. 20-30 years. The turbines are quite easy to dismantle, or, if necessary, they can

be replaced with new ones. What are left if they are dismantled are usually different forms of foundations which can be covered with soil. The roads will remain and can be used as forest roads as long as they are maintained (Ljunggren & Swedberg 2006, 7-8).

SCO General values

A wind power plant's impact on the cultural environment can be viewed from different value perspectives, for example experiential, educational, and scientific. Another important value is the user-value. Experience values are often the most central values when it comes to the establishment of wind turbines. The experience values are associated with acquiring an understanding of landscape processes; the landscape may give rise to recognition, curiosity and 'feel at home'. In terms of educational value it is the cultural environment's ability to help us to understand the context in which we live. The scientific value means that the place or object has a document value – as source material, and this scientific value, which is closely linked to the content, is almost always the easiest to accommodate for wind power projects. The educational value, if noted, should in many cases also be possible to take into account. Experience values are much more difficult to handle, here it is largely a question of 'indirect' damage (Hed Jakobsson 2008; Nordström 2003, 11). The user-value refers to how the (cultural) environment is currently used and how it may develop in the future. The cultural environment often contains long term investments in the form of, for example, buildings and roads which are of vital importance to the people who live there. User-value is therefore central when it comes to housing, for jobs in various industries, tourism and recreation. Wind power farms often have a strong influence (both negative and positive) on user values (Hed Jakobsson 2008, 9).

SCO Offshore wind power parks

Sweden's coast is 7000 kilometres long and no stretch of coastline is the same. The main part of the Swedish population lives in, or very close to, coastal areas. Offshore wind power parks can affect the cultural heritage in much the same way as on land. The significant difference lies in that very few people ever experience the visible features on the sea floor in its natural environment (blekingeoffshore.se 2009, 24-25). The marine cultural heritage along the Swedish coast consists mainly of wrecks and Stone Age settlements. Stone Age settlements can be found under the water mainly near Sweden's southern coast because the sea level during some parts of the Stone Age was below the current one. The flooding processes seems to, in some cases, have been relatively fast, which means that large areas of land were inundated. This rapid rise in sea level means that the settlements may have been hastily inundated and abandoned and therefore were not washed away by water (Ljungkvist 1992, 8). In many cases these settlements are of high scientific value, since organic materials are preserved. Not only can the sea floor be affected by the construction of offshore wind power plants, as historic and prehistoric remains – as for example, old harbours and cultural layers – at the coastline can be threatened by installations necessary for the transformation of power from the offshore wind power plant to the mainland (Nordström 2003, 14).

SCO References

English Heritage. 2005. Wind Energy and the Historic Environment. http://www.english-heritage.org.uk/publications/wind-energy-and-the-historic-environment/windenergyfinal.pdf/

Hed Jakobsson, Anna. 2008. Vindkraft på Gullberg, Bergviken, Söderhamns kommun, Hälsingland. Kulturmiljöanalys och arkeologisk utredning – Underlagsrapport för MKB
Rapporter från Arkeologikonsult 2008:2233b

Ljunggren, Anna & Swedberg, Stig. 2006. Miljökonsekvensbeskrivning. Uppförande av vindkraftverk på fastigheten Hajom Holane 1:17 Dals Eds kommun. Upprättad juli 2006 på uppdrag av Bohus Energi Projektering AB. Rio Kulturkooperativ.

Ljungkvist, J. 1992. Submarin stenålder längs skånska västkusten.
C-uppsats i arkeologi,
Lunds universitet.

Nordström, Pernilla. 2003. Sveriges kust- och skärgårdslandskap. Kulturhistoriska karaktärsdrag och känslighet för vindkraft. Rapport från Riksantikvarieämbetet 2003, 4

Samrådsunderlag för den planerade vindkraftsanläggningen Blekinge Offshore. 2009. http://blekingeoffshore.se/filer/Samr%C3%A5dsbilaga%20A%20Samr%C3%A5dsunderlag_090610.pdf. (2011-03-29).

10 CASE STUDY 3

LU Sustainable research programs *by Rosa Martínez*

SCO Introduction

In this case study we will analyse how the idea of sustainable development was included in the research programme of an archaeological group which later became part of the Spanish National Research Council's research strategy on heritage. The aim of overcoming the traditional definition of archaeology as the mere study of the past societies through the analysis of the cultural material has been indeed achieved. Approaching archaeological heritage management from a landscape point of view facilitates the participation of archaeologists and archaeological heritage mangers in policies and projects where environmental and cultural aspects can work together in the framework of sustainable development.

SCO Laboratory of landscape archaeology

The Laboratory of Landscape Archaeology (LAr) was created as a research group within the University of Santiago de Compostela in 1992. It has been partially integrated within the CSIC (Spanish National Research Council) since 2001, and now is a part of the Institute of Heritage Sciences.

The aims and objectives of the LAr were presented by its director Felipe Criado in 2005. He acknowledged a transformation in archaeology, leaving the academic world to become an applied science of heritage management, understood as the protection, study, regeneration and valorisation of heritage (Criado 2005)

According to this, the research programme is based in Landscape Archaeology and focused on archaeological heritage management. It aims to contribute to society by transforming science into knowledge to be used by the economic sector for generating wealth and employment. This interpretation of archaeology aims not only to produce knowledge about past societies, but to participate in building the present by participating in management policies such as those on heritage, environment, spatial planning and social development, and having sustainability as the underpinning idea. (Criado 2005)

Thus, one of the general objectives of the LAr is to contribute to the knowledge and critical analysis of the big challenges to our society such as quality tourism, socio- and natural environment protection, spatial planning, sustainable development, innovation, identity, interculturality and globalisation. A deeper analysis of the relation between the LAR actions with the sustainable development concept is presented by David Barreiro, member of the LAR. He analyses, from a dialectic point of view, the contradictions of the term and the ideological positions as regards as the development model. He adopts a critical pragmatism: although he does not consider sustainable development to be the solution to global problems, which he accepts as working within the concept framework (Barreiro: 2006). Therefore, he considers that undertaking sustainable projects means applying official strategies at a local level. According to the Spanish context, their working approach for archaeological heritage management linked to spatial planning, environment and education policies are as follows:

> ***Animation***

Archaeological heritage and intergenerational solidarity: the valorisation of archaeological heritage, especially cultural landscapes, generates a resource for a region, as well as the promotion of archaeological heritage, increasing the feeling of belonging to a culture and responsibility among the general public.

Archaeological heritage and strategic environmental evaluation: inclusion of cultural and natural aspects of the landscape in the environmental legal framework.

Archaeological heritage and cultural landscapes: the integration archaeological heritage and environmental aspects to cultural landscapes (European Landscape Convention, 2000), the definition of new management models, supported by the application of GIS technologies.

Training for archaeological heritage management: the academic world must focus archaeological education, without abandoning the theoretical and historical approach, towards archaeological heritage in the context of sustainability. New professionals and skills will be needed in the future.

Archaeology and social development: archaeological heritage management should contribute to developing rural areas. Archaeology should play an active role in modernisation processes, in order to influence social values and to reduce territorial imbalance.

SCO The Heritage laboratory

In 2007 the Spanish National Research Council created the Human and Social Sciences Centre, grouping all research institutes and associated units under a common management board. The study of cultural heritage was recognised as one of the interdisciplinary research lines. One of the principles that

should guide the research activity stated that landscape is part of heritage:

Heritage is (also) landscape, and this is (also) a cultural element. Heritage links Humanities to other important topics of the present as Spatial Planning, Cultural Tourism and Sustainable Development. (These topics are the application area of the Human and Social disciplines. The fields where they can acquire social relevance justify the resources they need and return profitable knowledge to society, so the expenditures become investment) (Criado, 2008).

As result the Heritage Laboratory was created and aimed to analyse how Cultural Heritage and the knowledge and values associated with it are produced, managed and socialised, as well as the material elements and social practices that integrate it.

The Laboratory of Archaeology Landscape was included in this new research line. Being the biggest research group and its director the leader of the new research line, it is not a surprise to find their influence among the action principles of the Heritage Laboratory: how science should contribute to society and sustainable development. So, when describing the common points shared by the different research areas, the Strategic Plan of the Laboratory for 2010-2013 states:

> a position defined as critical pragmatism, permitting actions for the production of value and interaction with the environment in an attempt to have a direct influence on social reality, and to contribute towards the transformation of its objective conditions,

> a vision in relation to its work that does not just conform to generating knowledge (...), but which also intends to play a role in the dynamics of the construction and transformation of reality in the present, by fully introducing them into the management policies of Cultural Heritage, the environment (of which it forms a part), territorial organisation and social development.

Influencing social reality refers to material conditions: improving people's quality of life (as other disciplines do: health sciences, IT, etc.). They have seen in sustainability a concept where archaeology can easily connect through landscape archaeology and which development is 'useful' for society. Finally, it should be recognised that there are some critical voices on the group's theories and works, which are represented by Bermejo Barrera (2008). He bases his criticisms on three main points: the use of the Archaeology of Landscape as a tool for interpreting archaeological remains, the privilege of management over research, and the establishment of economical objectives for the discipline.

SCO Conclusion

For a long time human and social sciences, and especially archaeology, have developed their research activities while turning their back to society's needs, studying past societies and resolving scientific problems just for the sake of science and knowledge. If this approach is not to be completely abandoned, the current context where the resources are limited and the social needs and the improvement of the quality of life are the challenges being faced, archaeology needs to find a way to contribute and participate in present transformation processes.

The Landscape Archaeology Laboratory proposed archaeological heritage management as a model in which archaeology may contribute to the knowledge economy, and therefore to economic growth, taking into account sustainable development and the environmental and cultural aspects of the landscape as a whole. This idea of archaeology becoming of service to society would make archaeology a sustainable science: since it produces useful knowledge, it will be easy to get funds and they will be justified in society's eyes.

SCO References

BARREIRO, D. (2006) LA AUREOLA PERDIDA (Propuesta para una Arqueología Aplicada) in ArqueoWeb at http://www.ucm.es/info/arqueoweb/numero8_1/conjunto8_1.htm

BARREIRO, D, CRIADO-BOADO, F. GARCIA, M.V., PARCERO_OUBIÑA, C., SANTOS, M. La arqueología del paisaje: una defensa innecesaria frente a un ataque inconsistente at http://hdl.handle.net/10261/17897

BERMEJO BARRERA, J.C. (2008) Estrategias institucionales y retórica de la ciencia en un grupo de investigación arqueológica español: una contribución a la sociología de la ciencia. ARBOR Ciencia, Pensamiento y Cultura, 731 mayo-junio (2008) at http://firgoa.usc.es/drupal/files/Arbor-731__Art-11___Bermejo_%5B1%5D.pdf

CRIADO-BOADO, F. (2005) Presentación del Laboratorio de Arqueoloxía da Paisaxe del IEGPS (y otras cosas) in ArqueoWeb at http://www.ucm.es/info/arqueoweb/numero7_2/conjunto7_2.htm

CRIADO BOADO, F. (2008) Las Humanidades en la actualidad. El Patrimonio como ejemplo in La investigación sobre Patrimonio Cultural, CSIC, Sevilla at http://hdl.handle.net/10261/12642

CRIADO BOADO, F. (2008) El Laboratorio de Arqueoloxia da Paisaxe del IEGPS: contribuciones desde la Arqueología al Patrimonio Cultural in La investigación sobre Patrimonio Cultural, CSIC, Sevilla at http://hdl.handle.net/10261/12644

LABORATORIO DE PATRIMONIO The Heritage Laboratory Strategic Plan 2010-2013: An Interdisciplinary Research Line on Cultural Heritage. La-Pa – CSIC at http://hdl.handle.net/10261/12211

LABORATORIO DE PATRIMONIO Interdisciplinary Research Line on Cultural Heritage: Informacion adicional LaPa – CSIC at http://hdl.handle.net/10261/13242

10 CASE STUDY 4

LU Drentsche Aa *by Heleen van Londen*

SCO Introduction

The case study of the Drentsche Aa is an example of sustainable development of an historic landscape integrated within a nature and recreational zoning context. The area is located in the north of The Netherlands and is named after a brook, the Aa, in the province of Drenthe. Its free winding course up stream to down stream through an open valley with historic pastures, old roads and fences is rare and valued because of its high quality. Villages are an integrated part of the brook landscape, the structure and coherence of the landscape elements can be easily recognized. In 2002 the core area became a National Park of c. 10,600 hectares.

Recently, the area needed restructuring due to conflicting uses and in preparation of a National Landscape status (Nationaal beek- en esdorpenlandschap (NBEL)). It was finalized in 2007. The area has been extended up to c. 34,000 hectares and encompasses some 3,550 archaeological monuments dating from the Neolithic to late medieval times. Landscape architects used historic landscape research to find the core values of landscape quality and formulate a so-called landscape vision. Research and design was coordinated with an intensive local participation. This cooperation delivered guidelines for the new development and is experienced as joined venture of politicians, experts and locals. The driving force behind the project was the concept of preservation through development aiming for sustainable development.

SCO The area

The area is defined by the course of the brook and has therefore a remarkable triangular form. The brook runs basically in three directions, the result of land formation during the last two Ice Ages (200,000-10,000 years ago). The valleys in the plat of Drenthe that of the Taarlosche Diep, Oudemolense Diep and Anreeper Diep show the course of the melting glaciers. In later periods with warmer climates, the area got overgrown with peat leading to a landscape with a high environmental and ecological diversity. Difference in height between the lowest (peat) and highest (sandy soils) point is c. 21 metres.

SCO The project

During a five-year project (2004-2009) experts from several disciplines like geology, archaeology, historical geography and ecology worked to develop an integrated concept of landscape linking cultural heritage to ecology. Furthermore, they developed methods for integrating expert and local knowledge of the landscape, designed procedures to improve collaboration and to developed planning concepts that would integrate all these values.

Seven sub projects were carried out:

> ***Animation***

Cultural heritage inventory

Archaeologists and architectural historians produced a comprehensive inventory of the Drentshe Aa National Landscape (Molema, Spek & Elerie 2004). The geological, archaeological, historical geographical and historical architectural values were mapped. Characteristic archaeological features are the megalithic tombs (dutch hunebedden) (3400-2800 BC), prehistoric fields (1100 BC-AD 200), settlements and religious sites. The basis for the current landscape was laid in during the Middle Ages, showing village districts with a concentric structure. The church was placed in the centre.

This inventory became the input for projects B and C.

Landscape biography

Nine researchers, 40 volunteers and five students worked on the long-term landscape history that resulted in a book for residents, stakeholder organisations, researchers, designers and planners. The book is expected to be published in 2011. The biography combines historical ecology and historical anthropology, thus integrating nature and human action.

Landscape Vision

Landscape architects produced a future vision for the National Landscape leaning on the previously collected landscape values and characteristics (Novioconsult, Strootman Landschapsarchitecten 2004 link do pdfa). The core concept behind the vision is a development oriented strategy both to preserve and develop the area. The public and stakeholder organizations participated through the entire process. The book guides further policies.

Online cultural atlas

Detailed maps of the physical geography, archaeology (3500 sites), land register maps, topographical maps, field names and local specific narratives were combined to form

an Online Cultural Atlas using Google Earth. It is designed for the residents and visitors of the region.

Field names
Residents, designers, artists, place name - and field name experts and other researchers investigated the meaning and role of historical field names in the past and how it may be used in the present. This project focuses on peoples perception of the current landscape. A book was produced for the general public (Elerie & Spek 2009).

Biography on the water
Some twenty students studied the history of the water system in their bachelor and master thesis's in a so-called rural atelier (Meijles 2010). The themes chosen were relevant to the water authority that will pursue an active policy based on the collected knowledge.
Design by research in the current planning process
The researchers of this project were actively involved in several planning processes in the region offering knowledge and ideas for development and management.
The national park issued a tourist folder.

SCO References

Elerie, H. & Th. Spek, 2009, Van Jeruzalem tot Ezelakker. Veldnamen als levend erfgoed in het Nationaal Landschap Drentsche Aa, Utrecht
Elerie, H. & Th. Spek, 2010, The cultural biography of landscape as a tool for action research in the Drenthse Aa National Landscape, in: T. Bloemers, H. Kars, A. van der Valk & M. Wijnen (eds) The Cultural Landscape & Heritage Paradox, Protection and Development of the Dutch Archaeological-Historical Landscape and its European Dimension, Amsterdam University Press, 83-115
Meijles, E.W., 2010, The rural atelier as an educational method in landscape studies, in: Journal of Geography in Higher Education 34(3),
Mollema, J., Th. Spek & J.N.H. Elerie, 2004, Cultuurhistorische inventarisatie ten behoeve van de landschapsvisie Drentse Aa, Amsterdam (RAAP-rapport 969)
Novio Consult & Strootman Landschapsarchitecten (2004). Landschapsvisie Drentsche Aa. Staatsbosbeheer. Rapportnummer 2004-1.
Spek, Th. (2004). Het Drentse esdorpenlandschap. Een historisch-geografische studie. Matrijs, Utrecht.

- *http://www.drentscheaa.nl/documents/home.xml?lang=nl*
- *http://www.compendiumvoordeleefomgeving.nl/indicatoren/nl1486-Drentsche-Aa.html?i=12-148*
- *http://geoservice.pbl.nl/website/monitornationalelandschappen/DA/2*
- *http://www.synbiosys.alterra.nl/natura2000/gebiedendatabase.aspx?subj=gebnatparken&groep=1&id=np16*

→ LU Further Reading

Ministeries van VROM, LNV, VenW en EZ (2006). Nota Ruimte: Ruimte voor Ontwikkeling. Deel 4: Tekst na parlementaire instemming. Ministerie VROM, Den Haag.
Provincie Drenthe (2007). Uitvoeringsprogramma Nationaal Landschap Drentsche Aa. pMJP-Gebiedsopgave 2007 - 2013. Vastgesteld door Gedeputeerde staten van Drenthe 12 juni 2007.
Provincie Drenthe (2008). Natuur- en landschapsdoelen in Drenthe. Integraal gebiedsplan 2008

10 CASE STUDY 5

LU Environmental Assessment in UK Archaeology

by Kenneth Aitchison

SCO Introduction
Whereas planning relates primarily to the development and changing use of land, Environmental Assessment is primarily concerned with the environment and how it might be affected by human activity (McGill 1995, 171). Environmental Assessment (often called Environmental Impact Assessment outside the UK) is a procedure that must be followed for certain types of development before they can be granted consent by state or local authorities, which involves ensuring that the environmental effects of a project are fully taken into account in the decision-making process. This is carried out through mechanisms similar to the planning process, but going significantly further than is required for planning purposes (ibid., 170).

SCO Case study – Environmental Assessment in UK Archaeology
The requirement for Environmental Assessment comes from European Directive EC 85/337 (EEC, 1985, as amended by EC, 1997), initially brought into law through the Environmental Assessment Regulations (DOE, 1988; Scottish Office, 1988; Northern Ireland Office, 1989). The existence of the EA procedure clearly influenced the thinking behind Planning Policy Guidance note 16 (PPG16) (DOE, 1990b), the key document relating to archaeology and the planning process, as it sets out a process of assessment, evaluation and mitigation.

Globally and historically, the first legislation formalising a role for EIA was the United States' National Environment Policy Act 1969 (Ralston and Thomas, 1993, 1). Many European Union countries operated EA procedures in advance of EC 85/337, such as France where these procedures had become compulsory in 1978 (ibid.).

Under the Environmental Assessment regulations, developers are required to compile an Environmental Statement (ES) describing the likely environmental effects of the development, assessing their significance and proposing mitigation measures, which allows the ES to be predictive and to form an agenda for future actions (Ralston and Thomas, 1993, 4).

A number of types of project are exempt from planning permission but can be required to undergo EA: motorways and trunk roads (over 10 km in length), afforestation, land drainage proposals, ports and harbours, marine salmon fishing, oil and gas installations and pipelines more than 10 km in length. These are often projects that span more than one local planning authority and can be of national, strategic importance. All nuclear power stations and non-nuclear generating stations with an output of 300MW or more require the authorization of the Secretary of State for Trade and Industry (McGill 1995, 179). EA regulations initially did not apply to projects approved by private Acts of Parliament, but this was amended so that projects such as the Channel Tunnel Rail Link effectively do (ibid., 179-180).

Most marine developments are so large that the consent schemes require Environmental Assessment, including assessment of cultural heritage (Firth 2006, 93), and the Highways Agency Design Manual for Roads and Bridges (Highways Agency, 2010) adopted the same principles in its first edition (DOT 1992) that underlay PPG16 (and in subsequent editions, PPG15 (DOE and DNH 1994) and the relevant planning guidance outside England) and sets out the requirements for Environmental Assessment of trunk road schemes.

SCO Technical Discussion
The required contents of an ES are defined under the Checklist of matters to be considered for inclusion in an environmental statement (DCLG, 2000), which should '…include any information relating to any significant effects on material assets and the cultural heritage, such as archaeological features and other human artefacts, and the measures envisaged to avoid, reduce or remedy adverse effects' (Barber et al. 2008, 58).

Generally, this chapter of an Environmental Statement should provide a high level of detail on designated heritage assets (such as Scheduled Ancient Monuments and listed buildings), other archaeological sites, the potential for disturbance of previously unknown remains, historic gardens and designed landscapes, conservation areas and their settings, and crucially the assessment work '… should be undertaken by a qualified archaeologist' (Barber et al. 2008, 58).

SCO Conclusion
The introduction of the Environmental Assessment regulations led to a significant change in the way that archaeology was carried out in the United Kingdom. They were introduced in the late 1980s, at a time when commercial archaeological services were still in development and before the requirement for archaeology to be considered in the planning process had been embedded in government policy.

The requirement for the assessment work to be undertaken by 'a qualified archaeologist' has meant that the introduction of the Environmental Assessment regulations had a significant effect on archaeological employment. An Environmental Statement is comprised of many chapters requiring professional expertise in different disciplines, and very few predominantly archaeologically-focussed organisations can claim to have the appropriate expertise to take on the full scope of writing a complete Environmental Statement (Hunter et al. 2006, 46). Environmental consultants, who may have archaeologists on their team, will normally coordinate this work or the work of preparing the cultural heritage chapter will be subcontracted to archaeological consultants or contractors acting in an advisory way. It has been a growth area in terms of the employment of senior, more experienced archaeologists who receive some of the highest levels of financial reward in the sector, in contrast with the growth in fieldwork employment which created many more opportunities for relatively junior members of the profession.

SCO References

Barber, B., Carver, J., Nxon, T., & Hinton, P. (2008). Archaeology and Development – a good practice guide to managing risk and maximising benefit. (Vol. CIRIA C672). London: CIRIA.

DCLG. (2000). Environmental impact assessment: guide to procedures. London: HMSO.

DOE. (1988). The Town and Country Planning (Assessment of Environmental Effects) Regulations. SI 1199. London: HMSO.

DoT. (1992). Design Manual for Roads and Bridges. London: HMSO.

Firth, A. (2006). The management of archaeology underwater. In J. Hunter, & I. Ralston (eds), Archaeological Resource Management in the UK (2nd edn) (pp. 85-96). Stroud: Sutton Publishing.

Highways Agency. (2010). Design Manual for Roads and Bridges.

Hunter, J., Ralston, I., with Hamlin, A., & Foley, C. (2006). The structure of British archaeology. In J. Hunter, & I. Ralston (eds), Archaeological Resource Management in the UK (2nd edn) (pp. 37-55), Stroud: Sutton Publishing.

McGill, G. (1995). Building on the Past: a guide to the archaeology and development process. London: E& FN Spon.

Northern Ireland Office. (1989). The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) (Vol. SR 79). Belfast: HMSO.

Ralston, I., & Thomas, R. (1993). Environmental Assessment and Archaeology: an introduction. In I. Ralston, & R. Thomas (eds), Environmental Assessment and Archaeology IFA Occasional Paper 5, pp. 1-8). Birmingham: Institute of Field Archaeologists.

Scottish Office. (1988). The Environmental Assessment (Scotland) Regulations. SI 1221. Edinburgh: HMSO.

11 CASE STUDY 1

LU The Rose Theatre

by Kenneth Aitchison

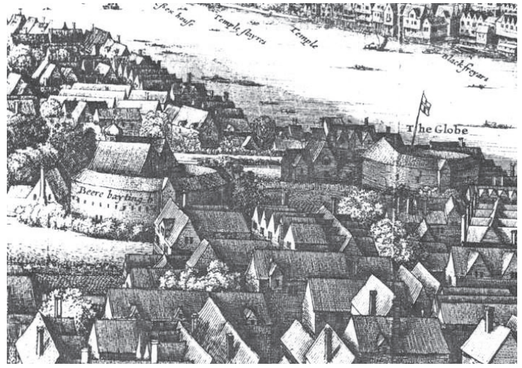
SCO Introduction

The amount of building in central London rose dramatically in the late 1980s following an episode of financial deregulation of the City of London known as the 'big bang' (Biddle 1994, 9), and this led to considerable amounts of archaeological work. The Museum of London, which had undertaken 18 excavations in 1987, carried out 54 in 1988 with £7 million of developer funding (Carver 1993, 10).

At this time there was no obligation upon developers to pay for archaeological work – the funding was being paid as an incentive to get work done swiftly and professionally. The increasing pace of development of archaeologically sensitive areas meant that 1989 was 'a particularly turbulent year' (Wainwright 2000, 924). In London, the site of Roman baths at Huggin Hill, a Scheduled Ancient Monument first partly excavated in 1964, proved to be much better preserved than had been anticipated. This site had been released for development provided the developer funded prior excavation (to an agreed cost of £0.5 million), but the excavation revealed Roman walls 3m high, leading to a £3 million redesign to rebury those walls. The developers then 'questioned the assumption that their responsibility included the conservation of invisible monuments under ground' (Carver 1993, 10). A settlement was reached wherein the developer received planning permission to expand their development but not at the expense of the site, which was reburied (Bluer 1991).

SCO Case study – The Rose Theatre

On the south bank of the Thames, the Rose Theatre had been a playhouse in Southwark for which William Shakespeare and Christopher Marlowe had both written plays. Constructed in 1587 and abandoned in the first decade of the seventeenth century, the location of the Rose had been predicted by Ove Arup (engineers) in 1971 from cartographic evidence (Biddle 1989,755), and their report had also indicated the archaeological potential and possible public sensitivity of the site. By the late 1980s, the site (between Southwark Bridge Road, Park Street and the rather suggestively named Rose Alley) was occupied by Southbridge House, built in 1957 without any archaeological investigation (Gurr 1992).



Planning permission for the redevelopment of the site was granted in 1988 and work began late in that year, with the developers having agreed to what was considered to be a routine two month archaeological investigation – and very near the end of the investigation period, in January 1989, the remains of the Rose Theatre were identified (Carver 1993, 10).

Because of the site's association with Shakespeare, it rapidly attracted a high degree of media attention. The developers provided more time for the investigation, which English Heritage (as the state's advisory body) funded, but by the middle of 1989 it had become an extremely contentious issue, with actors keeping 'an all-night vigil on the 12th May turning away the building contractors' (Carver 1993, 10). Detailed, and occasionally conflicting, accounts of the decisions, events and outcomes of the summer of 1989 (Orton 1989; Wainwright 1989a; Biddle 1989; Sheldo 1990a) tell the story of negotiation and counter-negotiation over control of the site, responsibility for which passed from The Museum of London to English Heritage's Central Excavation Unit in June 1989, who then completed the excavation.

The actual archaeology of the site is described in Bowsher and Blatherwick (1989) and Bowsher and Miller (2009), but the site's significance goes far beyond its value as one of a very small corpus of late sixteenth century theatres or playhouses to have been archaeologically investigated in London (two others being the nearby Globe (also described in Bowsher & Blatherwick 1989), and The Theatre in Shoreditch (Kennedy, 2008)), because its high profile coincided with rapidly changing political sentiment regarding archaeology.

This project (and the contemporary work at Huggin Hill) was extremely expensive, with the total costs of these two projects being 'about twice English Heritage's rescue excavation budget' ('Gromaticus' 1989). Ultimately, massive cost overruns at The Rose meant that the developer spent £11 million on six months of excavation and a subsequent redesign of the construction project (to accommodate footings of the theatre being preserved in situ beneath the new building) (Davis et al. 2004).

Figure 1 Detail from Hollar

SCO Technical Discussion

At the time, there was not yet a mechanism in the UK to ensure that developers met the full costs of archaeological work, and in any case (at The Rose), planning permission had already been granted with an agreement to allow two months investigation prior to the full potential of the site being recognised. There was no legal route to rescind planning permission on the basis of unexpected discoveries that were made during development, although the development could have been stopped if the site had been Scheduled – but in that case the State would have been liable to compensate the owners, which would have potentially led to crippling cuts to English Heritage's budget.

In terms of archaeology's place in the planning process, what The Rose Theatre made clear was that there was a clear need for information to be gathered early, before a decision is made whether, and with what conditions, planning permission is granted.

The site was an embarrassment to the government, whose agents – English Heritage – were not being presented positively in the media which suggested that they were attacking the Museum of London's attitudes to these sites, with reports that ministerial fears were expressed in the House of Commons that archaeologists could turn the whole City of London into a museum ('Gromaticus' 1989).

'So anxious were politicians to issue policy guidance on the matter, that in May 1989, Virginia Bottomley - then Heritage Minister - announced Government's intention to issue new guidance on archaeology and planning. The ground had been well-prepared and the timing could not have been better. A draft policy document had been prepared and its main provisions publicised by EH before it was discussed with the Department of the Environment [Wainwright, 1989b]. The announcement was made at a time when archaeological discoveries in York and London - culminating in the Rose Theatre – had highlighted awareness and interest in archaeology, and the need to ensure that archaeological remains were being considered early on in the planning process' (Wainwright 2000, 925-6).

The document Wainwright refers to was the draft version of Planning Policy Guidance note 16: Archaeology and Planning (DOE 1990a), also known as PPG 16, and the absence of curatorial oversight for Greater London, identified by Gurr (1992) was remedied through the establishment of the Greater

London Archaeological Advisory Service within English Heritage (removing curatorial powers from the Museum of London in the process).

PPG 16 then became the document which firmly established archaeology's place in the planning system and which was the key publication in the opening up and expansion of archaeological practice in the UK from 1990 onwards.

SCO Conclusion

The 1969 Walsh Committee of Enquiry into the Arrangements for the Protection of Field Monuments by County Planning Authorities had decided against recommending that the cost of rescue excavations should be made a charge on developers (Walsh 1969), as this work was seen as having public benefit – and therefore public funds should pay for it – and because that might become an 'incentive to concealment' that could lead to archaeological remains being deliberately destroyed in order to avoid these costs. Two decades would pass before a system was in place that ensured that the developer, as 'polluter', would pay for archaeological investigation.

The critical document that would achieve this was PPG 16 (DOE 1990b). It combined two critical aspects of that change, as the introduction of the polluter-pays approach to cultural heritage matters was coupled with the polluter being granted freedom to choose who to pay.

This document's significance lay in its acceptance that responsibilities for undesignated sites (those that were not protected by the state as being of national importance) affected by development lay with local authorities and thus the planning process (Sheldon 1990b).

No longer were developers expected to 'contribute' to the costs of excavation: the final document simply stipulates the requirement for archaeological work to be done, and makes is clear that it is the applicant for planning permission's responsibility to obtain this information – leaving the developers to pay to get this information from somewhere, and archaeological organisations to realise that this was an opportunity, now underpinned by Government advice, to provide services to clients.

This stimulated the growth of a large private sector in archaeology, comprising archaeological units or individuals able to provide advice and other services to developers (Aitchison, The Funding of Professional Archaeological Practice in England 2001), meaning that 'Almost, but not quite, overnight, archaeology became a competitive, commercial enterprise' (Start 1999, 52).

The process of the document's development can be summarised as an accumulation of experiences, particularly within local authorities but also within English Heritage as the state agency. This was contextualised against a backdrop of changing public and political awareness of the value of the environment including archaeology, finally prompted by a series of very high profile cases which were opportunistically seized upon to allow the introduction of an expedient and ultimately very successful measure which secured the treatment of archaeological remains within the planning system (Aitchison, No going back – remembering when British archaeology changed forever, forthcoming).

The Rose Theatre confirmed the need for archaeological investigation before planning permission was granted. At The Rose planning permission had been granted before archaeology had been fully taken into account – and this was the overwhelmingly important issue. If archaeology could be identified as a matter to be considered in the planning procedure, then its treatment would be secured through the weight of the Planning Acts. The first major change that PPG 16 introduces is conceptual – it is a statement by the Government that formally recognises archaeology as an environmental asset – 'Archaeological remains should be seen as a finite and non-renewable resource' (DOE 1990b, para. 6).

