ARCHAEOLOGICAL SITE MANUAL

Museum of London Archaeology Service

Third edition - 1994

museum of LONDON

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The cover illustration shows an interpretative plan drawn after post-excavation assessment and detailed analysis of many individual single context plans and other records. This plan shows part of a large building constructed in the first half of the 2nd century AD beside the Walbrook, in the centre of Roman London. The archaeological site (site code LHY88) was situated in the middle of a modern street, Lothbury, and different areas of the site were excavated at different times (explaining the irregular outline of the excavations). Each time the site records were made consistently, however, according to the system described in this manual, and could be combined to produce a single interpretation of the sequence of events. (A photograph of part of these excavations appears in Fig 40.)

ACKNOWLEDGEMENTS

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CONTENTS

(Further information about this recording system can be obtained from MoLAS, 1 London Wall, London EC2Y 5EA, England.)

1. INTRODUCTION

This manual is a guide to the compilation of archaeological site records – drawn, written or photographed in the course of fieldwork – using in most cases a system for recording single contexts one at a time. A 'context' is simply a unit of record, and is usually defined stratigraphically.

The original manual on which this is based was published in 1980 by the Museum of London's former Department of Urban Archaeology (DUA). A revised and much expanded version of this manual was produced in 1990, accompanied by revised recording sheets. This is the third edition of the manual, produced by the Museum of London Archaeology Service (MoLAS), which was created in 1991 by the merger of the Museum's former DUA and Department of Greater London Archaeology.

This manual has been designed for use in the field and covers the methods and techniques employed by MoLAS in both recording and excavation. It is arranged in sections in a logical sequence from simple contexts such as deposits and cuts, through the associated activity of environmental sampling, to more complex features such as masonry and timber structures. Further sections deal with specialised aspects of fieldwork, such as skeleton and coffin recording, finds recovery, photography and surveying, and the manual concludes with specifications for the contents of a site archive.

The information presented here should enable any archaeologist to undertake most recording and excavation tasks without the need for further reference. Nevertheless, the detail with which any particular type of feature or method can be discussed is limited, and in some circumstances it is important to seek specialist advice. MoLAS employs specialists in finds, timber recording, environmental archaeology, archaeological photography and surveying. These specialists have produced manuals of their own, such as a *Finds Procedures Manual*, a *Worked Stone Recording Manual*, and an *Environmental Archaeology Manual*, which can be consulted when necessary. Outside advice may also be necessary (for example, about archaeometallurgy or soil micromorphology).

The manual was written initially for internal use only, but it is hoped that archaeologists everywhere will find it useful. Clearly, since the techniques it recommends were evolved in an urban rescue environment, it is somewhat restricted in scope. In addition, the relatively large size of the Museum of London's archaeological unit and the particular nature of London's archaeology – the emphasis on waterfront timber structures, for instance – has dictated certain working practices. In most cases, however, the principles described here could easily be extended to new working environments or be adapted for use by other archaeological teams.

1.2 STRATIGRAPHY AND THE SINGLE CONTEXT PLANNING SYSTEM

The primary route to an understanding of the activity represented in the archaeological record is through the 'stratigraphic sequence'. The majority of urban archaeological sites are composed of stratified sequences, except those which present contexts isolated by truncation. In other words they have been formed by a process of stratified deposition and removal. (*Any single action, whether it leaves a positive or negative record within the sequence, is known as a 'context'*). Within any such sequence the chronologically earliest context will always be found to be 'sealed' or 'cut' by a chronologically later context. Chronology in this sense refers to the relative date of activity between one context and another.

Any physical relationships that may exist between one context and another are of no assistance in the study of a site's stratification. For example, although a pit may cut through a number of earlier layers it will have only a single implication for the stratigraphic sequence. The only relevant relationship in this case would be that between the latest deposit through which the pit cut and the cut itself, and not with any earlier deposits cut by the pit or any physical contact that may exist between the pit fills and the earlier deposits.

It is important that all contexts within a site are considered equally with reference to the stratigraphic sequence. Although the majority of such contexts may be deposits and cuts, a number of contexts will be composed of structures or artefacts, for example timbers, walls or coffins. If the full stratigraphic sequence is to be properly understood all such contexts must be considered equally.

In recording the stratification of a site by means of a single context recording system a very large number of separate records are produced. The inter-relating of these records is the central process in understanding the site sequence. For this purpose MoLAS has adopted the Harris matrix. This provides a simple method of relating one context to another according to their relative stratigraphic positions and so a record of the sequence can be graphically compiled.

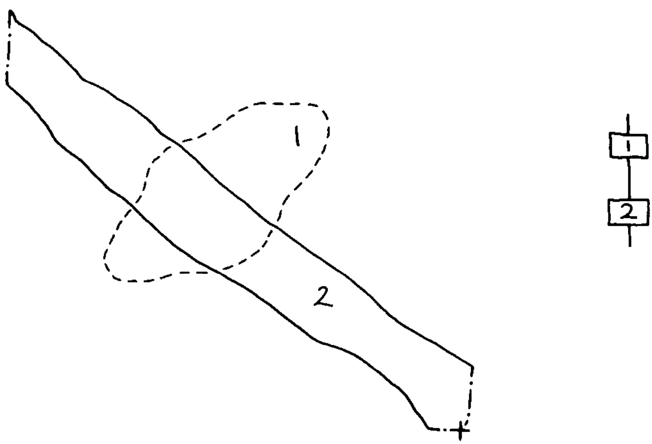
The immediate relationship of any one context to any other is established by the use of a 'single context planning system'. Each context is drawn in isolation, once all overlying contexts have been removed, thus allowing a record of its total extent and relationships to be made. Each context is planned on a separate sheet of draughting film. These drawings can then be overlaid to show the stratigraphic relationships; these relationships can be checked for accuracy and a 'site matrix' compiled.

In a single context planning system stratigraphic relationships are established by the following method:

The latest, uppermost, context is defined, planned and excavated, and its context number is then placed on the matrix.

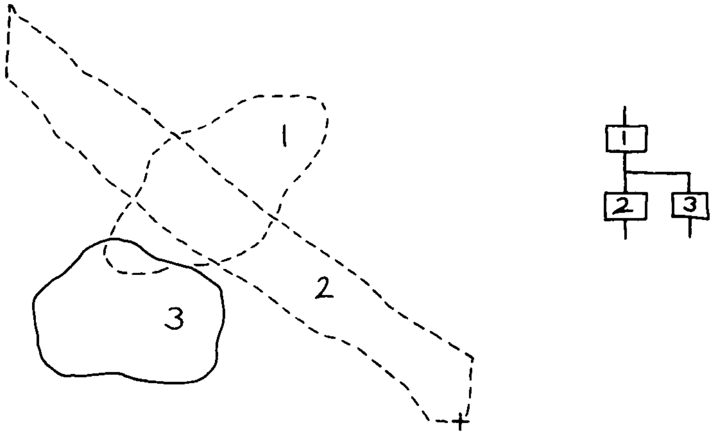
1 Context 1 is planned and placed on the matrix.

The next context (*context* 2) is defined, planned and excavated, its relationship with the previously excavated context is found by overlaying the previous context's plan, and the resulting relationship, if any, is then noted on the matrix.



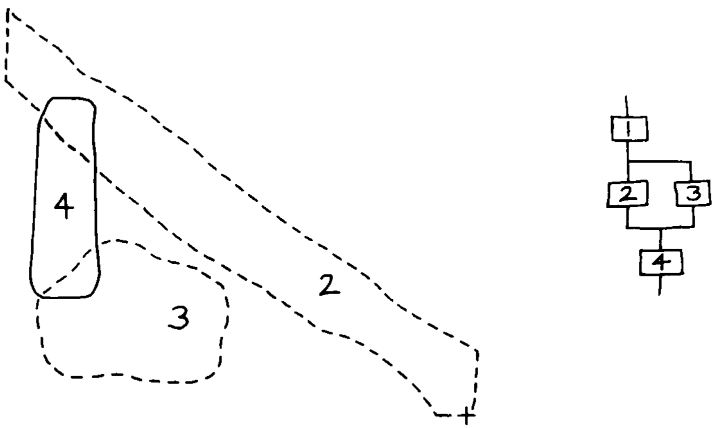
2 The plan of context 1 is compared with the plan of context 2.

