OASIS
Dealing with the Digital Revolution

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Abstract. As the quantity of developer-led archaeological fieldwork increases it is difficult for researchers and teachers to keep abreast of the latest discoveries. The OASIS project responded to the need for a single unified index to archaeological investigations in England. The on-line database provides access to over 50,000 records and has the potential to act as an entry point to an on-line virtual library of grey literature, and as a pointer to physical finds and excavation archives distributed in local museums. A web-based data capture form provides a means for maintaining a digital flow of information between producers and users and for keeping the index current.
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1 Introduction

In England the filing cabinets and shelves of national and local curatorial agencies contain a hidden treasure of reports and archives of the latest archaeological discoveries. Yet for the most part these archives remain unvisited and the reports unopened. All the while archaeological work continues apace and it is difficult to find out about the latest discoveries or to locate archives of information useful to research. Consequently in universities the archaeologists of tomorrow are being taught the archaeology of yesterday. The OASIS project, which is the subject of this paper, aims to address this problem by providing access to the large and growing body of grey literature and to make it available to researchers and teachers as part of a national virtual library. OASIS (Online Access to the Index of Archaeological Investigations) is a collaborative venture between the Archaeology Data Service (ADS), the English Heritage National Monuments Record (EH-NMR), and the Archaeological Investigations Project (AIP), based at Bournemouth University. The first phase of the project was funded by the Research Support Libraries Programme (RSLP); funding for continued data collection and for pilot testing of an on-line data collection form has been provided by English Heritage.

2 Increasing fieldwork: declining access to information

In November 1990 the UK Government's Department of Environment published a Planning Policy Guidance note entitled Archaeology and Planning (DoE 1990), popularly known as PPG16. This document strengthened the role of archaeology by ensuring that account was taken of archaeological issues as part of the planning process. The approach has led to a massive increase in the amount of archaeology being undertaken, although much of it now comprises small-scale investigations carried out to assess the impact of building and other commercial developments. Since the advent of PPG16 most archaeological fieldwork in England has been conducted by consultants or contracting field units operating to requirements developed by curatorial archaeologists working in local government planning offices. It is usually a requirement that, as well as being supplied to the commercial client, copies of the resultant reports are lodged with the regional or county Sites and Monuments Record (frequently held within the Planning Department). Although theoretically available for public consultation these reports are rarely published in any conventional sense and knowledge of them will rarely enter the public or academic domain. Thus whilst many of the consumers of archaeological information sit within the offices and lecture theatres of universities, the majority of the data producers work in the commercial sector. It is estimated that since 1990 there have been about 28,000 separate archaeological investigations (Darvill and Russell 2002, 6) although most of these remain unpublished. Yet this information should be the primary research data for any researchers interested in the current state of knowledge of the past.

The difficulty of access to information about the latest archaeological discoveries has been recognised for some time. In 1992 a report on archaeological publication prepared under the auspices of the Society of Antiquaries and the Museums Association noted that:

> The number of archaeological interventions undertaken each year runs into many hundreds and no complete and consolidated record is kept of them. This is a situation which archaeology as a mature discipline should no longer be prepared to accept (Carver et al 1992, 2.3.4).

Several commentators have voiced concerns that the academic syntheses of scholars are becoming increasingly divorced from the latest archaeological discoveries made in the field (e.g. Bradley and Phillips 2002), and it has been suggested that much university teaching can be up to ten years out of date. Many of the national period societies publish annual listings of work falling within their area of interest, generally within their annual journal. A number of county archaeological journals and other regional or local groups also produce listings and summaries of projects within their geographical area. However, as the quantity of work has increased each of these bodies has experienced difficulty in compiling a complete record. Invaluable as these sum-

maries are, there is no comprehensive listing of completed archaeological work in England (Darvill and Russell 2002, 5)[1].

From 1995, English Heritage, concerned that this new information was being lost, funded an annual data collection exercise (conducted by researchers at Bournemouth University) to compile an index of archaeological investigations. The results have been published as annual hard copy volumes, *The Gazetteer of Archaeological Investigations in England*, issued as supplements to the *British and Irish Archaeological Bibliography*. However, it is widely acknowledged that in paper form the potential use of the information in these volumes is under-exploited; for the most part the dissemination of the data remains limited (Jones et al 2001, section 2).