All of this is founded upon the understanding that the resource can be preserved by record (DOE 1990b, para. 13, 24-5) and that it is the developer's responsibility - not the local planning authority's – to generate and provide that record. By effectively forcing developers to pay for archaeological services, PPG 16's greatest effect was to normalise developer funding for archaeology.

Before PPG 16, archaeological input only occurred after decisions had been made, and potentially led to delay and costs (normally to Government). Subsequently, PPG 16 placed the decision-making over the heritage in the planning process, making those who wanted to develop sites containing archaeology responsible for their own actions with the effect of requiring considerably more archaeological work.

SCO References

'Gromaticus'. (1989). Commentary. The London Archaeologist, 6 (4), 86.

ACAO [Association of County Archaeological Officers]. (1993). Model Briefs and Specifications for Archaeological Assessments and Field Evaluations. Association of County Archaeological Officer.

Aitchison, K. (forthcoming). No going back – remembering when British archaeology changed forever. In J. Jameson & J. Eogan, Training and Practice for Modern Day Archaeologists. New York: Springer.

Aitchison, K. (2001). The Funding of Professional Archaeological Practice in England. Cultural Trends, 39 (1-32).

Biddle, M. (1989). The Rose reviewed: a comedy (?) of errors. Antiquity, 73, 753-60.

Biddle, M. (1994). What Future for British Archaeology? (Vol. Oxbow Lecture 1). (Oxford, Ed.) Oxbow Books.

Bluer, R. (1991). Tales of the unprotected. Building Research & Information, 19 (2), 118-128.

Carver, M. (1993). Arguments in Stone: archaeological research and the European town in the first millennium (Oxbow Monograph 29). Oxford: Oxbow Books.

CBA & IFA. (1989). CBA/IFA Statement on the Rose. CBA Newsletter, 4 (5), 67.

Clark, K. (2001). Planning for the Past: heritage services in local planning authorities in England. Cultural Trends, 43 & 44, 6-931.

Darvill, T. (1990). Chairman's Notes. The Field Archaeologist, 13, 215.

Davis, M., Gdaniec, K., Brice, M., White, L., with contributions by Price, C., & Thorne, R. (2004). Mitigation of Construction Impact on Archaeological Remains (volume 1: main report). London: MOLAS for English Heritage.

DOE [Department of the Environment] (1990a) Archaeology and Planning: a consultative document. DOE draft planning and policy guidance February 1990, London: DOE.

DOE (1990b) Planning Policy Guidance note 16: Archaeology and Planning, London: HMSO.

Fairclough, G. (1990). Archaeological conservation and planning. Conservation Bulletin, 12, 1-2.

Gurr, A. (1992). Cultural property and 'sufficient interest': the Rose and the Globe sites. International Journal of Cultural Property, 1, 9-25.

Kennedy, M. (2008, August 7). Shakespeare's Shoreditch theatre uncovered. The Guardian .

Lane, J., & Vaughan, S. (1992). An Evaluation of the Impact of PPG16 on Archaeology and Planning. London: Pagoda Projects.

Murdoch, J., & Hughes, W. (2000). Construction Contracts: law and management (3rd edition ed.). London & New York: Spon Press.

Shelbourne, C. (1989, May 19). Burying our mistakes? – the 'palace' at Huggin Hill. New Law Journal, 676-8.

Start, D. (1999). Community archaeology: bringing it back to local communities. In D. Baker, & G. (. Chitty, Managing Historic Sites and Buildings: reconciling presentation and preservation (pp. 49-60). London: Routledge.

Tym, R. & Partners & Pagoda Associates. (1995). Review of the Implementation of PPG-16 Archaeology and Planning. London: English Heritage.

Wainwright, G. (2000). Time please. Antiquity, 74 (26), 909-43.

Walsh, D. (1969). Report of the Committee of Enquiry into the Arrangements for the Protection of Field Monuments (1966-68). London: HMSO.

11 CASE STUDY 2

LU Praileaitz *by Rosa Martínez*

SCO Introduction

This case study analyses how archaeological heritage management depends not only on the existing legal framework and political decisions, but also on previous landscape plans, actual archaeological findings as well as the action and mobilisation of public opinion. Facts and events are presented in chronological order to facilitate the comprehension of this complex case.

SCO From disappearance to preservation (2001-2006)

Praileaitz is a cave located on the north coast of Spain (Gipuzkoa, Basque Country) only few kilometres away from other important Palaeolithic sites such as Ekain, Altxerri. It was discovered in 1983 and archaeological investigation confirmed the existence of Palaeolithic remains.

The previous existence of a quarry near the cave, conditioned upon its preservation, where exploitation is licensed until 2031. Another cave that existed in the same hill was destroyed after being excavated (Praileaitz II) and that seemed to be the future for Praileaitz I.

As the quarry activity approached the cave, archaeological excavations promoted by the local council started in 2001, aiming to record the site ahead of its likely later destruction. However, the extraordinary findings suggested that the site was a kind of sanctuary, since no tools or remains of daily life were found. Instead a great collection of pendants and ornaments, carefully disposed, suggested a ritual use of the cave. The excavation attracted the media's interest and the continuous references to the exceptionality of Praileaitz findings started to establish public opinion on the need to preserve the cave from the quarry.

The legal status of the cave completely changed after the discovery of paintings and carvings inside it in 2006. According to the Spanish Heritage Law, the prehistoric paintings have to be preserved in situ. So, the public authorities no longer needed to make a decision on its future, but they became automatically responsible for its preservation and valorisation.

SCO Praileaitz protection: A public discussion (2006-2007)

The legal framework of Praileaitz' protection, which was to be

developed by the regional government, needed to consider two aspects:

a the previous existence of the quarry, as well as the impact of its activity on the cave, such as risk of impact from explosions (cracks, collapses…) and,

b destruction of natural environment (Cross-reference to Altamira Case study).

According to this, and after a public process for proposals and contentions, the Basque government stated, in 2007, five areas of protection for Praileaitz and its surroundings:

> ***Animation***

Public opinion

After the discovery of the paintings, the quarry continued its activities, and even increased them as denounced by local ecologist groups. An association, Praileaitzen Lagunak – Friends of Praileaitz – was set up in order to raise awareness of the Praileaitz situation at risk. They consider that even with the Surveillance Plan for explosions there is a real risk of damage to the cave. They also consider that Areas 1, 2 and 3 of protection should be enlarged, which would mean preserving to the entire hillside of the cave and not only a promontory of 50 meters perimeter around the cave. The group has been very active, publishing a book to raise funds and regularly organising events and demonstrations to demand more complete protection of the site.

Research community

Following society's requirements, shown by the Friends of Praileaitz association, Aranzadi Society of Sciences, which had been responsible for the excavation so far, gathered different technical opinions and reports on the necessity and convenience of further protection. The Society publicly confirmed the necessity of preserving the entire hillside as the best way to preserve the cave and its paintings, as well as to ensure the valorisation of the heritage and its relation with landscape, as stated in the Heritage Law. This position was reinforced by a resolution of the Basque Ombudsman, demanded by Friends of Praileaitz Association and also supported by a letter signed by 351 international experts and heritage researchers.

Figure 2 Situation of Praileaitz I in relation to the quarry exploitation

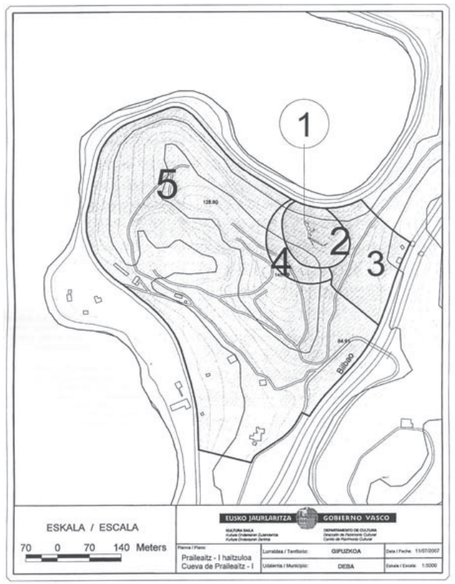


Figure 3 Map identifying the different areas of protection around Praileatz cave, as appeared in the decree of the Basque government

Public authorities

As the body responsible for defining the protection regime of Praileaitz, the Basque regional government considered the 50 metres security perimeter to be enough to preserve the cave and avoid any risk arising from the quarry activity. Despite the pressure of public opinion, together with several technical reports submitted by experts and researchers, the recommendation of the Basque Ombudsman and the discovery of new caves in the cave's hillside in the meantime, the Culture Department did not enlarge the security area around Praileaitz. However, the local council demanded larger protection and the preservation of the entire hillside.

sco An unexpected legal protection – Coasts Law (2008-2010)

Although the decision was already made, local associations were still very active in monitoring the quarry activity, organising awareness events and also in searching for other legal alternatives which could help to stop the quarry activity. Finally, the local ecologist group found an administrative irregularity in the exploitation in the framework of the Law on Coasts Protection (the cave being located only four kilometres from the sea). According to this, the exploitation of Praileaitz hillside should be subject to special authorisation by the Coast Authority as an easement zone. The quarry activity was suspended, and the company appealed against this administrative decision.

A judicial decision in 2010 ratified that the company have been illegally exploiting a portion of around 100 metres protected by Coasts Law as easement zone. As the cave is located in this easement zone that means that the protection of the cave and part of the hillside is ensured for its environmental value and not as heritage.

sco More protection and compensation request (2010-2011)

Meanwhile, a political change occurred in the Basque government, and the new Culture Department, proposed in 2010 to enlarge the security area from 50 to 65 metres, but leaving the hillside preservation in hands of the Coast Law. This does not satisfy neither the experts and researchers nor public opinion (local groups and associations). Preserving the hillside of Praileaitz should be ensured as cultural heritage, considering the closest landscape to be part of the protected heritage. In response, in January 2011 the company requested €49.7 million as compensation for the losses that preserving the cave and its security area would lead to. This amount could be higher, if the security area finally increases to 65 metres. (El País, 17/01/2011)

The vice-counsellor of the Basque Culture Department recognised, in an interview (Diario Vasco, 12/04/2010), that the protection of the hillside was a question of money, since legally the administration could be obliged to compensate the company for the material they will not extract from the protected area.

'If there were no problem of money, we would establish a protection decree of 500 metres (…)'

sco Conclusion

Five years after the discovery of the paintings, and despite the new legal status of the cave as protected heritage, no solution has been found to the question on how much land around the cave should be protected from the quarry activity.

The current protection regime is not enough for the research community and the general public opinion and could mean economic compensation for the company exploiting the quarry.

How much is Praileaitz worth? €50 million? €25 million? Is the economical compensation to the company legitimate? Should public cultural interest prevail over private economic interest?

sco References

Aranzadiana 2007. Aranzadi Society of Sciences Annual Memory of Activities

Decreto 120/2007 de 17 de Julio del Gobierno Vasco.

Los colgantes magdalenienses de Praileaitz I (2005). Bertan, num. 22. Departamento de Diputación Foral de Gipuzkoa.

Press references (2006-2011)

Pro Praileaitz I y su ladera (Deba, Gipuzkoa) (Manifiesto)

RESOLUCIÓN DEL ARARTEKO, de 18 de diciembre de 2008, por la que se recomienda al Departamento de Cultura que evalúe la posibilidad de promover una modificación de la delimitación del santuario prehistórico de Praileaitz, en la que incluya toda la ladera de la cueva.

- *http://amigosdepraileaitz.wordpress.com*

12 CASE STUDY 1

LU Commercial Archaeology in Spain *by Rosa Martínez*

SCO Origins of commercial Archaeology in Spain

Beginning in the 1970s, economic growth favoured new development plans in which archaeological heritage was not at all taken into account. In 1985 Spanish Cultural Heritage law established the first legal protection for cultural heritage, which represented a transformation of values and attitudes towards cultural heritage, which had resulted from democracy and economic growth. Also in these years political and administrative decentralisation took place, transferring competence for archaeological heritage to Autonomous Communities and to local councils.

In this context, the requirement of an archaeological report to support development plans and public works acquired legal force few years later. Initially, public archaeological services were the ones carrying out archaeological assessments, but as the number of works and demand for permissions increased, public authorities were unable to monitor and supervise the potential threat to the archaeological heritage. This was when the first external contracting took place.

According to Parga-Dans (2009), besides the new values on cultural heritage and legal framework, another factor contributed to the establishment of commercial archaeology in Spain: the economical neoliberalism of the 1990s. Archaeology became a service offered by the market, thus abandoning its traditional academic field.

SCO Archaeological sector: current situation

In 2008, 273 companies were registered as undertaking archaeological activities, 40% of them were established within 2000-2005, linked to the great construction boom. They are mainly located in major cities, near to public institutions and potential clients. The multiplicity and diversity of public bodies involved in archaeological heritage management, as well as the specific heritage existing in each region, has led to small companies forming the majority of commercial companies and to a great number of freelancers working at the local level. According to the 1st National Survey on Archaeological Companies, archaeological companies employed 2,358 people in 2009 (including both employers and permanent and temporary workers (Parga-Dans 2010).

However, it is difficult to profile professionals working in commercial archaeology. First, the lack of an official degree in Archaeology means that anyone holding a degree in Humanities, (History, Anthropology, Philosophy, etc.) and/or with working experience as an archaeologist may offer their services as such. Secondly, the economic activity of freelancers is not officially recorded; and finally the temporary nature of the activity makes it difficult to have a general overview on professionals who have commercial activity as their main activity (Moya Maleno 2010).

Another characteristic of Spanish commercial archaeology is the lack of corporatism among companies and professionals. Companies and professionals have not led any initiative in regulating the profession, developing a deontological code, signing collective agreement or defining common fees, with 'price wars' being a common practice. Doubtless, all these circumstances have consequences not only on the quality the archaeological work, but also on the labour situation of professionals.

SCO Madrid: a model of free market archaeology

The first objective of the Madrid heritage authorities, once the competences were transferred to them within the Autonomous Community, was to create an archaeological chart of the region, surveying municipalities, requiring an archaeologist for certain works and promoting the first rescue excavations. Gradually, the 'polluter pays' principle was introduced for the monitoring of development plans. Authorities opted for open competition to find archaeology professionals to face the increasing number of works to be supervised, being the first Spanish regional authority to resort to commercial archaeology to carry out part of their responsibilities in heritage protection (Diaz del Rio 2000).

Nowadays, heritage and urbanism authorities in Madrid produce a weekly report which lists all requirements and obligations for development plans within historical, archaeological and paleontological areas of the town. Depending on the size of the project and the type of intervention required, technical specifications are attached which refer to the intervention, deadlines, phases, experience required or auxiliary techniques (e.g. palaeobiology).

In general, this model satisfies developers, because despite paying for it there is no delay in obtaining permissions; public administration, which obeys Heritage Law and archaeologists, who find a way for their professional development. However, as developers usually choose the cheapest bid for the service, the quality of archaeological work might be affected. At the same time, intervention and assessment by public authorities decreases as the number of cases increases (Rodríguez Temiño 2006).

SCO Future challenges for commercial archaeology

Commercial archaeology is a good job opportunity for a considerable number of university students. The lack of professional regulation for archaeology is still a problem, especially in a context where the price war is the rule of the market. Archaeologists' work is not assessed in terms of quality by their client, but according to their capacity and ability in solving an administrative obstacle: submitting a favourable archaeological report (Diaz del Rio 2000).

These problems have also been experienced by commercial archaeology in other European countries such as United Kingdom and The Netherlands, but they have faced them by means of professional associations or quality norms. It is clear that existing professional associations have also a role to play in defining a professional and legal status of the archaeological profession, as well as collective agreements and a deontological code of the activity. However, up to now all initiatives have failed and the lack of corporatism and self-regulation is a characteristic of Spanish commercial archaeology.

Rodríguez Temiño (2006) proposed some actions to increase the control of public authorities on commercial archaeology work:

> To promote technical specifications in the framework of a general research project in urban context,
> To increase inspections of excavations,
> To oblige the completion of the management cycle, including post-excavation research and the dissemination of acquired knowledge.

However, the above-mentioned challenges need to be reviewed in the light of the present financial and economic crisis. Spanish economic dependence upon the construction sector is having an important impact on commercial archaeology, especially in those regions with large construction sectors (Catalonia, Community of Valencia, Madrid, Andalusia or Extremadura). Companies confirm that demand for services has reduced, from both public and private sectors. Archaeology's dependency on the construction sector should help to enlarge the field of activity, offering new activities related to archaeological heritage other than interventions: assessment, management, sustainable cultural tourism, territory planning, etc. (Parga-Dans 2010).

SCO References

Diaz del Rio, P. (2000) Arqueología comercial y estructura de clase. Criterios e Convecións en Arqueoloxía da Paixaxe, CAPA nº12, Laboratorio de Arqueoloxía e Formas Culturales, Santiago de Compostela, December 2000 at http://hdl.handle.net/10261/9792.

DOMINGUEZ, R. M. Empresas de Arqueología y Arqueología urbana: investigación, negocio, profesión. Arqueología y territorio medieval. Universidad de Jaen. Num. 1, 1994 at http://www.ujaen.es/revista/arqytm/pdf/R1/R1_7_Dominguez.pdf.

Moya Maleno, P. (2010) Grandezas y miserias de la arqueología de empresa en la España del siglo XXI. Complutum 2010, Vol. 21 (1) at http://www.ucm.es/BUCM/revistas/ghi/11316993/articulos/CMPL1010120009A.pdf

Parga-Dans, E. (2010) Commercial archaeology in Spain: its growth, development and the impact of the global crisis in Archaeology and the global economic crisis, Culture Lab Editions 2010 at http://www.ace-archaeology.eu/fichiers/25Archaeology-and-the-crisis.pdf.

Parga-Dans, E. (2010) I Encuesta nacional dirigida a empresas de arqueología. Informe de resultados. Laboratorio del Patrimonio (LaPa). CSIC. July 2010 at http://hdl.handle.net/10261/26192.

Parga-Dans, E. (2009) El Mercado del Patrimonio: nacimiento, estructura y desarrollo de las empresas que gestionan el patrimonio arqueológico. Cadernos de Arqueoloxía e Patrimonio. CAPA, nº21. Laboratorio del Patrimonio (LaPa). CSIC. Santiago de Compostela, 2009 at http://hdl.handle.net/10261/25061.

Rodriguez Temiño, I. (2006) Arqueología urbana en España. Ariel Patrimonio, 2006.

12 CASE STUDY 2

LU Irish Commercial Archaeology and Road-building Development

by Kenneth Aitchison

SCO Introduction

Archaeological practice in the Republic of Ireland is delivered through a commercialised system, where different private companies carry out fieldwork and other research on behalf of public and private funders. There was a great boom in the amount of archaeological work carried out in the Republic of Ireland in the early years of the 21st century, which was largely in support of the construction of many new roads. This period of road building came to an end at the same time that changing global economic conditions also led to a significant downturn in other construction-led archaeological work and thus to a considerable reduction in the number of archaeologists working in the Republic of Ireland.

SCO Case study – Archaeology and Roadbuilding

The National Roads Authority (NRA) was established in 1994 as an independent body to deliver and manage Ireland's national road network. The NRA formulated an extensive road-building scheme which was financed via the state's National Development Plan 2000-2006, the centrally planned investment programme for Ireland which was largely funded through the European Union's Structural and Cohesion Funds.

In 2000, a Code of Practice for archaeology and national road schemes was agreed between the Irish government and the NRA (NRA & DAHGI 2000) which recognised that road development need not be a threat to the protection of the archaeological heritage but would be a funded driver of research. Through the requirements of this code of practice, a remarkable amount of archaeological work associated with road building schemes was undertaken (O'Rourke 2007).

By 2005, the NRA directly employed three archaeologists and, through the local authorities/NRDOs, a further 22 project and assistant archaeologists, all of whom were involved in the commissioning and managing of archaeological projects ahead of road development (O'Rourke 2005). This archaeological work was undertaken by commercial companies. Eogan

(2010, 21) reports that sixteen different commercial companies won contracts to provide archaeological road services on national road schemes over the 15 years to 2010.

Owing to the highly visible nature of roadbuilding schemes, this also led to a series of politically volatile issues relating to archaeology and heritage, specifically (but not only) regarding the sites of Hill of Tara and Carrickmines Castle

SCO Technical Discussion

In the mid- to late-1980s, the numbers of archaeologists employed in private sector archaeology 'could be measured in tens' (Byrne 2000, 572). Byrne (ibid) estimated that there were around 500 archaeologists working in Irish archaeology in 2000; CHL (2002b) reported 650 professional archaeologists in 2002 and by 2007 there were approximately 1,700 archaeologists in work in Ireland, an increase of 263% over five years (McDermott & La Piscopia 2008, 5), meaning that there was one archaeologist for every 2,340 people in the country – 0.04% of the population.

Of those archaeologists working in Ireland, a remarkable 45% were non-nationals, archaeologists who had moved from other countries to Ireland to work. Such was the level of demand that it could be economically advantageous for a team of Polish archaeologists, working on a major road scheme, to undertake all of their recording in Polish and have their reports translated subsequently (Aitchison 2009a).
The boom in Irish archaeology came to an abrupt end when the global financial crisis impacted seriously upon the Irish economy, with a 52% reduction in the number of archaeologists working in Ireland over the six months to January 2009 (a reduction of 82% of commercial archaeological posts) (Eogan & Sullivan 2009).

Figure 1 Tralee bypass road crossing at Ballingarry Hotel

In 2011, the Institute of Archaeologists of Ireland estimated that there are now only 350 individuals working in professional archaeology in Ireland (Heritage Council 2011, 1), a decline of 80% over four years.

This dramatic collapse could have been partly foreseen (Aitchison 2009b) –The Future Demand for Archaeologists in Ireland (CHL 2002a) had identified the link between growth in archaeological employment and the National Roads Authority's roadbuilding scheme which was funded via the state's National Development Plan 2000-2006 and that demand for commercial archaeology would fall after 2007 when the bulk of the roadbuilding was to be completed.

SCO Conclusion

The experience of Irish archaeology shows how that this area of professional study and research can operate in a commercial market just like any other business, how it can benefit when the market is expanding and very clearly how it can suffer when the market contracts. In this sense, it also shows the danger of over-reliance on single sector for funding. Road-building was not the only source of archaeological work in Ireland in the years from 2000-2007, but it was without doubt the most significant. Irish archaeology now has to restructure and reposition itself, with a 'sustainable population' of around 500 professional archaeologists being identified and an Archaeology Strategy Plan being developed (Heritage Council 2011).

SCO References

Aitchison, K. 2009a. 'Archaeology and the global financial crisis', Antiquity 083/319. http://www.antiquity.ac.uk/projgall/aitchison319/.

Aitchison, K. 2009b. 'After the 'gold rush': global archaeology in 2009', World Archaeology 41/4, 659-671.

Byrne, M.E. 2000. 'Private-sector archaeology' in N. Buttimer, C. Rynne & H. Guerin (eds) The Heritage of Ireland Collins Press: Cork, 571-578.

CHL Consulting Co. Ltd. 2002a. The Future Demand for Archaeologists in Ireland. A report to the Heritage Council and the Institute of Archaeologists of Ireland. CHL Consultants: Dublin.

CHL Consulting Co. Ltd. 2002b. A Profile of the Archaeological Profession and Educational Resources in Ireland: a report to the Heritage Council and the Institute of Archaeologists of Ireland. CHL Consultants: Dublin.

Eogan, J, 2010. 'The impact of the recession on archaeology in the Republic of Ireland' in N. Schlanger & K. Aitchison (eds), Archaeology and the Global Economic Crisis: multiple impacts, possible solutions, 19-23. http://www.ace-archaeology.eu/fichiers/25Archaeology-and-the-crisis.pdf.

Eogan, J. & Sullivan, E. 2009. 'Archaeology and the demise of the 'Celtic Tiger'', The Archaeologist 72: 26-7.

Heritage Council. 2011. The Archaeological Profession in Ireland: a workshop on future possibilities. http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Archaeology/Archaeological_Profession_in_Ireland_2011.pdf.

McDermott, C. & La Piscopia, P. 2008. Discovering the Archaeologists of Europe: Ireland. http://www.discovering-archaeologists.eu/national_reports/DISCO_national_Ireland_Final_Web.pdf

NRA & DAHLGI (National Roads Authority and the Department of Arts, Heritage, Gaeltacht and the Islands). 2000. Code of Practice Between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands. http://www.nra.ie/Publications/DownloadableDocumentation/Archaeology/file,3476,en.pdf

O'Rourke, D. 2005. 'Routes', British Archaeology http://www.britarch.ac.uk/ba/ba85/feat4.shtml.

O'Rourke, D. 2007. 'Quaestors, quality and quantity' in Willems, W.J.H. & Van den Dries, M.H. Quality Management in Archaeology, Oxford: Oxbow Books, 35-49.

12 CASE STUDY 3

LU Canal Seine-Nord Europe *by Kenneth Aitchison*

SCO Introduction

The Canal Seine-Nord Europe has been the biggest archaeological project in Europe, comprising work ahead of the development of a major new canal in the north of France between the Seine and Scheldt river basins.

The canal is 106 km in length, linking the Seine at Compiègne to Aubencheul-au-Bac, between Cambrai and Arras and close to the French border with Belgium.

The canal itself will be 4.5m deep and 54m wide, within an 'easement' – the area impacted upon for service roads and other facilities - of between 100 and 150m width.

Archeologie preventive – pre-development archaeology – in France is largely, but not entirely, carried out by INRAP (Institut National de Recherches Archéologiques Préventives), a quasi-autonomous semi-state agency, and funded by the developers. However, some archaeological practice is undertaken by other, commercially orientated bodies, in competition with INRAP. The Canal Seine-Nord Europe is a particularly unusual project, not just for its scale but also because it is involving seven separate archaeological organisations, two of which are not French.

SCO Case study – Canal Seine Nord Europe

The archaeological work on Canal Seine-Nord Europe has been fully integrated into the project planning process, and has been a very public part of the development. Archaeological evaluation took place from September 2008 until the end of 2009, with focussed excavation from June 2009 until 2011. The evaluation phase involved the investigation of an area covering an average of 25ha per linear kilometre of the route, a total of approximately 2,500ha.

Evaluation has involved a team of about 50 archaeologists; over the 28 months to the end of 2010, this represented 15,000 work days with a provisional budget of approximately €10 million. This was primarily funded by the hypothecated taxation (redevance) paid by the developer, Voies Navigables de France.

Methodologically, the topsoil was removed by mechanical excavators working with 3m wide non-toothed shovels which are able to expose approximately 1ha per day. These trenches are rapidly backfilled following the initial evaluation of any exposed deposits.

The drift geology across much of the canal route is fine loess soil, which can be up to 14m deep. To evaluate deeply stratified sites, including some Palaeolithic material, the project has used 'giraffe shovels' to open deep sondages.

Evaluation has revealed approximately three sites per linear kilometre, with considerable amounts of prehistoric, Roman and medieval material being investigated. The project also extends across large areas of First World War battlefield; during the evaluation of the first 850ha, landmine clearance services have had to be called in 45 times, leading to the recovery of considerable amounts of munitions.

The second phase of investigation involves the focussed excavation of sites identified during the evaluation stage. Again, this is funded by the developer, Voies Navigables de France.

SCO Technical Discussion

Since 2001, the French state has adopted the 'polluter pays' approach to archaeology, ensuring that the developer which is responsible for damaging the archaeological resource is held financially accountable for their actions. Rather than leaving the delivery of this to market forces (as in the UK), a system of hypothecated taxation has been introduced which funds a semi-state agency (INRAP) to undertake evaluation work (Demoule 2008).

At the most immediate of levels, this has been a relative success – the number of people working in French archaeology rose by 50% over eight years, from 2,068 in 2001 (Rubio & Bernard 2001) to 3,131 in 2009, with private enterprise now being tolerated in a minor role (14% of archaeologists in France worked for 'enterprises privées' in 2009) (Giraud 2009).

Two weaknesses of this system are the obligation upon all developers – regardless of their choice of site – to pay into the hypothecated fund which finances the archaeological evaluation work, and the limited choice available to the developers when it comes to mitigation. At this stage, INRAP, which had undertakes the evaluation work, then also specifies what (if any) further mitigation work has to be undertaken. The cost of this is not decided through the precise, formulaic manner whereby the evaluation costs are predicted, but this is left to market forces – and in many parts of France, INRAP is either the only or the most significant 'contractor' available to undertake this work, and if no other operator is available, work falls to INRAP by default, which can lead to long waiting times for developers.

Archeodunum, a Swiss company which has offices in France and Oxford Archaeology, an English company also with offices in France are both participating in the Canal Seine-Nord Europe project. They are not working directly alongside INRAP, but on separate 'parcels' of the canal; the regional archaeology services (DRAC) retain overall administrative control.

SCO Conclusion

This project is very important as it shows how sustainable development is delivered through the polluter pays system, but that this is levied through a mixed-economy system, whereby firstly the costs of evaluation is calculated precisely (depending upon the area to be evaluated and the anticipated depth of archaeological deposits) and then paid directly to the quasi-autonomous body of INRAP. The further costs for full excavation and preservation by record are then also met by the developer, but they have been able to negotiate delivery of this service with a number of different commercial providers.

Kristian Kristiansen (2009) considered that there are two models for the implementation of development-led archaeology, both of which rely upon an obligation on the developer to fund the work and both of which separate the delivery of archaeological services from those that make the legal decisions on its application. He calls these the 'socialist' and 'capitalist' model, and he places the French system firmly within the socialist version.

The INRAP system works well internally, creating so much employment that it is probably the largest single employer of archaeologists in the world, but it has not operated efficiently when exposed to competition, and it has been under almost constant threat since its establishment, firstly from the representatives of the potential funders. Secondly, non-French operators felt that the opportunity to work in France was being blocked in what was seen as a 'closed-shop' that did not embrace competition, arguing that this is not a system that works well within the context of globalising economics and the objectives of the European Union, which include allowing the freedom for individuals and organisations to work in all European Union states as well as their home countries.

SCO References

Demoule, J.-P. 2008. 'L'archéologie préventive en France: parcours et perspectives' in B.O.M Naffe, R. Lanfranchi & N. Schlanger (eds), L'Archéologie préventive en Afrique: enjeux et perspectives, 187-92. Saint-Maur-des-Fossés: Editions Sepia.

Giraud, J.-P. 2009. 'Organisation and Structure of French Archaeology'. Paper presented at Archäologie in Deutschland und Europa. Situation und Strukturen im Staatenvergleich, Köln 5 May 2009.

Kristiansen, K. 2009. 'Contract archaeology in Europe: an experiment in diversity', World Archaeology 41/4, 641-648.

Rubio, E. & Bernard, S. 2001. Cartographie du Paysage Scientifique en Archéologie Métropolitaine. Paris: Ministère de la culture et de la communication.

→ LU Further Reading

Canal Project website http://www.seine-nord-europe.com/.

First evaluation results
http://www.inrap.fr/archeologie-preventive/Actualites/Communiques-de-presse/Archives/2009/p-11881-Les-diagnostics-archeologiques-du-canal-Seine-Nord-Europe-des-premiers-resultats-remarquables.htm.

What role for the private sector in French archaeology?
http://www.france2.fr/cultureetloisirs/archeologie/37140534-fr.php?page=accueil

13 CASE STUDY

LU Open for Works *by Rosa Martínez*

SCO Introduction

The valorisation of archaeological heritage in Spain is a process that, generally speaking, started only in the 1980s, together with legal protection through the Law on Historical Heritage (1985). Important and popular archaeological sites such as Las Médulas (Roman mining landscape), Numancia (Iberian village which suffered a legendary siege by the Romans), Itálica (Roman town), Madinat-al-Zahra (Islamic medieval town) or Santa Tecla (pre-Roman village in Galicia) were abandoned or ignored for decades after the Civil War. Others, like Altamira or the Archaeological Ensemble of Mérida were not forgotten. Therefore, a review of the information boards explaining Spanish archaeological heritage would make sense if it focused on when and how the public authorities started to take care of providing on-site archaeological heritage information.

The preservation and valorisation of the historical heritage unavoidably leads to considering the role of heritage in society, sharing research results and recuperating the social function of the heritage. Furthermore, competition for visitors has encouraged archaeological heritage managers and public authorities to search for innovative and attractive ways of passing on on-site historical and archaeological information, considering the heritage as a resource whose specificities and qualities need to be highlighted and known in order to be better valued by visitors.

In this context, we will present the experience of Santa Maria Cathedral in Vitoria-Gasteiz (Basque Country). The Restoration Master Plan proposed a pioneering initiative of opening up the whole physical process of the works to the public, in order to rebuild the cultural and social function of the building, as well as to share the knowledge produced by the research with the city's inhabitants, who are ultimately, the heritors of the Cathedral.

