Archaeology Data Service Online

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Table of Contents

Director's Welcome

Julian D. Richards

On 15 September the ADS hosted a party in York to celebrate the launch of its Z39.50-enabled Internet-accessible catalogue (see the next article for more details). You can find it at http://ads.ahds.ac.uk/catalogue/ and can read more about it below. If you don't have Internet access at work or home, and many of you do not as the results from our user needs survey in article 7 show, consider a visit to your local public library or an Internet cafe. Many places now offer such web access to the community.

Increasingly, though, archaeologists do have computers and are using them in their work. Find out about the scale of this computer usage in article 6 - the tip of the iceberg suggests it might take 27 working years merely to deal with the backlog of digital information collected by just some parts of the academic sector!

When creating digital information, consider the need for quality documentation about your methods written in an easy-to-understand way. This will help enable others to reuse your datasets. Of particular interest to those working with Geographic Information Systems is publication of a *GIS Guide to Good Practice* by the ADS at http://ads.ahds.ac.uk/project/goodguides/gis/. For those of you interested in digital images, the

[Institute for Image Data Research](#) is conducting research which should lead to similar standards and recommendations.

Bulletin Board

by Frances Condron

Digital Archiving for Archaeologists Rewley House, Oxford, Wednesday 17th February 1999	This day school introduces participants to the concepts of digital archiving, migration, refreshment, metadata and documentation. It is particularly useful for those interested in or responsible for information technology in museums, SMRs, units and universities. The course costs £59.50 with lunch, £53 without lunch. For further details, contact Alison MacDonald, OUDCE, 1 Wellington Square, Oxford OX1 2JA. Tel: 01865 270 371.
Thinking about archiving data with the ADS? [Guidelines for Depositors](#) are now available on the web.	

Launching ArchSearch

Frances Condron, Project Officer

On the 15th of September, 1998, the ADS launched its online catalogue of digital data. Archaeologists came from all over Britain to find out about the catalogue, and celebrate with the ADS the successful culmination of months of hard work.

Emeritus Professor Rosemary Cramp, Chair of the ADS Advisory Committee, opened the proceedings, 'cutting the ribbon' and declaring the catalogue formally online (assisted by Julian Richards, Director of ADS).

Visitors were given plenty of opportunities to use the catalogue.

All you need is a computer, access to the Internet, and an interest in the archaeology of Britain.

A range of buttons on the left part of the screen leads users to various search options. Queries and results come through on the main screen.

Specialists from around the country put the catalogue through rigorous tests (helped by a ready supply of wine).

The Royal Commissions of England, Scotland and Wales set up an impressive suite of displays, and the Museums Documentation Association provided a demonstration of their services on computer.

The catering services at King's Manor provided a wonderful buffet for visitors, and ADS staff too!

Since the launch, ArchSearch has had over 10,000 'hits', and is proving to be a useful and important resource for people within and beyond Britain.

ArchSearch

Paul Miller, ADS Collections Manager

After months of preparation the Archaeology Data Service's online catalogue of digital data, *ArchSearch*, was launched in September by Emeritus Professor Rosemary Cramp, Chair of the ADS Advisory Committee. If you have access to the World Wide Web, take a look for yourself at http://ads.ahds.ac.uk/catalogue/ and let us know what you think.

Users are able to search a number of important UK resources, including the Fife, Shetland, and Strathclyde sections of the RCAHMS' National Monuments Record of Scotland, both RCHME's Excavation Index for England and their Microfilm Index, and the world-class library catalogue of the Society of Antiquaries of London.

A number of search screens are offered, each tailored towards a different type of query in order to avoid overloading users with too many options at once. A user can elect, for example, to carry out a keyword search across the entire catalogue, or they can restrict themselves to a location-specific search and request resources from within a single parish, district or county, or one of the new unitary authorities. As well as different search forms, users will be able to interact with the catalogue by means of a map interface, allowing them to point at locations of interest on their computer screen. Links are also offered through to the prototype catalogue of our parent organisation, the Arts and Humanities Data Service. Here, a user can enter a single query that is automatically passed to five separate databases spanning archaeology, history, text, and the performing and visual arts.

As with any system of this complexity, teething troubles remain, but we hope to be in a position very soon both to add enhanced functionality in response to real user needs and to add a number of other valuable resources including the Council for British Archaeology's Radiocarbon Index. ADS staff continue to work with our suppliers, Fretwell-Downing Informatics in Sheffield, to complete the task of converting a package designed for describing library holdings into something capable of meeting the needs of archaeological data and researchers. It's an uphill struggle, but we hope that you will agree it's worth it when you see the catalogue for yourself!

Take a look at the catalogue online, let us know what you think, and pop back every week or so to see how it's continuing to evolve.