An archive copy of the database which provides the information for the printed volumes published to date has been deposited with the English Heritage National Monuments Record (NMR) in Swindon. Since 1978 the NMR has also compiled a separate database of archaeological interventions, *The Excavation Index*. By 1998 this held records for over 55,000 archaeological interventions in England from the earliest episodes of scientific archaeology to the present day. Data was collected from a variety of sources, combining bibliographic recording with direct supply in the form of reports, proformas and microfilm deposited with the National Monuments Record. The scope of the Index covers both invasive (excavation, evaluation, watching brief) and non-invasive (geophysical survey, desk-based assessment, field-walking and measured survey) methods of fieldwork, and has been expanded to bring it closer in line with the Archaeological Investigations Project. Each Excavation Index record holds basic data on the location and results of fieldwork, covering Name, Start and End Date, Description of results, Location (County/District/Parish) and grid reference, Period and Monument Type, Contractors/ Funders/ Holders of Archive & Finds, Published and unpublished Sources, and External Numbering schemes. Each record is indexed to a core data standard on a relational database that allows links with other NMR datasets including monument information and paper and photographic collections. From September 1998 selected fields from the Index have been available on the Internet via the ADS on-line catalogue ArchSearch (http://ads.ahds.ac.uk/catalogue), together with the related Microfilm Index.

3 Increasing fieldwork: declining access to information

The OASIS project was developed in response to the need to provide a single unified index to archaeological investigations, a means of accessing the associated grey literature, and an on-line method by which the index could be maintained. It was funded under the Research Support Libraries Programme, as part of efforts to enhance those research resources available to the academic sector.

3.1 OASIS records

A major achievement of the project was to integrate the AIP records with the Excavation Index to provide a single concorded list. The concordance programme has delivered, for the first time, a fully unified record for archaeological interventions in England for the period from 1700 to 1998. This is made up of:
- c.50,000 enhanced English Heritage Excavation Index records
- c.17,000 concorded English Heritage Excavation Index and Archaeological Investigations Project records

The records are catalogued according to the Dublin Core metadata standard (http://uk.dublincore.org) and provide:
- The name of the project
- A short description
- Dates of the project
- The location of the artefactual and paper records
- The name of the organisation responsible for the work
- Any bibliographic records
- The location of the fieldwork, according to Ordnance Survey national grid reference
- The principle types of archaeology found, and its date

Name of Resource	HARBUTT'S FIELD
Description	Watching brief continued throughout ground preparation works for reseeding of the area adjacent to the scheduled fort. No Roman features were observed but finds indicated that the fort designation was correct.
Project Date(s)	1996 - 1997
Drawn from choose for collection details	English Heritage NMR Excavation Index for England (Collection)
Resource details	
Paper/microfilm archive: Location	Gifford and Partners Consulting Engineers
Responsible for work	Gifford and Partners Consulting Engineers
Associated identifier	AIP Record Number C.13.0016
Associated identifier	AIP Record Number E.13.0705
Associated identifier	AIP Record Number E.13.2811
Bibliographic references	Gifford and Partners [archaeological evaluation and assessment reports] Rogers I/1997/Final Report on Archaeological Watching Brief at Harbutt's Field, Middlewich, Cheshire.
Record Maintainers choose for contact details	English Heritage National Monuments Record (EH NMR) (Contact)
Map reference choose for explanation	(OSGB) SJ 70 66
Intervention Type	Watching Brief
Place	HARBUTT'S FIELD
Parish	MIDDLEWICH

Fig.1 An example of a partial OASIS record as delivered from ArchSearch

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[1] The situation is rather different in Scotland where an annual published summary, *Discovery and Excavation in Scotland*, has been published by the Council for Scottish Archaeology since 1955.

These OASIS records are available through the ADS on-line catalogue ArchSearch, where they can be searched by a variety of tools, including a clickable map-based interface, allowing users to search for archaeological investigations of interest in a particular locality (Fig.1). The catalogue is available free of charge to all users, providing they agree to abide by certain basic terms and conditions of use, including acknowledgement of the source and copyright owner of the records in any subsequent re-use.

Where a fuller electronic copy of a report is available on-line, either on the ADS server or on the web site of the contractor or Sites and Monument Record it is possible to include the URL of the resource as a bibliographic reference. As curators begin to require deposition of digital reports and as they make them available on the Internet it will be possible to build up an on-line virtual library of grey literature, directly linked from the index.