'It is a monumental work, technically and architecturally speaking, but also for opening the temple to society, for rebuilding the artistic, cultural, scientific and educational functions that Cathedrals traditionally had throughout the centuries (...)'
Mario Vargas Llosa

The starting point: the Restoration Plan

Santa María Cathedral is located on the highest part of the hill upon which the old settlement of Gasteiz was built, within the limits of the old city walls. Due to several reasons (marginality in the surroundings, the existence of another cathedral in the city, etc.) Santa Maria Cathedral was forgotten and misused. In 1994 it closed due to important structural problems which risked the building collapsing.

The Master Plan for Restoration, which was awarded the Europa Nostra Prize in 2002, was completed in 1998. It highlighted two areas for restoration: both the physical aspect of the monument and its outward relationship with the urban, social and cultural setting.

In this sense, the Plan included a specific aim devoted to the valorisation of the Cathedral. The goal was to reinvigorate the Cathedral for the city, as well as to generate returns to the society (cultural, social, economical, urban-development, etc.). Although the building does not have the same artistic qualities of other Gothic cathedrals in Spain (León, Burgos, Sevilla, Toledo...), the Plan focussed on highlighting and exploiting other aspects that are specific and typical to the Cathedral as a strategy for promoting and differentiating it from the rest. In order to achieve this, it was necessary to pass on knowledge and explain the building as unique, its relations with history and geography, with the societies which built it, used it and maintained it until now, as well with their mentalities. (Lasagabaster: 2002).

Thus, the Restoration plan proposed to open archaeological excavations for visiting, as proof of the complexity of the construction and different aspects of its construction: religious, military and urban-development. Also, it included the possibility of establishing the necessary infrastructure (platforms and runaways) for visiting the triforium and the sentry wall, where the structural problems and their solutions were to be explained to visitors, so the public could understand the basis of the vaulted architecture.

SCO The visits programme: Open for Works

Once the Plan was approved and presented, a small exhibition and open days were organised. The success of this initiative confirmed the need to undertake the project in a way that was closely linked to the city and to speed up the proposals for valorisation that were included in the Plan.

Opening up the whole physical process of the works to the public meant that the schedule and infrastructures of the restoration works had to be adapted to make them available for visits during the whole process. Because of this approach, the tour of the church becomes a visit to a working site. It is a living project in which the tours of the Cathedral follow and

adapt to different moments within the process of the development of the works.

The visits focus on four main topics: History, Architecture, Archaeology and Art. The aim is not only to provide detailed descriptions of the problems encountered and the restoration solutions found, but also to explain them in historical, archaeological and artistic context. Another attraction for visitors is the opportunity to share the space with professionals at work, so they can witness restoration and archaeological work (with archaeologists and stonemasons, scaffolding and supports) and receive explanations of how and why they carry out their job.

Visits and itineraries evolve at the same time that the restoration works advance, increasing the parts of the cathedral that are open to visit and changing the itinerary and including new points and elements for discussion.

The main tour explains in depth the construction of a Gothic cathedral. The itinerary shows the different phases in which it was built; the problems it has been suffering for centuries; the archaeological and architectural research carried out, and the content of future projects. Throughout the tour, visitors discover the entire building from its foundations to the upper levels by walking along platforms that run above the supporting arches and supporting reinforcements that have been inserted several metres above the ground. Visitors are able to see the stonemasonry work that is reinforcing the foundations and creating a new floor for the Cathedral, some of which has already been put down. The tour also follows the outdoor sentry walk and visits the triforium, and ends at the portico, the restoration of which allows visitors to enjoy the extraordinary quality of the stone carvings on the tympanum. This tour was especially popular among the public when the archaeological excavations exposed the necropolis inside the cathedral. The exhumations carried out by archaeologists and anthropologists, as well as the explanations of burial rituals in the late Middle Ages were greatly appreciated by the general public who were aware that accessing this kind of fieldwork was an exceptional opportunity. Nowadays, over 400 m^2 of flooring have been put in place, covering part of the excavations. Visitors can now access this new space with an explanatory brochure.

Apart from the main itinerary, other spaces are open for visiting, both during the works and once the restoration has been completed: the Medieval wall (where space was recovered for the use and enjoyment of residents and visitors); the Portico of Light (where a digital recreation of the polychrome evolution is shown, explaining the changes in decorative details); the Tower and the Sacristy. Technical visits are also organised, lasting for two hours and exclusively devoted to technical aspects of the works' restoration and architectural issues.

Figure 1 View of the inside of the Cathedral with visitors
Image: Fundación Catedral Santa María

SCO Conclusion

The transmission of knowledge and the results of research on cultural heritage have been shown to be an efficient way of presenting heritage to society. Traditionally, information-boards have been the only way through which the general public learn about the history and specificities of an archaeological site or a monument.

Santa Maria Cathedral and its programme of visits has established a new way to form a relationship with the public, who become the main target group for the research and the restoration process. Interaction and proximity to the professionals, as well as the continuous evolution of the visits and therefore of the information provided, are the two most innovative aspects.

As results, people from Vitoria who have visited the Cathedral have a deeper knowledge of their heritage than most people from other places who can only see their Cathedral at floor level, and most of the time without any additional explanation of the monument (Lasagabaster: 2002).

Finally, and although the original objective was to involve the town in the process, thanks to these guided tours, Santa María Cathedral in Vitoria-Gasteiz has become one of the most important tourist attractions in the city and in the Basque Country (over 650,000 visitors since 2000) and has become an international reference for heritage management.

SCO References
AZKARATE A., CÁMARA L., Lasagabaster, J.I. y LATORRE P. (Coord) (2002). Plan Director de Restauración de la Catedral de Santa María de Vitoria-Gasteiz. Vitoria: Diputación Foral de Álava. Fundación Catedral Santa María. (2002).
Del AMO, M.C., CRESPO, S. (2007) Otro concepto de recuperación del patrimonio: abierto por obras. Entrevista a Carlos Rodríguez, Gonzalo Arroita and Juan Ignacio Lasagabaster. CEE Participación Educativa, 6, noviembre 2007 at http://www.educacion.gob.es/revista-cee/pdf/n6-amo-amo.pdf.
Lasagabaster, J.I. (2001) La Restauración Integral de la Catedral de Santa María de Vitoria, como instrumento de divulgación cultural in Euskonews (12-19/01/2001) at http://www.euskonews.com/0106zbk/gaia10603es.html.
Lasagabaster J.I (2002). La restauración de la Catedral de Santa María de Vitoria, historia de una gestión. II Bienal de Restauración (Vitoria-Gasteiz, 21th-24th November 2002), Vitoria-Gasteiz.
Grupo de Investigación del Patrimonio Construido at http://www.ehu.es/arqueologiadelaarquitectura/portal/index.php/proyectos/49-catintervencionesencascoshistoricos/196-catedral-de-santa-maria-vitoria-gasteiz.
Fundación Catedral Santa María at http://www.catedralvitoria.com/

14 CASE STUDY 1

LU Oxford Archaeology database *by Kenneth Aitchison*

SCO Introduction – Access to archaeological data

'Archaeological practice in the United Kingdom produces considerable amounts of reportage that is never intended for formal publication. This grey literature forms a resource which has, historically, been poorly used by academic archaeologists, and problems of access have been blamed for this. ... [T]his problem does not lie with accessing the resource, but has been of awareness, attitude and understanding. Structures are now in place which can allow the comprehensive interpretation and reinterpretation of fieldwork results by any archaeologists who choose to do so' (Aitchison 2010 289).

Following a public complaint (Lock 2008) about the inaccessibility of information originating from a particular piece of work undertaken by Oxford Archaeology, a major commercial archaeological contractor, the Chief Executive of Oxford Archaeology, David Jennings, wrote a robust defence of his organisation's policies (Jennings 2008). Jennings made it clear that Oxford Archaeology followed all current best practice for putting the reports on archaeological work into the public domain, and was working to 'to develop richer and better access to archaeological material'. This case study examines what Oxford Archaeology has done to make archaeological data, as well as the interpretations presented in archaeological reports, more publicly available.

This case study examines Oxford Archaeology's policies as it is the largest commercial archaeological operator in the United Kingdom – indeed, probably the largest in Europe and one of the largest in the world – and it has unique publicly presented policies on access to data.

SCO Case study – Oxford Archaeology

Oxford Archaeology is the largest direct employer of archaeologists in the United Kingdom. The company is a registered charity, and its published accounts for 31st March 2010 show an income in that year of £15 million with the company then having 402 employees.

Oxford Archaeology's published core strategy (at *http://openarchaeology.net*) includes a commitment to 'Open Archaeology', which it considers to be 'a philosophy, some software,

a commitment to adopting and developing standards, making archaeological knowledge free to access, a passion' (*http://thehumanjourney.net/index.php?option=com_content&task=view&id=128&Itemid=141*).

This involves the organisation working to use and produce:

> *Open Source* (using open source software, the use of software whose component parts, the program or source code, are available along with the software, normally with no licence fee),

> *Open Standards* (using standards that are in the control of a vendor- or sector-neutral body, demonstrated by adopting W3C standards for the web and Open Document Format (ISO 26300) for office documents,

> *Open Data* (a commitment to provide access to data as soon as possible, extending beyond the traditional archaeological record but also to include raw data and enhanced by wiki-systems) (*http://thehumanjourney.net/index.php?option=com_content&task=view&id=135&Itemid=158*).

SCO Technical discussion – Open data

Oxford Archaeology's commitment to making its data open is based on some significant starting points:

> that if the intention of archaeological fieldwork is the 'preservation by record' of past human activities and environments, then the record has to be preserved as well as possible,

> that huge quantities of archaeological data are now created and/or stored in a digital form and therefore digital preservation is key,

> that preservation without commitment to ensuring and facilitating access is a pointless exercise; and,

> that publically funded geo-data should be publicly available.

Oxford Archaeology estimates that they hold more than 3Tb of digital and digitised data, and their corporate intention has been to provide access 'not only to the traditional archaeological record, but also to the raw data in the form of context sheets, site photographs and images of key artefacts. This will be further enriched by Wiki-style systems facilitating discussion, and even the blogs of project managers, recording the process of discovery, interpretation and re-interpretation' [*http://thehumanjourney.net/index.php?option=com_content&task=view&id=135&Itemid=158*].

The first stage of this work has been to make mapping data (initially the locations of sites that Oxford Archaeology have worked on) available as a WMS/WFS feed. The map page is accessible at *http://mapdata.thehumanjourney.net*.

SCO Conclusion – Grey Literature and Grey Data

One major issue with Oxford Archaeology's good intentions is that while they consider that 'publicly funded geo-data should be publicly available', only a small part of their work is funded by public sources. The bulk of their work, like that of every other archaeological contractor in the United Kingdom, is funded by private developers, who are under no obligation to make the results of the work they have commissioned available to the wider public – unless that report is then used to apply for permission to change the use of land.

In England, landowners (not necessarily the same as the developers) retain all rights of ownership to archaeological materials found on (or in) their land, with the exception of particular objects (made of precious metals) that have been legally classified as Treasure. 'Title' to this material must be formally and legally transferred from the landowner to the museum of repository where the material is deposited.

Copyright in the reports and data belongs to the producer of those reports and data – the archaeological contractor – but, contractually, this may have been assigned or transferred by the contractor to their client – the developer.

It is now the norm for developers and/or landowners to sign releases transferring title to material to the repository where it is placed, and all reports produced for developers which are subsequently used to support their application for planning permission (or which have been produced as conditions upon their permissions)have to be placed in the public domain, normally through deposition with an archive or Historic Environment Record.

However, there is no obligation on developers who have not been in receipt of public monies to do so. This means that, similarly, plans to make all of the data from all applied archaeological work available hits an immediate, legalistic obstacle. If and when this can be overcome, there is an additional, technical and financial obstacle – although data are increasingly being 'born digital', this does not mean that it is always going to be interoperable and accessible to everyone, and so making the data available will require the investment of staff time.

It has taken a long time for archaeological 'grey literature' (the otherwise unpublished primary reports on archaeological work) to become easily accessible, as they now are in the UK through the OASIS project with deposition in the Archaeology Data Service (ADS)'s Grey Literature Library [*http://archaeologydataservice.ac.uk/archives/view/greylit/*].

The ADS (a publicly funded body, based at the University of York) is now moving towards becoming a repository for commercial project data as well as reports and data generated by academic projects.

The ADS is working with national and local archaeological agencies and those research councils involved in the funding of archaeological research, to negotiate deposition of project data. This includes data derived from fieldwork as well as desk-based studies. The types of data involved include: text reports, databases (related to excavated contexts or artefacts, for example), images (including aerial photographs, remote sensing imagery, photographs of sites, features and artefacts), digitised maps and plans, numerical datasets related to topographical and sub-surface surveys and other locational data, as well as reconstruction drawings [*http://archaeologydataservice.ac.uk/about/background*]

The first two major datasets to be deposited (and thus to become publicly accessible) are those from the Framework Archaeology (a joint venture between Oxford Archaeology and Wessex Archaeology) projects at Stansted Airport and Heathrow Terminal 5 [*http://archaeologydataservice.ac.uk/archives/view/t5_framework_2011/*] [cross-reference to Heathrow Terminal 5 case study].

It will take some more time before grey data becomes as equally accessible as grey literature, but there is a clear will to achieve this and mechanisms are being put in place.

SCO References

Aitchison, K. 2010. 'Grey literature, academic engagement and preservation by understanding', Archaeologies: Journal of the World Archaeological Congress6/2, 289-300.

Charity Commission. 2010. Oxford Archaeology Ltd, http://www.charity-commission.gov.uk/SHOWCHARITY/RegisterOfCharities/FinancialHistory.aspx?RegisteredCharityNumber=285627&SubsidiaryNumber=0

Jennings, D. 2008. 'Moribund stereotypes' [Letter to the Editor]. British Archaeology 103 (November/December 2008), 10. http://www.britarch.ac.uk/ba/ba103/letters.shtml [14 December 2011]

Lock, G. 2008. 'A Professional Mockery', British Archaeology101 (July/August 2008), 36-37. http://www.britarch.ac.uk/ba/ba101/feat6.shtml

14 CASE STUDY 2

LU Archaeotainment

by Marjolijn Kok

SCO Introduction

In this learning unit we will examine how archaeology is represented in entertainment. Heritage in games is not equal to heritage education, but nonetheless, it shapes the mind. We will call this mixing of archaeology and entertainment 'archaeotainment'. The examples will be taken from movies, games and toys. All three have strong visual aspects but the level of interaction and/or engagement is different.

SCO Movies: Indiana Jones

The Indiana Jones movies take the lead in debates concerning popular representations of archeaology (Membury 2002). There is even a website which polls the number of visitors who think Indiana Jones is bad for archaeology (*http://www.helium.com/debates/131864- is- indiana- jonesbad-for-archaeology/side_by_side*). On 12 april 2011, 182 voted yes and 621 voted no.

Most (2010) surmurises that no-voters think that audiences can make a distinction between fiction and reality. And Indiana Jones has at least drawn attention to the profession. Holtorf (2007, 105) is aware that archaeologists might expect too much educational value or truth from what is pure entertainment, and warns that 'Unfortunately these kinds of clichés and narratives are not always harmless entertainment but can have highly problematic colonial and imperial undertones' (Holtorf 2008). Furthermore, it may make some (non-white western virile heterosexual male) feel excluded from archaeology.

Although the image of Indiana Jones influences the image audiences have of archaeologists, archaeologist have little to no influence on how they are represented in movies. This is not necessarily bad as entertainment is different from education or documentary. Moreover, many archaeologist enjoy watching Indiana Jones movies, just as much as the general public. And we have to ask ourselves when we view other (adventure) movies do we expect to get a true picture of a profession or social position.

The actual effect of people associating everyday archaeology with Indiana Jones may be overstated as, for example, a questionaire in British Columbia by Pokotylo and Guppy showed that 2.7% of people got their view on archaeology from popular media of which only 1.4% referred to Indiana Jones. Although a later study by Pokotylo (2007) among archaeology students showed that in this group a three times higher percentage (8.1%) referred to popular media on how they viewed archaeology (Indiana Jones was explicitly mentioned by 6.5 %), this is still a relatively small proportion.

In comparison to games and toys, movies have the lowest level of interaction as the story unfolds before our eyes but there is no real participation. The story/imagery can be compelling and take us into another reality, but there is always a clear boundary as the spectator cannot alter the movie.
I guess few go to an Indiana Jones movie to learn about archaeology. Audiences want to hear/sea a good story and enjoy themselves.

Nonetheless, many archaeologists feel compelled to explain that they are not Indiana Jones (just type 'Indiana Jones Archaeology' into Google-scholar and dozens of pages of references will come up). This name-dropping of archaeologists is of course also a way of socially positioning themselves. It shows they know about popular culture, but what they do is much more serious.

SCO Games: Lara Croft

In comparison to movies games have a higher level of interactivity. If the player does not engage with the game nothing happens. And if you do not play it well the avatar dies or the game ends. The interaction is, however bounded by the programmers script, although some games have multiple scenarios or the games are altered through hacking (McRea 2002). Players often feel submerged in a virtual reality which goes further than merely viewing or playing as in board games.

One of the best-selling games in the industry is about an archaeologist Lara Croft. Millions of copies of Tomb Raider have been sold and Lara Croft has been the first virtual figure to appear on non-gaming magazine covers and adds. In reverse to most movies that have spin-offs in games and toys, Tomb Raider has been made into a popular movie. And both the games and the movies have become part debates on popular culture. In archaeology the discussion of the Tomb Raider series or other game has remained minimal. Striking in relation to archaeology the focus has mainly been on the movie and its relation to heritage sites (Winter 2002, Wheeller 2009). The game receives far less attention in archaeological discourse The association between games and acne-stricken boys may be something archaeologists want to keep away from (Watrall 2002). This in oposition to their openly flirting with Indiana Jones. However, Breger (2008) shows how the exploration of space in games, especially in relation to archaeology, can have colonial and imperialistic overtones. Other cultures are there to take artefacts from, something that must ring a bell with certain indigenous people who's culture are researched by foreign archaeologists.

Another aspect of Lara Croft that is most often discussed is here gender. How much archaeologists may despise popular representation, it is often seen as positive that Lara Croft embodies a female archaeologists, as the profession is overtly presented as a white male enterprise (Conkey 2007). Of course the bodily proportions are a point of discussion, but overall it is seen as a positive rolemodel, that not only makes archaeology something women can do, but that has also brought women into the gaming industry.

The different ways in which archaeologists comment on popular media, may give us some insight into how archaeologists critique popular images and at the same time make sure that they align themselves with a favourable stereotype.

SCO Toys: Playmobil

> ***Animation***

Toys are the most interactive category of archaeotainment as in play the users have to develop their own narrative. Although the imagination of most children (and sometimes adult players) has very few limitations, the material aspects of the toys does influence the narratives created. Here we focus on playmobil as it is a type of toy that induces the construction of narratives and playmobil has several play-sets with archaeological-historical aspects.
The early playmobil sets were historical and consisted of medieval castles and their inhabitants, and cowboys and indians. In these early sets the figures were fairly identical with only different colours of hair and bodysuits. By dressing up the figures they became persons. Although the boxes displayed who should have which attribute as a child you could mix them freely.
Through the years playmobil has, however, introduced more characters (ethnical and gender-based) which have relatively fixed identities as their clothes and ornaments are partailly permanent. For example, ancient Greek has a robe attached on his body.
With the historical set Egyptians for the first time (to my knowledge) a booklet appeared describing Egyptian culture, instead of what other sets were available. This adds an educational value to the toyset which was absent before. The playsets have become more cultural, but as playmobil is stereotypical also concerns have risen about the images they create.
The discussion has two major topics both related to discrimination of ethnic groups. The first mainly deals with

the cultural inaccuracies in the playsets. For example 'The Playmobil Indian Village set suggests the problem. It intermingles what looks like an Apache warrior, a Plains Chief, a Navajo weaver, and an Algonquin canoe. Actually, these come from several separate, largely unrelated cultures' (*http://www.bluecorncomics.com/stbasics.htm* accessed 13-4-2011).
The same argument can be made for the african. The main critique is that it poses an idea of a uniform Indian or African culture that does no justice to the complexity of very diverse cultural groups. Furthermore these mixed images draw on prejudices about these cultures. It would be similar to placing an ancient greek in his robes in the playset of the vikings and adding a modern road worker as if they belong to the same culture.
The second topic is related to the colonial overtones of the playsets and the markting strategies. There are multicultural playsets concerning African /African American, Asian, Mediterranean/Hispanic and Caucasian families. It is rightly pointed out that these set are more racial than multicultural as no family has people of different colour (*http://thesocietypages.org/socimages/2008/08/31/the-social-construction-of-race-by-playmobil/ accessed 18-5-2011*).

Furthermore the extra set 'figures' which falls within the same section only has white figures, suggesting that they are the standard. For archaeologists the colonial overtones in the adventurer and archaeologist sets are of interest as they relate to popular images of what it means to be an archaeologist. These figures all have guns and no notebooks. As Holtorf suggetsed these images do not actually relate to real archaeologists but to popular imagery of archaeologists (Holtorf 2005). Therefore we should not be surprised that the archaeologist looks more like Indiana Jones than a person actually excavating.

Although playmobil is diversifying its playsets, the company is still not fully aware of the impact of popular images on diverse cultural groups. But also archaeologists have done little research into toys and how they shape the image of archaeologists. However, the players can alter narratives and the eventual outcomes in contrast to the games and movies.

SCO Conclusion

As we have seen archaeotainment is heavely based on stereotypes with colonial and illegal (treasure hunting) overtones. Archaeologists can be critical about the way their profession is depicted, but it should be kept in mind that the main aim of these products is entertainment and not education. Furthermore, archaeologists portray their jobs, besides meticilous, hard-working, precise, and ethically correct, often as adventurious, detective-like and exciting. What aspects would you choose if you were inventing a game, movie or toy? It is not so much the portrayal of the archaeological profession that should be critised as the colonial overtones in popular media and our own narratives.

> SCO Test

SCO References

Breger, C., 2008: Digital Digs, or Lara Croft Replaying Indiana Jones: Archaeological Tropes and 'Colonial Loops' in New Media Narrative. Aether Vol.11, 41-60.
Conkey, M.W., 2007: Questioning Theory: Is There a Gender of Theory in Archaeology? Journal of Archaeological Method and Theory 14, 285–310.
Holtorf, C. 2005: From Stonehenge to Las Vegas: Archaeology as Popular Culture, Oxford.
Holtorf, C. 2007: Archaeology is a Brand. The meaning of Archaeology in Contemporary Popular Culture. Oxford.
Holtorf, C., 2008: Hero! Real archaeology and 'Indiana Jones and the Kingdom of the Crystal Skull.' http://traumwerk.stanford.edu/archaeolog/2008/03/hero_real_archaeology_and_indi.html (13-4-2011)
McRea, L. 2002: Questions of Popular Cult(ure). Perth, phd-thesis.
Membury, S. 2002: The celluloid archaeologist - an X-rated exposé, in: M. Russel ed., Digging Holes in Popular Culture: Archaeology and Science Fiction, Oxford.
Most, R, 2010: Archaeology and the media in the 1980s. The SAA Archaeological Record 10-5, 30-32. http://www.saa.org/AbouttheSociety/Publications/TheSAAArchaeologicalRecord/tabid/64/Default.aspx (13-4-20110)
Pokotylo, D and Guppy, N., 1999: Public Opinion and Archaeological Heritage: Views from Outside the Profession. American Antiquity 64(3), 400-416.
Pokotylo, D., 2007:Archaeology and the 'Educated Public.' A Perspective from the University. The SAA Archaeological Record 7-3, 14-18. http://www.saa.org/AbouttheSociety/Publications/TheSAAArchaeologicalRecord/tabid/64/Default.aspx (13-4-20110)
Watrall, E., 2002: Interactive Entertainment as Public Archaeology. The SAA Archaeological Record 2-2, 37-39. http://www.saa.org/AbouttheSociety/Publications/TheSAAArchaeologicalRecord/tabid/64/Default.aspx (13-4-20110)
Winter, T., 2002: Angkor Meets Tomb Raider: setting the scene. International Journal of Heritage Studies vol.8, No.4, 323-336.
Wheeller, B., 2009: Heritage Tourists: Responsible, (f)or What? Tourism Recreation Research Vol. 34, No. 1, 84-87.

15 CASE STUDY

LU Uses of Web 2.0 for Archaeology and Archaeological Heritage Management *by Rosa Martínez*

SCO Introduction

In this learning unit we will analyse the possible uses and applications of Web 2.0 to archaeological heritage management. Web 2.0 brought both technical and social changes in comparison with Web 1.0, facilitating users' interaction and communication as well as their contribution to generating contents. The services and applications available may become a useful resource and tool for AHM if we know how to use it and with which purpose.

SCO Web 2.0

'Web 2.0 is a new generation of services and on-line web applications which: facilitate publishing, sharing and

Figure 1 Web 1.0 vs. Web 2.0: the visual difference. *http://www.sizlopedia.com/2007/08/18/web-10-vs-web-20-the-visual-difference/*

→ **LU** Further Reading

The websites have been accessed in May 2011, many more can be found
http://www.indianajones.com (for all stereotypes)
http://www.msnbc.msn.com/id/24595365/ns/technology_and_science-science/t/indiana-jones-would-make-bad-archaeologist/
http://www.archaeology.org/online/reviews/tombraider/index2.html
http://www.archaeologyatthemovies.com/lara-croft-tomb-raider.htm
http://www.kopfwelten.org/
http://loveisntenough.com/2010/10/27/playmobil-and-the-essential-nature-of-africans-part-ii/

disseminating digital content; promote the collaboration and interaction; and offer tools which facilitate searching and organising information.' (De Clerq in Grane & Willem (eds): 2009)

SCO Technical change

The concept of Web 2.0 was first used by O'Reilly Media in 2004. The company observed the evolution of the internet after the bursting of the dot-com bubble in the autumn of 2001. They stated that the most popular pages were no longer static store-content websites, but free applications which allowed users to publish information in a quick and easy way. It is not a coincidence that first blogs appeared in 1999 and Wikipedia was created in 2001.

O'Reilly identified seven points which defines Web 2.0: (always visible)

1 The Web as platform: You may use the applications for free without downloading any software to your equipment,

2 Collective Intelligence: Wikipedia is the best example of harnessing collective intelligence. Users produce contents that might be useful or relevant for others.,

3 Database management: 'Every significant internet application to date has been backed by a specialized database: Google's web crawl, Yahoo!'s directory (and web crawl), Amazon's database of products, eBay's database of products and sellers, MapQuest's map databases, Napster's distributed song database' (O'Reilly, 2005),

4 End of the software release cycle: Web 2.0 applications are not definitive, they are continuously improving or updating. Users' information and feedback are the main criteria for creating new products and functionalities in a very short time,

5 Lightweight Programming Models: Simplicity is the main characteristic of Web 2.0 applications, in their architecture and programming, as well as their use and interface. Good examples are the RSS application or Google Maps which allow very simple navigation among different applications and information,

6 Software Above the Level of a Single Device: Web 2.0 is not only for use in computers. The programming and simplicity of the software is one of the reasons for its easy adaptation to other devices. A new space named Mobile 2.0 has been created thanks to the mobile phones from which we can consult and create media contents,

7 Rich User Experiences: Web 2.0 applications propose user-friendly interfaces, which facilitates access from anywhere at any time and promote social interaction. The easy use of blogs or Gmail which combine internet based email with a PC interface are two examples which aimed to facilitate the interaction.

SCO Social change

Web 2.0 has been called the social web. But it might be very well named the people's web, your web or everyone's web. The internet is no longer a closed repository of information, without any feedback. Nowadays it is a space for interaction and discussion in which anyone may be a content creator. We, the people, are interacting, creating and sharing information: we use the web as it was meant to be used (Graham: 2005).

Another element of the social revolution is democracy. Users have the same possibilities as the big mass media for publishing information and for creating opinion. There is no editorial board which decides what is to be in the news. Rates, links and visits are some of the ways in which users decide the day's or week's news. Finally, users search for information. Thanks to applications which simplify and customise the search according to user's preferences, people decide not only what information they want to receive but also when. (Graham, 2005)

Differences between Web 1.0 and Web 2.0

SCO What use for Web 2.0 tools in Archaeological Heritage Management?

Introduction

Archaeology and AHM have not been excluded from this new way of producing and sharing contents among users. Terms as 'Archaeology Web 2.0' 'blogging archaeology', 'Archaeology and social networks' produce millions of results in a Google Search.

Shawn Graham processed over 8000 pages aiming to create a map of what he called the 'Archaeological blogosphere'

Explanation of the image:

1 The archaeological blogosphere: green,

2 The cloud: light blue (Google, Amazon, YouTube),

3 Social Media: Purple (Facebook, Twitter; also online newspapers),

4 News aggregators: Red (news.google.com).

It seems that blogging is the most popular Web 2.0 tool among the archaeological community. However, other services and applications may have an important impact in disseminating Archaeological Heritage and in supporting its management.

SCO Web 2.0 services for producing contents

> ***Animation***

Blog

There are still few analysis and reviews on blogging archaeology. So it is difficult to state a classification of blogs according to their content, purpose, target group, etc. Apart for the traditional author-centred blogs and those devoted for teaching and training, we can establish a general classification of blogs related to archaeology or AHM, following Michael E. Smith's opinion (2011), from the Society for American Archaeology.

> Blogs relating the fieldwork: Blogs aimed to involve the public in the fieldwork, or even scholar them explaining archaeology methods with examples. Blogs may adopt the form of an excavation log, be devoted to a single project or gather different examples of archaeological matters with dissemination purposes.

Where in the hell am I? (*http://whereinthehellami.wordpress.com*). Getting' dirty before 10:30 (*http://www.flpublicarchaeology.org/blog/serc*).

> Blogs for communication of broader ideas and themes to the public and/or media. The themes are more general not directly linked to a specific fieldwork or project. The aim is to discuss ideas and themes with the broader public. It might also be aimed at raising awareness or to increase sensibility towards archaeological aspects; preservation of the heritage, involvement of the public in development plans or to make known the archaeological lobby's point of view.

Wide Urban World (*http://wideurbanworld.blogspot.com*)

Iraq War and Archaeology (http://iraqwararchaeo.blogspot.com)

Archaeology dude (*http://www.archaeologydude.com*)

> Blogs for communication and discussion of professional topics with a professional audience: This category may serve to disseminate and exchange research results, as well as to facilitate discussion on good practices in AHM.

Blogging Pompeii (*http://bloggingpompeii.blogspot.com*)

Digging digitally (*http://www.alexandriaarchive.org/blog*)

Whatever your interest, specific blog search engines might help you to index and select the most relevant and popular blogs on a particular topic.

Most popular tools for creating a blog

- *www.blogger.com (http://www.blogger.com)*
- *www.wordpress.com (http://www.wordpress.com)*
- *www.blogflux.com (http://www.blogflux.com)*

For searching and indexing blogs

- *www.technorati.com (http://www.technorati.com)*
- *www.blogpulse.com (http://www.blogpulse.com)*

Wiki

A website aimed to generate collaborative work in which different people contribute to editing the content, it is continually revised and is open to a group of users of varying size.

Possible applications of a wiki in archaeological heritage management are: the elaboration of resource guides (information, documents, references, etc.); creation of handbooks or local guides, and also as internal management tool (intranet or knowledge management).

Quantitative Archaeology Wiki (*http://wiki.iosa.it*)

The Wiki Archaeological Information Resource (*http://www.wikiarc.org*)

Digital Archaeological Documentation Project (*https://wiki.uibk.ac.at/confluence/display/excavationtutor/Home;jsessionid=715A4EEF54E52FC82236B95FCE8F1B6A*)

Most popular tools

www.wikispaces.com (*http://www.wikispaces.com*)

Personal desktop

These applications gather in a single space all the content, webs and tools which are useful or relevant for the user. Thanks to RSS channels, widgets and customisable modules all Web 2.0 resources may be available via any computer (or device) thanks to a personal URL.

You may use these applications to create a customised and updated web with relevant information for your community: blog entries, news, tools, software, publications, search engines, etc.

Most popular tools

- *www.netvibes.com*
- *www.pageflakes.com*
- *www.google.es/ig*

SCO Sharing content

There are websites that allow the sharing of multimedia digital objects such as pictures, video, podcast or presentations. Users may store, distribute and tag any material, which may also be rated by other users.

Nowadays, it is common that websites offer the possibility of sharing and saving content in bookmarks and social networks via a single button. This is a widget with a list of services to choose (Yahoo, Hotmail, Gmail, MySpace, Facebook, Twitter, StumbleUpon…) where to share the URL.

The interest in sharing content for Archaeological Management Heritage is mainly related to the dissemination of heritage and related activities. Any material created will be

at the users' disposal through the sharing tools. This is also a way of managing and monitoring the digital material available: pictures, videos, presentations, maps, designs, etc. as a part of a broader communication strategy.

