Making Archaeology FAIR: in the ADS and ARIADNE

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FAIR principles

Make your data:
- Findable
- Accessible
- Interoperable
- Reusable

Findable
- Descriptive metadata
- Persistent Identifiers

Accessible
- Determining what to share
- Participant consent and risk management
- Access status

Interoperable
- XML standards
- Data Documentation Initiative
- CDISC

Reusable
- Rights and licence models
- Permitted and non-permitted use

http://datafairport.org/

Data FAIRport
Find, Access, Interoperate & Re-use Data
In practice....

• Being FAIR when archaeological information is MEAN:
  • Miscellaneous
  • Exceptional
  • Arbitrary
  • Nonconformist

(Isto Huvila, Centre for Digital Heritage conference, University of Leiden 2017)
Digital Access Challenges

• Finding and joining up fragmented datasets
• Interoperability across datasets
• Lack of suitable data standards
• Need for controlled vocabularies and ontologies
• Permanence – Digital Object Identifiers (DOIs)
• Identifying quality data
• Metadata vs paradata
• Lack of clear rights statements
ARIADNE European User Needs Research

• 94% of researchers agreed that it is important that datasets are available online in an uncomplicated way.

• 87% of researchers agreed that they often do not know what research data is available because it is stored in so many different places and databases.

• 74% of researchers consider it important to have easy access to international datasets.

• The perceived lack of professional recognition and reward for sharing data is a barrier to data sharing for 72% of researchers.

• A lack of institutional or international repositories for archaeological data sets was a barrier to data sharing for 60% of researchers.
Professional ethics: testing and re-use

INTEGRAL to archaeological data creation methodology is the understanding that the material archived will be available to others to reuse, so that:

• Interpretations can be shown to be underpinned by formally recorded, rigorous and ‘complete’ data
• Interpretations can be challenged
• Further interpretations can be made
• Further analysis can be made (e.g. with new techniques), again leading to new interpretation
The Archaeology Data Service

- University of York, 1996 - present
- Shared UK digital research infrastructure
- Mandated digital archive for UK research councils and Historic England etc
- 14 staff
- Business model based upon charging policy
- Open Access data:
  - 1.4m records for archaeology of UK
  - > 60,000 fieldwork reports
  - > 1800 full project digital archives
  - 10Tb; 2,054,846 files; 18,505 recorded processes
The Archaeology Data Service is the only accredited digital repository in the UK for heritage data, with over 20 years of experience supporting research, learning and teaching with free, high quality and dependable digital resources.

The ADS disseminates a broad range of digital heritage data that are free to access and re-use. This includes data rich archives, unpublished reports, journals and metadata records.

Are you visiting our website in order to use marine data? If so, would you mind taking a few minutes to answer the following questionnaire to assess the fit of marine data in the GIS economy?

Search Monument and Event Records
Search our Data
Search Journals, Books and Reports
1.4m records to 70 reports in 3 mouse clicks
Access to Grey Literature Library

Assessment of an Archaeological Excavation at 551 Old Kent Road, London Borough of Southwark

Description: Assessment of an Archaeological Excavation at 551 Old Kent Road, London Borough of Southwark.

City: ENGLAND
County: GREATER LONDON
District: SOUTHWARK
Parish: SOUTHWARK
Named Location: 551 OLD KENT ROAD LONDON SE1 LONDON BOROUGH OF SOUTHWARK
Grid reference: TQ3

Identifiers:

Quality Control

Pre-Construct Archaeology Limited

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Revision No.

