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MANAGEMENT of ARCHAEOLOGICAL PROJECTS

1991

English Heritage

CONTENTS

Preface

1 Introduction **1**
2 Summary **3**
3 A model for the management of archaeological projects **5**
4 Phase 1: project planning **9**
Evaluation projects
Formulating the project design
Planning for fieldwork
5 Phase 2: fieldwork **12**
Decision making
Data-collection
Review
Planning for assessment
6 Phase 3: assessment of potential for analysis **15**
The nature and purpose of assessment
Decision-making
Data-collection
Review
Planning for analysis: updating the project design
7 Phase 4: analysis and report preparation **20**
Decision-making
Data-collection and report preparation
Review
Planning for publication
8 Phase 5: dissemination **23**

Appendices

Appendix 1: project management techniques **24**
A1.1 Teams and team meetings
A1.2 Estimating
A1.3 Controlling time and money: the work plan
A1.4 Resource accounting
A1.5 Monitoring
A1.6 Project management packages
Appendix 2: project design specification **27**
A2.1 Background
A2.2 Aims and objectives
A2.3 Methods statement
A2.4 Resources and programming
Appendix 3: site archive specification **30**
A3.1 Materials and records
A3.2 Matrix and summaries
Appendix 4: assessment report specification **32**
A4.1 Factual data
A4.2 Statement of potential
A4.3 Storage and curation
Appendix 5: updated project design specification **34**
A5.1 Background
A5.2 Summary statement of potential
A5.3 Aims and objectives
A5.4 Methods statement
A5.5 Resources and programming
Appendix 6: research archive specification **37**
A6.1 Catalogues and other records
A6.2 Analytical reports
Appendix 7: guidelines for the preparation of published reports **39**
A7.1 Minimum requirements
A7.2 Report-writing criteria
A7.3 Production criteria

PREFACE

The scale and cost of archaeological projects has increased dramatically in the last two decades and this has highlighted the need for formal project management procedures to be introduced into archaeological projects. In the past when these were relatively small scale and few in number the processes of project planning, estimating, timetabling, and selection were correspondingly simple. Formalising the management procedures which were previously implicit is fundamental to successful future archaeological endeavour and to the credibility of the profession.

In this document the principles of archaeological project management have been worked through in the context of a large-scale excavation and its subsequent programme of post-excavation analysis. This is because such projects are generally the most costly and the most challenging to manage. It should be stressed, however, that the model put forward in section 3 is applicable to all archaeological projects regardless of scale, although it is recognised that the precise application of the model will vary from project to project. It will not be necessary in every case to go through each of the five phases identified, but the repeated cycle of activities identified and used within each project phase will always be relevant and applicable. This model starts on the assumption that a decision to initiate a project has already been taken.

English Heritage would now like to see other groups apply, interpret, and develop this framework with reference to their own particular areas of interest, and to other types of project, with the aim of ultimately establishing a consensus on good professional and management standards and practice in all areas of archaeological work. It is likely to become necessary in future for this document to be again revised in the light of practical experience and we intend to facilitate this process through continuing discussion. In addition it may be necessary to promote or develop training programmes to facilitate the adoption of the processes described.

G J Wainwright
Chief Archaeologist

1 Introduction

1.1 This is the latest in a series of documents dealing with archaeological project management. Its contents have been substantially influenced by the documents which preceded it. In particular *Principles of Publication in Rescue Archaeology*, a report by a working party of the Ancient Monuments Board for England Committee for Rescue Archaeology (1975), commonly referred to as the Frere report after the working party chairman, and *The Publication of Archaeological Excavations*, a report of a joint working party of the Council for British Archaeology and the Department of the Environment (1982), referred to as the Cunliffe report, have been of fundamental importance in developing approaches to the management of projects and the dissemination of their results. These two reports have given rise to a set of archaeological management concepts and terms which have achieved a wide currency. It is appropriate briefly to review these reports to put the present document in context.

1.2 The Frere report was particularly concerned to address the problem of how to publish an ever-increasing quantity of archaeological data. The report put forward a model for archaeological projects which saw data managed at a series of levels. With hindsight the principal problem with the model was with the concept of the Level 3 report: this was to contain all the data recovered, prepared to a standard equal to that required for publication. Although the report stated that 'refined' publication at Level 4 should be the objective in the future, the need for the prior preparation of a Level 3 report separate from the production of a report text for publication, meant that achieving publication was still time-consuming and expensive.

1.3 In addressing this problem the Cunliffe report stressed the need for the critical selection of data. Particular emphasis was put on the research design as a means of exercising this selectivity. The need for 'well defined thresholds for review and forward planning' was identified as an appropriate mechanism for implementing this. Although the model put forward in the Cunliffe report has been of great value, putting it into practice has been difficult. One of the principal purposes of the present document is to develop the concept of regular critical review as the key to successful archaeological project management, and to suggest how this might be achieved.

1.4 A previous version of this document has been issued (*Management of Archaeology Projects*, 1989 – subsequently referred to as *MAP* 1989). This addressed two aspects of project documentation: first it gave a fuller definition of the terms set out in the Frere and Cunliffe reports; it also set out the role that documentation should play in an archaeological project. The purpose of the present document is to revise and expand *MAP* 1989, as a result of experience gained through using it, and in particular to re-examine and define more fully the management process which leads to the production of project documentation, which was not covered in *MAP* 1989.

1.5 This revised document puts forward and describes in detail a model for the management of archaeological projects. The most innovative part of this model is identified as 'assessment of potential for analysis' (phase 3, figure 1) and this has received detailed treatment because the importance of a formal post-excavation review phase has become evident. It is intended that this management framework will operate side by side with a framework of academic priorities which will help to estimate archaeological value. These priorities will of necessity change as the successful completion of well planned projects contributes to the growth of the academic database.

1.6 The opportunity has also been taken to revise the definitions made in *MAP* 1989, and to produce sample specifications of key project documents (appendices 2 to 6). There is currently a need for the standardisation of terms in use within the profession, and it is hoped that this document will contribute to this.

2 Summary

2.1 Archaeological projects are set up to collect specified data within time and cost constraints. The academic justification for the project must be clearly formulated and expressed at the outset. The end result should be a publication which reflects the significance of the data collected, and the creation of an archive deposited in an appropriate place for continuing curation and legitimate access.

2.2 For any project, a team with the appropriate knowledge and skills must be appointed. It is a basic principle of good management practice, and fundamental to project's success, that all the principal members of the team have a common understanding of the project objectives and communicate effectively with each other.

2.3 To be managed effectively an archaeological field project of any size must be organised in phases. These phases are:

- phase 1 – project planning
- phase 2 – fieldwork
- phase 3 – assessment of potential for analysis
- phase 4 – analysis and report preparation
- phase 5 – dissemination

Each of these phases should have clearly defined objectives and be appropriately resourced in terms of staff, equipment, time, and costs.

2.4 Regular review of a project's results is essential if academically acceptable objectives are to be consistently pursued and appropriately resourced. The purpose of such review is to establish the significance of the results at each phase and to define the work needed as a consequence in the subsequent phase. This is achieved through sequential and phase-related project documentation:

- phase 1 – project design, which defines the objectives of the whole project and gives an outline of the overall resources likely to be necessary to achieve these
- phase 2 – site archive, which records all the primary data collected during fieldwork
- phase 3 – assessment report, which states the academic potential of the data in the site archive
  - updated project design which sets out the further work considered necessary to fulfil this academic potential
- phase 4 – research archive, which records the data resulting from the analysis phase and forms the basis of the final report
  - report text for publication, which reflects the importance of the results of the project and their contribution to archaeological knowledge
- phase 5 – publication
  - project archive for deposition

2.5 The progress during each stage of a project will usually be externally monitored. The level of external monitoring will have to be agreed in advance with the project sponsor. Any changes to the design of a project may have to be negotiated as part of the project monitoring undertaken by the project sponsor, but in any case they must be recorded and communicated to all concerned. A system of quality control must also be in place to ensure that work is carried out to an acceptable professional standard.

3 A model for the management of archaeological projects

3.1 In any project, a team is appointed to carry out a number of linked tasks to achieve predetermined objectives. These tasks will be planned to occur in a specific order within cost and time constraints. The purpose of project management is to ensure that the tasks undertaken are organised and monitored to achieve the required outcome. For archaeological projects the successful outcome is defined as a published report which accurately reflects the archaeological significance of the results, supported by a properly curated and accessible archive.