A third context is excavated. When the plan for this context is compared with those for the previously excavated contexts, it will be seen that context 3 has a relationship with context 1 but not with context 2. This is recorded on the matrix.



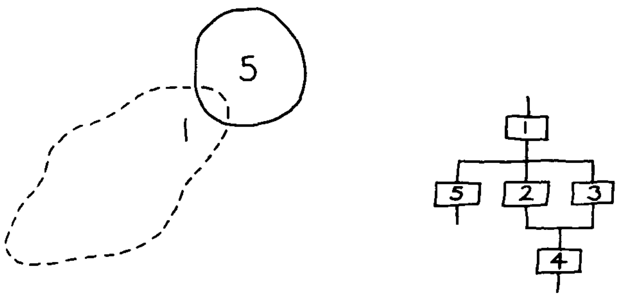
3 Context 3 is found to have a stratigraphic relationship with context 1, but not with context 2.

This process continues throughout the excavation, each new plan being compared with those plans whose context numbers have nothing below them on the matrix.



4 The matrix is added to throughout the excavation by establishing the stratigraphic relationship between each new context and those contexts previously excavated.

If, however, none of these contexts have a relationship with the newly-planned context, the pathway must be followed back up the matrix until a relationship can be established.



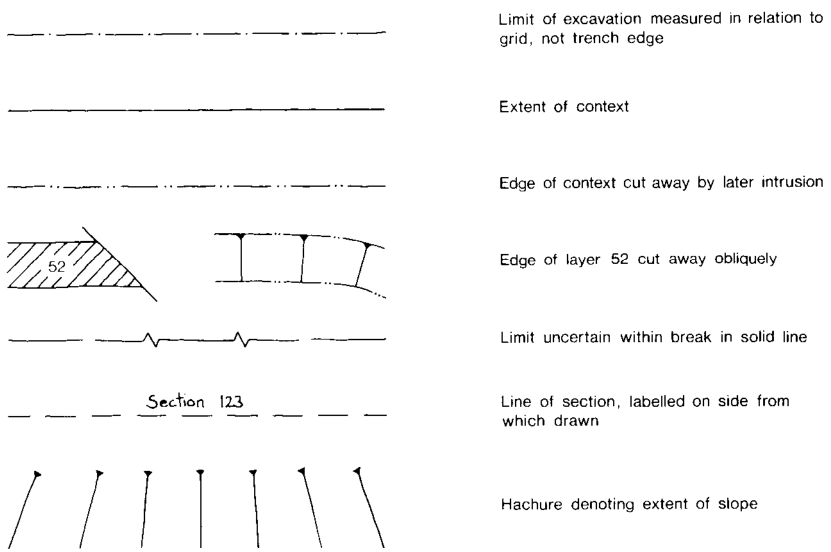
5 The matrix will eventually provide a complete representation of the stratigraphic sequence.

Sometimes site conditions do not allow contexts to be recorded individually, and more than one context must be shown on a single drawing. A section, for example, shows one or more contexts exposed in the vertical plane. A disadvantage of a section drawing is that it cannot show contexts to their full extent and may therefore be misleading. A stratigraphic sequence can be worked out from such a composite record, but it may be wrong. The equivalent drawing in the horizontal plane is a multicontext plan. Neither sections nor multicontext plans can be used to determine and verify a stratigraphic sequence, in the way that successive single context plans can. A section or multicontext plan should have its own matrix diagram drawn as soon as possible, to show how the relevant contexts are thought to interrelate stratigraphically.

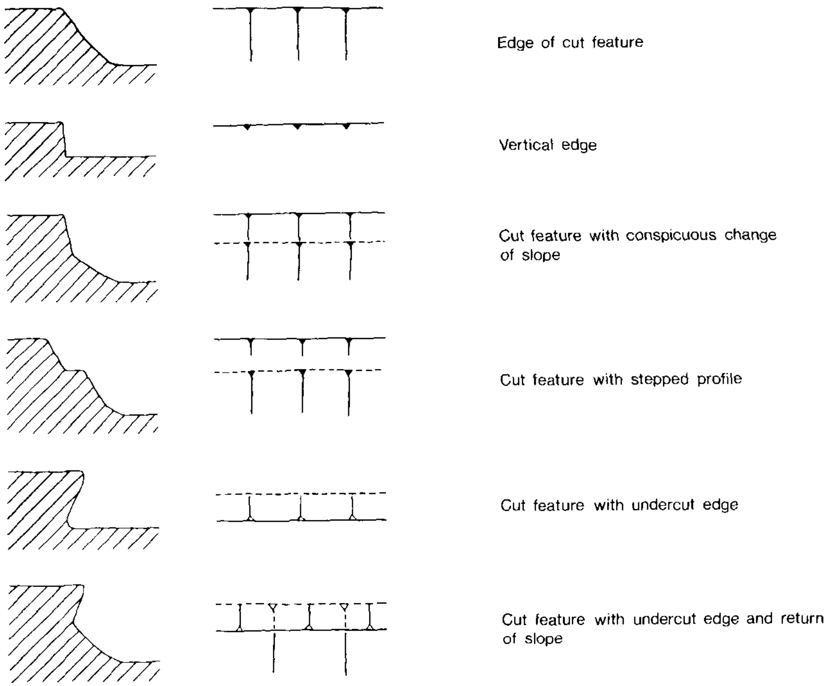
2. RECORDING METHODS AND EXCAVATION TECHNIQUES – THE DRAWN RECORD

2.1 PLANNING OF CONTEXTS

Each context is planned on a separate sheet of gridded draughting film. MoLAS uses pre-cut sheets measuring 290 x 320 mm. This allows an effective drawing area of 250 x 250 mm, with the bottom of the sheet pre-printed for plan identification information. The drawing area represents an area of 5.0 x 5.0 m at a scale of 1:20 (the standard context recording scale). This 5.0 m square relates to the archaeological site survey grid established across the entire area of excavation. Where a single context extends across a number of site grid squares a separate plan sheet should be taken for each square, and the context drawn in its true position in relation to the survey grid. (If the overlap is less than 0.10 m then the context can be drawn on a single sheet, but a note of this overlap should be made on the plan matrix of the adjoining grid square.) All single context plan sheets are assigned the number of the context. (Only multicontext plans and sections/elevations need separate drawing numbers.) Plans are drawn using the conventions shown in Fig. 6:



