

AN INTERNET-ACCESSIBLE BUILDING ARCHAEOLOGY RESEARCH DATABASE (BARD)

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The UK has no comprehensive national, regional or local indexes (whether hard copy or database format) for unpublished building records. This paper introduces a building archaeology research database (BARD), designed as an archive for both published and unpublished building records. All data may be searched, entered and amended via the internet although, for security and quality control, entry is via password and the amendment functionality assignable. The database has been developed to both encourage people's involvement in building archaeology and as a research tool. BARD is available through a low subscription, with any accumulated surplus being used towards its on-going development.

CONTEXT

The best knowledge is knowledge shared, and it is important that advances in knowledge that stem from the recording of buildings are passed on.¹ It has been estimated that by 2007 more than 97% of all telecommunicated information was carried over the Internet.² It provides a remarkable tool for accessing Cultural Resource Management (CRM) data, including Historic Environment Records (HERs), the National Heritage List for England (which includes listed buildings) and several specific online datasets such as the Dendrochronology Database. There remains, however, no comprehensive national, regional or local indexes (whether hard copy or database format) for unpublished building records, and no guide as to where they might reside.³ Where records do exist, they are often difficult to gain access to without visiting the original repository in person. The Archaeological Data Service has gone some way to provide access to grey literature (<http://archaeologydataservice.ac.uk/archives/?category=greyliterature&>) although the results are limited. They do include some buildings, but the metadata are not searchable. It follows that the results cannot be filtered by specific building features or chronology⁴.

With the advent of the home computer there has been a “growing call for the archaeological archive to be digitised” in order to open access to grey literature⁵. Databases are already a common form of managing data in an archaeological context,⁶ and have been shown to provide an efficient way of collating and querying data (for examples relating to buildings see: <http://archaeologydataservice.ac.uk> and <http://www.heritagegateway.org.uk>). A database provides an efficient means of adding, sharing, querying and displaying the data in a meaningful way. Instant access to a CRM dataset is crucial in today's world for planning authorities and contracting

archaeologists in order to provide accurate information on time, and conversely updated or amended instantly⁷. The research community - academics, professionals and general interest groups – can also benefit from remote access to information held on a central repository. Clearly then, an easily accessible online database specific to the dated buildings of England and Wales has both great value and potential in aiding Cultural Resource Management and advancing research into historic buildings. However, the ability to update and disseminate data in internet-based versions is typically very limited. As a response to this need, the Building Archaeology Research Database (BARD) has been constructed.

INTRODUCTION

The Domestic Buildings Research Group (Surrey) (DBRG) was founded in 1970 by Miss Joan Harding MBE, FSA, to record and study the smaller houses and farm buildings of the county. Between 1970 and 1990 the Group recorded more than 3500 buildings in Surrey and neighbouring counties. Joan Harding used Edge-notched cards (See Wikipedia http://en.wikipedia.org/wiki/Edge-notched_card) and knitting needles to help organise this large number of records and produce her seminal work on the analysis of Surrey's timber-framed buildings.⁸ The DBRG card system has now gone, although not before the information was transferred. The ever-increasing size of this data set has encouraged innovations to improve its storage, analysis and dissemination. This is a common thread in today's archaeological investigations⁹. With the increased use of computers, the DBRG developed a building summary sheet that became known as the "Tick-Box" sheet (See Fig 1 for a simplified version of this sheet). The Tick-Box sheet was created to help standardise and allow the codification of data suitable for entry and analysis by spreadsheet and database. The Tick-Box sheet also gives a first indication of the likely date of the building. All the building records for Surrey were initially kept on Omnis software and subsequently transferred to a Microsoft Access database. However, it became increasingly recognised that in order to collate, manage and archive such a large number of records, a form of web-accessed Relational Database Management System was desirable.¹⁰

In 2010 work began on BARD, the main aims being:

1. To provide an on-line accessible database for entering, updating, searching, summarising and archiving data on both timber-framed and brick buildings (up to the mid-19th century).
2. To encourage the recording, research and understanding of old buildings.
3. To help develop and refine our ability to date old buildings.

