Dig Digital.

Work Digital. Think Archive. Create Access.

A guide to managing digital data generated from archaeological investigations

Infosheet #5 – finds and data archives

Digital data occupies all corners of an archaeological project, and the assessment, analysis and interpretation of finds is no exception. The definition of 'finds' used here includes 'all artefacts, building materials, industrial residues, environmental material, biological remains (including human remains) and decay products'. This is in line with the CIfA *Standard for the creation, compilation, transfer and deposition of archaeological archives* (2014); see also the Toolkit for Specialist Reporting.

Good practice standards in archaeology stipulate that digital data created during an archaeological project is an intrinsic part of the archaeological archive and must be managed to the same standard as all parts of the working project archive. The CIfA Standard for the creation, compilation, transfer and deposition of archaeological archives (2014) requires that archaeological material is kept and curated in a stable, ordered and accessible archive. For digital data this means being curated in a trusted digital repository with Core Trust Seal accreditation: 'Digital archive material should be deposited with a trusted digital repository, where data migration and backup procedures are in place, and the integrity of the digital archive is maintained' (CIfA 2014, para 3.5.5).

Digital data relevant to archaeological finds can be created throughout the archaeological project and initiated by different members of the project team. Finds specialists are not always employed within the organisation leading the project and may not be aware of internal processes that underpin data management within the working project archive. In addition, inclusion of specialist research within a combined report (such as a PDF) is sometimes seen as meeting CIfA Standards, but this is not always the case. Planning for digital archives should include the full project team to avoid issues in digital archives management throughout project delivery.

This case study addresses some of the potential pitfalls facing finds data and outlines suggestions to help support the collection, management and curation of digital data archives.

The Dig Digital resource is an Archaeological Archives Forum guidance document which supports CIfA Standards and guidance. *It was created by DigVentures, in partnership with CIfA, and funded by Historic England.*

You can find the full resource online at: https://www.archaeologists.net/digdigital

Planning for finds data – the data management plan

The various types of data that form part of an archaeological archive are well known and, generally, project teams can estimate at the project planning stage the nature and quantity of data that may be created or digitised during a project's lifetime.

A data management plan (DMP) is a planning tool that should be completed at the start of the project by the team managing the delivery. It is a live document and will be reviewed at key stages during project delivery. The DMP should be included as an appendix to key project documentation, such as the WSI or project design, the assessment report and the updated project design, and as part of the final technical report. Ideally, it will also be deposited with the selected project archive. See the Dig Digital example of a DMP.

The DMP can be shared and circulated to the project team during development. By treating the DMP as a living document, it remains relevant and flexible to any changes that may occur through the project delivery stages. Any developments or changes are then recorded and visible to all project stakeholders, including the wider project team, the trusted digital repository and the museum receiving the physical archive.

As a finds specialist, you can contribute to this document and use it as a planning tool to consider how your data will be integrated into the archive throughout delivery of the project.

Finds specialists and the project team

The definition of 'finds specialist' used within this document is:

> An individual who is competent in, and specialises in, collecting, recording, analysing, interpreting and reporting on specific materials, objects or scientific data. A specialist will have developed expertise through the extensive study of their particular field, working to accepted standards of practice and ethics, and reporting in reputable peer reviewed sources. They should also be accredited in line with any recognition schemes in place for their field of expertise. Membership of a study group or special interest group is a valuable way of acquiring and sharing knowledge and is also recommended (see also: the Toolkit for Specialist Reporting).

A specialist might be employed within the project lead organisation or may commissioned to undertake work as an external contractor. Either way, members of the specialist team should be included in project planning stages and provided with a copy of the project DMP. Requirements outlined in the DMP may determine how the specialist manages digital data, which can then be planned into delivery. Specialists should also be provided with information that could influence data collection and sharing, such as technical standards, report submission and provision of metadata.