6 Standard planning conventions (continued overleaf).



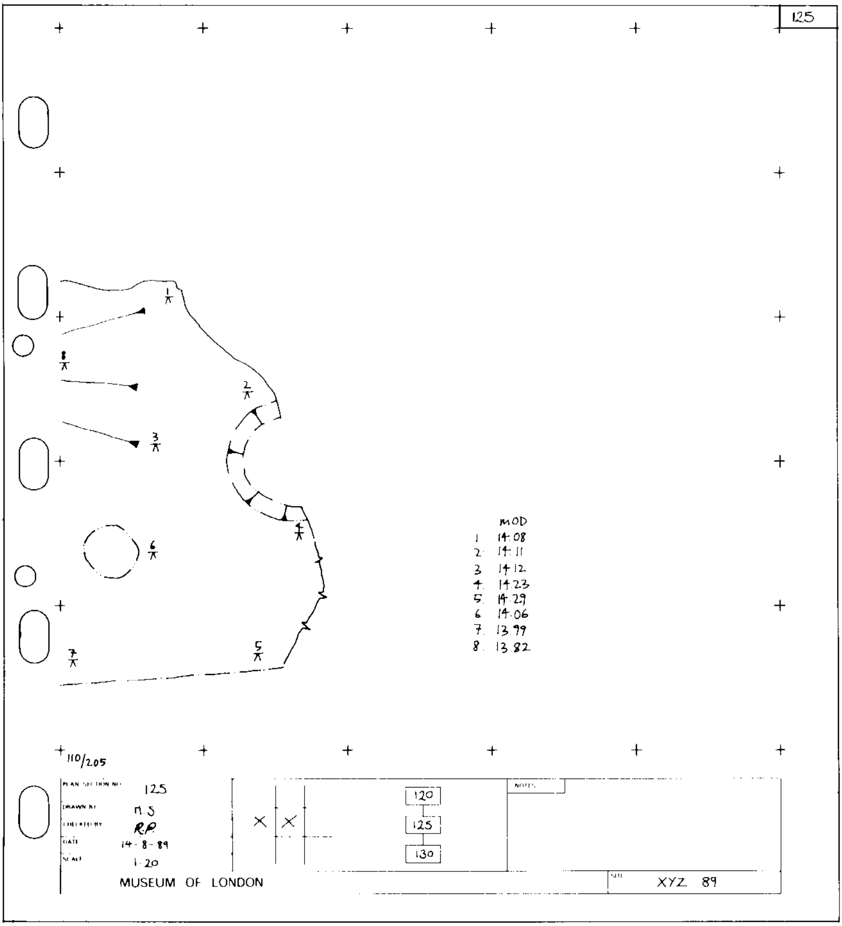
6 Standard planning conventions.

Levels: The positions of the surveyed levels should be accurately marked with the following symbol ⊼. At first these should be numbered sequentially. Once the level readings have been taken, recorded and the true values calculated on the back of the context sheet, they can be transferred to the plan sheet.

North arrow: All plan sheets must be orientated with survey grid north at the top of the plan sheet, and so there is NO need to indicate north on any context plan.

Plan/context number: This should be written both in the box at the bottom of the sheet marked 'Plan/section No.' and in the top right hand corner of the sheet. This will allow the plan to be found quickly when filed.

Drawn by: It is important that the recorder's initials are entered in this box. If there is a problem with the plan when it is checked, the person responsible can then be contacted.



7 An example of a single context plan. The complete plan of this context continues on another sheet, covering the next 5 m grid square to the west.

Checked by: this box should be completed with the initials of the person checking the plan, and with the date on which the plan was checked.

Date: the date on which the plan was drawn; to be completed by the recorder.

Scale: although the standard plan recording scale is 1:20, it is important to note here what the scale actually is, as other scales are used in certain cases.

1:1 This scale is used when recording inscriptions, mosaics, some types of timbers and complex special finds. Drawings of this sort may either be measured or traced.

1:10 All elevations and sections are drawn at this scale. This may result in large drawings but this does allow detailed notes, such as context descriptions, to be added to the drawing.

1:100 Plans at this scale are usually drawn to show site limits, excavation areas, extent of modern intrusions and survey information. Context information should not be recorded at this scale.

Location: The location of the plan is noted in two ways. First the bottom left-hand (or south-west) grid co-ordinate point should be labelled with its co-ordinate figure. Secondly the 'noughts and crosses' box should be filled with a cross in the central box (this grid square) and with crosses in any other adjacent boxes (i.e. adjacent grid squares) into which the context physically extends.

Matrix: The matrix boxes should be completed with the context number of this context in the central box and the context numbers of the earlier and later planned contexts in the lower and upper boxes respectively. If you require extra boxes simply draw them alongside the pre-printed boxes.

WHEN CONSTRUCTING A 'PLAN MATRIX' YOU MUST ONLY INCLUDE CONTEXTS WHICH WERE EXCAVATED IN THAT PARTICULAR PLAN SQUARE AND ONLY THOSE CONTEXTS THAT HAVE ACTUALLY BEEN PLANNED.

Notes: If you use any sort of symbols other than those conventions already specified you should construct a key to their meaning in this box. The 'Notes' box can also be used to make any other comment that you feel might help to explain or clarify the plan, such as a brief interpretation or description.

Site: It is essential that you place the site code in this box. In the post-excavation work-place or archive the plan will not be identifiable if this information is missing and the sheet becomes separated from the other site records.

A plan shows principally the extent and surface of a context. It is important to record edges carefully. If the edge of a layer lenses out, for example, draw the line for uncertain limit at the maximum perceptible extent of the context and describe this lensing in the written description (see Section 3.1.2.5). Any significant change in the surface of a context must be recorded. A surface that consists of randomly repeating elements, however, such as pebbles or tile fragments, need not be drawn in detail completely, so long as a representative area (perhaps 0.5 m square) is drawn accurately and fully, and the fact that this is a sample area is made clear on the plan. Individual plans need not be drawn of fills within a cut, so long as a plan of the cut sufficiently defines the stratigraphic relationships of its fills and the fills possess no significant characteristics of their own that must be recorded in plan (sketch plans and sections may be drawn on the reverse of the relevant Recording Sheets to record, for example, the position of levels and the slope of tip lines).

2.2 SECTION/ELEVATION DRAWING

Sections can be drawn both on the small plan sheets or on larger pre-printed A1-size sheets of draughting film. The position of the section must always be accurately plotted on the site plan or the relevant context plan. The following conventions should be used when drawing sections or elevations.

Numbering: Unlike plans, sections/elevations have their own numbering system. This number replaces the context number in the top right-hand box.

Scale: This should always be noted and is usually 1:10.

Cardinal points: At either end of the section the cardinal points should be noted, (ie. N,S,E,W etc according to the site grid). This is a more reliable method of orientating the drawing than saying 'north facing section', which can sometimes be misunderstood.

Datum points: These should be clearly marked on the section together with both the co-ordinate figure for each datum point and the level with reference to Ordnance Datum. The co-ordinate information can be repeated on a relevant 1:20 context plan as an additional check.

Contexts: It is important that wherever possible the limits of contexts are clearly defined with the relevant line convention, and the context number marked on or indicated near to the context and enclosed in a rectangular box. Do not forget to indicate cuts. Draw solid lines for these and annotate them as necessary (do NOT use a dash-dot-dot-dash line). If context numbers have not yet been assigned you should write a description of the context on or near to the context. (Do not forget to describe compaction or morphological structure.)

2.3 TIMBER DRAWING

Drawing is an essential part of the recording of a structural timber, enabling an accurate three-dimensional record to be preserved after the timber itself has been sawn up and/or decayed. A future archaeologist will be able to reassess a joint which may have been incorrectly identified on the context sheet or re-interpret a complete structure on the strength of reliable drawings. Such drawings can often be produced in very little time.

The drawing of each timber should show:

- The outline of all edges and faces, drawn either horizontally one below the other, or vertically side by side, according to the position of the timber within the structure. Always show joint details (if any).
- A cross-section of the timber with the position of pith, heartwood and sapwood marked, if necessary.
- The position of knot holes, and a suggestion of direction of the grain.
- Which end is the head/foot and which face is the north/south etc.
- Any tool marks.