DATABASE DESIGN

BARD was initially conceived as a means to manage the DBRG's records of more than 3500 buildings and help in the analysis of around 170 buildings tree-ring dated through the Surrey Dendrochronology Project (as published in *Vernacular Architecture* between 2004 and 2010). The starting point for development of the database was the two-page Tick-Box sheet, as summarised in Figure 1, which is used to both help systematically summarise the recording of stylistic features in old buildings and, because it indicates the common date ranges of known features, helps refine the dating of a building during its recording in the field.

The design of the Tick-Box sheet was not easy. It could not possibly be all-encompassing. Experience had shown that, if it were too complicated, it would simply not be used. The concept of 'Key Features' was formed, identifying the most common and distinctive features, at least in the south east. This recognised that, for detailed work, original reports will always have to be referenced. This simplification has proved popular, enabling beginners in particular to become familiar with building features and their rough timescales. To broaden its versatility, a searchable free-form text field was incorporated. This can be used to search for key features, or for any other useful feature entered.

To ensure common nomenclature, the Council for British Archaeology (CBA) illustrated glossary of timber-framing terms has generally been used.¹¹ While the glossary is very comprehensive some local terms were still needed for example:

- ⑤ Fan truss (a combination of a crown strut with curved raking queen struts, sometimes called a 'butterfly truss', quite common in Hampshire)
- ⑤ Half-floored hall (a two-bay hall with one bay ceiled, 'boot shaped', this sometimes occurring in Surrey)
- ⑤ A 3/4 quarter depth bridled scarf (Hewett ¹², p197, calls it 'a face-lapped, straight-bridled, scarf joint of three-quarter depth' – another Surrey speciality)

It is reasonable to hope that the adoption of systems like BARD will help with the eventual production of a standardised lexicon of terms for both general and local use. To make BARD more generally applicable for regional comparisons, it has been extended to cover stylistic features rarely found in Surrey. Also, to build on the work of George Howard ¹³, an optional third page for recording stylistic features of brick buildings was developed and incorporated.

ACCESS

BARD is accessed at the following internet domain address: <http://www.buildingarchaeology.co.uk>. Entry to the database is by username and password only and there is a security time out for activities. These measures help ensure the authenticity of the data submitted, and maintain data

integrity. BARD has been designed to run on a windows based web server, under a number of browsers including recent versions of Internet Explorer, Firefox and Google Chrome.

Upon entering the database you are presented with the main search page (Figure 2). Building records may be searched for using any combination of the following: Building name, Parish, County, Nature of Original Building, General Period, Likely construction date, Date type (e.g. Tree-ring, date stone, documentary and graffiti), completed Timber and/or Brick building summary information and Key Features.

The results of any search may be displayed either as a summary listing or as Key features in tabular form (Figure 3). Both these listings can be produced either by County/Parish/Building name order, or by likely construction date order. From either listing, the building name is a hyper-link which can be clicked on to take you to the individual record for that building. All outputs can be printed as seen. Small thumbnail pictures or drawings of buildings are shown (where available) on the individual building Tick-Box sheet and the summary listing.

ADDING AND UPDATING DATA

Whilst all users are able to search the database, the ability to add, amend and edit data is restricted. This design is to allow individual researchers or the assigned individuals within a group to be responsible for the input and maintenance of their own data. The initial two to four characters of the building reference number are assigned to be specific to an individual or group, and apart from the database manager, only they are able to, and responsible for, the update of these records.

The current letter code conventions for are as follows:

- “DBRG”- followed by four digit number (Domestic Building Research Group)
- “WBG”- followed by year of the report and number (Wealden Buildings Research Group).
- “TRS” followed by year of report and report number (Tree-Ring Services)
- “VA” followed by volume, page and a unique item number (For tree-ring dates in Vernacular Architecture)

Different phases of a building can be given separate records and indeed should be where precise dates are available. The building’s reference number would then be augmented with a letter such as A, B, or C.

It is not intended that buildings be recorded independently twice. Although a building could have multiple references (for example DBRG and VA), the first entry into the database should always be used. There is a Notes and References field which can mention other records.