Pre-Construct Archaeology Limited


Download the report; cite by Digital Object Identifier

Pre-Construct Archaeology Ltd

Unit 54

Brookley Cross Business Centre

96 Broomfield Road

London

SE4 2PD

http://archaeologydataservice.ac.uk
A LOOK IN THE REAR VIEW MIRROR

- **Historic England NRHE Excavation Index for England**
  - Report examining the developing relationship between modern road construction, particularly motorways, and the development of archaeology, primarily in the period since the Second World War.
  - **WILTSHIRE**

- **ABBOT FieldS Abbeymead**
  - **Historic England NRHE Excavation Index for England**
  - Followed by excavation 14/86 (Event 65270). Observation of sewer trench.
  - **GLOUCESTERSHIRE**

- **Annsbrook Site**
  - **Historic England NRHE Excavation Index for England**
  - Evaluation and excavation of the site of a Viking period hoard recorded a disturbed burial with grave goods and a large Bronze Age enclosure. Metal detectorists had previously removed '7000' artefacts from the site, the location of which is kept secret. County location data applied to aid retrieval 2018.
  - **NORTH YORKSHIRE**

- **Applegarth West of St Andrews Churchyard**
Area A3, Castleward Phase 2, Derby. Archaeological Post-extraction Assess (OASIS ID: wessexar1-328626)
Wessex Archaeology, 2020

Introduction
Wessex Archaeology was commissioned by Ecos Ltd, on behalf of Lowell Partnerships Ltd, to undertake archaeological mitigation works comprising a strip, map and sample excavation on land off the corner of Carrington Street and Trinity Street, Derby, DE1 2RE. The Site covers 0.079 hectares and is centred on NGR 435835 335640.

The work exposed the remnants of terraced housing comprising foundations, floor surfaces and other structural remains. To the rear of the houses, yard surfaces, outside toilets, drains and garden/property boundary walls were recorded. The housing was built, seemingly as separate blocks, in the mid-19th century and was demolished in the early 1970s. Followin the local roads were widened, impinging on the footprints of the former buildings. Overall arrangement of the exposed remains matches the layout of the Site as portrayed on histo photographs.

The confirmed or likely location of a separate outside toilet could be identified for most of the houses. There was no definite evidence that the housing was not provisioned with these when first possible soakaway, potentially for a more primitive type of sanitary provision such as a pit was found sealed beneath a later toilet in one property, although this interpretation was not confirmed and the feature may represent a drain instead.

No traces of any cellars were recorded, although it is proposed that these lay beneath the houses, which were situated beyond the limits of the Site.

The earliest archaeological deposit seen on the site was mid-19th-century levelling matari generally comprised a dirty yellowish brown sandy clay with fragments of brick/tile, typical of a peat. This likely represents redeposition natural, either imported to the Site, or arisings from reduction of high ground within the Site itself.

Asbestos contamination prevented the investigation of the south-western quarter of the site.

The finds assemblage largely represents mid-late 20th-century material and was largely recovered from demolition rubble. No environmental samples were collected.

Census data from 1851 to 1911 reveals that the properties were the homes of the skilled working class, with various bakers, weavers, butchers and a surgeon among the occupations recorded.
Research Value

ADS: % respondents

- 84% - ADS has had an impact on data sharing
- 79% - reduced time required for data access and processing
- 51% - New intellectual opportunities
- 56% - Permitted new types of research
- 94% - Data very or quite important for their research
Economic Impact of ADS

Beagrie/ Houghton 2014:
• Investment value £1.2m pa
  • £698,000 pa funding from sponsors
  • £465,000 pa indirectly contributed by depositors
• Direct use value £1.4m pa
• But efficiency impacts £13m-£58m per annum
• Research efficiency gains = 7 hours per person per week
• £1 investment provides up to £8.30 return
Integrate and effectively serve a research community that studies the past to better understand the present with the tools and the methodology of the future, in the service of culture and society.
The ARIADNE roadmap

1. **Geographic extent and different languages**
   - Global
   - Cross-country
   - Country
   - Region
   - 1 site

2. **Metadata richness and standardisation**
   - Legacy metadata
   - General purpose, e.g. Dublin Core
   - Application profiles
   - Domain ontologies, e.g. CIDOC-CRM

3. **Addressing complexity**
   - Managing different knowledge models
   - Part–whole relations
   - Complex time–spatial relations
   - Richly integrated thesauri
   - Flat thesauri

