Archaeology Data Service ONLINE

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ADS **ONLINE**

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Introduction

As we approach the third millenium AD archaeological research is becoming more and more reliant on digital data, at an ever increasing pace. At the same time, the experience of addressing the "millenium bug" has raised awareness of the fragility of this medium, compared with traditional media such as paper. Electronic information is vulnerable, and requires a proactive and strategic approach from creation, to ensure its preservation. The digital world is one of constant change, with new technologies introduced each day. In this context preservation seems a contradiction. How can one preserve something that is constantly changing? And yet digitisation is itself a means of preservation, providing alternative access to the original object.

The ADS sees the promotion of re-use and enhancement of access to primary data as being crucial to their long term preservation. In the latest volume of the European Journal of Archaeology Nick Merriman and Hedley Swain report the results of the English Heritage/ MGC survey of archives. The results are depressing for a discipline that believes in the creation of an

ordered archive, with 29% of responding museums reporting that no one had looked at their archives in the last year. In this Newsletter you will be able to read about DAPPER: Digital Archiving Pilot Project for Excavation Records, funded by English Heritage. The digital components of two major excavation archives: the Royal Opera House from MOLAS, and Eynsham Abbey from the Oxford Archaeological Unit, are now available from the ADS catalogue. This pilot provides unprecedented access to the archive from any PC connected to the Internet, anywhere in the World. Already the results are encouraging. At the time of writing there have already been over 2000 visits to the Archive, with an average of over 50 downloads of individual data files. Put crudely, that's more use in a month than the average museum archive will get in a year. Explore these archives, and let us know what you think.

Julian Richards
email

More New Faces at the ADS

Support from the AHRB and revenue gained from several consultancies has enabled ADS to make several new staff appointments since the last edition of ADS **ONLINE**.

William Kilbride has taken up a new post of User Services Manager. William is a graduate of Glasgow and Southampton universities, and is currently completing a PhD at the University of Glasgow on the Archaeology of Religious Conversion in 7th century England. His new role will involve developing a helpdesk service and promoting the use of ADS resources through workshops and conferences. William has also taken over responsibility for the project web pages and the newsletter.

(from left to right, William Kilbride, Jo Clarke and Keith Westcott)

Jo Clarke and Dr Keith Westcott have joined ADS as Curatorial Officers. Jo has recently been awarded an MSc in Archaeological Information Systems from the University of York. She began working with the ADS on a student placement last year and was soon taken on as a part-time secretarial assistant. Keith completed an MSc in Archaeological Computing at the University of Southampton some years ago and has since been working for Oxford Archaeological Unit as a Computing and Survey Officer. Both will be involved in cataloguing and curating digital archives and in developing ArchSearch.

Julian Richards
email

Rescue Archaeology at the ADS

When the Newham Museum Archaeological Service was closed down in 1998 its digital archive was passed to the Archaeology Data Service by the London Borough of Redbridge. The archive represents some 10 years of fieldwork and incorporates the work of other units that had previously been closed including those associated with the Passmore Edwards Museum and the Manor Valley Museum. The archive as delivered consists of over 250 floppy disks containing several thousand files. The files are in a variety of proprietary software formats and versions therein some of which are now 'archaic'. Problematically no funding accompanied this important collection to ensure its preservation and the provision of access.

Effectively the ADS has been thrown into a traditional 'rescue' situation that has often confronted archaeologists in the past. As usual there is some urgency to the 'rescue' as floppy disks are volatile and have a limited lifespan. There is a pressing need to move the data onto a more secure medium. Similarly migrating the data to current standards and formats becomes

progressively more difficult with time as the original files become increasingly remote from current technology.

Movement of the files onto the ADS server has commenced and consequently the data has become a part of the associated back-up strategy that ensures the safety of all our holdings. Currently around one third of the archive has been successfully moved. Some of the file types have also been migrated to current standards in order to maintain usability. Others however, are problematic and will require the development of specific migration strategies.

