

ARCHAEOLOGY DATASHEET 102

Metalworking evidence and archaeological project management



Summary

Project management techniques are widely used to plan and monitor the progress of archaeological projects. Project management makes the aims, objectives, methods, timetable, risks and outcomes explicit. It is common to divide a project into a series of stages where the relevant aspects of the project can be reviewed and the project as a whole re-focused if necessary. Archaeological evidence for metallurgical activities is routinely encountered and effective archaeological project management needs to take this into account.

Project Management

Project management became a significant issue in archaeology from the 1980s as a proportion of excavations (and the associated post-excavation research) grew in size and scope. Traditional (and largely informal) approaches were insufficient to deal with projects which might involve several months (or even years) of fieldwork and decades of post-excavation research. In order to cope with such large projects some of the techniques employed in construction and manufacturing industries were imported into archaeology. These approaches vary somewhat and many have been refined over the years but fundamentally include provision to plan an activity (including aims, objectives and methods), identify the resources required (project team), provide a timetable, manage risks, set out products and (crucially) allow all of these elements to be reviewed on a regular basis. Any large project will be subject to varying degrees of uncertainty and this is particularly true of archaeology. It is therefore essential that a project contains review points where interim results can be assessed and the next stage planned.

Aims, objectives and methods

Any archaeological project should have clear aims and objectives. While some archaeological research is non-destructive, the excavation of archaeological deposits involves their destruction and this needs to be justified. In many cases, archaeological excavation will be initiated by construction projects which would destroy the archaeological deposits. In this case the archaeological excavation provides a detailed record of what was there. The nature of the archaeology should prompt a consideration of secondary objectives, which should be framed by relevant research frameworks (in Britain these include regional and period research frameworks, and of course *Metals and Metalworking*). In many cases, where an archaeological site is to be destroyed or altered by redevelopment, the aims and objectives will be set out in a document (brief) drawn up by a Local Authority planning archaeologist. The Local Authority planning archaeologist will be aware of the archaeometallurgical potential of sites in their area and

will ensure that any briefs they draft require adequate investigation of metallurgical sites. The refining of aims and objectives should also consider the results of any Desk-Based Assessment and involve all members of a Project Team. Aims and objectives should be reviewed regularly to ensure that they are effective and appropriate. The excavation of archaeological sites which are not subject to redevelopment (or subject to threats outside the planning process) needs to be thoroughly justified.

The methods employed must be considered in relation to the nature of the archaeology to be recorded as well as the research aims and objectives. In most cases, standard archaeological excavation and recording techniques will be sufficient. Relevant members of a Project Team will be able to provide advice on any alterations to standard archaeological methods that may be appropriate to excavate and record a particular metallurgical site or structure.

Desk-based assessments

A Desk-Based Assessment is a written report on a potential archaeological site which reviews earlier investigations in the area and assesses the likely survival and nature of archaeological deposits. Desk-Based Assessments will draw on records of archaeological discoveries held by Local Authorities (Historic Environment Records). For recent sites the examination of historical sources (including maps) may identify the presence of significant metallurgical activities. Desk-Based Assessments are an extremely helpful resource when devising aims and objectives, and estimating the resources required to excavate and record such a site (including the establishment of a Project Team).

Project designs

A Project Design is a written report which describes a planned activity. Any archaeological fieldwork should only proceed once there is an agreed Project Design. The project design sets out the aims of the fieldwork, the objectives that address these aims, and the methods that will ensure the fieldwork is successful. The Project Design will identify all of the people who make up the Project Team and their roles. The Project Design will identify a timetable for the activity (assessment, survey, excavation, post-excavation analysis, publication, archive, etc). Crucially, a Project Design will identify (and even specify) the nature of the products (archive, publication report, etc). The Project Design must include an assessment of risks (see below). An initial Project Design will usually be revised following the execution of various stages of a project. Such Updated Project Designs will take into account the nature of any interim results and may include modified aims and objectives (and even methods). Project Designs will usually be compiled and edited from contributions made by the

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whole team. If the Desk-Based Assessment indicates a site is primarily metallurgical in function, then archaeometallurgy should be a major aim of the Project Design.

Project teams

One of the first tasks required for the successful implementation of an archaeological research project is the identification of the resources required and the appointment of a project team. The project team needs to include a range of archaeologists with all of the skills necessary to complete the project. Identifying the right people for the project team is usually the responsibility of the project manager but will be informed by the nature of the site (identified in the Desk-Based Assessment) and the overall aims and objectives.

It is important to establish good communication between different team members so that all relevant information can be provided to the specialists (e.g. stratigraphic analyses). In addition, responsibility within archaeological teams is often divided according to material type but metallurgical information may be recovered from a range of materials (e.g. metals, stones, ceramics and slags).

Timetable, review points and assessments

A key part of project management is the delivery of the project to an agreed timetable. In the case of developer-funded projects, the construction timetable will usually be imposed on the archaeological excavation and recording. Nevertheless effective timetabling can reduce the risk that a project will overrun. In many projects it is possible to identify some tasks which must be completed before other tasks can be started. The interdependence of tasks and their chronological arrangement can be efficiently displayed in a Gantt chart.

The initial Project Design will set out an overall scope and timetable for a project and in almost all cases this will include one or more review points. The number of review points will vary depending on the scale and complexity of a project. Within archaeology it has become standard practice to have a review point once the fieldwork has been completed and an initial assessment has been carried out on the records generated and the materials recovered. The aim of this review point is to identify appropriate resources for subsequent analysis of these records and materials.

The assessment of the results of a phase of archaeological research requires that the records made during the fieldwork and the materials recovered be examined. This will always include a quantification of the records and materials and should include an evaluation of their quality, in particular their potential to address the aims and objective set out in the Project Design. The exact methods employed to assess material evidence for past metallurgical activity will vary

depending on the nature of the archaeology as a whole, the type of process represented and the quantity and quality of the material evidence. In some cases, it will be appropriate for all relevant materials to be examined in some detail, while in others it will be pragmatic to examine just a sample of the relevant materials.

Managing risk

Within project management the management of risk concerns all those issues which will may affect the delivery of the project. This should focus on the availability of the resources required, and will include an assessment of both human resources (i.e. availability of various specialists) and non-human resources (e.g. failure of plant and equipment). The overall risk is often broken down into two components: likelihood and impact. If these two are assessed carefully and estimated (e.g. on a scale of 1-5) then the overall risk is the product of the two. This then allows the identification of the most significant risks. Once risks have been identified it is essential that strategies are outlined which will mitigate them should they occur. All risks and their mitigation should be covered in a risk log within the Project Design.

Archives

Archaeological fieldwork employs careful excavation and recording but it is essentially destructive. Once a particular site has been excavated, it can never be excavated again. If future generations are to have any chance of re-evaluating the nature of the activities that took place on the site excavated they must have access to the records made and materials recovered. The post-excavation analysis will often result in a publication which will describe some or all of these records and material in detail. Nevertheless, the records (written, drawn and photographic accounts of the excavation) and materials recovered (materials culture, waste products, ecofacts etc) must be retained so that future archaeologists (perhaps employing techniques as yet unimagined) can carry out their own analyses. Within Britain it is standard practice to identify which body (usually a local museum) will take the archive once the post-excavation analysis and publication is complete. All records and materials should be stored in suitable conditions which will ensure their long-term conservation.

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