Examples of AHR related resources shared in the Web

> Help Save the Tara Valley (video) (*http://www.youtube.com/watch?v=64vaMhwvdRc*),
> Archaeological open air museums (video) (*http://www.youtube.com/watch?v=GFbaXJBhyCs*),
> Archaeology group (pictures) (*http://www.flickr.com/groups/13975509@N00*),
> English Heritage Maritime Archaeology (*pictures*) (*http://www.flickr.com/groups/ehmaritime*),
> Cultural Landscape as place for civil society engagement in heritage (presentation) (*http://www.slideshare.net/heritageorganisations.eu/cultural-landscape-as-place-for-civil-society-engagement-in-heritage-management-gerhard-ermischer*),
> Project Archaeology Workshop and Field Opportunity (presentation) (*http://www.slideshare.net/fultonm/carroll-college-workshop-brochure*),
> Wessex Archaeology (resources to share) (*http://es.scribd.com/wessexarchaeology*).

Most popular tools

> *www.flickr.com (pictures), http://www.flickr.com,*
> *www.youtube.com (video), http://www.youtube.com,*
> *www.slideshare.cnet (presentations), http://www.slideshare.cnet,*
> *www.addthis.com (tool for sharing contents through other webs), http://www.addthis.com,*
> *www.addtoany.com (tool for sharing contents through other webs), http://www.addtoany.com.*

SCO Social Navigation

A social navigation system gathers information, opinions and feedback from users that might be useful or relevant for other users. Instead of relying upon a web search engine to select content, the user searches by being guided by other users' experiences, comments or choices. Using these tools you may contribute to the widespread dissemination of archaeology or AHM content.

> ***Animation***

Social bookmarks

As in your personal laptop you add a bookmark in your browser when you find a website useful or interesting, there are applications which allow you to record your preferences on-line and to make them accessible to as many people as you want.

Most popular tools

- *bliklist.com (http://bliklist.com),*
- *cloudalicio.us (http://www.cloudalicio.us),*
- *gnolia.com (http://gnolia.com).*

Geo-applications

They are websites operating with maps and geographical tools (GIS) in which we can tag, upload pictures or mark places, make comments, etc. In AHM these applications are especially useful for locating archaeological sites and for the spatial management of archaeological resources. You can also use them to elaborate guides or itineraries. Discover UNESCO World Heritage sites (Google Maps and Google Earth) (*http://www.google.es/intl/en/landing/unesco/*) Olympia, Greece (*http://www.panoramio.com/map/#lt%3d37.648552%26ln%3d21.627286%26z%3D4%26k%3d1%26a%3d1%26tab%3d1*)

Syndication

RSS channels have become very popular as a way to be updated on the news from a website we are interested in (blog, wiki, website, etc.) without browsing. Users may subscribe as individuals or may include in these in their websites to automatically reproduce updates.

SCO Social Networks

The networks are a social interaction tool, aimed at creating and managing virtual communities in which people communicate naturally about their likes and dislikes, opinions, links to blogs, websites, interests, etc. These are very active and they are references on what is going on in Web 2.0.

Apart from the evident benefit of immediate communication, an interesting feature of the social networks for AHM is the consolidation of thematic communities, such as on a common interest, or a common purpose (i.e. pressure group for protecting a site).

Students of Archaeological Heritage and Museums at Cambridge University *http://www.facebook.com/group.php?gid=123641657690955*
Underwater Archaeological Heritage (Greece) *http://www.facebook.com/group.php?gid=155186538115*
Heritage Watch *http://www.facebook.com/group.php?gid=4664104863*

SCO Conclusions

There are hundreds of examples on how Web 2.0 has become a supporting tool for AHM. Without doubt it is a powerful tool for reaching a broader public, as well as improving communication and connections between professionals.

A successful and efficient use of Web 2.0 needs to be carefully designed and included in a broader strategy in order to meet more general objectives. In general, and regardless of the final aim of using Web 2.0, there are four areas in AHM in which Web 2.0 will be especially useful: Education, Communication, Dissemination and Research.

> Exercise

SCO References

- Caraher, W. R., 2008, *Blogging Archaeology and the Archaeology of Blogging*, January 17, 2008 at *http://www.archaeology.org/online/features/blogs*
- Cordon, J.A., J. Alonso, R. Gomez, J. Lopez, 2010, *Las nuevas fuentes de información: Información y búsqueda documental en el contexto de la Web 2.0*. Ed. Piramide, Madrid
- Graham, P., 2005, *Web 2.0* at *http://www.paulgraham.com/web20.html*
- Graham, S.,2011, *The archaeological blogosphere*, April 1st, 2011 at *http://electricarchaeologist.wordpress.com*
- Grane, M. and C. Willem, (eds), 2009, *Web 2.0: Nuevas formas de aprender y participar*, Laertes Educación, Barcelona
- Hirst, K.K., 2011, *Blogging archaeology post session comments*, April 8th 2011 at *http://archaeology.about.com/b/2011/04/08/blogging-archaeology-post-session-comments.htm*
- O'Reilly, T., 2005, *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software* at *http://oreilly.com/pub/a/web2/archive/what-is-web-20.html?page=1*
- Scopeo, 2009, *Formación Web 2.0*, Monográfico Scopeo, nº1 at *http://scopeo.usal.es/images/documentoscopeo/scopeom001.pdf*
- Smith, M. E., 2011, *Types of Archaeological blogs*, April 4th, 2011 at *http://publishingarchaeology.blogspot.com*

16 CASE STUDY

LU Engineering Amsterdam Subway *by Heleen van Londen*

SCO Introduction

The North/South subway in Amsterdam is by far one of the most complex urban projects in the Netherlands. The city is divided by the river IJ and the subway connects both parts After a long political debate from the 1950s onwards, the work finally started in 2003 and is still to be completed. The line will be 9.7 kilometres long with stops at eight stations. The majority, some 7.1 kilometres, will be underground, below water, the railway station and the historic centre. The riverbed of the Amstel was chosen to avoid damage in the historic district. There was a general intention to not disturb heritage above the ground. However, the river bed is of course an archaeological 'hot spot' and severe erosion could not be avoided. The city archaeologists were consulted early in the process. As early as 1997 a desk based assessment was presented to the planners indicating where to expect archaeological remains.

The complexity of the project is due to the weak soil combined with a historic city centre that is now a World Heritage site. The engineers have used a new type of drill especially designed for weak soils (fig 1). The drill has a diameter of 6.88 m and is 84 m in length. In total 6.2 km will be drilled. It is the first time engineers have used a drill instead of sinking tunnel cases. The great advantage of drilling is in preventing demolition of historic houses. As all the historic houses are funded on long beams that go well into the peat to the first sandy layer, the drill needs to stay away from an underground forest of beams.

The city archaeologists developed a master plan for archaeological research well beneath street level (25-33 m) based on preconditions set by engineering. The drilling technique itself excludes the possibility of research. Three locations were selected for excavation, two stations and one part of the trajectory where the drill needed to be put into place to start its work. Excavations led to complex working conditions without much daylight. Among other things archaeologists needed to be instructed about decompression sickness.

At some other locations the archaeological work was limited to assessments such as the Bijenkorf location at Dam

square. Here finds material was collected from dumped soil from vertical drilling work by engineers. Methods could not be influenced to gain more archaeological insight.

Figure 1 Tunnel drill

SCO Early history

> *Animation*

Amsterdam started peat reclamation from about 1000 AD. At that time, the area was a swamp and people started to drain the area, following small peat river. The new land was used by farmers. But due to drying out, the peat oxidised and sank below the sea level which led to the emergence of dikes along the river IJ and the Zuiderzee. In the 13th century a dam was placed at the crossing between the rivers IJ and Amstel which would become a river based trading market and the beginning of a major city.
The west levee of the Amstel river (now the Nieuwendijk) was built on first. Wooden houses date back to 1225. Somewhat later the east levee was developed. In 1306 Amsterdam received municipal rights. The oldest map of Amsterdam from 1538 still shows the main structure of the Amstel river in the middle and parallel rows of houses on both sides. Prominently, in the centre of the river lies the dam that named Amsterdam: the dam of the river Amstel. It was a sea port and the early economy thrived on trading beer and herring.
In the 16th and 17th century the city developed quickly. First the canals, the city walls, then housing blocks, harbour islands and basin.

Amsterdam has been a maritime city for many centuries. Today the harbour front pictured by Stopendaal in 1693 cannot be enjoyed anymore because city planners placed the railway station of Amsterdam Central along the harbour basin. As a result, it remains closed. In historic times, ships could sail all the way to the dam and along the canals. Amsterdam is famous for the 17th century Golden Age quarters and is called the 'Venice of the North'. However, the canals cannot be understood without the harbour.

SCO Archaeological excavations

Excavations of the Amstel river bed were organised in three sections and went as deep as the natural deposits up to 25-33 meters below street level. Two locations are metro stations (Stationsplein and Rokin) and one is a tunnel shaft to get the drill into place (Damrak). Rubble was collected in big bags and sieved on the street. Also, in situ digging could be done following river stratigraphy. Research questions touch the early development of Amsterdam and of course the natural landscape.

SCO Results

Over time, people have thrown things into the river or lost them. Now, almost 700,000 finds were collected from all periods. Analysis is focused on dating and spatial distribution in order to find patterns of use. And indeed patterns occur, pointing to a rich 17th century sugar industry (pottery), city defence (weaponry) and boating (ship hooks 1300-1900 AD). Also, finds from the Far East were collected, evidence for the East Indies Company (VOC), many personal belongings (Dutch gin bottles), pilgrim insignias and evidence for wool production. Analysis is still in progress.

SCO No damage at all?

Shortly after the first drilling, serious complaints were heard from house owners. Extremely expensive real estate in the historic centre became damaged, some houses needed to be evacuated right away. The city council established a special office for damage claims.

The subway project is both famous and infamous. The city centre is a mess, budgets can't be met time and again and there is of course damage to the historic centre. But, on the other hand, the project is known for its first class engineering. The city council has high hopes for the economy of the city once the subway is opened.

SCO References

- Gawronski, J., 2009, *Amsterdam, een maritieme stad?*, Amsterdam University Press
- Kranendonk, P.S.M., 2003, *Projectopdracht Archeologische Begeleiding Noord/Zuidlijn*, document BMA, Amsterdam
- Kranendonk, P.S.M.,2005, *Herziene Projectopdracht Archeologische Begeleiding Noord/Zuidlijn*, document BMA, Amsterdam
- Kranendonk, P/S.M., 2010, *Boren voor de Bijenkorf. Archeologische Begeleiding bouwschacht voor de Noord/Zuidlijn op de Dam (2007)*, AAR (Amsterdamse Archeologische Rapporten) 46
- Veerkamp, J.,1998, *Mammoeten in Amsterdam. Een archeologische verkenning langs de Noord/Zuidlijn*, Amsterdam

Links

- *http://www.parool.nl/parool/nl/1084/dossier-noord-zuidlijn/index.dhtml*
- *http://www.noordzuidlijn.amsterdam.nl/*
- *http://www.bma.amsterdam.nl/archeologie/noord_zuidlijn/*
- *http://www.sbnzlijn.nl/*

→ **LU** Further Reading

- Bakker, B., 2004, 'De zichtbare stad', in: W. Frijhoff en M. Prak (red.), *Geschiedenis van Amsterdam II-1. Centrum van de wereld 1578-1650*, Amsterdam, 17-101
- Bakker, B., E. Schmitz, 2007, *Het aanzien van Amsterdam. Panorama's, plattegronden en profielen uit de Gouden Eeuw*. Bussum
- Carasso-Kok, M. (red.), 2004,*Geschiedenis van Amsterdam, Deel I en II*, Amsterdam
- Gawronski, J., 1996, *De Equipagie van de Hollandia en de Amsterdam. VOC-bedrijvigheid in 18de eeuws Amsterdam*, Amsterdam
- Gawronski, J., 2002, 'Archeologie op Oostenburg. De Amsterdamse stadsuitleg en het maritieme cultuurlandschap', In: J. Gawronski, J.F. Schmidt, M.-Th. Van Thoor (red.), *Amsterdam. Monumenten en Archeologie 1*. Amsterdam, 10-27
- Gawronski, J., 2004, 'Opgravingen in Amsterdam. Een terugblik op dertig jaar gemeentelijke archeologie', In: V. van Rossem, M. Bakker (red.), *Amsterdam maakt geschiedenis. Vijftig jaar op zoek naar de genius loci*, Amsterdam, 302-323
- Hoog, M. de, 2005, *4 X Amsterdam. Ontwerpen aan de stad*. Bussum.
- Kranendonk, P., J. Gawronski, 2006, Zeven op het Damrak. Archeologie en de Noord/Zuidlijn. In: J.Gawronski, F. Schmidt, M.-TH. Van Thoor, *Amsterdam. Monumenten en Archeologie 5*, 11-17
- Lesger, C., 2001, *Handel in Amsterdam ten tijde van de Opstand. Kooplieden, commerciële expansie en verandering in de ruimtelijke economie van de Nederlanden ca. 1550 – ca.1630*, Hilversum
- Rebel, B., G. Vermeer, 2009, 'Amsterdam en haar problematische verhouding met het Centraal Station', *Amstelodamum* 100, 10-45

pdf

- Gawronski, J., and P.S.M. Kranendonk, 2008, Damrak en Rokin. Archeologie en de Noord/Zuidlijn in Amsterdam, *Vitruvius* 4, 38-44

18 CASE STUDY 1

LU Archaeology and Human Rights *by Rosa Martínez*

SCO Introduction

During the 20th century, we have assisted to a new practice linked to war and conflicts: deliberate and systematic practices of making people disappear – whether for political, religious, ethnic, cultural or other motives – have been known as an efficient tool of war and repression. (Juhl 2005) The repression after the Spanish Civil War and the genocides committed during World War II, were only the firsts of a dramatic list of conflicts where crimes against humanity and genocide have occurred: Argentina, Chile, Guatemala, El Salvador, Rwanda, former Yugoslavia and most recently Iraq.

Mass graves are often the result of these atrocities in order to conceal the crime and also prevent individual identification (Juhl 2005). Normally, the excavation of these mass graves is carried out in the framework of an investigation of the crimes themselves. This learning unit is aimed to analyse the contribution of archaeology to this process.

SCO Legal framework

After the World War II international society tried to take preventive measures against the atrocities committed by the establishment of the United Nations in 1945, the adoption of The Universal Declaration of Human Rights (Juhl 2005) With the United Nation's approval of the Convention on Genocide on December 9, 1948, along with other human rights treaties, it was made easier to prosecute those who were responsible for the genocides. (Peterson 2008)

> ***Animation***

Crime of Genocide: any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such: killing members of the group; causing serious bodily or mental harm to members of the group; deliberately inflicting on the group conditions of life, calculated to bring about its physical destruction in whole or in part; imposing measures intended to prevent births within the group; [and] forcibly transferring children of the group to another group. (Article 2 of the UN Convention on the Prevention and Punishment of the Crime of Genocide by The United Nations, 1948).

Despite the good intentions of the first treaties and resolutions, violations of Human Rights continued in wars and conflicts. Therefore the international legal framework evolved towards a more precise definition of Human Rights violation in war time. The systematic practice of making people disappear has since 1978 been known as enforced disappearance. In 1992 the United Nations made a declaration about enforced disappearances; and in 2002, it became fully recognised as a crime against humanity within international criminal law.

Crimes against humanity: are particularly odious offenses in that they constitute a serious attack on human dignity or grave humiliation or a degradation of one or more human beings. They are not isolated or sporadic events, but are part either of a government policy (although the perpetrators need not identify themselves with this policy) or of a wide practice of atrocities tolerated or condoned by a government or a de facto authority. Murder; extermination; torture; rape; political, racial, or religious persecution and other inhumane acts reach the threshold of crimes against humanity only if they are part of a widespread or systematic practice. (Rome Statute of the International Criminal Court, 1998 Explanatory Memorandum).

As consequence of genocide and crimes against humanity, it is needed an investigation on grave recognition, excavation, and the identification of human remains and the recovering artifacts. (Peterson 2008) Importance of an adequate investigation of the burial sites has been recognized by United Nations by the Manual on the Effective Prevention and Investigation of Extra-Legal, Arbitrary and Summary Executions, which provide a Model Protocol for disinterment and analysis of skeletal remains.

SCO Forensic Archaeology

In most of Europe, archaeology and physical anthropology are separate disciplines originating in the different educational departments as archaeology and anatomy/forensic medicine respectively. In North America, physical anthropologists receive a basic education on archaeology. (Juhl 2005)

The application of these sciences, physical anthropology and archaeology, to questions of medico-legal significance results in the definition of forensic anthropology and forensic archaeology.

> ***Animation***

Forensic anthropology is the application of the methods and goals of physical anthropology to questions of medico-legal significance with a core expertise in obtaining information from hard tissue (bones and teeth) variation whether genetic or acquired (Juhl 2005).

Forensic archaeology is the application of archaeological methods to the resolution of medico legal issues. Specifically, forensic archaeologists perform the controlled recovery of human remains and other evidence at forensic scenes. (Nawrocki 1996).

Although excavations of mass graves containing missing military personnel goes back to World War II and the post-war period, first contact of Archaeology with human rights investigation was in Argentina, where in 1985 a team of physical anthropologists included archaeologists in the field work. All the Latin American forensic human rights organisations are called forensic anthropology teams although they consist of both archaeologists and anthropologists, and apply both sciences (Juhl 2005).

Archaeological methods allow to recover evidences and artefacts (identification papers, wallets and their contents, coins, amulets and other personal ornaments, clothes, cartridges, cartridge cases and bullets) usually present in mass graves, but also to reconstruct the entire scene as it appeared before excavation. (Juhl 2005; Nawrocki 1996)

This is important since forensic anthropologists and archaeologists not only work with forensic evidences, but also with testimonies and personal stories of the people they are exhumating (Belelli 1996). So evidences become important to support the identification process and also to verify or exclude testimony from a witness or suspect (Nawrocki 1996).

SCO Methodology

Most of the exhumations and investigations related to crimes against humanity and mass graves follow the protocol and recommendations of the Manual on the Effective Prevention and Investigation of Extra-Legal, Arbitrary and Summary Executions, which might be summarized as follows:

> ***Animation***

1 *Finding the grave*

First step is locating the grave. Depending on the context and the circumstances this might be done in different ways. In any case it is necessary to gather all the previous information available on the grave: interviewing witnesses, research in archives, etc. Secondly, a field exploration is needed to identify the point. Mounds, sunken earth, altered vegetation, or altered soil can indicate a grave site. Sometimes supporting methods are needed (remote aerial sensing, GPR, metal detectors etc.) The way in which the grave is located will vary depending on the size of the grave, the number of the bodies, the time passed and the available budget. Legal permissions and requirements are also to be taken into account, which also will vary depending on the country, the framework of the exhumation (as part of a general investigation on human rights violation or individual action).

2 *Excavating the grave*

The excavation is aimed to recover as much information as possible in situ, regarding the identity of the people buried, as well as their death circumstances. Thus, archaeology provides a working system which allows recording and documenting the process, as well as the information provided by the remains, artifacts and their context.

Nawrocki (1996) proposes five objectives which a proper archaeological excavation of a grave should be able to accomplish:

1 clarify the stratigraphy of a site, reconstructing the sequence of events that disturbed it.

2 recover all evidence, paying special attention to small bones and teeth. Debris is generally screened through 1/4" wire mesh.

3 document the provenience of all evidence in 3-dimensional space (latitude, longitude and vertical position.

4 determine whether evidence is 'in situ', explaining the forces that move items out of position (e.g., humans, animals, water)

5 limit postmortem damage to the remains, facilitating the anthropologist's identification of perimortem using small tools, such as trowels, spoons, and wooden picks.

For Peterson (2008), before the body can be removed from the grave some steps have to be taken.

The distribution of the limbs of the body should be worked out for they may be contorted if thrown into the grave or bulldozed.

The body should also be freed as much as possible from the soil and other bodies.

The body should be cleaned for a photograph and to reveal clothing and suspected injury.

A recording sheet has to be filled out with information regarding the body and associated artifacts.

As far as the documentation is concerned, some authors advise for video recording the process, or at least a complete and detailed series of photographies of all the process. (Polo 2009)

3 *Anthropological and forensic study*

Polo (2009) distinguishes two phases field and laboratory analysis:

On the field, archaeologists and anthropologists participating in the excavation gather all the information about the position of the body, the description of the burial pit,

description of grave accessories, and the orientation of the body (Peterson 2008) as well as the association of objects and artifacts to the bodies. A preliminary estimation on identity (age, sex) and anthropological pathologies, as well as death cause might be also done in situ.
In laboratory, anthropological and forensic analysis are carried out aimed to obtain four types of physical evidence that, according to Skinner, can be obtained from human remains: evidence of identity, evidence of when death occurred, evidence of premortem suffering, and cause, manner, and mode of death. (Peterson 2008 and Juhl 2005)

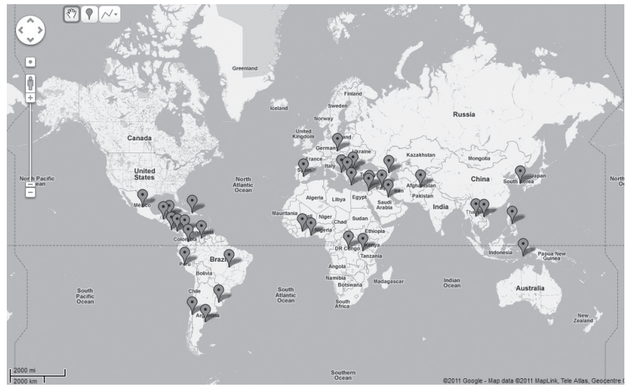
Depending on the circumstances and context of the grave, genetic analysis may be done for identifying the bodies.
For Juhl (2005) in the prosecution of war crimes, crimes against humanity and genocide, personal identification is not a priority since those killed are not killed because of their private qualities, and the killer usually does not personally know the people he or she is killing. However, in investigations of forced disappearances the identity is a key aspect of the process since many of them are promoted by relatives willing to know what happen or to recuperate the remains for reburial.

Sometimes, information provided by relatives and witnesses, together with a proper analysis on physical and anatomical traits, as well as archaeological evidence of personal effects related to the body, might be enough for identification. However, DNA-analysis may be the ultimate and conclusive tool to establish positive personal identity.

SCO Forensic Archaeology contribution to human rights: some examples

Despite the human rights treaties and conventions, the international society has not been able to prevent atrocities in wars and conflicts, especially during the last three decades of the 20th century where massive violations of human rights took place all along the world.

> ***Animation***
Countries where forensic archaeological investigations and identifications have been carried out: Argentina, Chile, Uruguay, Guatemala, El Salvador, Nicaragua, Colombia, Peru, Mexico, Rwanda, former Yugoslavia, Brazil, Israel and the Occupied Territories, South Korea, Czechoslovakia, Honduras, Kuwait, Panama, Thailand, Cyprus, Georgia, Abkhazia, Nigeria, Afghanistan, Iraq, Haiti, Congo, Ivory Coast, East Timor, Sierra Leone, Kosovo, Cambodia, Spain, Filipinas, Romania, Venezuela.
The existing cases have been approached differently



depending on the country, the socio-political circumstances and the role of the International organizations.
In some cases, mostly in Latin America, the investigation of the crimes against humanity has been led by national forensic teams and in the framework of national courts and reconciliation process:

Argentina
According to the National Commission on the Disappearance of people, almost 9,000 people were made to disappear during Argentina's 'Dirty War' 1976-1983. Some were dropped from airplanes into the ocean, while others came to be buried in anonymous graves in municipal cemeteries. (Juhl 2005)In the mid-1980's first exhumations were carried out without any scientific method complicating the investigation and latter identification. Students of anthropology and archaeology were guided and trained by Dr. Clyde Snow, forming as non-profit organization the Argentine Forensic Anthropology Team (EAAF) aimed to apply physical anthropology and archaeology to investigate violations of human rights.

Guatemala
The Guatemalan civil war broke out in the 1960s, between the military regime US supported and the guerrilla groups. After the peace agreement, a United Nations truth commission was established in 1997 which recorded 669 massacres affecting approximately 200,000 people had been killed and/or disappeared by government agencies since 1962. Most of the killings were termed genocide against the Mayan rural population disguised as campaigns against guerrilla groups. (Juhl 2005)
A training program conducted by the American Association for the Advancement of Science (AAAS) in 1991 with the participation of the EAAF led to the formation of a similar anthropological team in Guatemala as in Argentina – The Guatemalan Forensic Anthropology Foundation (FAFG). Evaluations and studies carried out by UN in the countryside stated that the work of FAFG to be a crucial link between civil society and recent Guatemalan state history, critical to potential future reconciliation in Guatemala
In other cases, the mass graves excavations and investigations were carried out in the framework of an International Criminal Tribunal established ad hoc. In these cases, the forensic teams (all of them including archaeologists) were required to gather evidences and contribute to the prosecution of the responsible of the genocide:

Figure 1 World Map pointing out all the countries where forensic archaeological investigations and identifications have been carried out

Former Yugoslavia
The Balkans wars took place between 1991 and 1995. In October 1992, the UN Secretary-General was requested to establish an impartial Commission of Experts to examine information received on violations of humanitarian law. The Expert Commission's final report of 1994 reported on gravesites seeming to contain victims of a mass killing conducted as the final phase of an 'ethnic cleansing' process following a distinct pattern of procedure. Despite these evidences, the international society could not impede the atrocities such as Srebrenica.
Srebrenica town was massacred in July 1995. Serb Bosnian army took 20,000-25,000 Bosnian Muslim refugees; men and boys were killed and buried in different places. Around 10,000-15,000 men hid in the woods and mountains around the town trying to reach Bosnian town of Tuzla. Only 4,700 succeeded, the rest was rounded up and killed in the trial (Juhl 2005) ICTY conducted mass grave investigations related to the Srebrenica massacre from 1996 until 2001 when all further excavations were ended as there were 'no more known sites of particular relevance to their investigations'. From 2000 onwards, ICTY has monitored exhumations and seized forensic material (including the human remains) from exhumations carried out by local authorities. (Juhl 2005)

Rwanda
On April 6, 1994 a plane carrying Rwandan President Habyalimana was shot down by Force Armée Rwandese; killing the president in the context of a local conflict. The genocide that followed left more than 800,000 people dead (75% of the Tutsi population), 4 million people internally displaced, and 2.3 million refugees, most of them from the Tutsi ethnic. (Peterson 2008)
One of the two sites ever to be investigated in Rwanda under the auspices of ICTR was the site called the Kibuye Roman Catholic Church and Home St. Jean Complex, where around 4,000-6,000 people arrived seeking a refuge. On the 17th of April armed civilians, the police, and soldiers surrounded the buildings. They used grenades, guns, machetes, and various other weapons on those that had gathered inside.
Only the largest of the graves was excavated by an international team between 1995 and 1996. First phase was the documentation, photographing, transecting and flagging all skeletons encountered at the surface site, which was done exclusively by archaeologists. Secondly, these remains on surface was removed and analysed, and finally the mass grave was excavated. Identification of the bodies was difficult, only 17 bodies were identified. (Peterson 2008)
Regarding, Yugoslavia and Rwanda cases, it is necessary to make reference to Physicians for Human Rights (PHR). A NGO based in Boston, with the general aim of promoting health by protecting human rights. From the early 1990s onwards they came to play an increasingly important role internationally in the application of mass grave excavations as a mean to human rights investigations. (Juhl 2005) The teams included forensic anthropologists, archaeologists, pathologists, radiologists, deontologists, geneticists, biologists and ballistics experts and worked primarily on a voluntary basis.
Finally, a special case of Forensic Archaeology is the investigation and excavations carried out in Spain, linked to the Spanish Civil War and Franco's after war repression. In this case, there is no national or international legal framework or court which monitors the excavations and the identification process. Excavations are promoted and sponsored by relatives and non-profit organisations which support the families searching for their loved ones 70 years after. (Cross reference to CS: Memory graves)

SCO Conclusion

Despite international treaties and agreements, human rights violations are still worldwide present in war and conflicts. The only difference is that if these crimes are known, international society has the mechanisms to prosecute and judge the responsible.

Archaeology methods have result of great help in the excavation of mass graves resulting of genocides and crimes against humanity. As part of a multidisciplinary team archaeologists collaborate in reconstructing the facts, identifying the bodies and stated the way and cause of death, by analysing the stratigraphy, recovering evidences and documentation the destructive process of an excavation.

Diversity of contexts in which mass graves might be excavated is enormous, and each case should be approached as exceptional and teams working on the site should be aware of the circumstances of the crime and the context of the excavation. Whether the excavation is carried out in the framework of a prosecution process or in the framework of an identification or reconciliation program might determine the objectives of the excavation itself.

Dealing with families and relatives is another specificity of the forensic archaeology work. Normally, archaeologist work with evidences of the remote past, in the contemporary mass graves the object of study is a human being whose memory is still alive and has strong links with present times.

> SCO Exercise

SCO References

- Belleli, C., J.Tobin, 1996, Arqueología de los desaparecidos. Translation of the article Archaeology of the dissappeared, *Bulletin of the American Society of Archaeology* 14, 2. March – April, 1996 at *http://www.cbc.uba.ar/dat/catedras/garreta/Bellelli_Tobin.pdf*
- Estrada Moreno, F., *Arqueología Forense y Derechos Humanos en el Perú: Algunas consideraciones conceptuales* at *http://www1.umn.edu/humanrts/research/Peru-Estrada%20Moreno%20Arqueologia%20Forense.pdf*
- Juhl, K.,2005, *The Contribution by (Forensic) Archaeologists to Human Rights investigations of Mass Graves,* Museum of Archaeology, Stavanger 2005, at *http://am.uis.no/getfile.php/Arkeologisk%20museum/publikasjoner/ams-nett/Mass_Graves2.pdf*
- Nawrocki, S.,1996, *An Outline of Forensic Archeology. University of Indianapolis Archeology & Forensics Laboratory*, at *http://archlab.uindy.edu*
- Peterson, K.,2008, *The Use of Forensic Archaeology to Investigate Genocide,* Senior These, University of Wisconsin La-Crosee at *http://digital.library.wisc.edu/1793/37452*
- Polo, M.,2009, Métodos internacionales empleados para la identificación de restos óseos humanos. I Seminario de Antropología Forense en el marco de los Derechos Humanos. *Revista d´estudis de la violència*, 8-2º Trimestre 2009 at *http://www.icev.cat/antropologiaforense.pdf*
- UN Doc A/CONF.183/9, of 17 July 1998: *Rome Statute of the International Criminal court* at *http://www.un.org/law/icc/statute/romefra.htm*
- UN Doc GA/RES/260(III) of 9 December 1948: *Convention on the Prevention and Punishment of the Crime of Genocide.* Entered into force in 1951, *www.unhchr.ch/html/menu3/b/p_genoci.htm*
- UN Doc E/ST/CSDHA/12 (1991): *United Nations Manual on the Effective Prevention and Investigation of Extra-Legal, Arbitrary and Summary Executions. Annex V – Model Protocol for disinterment and analysis of skeletal remains. http://www1.umn.edu/humanrts/instree/executioninvestigation-91.html*
- *http://www.eaaf.org*
- *http://www.fafg.org*
- *http://www.ic-mp.org*
- *http://physiciansforhumanrights.org*

→ LU Further Reading

- Conner, M. A., 2007, *Forensic Methods: Excavation for the Archaeologist and Investigator*, AltaMira Press, Lanham, Maryland
- Cox, M., J. Hunter, 2005, Forensic *Archaeology: Advances in Theory and Practice*, Routledge, London
- Menez, L.L, 2005, The Place of a Forensic Archaeologist at a Crime Scene Involving a Buried Body. *Forensic Science International*, 152, 311-315
- Schofield, J., W. G. Johnson, and C. M. Beck, (eds), 2002, *Materiel Culture: The Archaeology of Twentieth Century Conflict*, Routledge, London
- Skinner, M., 1987, Planning the Archaeological Recovery of Evidence from Recent Mass Graves, *Forensic Science International*, 34, 267-287
- Spennemann, D. H.R., B. Franke, 1995, Archaeological Techniques for Exhumations: A Unique Data Source for Crime Scene Investigations. *Forensic Science International*, 74, 5-15
- Steadman, D. W., W. D. Haglund, 2005, The Scope of Anthropological Contributions to Human Rights Investigations, *Journal of Forensic Sciences*, 50, 23-30

18 CASE STUDY 2

LU Archaeology contributions to Basque and Catalonian nationalisms

by Rosa Martínez

SCO Introduction

As in many other European countries, Spanish national identity was built during the 19th century. The economical and social differences between the peripheral regions of Catalonia and the Basque Country, which are also justifiable in linguistic terms, supported and encouraged the appearance of other nationalisms as an alternative to the Spanish one. (Diaz-Andreu 2002).