Priorities requiring our attention now include resolving a handful of idiosyncrasies in the current search mechanisms and working with Fretwell Downing to obtain effective import tools for processing our backlog. Beyond that, we will continue to improve the search options we offer in response to your feedback, and will work to add new search features and new data as rapidly as possible. As the quantity of available data grows, we will also need to devote increasing attention to the question of thesauri and terminology control; both in reflecting the power added to individual data sets by allowing users to query them by means of the thesauri with which they were constructed, and in exploring the issues behind integrating resources originally created with very different thesauri.

There is also our long-term goal of devolving data back to those best placed to maintain them; the creating organisations. All along, the ADS has advocated a distributed rather than centralised structure for our catalogue, and we are investigating the use of technology such as Z39.50 as a means by which large organisations such as RCHME and RCAHMS might make their data available to our catalogue without the data ever needing to leave the NMR in question. Other organisations such as the Scottish Cultural Resources Access Network (SCRAN) are also exploring Z39.50, and a useful first step will be for us to provide access into their catalogue and vice versa.

Thanks are due at this stage to the many staff at CBA, RCAHMS and RCHME who have worked so hard to prepare their data for import into early prototypes of the catalogue.

ArchSearch and ArchHelp: a dynamic duo

Tony Austin, ADS Curatorial Officer

The philosophy behind the ADS catalogue help system is briefly described in the on-line Introduction to ArchHelp, the user-friendly help system inside the [ArchSearch](#) catalogue. The ArchSearch Help System has two main aims.

Firstly, it is there to assist users who are largely unfamiliar with the Internet or in using archaeological data. The intention is to provide a gentle but useful introduction to the concepts underlying these subject areas and enough background to enable even the most inexperienced of users to further their interest or research by accessing information resources available through the ADS catalogue.

Secondly, ArchHelp introduces all users to the specifics of ArchSearch including the various search options available, how to use them and how to interpret your results set. The On-Line Glossary also offers lots of advice on how to structure your search criteria through the use of keywords and logical operators, and how thesauri, relevance ranking and fuzzy matching assist 'behind the scenes'.

In the case of background material ArchHelp generally provides a basic overview but, where possible, navigable links to more detailed information are provided should you wish to know more about a topic.

What's in there, anyway?

Alicia Wise, ADS Data Co-ordinator

Excavation Index for England - a guide to the archaeological excavations and interventions carried out in England since the earliest days of scientific archaeology, and an index to the location of the excavation archives and finds. It is part of the National Monuments Record, England's heritage archive. This archive contains over 12,000,000 items covering the archaeology and architecture of England including air photographs, historic and modern photographs, digital indices, and documents.
Figure 1.

[Figure 1: 1908 Excavations at Avebury from NMR Publications Photographic Library © [RCHME](#). Just one of over 48,000 archaeology projects recorded in the Excavation Index for England.]

Compiled and updated since 1978, the EI currently comprises in excess of 48,000 records of events including excavations; evaluations; watching briefs (since 1960); geophysical surveys; fieldwork funded by English Heritage and its predecessors; and field observations (a recent addition, reflecting the frequency in the urban record of pre-watching brief recording). Events comprising purely desk-based assessments, fieldwalking, and building survey are not at present included.

The National Monuments Record of Scotland - an index to archaeological information in Scotland, as held by the Royal Commission on the Ancient and Historical Monuments of Scotland ([RCAHMS](#)) and others. At present, the ADS provides access to a subset of NMRS records; those for the **Shetland Islands**, the former **Strathclyde Region** and **Fife**.

Microfilm Index - describes all those archaeological archives for which the National Monuments Record for England holds microfilm copies. The [RCHME's](#) microfilm programme has been running for the last 20 years, and the collection comprises archive obtained from a variety of sources, including archaeological units, museums and English Heritage. The remit of the Microfilm Collection has always been much wider than that of the Excavation Index, so in

addition to excavations, evaluations, watching briefs and geophysical surveys, there is also archive for building surveys, desk-based assessments and fieldwalking projects.

[Figure 3: From NMR Publications Photographic Library © RCHME.

Society of Antiquaries of London Library Catalogue - a prototype version of their world-famous library catalogue has been made accessible online via the ADS. Currently a subset of the many records held in the main catalogue is available, but work is proceeding apace to migrate the rest of the catalogue into its new software.

Tip of the Iceberg in a Digital Sea:

Scale of the Academic Digital Resource

Tony Austin, ADS Curatorial Officer

Many of the major funding agencies for archaeological research now require or recommend deposition of any grant-generated digital resources with the Archaeology Data Service.