3.2 To set up and run any project effectively it is necessary:

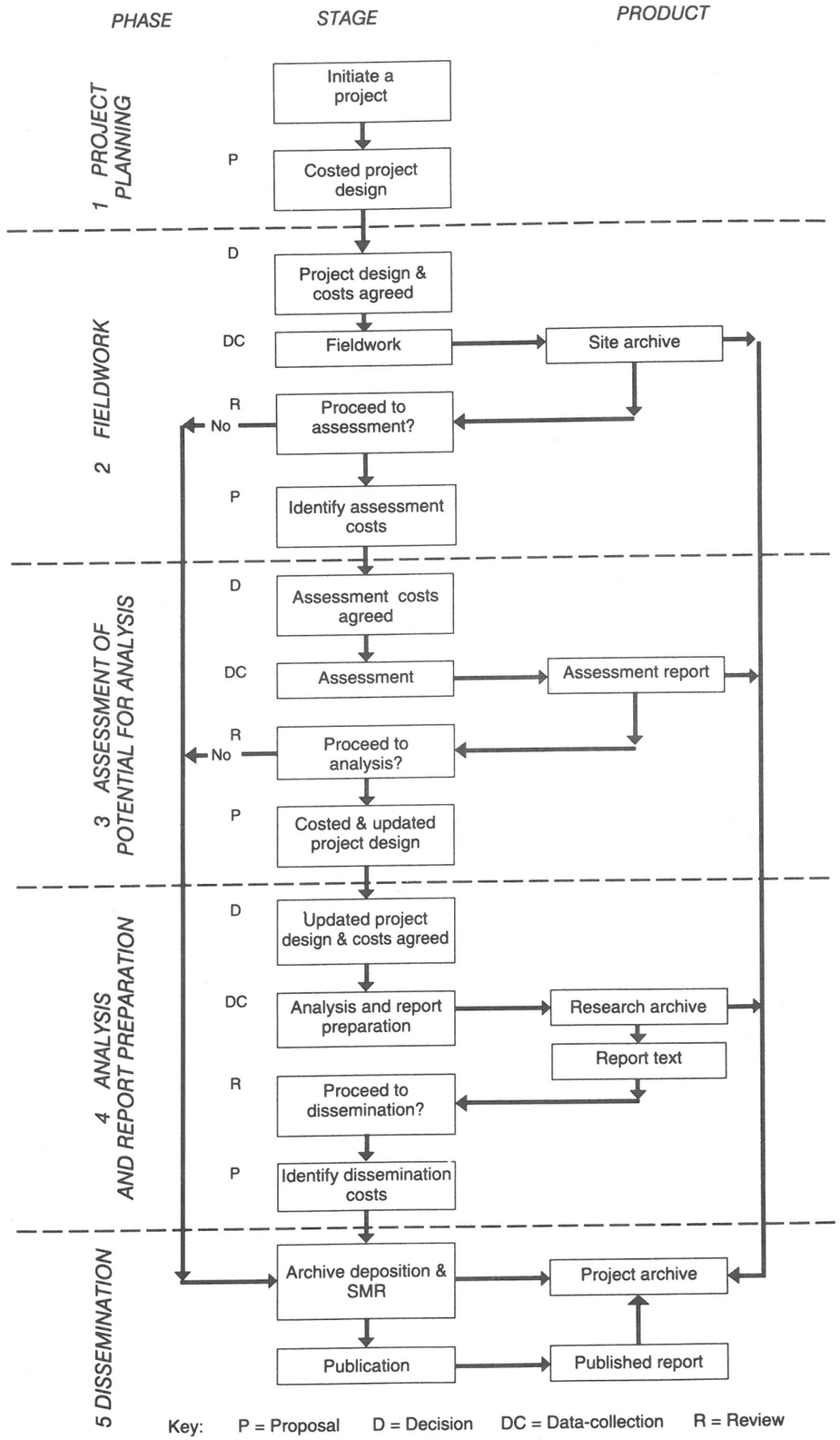
- to formulate clearly defined objectives and standards
- to establish soundly based estimates of the resources required to achieve the objectives
- to appoint a project manager who can motivate and coordinate the team
- to appoint a team with appropriate knowledge and skills
- to establish and maintain effective communication between all team members and external people involved
- to establish and operate a system of quality control
- to monitor progress and address any problems revealed as soon as possible

These activities are fundamental to the model of archaeological project management which follows. Their specific application during each project phase is discussed in sections 4 to 8.

3.3 In order to perform these activities successfully it will be necessary to employ a wide range of project management techniques. Detailed discussion of these is outside the scope of this document. Some of the techniques most relevant for archaeological project management are summarised at appendix 1.

3.4 Experience in English Heritage of archaeological project management has shown that the definition and consistent pursuit of objectives can be difficult. It is this problem which the proposed project management model is intended particularly to address. Objectives for archaeological projects must be defined and justified not only in practical, but also in academic terms. This academic justification must make clear the issues that the work will address, and the framework of academic priorities into which the project will fit. Due to the difficulty of predicting the potential of archaeological evidence, the original academic objectives may well need to be redefined more than once during the life of a project. To ensure that this redefinition is possible it is necessary to identify phases within a project, at the end of each of which the priorities of the project can be reconsidered and resources redirected appropriately. (These points are what the Cunliffe report called 'thresholds for review and forward planning').

Figure 1



3.5 This document identifies five principal phases through which a large archaeological field project would normally pass (see figure 1):

- phase 1 – project planning
- phase 2 – fieldwork
- phase 3 – assessment of potential for analysis
- phase 4 – analysis and report preparation
- phase 5 – dissemination

These phases, with the possible exception of phase 3, are familiar components of archaeological projects. However the emphasis on following a similar staged approach in each phase, culminating in a critical review at the end of each phase, is new.

3.6 As figure 2 shows, these stages form a repeated cycle of activities:

- Proposal: a proposal is put forward, defining and justifying the objectives to be met – this should give due consideration to the relevant academic priorities as well as practical considerations, and show the estimated cost of undertaking the work
- Decision: following consideration of the proposal as set out above, a decision is made as to whether or not the project should move to the data-collection stage. Where a positive decision is taken a budget should be set and appropriate resources made available
- Data-collection: will implement the decision to proceed and result in the collection of appropriately documented data. The term data is here and throughout used in a broad sense to include site records, materials recovered from the site, and any results obtained from subsequent analysis
- Review: assesses the significance of the data collected, and gives consideration to the most appropriate next step

The end result of each cycle may be the formulation of new or modified proposals, thus initiating another cycle at the next project phase. A proposal is the first stage of any project phase; however a phase will only begin once a positive decision to fund the work has been made. In practice therefore in phases 2, 3, and 4 the proposal is the final stage. Figure 1 has been drawn to reflect this.

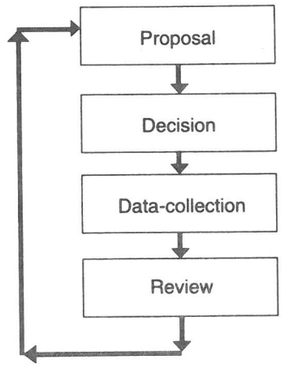


Figure 2

3.7 Three review stages are identified in figure 1. At each of these the relevant project documentation is reviewed, allowing objectives to be redefined, the subsequent phase to be planned, and appropriate costs identified.

3.8 This cyclical process of data-collection and review, followed by selection, further study, and ultimately dissemination, is fundamental to the structure of an archaeological project. Formalising this process is important and will ensure that:

- projects are carried out to consistent standards
- project proposals are well presented and carefully justified, so that they satisfy project sponsors, those responsible for the care of archaeological sites, and the ultimate consumers of the results
- archaeological projects are managed in a professional manner

3.9 The system of regular review and follow-up will probably cause some hiatuses in the execution of a project. This will, however, be offset by the improved end-product, and the reduction of misdirected effort. With careful planning disruption can be reduced or mitigated. The following general principles should always be considered:

- an outline plan of the whole project should exist at the outset
- the needs of the next phase in a programme should always be kept in view: for example the assessment phase can be initiated relatively quickly after the completion of fieldwork if the site archive (the ordering and review of which has to precede assessment) has been compiled to a high standard
- sponsors and all participants in a project should be made aware of the timetable to which a project is running, and should be consulted well in advance about their participation
- organisations running several projects should ensure that project review stages are timetabled so as not to coincide.