**Dimensions of integration**
- Pan-European integration of datasets
- Multi-lingual tools and services

Extending the Conceptual Reference Model

Standardisation to high-level ontologies
Achieving interoperability

- We have datasets in many languages and complying with many different standards
- ARIADNE uses the CIDOC CRM with extensions for archaeology to achieve integration
  - Existing datasets are mapped to the ARIADNE data model
  - WHAT: Subject concepts are mapped to the Getty A&AT
  - WHERE: WGS84
  - WHEN: Perio.do
ARIADNE portal

Welcome
ARIADNE brings together and integrates existing archaeological research data infrastructures so that researchers can use the various distributed datasets and new and powerful technologies as an integral component of the archaeological research methodology.

Browse the Catalog

http://portal.ariadne-infrastructure.eu
• Vocabulary concepts from the Getty Art & Architecture Thesaurus (AAT) are offered as users type a query
  – Enables query expansion
  – Supports multilingualism
Current search
ARIADNE subject: ring brooches

Total results: 5

An Archaeological Evaluation at 98-100 Bull Close Road, Norwich, Norfolk
Type: Sites and monuments databases or inventories Publisher: Archaeology Data Service
An Archaeological Evaluation at 98-100 Bull Close Road, Norwich, Norfolk

Archaeological Excavation Report: Norwich Road and Exeter Crescent Road alignment, RAF Lakenheath ERL 161
Type: Sites and monuments databases or inventories Publisher: Archaeology Data Service
Archaeological Excavation Report: Norwich Road and Exeter Crescent Road alignment, RAF Lakenheath ERL 161

Report on a Second Phase of Archaeological Evaluation at Land adjoining Swanton Morley Airfield, Beetley, Norfolk
Type: Sites and monuments databases or inventories Publisher: Archaeology Data Service
Report on a Second Phase of Archaeological Evaluation at Land adjoining Swanton Morley Airfield, Beetley, Norfolk

The Mucking Anglo-Saxon cemeteries
Type: Fieldwork archives Publisher: Archaeology Data Service
The Anglo-Saxon cemeteries at Mucking, Essex, represent the burials of over 800 individuals from the 5th to early 7th centuries AD. The mixed rite Cemetery II is one of the largest and most complete Anglo-Saxon cemeteries yet excavated (282 inhumations, 463 cremation burials), while the pa...

An archaeological excavation was carried out in advance of the realignment of the junction of Norwich and Plymouth Roads and Exeter Crescent at RAF Lakenheath, which lies close to an area from where 267 Anglo-Saxon burials were found in 1997. The work was carried out in stages in order to minimise disruption to the traffic flow between April 2007 and August 2008. Three Anglo-Saxon burials were identified during the final stages of the work linking the existing Norwich Road into the new road, two of which were new discoveries and one of which was the second half of a burial found during pipelaying works in 2002...
# Multilingual support

## Ring Brooches

**Getty AAT ID** 300263352

**Note** Brooches in the shape of a ring, with a movable pin that may extend beyond the diameter of the ring; usually of metal and often ornamented. Used to fasten costume and worn especially during the Medieval period in Europe.

**URI** [http://vocab.getty.edu/aat/300263352](http://vocab.getty.edu/aat/300263352)

**Broader** [brooches](#)

### Terms

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### Provider mapping

**Annular Brooch**

**Match URI** [http://www.w3.org/2004/02/skos/core#exactMatch](http://www.w3.org/2004/02/skos/core#exactMatch)

**Source URI** [http://purl.org/heritagedata/schemes/mda_obj/concepts/97114](http://purl.org/heritagedata/schemes/mda_obj/concepts/97114)
In summary...

- Nearly 30 years of making heritage data FAIR...
- Still a long way to go
- Importance of data standards
- Value of good metadata
- Needs for community and international efforts
- What is missing in the metadata to better support re-use?
Thank-you for listening

Follow us on Twitter:
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@ARIADNE_Network

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http://www.facebook.com/archaeology.data.service

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ARIADNE portal: http://portal.ariadne-infrastructure.eu