Many of the Newham sites are unpublished. Consequently the saving of the digital archive has become a priority project for the ADS with resources switched to it whenever possible. In this way, the archive will be migrated before data is lost through degradation of the disks. The problems described above exist in many organisations. Through highlighting these problems it is hoped that an interest in developing data preservation strategies will be engendered.

On-line access to the Newham archive will be provided through ArchSearch. As described by Damian Robinson in this issue of ADS **ONLINE**, the ADS has started to provide access to project archives, allowing users to download many new resources over the Internet.

Tony Austin
email

ArchSearch Latest

Since the last issue of ADS **ONLINE** two new reference datasets have been added to the on-line catalogue:

- An on-line sub-set of the Greater London Sites and Monuments Record maintained by English Heritage - 71,000 records
- The York Archive Gazetteer which details over 25 years of archaeological fieldwork in York by the York Archaeological Trust - 1,000 records

A major ambition of the ADS has also recently come to fruition in the provision of digital archives on the Internet. As described elsewhere in the newsletter the DAPPER project funded by English Heritage has allowed the digital archives generated by the OAU excavations at Eynsham Abbey and by MoLAS at the Royal Opera House in Covent Garden to be made available on-line. Users of ArchSearch can now view or download texts, databases, drawing files, images and GIS themes from the comfort of their own living room or workplace. The archives can be found either through links from metadata records in the catalogue (try a search on Eynsham Abbey for example) or through a new button, 'Project Archives', added to the main menu options available to ArchSearch users.

ArchSearch can be interrogated at `http://ads.ahds.ac.uk/catalogue/`

User Services *what?*

> *The post of User Services Manager is new, so it seems appropriate to outline the new directions in which the post will develop as well as the existing work load that the USM will take on.*

In broad terms, user services means presenting the work of the ADS to the user community and representing the needs of the user community within the ADS. These concerns are not new. The service has been working hard over the last couple of years to identify the needs of the user community and to shape its holdings and interface to that community: an interest that culminated in the publication of Strategies for Digital Data in the spring of this year. Given the development of the catalogue over the last few years, the complexity of the data held, and the clear vision of the user community provided by the user needs survey, it is timely that we put in

place and maintain some structures to assist and encourage users. The post of User Services Manager is that structure!

In effect the user services manager is required to be active in some respects and reactive in others.

- The active role of the user services manager is probably the one that is easiest to specify since it is the one over which we have most control. In essence it means consciousness raising, presenting the ADS and issues of digital archiving more generally to the user community. This means going "on tour" with the ADS to conferences, to HEI's and professional organisations. It means writing about these issues for local and special interest journals or newsletters. It means producing the ADS's own literature and attempting to distribute this as widely as possible to the user community. It also means advising the ADS of user complaints or suggestions about interface issues or the data held, and actively pursuing feedback from focus groups of users.

  A good example of this is the presentation the USM will give in November this year to the Society of Museum Archaeologists. This type of conference is important precisely because it is not a conference on or about computing in archaeology, nor will there be a specific section on computing use or digital issues. Attendance at such conference locates the work of the ADS in the context of the day to day work of the user community, not a special or minority interest.

- The reactive role of the user services manager is not so easy to define since it will be led by user requests and suggestions. The principal responsibility of the User Services manager is to develop a Help Desk facility for users. In practice this means providing users with online support for the catalogue, with guides to the catalogue, and guidance on technical issues. This can be done in part through on line documentation such as FAQ pages and tutorials, but in some cases this will not be enough. It will also be necessary to reply to user enquiries, which may range from the specific and complex, to the generic or naive. Each of these is important in its right. While it is important to provide comprehensive technical support for archaeologists, it should also be recognised that the user community includes a large public interest. Both audiences need to be taken seriously, but require different sorts of support.

  A good example of this is the responses to email enquiries that the service receives. Since the start of September, enquiries of a generic kind have been passed to the USM. In the future, these will include more specific technical enquiries. As the volume of users increases, so we should expect the volume of user enquiries to increase.