All timber recording should take place in sufficiently well lit conditions to allow tool marks and small fixings to be identified. It is important to make written notes on the drawings to differentiate between, for example, axe cuts, machine damage or naturally decayed ends. Generally, the conventions used for site planning can be used on timber drawings. The following notes should clarify the use of additional timber drawing conventions:

Clearly original edges (shown as a continuous line) = ————————

Cuts or breaks made during excavation = — · — · — · — ·

Cuts or breaks caused by cutting by later feature = ·· ·· ·· ··

Joints or holes that do not cut through timber = – – – – – – – – – –

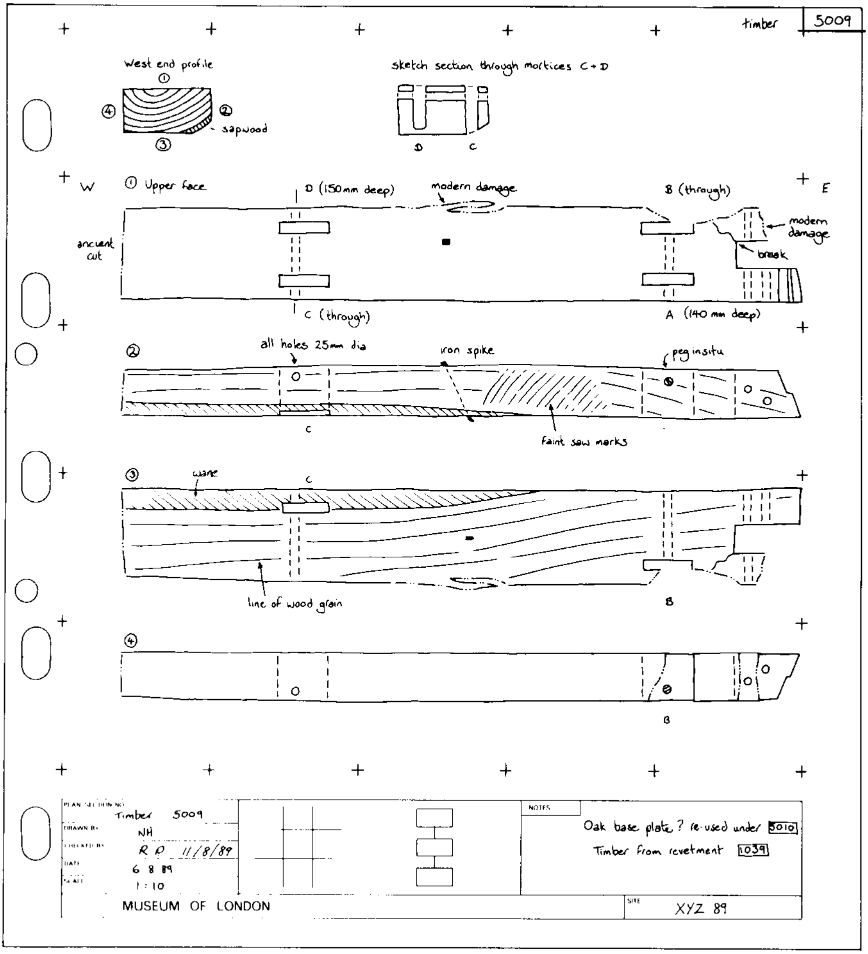
If present sapwood should be shown by light shading

Paint, charring etc can be shown by delineating and annotating the area

Nails, bolts, tacks etc should be shown as solid black and annotated

If split wooden fastenings are present show orientation of wedge

If indicating grain only draw very lightly so as not to obscure other information



8 An example of a completed timber drawing.

A sketched isometric projection of the timber is a most useful addition. In theory, of course, it is possible to draw this from the information on the 1:10 edge-and-face drawings, but it is useful to check a projection against the real thing before it is sawn up for dendrochronological samples (see also Fig. 36).

3. RECORDING METHODS AND EXCAVATION TECHNIQUES – THE WRITTEN RECORD

3.1 RECORDING DEPOSITS AND CUTS – INTRODUCTION

The majority of recorded contexts on any site will fall into the category of deposits and cuts. As all excavation necessarily involves the destruction of such contexts, it follows that the only surviving record of the archaeological sequence is the field, finds and environmental record. This will become the primary source of information for the study of the stratigraphic sequence. It is clearly important that the quality of the records should be adequate for this study to be supported. The system employed for recording deposits and cuts in the urban rescue environment must, therefore, be standard in method but also flexible enough to allow comparable records to be produced in a variety of recording situations, from controlled excavation to rapid salvage work.

A wide variety of contexts, which are recorded as deposits or cuts, may be encountered. Deposits include natural deposits, floor and road surfaces and pit, ditch and grave fills, as well as more complex features such as hearths or clay and timber buildings. Cut features such as pits, ditches, graves, and foundation and robber trenches are also frequently found.

The BASIC MINIMUM RECORD of a DEPOSIT may be defined as the collection of sufficient data to:

- Establish its stratigraphic position and situation in relation to other features on the site;
- Establish the processes involved in its deposition;
- Provide a suitable interpretation within the limitations of the excavation;
- Enable it to be dated.

For these reasons DEPOSIT recording involves the following elements:

- Every deposit has a separate written description compiled on a general Context Recording Sheet;

- Every deposit is drawn at 1:20 in plan (and if necessary 1:10 in elevations and sections (see Section 2.2));
- Environmental samples are taken, whenever necessary, following the advice of the Site Environmentalist (see Section 3.2);
- Finds are collected in accordance with the finds collection policy and the advice of the Site Finds Liaison Supervisor (see Section 4);
- A photographic record is made of the deposit if it forms part of a significant feature.

The BASIC MINIMUM RECORD of a CUT may be defined as the collection of sufficient data to:

- Establish its stratigraphic position and situation in relation to other features on the site;
- Establish the processes involved in its formation;
- Provide a suitable interpretation within the limitations of the excavation.

For these reasons CUT recording involves the following elements:

- Every cut has a separate written description compiled on a general Context Recording Sheet;
- Every cut is drawn at 1:20 in plan (and if necessary 1:10 in elevations and sections (see Section 2.2));
- A photographic record is made of the cut if it forms part of a significant feature.

3.1.1 HOW TO COMPLETE THE GENERAL CONTEXT RECORDING SHEET (Fig. 9)

All context sheets have been printed with some areas of the sheet shaded. These shaded areas should not be completed on site, but can be filled out, where necessary, during post-excavation.

Grid Square(s): The excavation survey grid is established with the point of origin (co-ordinates 100/200), outside and to the SW of all the areas of archaeological recording. The grid is composed of 5 metre squares identified by the co-ordinates of their southwest corner, for example 110/225. Enter the SW co-ordinates for all the squares that the context occupies in this box.

Area/Section: Enter the area letter or code if allocated or, if recorded in section, the number of that section.

Context Type: This should state whether the context described was a deposit, cut, or other type (ie. complete artefact, hearth structure or other feature), but NOT masonry, timber, skeleton or coffin as descriptions of these should be completed on the relevant type of recording sheet (see Sections 3.3, 3.4, and 3.5).

Site Code: This will comprise a three letter code, usually abbreviated from the site name or address, and two numbers denoting the year of commencement of the excavation; (eg. BIG82 = Billingsgate–1982, LSS85 = Liverpool Street Station–1985). The Museum of London Archive Officer keeps a record of all site codes used in the London area and issues new site codes, avoiding repetition (see Section 8).

Context: Every unit of stratification is given a number which is entered in this box. The sequence starts at 1 for each site and will normally be continuous. The next context number should be obtained from the context register at the time of taking the context sheet. On some excavations certain types of contexts might be assigned context numbers from a separate part of the numerical sequence; for example, skeletons on a cemetery excavation might be assigned context numbers from 1000 onwards.

Deposit and cut prompts:

See Section 3.1.2 for the method of describing a deposit, and Section 3.1.3 for the method of describing a cut. Note, however, that the

CONTEXT RECORDING SHEET

Grid Square(s)	Area/~~Section~~	Context type	Site Code	Context
110-115/210	B	DEPOSIT	XYZ 89	137

DEPOSIT
1. Compaction
2. Colour
3. Composition / Particle size (over 10%)
4. Inclusions (under 10%) occa / mod / freq
5. Thickness & extent
6. Other comments
7. Method & conditions

(1) VARIES FROM LOOSE TO COMPACT
(2) DARK GREYISH BROWN
(3) SAND (40%), SILT (60%)
(4) FREQUENT LARGE FRAGMENTS OF POTTERY AND TILE; FREQUENT MEDIUM AND SMALL FRAGMENTS OF BONE; OCCASIONAL MEDIUM AND SMALL FRAGMENTS OF LEATHER, SMALL FRAGMENTS OF METAL, AND WHOLE OYSTER SHELLS (ALL INCLUSIONS WELL SORTED).
(5) THICKEST TO NORTH (25 MM), SLOPING DOWN TO THE SOUTH/EAST (10 MM). THE LOWER BOUNDARY TO THE NEXT HORIZON IS IRREGULAR.
(6) OCCASIONAL LENSES OF ORGANIC MATERIAL
(7) WEATHER DRY; EXCAVATED WITH MATTOCK.