But what of earlier projects funded by these institutions? During the last sixteen months the ADS has carried out a small but almost total canvas of Leverhulme Trust grant recipients who have undertaken or are undertaking archaeological projects. Approaches were made to recipients who had received awards between 1975 and 1996 in support of a total of 64 projects. In each case a straightforward questionnaire was enclosed requesting details about any digital resources created (or to be created) during the course of each project. The dataset acquired about Leverhulme Trust funded projects should then be very reliable and allow questions to be asked and answered about digital resources and the agency funded academic side of archaeological research as whole.

Information was received about 47 of the 64 projects which represents a pleasingly high response rate of 73% considering that some of the grants were made over 20 years ago with attendant problems of tracing recipients. The replies received could be grouped within three broad categories.

Response	Number of projects	% of total
Have digital data, interested in deposit	24	51
Have digital data, not willing to deposit	4	9
No digital data	19	40

It should be noted of the four unwilling to deposit; one grant recipient considered the data unusable outside the context of the project and two had alternative means to make their data available but were both very interested in forming web links with the ADS catalogue. Thus only one recipient was directly opposed to the aims of the ADS. Indeed, five of those with 'no digital data' from their projects specifically expressed enthusiasm about depositing digital resources generated in the future!

Perhaps surprisingly, considering the time span involved, 60% of projects produced digital data but looking on a yearly basis confirms the expected pattern of archaeological research transformed in the last 20 years with, for example, only 35% of projects started in the 1980s producing digital data compared to over 80% for the 1990s. Interestingly, data for the 1970s suggest nearly 45% of projects produced digital resources; however, the figures are skewed. Data from four (out of nine) projects for the 1970s has been computerised either retrospectively or because of incorporation into later research.

The main interest of the above figures based on an almost total sample of Leverhulme Trust awards is that they should be directly applicable to other funding agencies and their grant recipients. The Humanities Research Board/British Academy is the largest funder of

archaeological research (now the Arts and Humanities Research Board). The HRB/BA maintain a database detailing recent awards and the ADS is in the process of digitising earlier paper records which so far cover the period 1989 - 1994. The latter database records nearly 700 archaeological projects which roughly equates to 140 archaeological awards per year. If consistent and extended to the period covered by the Leverhulme Trust survey, this would represent over 3,000 archaeological projects of which 60% or 1,800 would be expected to have digital resources!

The ADS aims to preserve quality datsets and to make provision for their re-use within the research and educational community but would clearly be overwhelmed in tackling such a backlog of material. Current estimates suggest that it will take an average of 1.5 working days to physically accession a dataset but time for negotiating with and advising depositors must be added to this as must general administration associated with the process which might reasonably double this to three days. Thus it would take 5,400 working days or 27 working years (at 200 days per working year) just to deal with the backlog of HRB/BA grant-generated resources! If this was tackled in its entirety, datasets from other sources would have to wait to be accessioned including 112 (80% of 140) each year from the HRB/BA grant recipients now required to offer their data to the ADS. Interestingly, these datasets alone would require 336 days of staff attention - the bulk of the working days of two staff members each year. The situation will be further compounded as there is a growth in the number of commercial organisations depositing datasets.

The ADS is developing strategies to deal with this 'sea of data'. In the short term it is seeking additional funding to employ more staff but the long term solution may be to charge depositors (currently waived for existing projects) who would need to budget for this in future research proposals or tenders. A second approach considers the 'quality' and 'value' of datasets; how usable and what demand there will be for a resource will be important in accepting deposits for accessioning.

I hope to delve deeper into the murkier waters of the Leverhulme Trust and HRB/BA grants databases in a subsequent newsletter. So watch this space for more startling revelations!

Digital Data in Archaeology: A Survey of User Needs

Frances Condron, ADS Project Officer

In the spring of 1998, the ADS conducted a survey of the use of computers in archaeology. 3,000 questionnaires were sent around Britain and Ireland, to people involved with or working in archaeology - university and school teachers, students, field units, independent consultants, major bodies like English Heritage and the RCAHMW, and independents. We are very grateful to the hundreds of people who generously gave their time and attention to our demanding questions. The survey was in collaboration with the AHDS, and major archaeological bodies of England, Ireland, Scotland and Wales, who generously supported the research (Cadw, English Heritage, Environment and Heritage Service of the DoENI, the Heritage Council of Ireland, Historic Scotland, RCAHMS, RCAHMW and RCHME).

Archaeologists have always been open to the potential of new technologies to develop the discipline. Increasing use of computers as a research tool in their own right, and greater automation of recording/surveying techniques is resulting in an ever-growing corpus of digital information. In many instances the digital information is duplicated on paper, and may be a result of digitisation from hand-written lists or drawings. However, there is also much information that is created initially and in most detail in digital form. The functionality of such datasets is reliant on their digital format. In total, 607 questionnaires were returned, and an additional 83 people/organisations informed us that they would not respond (largely because they had no clear association with archaeology though in some cases because they did not use computers). Respondents were asked to state which area of archaeology they were associated with.