The two roles compliment each other. The people who meet the ADS "on tour" will (hopefully!) encounter a friendly face that will in turn encourage them to use the service, realising that while digital archiving is important, it need not be intimidating.

William Kilbride
email

Training: a necessity too long overlooked?

The new post of User Services Manager has focused attention once again on issues pertaining to training. Here Harrison Eiteljorg II of ADAP reflects n the state of IT literacy among students of archaeology in the US, and contemplates the implication of the shortfall he found there. This is the complete text of a much compressed article in ***ADS News***

Those of us who are converts to the Digital Age have obvious biases. We think digital forms of data have specific, demonstrable advantages over other forms. Whether we are correct or not, there are specific digital forms of data that simply cannot be duplicated on paper. In particular,

there are three types of digital files that are regularly used by archaeologists and that do not have paper analogs: relational databases, CAD models, and GIS data sets. For none of those data types is it possible to produce a paper version of the whole data set. Reports, drawings, analyses of one type or another can all be produced, but that is far different from having the full utility of the original - digital - format.

Consider these two examples. Building a good a CAD model involves separating the parts of the model by phase, material, and any one of a number of other criteria, as dictated by the particular site or structure. The result is a flexible tool that permits the scholar to understand better what he/she has found, to analyze it with care and precision, and to illustrate better to others the conclusions he/she has reached. Equally important, a second scholar may choose to mix together phases of differing periods (different, at least, according to the scholar who originally made the model) to examine and analyze new possibilities. That is, a user of a model, as opposed to the creator, may use it to reinterpret the building (or site). Doing that with paper drawings would require completely re-drafting the monument or site - even to see if a given possibility had any appeal, much less to demonstrate real likelihood.

Similarly, using a well-constructed set of GIS data, perhaps from an archaeological survey, a scholar - either the creator of the data set or a second scholar - could ask to see the material in nearly an infinite variety of ways, many of which would be of no interest to the scholar responsible for gathering the original data. Whereas, for example, one scholar might use the data to compare distribution of sherds over time, examining the relationships between and among various periods to see how settlement patterns evolved, another scholar, coming to the data later and with different research interests, might focus on the distribution of sherds compared with the distribution of chipped-stone debitage, hearths, and architectural remains in order to understand better the ways early inhabitants organized their work spaces.

In both the examples given, the digital form in which the data have been gathered - and the computer to access the data - are crucial to the utility of the data. The digital form is important to creators of the files; it is equally important to anyone wishing to re-use the files. The flexibility for re-analysis stems from the digital nature of the files and the programs used to generate and study the data.

This gives rise to a serious problem. Not only must the creators of the digital files be capable of using programs to put the data into a digital format, those who would re-use the files and the data in them must know how to use the programs required to view, analyze, and interpret the data. The programs required for access are not easy to use, however, and additional problems often arise when one must deal with data from similar but not identical software.

Some would argue that it is possible to leave the matter of digital information to specialists or to assume that summarized versions of the information will be sufficient for secondary use. Others will argue that the next generation of scholars will, as if by osmosis, have learned these software programs simply because they will have been computer users from an early age. Yet others assert that one can learn to use a difficult computer program for the sake of important data, much as one might learn a new foreign language for the sake of material published only in that language.

Leaving the use of computers to specialists has been common, but it seems quite unacceptable. How is a scholar to evaluate, much less re-analyze or re-use data, if he or she is always dependent on some intermediary to intercede? How will the scholar make judgments in the absence of understood criteria?

Similarly, younger scholars will certainly be more adept with computers. That does not, however, mean that they will be adept with specific programs, and the more unusual the program the less likely it is that real competence will be gained. The programs mentioned here - database management, CAD, and GIS - may all be in use in some forms in the near future, but only with carefully constructed user interfaces for specific products to permit public access, and

archaeologists cannot expect such costly additions to the data files generated by scholarship, especially when those files will rarely be re-used.