~~CUT~~
1. Shape in plan
2. ~~Corners~~
3. ~~Dimensions/Depth~~
4. ~~Break of slope- top~~
5. ~~Sides~~
6. ~~Break of slope- base~~
7. ~~Base~~
8. ~~Orientation~~
9. ~~Inclination of axis~~
10. ~~Truncated (if known)~~
11. ~~Fill nos~~
12. ~~Other comments~~

Draw ~~profile~~ overleaf

PTO

Stratigraphic matrix

121	135									

This context is 137

154	155	148								

Your interpretation : ~~Internal~~ External ~~Structural~~ ~~Other (specify)~~

DUMPED DEPOSIT

Your discussion :

LARGE QUANTITY OF POTTERY AND BONE AND OTHER MATERIALS, AND WELL-SORTED CHARACTER, SUGGEST THIS IS A DELIBERATE DUMP OF REFUSE.
MIGHT BE ASSOCIATED WITH [95] (STRUCTURE)?

Context same as :

PTO

Plan nos : P 137 (X 2)	Site book refs :	Initials & date NRA 24/8/89
Other drawings : S/E	Matrix location :	Checked by & date SJ 2.9.89
Photographs : ☐	Card nos :	

Levels on reverse
Tick when reduced and transferred to plans : ✓
Highest : | Lowest :

Finds (tick)

None	Pot	Bone	Glass	Metal	CBM	Other BM	Wood	Leather
	✓	✓		✓	✓			✓

Environmental samples (23) BULK FOR
Sample nos & type : SIEVING (FISH BONES?)

Other finds (specify) :
Finds sample (BM) nos :

Finds Sieving : on site ☐ off site ☐ | **Metal detecting :** in situ ☐ on site ✓ off site ☐

Checked interpretation :

PTO

Provisional period	Group	Initials & date

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9 An example of a completed general Context Recording Sheet.

order in which you describe any context must follow that of the prompts printed on the context sheet. The order is important as this will allow immediate comparison between one context and another; the description can also be entered directly into a computer programme during post-excavation if it is in this order. Number each part of your description with the relevant prefix for that prompt. When describing a deposit delete the cut prompts box to avoid confusion; when recording a cut delete the deposit prompts box. After you have completed the description of a cut draw one or more measured profiles of the cut on the reverse of the Context Recording Sheet.

Stratigraphic matrix: Enter the number of the context in the central box, then enter the numbers of contexts immediately above and below stratigraphically in the relevant boxes.

Your interpretation: Tick or circle the appropriate basic interpretation prompt, then enter a simple descriptive interpretation. For example, is it a floor, midden, brickearth wall, gully or pit?

Your discussion: Elaborate upon your basic interpretation, explaining why you have come to this conclusion and what evidence there is to support your argument.

Context same as: Give the context numbers of known correlations; if these are uncertain add a question mark. It is important that a note is made here when a context has multiple numbers (for example when recorded separately in plan and section).

Plan nos: Note the numbers of all plans on which this context appears. Plans should ideally be given the same number as the context number. If there is more than one plan with the same number, (for example in several grid squares), indicate as follows: p 1355 (3).

Other drawings: Note the numbers of all sections, elevations or large scale detail drawings on which the context appears.

Site book refs: Cross-reference to any notebook records. Normally these are used only during watching-brief or trial-pit work.

Matrix location: The matrix is the primary means of representing the relative chronology all contexts in diagrammatic form. Because matrices often become very complex, it has been found convenient to mark a grid over them. By using a series of letters and numbers for the opposing axes, a reference can be given in the form A3, B9, E6 and context numbers can be quickly located. A context should appear only once in a matrix diagram.

Photographs: If the context appears in a photograph tick this box when the photograph is taken. Later, the image and contact card numbers assigned to this photograph can be entered here (see Section 6).

Initials & date: It is essential that anyone recording information on the Context Recording Sheet should enter their initials, and the date of recording, in this box. The person(s) concerned can then be contacted if discrepancies are found when the sheet is checked.

Levels: On the reverse of the sheet (Fig. 10) enter the value of the temporary bench mark (TBM) and the backsight (BS). Add the two values to give the instrument height (IH) in metres above Ordnance Datum (m OD). Enter the foresight (FS) values against the numbers 1-30 and reduce by subtracting the foresight values from the instrument height. If additional levels are taken at a later date, when the instrument has been moved and there is a different backsight, complete the details in the 2nd, 3rd or 4th TBM box and note at which number the new levels begin. Once the true values of the levels have been calculated and transferred to the plans tick the box on the front of the sheet. At a later date the highest and lowest level values can be entered on the sheet for reference.

Environmental samples: Note any environmental samples taken and cross-reference to the relevant sample numbers.

Finds: Tick the boxes of those categories of finds which are collected from the context. Remember to include numerous finds as an element of the basic context description. This information is needed during post-excavation analysis to help identify those contexts with artefact assemblages which may provide dating or other interpretative evidence. If there are no finds always tick the 'None' box. Unusual or specific finds (for example, coins or whole ceramic vessels) can be noted on the line below. Note should also be made of any building material, petrological or inorganic samples taken. On the bottom line of the finds area reference can be made to any special recovery

This context is

138

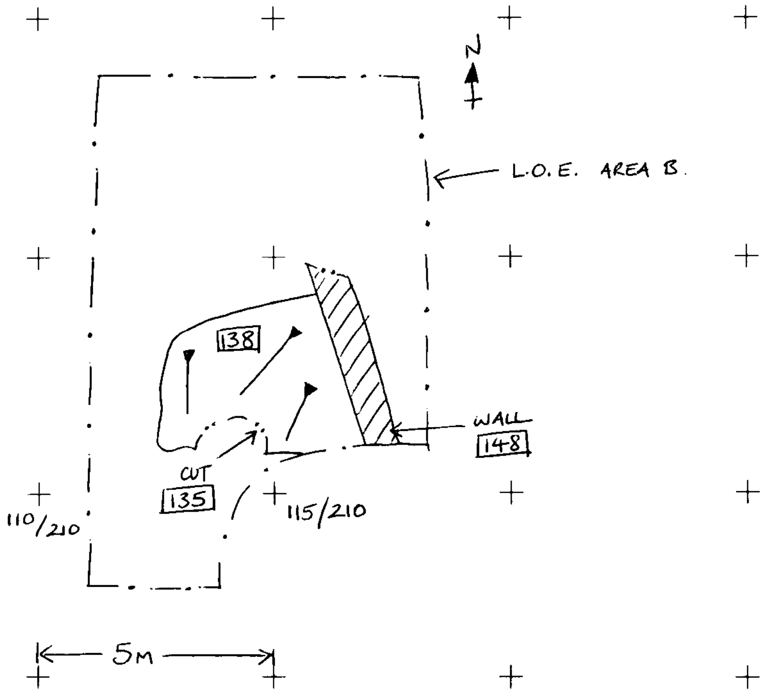
1st TBM	TBM : 2·78 IH : 3·01 BS : 0·23 Nos :
2nd TBM	TBM : IH : BS : Nos :
3rd TBM	TBM : IH : BS : Nos :
4th TBM	TBM : IH : BS : Nos :

No	FS	Reduced	No	FS	Reduced	No	FS	Reduced
1	0·995	2·015	11			21		
2	0·92	2·09	12			22		
3	0·91	2·10	13			23		
4	0·955	2·055	14			24		
5	0·91	2·10	15			25		
6	0·96	2·05	16			26		
7	0·965	2·045	17			27		
8	0·96	2·05	18			28		
9			19			29		
10			20			30		

Now transfer to plan Continue levels as necessary

Draw sketch profile/plan

(show : scale, cardinal points / north point, co-ords & dimensions)



10 *An example of the reverse of a completed Recording Sheet. Draw sketches here of profiles of cuts, and of any significant detail that would otherwise be unclear, such as tip lines of fills within cuts or the stratigraphic relationships between upstanding edges of contexts that would otherwise seem to be abutting.*

techniques employed: for example, dry or wet sieving, *in situ* or off-site metal detecting, 3-dimensional plotting.