The general convention for building codes not entered by a specific group or organisation is a two-letter code based on the Region/Country followed by a six digit number e.g. SE (South-East),

SW (South-West), EA (East Anglia), WM (West Midlands), EM (East Midlands), NW (North-West), NO (North), WA (Wales), SC (Scotland), NI (Northern Ireland), IR (Ireland).

While BARD could be used for simple lists of buildings with little detail, the aim is to enter data from fully completed Tick-Box sheets, as only then can some of the listings operate to their best advantage. Two exceptions to this principle are buildings that have been tree-ring or otherwise dated and contain a stylistic feature that is on the tick box; and buildings that are important to a particular line of research (e.g. examples of Wealden buildings, crucks, scarf joints and others that may be agreed).

Naturally, the accuracy of the data produced through querying the database is only as accurate and complete as the data it contains. This database is designed to help ensure data continuity through the use of the Tick-Box recording sheet. Drop down lists within the on-line data entry form mitigate against spelling errors and inconsistency in the use of terms. The most common terms are detailed in a short Illustrated Glossary that has been designed specifically for use with the Tick-Box sheet. The Illustrated Glossary and Tick-Box sheet are available for download from BARD.

DATA

Conversion of the Surrey data went smoothly and the database at the time of writing contains 3676 records for buildings, of which 233 are tree-ring dated, 102 have documented and 35 graffiti dates. This body of data for Surrey has enabled date ranges to begin to be assigned to some stylistic features, as summarised in Figure 1. It is hoped that this sample of buildings, precisely dated through tree-ring analysis, will provide refined criteria by which many more buildings can be dated with more precision and confidence (Wild, in prep). While the data is currently focused on Surrey, other data has quickly and easily been added. Courtesy of Nat Alcock and Edward Roberts, the records of Wealden¹⁴ and Hampshire tree-ring dated buildings¹⁵, respectively, have now been added. The Wealden Buildings Study Group is also joining the system, so it is expected that data for East Sussex, West Sussex and Kent will start to be entered. This should soon enable comparisons on the system between all these south-eastern counties.

DISCUSSION

The database was designed principally for the benefit of amateurs and voluntary groups, but it is hoped that it may also become useful to professionals and academics and that all users will help add, or permit their data to be added to the project. A principal of BARD is that a number of volunteer administrators (who are granted free access to the database), help enter, check and amend data for a county/region. This is to encourage peer review in the verification process that is made on all submitted data, before its inclusion. As professionals and academics know, publication is often

expensive and time consuming with the subsequent paper often difficult to gain access to.⁹ Since it is desirable that historic buildings are recorded and the data archived, BARD offers a cost-effective means of providing that service. As an additional facility, although not on-line and by separate agreement for bona-fide research, segments of the database can be provided in either Microsoft Excel or Access format to enable more detailed analysis.

Two important considerations for any database are to keep up with continuing developments in technology and its fitness for use. The database used for the RCHME's Kent project had to be scrapped when it was not possible for English Heritage to continue supporting it.¹⁶ The data was lost as there was no money to transpose it into another supportable medium at that time. It has therefore been decided to make BARD accessible through a low subscription, with any accumulated surplus being used towards on-going development and functional improvements. It is emphasised that the BARD database is not set in stone. Both the Tick-Box summary sheet and BARD were recently extended to cover later brick building features, and it is expected that, as research and understanding of the dating of stylistic features progresses, these tools will further evolve.

There is therefore no reason why the system should not be considered for many sets of vernacular architecture data, not just those of local groups. Other national databases could be included. A key point would be the difficulty of converting or inputting the data. This could be relatively simple – in the case of a modern database such as Microsoft's Access – or quite laborious for manual entry. Advice is available for interested parties.

