Making Archaeology FAIR: 
in the ADS and ARIADNE
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
• 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
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.
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

http://archaeologydataservice.ac.uk
ACCESSIBLE

1.4m records to 70 reports in 3 mouse clicks
Download the report; cite by Digital Object Identifier

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Heritage Data
Linked Data Vocabularies for Cultural Heritage

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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 BISHOP**

**Historic England NRHE Excavation Index for England**

Followed by excavation 14/86 (Event 652905). 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**
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**NORTH YORKSHIRE**

- **APPLEGARTH WEST OF ST ANDREWS CHURCHYARD**
  - Historic England NRHE Excavation Index for England
  - Two small trial trenches in the garden of a 1960s bungalow adjacent to the churchyard boundary wall on the west side of St Andrew's Church revealed traces of a Roman road from the Mendips to the River Avon, possibly RP540. There were
Area A3, Castleward Phase 2, Derby. Archaeological Post-excavation 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. Following 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 historic 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 occupied, potentially for a more primitive type of sanitary provision such as a privy was found sealed beneath a later toilet in one property, although this interpretation was not definitive 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.

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 copper branded products in the attic and were employed on the railways as associated tradesmen.
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

Dimensions of integration

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

2. Extending the Conceptual Reference Model
   - Richly integrated thesauri
   - Complex time-spatial relations
   - Part-whole relations

3. Addressing complexity
   - Managing different knowledge models
   - Standardisation to high-level ontologies

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

ARIADE subject: ring broches

Filters

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...
Archaeological Excavation Report: Norwich Road and Exeter Crescent Road alignment, RAF Lakenheath ERL 161

Resource is part of
ArchSearch: ADS catalogue

Geographically similar
ERL 161 New Road Layout, RAF Lakenheath

Thematicaly similar
Archaeological Excavation Report: Norwich Road and Exeter Crescent Road alignment, RAF Lakenheath ERL 161
The Mucking Anglo-Saxon cemeteries
Saltwood Tunnel, Kent - Integrated Site Report
Wasperton Anglo-Saxon Cemetery

Title: Archaeological Excavation Report: Norwich Road and Exeter Crescent Road alignment, RAF Lakenheath ERL 161

Series: Suffolk County Council Archaeological Service unpublished report series

Downloads: suffolk1_398484.pdf (649 KB) Download

DOI: https://doi.org/10.5284/1004825

Publication Type: Report (in Series)

Abstract: 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...

Author: J Caruth

Publisher: Suffolk County Council Archaeological Service

Other Person/Org: Historic England (OASIS Reviewer)
Suffolk HER (OASIS Reviewer)

Year of Publication: 2009

Locations:
- Site: ERL 161 New Road Layout, RAF Lakenheath
- Parish: ERISWELL
- District: FOREST HEATH
- County: SUFFOLK
- Grid Reference: 572860, 280320 (Easting, Northing)
- FInd: Annular Brooch Early Medieval

ARCHAEOLOGICAL EXCAVATION REPORT
SCCAS REPORT No. 2009/125

Norwich Road and Exeter Crescent Road realignment, RAF Lakenheath ERL 161
Multilingual support

环形别针

**Getty AAT ID**: 300263352

**Note**: 环形别针，拥有一个可移动的针，针尖可能超过环的直径。通常由金属制成，并且常常装饰。用于固定服装，特别是在中世纪的欧洲，特别是在这一时期。

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

**Broader**: [brooches](#)

**Terms**

- **English**: ring brooches, brooches, annular, brooch, annular, ring brooch, annular brooches, annular brooch, brooches, ring, ring-brooch
- **Spanish**: broches, ring broche, broche
- **Dutch**: ringbroches, ringbroche

**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 and ontologies
- Value of good metadata
- Need for community and international efforts
- Need for collaboration between domain and IT specialists
- What is missing in the metadata to better support re-use?
Thank-you for listening

Follow us on Twitter:
@ADS_Update
@ARIADNE_Network

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

E-mail: julian.richards@york.ac.uk
Website: http://archaeologydataservice.ac.uk/
ARIADNE portal: http://portal.ariadne-infrastructure.eu