THE CONTEXT RECORDING SHEET SHOULD NOW BE PLACED IN THE 'TO BE CHECKED' FILE.

Checked by & date: After the Context Recording Sheet has been completed it must be checked by the supervisor. The date and the checker's initials should then be entered: this is important as it confirms that the context has definitely been checked and can be used as an aid during post-excavation.

Checked interpretation: This space is provided for the supervisor to make comments on the validity of interpretations made by the excavator and to note possible correlations and higher-level interpretations that the excavator may not have been aware of.

Provisional period: During post-excavation a note may be made here of the broad date range of the context. This can be obtained by using the 'spot dates' provided by the Finds Section.

Group: After post-excavation analysis of both the site matrix and the records themselves the archive report will be based on a sequence of groups or 'phases' of activity which will be assigned numbers. If necessary these numbers can be cross-referenced on the sheet in this box.

3.1.2 RECORDING DEPOSITS

Detailed descriptions of deposits are required for two main reasons: first, to form a permanent record of the nature of the deposits and, secondly, to allow informed interpretation of the archaeological sequence to take place with reference to the depositional processes, whether naturally-occurring or anthropogenic.

The sedimentary particles that make up a deposit hold important information about the origin and nature of that deposit. Therefore, it is essential that the records allow comparisons to be made later between one deposit and another, not only within the area of a site but between one excavation and another. For this reason a standard approach to such description is required. MoLAS has devised a recording approach based upon field techniques of sediment description, but the nature of archaeological deposits requires note to be made of certain other aspects not dealt with by such descriptions. The most obvious additional factor is that of anthropogenic material incorporated within a deposit. Such material, if not making up the bulk of the deposit, is described in terms of inclusions. The attribution of percentage volume to such inclusions can provide useful analytical data during post-excavation work.

Whatever approach the individual excavator takes towards the recording of deposits, the descriptive structure laid out here will help to create clear, consistent and comparable records. When making interpretations, however, a deposit should be seen as the sum total of its parts – in other words, how the various elements of a deposit are assembled is as important as what those individual elements are.

The following information should provide a helpful guide to objective description:

> NOTE: ALL DEPOSITS MUST BE DESCRIBED IN THE FOLLOWING ORDER AND USING THE ACCEPTED TERMS.

1. Compaction/(sediment strength): When excavating, the strength of a deposit is obviously one of the first things that is noticed. This provides some indication of the processes that have created or affected the deposit. It is important that changes in compaction throughout a deposit are noted. The following table outlines the terminology to be used when assessing different sediment types and is based on the amount of effort needed to excavate the layer.

SEDIMENT TYPE	STRENGTH	
	TERM	DEFINITION
Coarse-grained sediments	Indurated	Broken only with sharp pick blow, even when soaked.
	Strongly cemented	Cannot be broken with hands.
	Weakly cemented	Pick removes sediment in lumps, which can be broken with hands.
	Compact	Requires mattock for excavation.
	Loose	Can be excavated with hoe or trowel.
Fine-grained sediments	Hard	Brittle or very tough.
	Stiff	Cannot be moulded with fingers.
	Firm	Moulded only by strong finger pressure.
	Soft	Easily moulded with fingers.
	Very soft	Exudes between fingers when squeezed.
	Friable	Non-plastic, crumbles in fingers.
Peat	Firm	Fibres compressed together.
	Spongy	Very compressible and open structure.
	Plastic	Can be moulded in hands and smeared between fingers.

2. Colour: This should be kept as simple as possible and standardised. Colour should always be assessed when the deposit is moist but not waterlogged. Use graduations of 'light', 'mid' and 'dark' for colours, not the terms 'medium' or 'moderate', which are used for other attributes of the deposit. Note changes during excavation, (for example, a blue-stained deposit changing to brown or light-grey on exposure to air, would indicate a change from a reducing to an oxidising atmosphere). No more than two colours should be used and they should follow the terms outlined below:

MODIFIER	HUE	COLOUR
light	pinkish	pink
mid	reddish	red
dark	yellowish	yellow
	brownish	brown
	greenish	green
	bluish	blue
		white
	greyish	grey
		black

3. Composition/particle size:

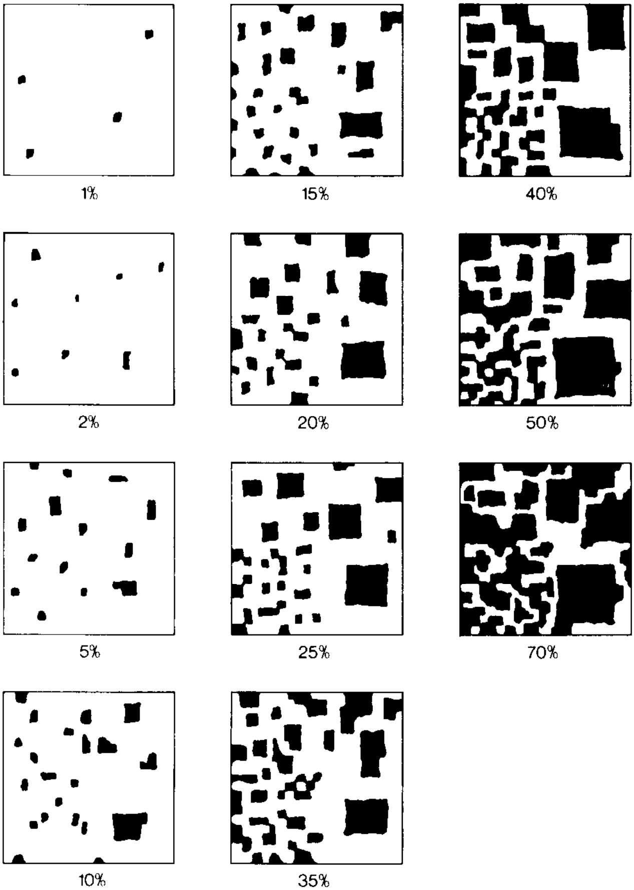
(3.1) Grain size: This refers to the size of individual grains and clasts within the sediment matrix. Each fraction of the deposit which amounts to more than 10% of the whole deposit should be included in this element of the description. This includes clay, silt, sand and gravel particles and tile, bone, mortar, pottery, molluscs and organic material. Use the following terms to describe the deposit:

Clay	
Silt	
Fine Sand	0.02mm – 0.06mm
Medium Sand	0.06mm – 0.20mm
Coarse Sand	0.20mm – 2.00mm
Fine Pebbles	2 mm – 6 mm
Medium Pebbles	6 mm – 20 mm
Coarse Pebbles	20 mm – 60 mm
Cobbles	60 mm – 200 mm

(Ask to see examples of the different size grades of sediment to familiarise yourself with them.)

Ambiguous terms such as 'loam' or 'soil' must not be used, (unless, of course, it is applied to a true soil horizon, which should in any case be recorded by the Site Environmentalist observing the soil *in situ*).