FUTURE DEVELOPMENTS

As the database continues to expand, it is likely to be necessary to add new data fields in order to include regional variances; but a relational database such as this permits the addition of new fields and tables whilst maintaining its structural integrity. One aspect of the project that is already benefiting from future advances in mobile technologies is the ability to add and amend data in the field in real time. Providing the user has internet access via a mobile phone, tablet or laptop, survey data can be instantly uploaded, compared, and shared with ease. The recording of the location of the building using the British National Grid system is part of the Tick-Box sheet. The six or eight digit National Grid alphanumeric coordinates are subsequently converted into twelve-digit numerical ellipsoidal coordinates (latitude and longitude) and stored to facilitate the analysis of the data in a Geographical Information System (GIS). Although not currently an on-line facility, this geo-referencing of buildings does permit the data to be mapped by GIS to help identify local, regional or national patterns of distribution.

There are many other possibilities. Perhaps the most important is the eventual overall scope of the system. It is a database with about 100 specific fields and a number of free-format descriptive

fields. These give a good summary record, but there will always be a need to reference original reports. Provided these are in electronic format, it is possible that these could be linked in. The DBRG building reports, including all the individual drawings and plans, are archived in the Surrey History Centre, but these reports have also now been scanned, not simply to help archive them, but with such developments in mind. Another such evolution would be the ability to attach photographs and plans to the BARD records, thus providing a visual context to the building (subject to the right permissions).

ACKNOWLEDGEMENTS

The development of BARD has been funded in partnership by the Domestic Building Research Group (Surrey) and Tree-Ring Services, with the latter now managing the database. The work of the early database pioneers in DBRG is acknowledged: Joan Harding, Peter Gray, Jim Miller and George Howard. DBRG's vernacular architecture expertise is considerable and the skills of Martin Higgins in particular have been a vital contribution. A very large number of DBRG members have put together their extraordinary treasury of data, either in the original recordings or the later conversion into Tick-Box sheets. Finally, thanks are due to the kindness and generosity of the householders who have allowed their buildings to be recorded and to Nat Alcock for useful comments on a draft of this paper.

BIOGRAPHIES

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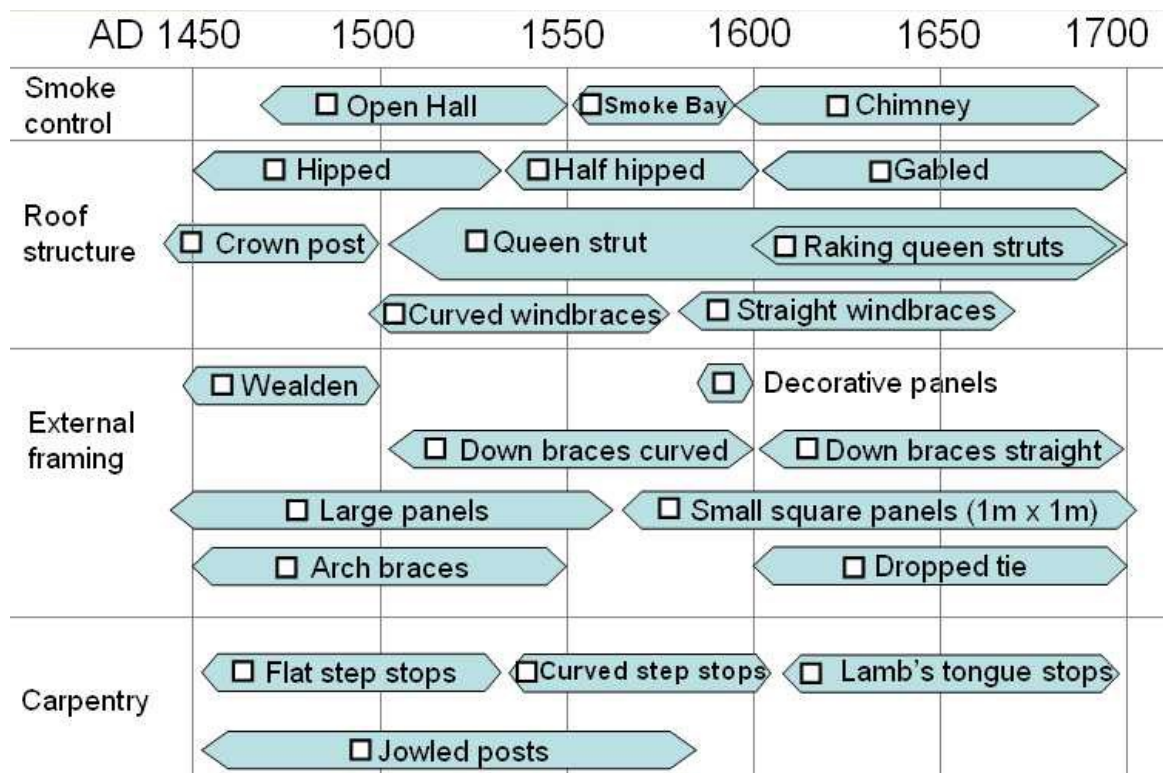