3.10 The funding of archaeological projects can vary. Ideally funding would be made available in blocks related to one or more of the five project phases. In practice, however, funding will be dependent on the internal policy of the project sponsor. Project budgets may be established on a once-and-for-all basis at the beginning of the fieldwork. Where this is the case the staged approach to project planning should still apply. Regular reviews will ensure that at each phase the balance of the project's fund is allocated appropriately.

4 Phase 1: project planning

Evaluation projects

4.1 The project management model described begins to operate at the point when a decision has been taken to initiate a project (see figure 1). Large archaeological field projects, however, may have been preceded by one or more preliminary phases of evaluation. These evaluations may have formed projects in their own right and will have followed the cycle of activities described at 3.6. The results of these evaluation projects will be critical in defining the objectives of any subsequent field project, and in estimating the resources necessary to achieve the objectives once defined. It should be appreciated that evaluation may produce results of sufficient significance to merit assessment, analysis and publication in their own right (see sections 6, 7, and 8), even if the result of evaluation is a decision not to initiate a further project.

4.2 Evaluation will almost invariably commence with a desk top study. In those cases where such study yields insufficient information, rapid and limited fieldwork may follow. The purpose of such fieldwork is to define, as far as possible, the likely nature and extent of the archaeological deposits under consideration.

4.3 The evaluation report produced will present a digest of information on the character and significance of the deposits under review. This report will form the basis of the proposal on appropriate further action.

4.4 A copy of the evaluation report must be lodged with the commissioning body (eg developer) and an entry made in the relevant sites and monuments record (SMR hereafter). It is also important that a note be published recording that an evaluation has taken place, summarising its results, and stating where the archive can be consulted. This is also necessary where the evaluation results are negative, or when there is to be a time lag between the completion of the evaluation and the start of any resultant project. Material collected during evaluation should be accessible in the interim to archaeologists and other related professionals.

Formulating the project design

4.5 The end-product of the initial planning stage is the project design, a specification for which is given in appendix 2. This defines the objectives of the whole project and outlines the overall resources likely to be necessary to achieve them. The project design will provide the framework for the execution of the project through to completion. Even if the funding is agreed in phase-related blocks (see 3.10) it is necessary to have an overview of the aims and anticipated costs at the outset. The project design will also give more specific details of the strategies and resources appropriate to the fieldwork phase.

4.6 Work on the project design can only begin when the project manager and core team have been assigned to the project. This core team will include representatives of all relevant specialisms (eg environmentalists, technologists, conservators, illustrators, surveying/dating specialists, documentary historians, artefact specialists, etc). The project manager and core team will together formulate the project design, although it is the project manager's responsibility to ensure that all potential areas of enquiry are considered and appropriate resources allocated.

4.7 Once the composition of the project team has been established team members will wish to ensure that contact has been made with those other organisations which have an interest in the project, including the museum or other body which will become the eventual recipient of the project archive. Consideration should also be given at this stage to seeking any additional academic guidance needed.

4.8 The compilation of a project design is essentially a four stage process and should be carried out in the following sequence:

- Background: sufficient relevant background information should be studied to allow a reasoned estimate to be made of the nature of the data which will be gathered, for example their type, quantity, condition, and significance. This may draw on the results of a prior evaluation project (see 4.1 to 4.4)
- Aims and objectives: consideration of the potential character of the data, as identified above, will assist in formulating specific project objectives. These will include the academic objectives of a project, termed the research design
- Methodology: the proposed data collection methods should be described, making clear why those advocated are the most appropriate and will best ensure that the data collected can fulfil the project's aims as set out above. No archaeological report is better than the data upon which it is based: establishing appropriate recording and recovery strategies is crucial to a project's success
- Resources and timetable: the recording and recovery strategies defined above will affect the character and quantity of the data collected, and form the basis of the justification for the timetable, staffing, equipment, and funding level proposed

Planning for fieldwork

4.9 The aim in undertaking a programme of fieldwork should be to produce a comprehensive site archive as defined in appendix 3. This can only be properly achieved if the resources needed for fieldwork are correctly estimated and deployed. Where this is done, time will not be wasted at a later stage attempting to solve problems which were not properly addressed during excavation. An appropriate level of resourcing will ensure maximum efficiency and allow the subsequent assessment phase to go ahead with the minimum of delay. Particular attention should be paid to the following areas:

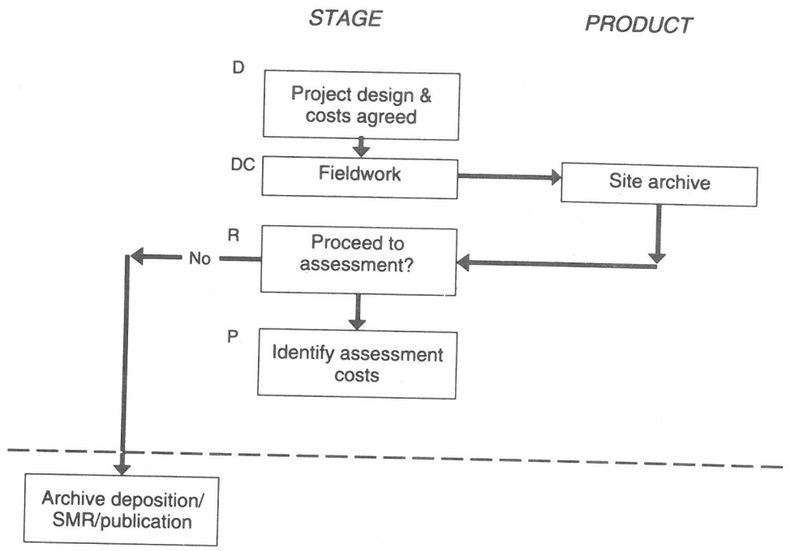
- Records: adequate time should be allowed to ensure that records are checked and internally consistent. A system for detecting errors should be established, and particular effort should be made during fieldwork to rectify errors as soon as possible. The use of computer-based recording systems can be an invaluable aid in this respect
- Artefacts: specialists should be asked to identify work which needs to be carried out on site, and their advice should be sought on how this should be done. Basic artefact sorting and identification such as spot-dating can help to inform decisions on fieldwork strategy, and raise fresh questions in time for them to be appropriately addressed. Arrangements should be made for the proper

cataloguing and storage of artefacts. It may well be appropriate to involve a museum professional in this stage of the planning process. Allowance should be made in the project timetable and budget for any occasional visits by conservators and other specialists which may prove necessary

- Archaeological science: specialists need to be asked to identify any work which should be carried out on-site, and their advice should be sought on how this should be done. While some material will always be best handled under laboratory conditions, some environmental samples, for example, can more efficiently be dealt with on-site. Material should be properly catalogued and stored, following appropriate professional advice, and allowance should be made in both the project timetable and budget for any necessary occasional site visits by archaeological scientists.

4.10 The site archive is a primary resource and must be properly curated and stored so that it can be consulted in the future. The project manager should ensure that appropriate advice on conservation needs is available to the project team. Long term storage is a museum responsibility, and it is essential that contact with a museum professional is made at a sufficiently early stage. Museum requirements must be established and appropriate resources allocated. The United Kingdom Institute for Conservation (UKIC)'s *Guidelines for the preparation of excavation archives for long term storage* (Walker, 1990) and the Museums and Galleries Commission's *Standards in the museum care of archaeological collection* (in prep), in particular the section headed 'Standards for the preparation and transfer of archaeological archives' should be referred to when planning for curation.

5 Phase 2: fieldwork



Key: P = Proposal D = Decision DC = Data-collection R = Review

Decision-making

5.1 When the project design is complete, approval will have to be sought from the project sponsor and those responsible for the care of the site to be excavated. The fieldwork phase cannot commence until the proper approval has been given. Agreement to proceed may include provision for progress monitoring by the project sponsor.

Data-collection

5.2 It is likely to be at this point that the full project team will be brought together. This will consist of the core team (see 4.6) plus site staff and relevant consultants. It is essential that data-collection does not commence until the project manager has ensured that all involved are thoroughly acquainted with the project design. Particular attention should be paid to ensuring that:

- there is a common understanding of the objectives of fieldwork and of each individual's role in it
- individuals are clear about their own role and their relationship to other team members
- recording and recovery policies and on-site procedures are explained, and any necessary collective or individual training undertaken

5.3 There is a potential danger during data-collection, that funds allocated to creating a high quality ordered site archive may be diverted to intensifying fieldwork. The project design will however have specified the expected level of resourcing needed for different aspects of the fieldwork, and particular attention should be paid to ensuring that resources remain appropriately allocated within that framework. If any area of a project is not conforming to the agreed project design steps should be taken either to bring the project back on course, or where necessary, to revise the project design. Any changes in priorities, methodologies or timetabling should be discussed and agreed with other members of the project team, as they may have implications for other aspects of the project. Any alterations to the project design should be made by authorised staff and should be recorded; they should also be reported to the project sponsors, especially if they have not been involved in their formulation.