(3.2) Composition: This refers to the proportions of different grain sizes within the deposit. When describing the deposit these differences should be noted: for example, if there is more sand to silt it should be described as a 'silty sand', implying that the deposit is not a pure sand but has some silt in it. The percentage of each

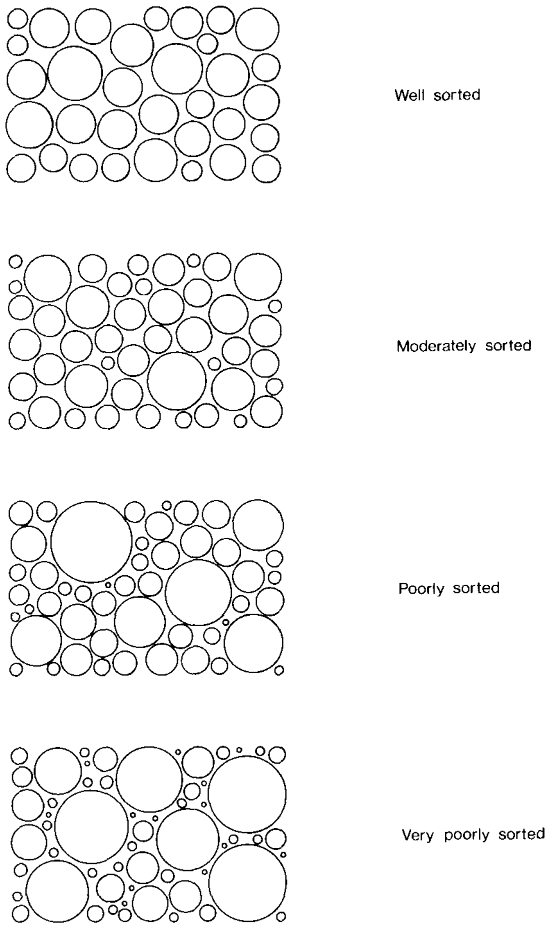


11 Chart for estimating percentage composition or inclusions (Each quadrant equals the percentage) (redrawn after Hodgson 1974).

constituent fraction/size grade may be estimated by using Fig. 11, (this can also be used to estimate percentages of stones or other inclusions; see 3.4 below).

(3.3) Sorting: This is a measure of the frequency with which particles of the same size occur (see Fig. 12). For example, if the deposit consists mainly of coarse to fine pebbles, it is 'well sorted'. An appreciation of sorting gives some idea of the processes responsible for deposition.

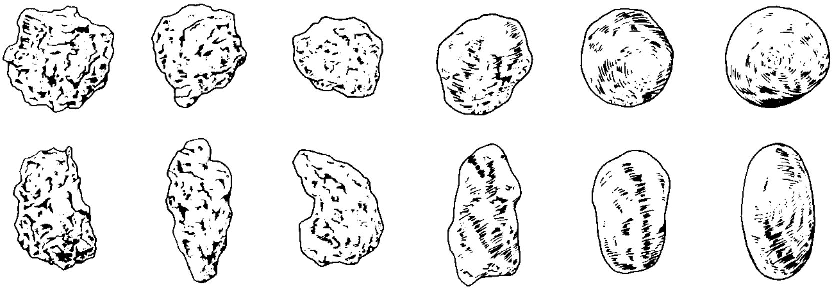
(3.4) Stoniness: This is a measure of the size, shape and roundness of individual stones. If possible note the lithology of the stone (eg. flint).



12 Chart for estimating degree of sorting (redrawn after Folk 1988).

(3.5) Size: Give an estimate of the size range of stones present: for example, 20mm – 50mm.

(3.6) Shape and roundness: This information helps to determine the nature and origin of the deposit. Shape is difficult to assess accurately in the field as it requires measurement of the axes of the stones, but it should be possible to say whether the particles are 'platy' (flat), 'elongate' (tube like) or 'spheroidal'. The terms used to describe roundness range from 'very angular' to 'well rounded' (Fig. 13).



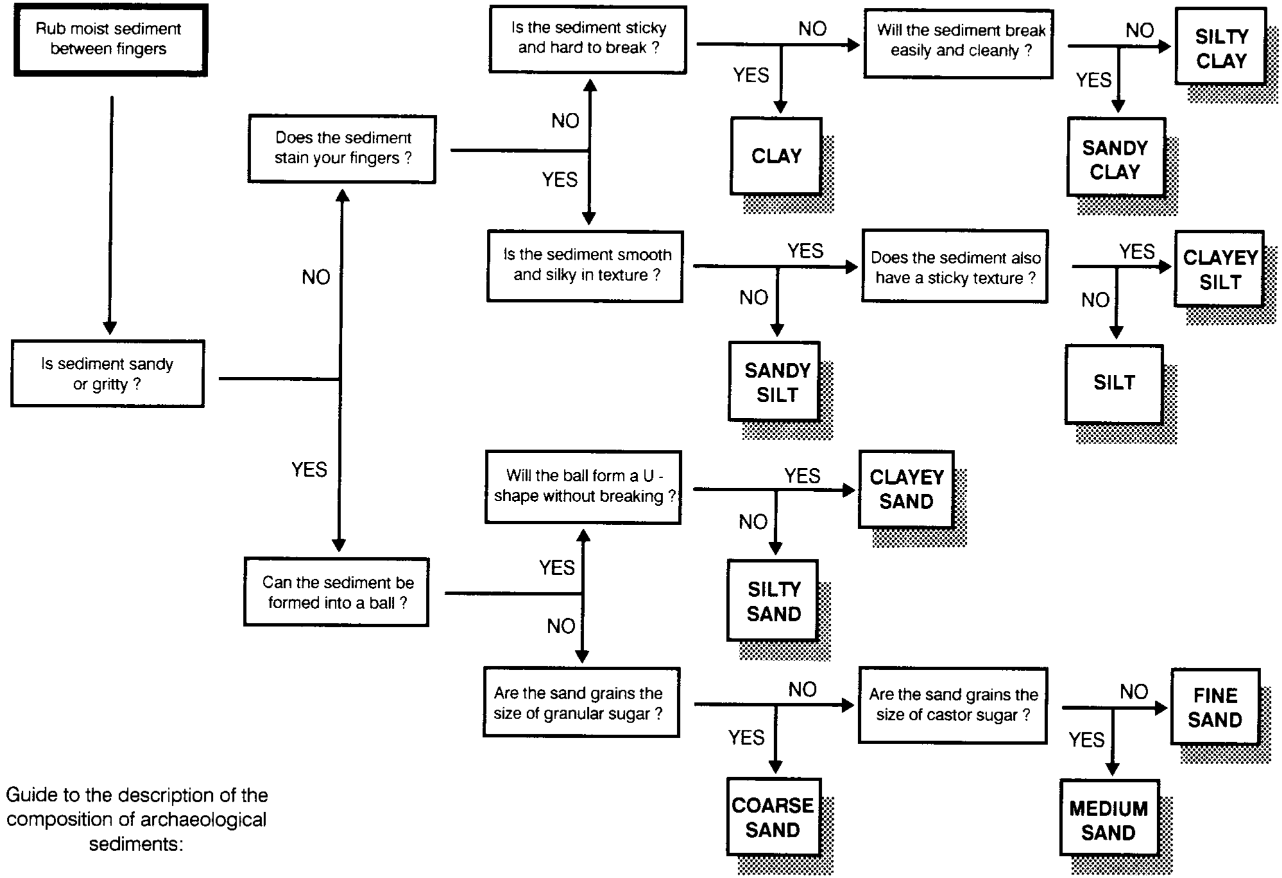
13 Diagram to show degrees of roundness in the shape of pebbles (redrawn after Powers 1953):

4. Inclusions: Elements of the deposit which make up less than 10% of the whole are 'inclusions'. They should be noted as 'frequent', 'moderate' or 'occasional' and, if fragmented, specified as 'flecks' (up to 6 mm), 'small' (6mm–20mm), 'medium' (20mm–60 mm) or 'large' (60 mm–120 mm). For example: 'frequent small fragments of tile, pottery and bone, moderate large fragments of opus signinum, occasional whole oyster shells'.

6. Thickness & extent: For example: '0.2 m thick at centre, lensing out to E & W'. Do not describe in words what a drawing can show more clearly (for example, the overall dimensions of a context).

(5.1) Boundary to the next horizon: This should always refer to the lower boundary of the deposit that is being described and not to the upper boundary, as this may have been truncated. Use the following standard terms:

Sharp	Change occurs over a distance of 5–25 mm (or less)
Clear	Change occurs over a distance of 25–60 mm
Diffuse	Change occurs over a distance of 60–130 mm
Smooth	The boundary surface is plane with few irregularities
Wavy	The boundary surface has broad shallow relatively regular pockets
Irregular	The boundary surface has pockets that are deeper than they are wide
Broken	The boundary is interrupted



14 *Guide to the description of the composition of archaeological sediments.*

6. Other comments: For example; on excavation sand increased to 80% near base of deposit.

7. Method & conditions: This might include the tools used and the circumstances of excavation (for example 'mattock and shovel. Rained heavily'). It is also important to comment on quality of finds retrieval and special retrieval systems (for example 'metal detecting, sieving, 3-dimensional plotting').