Figure 1. A much simplified version of the Tick-Box sheet, showing stylistic features which can be 'ticked' and their approximate date range. These date ranges have been developed for Surrey, through the Surrey Dendrochronology project.



Building Archaeology Research Database
Search for Buildings

[Search for Building\(s\)](#) - [Logout](#)

Enter Search Criteria

Building Reference

Building Name

Postcode

County

Parish

Building Type

Nature of Original Building

General Period

Likely Construction Year

Date Type Code or

Key Features

Select Sort Order

County and Parish

Display Results As

Summary Listing

Figure 2. The main search menu screen for BARD

Building Name	Parish	County	OS Grid Ref	Likely Construction Date	Date Type	Building Type										Roof			Framing		Carpentry								
						Open Hall	Smoke Bay Central	Smoke Bay End	Smoke Hood	Chimney Central	Chimney End	Chimney Lateral	Hipped	Half Hipped	Gabled	Crown Post	Crown Strut	Queen Strut(2)	Queen Strut(3)	Diminishing Principal Rafters	Windbraces (curved)	Windbraces (straight)	Passing Braces	Arch Braces	Down Braces Curved (external)	Down Braces Straight (external)	Small Square Panels	Stops Flat Step	Stops Curved Step
Dormer Cottage	Charlwood	SURREY	TQ242416	1412	DEN	Y					Y		Y						Y									Y	
The Cottage [Horwood Hill]	Charlwood	SURREY	TQ242417	1436	DEN	Y					Y		Y					Y										Y	
The Cottage - Hall range	Charlwood	SURREY	TQ241411	1441	DEN	Y					Y		Y					Y					Y					Y	
Pagewood House	Charlwood	SURREY	TQ238413	1452	DEN	Y					Y		Y					Y										Y	
Swan Cottage	Charlwood	SURREY	TQ246413	1460	DEN	Y					Y		Y					Y										Y	
Little Dolby	Charlwood	SURREY	TQ241407	1497	DEN	Y					Y		Y					Y	Y									Y	
Robins Farm	Charlwood	SURREY	TQ238409	1505	DEN	Y					Y					Y	Y	Y			Y							Y	
Chanterskuer	Charlwood	SURREY	TQ234439	1508	DEN	Y					Y		Y															Y	
Hillands	Charlwood	SURREY	TQ228401	1533	DEN	Y					Y		Y					Y						Y				Y	
Greenings - North Wing	Charlwood	SURREY	TQ226417	1539	DEN			Y				Y			Y	Y	Y		Y						Y		Y	Y	
Brittleware Farmhouse	Charlwood	SURREY	TQ247434	1555	DEN		Y					Y			Y	Y	Y		Y							Y		Y	Y
Charlwood Place Farm	Charlwood	SURREY	TQ248409	1596	DEN				Y						Y	Y					Y	Y					Y	Y	Y
2 Old Rosemary Cottages	Charlwood	SURREY	TQ244412	1642	DEN					Y		Y	Y		Y	Y	Y			Y	Y						Y		
Pagewood Cottage	Charlwood	SURREY	TQ239413	1705	DEN						Y	Y											Y				Y		

Figure 3. A Key Features Report for some Charlwood tree-ring dated cases, Charlwood being a village in the Weald of southern Surrey. The listing shows Key Features in construction-date order and the style changes in the various categories.

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