As part of the planning stage, it is therefore important that

- finds specialists are provided with the DMP and relevant process documents at project initiation and are able to contribute to the DMP at key stages in project delivery
- project leads outline how data and metadata within the project will be collected, managed and selected for archive, including timescales (which may be identified in the DMP)
- finds specialists inform the project team of expected data types, including format and quantity, and agree formats for the creation, receipt and sharing of data/metadata

Finds data and project stages

The processes relating to digital data creation and management in the archaeological project will be determined by the project lead and outlined in the DMP. Generally, the procedure involved across project delivery is relatively predictable, with the same sequence of events and similar personnel being involved. As with all digital data, it is important to apply the <u>FAIR principles – Findable, Accessible, Interoperable, Reusable</u>.

The summary below defines the tasks delivered in key project stages that are relevant to the creation and management of finds data.

Project initiation

- The *project team* produces a project design or WSI that
    - refers to technical data standards that will be followed, including best practice guidance, organisational manuals and professional standards
    - includes a completed DMP that meets CIfA Standards and provides a clear framework for how data will be managed throughout the archaeological project, from acquisition to archive.
- The *finds specialist* is provided with the DMP so they can review data collection, documentation and metadata requirements, IP, storage, selection and sharing, to ensure that standards are understood and achievable. They should provide feedback and updates to the *project team* as appropriate.

Project execution

- The *project team* ensures that standards are achieved by
    - maintaining and updating the DMP in consultation with stakeholders, including *finds specialists*
- The *finds specialist* ensures that standards are achieved by
    - managing and storing digital files to protect from loss or damage, and to make them accessible throughout the project
    - establishing systems for creation of digital data using appropriate data standards and applying consistent and clear file-naming conventions throughout the project
    - documenting acquisition, analytical and interpretative activities through appropriate metadata
    - submitting reports and associated data/metadata in open and accessible formats, with clear signposting to any standard vocabularies or provision of a glossary for abbreviations and specialist terminology
    - making recommendations for the selection of digital data for long-term preservation, discussing selection strategies with the *project team* as necessary.

Selection – what data should be included in a digital archive?

As with all parts of the working project archive, it is unlikely that every digital file generated during a project will need to be retained long-term in the preserved archaeological archive. Any digital files created through the course of a project should therefore be subject to a selection strategy and the CIfA *Selection Toolkit for Archaeological Archives* provides practical advice on selection to aid in the creation of sustainable archives (CIfA 2019).

The digital archive should include the full specialist report, original specialist analysis and data (see also the Dig Digital Case Study on Selection). To avoid data sharing and copyright issues, discuss archive policy with the specialist team, especially any individuals working outside of your organisation. All team members, including external specialists or project partners, should be aware that this data will be deposited and made available as part of the archaeological archive. This might include

- the final version of the text file relating to specialist reports

- any spreadsheets or databases that contain specialist data from any stage of work, including assessment and analysis

- database information that may be separated into constituent tables and presented as csv files; the metadata should include documentation of how the database was structured

- images provided by a project specialist that would aid reinterpretation in the future

- additional documents or data, such as radiocarbon dating certificates or the results of scientific analysis

Accessing digital archives – OASIS and finds

OASIS is an online database of all the historic environment investigations carried out in England, Scotland and the maritime region of Wales. It is hosted by the Archaeology Data Service (ADS), an accredited digital archive repository, on behalf of Historic England and Historic Environment Scotland.

The Society for Museum Archaeology (SMA) has worked closely with the ADS to ensure that the newest version of OASIS works well for museums and takes account of their needs and requirements, supporting discussions between museums and the main project team from the outset of the investigation (see above). The accessibility of OASIS for museums has also improved through the uptake of the FAIR guiding principles, which set out an ambition for all research project data to be

- Findable: making data and metadata easy to find
- Accessible: ensuring the data can be accessed in a variety of formats
- Interoperable: making sure the data can be integrated with other data applications and workflows
- Reusable: well-described data and metadata will optimise its re-use

OASIS will signpost to documentary and material archives, and link to digital archives deposited with a Trusted Digital Repository such as the ADS.