Review

5.4 The site archive comprises the excavation records and any materials recovered. It should be quantified, ordered, indexed, and internally consistent. It should also contain a site matrix, a site summary (a short report giving a preliminary account of the discoveries), and brief written observations on the artefactual and environmental data.

5.5 Once the site archive has been completed it will be possible to move on to the review stage to see if the original or redirected project objectives have been achieved, and whether it is necessary to proceed to a formal 'assessment of potential for analysis' as the next phase of the project. The speed and efficiency with which this can be done will be directly dependent on the resources given to on-site recording and storage.

5.6 In some cases review of the quality, character, and significance of the data-collection may indicate that a formal assessment phase is unnecessary. In such cases a certain level of published information should be regarded as an irreducible minimum (see appendix 7). Steps must be taken to complete an SMR entry, arrange for the deposition of the archive, and publish a brief report summarising the results of the project.

5.7 Where the review indicates that a formal assessment phase is required, an interval to plan this assessment work programme will be needed. At this stage steps must be taken to make an initial entry into the SMR.

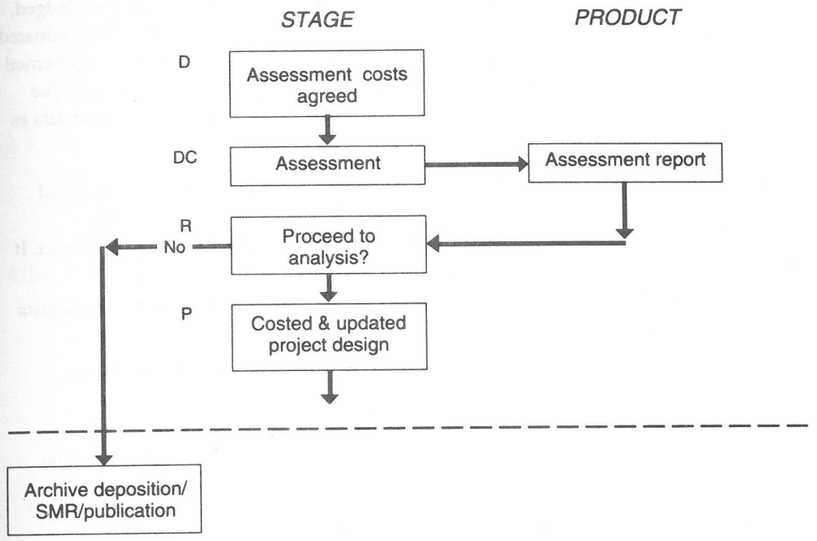
Planning for assessment

5.8 The project team is responsible for formulating a programme for the assessment phase. Different types of material will require different assessment methods. It is consequently most important that the views of all the relevant specialist contributors as well as team members should be sought when estimating costs and preparing a timetable.

5.9 The most time-consuming and costly aspect of the assessment phase is likely to be supplementary data-collection (see 6.6 to 7). As far as possible the need for supplementary data must be identified and estimated for when planning the assessment phase.

5.10 The internal programming of the assessment phase is critical. Most assessments will involve a sequence of events which must be identified and appropriately timetabled. For example, if money and time are not to be wasted bulk sample processing and sorting has to wait for the pottery specialist to decide, in collaboration with the team member assessing the site stratigraphy, which contexts are worthwhile; bone assessment has to wait until the bulk samples have been sorted; work on the fish bones has to wait until they have been extracted from the mammal bones; and integration of assessment results must wait until all the individual specialist assessments are ready. Consequently all relevant staff have to be consulted before a programme for this phase can be finalised.

6 Phase 3: assessment of potential for analysis



The nature and purpose of assessment

6.1 Some of the most challenging problems facing those managing archaeological projects centre on post-excavation work, in particular the widely acknowledged need to be selective when planning this work. It is therefore crucial that academic and archaeological objectives are carefully defined before any work takes place. This is essential to ensure that appropriate selection is made and a publication produced which accurately reflects the value of the data-collection (see 1.5, 3.4). It has become clear that, to ensure post-excavation funding is allocated to best effect, and post-excavation planning decisions are firmly based, there is a need for a formal review phase, here termed 'assessment of potential for analysis'.

6.2 The assessment phase is a pivotal point in the execution of an archaeological project. Its purpose is to evaluate the potential of the data-collection to contribute to archaeological knowledge and to identify the further study necessary. The complexity of the assessment phase and the amount of time required will vary; for example deeply stratified urban sites will probably require more detailed work on the stratigraphy than rural sites with a limited occupation span. It should however be stressed that any work undertaken should be directed towards allowing decisions to be made about the potential of the data and the nature of the future programme; no detailed analytical study should be undertaken until the assessment phase has been completed. Considerable breadth of academic knowledge is needed to make the necessary judgements; the best available staff should be used for assessment. Alternative sources of expert advice should be sought if not available within the project team.

6.3 A key aspect of this assessment phase, which deserves emphasis at the outset, is the need for a co-ordinated approach. The importance of integrating artefact and environmental evidence with the stratigraphic record has long been acknowledged, but not always fully exploited. Too often programmes of analysis have been initiated on related groups of data with insufficient contact between the specialists concerned and no cross-reference made until the final stages of publication preparation. The assessment phase must establish the full potential of the properly integrated data as early as is practical.

6.4 The end-product of the assessment phase is an assessment report, the contents of which are more fully defined in appendix 4. This report will include all the information necessary to make decisions about the future direction of the project. It is formed of three principal parts:

- a factual summary, characterising the quantity and perceived quality of the data contained in the site archive
- a statement of the archaeological potential of the data contained in the site archive
- recommendations on the storage and curation of the data contained in the site archive, and the timescale on which this should be achieved. (An appropriate museum professional should be involved in this aspect of the assessment)

Decision-making

6.5 Costs and a timetable for the assessment phase must be agreed with the project sponsor before work can commence. If appropriate these may also be presented to those responsible for the care of the excavated site for their approval. Agreement to proceed may include provision for progress monitoring by the project sponsor.

Data-collection

6.6 The data to be collected at this stage are specified in more detail in appendix 4. In some cases the value of the material being assessed will be self-evident. If, for example, a large collection of securely stratified environmental data from a previously unresearched context type is recorded in the site archive, its potential can easily be characterised because it is known to be unique. Equally, a small collection of highly fragmented pottery from a site with high residuality and a long occupation span can be identified as having no apparent potential without supplementary records being necessary.

6.7 In other cases further work will be needed to establish the archaeological potential of the material. The methods used will vary according to the type of material and the extent to which it is already understood. For example collections of pottery largely represented in existing regional type series may be rapidly scanned to achieve an adequate assessment, whereas for environmental material such as parasite eggs or pollen a sample of the material may need to be studied in detail to estimate its potential. It must be stressed, however, that any processing and recording should only be done to demonstrate that a particular research topic has potential. It is important that those responsible for managing and monitoring the project during this stage should ensure that this is the case.

6.8 Before the bulk of the environmental and artefactual data is assessed it is important that all contexts containing residual or contaminated material are identified. In order to do this, initial artefact dating (eg ceramic, glass, clay pipes) should be integrated with the site matrix (see appendix 3). This will inform those working on material where contamination or residuality cannot be observed, of contexts for which further study may be unprofitable.

6.9 It is of crucial importance that all assessors of material are adequately briefed. It is the project manager's responsibility to ensure that all those involved are provided with the material for assessment in a suitably ordered and accessible manner, and with the relevant background and contextual data.

6.10 Artefact and environmental specialists should be provided with:

- an up to date copy of the project design
- a copy of the site, environmental, and finds summaries (see appendix 3)
- specific information on the individual contexts from which the material referred to them for assessment comes including:
  - context type
  - position in the stratigraphic sequence, and/or relationship to major structures
  - approximate date where known, or details of how this is to be derived
  - degree of contamination or residuality
  - recovery method
- sufficient data to allow contexts to be grouped together to provide useful and appropriate analytical units for study. Analysis work depends to a great extent on such groupings, rather than on the deductions that can be drawn from a single context. Groupings are likely to be defined primarily by chronology (eg by provisional phases or groups of similar phases), and secondarily by structural context or context type
- details of any questions the project manager wants the specialist to consider

6.11 Artefact and environmental specialists should liaise closely with conservators during this stage to ensure that appropriate recommendations can be made on both immediate and long-term conservation requirements.