Thus archaeology's contribution to the construction of Basque and Catalonian nationalisms needs to refer to its contribution to Spanish nationalism, since somehow archaeology as it developed in these regions established an objective to refute the Spanish theories.

The relationship between archaeology and nationalisms was also configured by the political circumstances as well as the evolution of the discipline itself from a scientific and methodological point of view. Therefore this case study is presented according to the periods established by historiographic studies.

SCO 19th century

> ***Animation***

The Spanish National History written by Modesto Lafuente (1850-1867) established the Iberians and Celts as the common cultural and ethnic roots of the Spanish nation. Besides, he attributed to these people some values such as resistance to foreigners, courage and bravery, which were also seen as part of the idiosyncrasy of contemporary Spaniards. He defines three geographical areas in the Iberian Peninsula: the Iberian South-east, the Celtic North-West and the central part in which both people mixed (Celtiberian). However, his theory is only supported by Greek and Latin sources, and he does not propose or use archaeological evidence. The first archaeological studies supporting this idea were presented in 1875, the thesis of a common culture, is supported by the existence of megalithic sites from the north to the south, considered not to be Neolithic but Iberian.

As history searched for the specificity of Catalonia in the Modern Age, archaeologists, such as Prat de la Riba, defend the Catalonian language area (French Roussillon, Catalonia, Valencia region and Balearic Islands) as being the original Iberian territory. He also started to excavate Empúries, a Greek colony. In his theses, the Iberian ethnic origin is created through the contact of local people with Mediterranean cultures such as the Phoenicians and Punics, giving the democratic sense of the Catalonians a Greek heritage.

Basque archaeology focused on racial studies. It was a physical anthropologist, Telesforo de Aranzadi, who carried out comparative research to define the physical particularities of Basque people. Notwithstanding the application of this racial approach, it was not his aim to demonstrate the superiority of the Basque or to defend the racist ideas that Sabino Arana, father of Basque nationalist movement in 19th century, included as part of their national ideology.

SCO First third of 20th century

> ***Animation***

In this period a number of archaeological institutions were founded at national and regional level. Universities created archaeology and anthropology Chairs in Madrid and Barcelona, and the first museums and archaeology legal framework are also established. Archaeology starts then to contribute to the political objective of studying the glorious past of the Spanish nation, as history had been doing until that point. Theories and research lines are focused on confirming the resistance to foreigner invasions as part of the Spanish identity (Numancia and Sagunto's legendary resistance to the Romans are the best examples); and also according to the diffusionist paradigm it tries to demonstrate a Spanish common cultural past within different stages of prehistory.

In Catalonia, the regional archaeological institutions and university departments were clearly connected with the nationalist political movement. Therefore, their aim was to refute the Spanish nationalist theories and to focus research on the ethnic diversity of Spain. In this sense, Bosch Gimpera reinterpreted the idea of Iberian as the origin of Catalonian nation. He defined, based upon archaeological evidence, three ethnic and cultural groups in the territory of Catalonia and its nearby territories. The three of them would have had a common origin in a Neolithic group located in the Pyrenees, which expanded and received different influences during the Bronze and

Iron Ages. Over time, the theory evolved, identifying these three groups with different Iberian tribes established within the Catalonian language area. He also identified an ethnic origin for the rest of the Peninsula, as being Tartessian culture for the Southwest and Celtic for the Northwest.

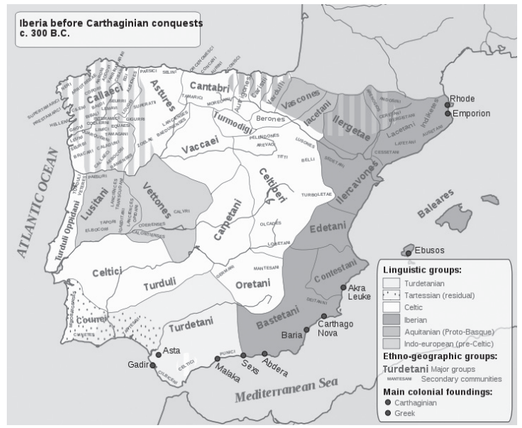
Jose Miguel de Barandiaran used archaeology as a tool for justifying and demonstrating the antiquity of the Basque people. Being Aranzadi's disciple, he focused, however, his researches in cultural aspects (archaeological artefacts and ethnography), arriving at similar conclusions. He defined a new 'race', the Basque ethnicity, which covered the Western Pyrenees with its main cultural manifestation being local megalithic sites which are quite numerous in the area.

The idea of an ethnic group physically different from their immediate neighbours was completed with the thesis of a Spanish Northern coast never conquered by Romans, and thus free of the Mediterranean culture which unifies the rest of the Peninsula.

SCO Second half of the 20th century

After the Spanish Civil War many intellectuals were exiled and universities purged. Archaeology loses its influence in building the image of the past, since prehistory is not able to provide a homogenous, common and glorious past. The main archaeological studies focused on glorious Iberian resistance to the Romans (Numancia or Sagunto) and neglect other aspects of heritage, as the Islamic one. Returning from exile, some researchers continued to study the ethnic origins of Basque and Catalonian people, but they did not use these theories to support any independent or nationalist movement, as it has been done before.

In the 1980s archaeology was one of the first competences to be transferred to the newborn Autonomous Communities. Methodological orientation inherited from 1970s (technical language, pre-eminence of chronology, object analysis etc) contributed to the drifting of archaeology away from the general public, making it less profitable in political terms. As a consequence, regional governments generally promoted local research only; giving preference to those studies that could legitimise or demonstrate ancient existence of the Autonomous Community as a cultural entity (Diaz-Andreu 2002). Nowadays, and although the regional authorities put some pressure on research groups; archaeologists are not prone to explicitly engage themselves in nationalist commitments (Fernandez 2006) or if they do, they express themselves in a more sophisticated way (Diaz-Andreu 2002).



SCO Conclusions

The appearance of the nationalist identities in Spain during the 19th century found in incipient archaeology an additional tool to build the narrative of their past. If Spanish nationalism looked in the archaeology for a common past; the peripheral nationalisms, Basque and Catalonian, sought to demonstrate their specificity apart from that common past based on the Iberian culture.

Although different theories were established by archaeologists for each of the nationalisms, the three of them have a common point: the search for their roots in prehistory, since all consider the Roman period to be degradation, and as invaders they cannot provide a unique and specific ethnic past. The Spanish Civil War and later Franco's dictatorship put end to any official study and development of any national identity other than the Spanish one; and official archaeology continued to develop the idea of a common Iberian past for the entire Peninsula (Gómez-Moreno). In the last part of the 20th century, the development of archaeology as science itself conditioned the use of archaeological studies for political purposes. However, some Autonomous Communities have tried to use archaeology to justify their own existence as political entities, although the public outreach of these studies has been very limited.

Figure 2 Iberian Peninsula: Ethnographic and Linguistic Map c. 300 BCE (before the Carthaginian conquests).

SCO References

- Azcona, J.,1981, Notas para una Historia de la Antropología Vasca: Telesforo de Aranzadi y José Miguel de Barandiaran. *Etnica* 17, Barcelona
- Calvo, L., 2001, Prehistoria, Etnología y Sociedad en la Cataluña del primer tercio del siglo xx. La investigación al servicio del catalanismo cultural y politico. *Complutum* 12
- Diaz-Andreu, M.,2002, *Historia de la Arqueología*. Estudios. Ed. Clásicas, Madrid
- Fernandez, V., 2006, *Una Arqueología crítica. Ciencia, ética y política en la construcción del pasado*. Ed. Crítica
- De la Rua, C., 1990, Los estudios de Paleoantropología en el País Vasco. *Munibe (Antropologia – Arkeologia)*, 42, San Sebastian
- Ruiz, A., A. Sanchez, P. y Bellon, *Historiografía Ibérica y el problema nacional, en Los Archivos de la Arqueología Ibérica: una arqueología de las dos Españas. Centro Andaluz de Arqueología Ibérica. Proyecto Area: http://www.ujaen.es/centros/caai/faselareal.htm*
- Zulaika, J., 2000, *Del Cromañón al Carnaval. Los vascos como museo antropológico*. Erein, Donostia

18 CASE STUDY 3

LU Ayodhya *by Kenneth Aitchison*

SCO Introduction

The Political Use of the Archaeological Past

The practice of archaeology has always been undertaken for political reasons. These have ranged, historically and geographically, from the purposes of the glorification of particular individuals or groups to achieving the agenda of sustainable development.

In a philosophically post-modern world, archaeologists recognise that there is no such thing as 'value-free' archaeology. Every act of analysis is guided by both the interpretations put upon it by the archaeologist as the 'sender' and by the interpretations then put upon the archaeologist's work by the 'receivers' or recipients of the archaeologist's views. This means that the political views of individual archaeologists, or the corporate views of organisations, can form a dominant discourse of the understanding of the past – and when this relates to controversial issues, those can be taken up, altered, used or abused by others who particularly value and emphasise the 'scientific' credibility given to the viewpoints ascribed to archaeologists.

While in the global West and North by the 1980s, many archaeologists were no longer satisfied by approaches that concentrated on the identification and fixing of particular groups of people as 'cultures' in time and space, Trigger (1989, 182) considered that in India archaeology remained closely attached to ancient history and 'Many Indian archaeologists are content to attach ethnic and linguistic labels to newly discovered cultures and to interpret them in a general, descriptive fashion'. This tendency, to interpret archaeological remains through the lens of ancient historical texts, was at the heart of the appalling consequences of the events of Ayodhya.

SCO Case study – Ayodhya

> ***Animation***

Destruction of the Mosque

On December 6, 1992, the 16th century Babri Mosque in Ayodhya, Uttar Pradesh, was destroyed by a crowd of Hindu fundamentalist militants. The demolition was a manifestation of growing anti-Muslim nationalism in India which was supported by Hindu fundamentalist groups such as the VHP (Vishwa Hindu Parishad) and RSS (Rashtriya Swayamsewak Sangh), together with the

significant political party the BJP (Bharatiya Janata Party) (Pandey 1991).
Following the wide reporting of the event there was bloody rioting, both in India and in neighbouring Bangladesh. In this wave of inter-communal violence, it is estimated that more than 1000 people lost their lives (Ramakrishnan 1993, 15).

Importance of the Site
The Babri Mosque was built in 1528 by the forces of the Mughal emperor Babur. Some Hindu groups claim that the mosque was built upon the site of Hindu temple which was destroyed in the process – and this particular temple has been ascribed enormous significance as it is claimed to have been built upon the birthplace of Rama, a mythical king who was a reincarnation of Vishnu, one of the major Hindu gods (Bernbeck & Pollock 1996, 139).
In 1949, shortly after Indian independence from Britain and the partition of India from Pakistan, the mosque ceased to be used as a place of Muslim worship. According to different perspectives, the mosque was either ritually cleansed and rededicated as a Hindu temple, or idols were surreptitiously placed within it and it was desecrated. It was then closed until the late-1980s when a legal decision led to it being reopened for Hindu worship, which led to protests by Muslim groups. Attempts at government-led discussion and reconciliation 'centred around two questions: Had Babur indeed destroyed a Hindu temple in Ayodhya, and, if so, had he built his mosque on the same spot?' (Bernbeck & Pollock 1996, 139).
These discussions were unproductive, and were abruptly ended when the mosque was destroyed in 1992.

What the Consequences Were
The BJP (Bharatiya Janata Party) political party was established in 1980 on a manifesto of Indian nationalism and conservative social policies. This party grew in popularity through the 1980s, strongly emphasising Hindu identity as being the Indian national identity.
The BJP was not directly behind the destruction of the Babri Mosque, but the popularity of this political philosophy, and as practiced by the BJP's allies in the right wing Vishwa Hindu Parishad (VHP) and RSS (Rashtriya Swayamsewak Sangh) organisations – was responsible for the demolition of the mosque as a demonstration of Hindu supremacy over Islam in the present through association with the past.
The BJP sought to make political capital from Ayodhya, and one of the party's main points was that there should be a 'right' to rebuild the earlier Hindu temple of Rama – and this argument was founded on archaeological arguments, on the basis that archaeological remains which would support this, were claimed to have been found after the destruction of the mosque (Funari & Podgorny 1998, 420).

Archaeological Investigations pre-1992
Before the Babri mosque was destroyed there had been several archaeological investigations in the vicinity of the site in the late 1960s and early 1970s – and some sculptures were discovered during construction work near the mosque in the summer of 1992 with further material reportedly observed by archaeologists who were present at the mosque's destruction in December 1992 (Sharma et al. nd, Gupta 1994).
Interpretations of these archaeological data vary widely. Although his initial reports (1980, 1983) made no mention of this, in a 1990 article, B.B. Lal claimed that he had found the remains of a 'columned temple' under the mosque (Lal 1990, 15).
Asked whether this alleged finding indicated that a Hindu temple marking Rama's birthplace existed under the Babri Mosque, he was quoted as saying, 'I am not saying so. But my spade is' (Malhotra & Sehgal 1992, 81).
This interpretation of his data has been challenged, particularly as the available stratigraphic information illustrating this columned room is limited to a single photograph of his excavation trench (Mandal 1993: pls. 1-3). Mandal and others (eg Sharma et al. 1992) argue that the features identified as column bases could not have supported a structure of the sort envisioned by Lal.

Archaeological Investigations post-1992
Following the demolition of the mosque, Allahabad High Court directed the Archaeological Survey of India to excavate the site and resolve the 'temple' issue, and the report of the subsequent excavation (in 2003) presented evidence for a large, 11th-12th century (Hindu) complex on the site, although it could not definitely be demonstrated to be a Rama temple – and the results continued to be contested.
'The ASI report of August 2003 claims to prove the existence of a 'massive structure,' a Hindu temple, beneath the mosque's foundation. Historians and archaeologists have challenged the credibility of the findings with regard to both their historical contextualization and the archaeological methods used... In many ways this confirms what Ratnagar has identified as one of the weaknesses of the discipline, its focus on an imagined Indianness. The report was a shot in the arm for the Hindu right' (comment by Kamyar Abdi on Ratnagar 2004, 251).

The 'Final' Verdict
The Allahabad High Court subsequently passed a verdict on the site (in the context of a land claim) in September 2010 (BBC News South Asia 2010). In this landmark hearing, the three judges of the court ruled that the 1.12 ha of contested land should be divided into three equal parts, with one each going to the Ram Lalla (Infant Lord Rama) represented by the Hindu Maha Sabha for the construction of a temple, one to the Islamic Sunni Waqf Board and the remaining third going to Nirmohi Akhara, a Hindu religious denomination. The three-judge bench agreed that a temple or a temple structure predated the mosque on the same site, with the Archaeological Survey of India's excavations being heavily used as evidence by the court that the predating structure was a massive Hindu religious building.
This decision was subsequently (May 2011) reviewed by the Supreme Court of India which 'questioned the reasoning' behind the earlier ruling and suspended the earlier High Court judgement, leaving the situation unresolved (Reuters 2011).

SCO Technical Discussion – What Happened at WAC?
The third World Archaeological Congress (WAC) was held in New Delhi in 1994.

This international conference was chaotic and overwhelmed by the Ayodhya issue. On arrival, delegates were surprised to be asked if they had 'any major disagreement with the following:
Following a meeting in New Delhi on the eve of the Third World Archaeological Congress, the WAC Executive is making it known that it supports the view of our Indian colleagues that there should be no papers or discussion within the Congress programme nor resolutions or discussion at meetings of the Executive Committee, in Council and in the Plenary Session on the politically and communally sensitive Ram Janma Bhumi-Babri Masjid (Ayodhya) issue. The Executive recognises that the practical consequences of discussing this issue would be beyond the Executive's control.

In asking members of the Congress to respect this understanding, the Executive assures participants that this is the only concession that it is willing to make to limitation of the WAC principles of discussion of the historical and social role, and political context, of archaeological enquiry and interpretation.
Signed: Jack Golson, President WAC' (Colley 1995, 15)

The WAC Code of Ethics (1990) prioritises the views of indigenous peoples over those from countries that have historically acted as colonisers, and effectively bans discussion of issues deemed sensitive by indigenous peoples. By seeking to enforce this Code, WAC was deliberately attempting to avoid having the discussion of this extremely contentious issue hijacked by Hindu nationalists.

Importantly, 'The main Indian organisational committee' included two partisans of the Hindu side in the conflict: B.B. Lal, the principal person to excavate near the Ayodhya mosque, and S.P. Gupta, an archaeologist known for his close associations with an extremist Hindu paramilitary organization, the Rashtriya Swayamsewak Sangh [RSS]. Lal served as president of the congress, while Gupta acted in the capacity of liaison between the Indian organizers and the congress's international executive committee. Some Indian archaeologists and historians of the 'other side' chose to boycott the congress in protest against what they considered to be the misuse of archaeology for divisive political purposes' (Bernbeck & Pollock 1996, 139).

Colley (1995, 17) considered that those who wanted WAC to talk about Ayodhya fell into several camps:
Writers in the RSS's mouthpiece Organiser expected WAC delegates to provide international endorsement for their 'irrefutable' evidence for Hindu claims to Ayodhya. Critics wanted WAC to censure Gupta, B.B. Lal and others whom they argued had broken the law and violated professional codes of practice and ethics in their abuse of archaeological evidence at Ayodhya, and in Lal's attempts to suppress discussion of the issue, given WAC's Code of Ethics and its explicit interest in the political context of archaeology. Colin Renfrew, Rhys Jones and other non-Indian delegates also called for open discussion of Ayodhya on the grounds of academic freedom.
Colley's eyewitness account of the Plenary session (Colley 1995, 16) then gives a sense of the event as it happened:

The organizers kept changing the time for the Plenary which eventually started while I was still queuing to reclaim my lost accommodation deposit. I entered a scene of chaos and uproar with angry Indian delegates screaming abuse at each other. It was difficult to follow the arguments. As things seemed to be getting nasty many people left. Several motions were presented. Some, from various Indian factions, called for discussion of the banned Ayodhya issue. Another, from an assortment of WAC delegates deplored the pressure put on WAC not to discuss Ayodhya as a curtailment of academic freedom. Hard-line fundamentalist Hindu delegates prevented discussion by filibustering and Conference President B.B. Lal, clearly sympathetic to their views, then terminated the meeting amid general uproar. To prevent any attempt

to restart the Plenary, Academic Secretary Makkhan Lai removed the PA system from the room. In protest at these events the WAC Council then met and decided to boycott the official closing ceremonies.

Conclusion – What This Can Mean for Archaeologists

It is clear that Ayodhya is an archaeological controversy on a scale unlike many other recent debates. Other disputes over archaeological interpretation may have led to confrontation and even violence, but not to the deaths of hundreds of people.

The destruction of the Babri mosque 'confronted the international audience of archaeologists with the problem of considering the 'Other' as homogenous and always in the right' (Funari & Podgorny 1998, 419) – the view captured in the WAC Code of Ethics that will always prioritise the views of indigenous or disposed people. 'This easy and naïve way of thinking about the distant and conflictive world implies that ... the poor of the world, are the good oppressed salvages, our main conflict being with the bad rich countries' (ibid.)

There is no such thing as archaeological truth. The reported stratigraphic location of materials, and the significance attached to them, can always be contested. If it can be argued on archaeological grounds that a Hindu temple pre-dated the Babri mosque, some were able to use this as justification for the subsequent destruction of the mosque.

At Ayodhya, this has been the application of what Härke (1993) has called a 'mythical' concept of history where little or no separation exists between the past and the present, all is very much continuous and this permits response to a historical situation to be made as if it was a recent and ongoing issue.

'The 1992 destruction of the mosque becomes a direct response to a perceived wrong of 500 years ago; bringing the past very near to the present helps to legitimate revenge for past injuries. Ironically, Muslims living in India today are in many cases not even the descendants of the Mughal invaders of the Middle Ages but rather members of low Hindu castes who have converted to Islam. Conversion, whether to Islam or to some other religion, is one possibility open to members of low castes to attempt to better their social position' (Bernbeck & Pollack 1998, 140, after McDonald 1994).

SCO References

- BBC News South Asia, 2010, *Ayodhya verdict: Indian holy site 'to be divided'*, *http://www.bbc.co.uk/news/world-south-asia-11441890*
- Bernbeck, R., S. Pollock, 1996, Ayodhya, archaeology, and identity, *Current Anthropology* 37, supplement, 138-142
- Colley, S. 1995. What happened at WAC-3?, *Antiquity* 69, 15-18
- Funari, P.P.A., I. Podgorny, 1998, Is archaeology only ideologically biased rhetoric? A report of WAC Inter-Congress on the destruction and conservation of cultural property, *European Journal of Archaeology* 1(3), 416-424
- Gupta, S. P., 1994, Government sitting tight over clinching archaeological evidence?, *Organiser* 46(18), 3
- Härke, H., 1993, Vergangenheit und Gegenwart, In: S. Wolfram & U. Sommer (eds) *Macht der Vergangenheit – Wer Macht Vergangenheit?*, 3-11, Wilkau-Hasslau, Beier and Beran
- Lal, B.B., 1980, Excavations at Ayodhya, District Faizabad, *Indian Archaeology*, 1976-77, A Review, 52-53
- Lal, B.B., 1983, Excavations at Ayodhya, District Faizabad, *Indian Archaeology*, 1979-80, A Review, 76-77
- Lal, B.B., 1990, *Archaeology of the Ramayana Sites Project*, Manthan, October, 9-21.
- McDonald, H., 1994, Die Rebellion der Kasten, *Der Uberblick* 30(4), 70-74
- Malhotra, J. & R. Sehgal, 1992, The Ayodhya controversy: Digging into the past to change the present, In: A.A. Engineer (ed.), *The Babri-Masjid Ramjarmiabhoomi controversy runs riot*, 81-84. Delhi: Ajanta Publications
- Mandal, D.,1993, *Ayodhya: archaeology after demolition, a critique of the 'new' and 'fresh' discoveries*. New Delhi: Orient Longman.
- Pandey, G.,1991, Hindus and others: the militant Hindu construction, *Economic and Political Weekly*, 28 December 1991, 2997-3009
- Ramakrishnan, V.,1993, The wrecking crew. In: Ayodhya, demolition and after, *Frontline*, 1 January 1993, 10-15
- Ratnagar, S.,2004, Archaeology at the heart of a political confrontation: the case of Ayodhya, *Current Anthropology* 45 (2), 239-259
- Reuters, 2011, *Indian Supreme Court suspends controversial Ayodhya mosque ruling, http://blogs.reuters.com/faithworld/2011/05/10/india-supreme-court-suspends-controversial-ayodhya-mosque-ruling*
- Sharma, Y.D., K.M. Srivastava, S.P. Gupta, K.P. Nautiyal, B.R. Grover, D.S. Agrawal, S.Mukherji, & S. nd. Malayya, Ramajanma Bhumi: Ayodhya, new archaeological discoveries, n.p. [New Delhi:] *Historian's Forum*
- Trigger, B.G., 1989, *A History of Archaeological Thought*. Cambridge: Cambridge University Press.
- WAC (World Archaeological Congress). 1990. First Code of Ethics. *http://www.worldarchaeologicalcongress.org/site/about_ethi.php*

19 CASE STUDY 1

LU Involving Community Groups in UK Archaeology

by Kenneth Aitchison

SCO Introduction

'Community archaeology' became a popular, if ill-defined, phrase in UK archaeology from the very late 1990s onwards. It has been applied to a variety of types of projects, all seeking to enhance local communities' engagement with their local, archaeological past and are 'driven by a desire for archaeology to meet a range of perceived educational and social values in bringing about knowledge of the past in the present' (Simpson & Williams 2008, 69).

Some of these projects have been run by professional, salaried organisations (whether universities, museums, local government or private companies) and others by unpaid, 'amateur' or avocational groups and individuals. They have normally tended to involve an element of excavation, often combined with other activities undertaken by unpaid participants.

SCO Case study – Community Archaeology in Britain

In general, archaeological excavation in Britain (England, Scotland and Wales – a different system applies in Northern Ireland) does not require a licence or permit to be issued by a state authority (with the exception of the small number of sites protected under law, such as Scheduled Ancient Monuments). Would-be excavators need the landowner's permission, but no formal approval from any legal authority.

The history of amateur interest and activity in archaeology in Britain extends back to the nineteenth century and even earlier. Largely in response to damage to urban centres during World War II and a recognition that this would present an opportunity for post-war archaeological investigation, the Council for British Archaeology was established in 1943 (replacing the Congress of Archaeological Societies, established in 1898) to promote archaeology and its public understanding. At that time, there was no concept of archaeology becoming a paid profession – it was understood that archaeological fieldwork would be undertaken by members of archaeological societies in their own free time.

By the start of the 1970s, the quantity of archaeological work being carried out in Britain had increased considerably, and it was no longer solely the preserve of the unpaid amateur – which led to tensions when the Council for British Archaeology established a Working Party on Professionalism in Archaeology, with a view to founding a 'British Archaeological Institution'.

The idea encountered such negativity that these plans to create a professional institution were abandoned in 1975, Jones (1984, 142) described this reaction against the attempt to form a body to guarantee standards of competence among practising archaeologists as an 'amateur backlash', which Myres (1975, 8) had recognised as '... any attempt to embrace all those concerned with archaeology in a single professional body is bound to run up against the great tradition of amateurism on which the strength and viability of so much valuable work in the subject still depends'.

Professionalisation and commercialisation continued, despite this reaction from the amateurs, and a professional institute (The Institute of Field Archaeologists) was established in the 1980s. By the early 1990s archaeology had become a material consideration in the spatial planning process. This meant that, in order for construction work to go ahead, developers whose plans impacted upon archaeological remains would need to have them investigated and recorded rapidly and efficiently – which amateur groups were generally incapable of doing sufficiently well.

Despite this reduction in opportunities to carry out fieldwork ahead of development, archaeological societies continued, and Thomas (2010, 5) found 'at least 2,030 voluntary groups and societies active in the UK that interact with archaeological heritage in a wide variety of ways. This represents approximately 215,000 individuals'.

SCO Technical Discussion

The range of types of activity that take place in community archaeology projects is diverse, but they will normally involve an excavation component, with members of the public actively participating in this. Three examples are presented here.

Shoreditch Park in north London was an area of high-density housing, comprising narrow streets with terrace houses until it was damaged during, and demolished following the Second World War It became a 'community park' in the 1980s. A community training excavation, funded by the Big Lottery Fund, was conducted by the Museum of London (MoL) and undertaken in the summer of 2005. 'A range of adult volunteers and schoolchildren from local Primary Schools experienced digging on site as well as washing finds from the site at the MoL's nearby Eagle Wharf Road centre over several weeks.

Over 700 school children participated or visited over July' (Aitken & Simpson 2005).

Some architectural features (from nineteenth century housing) were exposed, and considerable amounts of artefactual material were recovered. The project had a high public profile, and attracted visiting politicians, including the junior minister for culture.

> ***Animation***
> Heeley City Farm is an urban farm and environmental visitor centre within Sheffield, on the site of former nineteenth century high-density housing. The Farm has an active educational programme, and has been the site of a community excavation since 2009 (Rodgers 2011). Like Shoreditch Park, the archaeological material being recovered is from relatively familiar contexts (considerable amounts of nineteenth century housing, similar to that being excavated survives near the site), shallowly stratified and producing large quantities of artefacts – all key factors to attract and engage the public in a project.
> What Shoreditch Park and Heeley City Farm have in common is that the primary objectives of their funding bodies were to engage the public, rather than to add to the sum total of human knowledge about the past. Both were conducted on sites that were not under any threat, on archaeological material that was not of particular rarity. They have successfully provided a level of community education, engagement and training, and so have met their funders' objectives.
> Hungate has been the site of the largest ever excavation in the City of York, running for six years and ending in 2012. This excavation was conducted by York Archaeological Trust, a registered charity which also acts as a major archaeological contractor, and was funded by a consortium of private developers ahead of housing construction. With the encouragement of the municipal authorities (the City of York), York Archaeological Trust were able to simultaneously turn Hungate into a community engagement project whilst also fulfilling all of the developers' requirements (York Archaeological Trust, no date).
> A community team of local volunteers worked two days per week, both on and off-site, alongside and supervised by York Archaeological Trust staff. This meant that they were able to contribute to a wider range of activities than might be the case in other 'community archaeology' projects.
> The funding of community archaeology projects comes from a diverse range of sources, but the key driving force behind this has been the policies of the 1997-2010 UK Labour party government, which sought inclusivity through a sense of pride in local communities and democratic socialism led to community archaeology epitomising the (pre-2010) 'political environment, where the focus is on enabling communities rather than preaching to them' (Simpson & Williams 2008, 72). These governmental attitudes led to the opening up of a series of funding sources, normally through the (nominally independent) National Lottery funds, primarily the Heritage Lottery Fund but also the Big Lottery Fund through initiatives with titles such as 'Your Past Your Future' and 'Local Heritage Initiatives'.
> This meant that the investment of millions of pounds in community archaeology projects by the Heritage Lottery Fund, the UK Government and diverse other sources (Simpson and Williams 2008, 73, 74) became the norm. This is much less than the hundreds of millions of pounds being spent by developers on funding archaeological practice (Hinton & Jennings 2007, 100), but is very significant nonetheless.

Heritage Toolkit for Communities is meant to be a practical guide and a resource to help individuals and groups explore a deeper engagement with their local heritage, whether that engagement is through professional or voluntary activity; Planning and Leading a Guided Walk is a set of guidelines for planning and leading guided walks; and Sharing your Information reminds community groups that they have a responsibility to make the results of their work is available to other archaeologists and the public, and that if their work has been supported by a grant, they may well have to ensure their work is made available to the public as a condition of the grant. Involving Schools in Community Archaeology Projects does provide practical advice for organisers of community archaeology projects who may be considering the inclusion of school groups. It suggests that involving schools will lead to enhance the profile and visibility of a project while simultaneously enhancing educational opportunities for the school children.

Politically, the most interesting resource is Building a Sense of Belonging which links to a governmental advice note to local government, voluntary groups and other organisations on how to encourage 'a sense of belonging' to a particular place (DCLG 2009). This is very specifically aimed at supporting social cohesion in urban areas where social changes mean that the population is becoming increasingly ethnically diverse. This is significant because of its 'New' Labour origins, and because traditional archaeological societies are unlikely to have very diverse memberships, being very typically made up of older, white people.

While that document makes no direct reference to archaeology, it does identify using history and informal heritage community education ways to counter 'the feeling of declining (cultural, economic, spatial) predominance of a group representing itself as 'from here" and allowing individuals from varied backgrounds to 'experience the arrival of new groups as in line with the history and everyday experience of the place, and as a resource for the economic well-being of the area'.

SCO Conclusion

Community archaeology, as a concept, was initially indistinguishable from public archaeology – the idea of the preservation and management on archaeological resources for the benefit of and on behalf of the public (Merriman, 2004), it has increasingly meant the active involvement of members of the public in the practice of archaeology.

The United Kingdom's ratification of the Valletta Treaty (CoE 1992) led to an outpouring of rage from the very reactionary, 'traditional', part of the amateur archaeology sector, who believed that article 3 of the Treaty (requiring destructive archaeological fieldwork to be undertaken by 'qualified, specially authorised persons') would end all unpaid involvement in archaeology (eg Council for Independent Archaeology, 2001). By contrast, Valletta did not lead to the ending of archaeology as a hobby – and indeed, also in part prompted by the economic downturn since 2007-08 and the reduction in the number of people working in developer-funded archaeology (together with the ongoing availability of Heritage Lottery Funds), it may have prompted the emergence of a new industry of professional archaeologists being paid to support avocational groups in carrying out their work.

As well as the creation of posts (normally project-funded and for limited periods, such as the Community Archaeologist post advertised by Pennine Partnerships, a NGO, in November 2011 financed by the Heritage Lottery Fund and European Commission), this has also led to the establishment of commercial companies such as Community Archaeology Ltd, described as having developed from the owner's 'passion to involve the public and led to the unique approach of studying the past by guiding, motivating and encouraging people to draw together diverse threads of evidence in order to give relevance to everyday objects, places and landscapes' (Community Archaeology Ltd, no date) and Community Archaeology North West, which 'offers a range of services to groups and organisations that are seeking to develop and deliver community and educational dimensions to archaeological and heritage projects. The design and delivery of innovative learning experiences and programmes of study for schools based around archaeology and material culture is a speciality' (Community Archaeology North West, 2009).

There is a Master of Arts degree in Community Archaeology delivered by Bishop Grosseteste University College Lincoln which is aimed at supporting people seeking to make exactly such a career – the course description states that 'You will consider community archaeology in a range of local and national contexts. Your studies will encourage you to engage with and study a variety of archaeology projects and organisations. The course will help develop the knowledge, skills and networks that will assist you in your career' (BGUCL 2011).