We have responses from all areas of archaeology, from the largest group (higher education) with 120 returns, to the smallest (school/FE teachers) represented by only 12 returns. Local government archaeology, consultancy, national bodies, contracting field units, museums and the higher education sector are well represented. These came from all over Britain and Ireland:

Figure 1. Background of respondents to the survey - role in archaeology, and country where they are based.

One of the aims of the report was to identify what information was being created in digital form. A basic indication of this is the number of people who use computers when they are doing some kind of archaeological work - shown in figure 2:

Figure 2. Do you use computers when doing archaeological work/research?

These results are interesting - and indirectly indicate whether the archaeological information that is available digitally is relevant to the needs of all those surveyed. Almost all national body employees, those in universities, and in libraries are creating and/or using archaeological information in a digital format (for example, writing or editing reports, undertaking field surveys, managing catalogues and indices). Their work represents a rich body of data, some of which may not easily be duplicated by other means - complex, three-dimensional CAD drawings lose so much detail when printed out. Provision is not so extensive for field archaeologists, those working in local government, and consultants.

The use of computers by most professional archaeologists contrasts markedly with the experiences of those in museums, and school/FE teachers, and it is probable that teaching material is not widely available in a way that can be easily integrated into classroom activities. Likewise, the society members who responded to our survey do not necessarily make use of digital information.

To expand on the use of computers, the survey also asked whether people had access to the Internet. Variation in Internet access is a prime factor in identifying the ease with which one can acquire others' information. Increasingly, the Internet is a major key for communication and information exchange, and archaeologists cannot afford to ignore this powerful tool. The ADS/AHDS see access via the Internet as the ideal means of disseminating information, though not the only one. Figure 3 shows this, detailing access for each sector in archaeology.

Figure 3. Who has access to the Internet?

Trends in Internet access are similar to those for computer use. In this preliminary analysis, it is clear that the university sector has the most privileged access, with the vast majority having the use of permanently connected machines. University staff and students have privileged access. Special deals brokered with the UKHE community and software, hardware and information providers enable this community to access more information, more quickly and it seems in a more flexible manner. In addition, the majority of those based in national bodies and library/archives have access to the Internet (all with over 50% access in some form). However, those based in local government departments and independent consultants are not faring so well, with over 30% responding having no access. Finally, museum archaeologists and those based in field units have limited provision, and are on a par with society members and school/FE teachers.

The full survey report will be available for consultation in early 1999. It will provide recommendations for archaeologists to move forward and meet their information needs now and in the future, making provision for researchers, field workers, independents and the general public.

Introducing . . . IIDR

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What is it?

The Institute for Image Data Research (IIDR) is a research institute set up by the University of Northumbria at Newcastle in response to the growing demand for and use of electronic image retrieval systems. IIDR brings together the knowledge and skills of researchers from a variety of disciplines including Computing, Information and Library Management, Psychology and Art History.

What is it for?

The current work programme incorporates a number of ongoing projects connected with peoples' use of image systems. Particular emphasis is placed on analysing users' needs for visual information and one of the ongoing research projects concerns the analysis of users' needs for visual information and how these can most effectively be met. A user-centred approach will enable us to learn more about how humans seek, perceive and use images in their professional activities and will lead to improved techniques for the development of image storage, retrieval and processing.

VISOR (Visual Information Seeking Oriented Research) project

In a two-year project jointly funded by IIDR and the British Library Research and Innovation Centre, we aim to investigate the information-seeking behaviour of image users in professional contexts. Through case studies of individuals within different professions (e.g. Health Care, Architecture, Journalism) we will investigate how people use visual information as part of their work. Although there is an emphasis upon electronic image systems, we feel there is still much to be learnt from manual image systems which can feed into the improved development of electronic systems.

Who will benefit?

As more image collections are digitised an increasing number of organisations will provide image-based information services online, on CD-ROM or over the internet. There is a growing number of software and hardware products dealing with the processing, storage and retrieval of image data. Through collaboration with such organisations and the end users of image data, IIDR will be able to develop new solutions to the problems of electronic image management. The work will therefore be of benefit to a wide range of organisations including art galleries, museums, newspaper and slide libraries, health care organisations and other organisations with collections of images.

Would you like to become invovled?

We are looking to recruit people who use manual or electronic image databases - throughout the UK - into our user study (the VISOR project). If you or your organisation are interested in this field of research, if you are a current user of image data systems yourself, or if you know of

people who are - we would be keen to hear from you. Whether you are interested in future collaboration or just want to discuss ideas and find out more about us, please contact…

edited by **Alicia Wise**

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