6.12 Assessment and selection of artefactual and environmental material for further study is now widely practised, but assessment of structural data is less commonly undertaken. More rigorous consideration must be given to justifying the degree of stratigraphic analysis proposed. For example proposing a forward programme which does little more than reiterate context descriptions and relationships that exist in the records and matrix of the site archive cannot be justified. Structural analysis should be directed towards establishing an interpretation of the site record and describing why a particular phasing or interpretation is suggested. Assessment should identify the need for further work on the stratigraphic records in these terms.

6.13 Once assessments have been made of the individual classes of data, the results should be integrated. This is the stage at which all the strands of evidence can be brought together for the first time and their combined potential considered. For example, in isolation a group of pottery from a pit may be of limited significance, but in conjunction with the study of plant remains and animal bone the potential of all the elements may be greatly increased. To be successful this will need a period of intense communication between all the specialists involved. This should be achieved principally through regular meetings of the project team. It is essential that the project manager makes all the material category assessment reports available to all members of the project team, so that the full potential of the site archive can be explored.

Review

6.14 The end-product of the data-collection stage of the assessment phase will be an assessment report. Once this assessment report is written, the project team should review its contents to establish whether it is appropriate to proceed to analysis.

6.15 In some cases this review of the assessment report will reveal that an analysis phase is not appropriate. However, it will still be necessary to prepare a report accurately reflecting the significance of the results for publication (see appendix 7), complete an SMR entry, and arrange for the deposition of the archive.

6.16 Where assessment does demonstrate that the site archive contains material which has the potential to contribute to the pursuit of local, regional or national research priorities, appropriate data should be identified for analysis. When identifying such data it should be borne in mind that such work should be directed towards the final product of a project, the publication. Review should isolate:

- material crucial for interpreting the site which should be published
- material which merits publication for its intrinsic archaeological value outside the context of the site report, for example artefact or environmental studies
- material considered to have no present archaeological potential or relevance

The data identified as appropriate for analysis should be worked up into a formal proposal, which will be expressed as an updated project design.

Planning for analysis: updating the project design

6.17 The purpose of this stage is to put forward proposals for work to be carried out in the analysis phase. These proposals will be expressed as an updated project design, which will define the objectives of the analysis phase and the strategies and resources necessary to achieve them. This process is more fully described in appendix 5. The format of the updated project design is the same as that for the original project design (see 4.8 and appendix 2) with an additional section, 'Summary of potential', which summarises those aspects of the data-collection selected for analysis during the assessment phase.

6.18 All the project team members to be involved in the analysis phase should contribute to the formulation of the updated project design. Some materials will need to be worked on sequentially by more than one specialist. It is critical that such sequences be identified at a sufficiently early stage in consultation with all concerned, so that an achievable and agreed programme can be formulated.

6.19 Additional guidance external to the project team may be sought at this stage, both to focus and fine tune the formulation of research objectives, and consider the available report format options. Academic and editorial comment can more usefully be canvassed at this stage than at a later stage in the preparation of a report text, when alteration is more difficult and more expensive.

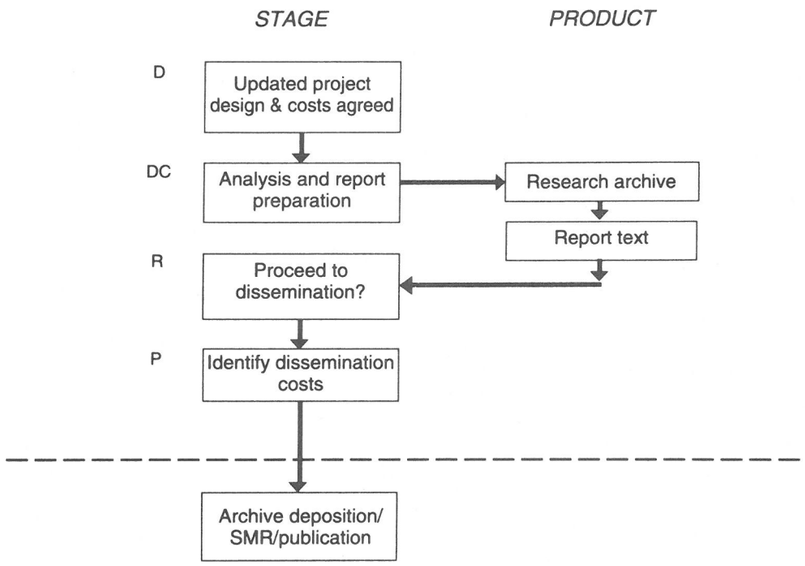
6.20 Planning for the analysis phase should bear in mind the two objectives to be met, namely the production of a research archive and of a report for publication. Analysis should be planned with the publication firmly in view, and the research archive should only contain data which derive from the analysis of material intended for publication. The urge to accumulate data not specified in the updated project design as part of the research archive or publication must be resisted.

6.21 When establishing the resources needed for analysis therefore, allowance must be made for the cost of synthesising the research archive and of producing a report for publication. The scope of the report will have been defined in the updated project design as a publication synopsis. Preparation of a report to publication standard requires the performance of a wide range of related tasks which can be easily overlooked when planning for analysis: it is most important that these are identified at an early stage (see 7.6, and appendix 7). Contact should be established at this stage with the proposed publication outlet to establish cost implications of editorial or reprographic requirements.

6.22 It must also be borne in mind that transfer of the report draft to an editor for publication is not the end of the process. Consideration must be given to the need for provision, once the editorial processes are underway, of time for team members to answer queries, correct proofs, and act as general liaison in the period between delivery to the publishing body and the eventual appearance of a printed report. The timescale on which this will be done will depend on priorities established by the publishing body, who should be consulted about the likely timescale and editing needs.

6.23 Any additional resources necessary to complete the project archive (see 8.2) must also be identified at this stage. The assessment report will have identified any material in the site archive for which special arrangements for long term curation need to be made. Discussion with the museum or other archive recipient will have been held earlier in the project (see 4.10), and it may now be necessary to re-establish contact and make a formal agreement on a mutually acceptable transfer date for the project archive.

7 Phase 4: analysis and report preparation



Key: P = Proposal D = Decision DC = Data-collection R = Review

Decision-making

7.1 When the updated project design document is complete, approval of the project design should be sought from the project sponsor and those responsible for the care of the excavated site. Analysis cannot commence until the updated project design has been approved. Agreement to proceed may include provision for progress monitoring by the project sponsor.

7.2 A copy of the publication synopsis should be sent to the appropriate editor at this stage to ensure that it conforms to requirements.

Data-collection and report preparation

7.3 At this stage it is essential that all members of the project team are fully briefed. The project manager should ensure that all those involved have contributed to the formulation of the updated project design and are thoroughly acquainted with it. Particular attention should be paid to ensuring that:

- there is a common understanding of the objectives of the analysis phase
- individuals are clear about their own role and their relationship to other team members
- recording and analytical strategies are explained and any necessary additional collective or individual training undertaken

7.4 Data-collection should be approached in two stages:

- compilation of the research archive, involving detailed work on the stratigraphy, artefacts and environmental data and the production of catalogues, illustrative material, and draft report text
- selection of data from the research archive to produce an integrated report text for submission to editors

Assessment will have removed many of the uncertainties about the results of analysis, but until the work has been done the exact content of the publication cannot be finalised.

7.5 It will be important to ensure that resources for analysis are directed towards achieving the stated academic objectives and not towards other interesting areas of enquiry outside the scope of the planned publication. It is also important that classes of material which cannot fulfil the potential predicted at assessment are identified at an early stage to allow modification of the work plan and allow re-allocation of resources. Any changes in priorities, methodologies or timetabling should be discussed and agreed with other members of the project team, as they may have implications for other aspects of the project. Any alterations to the project design or report contents should be made by authorised staff and should be recorded; they should also be reported to the project sponsors and if substantial enough to alter significantly the planned publication, editorial approval should also be sought.