Figure 1 Shoreditch Park

SCO References

- Aitken, R., F.Simpson, 2005, Shoreditch Park community excavation, In: T. Nixon, (ed.), MOLAS *2005: annual report*, Museum of London, *http://www.molas.org.uk/projects/annualReviews.asp?aryear=2005&section=1&category=17&subsection=0&highlight=Shoreditch* [8 December 2011]
- BGUCL (Bishop Grosseteste University College Lincoln), 2011, MA *in Community Archaeology*, *http://www.bishopg.ac.uk/?_id=10513* [8 December 2011]
- CoE (Council of Europe), 1992, *European Convention on the Protection of the Archaeological Heritage* (Revised), *http://conventions.coe.int/Treaty/en/Treaties/Html/143.htm* [8 December 2011].
- Community Archaeology Ltd, no date, *about us*, *http://www.communityarchaeology.co.uk/about_us.php* [8 December 2011]
- Community Archaeology North West, 2009, *Community Archaeology North West*, *http://www.communityarchaeology.com* [8 December 2011]
- Council for Independent Archaeology, 2001, *Introduction 2001*, *http://www.independents.org.uk/?page_id=189* [8 December 2011].
- DCLG (Department of Communities and Local Government), 2009, *Guidance on building a local sense of belonging*, *http://www.communities.gov.uk/publications/communities/senseofbelonging* [8 December 2011].
- Jones, B., 1984, *Past Imperfect: the story of rescue archaeology*, London, Heinemann
- Merriman, N., 2004. *Public Archaeology*, London, Routledge
- Myres, J.N.L., 1975, Anniversary address, *The Antiquaries Journal*, 55, 1-10
- Rodgers, S., 2011, *Community Heritage at Heeley City Farm*, *http://www.dayofarchaeology.com/community-heritage-at-heeley-city-farm/* [08 December 2011]
- Simpson, F., H.M.R.Williams, Evaluating community archaeology in the UK, *Public Archaeology* 7.2, 69-90
- Thomas, S., 2010, *Community Archaeology in the UK: recent findings*, York: Council for British Archaeology, *http://www.britarch.ac.uk/sites/www.britarch.ac.uk/files/node-files/cba%20Community%20Report%202010.pdf* [8 December 2011]
- York Archaeological Trust, no date, *About Hungate*, *http://www.dighungate.com/PageView.asp?PID=2* [8 December 2011]

19 CASE STUDY 2

LU Amaiur: heritage and local identity *by Mikel Errazkin*

SCO Introduction

Located in the Baztan Valley (Navarre), Amaiur castle played a strategic role during the middle ages, controlling one of the main communication roads crossing the Western Pyrenees which connected Pamplona (Spain) with Bayonne (France). At the beginning of the 16th century, this was the last resistance point of the Kingdom of Navarre against the Castilian conquest. Once the area was controlled, the fortification was destroyed. During the following centuries, the castle had different military uses by Spanish and French troops and in 1922 a memorial to 'those who defend the independence of the Kingdom of Navarre' was built. The memorial was destroyed by an explosion in 1931 and during 1942-1946 ditches and bunkers were built in the hill to face a possible attack from Allied forces during the Second World War. Finally, in 1982, the local community re-erected the memorial.

SCO Historical memory of a symbol and local identity

Amaiur's battle and castle are, and have been since 19th century, major symbols of both Basque and Navarre nationalism, examples of resistance to Castilians, and by extension, to Spaniards. At present, Amaiur is a small village with less than 300 inhabitants, with a rich architectural heritage, both in farms and palaces. In 2006, the local community took the initiative and contacted Aranzadi Society of Sciences to carry out archaeological research at the site. As a result, a multidisciplinary project has been carried out since then with following objectives: construction of historical memory, archaeological excavation of the castle, restoration of cultural heritage and an educational programme for dissemination.

Aiming to contribute to the process of building their historical memory, the research team have gone further than archaeological excavations. Different aspects related to memory and identity have been considered: research on cultural heritage, both material (buildings and monuments) and immaterial (costumes, language, etc.); historical sources, further knowledge of the social and natural environment of the castle; present daily life (interests, concerns, references to the castle, research project, etc.).

SCO Historical memory of a symbol and local identity – activities

Accordingly, these activities have been carried out since 2006:

> ***Animation***

Archaeological excavations

Aimed to reconstruct and study the remains of the castle, people from the local community participate each year together archaeologists and students.

Video showing and explaining the 2010 summer excavations: *http://www.aranzadi-zientziak.org/video/amaiurko-indusketa*

Historical documentation

Bringing together any kind of data and references to Amaiur village and the castle in different archives.

Documentation of architectural heritage

In collaboration with the Architecture School of the University of the Basque Country, planimetrics (two-dimension measure and representation) of the main architectural elements of the village were produced. The purpose was to value the cultural heritage and to contextualize the castle in its cultural environment.

Figure 2 Photograms of the digital stories generated during the public archaeology project

Digital stories

The objective was to disseminate the research activities, to analyse the historical memory of Amaiur as symbol and to engage the participation of the local community with oral testimonies. As results, four videos were produced.

1 Explanation of the archaeological work and the main conclusions,

2 History of the castle, a dialogue between archaeology and history research,

3 Historical memory: how Amaiur became a realm of memory, the reconstructions linked to the political context and the knowledge of past events of people from Amaiur. The importance of the memorial has also been approached, as an icon for very different groups and ideologies as well as the remembrance events organised around it.

The collective memory

Divided in two parts, the first talks about the daily life of the people in Amaiur, from children to the eldest, each one contributing with their own activities, experiences and concerns to make a picture of the present community. The second part show the relationship between the local community and the memorial, the aim was to define the meaning that local people give to the memorial and the castle, their knowledge about historical events, how it was transmitted and the different initiatives to reconstruct or reclaim the past.

Dissemination activities

During the excavation campaigns conferences and guided visits for local communities have been organised. Participation of the local community has been promoted during the whole process. The research team expect to produce three different publications: a compilation of scientific conclusions, a second one targeted at general public and a last one for children.

SCO Conclusion

When local community from Amaiur asked Aranzadi Society of Science to excavate and reconstruct the remains of its castle, it was decided that, despite the historical memory of the castle and its symbolic weight, the research project should stress its relation with the village and its people, as part of the cultural heritage of the local community.

In order to achieve that, archaeological works were not enough, even if people participated actively in the excavations. Therefore, the contextualisation of the castle and the village through history and in the present was essential to link the

scientific results with the local community, and to help them to construct their own local historical memory of the site. In this sense, this experience of community archaeology successfully explored the local identity through cultural heritage in the broadest sense: history, monuments, oral testimonies, individual and collective memory.

SCO References

- Jimeno Jurio, J.M., 1989, La guerra de 1512-1522 y su repercusión sobre los territorios de la Corona de Navarra, In: *Cuadernos de Sección, Geografía-Historia*, 11, 475 Aniversario de la Conquista de Navarra: Jornadas históricas, Donosita, Eusko Ikaskuntza, 11-32 2006, Amaiur. Símbolo de Navarra, In: *La navarra medieval, Obras Completas de José Mª Jimeno Jurío*, 4, Iruña, Pamiela, Udalbide y Euskara Kultur Elkargoa, 147-247
- Orreaga, M. de [Pedro de Navascués de Alarcón], 1923, *¡Amayur...! Los últimos nabarros. Vindicación de los caballeros patriotas que lucharon por la independencia de Nabarra y por los derechos de la casa de Albret en los años 1512-1524*, Pamplona, Imp. Viuda de T. Bescansa
- Sociedad de ciencias aranzadi, 2006-2010, *Aranzadiana. Resúmenes de las tareas realizadas en las campañas arqueológicas en el Castillo de Amaiur*

19 CASE STUDY 3

LU Vikings – archaeological resources? Local people involved in heritage *Anders Gustafsson & Håkan Karlsson*

SCO Introduction

At the end of the 19th century the Vikings were used in the political construction of an imagined national community in the Scandinavian countries of Sweden, Norway and Denmark (Svanberg 2003). Interest, that has been both scientific and public, has continued during the 20th century but interestingly the stereotype of the Vikings has changed over time. In the beginning the Vikings were presented as mighty warriors that conquered huge parts of coastal Europe as well as parts of Russia, but now they are presented as entrepreneurs and skilful merchants (ibid). Today it is solely in ultra-nationalistic circles that the Viking warrior myth still lives on. These different interpretations can be seen as products of the political context wherein they were or are constructed.

During the last few decades interest in the reconstruction of the past, may it be the Viking or medieval periods, have developed in Sweden as well as in other parts of Europe. In the Swedish case more than half of reconstructions are directed at the Viking period, even if this period is relatively short (c. 250 years). Regarding the reconstruction of the Viking period, this has primarily been focused on the building of boats and houses/farmsteads. In most cases this reconstruction work also includes various degrees of re-enactment (Petersson 2003). In most cases these reconstructions are initially driven forward by local public interest and a few enthusiasts. Simultaneously the local municipality often encourages this interest since they see the economic, i.e. tourism, potential in it.

SCO Ale Vikingagård, Västra Götaland, Sweden

The reconstruction of this Viking age farmstead started in 2001 and it is located in Ale directly beside the river Göta Älv, c. 30 km north of Gothenburg. Göta Älv has since ancient times been an important link between Lake Vänern and the Kattegat. In the countryside around Ale a large amount of ancient remains from the Iron Age and Viking periods can be found. The reconstruction took its point of departure from the finds from the excavations of the chiefly farmstead in Tissø, Denmark. The reason for the use of the Danish example is that it is extremely rare to find this kind of assemblage in this region of Sweden. The first houses reconstructed at the place are richly decorated with carved ornaments in contemporary style, with a few smaller craft stalls. The houses are built within the context of education in the ancient building craft.

Today the farmstead is driven forward by the municipality together with Viking enthusiasts and there is a café as well as a small shop with everything from silver jewellery to glass and loom weights. There are also numbers of activities that are offered to visitors: Viking feasts, weddings in a Viking environment with 'contemporary' clothing and cuisine as well as corporate events and Viking markets:
'Why not start the new season with a Viking pentathlon – followed by a real Viking meal? /.../ The first weekend in May is the time for a regular tradition for us – the annual Viking market! More than 400 Vikings who are in their element at the start of the season. Buy Viking crafts, see warriors train, experience the Viking Age for a day' (*Ale Municipality Homepage*).

SCO Conclusion

The Ale Vikingagård is in many ways a typical example of how the Viking Age is used in Sweden today, in that it combines public interest with local economical benefits. It is also typical that the initial interest, where a number of enthusiasts wanted to re-enact the Viking Age, is today channelled and used by commercial interests.

SCO References

- Ale Municipality Homepage *http://www.vastsverige.com/sv/Ale/products/49924/Ale-Vikingagard/* (2011-06-29) (2011-06-29)
- Petersson, B., 2003, *Föreställningar om det förflutna. Arkeologi och rekonstruktion*, Nordic Academic Press, Lund.
- Svanberg, F., 2003, Decolonizing the Viking Age. 1. *Acta archaeologica Lundensia*, Lund, Series in 8o, 43

20 CASE STUDY 1

LU Museum of London Archaeology *by Kenneth Aitchison*

SCO Introduction

Museum of London Archaeology (MOLA) is a commercial organisation providing fieldwork and archaeological research services, based within the Museum of London, a public museum with charitable status which is jointly funded by the Corporation of London and the Greater London Authority. The establishment and operation of this organisation (and its antecedents) have been a significant part of the provision of archaeological services within the greater London area, and particularly within the City of London, which forms the historic core and financial centre of the metropolis.

At the end of the 1960s, both the London Museum (principally a museum of social history) and the Corporation of London's Guildhall Museum (which carried out much more archaeology) were working on field archaeology projects in London. The Guildhall Museum established its Department of Urban Archaeology (DUA) as an in-house field unit in 1973 (Spence 1993, 24; Rowsome 2000, 88).

Brian Hobley was appointed to head this Department as Chief Urban Archaeologist in December 1973 (anonymous, 1973). Wainwright (2000, 917) described Hobley as 'the first unit director to wear a suit'. With his powerful personality and entrepreneurial attitudes, Hobley's guidance, together with the dynamism of the City of London property market, meant that 'relations with City developers prospered to the extent that [by the end of the 1980s – before the publication of PPG 16] virtually all City excavations [were] funded by direct grants from the implicated developer' (Spence 1993, 24).

The DUA was complemented by a Department of Greater London Archaeology within the London Museum, carrying out work outside the City of London. In 1975 the London Museum and the Guildhall Museum merged to form the Museum of London which provided a coordinated museum service for all of Greater London, with the two field archaeology Departments continuing in their previous roles. In comparison with the rest of the United Kingdom, organisational structures in London were evolving extremely rapidly. In 1976/7 there were 77 archaeologists then employed by 'units' working in London. A centralised sites and monuments record and advisory service for London was established within the Museum of

London in 1980. This meant that the Museum was operating as both the curator and as a contractor within Greater London. The Department of Urban Archaeology and the Department of Greater London Archaeology continued to operate separately until they formally merged in 1991 to become the Museum of London Archaeology Service (renamed Museum of London Archaeology [MOLA] in 2008).

The applied archaeology departments of the Museum had encountered serious difficulties at the start of the 1990s as the levels of development and construction dipped. At the height of the property boom, in 1989, the Museum of London's Departments of Urban and Greater London Archaeology were employing well over 400 archaeologists, most of them working on excavations funded by developers rather than English Heritage (CBA 1991b, 1), but then 300 jobs were lost by the end of 1990. A number of new, competitor organisations emerged following these job losses, as senior former members of staff developed new businesses in the post-PPG 16 environment.

One of the often overlooked consequences of the Rose Theatre (cross reference to Rose Theatre case study) was that the Museum lost its role as archaeological advisor to the London Boroughs' planning services, which was taken on by English Heritage through the Greater London Archaeology Advisory Service.

By 2010, Museum of London Archaeology remained part of the Museum of London, but as a self-financing business unit within the Museum, with a turnover of £8.6 million in 2008-2009 (Museum of London 2009).

Museum of London Archaeology (and its predecessors) has been important in the history and development of archaeological employment in the UK for three very important reasons. Firstly because of its capacity to deliver services in the centre of London, where the earliest and biggest development fieldwork projects were undertaken and where it demonstrated that professional archaeological practice can work alongside major development projects. The second area of influence has perhaps been the most direct of all, in the development of fieldwork methodologies to accommodate such sites, which have been widely adopted and which require large numbers of skilled individuals. In doing so this has created a demand for the work of many more individual archaeologists than the sector would otherwise need. And through the considerable part it played (especially under Brian Hobley's direction) in changing client understandings of the benefits of developer-funding (facilitated by its location in the most booming area for commercial development in the UK), the organisation established the financial framework that allows for the employment of these individuals.

SCO Case study – Number One Poultry

Mappin and Webb, a department store built in the 1870s at 1 Poultry, an address, almost immediately adjacent to the Bank of England in the City of London was demolished and replaced by a post-modern building (Rowsome 2000, 80) in the early 1990s. Following the demolition and before the replacement's construction an enormously significant excavation took place, chronologically at the transition from the pre-PPG 16 system to current practice.

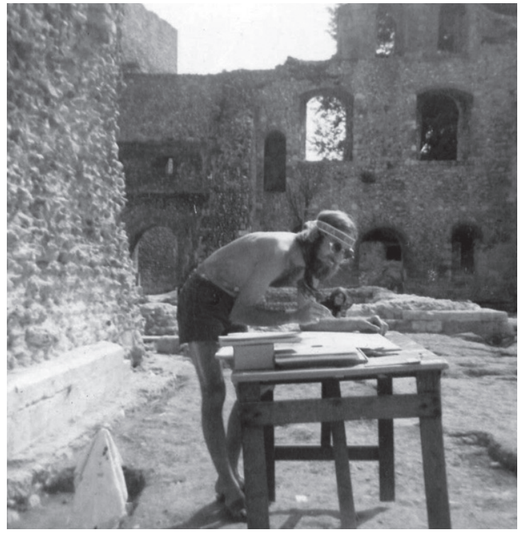
Following a 1988 Planning Inquiry, ministerial permission for development was granted in 1989, thus predating PPG 16. The consent carried a very weak condition requiring only archaeological 'observation and recording' (Rowsome 1995, 371), whereby 'The developer shall afford access at all reasonable times to any archaeologist nominated by the local planning authority and shall allow him to observe the excavation and record items of interest and finds' (Rowsome 2000, 10).

Because planning permission had been granted months before government guidance changed (following the publication of PPG 16), the State and its advisers in England, English Heritage, were placed in a difficult position. Ultimately, fieldwork was funded voluntarily by the developers (with the work was carried out within five years of the permission being granted, from 1993-96) but post-excavation and publication were funded by English Heritage (Rowsome 2000, 2).

The project's importance lies in its place in the history of professional archaeology, showing that forward-looking developers were prepared to work to the spirit of the new guidance before it was in place. It is also significant as the last major fieldwork project to be undertaken on behalf of private developers yet part-funded by the state in the United Kingdom. By the mid-1990s, when the fieldwork was actually undertaken, developer funding was no longer a contested issue.

SCO Technical discussion

MOLA (and its predecessors) has made considerable contributions to the development of methodology in archaeological field practice, frequently working on high-profile, high-pressure and deeply stratified urban sites, which need continuous excavation and recording systems that accommodate this. The technique of single–context recording was developed by DUA in 1975 for the General Post Office site in central City of London with all relationships being made via Harris Matrix (Spence 1993, 25). This led to more responsibilities being placed on individuals, but with a more accurate record and a greater level of interpretation at the recording stage, leading to the generation of a site-wide stratigraphic matrix which



then facilitates post-excavation analysis, with consequential implications in terms of the need for greater numbers of skilled personnel on site and working in post-excavation processing.

By 1992, single-context recording and planning was one of only three main recording systems in use in Britain (Chadwick 1997), and its use (together with the accompanying 'red book' – the Archaeological Site Manual (Spence 1990)) spread across commercial archaeology during the 1990s and first decade of the twenty-first century. However, there remains a disconnect with initial training as received at universities, as it is 'rarely taught to undergraduates in the field, yet should they want to work in London or most urban centres, practical experience of single context planning is a requirement' (Greatorex 2004). This recording system has been the consistent uniform controlling influence upon MOLA's work (Spence 1993).

Simultaneous with the General Post Office excavation, Barker (1977) had been promoting open area excavation, and Carver (2010, 29) considers that the methodological approach of single-context recording on open area excavation has subsequently become overwhelmingly the dominant approach used in commercial fieldwork in the UK (and much of western Europe) – and because it requires a large, skilled workforce, this has been one of the methodological drivers in the expansion of the labour market in archaeological fieldwork.

The Harris Matrix is a significant methodological legacy of excavations in Winchester in the 1960s and 70s. Edward Harris' stratigraphic matrix was developed by Harris in the post-excavation phase of the Lower Brook Street site in 1973 (Harris 1975; Harris 1979) (and invented quite specifically on 28th February 1973 [Brown and Harris 1993]), which effectively became a universal tool in both excavation and post-excavation. The introduction and wide adoption of this technique would subsequently contribute to the development of methodologies that would require large numbers of skilled personnel to work on excavations, and thus to directly influence the shape and size of professional archaeology in the UK.

This was in part influenced by a previous Winchester innovation, brought in during the 1964-65 excavations, also at Lower Brook Street – the use of dimensionally stable transparent drawing film which allowed one plan to be laid over another (Biddle 1983, 100). The use of film, or permatrace as it was generally known (the use of which was also being recommended by Hope-Taylor in 1966), combined with the matrix directly influenced the development of the Museum of London' single-context recording system (Spence 1993), which has meant that '…the Harris Matrix has gone from being an esoteric recording format of the Winchester Research Unit to a generic research tool of archaeologists across the world' (Hammond 1993). The Harris Matrix is known by that name rather than as the 'Winchester-Harris Matrix', following a dispute between Martin Biddle and Edward Harris (John Collis pers. comm. 23rd April 2010, Edward Harris pers. comm. 30th September 2011).

SCO Conclusion

While there was some archaeological work done in London in the years immediately following the Second World War as reconstruction took place on bomb-damaged sites, the great construction boom of the late 1960s and early 70s let to the establishment of substantial teams of skilled archaeologists in London working ahead of this building activity, under the control of the Museum of London.

The need for an excavation and recording system that could be employed in complex, deeply stratified urban sites led to the adoption of techniques in London that had been developed in the significant urban archaeological research project at Winchester. These methodologies subsequently became the standard modus operandi for commercial archaeology across the United Kingdom.

As these fieldwork methodologies have developed, they have led to greater levels of responsibility for the individual archaeologist – excavation, recording and interpretation are brought together through the development of the single-context recording system, in itself dependent upon the use of single-context planning and permatrace (thus allowing the Harris Matrix) and leading to methodological refinements such as the Framework system used at Heathrow Terminal 5

Figure 1 Ed Harris drawing at Winchester in 1970

(cross reference to Heathrow CS). Individual archaeologists are now expected to have a high level of technical skill and intellectual engagement, which they are able to confidently demonstrate.

SCO References

- Anonymous, 1973, New head of City excavations,*The London Archaeologist*, 2, 5, 105
- Barker, P.,1977, *Techniques of Archaeological Excavation*, London, Routledge
- Biddle, M., 1983, The Study of Winchester: Archaeology and History in a British Town, 1961-1983. *Proceedings of the British Academy*, 69, 93-135,
- Brown, M.R.,III, E.C. Harris, 1993, Interfaces in archaeological stratigraphy, In: E.C. Harris, M.R. Brown III, G.J. Brown (eds), *Practices of Archaeological Stratigraphy*, London, Academic Press, 7-20
- Carver, M., 2010, September/October 2010, Archaeology: what is it for, *British Archaeology*, 26-9
- Chadwick, A., 1997, *Archaeology at the edge of chaos: further towards reflexive excavation methodologies*, assemblage, 3
- Greatorex, R.,2004, Pan-European archaeological research: how different methodological approaches to research and practice in different countries might affect the interpretation of evidence. In: G. Carver (ed.), Digging in the Dirt: excavations in a new millennium, BAR *International Series* 1256, Oxford: John and Erica Hedges Ltd., 3-8
- Hammond, N., 1993, Foreword, In: E.C. Harris et al. (eds),1993, *Practices of Archaeological Stratigraphy*, London, Academic Press, VII-VIII
- Harris, E.C., 1975, The stratigraphic sequence: a question of time, *World Archaeology* 7(1), 109-121
- Harris, E.C., 1979, *Principles of Archaeological Stratigraphy*, Academic Press, London.
- Museum of London, 2009, *Unwrapping London: Annual Review 2008/09*. Retrieved August 6, 2010, from *http://www.museumoflondon.org.uk/NR/rdonlyres/CCFF08AD-84E9-47C7-8DAB-A491E2B076B0/0/MuseumofLondon_Annual_Review.pdf*
- Rowsome, P., 2000, *Heart of the City: Roman, medieval and modern London revealed by archaeology at 1 Poultry*, London, Museum of London Archaeology Service
- Rowsome, P., 1995, Number 1 Poultry – evaluation and phase 1 excavations, *London Archaeologist*, 7 (14), 371-8, 387
- Spence, C. (ed.), 1990, *Archaeological Site Manual* (2nd ed.), London, Museum of London Archaeology Service
- Spence, C., 1993, Recording the archaeology of London: the development and implementation of the DUA recording system. In: E.C. Harris et al. (eds), *Practices of Archaeological Stratigraphy*, London, Academic Press, 23-46
- Wainwright, G., 2000, Time please, *Antiquity*, 74 (26), 909-43

→ LU Further Reading

- Biddle, M., D.Hudson, C.Heighway, 1973, *The Future of London's Past: a survey of the archaeological implications of planning and development in the nation's capital* (Vol. Rescue publication 4), Worcester, Rescue.

20 CASE STUDY 2

LU Mérida: managing Emerita Augusta *by Rosa Martínez*

SCO Introduction

Urban archaeology started to develop in Spain in the late 1970s, together with the new democracy, development plans and new regional governments' competences in heritage protection. Until the mid-1980s rescue excavation was the rule in urban contexts. Then, preventive archaeology was imposed, with an archaeological intervention becoming compulsory before any work took place in urban plots, according to the polluter pays principle. However, no management model was behind this step forward.

One of the challenges of Spanish urban archaeology is the so called 'superimposed towns'. Many historical centres lay on Roman towns, placed for their part in a complex stratigraphy: before (prehistory, Greeks, Phoenicians, local cultures) and after (Visigoth, Muslim, middle ages, modern times etc.) We are not talking of small sized towns, but some of the main Spanish urban centres: Barcelona, Saragossa, Valencia, Sevilla, Málaga, Cádiz etc.

Mérida is a special case in Spanish urban archaeology. First, because of the significance and state of its monuments, it attracted the interest of archaeologists and heritage authorities, being the object of researches and protection earlier than any other town. And secondly, because its' current urban archaeological heritage management model is a good model for how to approach the study and management of superimposed towns.

SCO From Emerita Augusta to Mérida

Funded by Augustus in 25 BC, Emerita Agusta became the capital of Lusitania province and one of the most important cities in the Roman Empire. Mérida preserves more important ancient Roman monuments than any other city in Spain (including a theatre, amphitheatre, circus, several temples, a triumphal arch, bridges and aqueducts).

After the fall of the Western Roman Empire, during the Visigoth period, the city maintained much of its splendour. In 713 it was conquered by the Muslim army, returning to Christian hands in 1230.

Nowadays, Mérida is the capital of the autonomous community of Extremadura with around 60,000 inhabitants. The 'Archaeological Ensemble of Mérida' has been a UNESCO World Heritage site since 1993. 400,000 people visit the town every year, which enhances the necessity of preserving and valuing more than 30 archaeological monuments which can be visited in the town (Mateos 2004b)

SCO Archaeology in Mérida until 1993

The first scientific excavations took place in 1910 within the theatre and amphitheatre area. In the following years, all excavations and researches focused on the Antiquity period and mainly on the monumental area. In the 1960's, infrastructural works and archaeological interventions started to be monitored by an independent body. In 1973, Mérida was legally recognised as an archaeological ensemble, acquiring also more legal protection as heritage.

The selection of Mérida as capital of Extremadura in 1987 meant new development plans for the town, as new buildings were needed for the new regional administration. All permissions were conditional upon archaeological prospection, paid for by the developers. If an excavation was needed, public authorities assume responsibility for the cost. 135 archaeological interventions in five years give an idea of the rhythm and pace of construction at that time, although knowledge production was far from being what should have been expected (Rodriguez Temiño 2003).

The declaration as a UNESCO World Heritage Site was a turning point in urban archaeological heritage management in Mérida. In 1996 a new organisation was created, which aimed to plan and coordinate archaeological interventions in the city, which was considered, since then, as an entire and single archaeological site with unified criteria for intervention.

Figure 2 Emerita Augusta over Merida. *Source: Mateos (2004a)*

sco A model of urban archaeology

Since 1996, the Consortium of Mérida is the independent public entity responsible for managing the archaeological site of Mérida, which is treated as one unit and a single site. All public institutions having any responsibility or competency on the archaeological heritage of the town are represented in the Consortium. (Mateos 2004a)

This develops an urban archaeology project by articulating aspects such as administration, research and dissemination of archaeological heritage. Its main activities are:

> ***Animation***

Knowing

Although the main research interest continues to be Antiquity, excavations and research projects have been broadened up to the middle ages. The objective is to better understand the evolution of the superposed city through the centuries. Specific archaeological research projects are developed and rescue excavations have been substituted for preventive excavations in order to include archaeological information in development plans.

Documenting

A common methodology framework for excavating and documenting has been created: with the Harris matrix for registering, records of excavation, photography and plans, as well as required information for the introduction of a common cartographic database.

Monitoring

The Consortium is responsible for any archaeological intervention in the city. Merida it is the only European town where archaeological excavations initiated through development plans are paid for by the public administration instead of the owner or developer (Mateos 2004b). Any work requiring earth movement is to be approved by the Consortium and urban development has to fulfil the archaeological procedures established in the Protection Plan.

Conserving

Archaeological material is always preserved and protected (exceptionally it might be dismantled). However, the main conservation tasks are related to the public presentation archaeological heritage and its integration in the urban fabric. The aim is to combine protection and development, the archaeological and present town, not subordinating either of them. But integration should not also focus on urban plans, but also in the socio-cultural life of the town: Festivals of Classic Theatre and Romano-Greek Theatre for schools in the original Theatre or Emeritalia, a recreation project of daily life and use of monuments and buildings in Roman period.

Disseminating

Two different levels of communication are envisaged: one for scientific results from projects and excavations and another approach to the general public. The first one is ensured by the Consortium's own publication Foro, as well as excavation reports, which are shared with other local research organisations (Archaeological Institute and Roman Museum) for planning future research projects. As for the second, the media are regularly informed on the Consortium's activities, with the Mecenas programme providing specific activities for people supporting the Consortium.

Another particularity of the Consortium is its funding: only 30% of its annual budget is provided by the public authorities involved. The remaining resources are mainly obtained from ticket sales and applications for public grants or private sponsorship for specific research projects.

sco Conclusion

Mérida's model has shown that it is possible to develop a global research project in terms of the town as a unique archaeological site. (Rodríguez Temiño 2006) Accordingly, knowledge of Roman town evolution has improved and increased, especially those areas which had been neglected in favour of great monuments: urban fabric, walls, domestic architecture, materials and objects.

Apart from the improvement in the historical and archaeological knowledge of the town; the Consortium has been successful in two other aspects: dissemination, both at scientific and general public level, and the integration of archaeological heritage.

The principle of a single archaeological site integrated in the urban fabric has led to a unitary approach towards how to value and integrate archaeological heritage, without covering the town with ruins in small gardened areas, keeping only isolated monumental remains. (Rodríguez Temiño 2006) The urban integration together with programmes and projects for socio-cultural integration has contributed to raise awareness in Mérida's society on the value of its history and heritage.

sco References

- Consorcio de la Ciudad Histórica, *Monumental y Arqueológica de Mérida. www.consorciomerida.org*
- Duran, R.M., F.G. Rodriguez, 2004, *Veinticinco años de arqueología urbana en Mérida*, Cupauam 30, 2004
- Mateos, P.,2001, *Augusta Emerita: La investigación arqueológica en una ciudad de época romana.* AEspA, 74, 2001 at *http://hdl.handle.net/10261/27780*
- Mateos, P.,2000, *La gestión patrimonial en una ciudad superpuesta a un yacimiento arqueológico: el modelo de Mérida in Seminario Europeo de Gestión de Cascos Históricos*, November 2000 at *http://www.albaicin-granada.com/seminari/ponencias/pon6.pdf*
- Mateos, P.,2004a, *La gestión del yacimiento arqueológico emeritense: una labor de documentación, investigación y difusión (I)*, Foro 35, Mérida 2004
- Mateos, P., 2004b, *La gestión del yacimiento arqueológico emeritense: una labor de documentación, investigación y difusión (II)*, Foro 36, Mérida 2004
- Rodriguez Temino, I., 2006, *Arqueología urbana en España*. Ariel Patrimonio, 2006
- Vargas Calderon, J., 2009, *La gestión del patrimonio arqueológico en Mérida: El consorcio de la Ciudad de la Ciudad Monumental in Arqueología, patrimonio histórico y urbanismo en las ciudades Patrimonio de la Humanidad en España*. Actas de las jornadas técnicas sobre Arqueología, Patrimonio Histórico y Urbanismo. Ed. Grupo de Ciudades Patrimonio de la Humanidad en España, 2010
- Zabalbeascoa, A., *La Mérida romana se pone al día*. 02/03/2011 at *http://blogs.elpais.com/del-tirador-a-la-ciudad/2011/03/nuevo-marco-para-el-templo-de-diana.html*

21 CASE STUDY 1

LU Metal detectors in Southern Spain *by Rosa Martínez*

sco Introduction

The looting of archaeological sites is one of the main sources for the illicit trade of archaeological objects. In Southern Spain, metal detectors are the main tool used to locate archaeological sites or necropolises by existing 'professional' groups linked to Despite the magnitude and terrible consequences that professional looters are having on Spanish archaeological heritage, the legal framework is not very restrictive regarding the use of metal detectors.

sco Metal detectors

A metal detector is simply a device that senses the presence of metal.

Different technologies and applications allow for specific searches (objects, minerals, depth, type of soil, etc.) They are very specific instruments with complex designs that are aimed at detecting buried metallic objects, a great proportion of which are archaeological objects.