Finally, the possibility to learn these programs directly in response to a specific need is certainly real. However, some competence will be required even to understand the need, and learning how to use a program well enough to see data is not the same is knowing enough to evaluate the way data have been organized and presented. In addition, relying on the need to access information to drive scholars to learn these programs assumes that most can and will take the trouble if necessary and that all can learn the software more or less on their own. Those are unwarranted assumptions.

If the foregoing pessimistic view is correct, one should assume that two problems will continue. First, relatively few scholars will use computers to collect, record, analyze, and display data in the ways computers make possible. Second, even fewer scholars will be able to put the digital data to good use. Those problems will persist until training in the appropriate computer programs becomes the norm. Such training, however, is not forthcoming, at least not in the U.S. Worse yet, students do not understand what they are missing. In general, students seem to think they are adept with computers if they can surf the Web, send email, and use a word processor. A student who can use a spreadsheet program may be considered a computer whiz. Such students - and many in the faculty - are not only unable to use important software such database management systems, CAD, and GIS programs, they are also unable to determine when such programs should be used, which kind of program is appropriate for a given task, whether data have been well organized for entry into the system, whether the output available is adequate, and so on.

Perhaps the most sorrowful problem with the lack of computing skill is that the promise of electronic data will be lost. That promise lies greatly in the hope that data can be aggregated, combined, so as to make new sources from old ones. Imagine a CAD model of the Parthenon, perhaps a wondrous thing, but combined with models of the Erechtheum, the Nike Temple, the Propylaea, and so on, something that brings to life the whole of the Acropolis, not just a single building. Similarly, consider the difference between a database of pottery from a single excavation and a database combining pottery from many excavations dealing with the same culture. In each case, the whole is much more than the sum of the parts. This is great potential of the digital age. Without computing skills, it will be lost.

The concern about missing computing skills has been confirmed by questioning graduate students and academics in the US. Neither the student sample nor the faculty sample was large, but students confirmed that only a few computer programs are normally used, and faculty indicated that competence in computing is not required by graduate programs. Furthermore, requirements for new faculty rarely include computing skills of any kind. As a natural result, computer skills, if learned, are acquired by those students who need them for specific projects and who will learn some software in order to do special work. Those students may become very adept with the software they have learned, but they will rarely know about other software types, rarely understand why the particular tool they have learned is (or is not) appropriate for the work at hand, and rarely evaluate the software in comparison with alternatives. Other students who find no pressing need for computing skills in graduate school may know nothing more than the simplest of programs - email programs, Web browsers, and word processing.

Thus, it seems very clear that archaeologists should be trained in the use of computer software and that the training must be a required part of graduate instruction. Otherwise, training will be a matter of chance, as it has been, and that is simply not adequate. It may be too much to ask that all be trained in each of the valuable software applications, but it is not too much to ask that all be trained well in at least one area and that all have enough training to know when specific program types are appropriate. All archaeologists should certainly know enough about most applications to be able to evaluate data in the forms most commonly found. All most know enough to be able to re-use the data so carefully gathered and stored by their intellectual ancestors. When that day arrives, and the scholarly community can be expected to know how to use the programs needed to access and re-use data, the digital age for archaeology may begin.

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DAPPER: a world first for the ADS

Modern excavations create huge amounts of digital information. Whether it's the on-site recording of the archaeology, specialist databases created during post-excavation or indeed publication standard interpretive maps and plans, digital information has the potential to be created at every stage from assessment to publication. Within the discipline there has been an increasing awareness that this data is as much a part of the primary site archive as the artefacts and paper records that have traditionally found their way into museum stores. Yet until comparatively recently there has been no real, secure home for such information and digital excavation archives simply languished in the proverbial 'desk draws' of their creators.

At a series of meetings between the ADS, English Heritage and ALGAO in late 1997, it became clear that the time was right to 'do' something about the increasingly alarming digital archiving backlog. The resulting EH funded Digital Archiving Pilot Project for Excavation Records (DAPPER) aimed to prove the concept of digital excavation archives in order to inform the development of best practice in this emerging field. The pilot project also wanted to encourage the re-use of these digital repositories, to save them from being as under-used as their physical counterparts. Consequently DAPPER also investigated ways to deliver the data to a potential re-user community via the Internet and in the process set up the world's first digital excavation archive.