7.6 The report should be submitted in a completed state containing all the evidence, analysis, and synthesis the author considers necessary to fulfil the project design. All aspects of text, tables, artwork and other illustrative material, figure and contents lists, list of contributors, camera ready copy (CRC) for fiche, bibliography, appendices, and any other items for inclusion, should be fully integrated and cross-referenced. In effect the submitted report should be in a sufficiently final state for the author to be willing to allow it to be publicly distributed in manuscript. If specific guidelines are not supplied the appropriate British Standards Institute conventions (BS 4148, BS 5261) or the English Heritage Academic and Specialist Publications Branch guides *Preparing your text for publication (1991)* and *Preparing your illustrations for publication* (1991) can be used (see also appendix 7).

Review

7.7 Once a completed text for publication has been produced it should be sent to the project sponsor and other parties for their approval. The advice of an independent academic referee may well be sought by the project team or required by the project sponsor or publishing body at this stage. Referees may be asked for their opinion on the quality of the report and to comment specifically on all or any of the following:

- how far the publication reflects the stated aims of the project design
- whether the publication meets general archaeological and academic standards and priorities
- whether the proposed publication meets the requirements of the publishing body

- whether publication of the report is warranted and whether it meets professional standards

When establishing the suitability of a report for publication, reference can be made to appendix 7.

7.8 At this stage the opportunity should also be taken to review the success of the project as a whole. Consideration should be given to:

- the objectives it has been possible to achieve
- the standard of the work attained
- the accuracy of the time/cost forecasts

Such a review will provide essential feedback for estimating and decision making on other projects.

Planning for publication

7.9 Once the content of the publication text has been agreed the cost of publication must be established. When calculating costs allowance must be made for proof-reading (galleys and page proofs generally, or if typesetting from disc, equivalent but different proofing stages) which will already have been calculated as a project cost (see 6.22).

7.10 A breakdown of the costs of publication and a production schedule should be made in consultation with the relevant editor/publishing body. The production costs incurred by the publishing body will in general include:

- typesetting
- origination of CRC of both text and illustrations, including page make-up
- printing
- marketing/distribution

8 Phase 5: dissemination

8.1 Before the pulication is printed there will be a period during which appropriate members of the project team will liaise with the editorial team about matters of content and presentation, such as dealing with queries and checking proofs. Dissemination may result in a number of different types of publications: a project sponsor may require a more general account of a project's results for example. The need for such publications will have been identified in the project design, and arrangements for their dissemination should also be made at this point.

8.2 Once the final draft report has entered the editorial phase the project archive can be transferred to the recipient museum. The project archive will contain:

- the project design
- the site archive

Depending on the work undertaken after fieldwork it may also contain:

- the assessment report
- the updated project design
- the research archive
- a copy of the report draft submitted for publication
- a copy of the published report
- original artwork, CRC, fiche origination material, plates, and any other items used by the printer in producing the printed report

8.3 The record of the project results previously made in the SMR (see 5.7) should now be updated.

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Appendix 1: project management techniques

(see also main text para 3.3)

Project management is a large subject with a literature of its own. Some relevant topic headings are listed below, and those responsible for managing archaeological projects may usefully pursue these and other management skills further.

A1.1 Teams and team meetings

A1.1.1 It is essential that a team with appropriate knowledge and skills is appointed to undertake a project. Once the team and its manager have been appointed the success of a project will largely depend on how effectively its members communicate with one another.

A1.1.2 Representatives of the project team should be selected to attend regular meetings. All relevant areas of interest should be represented (eg archaeological scientists, artefact specialists, etc). Project sponsors may also be invited to attend team meetings.

A1.1.3 The purpose of team meetings is:

- to maintain a constant critical view of the project's objectives and make any necessary adjustments to the project design
- to ensure that progress and expenditure accord with the forecast
- to involve all members of the project team in making any necessary adjustments to priorities, methodologies, timetabling, or budget
- to inform all members of the project team of progress in areas outside their own particular concern
- to ensure that work is being carried out to an appropriate professional standard

A1.1.4 Records should be kept of the progress reported and the decisions made at team meetings for circulation to all concerned.

A1.2 Estimating

A1.2.1 It is of fundamental importance to establish accurate forecasts of time and costs required. In order to achieve accuracy:

- adequate time should be devoted to forward planning
- representatives of each specialist area within a project should be adequately consulted
- reference should be made to records of time and cost performance of previous projects

A1.3 Controlling time and money: the work plan

A1.3.1 It is necessary to formulate a work plan to ensure that a project operates effectively within its time and cost constraints. The work plan will detail:

- the projected start date
- the projected finish date
- the tasks to be performed
- the order in which they must be performed
- the projected start and finish dates for individual tasks

A1.3.2 There are a number of different ways of representing the work plan for example Gant Charts, Pert Charts. The size and complexity of the project will dictate the best methods of record and display.

A1.3.3 Regular review will be necessary and should be undertaken to ensure that the work plan is adhered to. The effects of planned or unplanned deviation must be considered and steps taken either to return to the original plan or make agreed necessary adjustments.

A1.3.4 Adjustments may necessitate rescheduling or reallocation of resources. The work plan must always be updated to reflect any changes made, and when necessary approval for this must be sought.

A1.4 Resource accounting

A1.4.1 Expenditure of time and money can only be successfully controlled if it is recorded. All members of a project team should maintain an appropriately detailed record of time spent on project tasks. It should be the project manager's responsibility to define the task headings under which activities are recorded, and the appropriate level of record, so that task records can be grouped and general trends observed. Tasks will range from project specific activities to more general headings, for example attending team meetings.

A1.4.2 The project manager should also be responsible for ensuring that an appropriate record is kept of cash-flow.

A1.5 Monitoring

A1.5.1 Project sponsors may well wish to satisfy themselves that a project is being run efficiently and to the agreed specification. The level of monitoring will vary in accordance with the sponsor's requirement and the needs of specific projects. The level and form of monitoring should be agreed between the sponsors and the project manager at an early stage. Monitoring may be carried out by a representative of the sponsor attending some or all team meetings, by regular contact with the project manager, or by other more or less detailed involvement.

A1.5.2 The purposes of monitoring at every phase are:

- to ensure that the objectives and methodologies defined in the project design are being adhered to
- to discuss and agree necessary changes to the project design
- to ensure that the work is being carried out to an appropriate professional standard
- to ensure that progress accords with the time/cost forecast
- to discuss any aspect of the project of legitimate concern to the sponsor

A1.5.3 Monitoring of an archaeological project will principally take place during phases 2 to 4 (fieldwork, assessment, analysis, and report preparation). In order to monitor a project effectively the project monitor must have at each stage:

- the current project design
- the current work plan
- details of the budget for the current stage and overall
- the opportunity to discuss and examine work in progress

A1.5.4 If monitoring reveals that any of the necessary criteria are not being fulfilled, steps must be taken to establish the reasons for this. Consideration must be given to whether or not the project design is still valid, and where appropriate adjustments must be made to the work programme to ensure that the re-defined targets can be met.

A1.5.5 Records of monitoring should be kept and circulated to all concerned.

A1.6 Project management packages

A1.6.1 A large number of project management software packages are now available. These packages provide an effective tool for planning, controlling and adjusting project programmes.

Appendix 2: project design specification

(see also main text paras 4.8 and 6.17)

A2.1 Background

A2.1.1 Description of the area/site to be examined:

i) location including grid reference, abbreviated if necessary to protect the site from unauthorised interference

ii) map/location plan

iii) the period and type of site

iv) the condition of the site, and the anticipated state of preservation of its deposits

A2.1.2 Previous work:

i) a short synopsis of previous archaeological work

ii) the location of existing site archives, and the extent to which they have been consulted

iii) the results of any evaluation fieldwork undertaken

A2.1.3 Reasons for and circumstances of the project:

i) the threat or other justification for carrying out the proposed work

ii) the legal status of the site

iii) the timing of the project

iv) arrangements for access agreed with landowners and site occupiers

v) proposed reinstatement (after excavation)

A2.1.4 Archive deposition:

i) where is it intended that the excavated material and records should be deposited and curated. This must be discussed and agreed with landowners, museum authorities, and other relevant bodies

ii) any specific recording requirements resulting from the decision on final location of the material

iii) any specific environmental or other conditions anticipated to be necessary for the optimum storage of site data

A2.2 Aims and objectives

A2.2.1 Academic or research design:

The following should be described and justified:

i) the contribution the project is expected to make archaeological knowledge, in the context of the current framework of local, regional, and national research priorities. For all projects (not just those funded by English Heritage)

reference may usefully be made to *English Heritage funding criteria* (1991). In summary the following attributes of a site should be considered:

- survival/condition
- period
- rarity
- fragility/vulnerability
- documentation
- group value
- potential

ii) the potential for integrating a project with existing archaeological research for example funded by the Science and Engineering Research Council (SERC) or a university

iii) opportunities for integrating aspects of a project with related non-archaeological research for example if the site is within a Site of Special Scientific Interest (SSSI)

iv) likely possibilities for future research which may emerge from the project

v) opportunities for experimental work

A2.2.2 Publication and presentation:

i) the likely scale of the published report (eg monograph, article or note) and the intended place of publication. The relevant editor or editorial committee must be consulted

ii) arrangements made for display and public information, including possibilities for community involvement or liaison with museums, schools etc

A2.3 Methods statement

A2.3.1 Particular attention should be paid to the relationship between the data which it is anticipated will be gathered, the methodological approach to be applied to these data and the project's objectives (as expressed in A2.2). The statement should make clear how the methods advocated are those best suited to ensuring that the data collected will fulfil the stated aims of a project. The following should be considered in the formulation of a methods statement:

i) the components of a site which will be investigated and those which will not

ii) the different types of data-gathering methods to be used, for example documentary research, survey, photogrammetry, excavation, environmental sampling

iii) the recovery and recording strategies which it is intended to employ during fieldwork, for example sampling of selected deposits, on-site flotation and sieving, finds recovery and processing programmes, and discard policies. These should be related to the different classes of data anticipated from the site, for example structural data, artefacts, environmental material

iv) in those cases where a suitable methodology does not appear to exist, consideration should be given to the necessity for developmental work

A2.4 Resources and programming

A2.4.1 Staffing and equipment:

i) details should be given of the structure and size of the project team and the levels of expertise represented by its component members. The need for any collective or individual pre-fieldwork training should be identified

ii) all the tasks identified in the methods statement should be listed and related to the individual members of the project team

iii) information should be given of the materials and equipment needed to fulfil the tasks defined in the methods statement (eg the hire of heavy plant, flotation equipment)

iv) details, complied in association with a conservator and relevant museum professional, of materials and equipment needed to ensure that the archaeological data collected (eg records, artefacts, environmental material) are appropriately stored and curated

v) details of premises hire, security provision, health and safety provision

A2.4.2 Timetable:

i) details should be supplied of the projected programme of the project through to completion. This should include fieldwork, assessment, analysis, and dissemination

ii) the programme should be expressed on a cascade chart or by some similar form of graphic representation. The cascade chart should show:

- all the tasks to be undertaken in the correct sequence
- the inter-relatedness and interdependence of tasks
- time-critical elements
- the length of time allocated to each task
- the personnel (or grade) allocated to each task
- agreed monitoring points

A2.4.3 Budget:

i) the costs of undertaking the work programme described should be presented making clear the basis of the calculation, for example salary scales, allowance for inflation and any other adjustments

ii) once the tasks directly related to fulfilling the projects objectives have been costed, allowance should be made for other legitimate costs, for example general administrative and managerial tasks, participation in project team meetings, employers liability insurance, compliance with health and safety legislation, monitoring, staff holidays, training etc

iii) cashflow and detailed cost projections should be shown in conjunction with the timetable shown on the cascade chart

Appendix 3: site archive specification

(see also main text paras 4.9, 6.8, and 6.10)

The site archive will contain all the data gathered during fieldwork and must be quantified, ordered, indexed, and internally consistent. The site archive represents the original record of the project's results and must not be amended, even when subsequent research suggests interpretations and conclusions different from those set down at the time of fieldwork. If at this, or any subsequent stage in a project, material is discarded from the site archive, this fact must be recorded (see also A4.3.2).

A3.1 Materials and records

A3.1.1 The first objective in assembling the site archive is to preserve the integrity of the primary field record. It must be maintained in optimum conditions to ensure the physical survival of the records, ecofacts, artefacts and other specimens. It will contain where relevant the following elements:

- copies of correspondence relating to fieldwork
- survey reports (eg borehole, geophysical, documentary)
- site notebooks/diaries
- original photographic records
- site drawings (plans, sections, elevations)
- original context records
- artefacts, ecofacts and any other sample residues
- original finds records (eg registered finds, bulk finds, artefact dating catalogues)
- records of conservation and x-rays undertaken during fieldwork
- original sample records
- original skeleton records
- computer discs and printout

A3.1.2 When compiling the site archive, the need for good images for security copying should be borne in mind. It is possible, for example, to fiche directly from drawings if the correct materials, letter and number size etc are used and staff are trained appropriately.

A3.2 Matrix and summaries

A3.2.1 In addition to these elements the site archive should also contain a brief objective statement summarising the nature and quantity of the various classes of data collected, which completes the task of observation and prepares for review without moving into the areas to be covered by the assessment and analysis phases. This summary should be compiled by those most closely involved with the fieldwork as soon after fieldwork has been completed as is possible. The following documentation should be produced:

i) a full site matrix: all stratigraphic relationships should be cross-checked and the stratigraphic sequence of the site firmly established. It may be supplemented by annotated lists of contexts or sketch plans as appropriate

ii) a summary account of the context record: not at this stage an exhaustive descriptive account of the site, but rather a short report describing the site and synthesising the context record (say 2–5 pages of text). The site summary and matrix together represent a mechanism for taking forward an understanding of a site while acknowledging that interpretation may well change as work proceeds through the succeeding assessment and analysis phases

iii) a summary of the artefact record: a brief statement of the range, quality, condition and any other pertinent details of the artefact collection

iv) a summary of the environmental record: a brief statement of the range, quality, condition and any other pertinent details of the environmental material collected

Appendix 4: assessment report specification

(see also main text paras 6.4 and 6.6)

A4.1 Factual data

A4.1.1 For each component of the project (eg stratigraphic/structural, artefactual, environmental) there should be a statement setting out:

i) the quantity of material and or records

ii) the provenance of material: this should include comment on provisional dating, and evidence for contamination or residuality

iii) the range and variety of material: this should include comment on any bias observed due to collection and sampling strategies

iv) the condition of material: this should include comment on the extent to which an assemblage is likely to be affected by preservation bias, and comment on its potential for long-term storage

v) the existence of primary sources or relevant documentation which may enhance the study of site data

A4.1.2 The means of collecting the data listed at A4.1.1 should be briefly described (eg rapid scanning, 10% sample recorded, pilot study based on x-radiography).

A4.2 Statement of potential

A4.2.1 This should comprise a considered statement on the value of the data listed at A4.1. The statement should be addressed at two levels.

i) For each material category consideration should be given to:

- questions posed in the project design which the data-collection has the potential to answer
- new research questions resulting from the data-collection
- the potential value of the data-collection to local, regional, and national research priorities

ii) The significance of an individual material category may be greatly enhanced by considering its study with that of inter-related material. The contents of all the material category assessment reports should be considered in this light before an integrated assessment report is prepared. This should summarise:

- site specific questions posed in the project design which the data-collection has the potential to answer
- potential new research topics resulting from the recovery of the data-collection
- the potential value of the site to local, regional, and national research priorities

A4.3 Storage and curation

A4.3.1 This section should be compiled following consultation with conservators and the appropriate museum professional and should contain:

i) comment on both immediate and long-term conservation and storage requirements for the data held in the site archive

ii) recommendations about discarding material from mixed, contaminated or unstratified contexts, where there is no apparent purpose in retention

A4.3.2 In formulating a discard policy due regard must be given to the views of the eventual recipient of the archive, the legal owners of the material, and those responsible for the care of the excavated site (see A3.4).

Appendix 5: updated project design specification

(see also main text para 6.17)

A5.1 Background

A5.1.1 The following should be provided:

i) a summary of the original academic objectives of the project, as expressed in the original project design

ii) a summary of the results of the project to date

A5.2 Summary statement of potential

A5.2.1 Review of the assessment report will have identified:

i) material of critical importance for interpreting the site

ii) material which merits publication for other stated reasons outside the context of a site report

A5.2.2 The perceived academic potential of the data represented by i), and by ii) if such material is proposed for analysis, should be briefly explained. The extent to which original objectives may be fulfilled, and new questions have been posed, should be made clear.