As the publicity for metal detectors makes explicitly clear; the adventure of finding treasure has become quite a popular activity with terrible consequences for archaeological heritage. It is not only the loss of objects, as part of the historical heritage, but the destruction of the context in which they were found. Even if the object detected and extracted was to be given to a museum or a heritage institution, valuable information for understanding the past may be lost forever. The beauty, the peculiarity or rareness of an object are more valuable to the treasure hunters than its historical value; this does not fit with contemporary archaeological principles and values (Rodriguez Temiño 2002).

sco The metal detectors in Spain – Legal framework

The Law 16/1985 on the Spanish Historical Heritage regulates the use of metal detectors. The law lists several places in which the use of metal detectors is forbidden (towns, archaeological zones and sites, historical buildings, etc.), as well as certain buffer zone around such areas. For the rest of the country, this law states that it is illegal to use these devices without permission for archaeological prospection. Therefore, if you find archaeological objects with a metal detector, the crime you

may be accused of is not looting of the archaeological heritage but of searching without authorisation.

Since 1985, the Autonomous Communities have held the competency of heritage protection. Thus, they developed their own laws and regulated the use of metal detectors in their territory. Some of them have followed the national law, considering the use of metal detector to be illegal prospection or an aggravating circumstance in other illicit acts on archaeological heritage. However, other Autonomous Communities have established that it is necessary to hold authorisation for any use of metal detectors. Experts consider that, in the absence of a more restrictive and protective law regarding archaeological heritage, this model guarantees better prevention against the loss of Spanish heritage.

In general, with the current legal framework it is very difficult to accuse someone of plundering, unless the user is caught digging and/or in possession of archaeological objects. Although in some cases only the possession of a metal detector and a digging tool has been enough to convict someone of heritage looting.

SCO Metal detectors and Archaeological Heritage

It is impossible to state the number of archaeological plundering acts as the only data available are those discovered by the police and security forces. According to those statistics, 75% of illicit acts against the historical and archaeological heritage are related to the use of metal detectors.

Thus, and although it is difficult to define the consequences of the illegal use of metal detectors on Spanish archaeological heritage, any person dealing with the topic (experts, lawyers, Heritage Unit of Guardia Civil, etc.) rapidly become aware of the magnitude of the problem in terms of harm to the Spanish archaeological heritage, both on land and submarine.

The security forces distinguish three profiles of those using the metal detectors against the archaeological heritage:

> Those using the metal detector as hobby; the archaeological objects are for their personal collection or to exchange,
> Local intellectuals or scholars: they like history and archaeology and they feel motivated to 'rescue' the local heritage; they might have important personal collections or have the purpose of creating a local museum,
> The 'professionals', those that search for economic profit. They act in large areas, working in groups of 2-4 people and use metal detectors to locate sites. They usually work at night, make deep excavations and are interested in any valuable archaeological object that might be sold. They have contacts with other groups and illicit trade networks. This group produces the biggest harm to the archaeological heritage.

Those organised groups, using metal detectors to find archaeological objects, are the main suppliers to the illicit trade. The security forces have identified different channels through which the plundered objects reach the final buyer: local markets, antiques shops (which sometimes are deceived with false documentation), press advertisements and auctions. Internet auctions have facilitated the international trade of archaeological objects. In 1999, the police broke up a group with more than 9,000 pieces which had sent heritage objects through online auctions mainly to USA, but also to Australia, Canada, Germany, France and Portugal.

SCO Amateur metal detector – enthusiasts vs. archaeologists

'Metal detectorists are not looters'. This is the main message of the 20 associations of metal detectors enthusiasts which exist in Spain. They also demand a change in the current legislation towards the sense of the Treasure Act applicable in England and Wales. They defend that their activity may contribute to archaeological heritage protection, detecting archaeological objects without stratigraphy (such as on farmlands) and in large areas where there is a risk of destruction (infrastructure development, mining activities or farming exploitation).

On the contrary, archaeologists consider the current law too permissive and demand more control on the use of metal detectors, not only as prevention against professional looters, but also against damages inflicted on the archaeological context by amateurs and the destruction of non-eye-catching archaeological remains (fireplaces, mats, etc.).

Although there is rejection from part of the scientific community, the use of metal detectors within archaeological research activity (excavation or prospection) may have some benefits: identifying metal presence before the excavation, helping to detect objects or structures where material has disappeared and only metal parts remain (chairs, coffins, boxes, shields, shoes, etc.), checking the land removed and prospection of large area for landscape studies (i.e. battlefields).

SCO Case study – Andalusia

According to the statistics on police interventions, Andalusia has been the region where the most arrests and operations against archaeological looting have been made. Several reasons may explain this:

> It is one of the largest regions in Spain,
> A very rich and varied archaeological heritage (populated since prehistory and with intense economic activity during classical antiquity),

> The soil has no natural protection (such as is offered by the vegetation cover in Northern Spain),
> The existence of permanent and organised groups of looters,
> A regional administration that is fully aware of the problem and therefore action against the archaeological looting is more visible than in other regions.

The police operations TAMBORA (2002) and TERTIS (2007), both of which had great impact in the media, are two significant examples of the magnitude of the archaeological heritage looting in Andalusia and the current legal limitations in fighting against it.

In 2002, 142 looters were identified. They had plundered 723 archaeological sites, mainly in Andalusia but also in other southern and central Spanish regions. As part of the operation a private collection of more than 100,000 pieces was confiscated (at that time the Archaeological Museum of Seville had only 2,000 pieces in exhibition).

Among the confiscated objects there valuable and remarkable objects from classical antiquity, although the chronological range of the objects were from 3000 BC until the Middle Ages. Each piece was identified with the date of acquisition and the place of origin. After analysing the information, the police concluded that 50% of the plundered sites were unknown to the heritage authorities.

An agreement was signed between the collector and the regional government. The Archaeological Fund Ricardo Marsal was created and the authorities thanked the collector for 'his labour in protecting the Andalusian heritage' (according to him his actions were aimed at preventing archaeological heritage being sent out of Andalusia and Spain). All the acquisitions made before 1985 were to be returned, since before that date buying heritage was not illegal.

Figure 1 Part of the confiscated objects
Source: El Diario de Sevilla. 08/02/2005

The study and classification of the collection started in 2005, confirming the exceptional and extraordinary pieces bought during the last 30 years from professional looters. The second example occurred in 2007, when 50 people were arrested (looters, intermediaries and final buyers) and more than 300,000 pieces were confiscated. It was defined as the largest operation against archaeological plundering in Europe. Two years later the justice decided that, despite the recording of phone conversations, there was not enough evidence to prove that the pieces were either obtained after the Heritage Law entered into force or that they came from a specific site. Thus, all of the pieces were returned to the looters.

SCO Conclusion

Metal detectors are one of the main threats to archaeological heritage in Spain. The harm is not only that valuable and unique objects are plundered, but also the destruction of the archaeological context and therefore the loss of scientific information. The current Spanish legislation is clearly inefficient and insufficient to protect archaeological heritage from both professional looters and metal detector enthusiasts. The entry into force of the European Convention on Archaeological Heritage (Valletta 1992) in October 2011 should mean more restrictions on the use of these devices.
Nevertheless, banning metal detectors will help to condemn looters, but not to protect isolated and unknown heritage. While buyers exist, plundering will be a profitable activity. Should we toughen legislation towards intermediaries and buyers? Which actions could help to protect our archaeological heritage from looters and illicit trade?

SCO References

- Benitez de Lugo, L., A.Sanchez, 1995, El furtivismo arqueológico : consideraciones legales y científicas sobre los hallazgos arqueológicos, In: *Boletín del Instituto Andaluz del Patrimonio Histórico* 12
- Nunez Sanchez, A.M., 2008, *El expolio de yacimientos arqueológicos in La lucha contra el tráfico ilícito de Bienes Culturales.* Ministerio de Cultura
- Rodriguez Temino, I., 2003, El uso de detectores de metales en la legislación cultural española. *Patrimonio cultural y Derecho* 7, 233-259
- Informe de la Guardia Civil sobre el Expolio Arqueológico, 2002

La detectoafición y el patrimonio histórico-cultural, 2004. Federación Española de Asociaciones de Detecto aficionados at *http://www.somosfadd.es/images/stories/docs/informe%20Feeada%20-%20La%20Detectoaficion%20y%20el%20Patrimonio%20Historico-Cultural.pdf*

- Archivada la causa de la operación 'Tertis' contra el expolio arqueológico para 31 de los imputados. Europapress. 27/02//2009. Archivada la Operación Tertis contra el expolio arqueológico at *http://noticias.estudio-arqueologia.es/search?q=tertis*
- Intervenidas 200.000 piezas de una colección arqueológica en Écija. El País 20/02/2002
- La Guardia Civil cierra la mayor operación antiexpolio de Europa con más de 100.000 piezas recuperadas. Estrella Digital. 22/11/2002
- La Junta de Andalucía pacta con Ricardo Marsal la donación de su valiosa 'colección'. Diario de Sevilla. 08/02/2005
- La red de la que se nutrió Marsal saqueó 723 puntos arqueológicos. Diario de Sevilla. 22/11/2002
- Los tesoros de la Colección Marsal. Diario de Sevilla. 13/08/2005 Operación Tertis. ¿Nada de nada? at *http://www.callejadelasflores.org/?p=8884*

21 CASE STUDY 2

LU Metal detectors in Sweden. A new legal framework?

Anders Gustafsson & Håkan Karlsson

SCO Introduction

Currently, the Swedish Heritage Conservation Act (1988, 950) in its Chapter 2, Section 18 states that:

'Apparatus that can be used for electronically detecting metal objects beneath the ground surface (metal detectors) may not be used /…/ Nor may metal detectors be carried on ancient monuments and remains, except when travelling on a road that is open to the general public /…/'

At the same time the EU Commission estimates that the ban on metal detector use in the Swedish Heritage Conservation Act is disproportionate to their purposes and thus not compatible with Articles 24 and 36 of the EU-treaty which affects the need for free movement of goods within the Union and the Commission has requested that Sweden to take action to solve the problem. Due to this fact the Swedish National Heritage Board has received a Government order to review the Heritage Act regulating the use of metal detectors and to propose rules that are compatible with EU law. In line with this the National Heritage Board has produced the report 'Proposal for new regulations on the use of metal detectors in the Act (1988, 950) of the Heritage Conservation' (RAÄ 2011).

The report discusses two possible solutions, both of which are deemed to be in conformity with the requirements of EU law on free movement of goods within the Union and the Heritage Conservation Act as well as the cultural policy's objectives to conserve, use and develop the cultural heritage. The first solution is an opportunity for increased use of metal detectors to locate archaeological finds and other metal objects through a licensing system and the second solution creates opportunities for increased use of metal detectors by making it free to look for anything but ancient finds in exception for Oland and Gotland and on ancient monuments. The report recommends the first of these solutions.

SCO Comments

It appears that the investigation preceding the report was of relative urgency, explaining why there was no comprehensive analysis of the situation for the foreseeable development of the key factors: the market, crime prevention, crime, conservation, the use and development of cultural heritage and knowledge development has been implemented. This situation is most unfortunate since the time-pressed process is probably the main reason why the two solutions are based on traditional legal tools in which the preservation of cultural heritage through legal control is at the centre, while the cultural policy objectives regarding the use and development of cultural heritage have been under-communicated. Control and preservation of cultural heritage is thus placed before the use and development of cultural heritage.

The first solution's licensing system tends to lead to an extensive bureaucracy and it is not easy to see how any of the current proposals are in accordance with the requirements of EU law on free movement of goods within the Union.

It may be noted that when the report is under-communicating the cultural policy objectives concerning the use and development of cultural heritage on behalf of conservation issues based on legal control, solutions which are based on the use and development of cultural heritage are at the same time neglected. However, the report points out that a desirable future development is that the cooperation between amateurs using metal detectors and the official cultural heritage sector is increasing, especially since this corresponds to developments in other parts of Europe. Here the report touches upon a solution to the problem that the report does not discuss other than very briefly, namely, people's interest and the cultivation of cultural heritage as a form of protection for it. A solution in this spirit would be a total legalisation of metal detectors whereby it becomes free to look for ancient artefacts at all other places than at recognised ancient remains. This solution is tangential to a great extent of the spirit of the report's first draft, but it contains no licensing procedure. Such a solution is consistent both with the requirements of EU law on free movement of goods within the EU and with the heritage Conservation Act as well as the cultural policy objective of maintaining, using and developing cultural heritage. To achieve the latter, this solution should be combined with increased cooperation between the metal detectorist amateurs and the official cultural heritage sector. One can also think of a situation where the authorities - in line with what has taken place elsewhere in Europe - initiates various types of partnerships and arrangements.

SCO Concluding remarks

The sketched solution can be seen as too radical as it seems to increase the risk of looting and destruction of Swedish cultural heritage, but one can also turn on the reasoning. It is impossible to control Sweden's approximately one million permanent monuments in relation to the use of metal detectors and those who have an interest in plundering will carry out this type of business despite the current law. Since the locations of the ancient monuments are also known through public databases such as Fornsök one only need minimal antiquarian knowledge to know what kind of monuments that presumptively do contain precious metals. The tool – the metal detector – is thus in most cases redundant since the needs of the plunderer can be satisfied by regular garden tools when trying to get at the prehistoric finds.

Instead of prohibition, it is a question of the attitude people have to cultural heritage. That this attitude is maintained through control and law would be a worse solution than that the public are encouraged to actively identify, cultivate, develop, and thus indirectly contribute to the protection and preservation of our common heritage.

SCO References

- Swedish Heritage Conservation Act (1988:950) *http://www.raa.se/cms/showdocument/documents/extern_webbplats/2009/september/kml_eng.pdf*
- RAÄ 2011. Proposal for new regulations on the use of metal detectors in the Act (1988:950) of the Heritage Conservation. *http://www.raa.se/cms/showdocument/documents/extern_webbplats/2011/april/metallsokarrapporten.pdf*

21 CASE STUDY 3

LU Baghdad Museum

by Kenneth Aitchison

SCO Introduction

Archaeological material is vulnerable to being stolen or looted in times of civil insurrection, revolution or wartime. While archaeological deposits are not tradeable, and therefore have no intrinsic value, some objects that have come from archaeological sites can have cash value. These are scarce resources that will not be replenished – there will never be any genuine, new ancient artefacts – and there are individuals and organisations that want to pay to have them.

Most museums have collection and display policies that prioritise artefacts that are prized for their perceived artistic value as well as their antiquity, and such objects are then (logically) also prized by art collectors. Given that such objects are often very portable, and that at times of civil crisis protecting museums may not be prioritised as highly as other things – particularly when compared with keeping human beings safe from harm – these museum collections may be at risk.

This case study looks at one particular example of museum looting during a chaotic wartime period, of the National Museum of Iraq in 2003. It examines what happened (or what was claimed to have happened), what the reactions of different interest groups were and why and in what situations archaeological materials are treated as economic resources.

SCO Case study – The Looting of the National Museum of Iraq in 2003

'The looting of the museums has been the subject of much controversy as to what happened and when, with much claim and counterclaim as to who did or did not do what' (Stone 2005).

The Baghdad Museum of Antiquities was established in 1923 largely through the efforts of the English archaeologist Gertrude Bell. It was soon renamed the Iraq Museum and then the National Museum of Iraq, was subsequently expanded and moved to its present location in central Baghdad in 1986.

> ***Animation***
>
> US-led forces invaded Iraq in late March 2003, moving into Baghdad on 7th April and taking control of much of the city by the 9th. With the collapse of the previous authority,

and before the American forces could effectively police the city, looting broke out in many areas. This initially concentrated on former government offices and presidential palaces, but rapidly spread to supermarkets, factories, hotels, embassies and cultural centres (Collier 2003).

One of these was the National Museum of Iraq, and by the 12th of April the BBC was reporting that 'looters had taken or destroyed 170,000 items of antiquity dating back thousands of years' which 'were worth billions of dollars' (BBC News 2003). This looting led to the then US Secretary of Defense Donald Rumsfeld's infamous response on April 11th 2003 that 'Stuff happens! ... and it's untidy, and freedom's untidy, and free people are free to make mistakes and commit crimes and do bad things' (US Department of Defense 2003).

Very quickly it was recognised that numerous very prestigious items had disappeared from the Museum, including the Uruk Vase (aka Vase of Warka), the Mask of Warka, the Golden Harp of Ur and the Bassetki Statue.

An investigation by the US military concluded that the initial estimates of the numbers of artefacts that had been taken were exaggerated, with an eventual assessment being that about 15,000 objects were taken (Bogdanos 2005, 494). That investigation considered that there had been three separate theft events – with 'professional' thieves taking the prestigious objects from the galleries (and bypassing copies and less valuable pieces), looters ransacking the above-ground storage rooms, and 'insiders' – individuals who had worked or otherwise had access to the museum – taking material from the basement including up to 11,000 very portable cylinder seals and items of jewellery.

In the second half of 2003, an amnesty on the return of cultural materials to the museum led to nearly 2,000 items being returned. While the amnesty was seen as having considerable success in terms of public relations, more than 99% of all items recovered through the amnesty program were relatively common artefacts, such as pottery sherds, which had come from the randomly looted above ground storage rooms and were not those that had been systematically taken from the public galleries or the below ground stores.

However, the amnesty did lead to the recovery of the Uruk Vase, which 'was returned in the trunk of a car along with 95 other artifacts on 12 June 2003 after two weeks of negotiations' (Bogdanos 2005, 497). It was in 14 pieces, but all of these breaks were ancient and it could be restored to the condition that it was in before it had been stolen.

A further 2,000 items were recovered during military raids on hideaways during 2003, including the Mask of Warka and the Bassetki Statue. Other items were subsequently recovered at Iraqi border checkpoints and from antiques dealers and auction houses elsewhere in the world, although the majority of artefacts taken had not reappeared by 2011.

There was a great deal of immediate outcry over the fact that the looting had taken place after the United States had invaded Baghdad. Because military forces were not deployed to prevent this, some commentators claimed that 'The looting of Iraq's national museum in Baghdad could have been prevented. The American and British forces are clearly to blame for the destruction and displacement of its cultural treasures' (Lowenthal & Urice 2003). The President of the International Council on Monuments and Sites (ICOMOS) went so far as to claim that the United States was guilty of committing 'a crime against humanity' for failing to protect the museum (Gody 2003).

In the time immediately following the invasion, the situation in Baghdad changed day-by-day. There was active fighting in the area of the museum and US troops were not sent to secure the building until the 12th of April, possibly four days after the looting had begun.

The fact that the 'official' investigation into the looting was subsequently carried out by the US Army, with the leader of that investigation publishing an article subtitled 'the truth about the Iraq Museum' (Bogdanos 2005), has allowed some to imply that US activity was retrospective and purely intended to protect and repair the American national reputation.

SCO Technical discussion – Treatment of portable antiquities as an economic resource

Joanne Farchakh, a Lebanese archaeologist and journalist, reported on looting of archaeological sites across Iraq in the aftermath of the invasion. When Farchakh asked villagers – who had previously been employed by the Iraqi state archaeology service - why they were looting, many responded that since the collapse of the Saddam regime no one purchased their crops and the only way they could survive was by providing the goods demanded by antiquities dealers who 'encouraged them to dig vigorously while the war lasted' (Carver 2003).

There is no doubt that such looting is caused directly by the fact that there is a market for such objects, and that the looting not only removes portable objects, but also seriously damages or destroys sites.

There were two particular reasons why this activity flourished in Iraq in 2003. These were the simultaneous loss of income to rural villagers from other sources, and the availabil- income money from the antiquities dealers who were able to move the objects out of Iraq to be sold in other countries.

Part of the explanation of why the objects could be moved easily out of Iraq was that customs and border officials throughout the world might not easily recognise certain types of antiquities as contraband (i.e., as items prohibited by law, such as narcotics or weapons). Under commonly accepted legal standards, an item must be either contraband or immediately apparent as evidence of criminal activity in order to justify detention and seizure (Bogdanos 2005, 67). Because smaller artefacts such as cylinder seals, which were being looted from sites and which were taken in the organised theft from the Museum's basement, are not immediately recognisable as contraband, customs officials often had little legal basis to stop traffickers and to seize material.

SCO Legislation to prevent trade in antiquities

UNESCO's 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property was a first step to prevent clandestine smuggling of antiquities, but it lacked legal authority in many states and could not effectively be applied to prevent the removal of material from Iraq in 2003.

Once the scale of the theft and resale of cultural items from Iraq became apparent, several 'destination' states, where there were considerable markets for such antiquities, rapidly passed legislation, such as the UK' s Dealing in Cultural Object (Offences) Act 2003. Under this act it is illegal to knowingly sell, buy or deal in 'tainted' cultural objects (objects of historical, architectural or archaeological interest) illegally excavated or removed after 30 December 2003. Possession of a legal export permit from the country of origin is normally enough to demonstrate that an object is not 'tainted'. The penalty for breaking this law is imprisonment for up to 7 years and/or an unlimited fine. US Congress passed the Emergency

Figure 2 The National Museum of Iraq

Protection for Iraqi Cultural Antiquities Act on 19th November 2004 (AIA 2004).

SCO Cooperation of archaeologists with military forces

A controversial way in which archaeologists have tried to prevent or limit damage to archaeological sites and material has been through cooperation with military forces. Before the 2003 invasion, archaeologists urged the US government to protect the National Museum of Iraq (Gugliotta 2003), and provided the US Department of Defense with information on the risk to archaeological sites (Gibson 2003). Similarly, Peter Stone of the University of Newcastle led a team of researchers who compiled a list of key, sensitive archaeological sites which was provided to the UK armed forces before the war (Stone 2005). The objective of this activity was to help the armed forces minimise the amount of damage caused to those sites by military action, and all of the sites 'were added to British military maps being prepared for the conflict and that British Military Field Orders identified them as places to avoid' (Stone 2005).

This cooperation was seen by some archaeologists (Hamilakis 2003; 2007) as being ethically questionable and as providing academic and cultural legitimacy to the invasion.

SCO Conclusion

The 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (UNESCO 1954) established the International Committee of the Blue Shield (ICBS) to protect cultural heritage by co-ordinating preventative measures to meet and respond to emergency situations, both natural and man-made. The Second Protocol to The Hague Convention (adopted in 1999, though still not in force in March 2003 as the requisite 20 states had not ratified it) meant that the ICBS had a particular and specialised role to advise the Convention's Committee for the Protection of Cultural Property in the Event of Armed Conflict. However, by 2003, neither the United States nor the United Kingdom had signed the Hague Convention. The United States subsequently ratified the Convention in 2009, but, by the end of 2011, the UK had not.

International conventions and national laws proved ineffective in preventing the looting and subsequent sale of antiquities from Iraq in 2003. The power of market forces, which place a commercial value upon such material, led to planned and opportunistic theft and resale with consequent loss of the objects' (and the sites they came from) cultural and academic value.

SCO References

- AIA (American Institute of Archaeology), 2004, *Emergency Protection for Iraqi* Cultural Antiquities Act Passes *http://www.archaeological.org/news/sitepreservation/143* [06 December 2011]
- BBC News, 2003, *Looters ransack Baghdad museum*, BBC News 12 April 2003, *http://news.bbc.co.uk/1/hi/world/middle_east/2942449.stm* [06 December 2011]
- Bogdanos, M., 2005, The Casualties of War: the truth about the Iraq Museum, *American Journal of Archaeology* 109, 477-526
- Carver, M., 2003, Editorial, *Antiquity* 77/296, 221-226
- Collier, R., 2003, *Looters shake Iraqi cities/CHAOS: Troops watch as Baghdad is ransacked*, San Francisco Chronicle April 12 2003, *http://articles.sfgate.com/2003-04-12/news/17484885_1_looting-baghdad-university-hussein-loyalists* [06 December 2011]
- Gibson, M., 2003, Focus on Iraq: where civilization began, *Archaeology* 56/4, *http://www.archaeology.org/0307/etc/civilization.html* [06 December 2011]
- Gody, J., 2003, *Worldwide Move to Stop Sale of Loot*, Inter Press Service News 15 April 2003, *http://ipsnews.net/news.asp?idnews=17567* [06 December 2011]
- Gugliotta, G., 2003, *Pentagon Was Told Of Risk to Museums: U.S. Urged to Save Iraq's Historic Artifacts*, Washington Post, 14 April 2003 *http://www.washingtonpost.com/ac2/wp-dyn/A19691-2003Apr13?language=printer* [06 December 2011]
- Hamilakis, Y. 2003, Iraq, Stewardship and the Record: an ethical crisis for archaeology, *Public Archaeology* 3, 104-111
- Hamilakis, Y., 2007, From Ethics to Politics, In: Y. Hamilakis & P. Duke (eds) *Archaeology and Capitalism: from ethics to politics*, Walnut Creek: Left Coast Press, 15-40
- Lowenthal, C., S. Urice, 2003, *An Army for Art*, New York Times 17 April 2003, *http://www.nytimes.com/2003/04/17/opinion/an-army-for-art.html* [06 December 2011]
- Stone, P., 2005, The identification and protection of cultural heritage during the Iraq conflict: a peculiarly English tale, *Antiquity* 79/306, 933-943
- UNESCO, 1954, *Convention for the Protection of Cultural Property in the Event of Armed Conflict with Regulations for the Execution of the Convention 1954, http://portal.unesco.org/en/ev.php-url_id=13637&url_Do=Do_ToPic&url_Section=201.html* [06 December 2011]
- UNESCO, 1970, *Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property 1970, http://portal.unesco.org/en/ev.php-url_id=13039&url_Do=Do_Topic&url_Section=201.html* [06 December 2011]
- US Department of Defense, 2003, DoD News Briefing – Secretary Rumsfeld and Gen. Myers, *http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2367* [06 December 2011]

→ **LU** Further Reading

- Bogdanos, M. with W.Patrick, 2005, *Thieves of Baghdad: one marine's passion to recover the world's greatest stolen treasures.* New York City: Bloomsbury.
- *Dealing in Cultural Object (Offences) Act 2003 http://www.legislation.gov.uk/ukpga/2003/27/contents* [06 December 2011]
- *Emergency Protection for Iraqi Cultural Antiquities Act 2003 http://www.govtrack.us/congress/bill.xpd?bill=s108-1291* [06 December 2011]

22 CASE STUDY 1

LU Queer archaeology

by Marjolijn Kok

SCO Introduction

Heritage is associated with identity and memory and problematic heritage can be viewed as aspects of heritage which we don't want to identify with or to remember. Well known examples of problematic heritage are linked to the remains of war atrocities and the treatment of indigenous or suppressed groups. These heritages are often contested and play a role in today's politics and human rights issues. A very complex type of problematic heritage is queer heritage (queer is seen here as people who place themselves outside normative heterosexual frameworks). There are several reasons which make it problematic. First of all queer is a modern term which developed in the lesbian, gay, bisexual and transgender communities. There is little reason to expect similarly defined persons in the past. This is not to say there were no acts and relations in the past that we would now describe under those terms, but there is every reason to expect a different conceptualisation of these acts and relations in the past. The idea of heritage is often related to more or less genealogical defined groups, related to family law. The family ties suggested between generations in the concept of heritage is not as easy in LGBT-communities. Most people who identify themselves as LGBT and/or queer are not born and raised in a LGBT-community, but may or may not join them in later life.

The political nature of heritage makes it an important tool in propagating normative ideas about the present. A continuous heteronormative presentation of the past makes this norm look natural instead of socially constructed. This can lead to the exclusion, hospitalisation and criminalisation of non-normative heterosexual persons.

Looking for gays in the past will not solve this problem as this will project our present day conceptualisation of gender relations straight back onto the past. A queer perspective should critically evaluate the representation of the past in heritage contexts and question one-sided narratives.

SCO Queer theory and heritage

Although the first steps have been made to apply queer theory to archaeology, queer archaeology has still to develop its own theoretical and methodological framework. Queer theory

questions heteronormative thinking and its accompanying binarism. As Nancy Fraser notes, 'The transformative aim is not to solidify a gay identity but to deconstruct human identity; it is, rather, to sustain a sexual field of multiple, debinarised, fluid, ever-shifting differences.' The goal is therefore to deconstruct what identity means and how it operates in relation to sexuality.

This means we should investigate how we construct identity in general. Rosemary Joyce shows how research starting from a binary concept of male and female has difficulty interpreting data which indicates the formation of identity through other processes. Research on skeletal remains should be sensitive to sliding scales and other aspects of the body, such as age and deformities. In this way more diverse aspects of identity can be brought to the fore and used in representations of the past.

Stephanie Moser's research into imagery has shown the persistent representation of specific gender roles in which the men look outward and are active and the women care for children and look inward.

These kind of stereotypes, when presented within a heritage context, affirm the naturalness of these roles going back as far in time as the Palaeolithic and leave little room for debate about the normative aspects of these roles. Pamela Geller furthers this discussion by explaining that not only present day gender roles but also our present day notion of romantic feelings are uncritically projected back into the past. Presentations in heritage often want the past to appear familiar or normal, so it is easier for people to identify with the people of the past. The perpetuation of dominant norms or exclusion of diversity is a (sometimes unintended) effect of these choices. Sarah Tarlow proposes that we should treat all human remains and their representation justly. The diversity of human experience should not be overlooked and the quality of the discourses we produce should be as high as possible. We can never do full justice to the people of the past, but at least we can try to treat their remains as justly as possible and critically evaluate our representations of them.

SCO Case study – The couple from Weerdinge

The couple from Weerdinge is one of the best preserved Late Iron Age bog finds in the Netherlands. In 1904 they were found by workers in the peat who alerted the police. The couple was rolled up, put in a soap box and brought to a cemetery. G.J. Landweer, a tax collector with an interest in archaeology, went to the cemetery where he unpacked the bodies and put them in their original position for photographic purposes.

He assumed they were a couple embracing. The smaller body which lay on top of the arm of the large body was thought to be a woman as the genitals of the large body were still intact and definitely male. The bodies were send to the Drents Museum and were immediately put on display and attracted many visitors. In a later article Landweer reminisced about the couple's lives and how they probably shared the good and the bad and how tenderly they were given a burial in a peaceful position.

Not much research took place and they were locally known as Mr and Mrs Veenstra (a common Dutch name meaning 'from the peat').

In 1988 the bog bodies in the Drents museum were examined and it became clear that the Weerdinge couple were both male. Later DNA research revealed that they were not brothers. What is interesting about the discourse about this couple is that the texts are emphasising that the two men were thought to be a couple but this changed once their sex was established. No further comments are given. It is not clear

Figure 1 The couple from Weerdinge photographed in the cemetery

why the two men cannot be a couple as well. There is a total silence about the possible same-sex relation these men could have had. The loving embrace is no longer part of the story. There is no more reminiscing about romantic relations lived out in the past.

In an overview of the bog bodies of northwest Europe of 1996 the Weerdinge couple and two other male couples from Hunteburg (Germany) and Bolkilde (Denmark) are discussed. Initially it was thought these couples could be homosexual men who had been punished for indecent behaviour. This was based on Tacitus' description of Germany and was even picked up by Heinrich Himmler who attested this was no punishment but simply the ending of abnormal lives.

Van der Sanden chooses to see these couples as not being punished for homosexual acts as all three couples were carefully laid down together. He sees these bodies as human offerings probably in relation to fertility, healing, celebration of victories or foretelling the future. He indicates that we shall never know the true nature of the relationships of these men, whether they were kin or blood-brothers. He is careful to omit the idea that they could be actual lovers. However, research by Holliman has shown that different gender roles are in some cultures related to spiritual activities. This could explain the occurrence of same-sex but not necessarily same-gendered couples within a ritual context. Furthermore Geller has shown that romantic notions are projected back into the past, as for example with the lovers of Valdaro, but disappear when this does not fit a heteronormative framework, like the Weerdingen case.

SCO Conclusion

Although we may not always be aware of our preconceived ideas and concepts related to human relations, a critical analysis of the way we present and research human remains may broaden our scope. Queer archaeology/theory can be a useful starting point, not just for the sake of finding queer persons in the past, but for understanding the diversity of personal identities throughout time.