In order to demonstrate the concept and potential of this new form of information provision, two large and 'high profile' sites were chosen; the Royal Opera House (Museum of London Archaeology Service) and Eynsham Abbey (Oxford Archaeological Unit). Both of these projects were at their dissemination stages and had large, quite different, digital archives to deposit. Importantly there was a community of scholars who would want access to the raw data from the excavations.

As Eynsham Abbey and the Royal Opera House are the first online excavation archives, DAPPER actively sought out user feedback. Part of this evaluation process involved the ADS hosting a focus group at the King's Manor. A cross-section of archaeologists was brought together to determine how useful the archives are to different kinds of people, how the documentation or presentation of archives might be improved, how the information in the archives might be reused, and what types of support would be necessary to encourage the reuse of information in the digital archive. It was a successful, highly productive day and particularly brought into focus the needs of the re-user community and the data depositors alike. It will undoubtedly help us develop these archives further.

Earlier in this newsletter Nick Eiteljorg asked whether the user community could handle the data we serve to them. Well the results so far from DAPPER have been very encouraging. In the few weeks since the archives first went live, and without much publicity, there have been over 2000 visits. People are downloading and starting to reuse the data, indeed one visitor remarked that the archives would prove very useful in his research and that the time and money he expended on downloading the entire Royal Opera House archive and reassembling it into its GIS form was well worth it. So please come and visit DAPPER and let us know what you think.

Damian Robinson
email

British and Irish Archaeological Bibliography: The On-line Bibliographic Database

Archaeology has been written about for over three-hundred years. In January 1999 BIAB and the ADS made it a lot easier to find out about the discipline's published heritage.

BIAB - the British & Irish Archaeological Bibliography - is the central bibliographic service for archaeology in the UK and Ireland. Originally the 'British Archaeological Bibliography', the service began 1991; it is now run by the CBA with grants from, English Heritage, Society of Antiquaries of London, Irish Heritage Council and equivalent organisations in Scotland, Wales and Northern Ireland.

BIAB publishes the British & Irish Archaeological Bibliography. Issued annually in two parts, BIAB contains abstracts of recent publications, classified and indexed. It also includes information on journals, publishers and archaeology in the UK and Irish parliaments. BIAB also distributes the Archaeological Investigations Project Gazetteer of Archaeological Investigations in England.

Archaeology relies heavily on previous work. Observations made two hundred years ago can be as significant as the results of the latest research. Publications are usually the most accessible sources of archaeological data - sometimes the only sources. Archaeologists need bibliographic information on everything that has been published, no matter how old. The following bibliographic sources cover publications for the years shown:

1967-91	The CBA's British Archaeological Abstracts (BAA) series, edited by Cherry Lavell, provided the model for BIAB. Initially BAA was very selective in its coverage, including only the most important publications.
1940-80	The CBA also published the Archaeological Bibliography for Great Britain & Ireland. This series provided a comprehensive bibliographic list cross-referenced with a county-by-county gazetteer.
1901-39	The Congress of Archaeological Societies published bibliographies in the annual Report of the Committee on Ancient Earthworks & Fortified Enclosures (1905-40), and a retrospective compilation by E L C Mullins, A guide to the historical and archaeological publications of societies in England and Wales 1901-1933, was published in 1968.
1695-1910	Even earlier material was collected by the Gomme family for their three-volume retrospective Index of Archaeological Papers published between 1892 and 1910. Although giving only basic bibliographic references, these cover the works of seventeenth- and eighteenth-century antiquaries.

The above comprise a wonderful resource - if you have access to an good library and time to search through around a hundred separate issues!