A5.3 Aims and objectives

A5.3.1 Academic or post-excavation research design The following should be described and justified:

i) the specific research aims to be addressed during analysis, and the contribution which they are expected to make to archaeological knowledge, in the context of the current framework of local, regional, and national research priorities

ii) details of the the specific elements of the data-collection which will be the subject of analysis, and the academic objectives to which they are expected to contribute

iii) the potential for integrating a project with existing archaeological research for example funded by the SERC or a university

iv) opportunities for integrating aspects of a project with related non-archaeological research (it may be necessary to obtain outside advice on this)

v) likely possibilities for future research which may emerge from the project

vi) opportunities for experimental work

A5.3.2 Publication and presentation

i) a publication synopsis should be prepared, giving the proposed format, structure, and content of the published report. It should include:

- a short summary explaining how the report has been planned to reflect the archaeological significance of the project as expressed in A5.3.1

- a chapter by chapter breakdown of the report, giving a summary of the contents of each and indicating the different methods of presenting the information (eg published text, tables, line drawings, half tones, colour plates, and fiche)
- the anticipated length of the text sections and proposed number of illustrations, tables etc

ii) those aspects of a site which could support a more popular treatment should be identified

A5.4 Methods statement

A5.4.1 The methods statement should make clear how the methods advocated are those best suited to ensuring that data-collection will fulfil the stated aims of the project. The following issues should be considered in the formulation of the methods statement:

i) the recording strategies which it is intended to employ during analysis, for example a basic quantification of all stratified ceramics, with detailed fabric analysis undertaken on identified key groups only. The treatment to be accorded to each type of data should be described, for example structural data, human bone

ii) in those cases where a suitable methodology does not appear to exist consideration should be given to the necessity for developmental work

A5.5 Resources and programming

A5.5.1 Staffing and equipment

i) details should be supplied of the size of the project team and the levels of expertise represented

ii) all the tasks identified in the methods statement should be listed and related to the role and responsibilities of the individual members of the project team and the need for any collective or individual training identified

iii) details should be given of the materials and equipment needed to fulfil the tasks defined in the methods statement

A5.5.2 Timetable

i) details should be supplied of the projected programme of the project through to completion, ie analysis and dissemination

ii) the programme should be expressed on a cascade chart or by some similar form of graphic representation. The cascade chart should show:

- all the tasks to be undertaken in the correct sequence
- the inter-relatedness and interdependence of tasks
- time-critical elements
- the length of time allocated to each task
- the personnel (or grade) allocated to each task
- agreed monitoring points

A5.5.3 Budget

i) the costs of undertaking the work programme described should be presented

ii) once the tasks directly related to fulfilling the project's objectives have been costed allowance should be made for other legitimate costs, for example general administrative and managerial tasks, participation in project team meetings, monitoring, training, holidays etc (see also appendix 1)

iii) cashflow and detailed cost projections should be shown in conjunction with the timetable shown on the cascade chart

Appendix 6: research archive specification

(see also main text para 6.20)

A6.1 Catalogues and other records

A6.1.1 The research archive will be derived from the work done during the analysis phase and will comprise: stratigraphical/structural, artefact, environmental, and other catalogues and all other records as well as details of the methods and selection strategies used in each case. Each separate data group should be cross-referenced to related data groups, to the final publication, and if necessary to a general context concordance. These should be supplemented by indices to allow users maximum accessibility to the contents. The archive will contain some or all of the following elements:

- context information: recording (on duplicate copies) any amendments to original field records resulting from analysis
- photographic catalogue: details of all photographs taken as part of analysis
- photographs: photographs taken as part of analysis
- stratigraphic drawings: any amended versions (on copies) of original site plans and sections cross-referred to earlier versions
- object catalogues: details of items selected for analysis, publication and record drawings, and the location of objects
- object drawings: object drawings undertaken as part of analysis either as record drawings or for publication
- x-ray catalogue: details of all x-rays taken as part of analysis cross-referred to object catalogue
- x-rays: x-rays taken as part of analysis, cross-referred to objects
- conservation records: details of conservation undertaken during analysis, cross-referred to objects conserved
- sample catalogues: details of samples selected for analysis
- human bone catalogues: details recorded for analysis
- animal bone catalogues: details recorded for analysis

A6.2 Analytical reports

A6.2.1 Report text derived from the above material, and which will form the basic text from which the final publication will be prepared, comprising:

i) site narrative: an interpretative structural and stratigraphic history of the site, illustrated by maps/plans/elevations and sections. It should be possible to relate this back to the site records listed above

ii) artefact reports: the full text, accompanying data, and illustrations relating to those artefacts selected for analysis. It should be possible to relate this back to the object catalogues, and to the final publication text, especially where individual reports are not reproduced in full

iii) environmental reports: the full text, accompanying data, and illustrations relating to environmental data selected for analysis. It should be possible to relate this back to the environmental catalogues and to the final publication

Appendix 7: guidelines for the preparation of published reports

(see also main text paras 5.6, 6.15, 6.21, 7.6, and 7.7)

A7.1 Minimum requirements

A7.1.1 The published report of an archaeological project should always contain the following information:

i) the research objectives as expressed in the project design and the updated project design where applicable

ii) circumstances and organisation of the work and the date at which it was undertaken

iii) identity of the individuals/organisation by whom the work was undertaken

iv) summary account of the results of the project

v) summary of the contents of the project archive, where it is housed and how it may be consulted

A7.1.2 Reports of fieldwork projects should additionally give:

i) the national grid reference (suitably abbreviated if publication of the exact site location is not in the general interest, or if it is necessary to restrict public access)

ii) the parish

A7.2 Report-writing criteria

A7.2.1 When writing up the results of a project consideration should be given to the following:

i) the report should appropriately reflect the importance of the results of the project and deal adequately with the site's social, political, and historical context

ii) the interpretation of the site should be justified by the evidence presented. Ambiguities in the data base should be discussed, and where more than one interpretation is possible the alternatives should be presented (at least in summary)

iii) the report should present information about what was found in a well balanced logical, accessible, and structured way. It should be immediately intelligible to and usable by those who know nothing about the site

iv) the extent to which the objectives of the project have been fulfilled should be discussed, including a critical assessment of the methodologies employed

v) the report should be written clearly and concisely, and should make appropriate, consistent, and economical use of other methods of data presentation for example tables, plans, or photographs (it is important to consult the publication editor if innovative presentation methods are necessary, as publication costs may be increased)

vi) specialist reports and their supporting data should be carefully chosen and given their proper value. Specialist contributors must be involved in or informed of editorial decisions affecting the presentation of their work in print

vii) all the constituent parts (text, figures, photos, and specialist reports) should cross-refer adequately. Readers should be able to find their way around the report without difficulty

viii) attention should be drawn to areas of future study potential which it has not been possible to explore fully within the limits of the agreed project design

A7.3 Production criteria

A7.3.1 Consideration will have been given in producing figures and typescript to any notes for authors supplied by the publishing body. As part of the process of producing the report draft consideration must be given to the following:

i) wordprocessing must be competently done and output checked by the contributor responsible for the original work. This is especially important as much work can be saved by accuracy at this stage, particularly as typesetting from disc is used increasingly to produce archaeological reports and accuracy avoids extra re-keying and correction stages

ii) good quality clear prints of half tones and colour negatives for colour plates should be selected at an early stage in the preparation of the report draft as they must be available to the editor with the rest of the report draft

iii) the presentation of line drawings and tables should also be discussed and agreed at an early stage in report preparation, and the art work must be available to the editor at the same time as the report draft

iv) figure, table, and photograph captions should also be drafted at an early stage, and should in general be supplied as text to be be typeset, not as Letraset or stencil lettered directly onto the figure artwork

v) the bibliography should be complete, checked, integrate all contributor's bibliographic contributions, observe BSI, and use conventions compatible with the house style of the publishing body

vi) errors are the responsibility of the authors and should, so far as possible be identified and rectified before the editorial processes begin

vii) text supplied to the editors should incorporate all revision necessary as a consequence of internal and external refereering. It must be established with the publishing body at an early stage in the production processes what their refereeing requirements are, as these may differ from those of the sponsors, and incompatibility is best anticipated and resolved at an early stage

viii) it is more cost effective to agree on format and presentation of material with editors at an early stage. Alteration of report presentation during the editorial process is uneconomical and leads to production delay

ix) in-house editing by the project team can save time, but should only be done after consultation with the publishing body, and must take due consideration of the style and format of the published report if it is not to waste time and resources

x) indexing is a specialist skill, best done by a trained professional. Where required they cannot be produced until the report is at page proof stage, and are generally commissioned by the publisher. Special requirements, or a wish to be involved, should be discussed at an early stage in the editorial processes