> SCO Exercise

SCO References

- Fraser, N., 1997, *Justice Interruptus.* New York. (cited in Davidson, R.J. 2010 Queering Politics, Desexualizing the Mind, *http://www.hivos.net/Hivos-Knowledge-Programme/Themes/Urgency-Required/Articles/Queering-Politics-Desexualizing-the-Mind-Robert-J.-Davidson* (25-2-2011))
- Geller, P.L., 2009, *Grave News, Romance is Dead, Compulsory Heterosexuality and Ancient Remains.* Paper presented at the Annual AAA-meeting in Philadelphia (US).
- Holliman, S.E., 2006, The Archaeology of nonbinary genders in Native North America. In: S. Nelson (ed.), *Handbook in Gender Archaeology*, Lanham, 435-450
- Joyce, R.A., 2008, *Ancient Bodies, Ancient Lives. Sex, Gender and Archaeology*, New York,
- Moser, S., 1998, *Ancestral Images. The Iconography of Human Origins*, New York
- Sanden, W.A.B. van der, (ed.), 1990, *Mens en Moeras. Veenlijken in Nederland van de bronstijd tot en met de Romeinse tijd.* Assen
- Sanden, W.A.B. van der, (ed.), 1996, *Vereeuwigd in het veen. De Verhalen van de Noordwest-Europese veenlijken*, Amsterdam
- Tarlow, S., 2006, Archaeological ethics and the people of the past, In: C. Scarre, G. Scarre, (eds), *The Ethics of Archaeology: Philosophical Perspectives on Archaeological Practice.* Cambridge, 199-216

- *http://www.drentsmuseum.nl/index.cfm?pid=81* (1-3-2011)

→ LU Further Reading

- Butler, J.,1993, *Bodies that Matter. On the discursive limits of 'sex'*, New York
- Voss, B.L., 2007, Feminism, queer theories, and the archaeological study of past sexualities. In: T. Insoll, (ed.), *The Archaeology of identities. A Reader.* London, 124-136,
- World archaeology 2000 Vol 32(2) *Queer Archaeologies*

22 CASE STUDY 2

LU Memory's graves. Exhumations of common mass graves from Spanish Civil War *by Lourdes Herrasti*

SCO Introduction

The case of the mass graves from the Spanish Civil War and the first years of Franco's dictatorship is a very good example of problematic heritage related to memory and politics.

Recent research (Preston 2011) estimate that about 200,000 civilians were executed during the Civil War and the first years of Franco's dictatorship. The main difference between the victims of both sides is that those killed by Republican forces or their supporters were investigated and documented after the war, forming part of the war memory for decades (declared martyrs and heroes, they were remembered and honoured). On the contrary, those executed or 'disappeared' by Franco's troops and regime, around 150,000 people, were forgotten and the families silenced by fear.

The political agreements after Franco's death put aside the memory of the dictatorship and all energies and efforts were devoted to the construction of the future. A kind of 'silence pact' led the transition to democracy, meaning that Franco's crimes were neither investigated nor recognised.

The mass graves are material heritage of the Civil War and the repression which followed, intended to eliminate any dissidence in the new regime. This case study analyses how the mass graves exhumation has contributed to recovering the historical memory of a forgotten period. The number of people who disappeared in Spain during the war and the post-war period was unknown. Silence was imposed over events and suffering. History in schools and universities never approached the Civil War and if it did, it was a narrative of battles and military events.

SCO The beginnings

In 2000 the first exhumation of a common grave of people executed during or after the Spanish Civil War was carried out. It was promoted by man who had tracked his grandfather's whereabouts until he located the exact place where he was buried.

From this, the process of excavating and exhuming common graves, using archaeological methodology and anthropological and genetic analyses started. In this grave, located in Priaranza del Bierzo (León – NW Spain), not only were 13 person's remains were recovered, but the forgotten memory of 13 people, whose execution was clandestine and unpunished, were recovered. At this moment, none could suspect the later development of what is called Historical Memory Recovery (Recuperación de la Memoria Histórica).

SCO Recovering the memory

The existing official guidelines for exhuming Civil War mass graves, published by three Autonomous Communities, as well as the draft presented by the Spanish Justice Ministry are the results of applying historical, archaeological and forensic methodology.

Exhumations are only carried out if the family of disappeared person asks. Many times, families have information on the circumstances of disappearance and execution, but sometimes there is no previous reference, and therefore it is almost impossible to locate the remains.

Although most of the people participating in the exhumations are doing it on voluntary basis, there is always a need for funding which mainly relies on the political position of the public authorities in the geographical area involved. Some regions have special programmes and funds for supporting Franco's victims, other cases have been promoted by the local authorities of the village or town where the grave was located; there are also exhumations funded by the families.

Locating a mass grave includes a stage of reviewing previous documentation in military archives and gathering the testimonies of people who saw how they were buried, who were forced to help in the burial or who have heard about the place. Usually it is necessary to carry out survey to exactly locate the grave, since the passage of time and landscape modifications might have changed the references provided for the location. The methodology is not very different from other archaeological excavations, with the objective being to expose the skeletons and the objects of each person.

Then, disposition and superimposition of the skeletons is documented; and particularities of each person (gender, approximate age and pathologies) are gathered in a field card. Archaeologists, anthropologists and forensic scientists participate in the exhumations together with historians, psychologists and social anthropologists who gather the information and mediate with families.

The identification process is based mainly in the information provided by relatives: name, origin, physical description, pathologies and particularities, as well as a narrative about the

circumstances of the disappearance. A later analysis of the remains and materials recovered from the grave will allow the identification the people buried most of the time. However, some circumstances complicate the identification process, such as the number of people buried in the grave, bad conservation of the remains, alterations to the grave etc. In this case, genetic analysis is proposed, but this analysis does not make sense if there is no previous information on the possible identity of the people exhumed.

Video showing the complete process of an exhumation, La Pedraja (Burgos) 2010, is available at: *http://www.aranzadi-zientziak.org/video/exhumacion-la-pedraja-burgos-2010*.

SCO Results of exhumations

Results of exhumations and latter researches may be summarised as follows:

> ***Animation***

> > *Number of people:* Between 2000-2011, 275 exhumations have been carried out with a total of 5,465 people's remains recovered, although in Malaga's cemetery alone more than 2,840 people were exhumed. During this time, other exhumations carried out by families during the first years after Franco's death were made public. Even if they knew the precise location of the grave, they had not dared to excavate it before.

> ≥ *Number of graves:* According to the Historical Memory Law (Law 57/2007), the Ministry of Justice has published a map of graves: *http://mapadefosas.mjusticia.es/exovi_externo/CargarInformacion.htm*. The number of graves recorded is not the total, but a first approximation. Graves are distributed across all the territory of Spain. In those regions with not enough or lack of information provided by the regional authorities (normally due to political reasons) the density is much lower.

> > *Profile:* 96% of people exhumed are men, although specific cases of repression of women have been identified: Grazalema (Cádiz), Guillena (Sevilla) and Valdediós (Asturias). Although the age of the victims varies from teenagers to over 70 years old, 80% are between 25-40 years old. They were mainly peasants, many of them affiliated to land trade unions. Objects borne by some of them give information on their profession: carpenter, blacksmith, tradesmen, etc.

SCO Exhumations' Impact

> ***Animation***

> > *On political life:* The continuous presence of exhumations in the media put some pressure on politicians. On 20th November, the Spanish Parliament unanimously condemned Franco's dictatorship for the repression carried out over 39 years. In 2007, the Historical Memory Law was approved and under the cover of this law activities such as the analysis of historical documentation, recognition as historical heritage of some places and exhumations have been increased.

> > *On families:* Families are the main target group of all the exhumation processes. It is by families' requirement that research, exhumation; analysis and identification of the remains are carried out. They suffered a long and repressive silence, not only during Franco's dictatorship, but also during the Transition and the first 20 years of democracy.

On society: The dissemination of the exhumation works released some events of recent history which were unknown to a large part of the society. Recovering the historical memory has also allowed reconciliation, because the suffering is accepted. It is not only about providing families with comfort, but settling a debt contracting to the entire society.

> > *On the media:* Both visual and written media have played an important role in disseminating the exhumation works and the history. There is nothing as eloquent as a mass grave full of skeletons on prime time tv. The continuous appearances and references have maintained the dialectic and have contradicted the version sustained by some revisionist sectors which questioned the existence of repression during and after the Civil War. It points out that foreign media were the first to be interested in the exhumation works. Media from Germany, Belgium, Denmark, United Kingdom or Austria informed their audiences more exhaustively way than the (Spanish) national media.

Figure 2 Mass grave in Covarrubias (Burgos). Skeletons are identified and their disposition documented.

sco Conclusions

Exhumations have been mainly led by grandchildren, free of the fear that dominated previous generations. Recovering the remains have also meant recovering their history and also started a process that cannot be stopped. The memory of the Civil War and Franco's regime is being discussed, a part of the society no longer accepts forgetting the past and associations and movements have been organised for recovering the historical memory of those who lost the war and demand a further step forward on the policy for recognising and making amends for the horrors of the War and the latter repression.

sco References

- Alonso, A., 2006, La identificación genética de las víctimas de la Guerra Civil española. '*La represión franquista: mito, olvido y memoria*', 183-193
- Conde, J., 2008, Huecos en la memoria. Exhumación de una fosa en Cincovillas (Guadalajara). *Complutum* 19: 131-138
- Congram, D., D.W. Steadman, 2008, Distinguished guests or agents of ingérence: foreign participation in Spanish Civil War grave excavations. *Complutum* 18: 161-173
- Del Olmo, J., 2006, Exhumaciones y análisis de las fosas. '*La represión franquista: mito, olvido y memoria*', 273-297
- Escarda, M., 2006, El análisis de los restos. '*La represión franquista: mito, olvido y memoria*', 299-330
- Etxeberria, F., 2004, Panorama organizativo sobre Antropología y Patología Forense en España. Algunas propuestas para el estudio de fosas con restos humanos de la Guerra Civil española de 1936. *La memoria de los olvidados. Un debate sobre el silencio de la represión franquista. Edit. Ambito*, 183-219
- Gassiot, E., 2008, Arqueología de un silencio. Arqueología forense de la Guerra Civil y del Franquismo. *Complutum* 19: 119-130
- Gassiot, E.B., J. Oltra, E. Sintes, D.W. Steadman, 2007, The archaeology of the Spanish Civil War: recovering memory and historical justice. In: Y. Hamilakis and P. Duke, (eds), *Archaeology and Capitalism*, Walnut Creek, CA: Left Coast Press
- Pinto, V., A. Pando, 2004, Excavaciones arqueológicas de la Guerra Civil en España. *Trivium* 1: 46-48
- Polo Cerdá, M., 2008, Arqueología forense en el territorio A.G.L.A. Valencia, *http://politicasdelamemoria.org*
- Prada, Mª E., J. Vidal, *Arqueología de la reconciliación, http://www.derechos.org/nizkor/espana/doc/arqueo.html*
- Prada, E., F. Etxeberria, L. Herrasti, J. Vidal, S. Macías, F. y Pastor, 2003, Antropología del pasado reciente: una fosa común de la Guerra Civil española en Priaranza del Bierzo (León). '*Antropología y Biodiversidad*' de Mª P. Aluja, A. Malgosa y R.Mª Nogués. Volumen I, 431-446
- Preston, P., 2011, *El Holocausto Español. Odio y exterminio en la Guerra Civil y después.* Ed. Debate
- Solé, Q., 2008, *Els morts clandestins. Les fosses comunes de la Guerra Civil a Catalunya (1936-1939).* Edit. Afers. 608 pp.
- Reports and pictures from exhumations might be found at: *http://www.sc.ehu.es/scrwwwsr/Medicina-Legal/_private/programa_de_identidad.html*

23 CASE STUDY 1

LU Vasa – a Swedish warship from 1628 *by Anders Gustafsson & Håkan Karlsson*

sco Introduction

Vasa was a Swedish warship built at Skeppsgårdens shipyard in Stockholm between 1626 – 1628 and is today considered to be the best preserved ship in the world from that period. This due to the brackish water of the Baltic Sea which is free from the shipworm (Teredo navalis), which usually destroys submerged wood rapidly in warmer, saltier seas. The ship turned and sank after sailing just 1300 meters into her maiden voyage on 10 August 1628. During 1663-1665 most of Vasa's valuable bronze cannons (64 in all) were salvaged with the help of a diving bell. Vasa did not fall completely into obscurity after the recovery of the cannons; the ship was mentioned in several histories of Sweden and the Swedish Navy, but the exact location of the ship and the details surrounding it varied.

sco Discovery, excavation and exhibition

It wasn't until 1956 that the amateur archaeologist Anders Franzén located the wreck in Stockholm harbour just outside the islet Beckholmen at a depth of 32 meters. Soon after the discovery divers were able to cut six tunnels through the clay beneath the ship with special water jets and steel cables were drawn through the tunnels and connected to two lifting pontoons on the surface, which would pull the ship free of the harbour bottom's grip. Then she was lifted in 18 stages to shallower water, where she could be patched and reinforced in preparation for the final lift to the surface (Cederlund & Hocker 2002, 172-180). The Swedish Navy was involved from the start, as were various museums and the National Heritage Board, representatives of which eventually formed the Vasa Committee, the predecessor of the Vasa Board. On the 24th of April 1961 she finally break the water and was transported to a temporary museum called Wasavarvet (The Wasa Shipyard) until 1988, and was then moved to the Vasamuseet (The Vasa Museum) on Djurgården, which opened on 15 June 1990. The ship is one of Sweden's most popular tourist attractions and has since 1961 attracted more than 28 million visitors. In 2009 the museum sets a new attendance record with 1,154,615 visitors.

sco A snapshot of daily life

Thousands of artefacts and the remains of at least 15 people were found in and around the hull of the ship. Among the many items found were clothing, weapons, cannons, tools, coins, cutlery, food, drink and six of the ten sails. The artefacts, human remains and the ship itself have provided historians, archaeologists and osteologists with invaluable insight into details of naval warfare, shipbuilding techniques and everyday life in early 17th-century Sweden. The Vasa Museum has analysed the hundreds of microscopic paint fragments that were found and the results has shown that Vasa was painted in bright colours on a red background when she sailed on her maiden voyage.

sco The conservation problem

The reason that Vasa was so well-preserved was not just that the shipworm that normally devours wooden ships was absent but also that the water of Stockholm Ström was heavily polluted until the late 20th century. The toxic and hostile environment meant that even the toughest microorganisms that break down wood had difficulty surviving. This, along with the fact that Vasa had been newly built when she sank, contributed to her conservation. Unfortunately, the toxicity of the water also had a negative effect. The sulphides present in the sediments around Vasa had penetrated the wood, and when the ship was salvaged and exposed to air after about 300 years it began reacting with atmospheric oxygen. After exhumation in 1961 from the protective anoxic water, sulphide oxidation produced sulphuric acid. In the autumn of 2000, spots of white residue ranging in size from only a few centimetres to half a meter across were noticed on Vasa. These turned out to be sulphate-containing salts that had formed on the surface of the wood when the sulphides reacted with atmospheric oxygen. The stains had a very low pH and were the first indications that the ship contained considerable amounts of sulphuric acid. The salts on the surface of Vasa and objects found in, and around her, are not a threat themselves, but if they are from inside the wood, they may expand and crack the planking from inside. This would cause particularly serious damage if it happened to objects made by skilled craftsmen, such as household items or some of the hundreds of carved sculptures (Dal & Hall Roth 2002, 38-39). To deal with the problem of the inevitable deterioration of the ship, the main hall of the Vasa Museum is kept at a temperature of 18-20 °C (64-68 °F) and a humidity level of 55%. To slow the destruction by sulphuric acid, different methods have been tried, such as the ship itself being treated with cloth saturated in a basic liquid to neutralize the low pH, but this is only a temporary solution as acid is being continuously produced. The original bolts rusted away after the ship sank but were replaced with modern ones that were galvanized and covered with epoxy resin. Despite this, the new bolts have also started to rust and are releasing iron into the wood, which accelerates the deterioration. Plans now call for new bolts made from materials that are non-reactive, such as titanium, carbon fibre or fibreglass (Sandström et al. 2002, 893-7).

sco References

- Cederlund, C. O., 2006, Vasa I, The Archaeology of a Swedish Warship of 1628, F. Hocker, L. Dal, H. Roth (eds.), *Ingrid Marinarkeologisk tidsskrift*, 4/2002
- Sandström, M., F. Jalilehvand, I. Persson, U. Gelius, P. Frank, H. Roth, 2002 Deterioration of the seventeenth-century warship Vasa by internal formation of sulphuric acid, *Nature*, 415

→ LU Further Reading

- Cederlund, C.O., 2002, The archaeological investigations of the Vasa: from the localisation of the ship in 1956 to the salvaging of the ship from the wreck site in 1967. *The marine archaeology of the Baltic sea area* (IV), 12-16
- During, E., 1994, *De dog på Vasa: skelettfynden och vad de berättar*, Stockholm, Vasamuseet,
- Franzén, A., 1961, *Vasa: regalskeppet i ord och bild*. Stockholm, Norstedt,
- Håfors, B., 2010, *Conservation of the wood of the Swedish warship Vasa of A.D. 1628: evaluation of polyethylene glycol conservation programmes*, Göteborg, *http://hdl.handle.net/2077/23215*

23 CASE STUDY 2

LU IJsselmeerpolders

by Heleen van Londen

SCO Introduction

> ***Animation** showing the following text*

Basically three methods exist for changing watery places into land: through reclamation, endiking and reclaimed marshland (dutch: *droogmakerijen*). The first two are the oldest techniques and were already used from the 11th century onwards. A closed knit web of parallel ditches draining wetlands are characteristic of the first technique. In the second case, a dike is placed around areas that would fall dry periodically and after that stay dry.
The last technique means really draining a lake or part of the sea.
The IJsselmeerpolders are a more recent example of reclaimed sea, the third technique. These polders were won from the Zuider Zee between 1955 and 1968. The entire area is artificially made and newly designed. It used to be the sea floor and because of that the area is 'littered' with ship wrecks. When driving on the motorway A6, one can see strange humps in otherwise flat land. These are shipwrecks that are carefully cataloged and preserved in situ. The Flevopolder in particular is known as the dry grave yard for ships. Not only ships are found, but also many objects that were thrown overboard or were lost. Together with the ships contents about 33,000 object have been collected.

The Netherlands are famous for changing water into land. These activities result in many areas that lie beneath the level of surrounding water, where the water table must be artificially managed. There are some 3000 polders in Netherlands and half of Europe's polders are found here.

SCO Zuiderzee

The Zuider Zee has played a crucial role in the economy of the Netherlands throughout history. The famous 17th century east Indies company (VOC) had its base there, but local fishery and trade has been as important. Towns like Harderwijk and Kampen were part of the Hanze treaty on Baltic trade between 14th and 16th century.

> ***Animation** showing the following text*

The Zuider Zee was however treacherous with foul storms and sandy ridges. Also battles were fought. Many ships went down and were soon covered in clay.
In the 19th century a master plan was conceived to tame the Zuider Zee and reclaim land. In 1920 an enormous dike – *de Afsluitdijk* – was built to severe the Zuider Zee from the North Sea.

SCO IJsselmeerpolders

Some 435 shipwrecks were registered during the development of the polders, of those 68 are preserved in situ. Many date from the 16th and 17th century although older – and younger – ships are found.
A special national maritime depot has been built in Lelystad (Flevopolder) for preservation and research. Since 2006 the International Fieldschool for Maritime Archaeology Flevoland (IFMAF) was founded for research and education. The Nieuw Land Heritage Centre exhibits several historic ship wrecks.

SCO Ensilage

To prevent deterioration a new method was designed called ensilage (dutch: inkuilen). Wrecks are insolated in plastic and clay after that the water table is raised very locally to drown the remains. The condition of the wrecks is being monitored over time.

Figure 1 Ensilage of a ship

SCO References and links

- *http://www.veraneschepen.nl*
- *http://www.cultureelerfgoed.nl/archeologie/maritieme-archeologie/nationaal-scheepsarcheologisch-depot*
- *http://ifmaffieldschool.blogspot.com*
- *http://www.nieuwlanderfgoed.nl/studiecentrum/ifmaf*
- *http://www.cultureelerfgoed.nl/flevolayer_lutina*

→ LU Further Reading

- Boer, de, P.C., A.F.L.van Holk, 2005, *'Eens ging de zee hier tekeer...' Waarderend veldonderzoek ten behoeve van de actualisatie van de archeologische monumentenkaart*, Flevoland 2003-2004, RAM 121, Amersfoort
- Berg, M.M. van den, E.A. Hartzman, 2005, *Water en archeologisch erfgoed*, NAR 30, Amersfoort
- Gijsbers, W., L. Koehler, J. Morel, 2010, *'Licht aan boord', Verlichtingsobjecten uit het Nationaal Scheepsarcheologisch Depot*, Amersfoort
- Overmeer, A.B.M, 2009, *Grondsporen 5: Scheepswrak aan het Wrakkenpad. Waardestellend onderzoek aan scheepswrak B 36, gemeente Noordoostpolder*, Standaardrapport van waardestellend onderzoek aan scheepswrak B 36, gemeente Noordoostpolder
- Resink, L., 2007, *Oud Hout, 'Scheepshistorie in de Flevopolders'*, Lelystad

23 CASE STUDY 3

LU Maritime Archaeology in the United Kingdom

by Kenneth Aitchison

SCO Maritime Archaeology in the UK

An emergent component of archaeological work between 1990 and 2010 has been the level of maritime, primarily off-shore, archaeological activity. Firth (2006, 85) considered that the amount of change that took place between 1993 and 2006 to have been 'striking'.

Archaeological material in inland waters and lakes is legally treated in the same way as terrestrial remains, and the same planning system applies. The principles, if not the detailed technicalities, of the planning-led system used on land have been extended and applied offshore (EH 2008d, 17).
There are 60 Wreck sites Designated under part one of the Protection of Wrecks Act 1973, which restricts certain activities within specified areas. To be Designated under part one of the Act a wreck must be of 'historical, archaeological or artistic' importance, but not necessarily of national importance. The national heritage agencies and the Advisory Committee on Historic Wreck Sites (which advises Government on the Designated wreck sites) are assisted by a team of contract diving archaeologists. From May 2003 English Heritage has administered the contract for all UK waters, which was held by the Archaeological Diving Unit of the University of St Andrews from 1986 to April 2003; since that date, the retained diving contractor is Wessex Archaeology.

A small number of wrecks are also Scheduled Ancient Monuments, and so have that particular level of restriction on who can work on them, and under the Protection of Military Remains Act 1986 it is also an offence to excavate for the purpose of discovering whether any place comprises any remains of an aircraft or vessel lost in service.

The other legal mechanism is the reporting of wreck under the Merchant Shipping Act 1995, under which any finders of wreck are legally obliged to report their finds to the Receiver of Wreck. This is obligatory, but compliance is and has been limited (Firth 2006, 90).

The investigation of wreck sites is a relative minor primary reason for archaeological work to be done – much more work is initiated through aggregates extraction with significant

Aggregates Levy Sustainability Fund investment (Flatman and Doeser 2010), and wind farm development. There is a range of marine consents required for off-shore development work (Firth 2006, 92-3), and major schemes will generally require the preparation of an Environmental Statement.

There has been a considerable amount of archaeological work ahead of the construction of offshore wind farms in many areas around the United Kingdom, with particularly significant amounts around the Western Isles and Orkney. In the Pentland Firth, this has not just related to wind power exploitation but wave and tidal energy as well.

It is very difficult to quantify the numbers of individuals working in maritime archaeology, as the three labour market intelligence surveys did not obtain particularly high quality data in this area – in 2007-2008 (Aitchison and Edwards 2008), there was no particular category of post titles, and only one 'Head of Maritime Archaeology', one 'Maritime Archaeologist' and one 'Marine Planner' could be identified as being particularly related to maritime archaeology. There were no such titles identifiable in 2002-03 (Aitchison and Edwards 2003), although Aitchison (1999) reported one 'Boatman' and four 'Underwater Archaeologists'.

As noted above, Wessex Archaeology holds the UK maritime 'call out' contract, and responds on behalf of DCMS to threats to Designated Wrecks in all of the UK's coastal waters. Wessex is the most significant operator in maritime archaeology, and opened an office in Edinburgh in the spring of 2010 to concentrate on maritime activities. There is relatively little competition in this area; other significant actors in maritime archaeology are Headland Archaeology, and EMU (a consultancy staffed in part by former Wessex personnel, also doing some fieldwork and advertising for new positions in the IfA Jobs Information Service Bulletin in June 2010).

Figure 2 Diver investigating archaeological remains

SCO References

- Aitchison, K., 1999, *Profiling the Profession: a survey of archaeological jobs in the UK*, Council for British Archaeology & English Heritage & Institute of Field Archaeologists,
- Aitchison, K., R. Edwards, 2003, *Archaeology Labour Market Intelligence: Profiling the Profession 2002/03*, Bradford: CHNTO
- Aitchison, K., R. Edwards, 2008, *Archaeology Labour Market Intelligence: Profiling the Profession 2007-08*, Reading: Institute for Archaeologists
- Firth, A., 2006, The management of archaeology underwater, In: J. Hunter, I. Ralston, I. *Archaeological Resource Management in the UK*, Stroud: Sutton Publishing
- Flatman, J., J. Doeser, 2010, The international management of marine aggregates and its relation to maritime archaeology, *The Historic Environment: Policy and Practice* 1, 2, 160-184

23 CASE STUDY 4

LU *Urbieta's shipwreck:* recuperating a 15th century ship in the Basque Country *by Manuel Izagirre*

SCO Introduction

The Guernica estuary (ría de Gernika) represents one of the oldest and most important fluvial waterways penetrating the Basque coast, thanks to it being navigable for six kilometres. The most important evidence confirming that this estuary has been in use since antiquity is to be found in the Roman settlement of Portuondo o Forua. After that we have to refer to the documentary evidence describing the commercial route of ore carriers and barges with varying cargo up to Guernica and other ports on the estuary.

Considering the natural values of Guernica estuary and the whole Urdaibai basin, in 1984 UNESCO declared this area a Biosphere Reserve. Nevertheless, no specific archaeological plan exists for this area giving priority protection to any possible discoveries related to fluvial navigation.

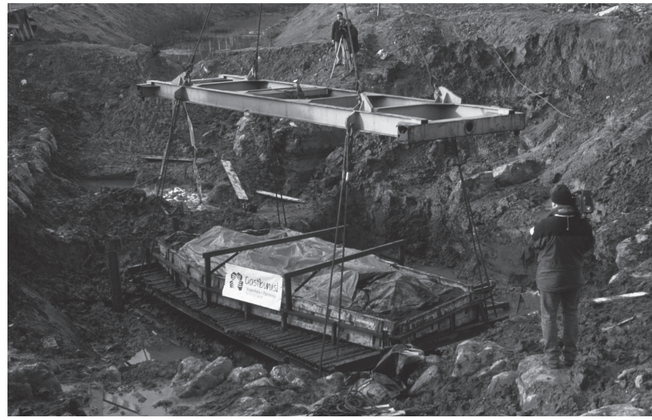
SCO The shipwreck

In 1998, work to repair and channel the river of Guernica started. As the area did not have any preventive protection regarding archaeological heritage, the project had no provision for archaeological monitoring.

A local archaeologist warned Guernica Town Council of the risk this created to the local heritage, and the Council decided to approve a special budget for archaeological monitoring of the works that had already started.

A backhoe excavator used to build a breakwater exposed (and partially destroyed) a 15th century shipwreck. It proved to be the only medieval ship encountered until that point in the Basque Country and was named after the location of its discovery, Urbieta.

The impact of the works threatened to totally destroy the recently discovered wreck Urbieta, since the channelling wall would have been built exactly where the wreck laid. Therefore, the necessity to excavate and salvage the wreck was agreed. The archaeological plan proposed the excavation, research and complete salvage of the wreck for its conservation. A multi-disciplinary team made up of maritime archaeologists, naval architects, engineers, curators, restorers and naval builders was engaged to carry out the whole process.



SCO Excavation and extraction

The vessel was resting on a river bank gently sloping downwards towards the present water level, on top of a series of layers of eroded iron ore gravel. Nowadays and due to deliberate backfilling, the river runs 2 meters above its earlier level, and so the shipwreck was saturated with water. Hence it was necessary to build a dam further up-river to dry out the place where the actual works were to be carried out. The site was turned into a semi-dry area for removing the four metres of earth and mud that covered the vessel and starting the archaeological excavation. It was necessary to run a water pump continuously extracting water from the area of archaeological intervention.

The vessel is a small clinker-built craft for coastal and river navigation, driven by oars and sails, 10.66m in length, 2.72 m width and 1m height in the centre. The characteristics of the ship correspond to a particular regional tradition in the Basque or North-Iberian maritime space, clearly different from the other three traditions identified in Northern Europe: the Scandinavian, Baltic Sea and Anglo-Saxon traditions.

During the excavation process, great difficulties were met in dismantling the vessel to extract it from its site due to the large quantity and excellent condition of the treenails fastening together the strakes of the clinker-built hull. The option of cutting all the treenails would require an excessive archaeological intervention; therefore it was decided to extract the wreck in one piece. This approach presented significant challenges, including the cost of the operation, the

Figure 3 Extraction of the shipwreck
Photo: Manu Izaguirre

subsequent consolidation and final reconstruction of the original shape of the hull.

To raise the vessel, the surroundings were excavated up to a depth of 1.6m across a sufficiently wide area to clear a horizontal plane that allowed the boring of transversal tunnelling holes and the placement of a series of parallel horizontal tubes under the vessel. Taking into account the irregularity of the mud and sand under the boat, a blocking fence was built around the structure using wooden boards and a metal structure to a height of 60 cm. The horizontal layer of tubes thus created also served as a base for the earthen block on which the vessel was resting. Once this was reinforced by the metal structure, it was extracted using a heavy-duty crane and placed onto a truck of adjustable height, which transported the whole block to a temporary storehouse near the site location.

SCO Treatment and Reconstruction of the Hull Shape

After the mud, sand and consolidation structures had been removed, the vessel was placed in a metal crate or cage, which was lowered into a bath of PEG 400, at a concentration of 75% and temperature of 60 °C for a period of two years. Once the treatment had been completed and the weight and length measurements of the treatment control test-bores had been verified, the excess PEG was removed and the vessel was packed for transport to the shipyard where the formal shape of its hull was to be restored.

The museographical plan for Urbieta vessel was to relate its final appearance to its operational life: the archaeological remains were to be reshaped into the original form of the boat. To this end, the original ship's lines were recreated. As the archaeological remains comprised only two-thirds of the port side, didactic/educational needs provided us with the justification to reconstitute the missing portion of the craft. To achieve this objective, fine steel ribs shaped to sustain the hull from the outside were combined with thin longitudinal battens of the same material. These were placed in the same axis as the strakes to give a more realistic impression of the volume of the vessel.

Details of the vessel are presented to visitors regarding its equipment, load capacity and aspects of work and life on board. Placing the scale model next to the archaeological remains allows for immediate comparison of both and helps the general public better understand the association of these elements which would otherwise mean very little. To reconstitute the vessel's original shape, it was necessary to develop tentative plans based on the drawings of the excavated remains and also based on the laboratory drawings of each piece.

SCO Conclusion

The wreck of Urbieta is a first class discovery as it is the only boat of this period and typology that has been found so far on the Cantabrian coast. Had this endangered site not been archaeologically rescued, a historically valuable and non-renewable resource would have been lost forever.

As far as this point is concerned, we must state that had the archaeological monitoring not taken place on behalf of the Town Hall of Guernica, and although it was under no legal obligation, the discovery would not have been possible. The historical importance of the Guernica estuary and previous findings related to maritime heritage were not enough for the area have been declared of archaeological interest and therefore, have a special protection.

With more than 3,000 km of coast, and a long tradition of trade with both the Mediterranean Sea and Atlantic Ocean, it is reasonable to think of the Spanish coast as being rich in maritime heritage. However, effort is still needed to promote protection and education related to maritime heritage, raising awareness for both public authorities and the general public.

SCO References

- Izaguirre M, L. Valdés, 1998, *Avance de excavación del pecio del siglo XVI de Urbieta (Gernika). Itsas memoria. Revista de estudios marítimos del País Vasco.* Museo naval (Diputación Foral de Gipuzkoa) San Sebastián
- Izaguirre M, L. Valdés, J.M. Matés, A. Díez, I. Pujana, 2004, *State of the excavation Works of the 15th Century shipwreck in Urbieta (Gernika, Spain).* Proceedings. International Symposium on Archaeology of Medieval and modern Ships of Iberian Atlantic Tradition. Trabalhos de arqueologia 18. Instituto português de Arqueología. Lisbon 2001
- Izaguirre M., 2006, *The Urbieta Wreck (Gernika) Basque Country. Heritage at risk- Underwater Cultural Heritage at risk: Managing Natural and Human Impacts.* (Special Edición). Edit ICOMOS – International Council on Monuments and Sites. Munich.
- Rieth E., M. Izaguirre, 2004, *El pecio medieval de Urbieta (Gernika) La memoria sumergida-Arqueología y patrimonio subacuático vasco.* Museo naval (Diputación Foral de Gipuzkoa), San Sebastián
- Rieth, E., 2004, *L'epave d'Urbieta (Gernika): une embarcation à clin du milieu du XVIème. Étude preliminaire. Itsas memoria. Revista de estudios marítimos del Pais Vasco,* Museo naval (Diputación Foral de Gipuzkoa), San Sebastián

Colophon

Programme
Lifelong Learning Programme 2010-2012, Leonardo da Vinci

Editors
Marjolijn Kok, Heleen van Londen and Arkadiusz Marciniak

Design
Susan de Loor, KANTOORDELOOR, Haarlem

Print
Koopmans' drukkerij, Hoorn

ISBN 978 90 78863 76 2