Therefore, one of BIAB's initial goals was to create a retrospective computer database of archaeological publications. This has been achieved, thanks to a data-conversion project funded by the former RCHME and The British Academy, and BIAB now holds computerised records from most of the above sources. Mullins's 1968 compilation and the Report of the Committee on Ancient Earthworks & Fortified Enclosures are not digitised, but we have some references for the inter-war period derived from the contents pages of major journals.

The ADS has provided an ArchSearch interface enabling access to BIAB's retrospective data - this went live in January 1999. Only pre-1992 publications can be queried, but that's still over 100,000 references! The data is presented in two fields: the full bibliographic reference and an abstract (where one is available). Both fields are searched. (See Tips for searching the BIAB on-line database.)

This database has its limitations, but we wanted to make the data available to the archaeological community at the earliest opportunity. Feedback received from users of this pilot version will help us improve the interface. The database that is now being designed for BIAB (by Karen Walford of Azuli IT Services) will enable searches on specific fields (eg author, title, date). BIAB is also committed to providing a subject index for more efficient retrieval.

Future releases of the BIAB database will include post-1992 references and will probably be distributed on optical disk.

Post script: The editorial office of BIAB has moved. The editors are now based at The British Academy, 10 Carlton House Terrace, London SW1Y 5AH. Tel (switch): (44) (0)171 969 5200. BIAB subscriptions are still available from the CBA Subscriptions for 1999 cost: 99ukp organisations; 45ukp individual; 35ukp full-time student.

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Conferences and Announcements

The late summer conference season has seen the staff of the ADS at various venues up and down the land. A session with Harrison Eiteljorg of ADAP was presented at the annual Digital Resources in the Humanities conference at King's College London. The ADS also participated there in a workshop run by the Arts and Humanities Research Board on the new technical appendix to their grant application form. By the end of the same week, we had moved to Bournemouth for the European Association of Archaeologists, again with Harrison Eiteljorg. Plans are now being made for next year's IFA gathering, as well asTAG, CAA and EAA and the Society for American Archaeology. More immediately, William Kilbride will be talking about digital archiving to the Society of Museum Archaeologists Conference in Stoke-on-Trent in November. These conference visits and seminars are designed to raise awareness of the issues of digital archiving for the profession as a whole.

Guides now available in paperback!

- **GIS Guide to Good Practice**
  edited by Mark Gillings and Alicia Wise
- **Archiving Aerial Photography and Remote Sensing Data: a Guide to Good Practice**
  Robert Bewley, Danny Donoghue, Vince Gaffney, Martijn van Leusen, and Alicia Wise

  .... and from our partners in the History Data Service ....
- **Digitising History: A Guide to Creating Digital Resources from Historical Documents**
  Sean Townsend, Cressida Chappell and Oscar Struijve

The ADS and the History Data Service are pleased to announce that three volumes of the AHDS guide to good practice series have now appeared in print, published by Oxbow Books at a price of £10. Write to Oxbow Books for more information: Oxbow Books, Park End Place, Oxford OX1 1HN England UK, tel: ++44 (0)1865 241249, fax: ++44 (0)1865 794449, or order them by email to oxbow@oxbowbooks.com Both of the ADS volumes, along with Digital Archives from Excavation and Fieldwork: Guide to Good Practice are available on the ADS website. For more details of this and other forthcoming guides on CAD and geophysics, point your browser at: http://ads.ahds.ac.uk/project/goodguides/g2gp.html

Credits

The Archaeology Data Service is part of the Arts and Humanities Data Service, and resides at the University of York. It is jointly funded by the Joint Information System Committee and the Arts and Humanities Research Board.

The ADS collects, describes, catalogues, preserves and provides user support for digital resources created during archaeological research. The ADS promotes standards and guidelines for best practice in the creation, description preservation and use of spatial information to the AHDS. For those classes of archaeological

ADS NEWS ADS ONLINE is edited by William Kilbride, email. If you have any ideas about articles or features for the next issue in Spring 2000, then write to me at the email address given.

data. Where archival bodies exist, the ADS collaborates to promote greater use of existing services.