The ADS catalogue is also interoperable with other on-line databases. It conforms to the Z39.50 communications protocol and so can be searched simultaneously with other Z39.50 targets. Thus the OASIS records are also searchable via the HEIRPORT portal (see Austin, Pinto, Richards and Ryan 2002) where they can be queried alongside the Portable Antiquities Programme database of metal detector finds, as well as the National Monuments Record for Scotland.

3.2 The OASIS Data Capture Form

OASIS also aims to use the power of IT to ease the flow of information from those undertaking fieldwork to the wider archaeological community. The current situation involves tremendous duplication of effort. Archaeological contractors generally write their reports using word processors and then print them out before delivering them to the local curator. From there the information will often be re-keyed into digital form to be entered into the Sites and Monument Record. It may also be keyed in separately into the National Monuments Record, the AIP Index, and numerous regional and period based listings of archaeological investigations. OASIS aims to capture the data once, hold it in a database, and then to allow all those parties who have a legitimate interest in it to access it. An on-line web-based Data Submission Form has been created, which is being used to inform the relevant monument records of the completion of specific field or post-excavation tasks, such as the deposition of 'grey literature' reports or of archives. The report can be completed on-line to provide details of all aspects of the intervention required by the local planning authority (Fig.2).

Once the form has been completed to the satisfaction of the contractor it is then submitted to the database and automated email messages can be generated to alert the different stakeholders to the existence of a new record. Monument records then participate in checking and enhancing the records on-line. Some may have a validation role in checking for the accuracy of the interpretation, or the correct use of terminology. For example, SMR officers may import an edited version into the county or regional record. The NMR will check for appropriate use of standardised terms and will import the data into the NMR Excavation Index. It is recognised that the diversity of local practices will mean that the information flow may vary according to re-

gion and the OASIS form and database holdings module have to be flexible enough to accommodate the various roles required by the different organisations involved. At six-monthly intervals a copy of all new validated Excavation Index records will be supplied to the ADS and made available on-line via ArchSearch.

Fig.2 A sample page from the OASIS web-based data capture form, collecting project details
(http://ads.ahds.ac.uk/catalogue/dev/oasis/oasis.pl)

4 Conclusion

In summary, the OASIS project has demonstrated how IT can be used to bridge the research gap and to provide archaeological scholars with up-to-date information about the latest archaeological results. The resulting index can provide on-line access to the increasing mountain of grey literature. Where archaeological contractors and curators are willing to make the digital texts available on-line it becomes possible to create a national virtual library of archaeological reports. Furthermore OASIS records provide pointers to all the elements of the archive. The digital record can act as the metaphorical glue which links together the

physical archive, such as the boxes of finds, and the paper record, such as the site notebooks. From the index the researcher can access not just to up-date information, but the archive itself. By these means we can hope to improve the nature of archaeological research and the role of publication and archive in the twenty-first century.

Acknowledgments

References

AUSTIN, T., PINTO, F., RICHARDS, J., and RYAN, N., 2002. Joined up writing: an Internet portal for research into the Historic Environment. In Burenhult, G. and Arvidsson, J. (eds.), *Archaeological Informatics: Pushing the Envelope CAA2001, Proceedings of the 29th Conference, Gotland, April 2001*, Oxford Archaeopress (BAR International Series 1016), 243-251.

BRADLEY, R. and PHILLIPS, T., 2002. Rewriting prehistory. In Taylor, A. (ed.), *Institute of Field Archaeologists Yearbook and Directory 2002*, University of Reading, 32.

CARVER, M., CHAPMAN, H., CUNLIFFE, B., HASSALL, T., HEBDITCH, M., LAWSON, A., LONGWORTH, I., MORRIS, R., PHILLIPSON, D., SCHOFIELD, J., and WAINWRIGHT, G., 1992. *Archaeological publication, archives and collections. Towards a national policy.* Society of Antiquaries and the Museums Association, London. [Printed as a supplement to *British Archaeological News*, 7.2 (March 1992), i-iv].

DARVILL, T. and RUSSELL, B., 2002. *Archaeology after PPG16: archaeological investigations in England 1990-1999*, Bournemouth University School of Conservation Sciences Research Report 10, Bournemouth University and English Heritage.

DoE (Department of the Environment) 1990. *Planning Policy Guidance: planning and the historic environment* (=PPG16). London. HMSO.

JONES, S., MACSWEEN, A., JEFFREY, S., MORRIS, R., and HEYWORTH, M., 2001. *From the ground up. The publication of archaeological reports*, Council for British Archaeology, York. [Also available at http://www.bntarch.ac.uk/pubs/puns/index.html]