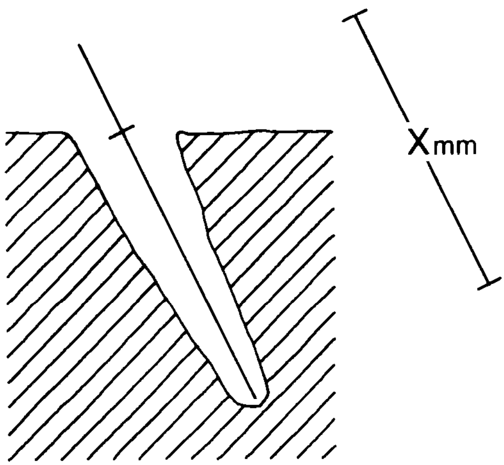
3.1.3 RECORDING CUTS

NOTE: ALL CUTS MUST BE DESCRIBED IN THE FOLLOWING ORDER AND USING THE ACCEPTED TERMS.

1. **Shape in plan:** Describe the shape at the top of the cut using the following accepted terms: 'square', 'circular', 'sub/semi-circular', 'oval', 'sub-rectangular' or 'linear'. If 'linear' describe the edges, noting for example whether they are 'straight and parallel' or 'curving and irregular'. Should the cut not conform to these terms describe it as 'irregular'. If 'irregular' describe the top according to the straightness of the edge, whether it has rounded or sharp corners and note the regularity or otherwise of the edge. If a cut is extremely complex it will be more efficient to refer to the plan and profiles.

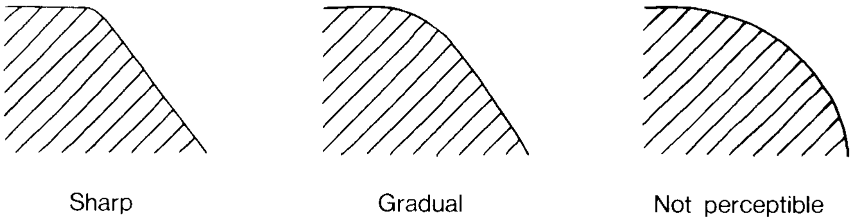
2. **Corners**: If present describe their shape in plan: 'square', 'rounded' etc.

3. **Dimensions/depth**: Record the longest side first. Dimensions should be in millimetres (1–99 mm) and thereafter in metres (0.1–0.9 m, 1.0–n.0 m). Depth can either be measured from the highest to lowest point or, if the cut is large and/or complex, be calculated from the highest and lowest level readings. If a sloping stakehole is being described then the depth should be measured along the axis of the hole (Fig. 15).



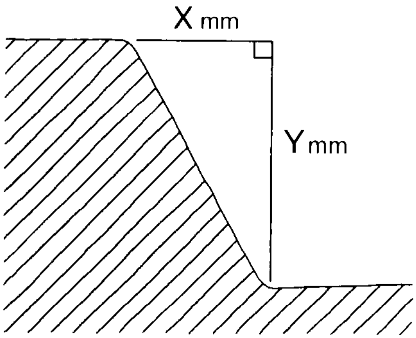
15 The depth of the sloping stakehole is 'X'.

4. **Break of slope – top:** Describe the degree with which the top surface of the edge of the cut breaks into the sides. Use the following accepted terms: 'sharp', 'gradual' or 'not perceptible' (Fig. 16). Note that cuts are often truncated so this may not be the true break of slope (see paragraph 10 below).



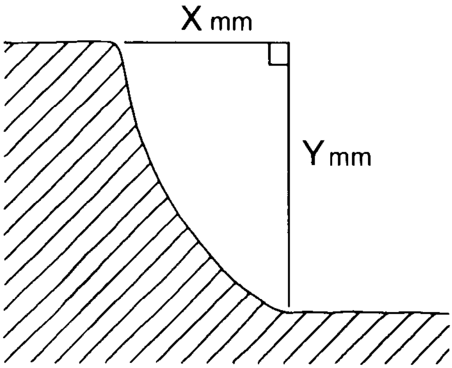
16 Break of slope at the top of a cut.

5. **Sides**: Describe the sides in terms of their smoothness or irregularity, and state whether they are 'vertical', 'convex', 'concave' or 'stepped', giving details for each side of a multi-sided cut. When describing post-holes note particularly whether the sides taper or drop vertically to the base, since this may help define whether the post was set or driven. Where possible state the gradient of a sloping side (Fig. 17).



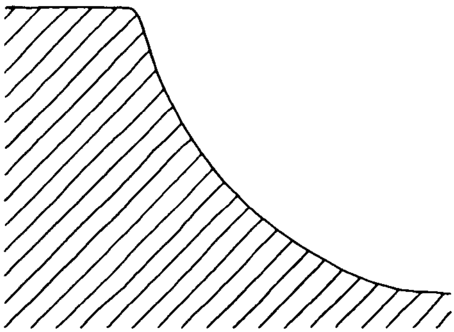
17 The gradient of the side is 'X' in 'Y'.

Where the side is 'concave' but meets the base at a sharp angle, give an overall gradient (Fig. 18).



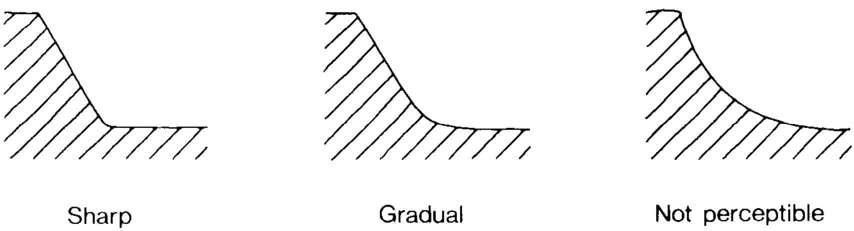
18 The overall gradient of a concave side is 'X' in 'Y'.

If it is 'concave' and has no perceptible break of slope with the base, then do not attempt to give a gradient (Fig. 19).



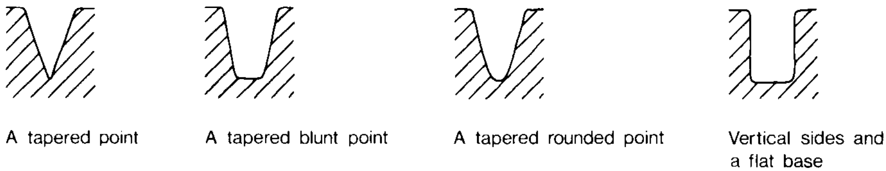
19 In this case do not attempt to give a gradient.

6. **Break of slope – base**: Describe the degree with which the sides break into the base of the cut using the following accepted terms: 'sharp', 'gradual' or 'not perceptible' (Fig. 20).



20 Break of slope at the base of a cut.

7. **Base**: Describe the base of the cut, noting whether it is 'flat', 'concave', 'sloping' (give the direction of the downward slope), 'pointed', 'tapered' ('blunt' or 'sharp') or 'uneven'. Also give the absolute level of the base. In the case of post-holes note whether the base has (Fig. 21):



21 How to describe the base of postholes.

8. **Orientation**: If linear, note orientation (N-S, NW-SE, etc). If a post or stakehole, give direction of the top of the cut relative to the bottom, (for example; top is NE of base).

9. **Inclination of axis**: This will only apply to post- and stakeholes; describe inclination in the form of a gradient ('Y mm (vertical) in X mm (horizontal)'). Do not attempt to describe the angle of inclination in degrees as it is very difficult to calculate on-site.

10. **Truncated**: Does the cut have its original shape and dimensions? If it is truncated note what part of it is truncated and, if possible, state what has truncated it.

11. **Fill Nos**: List all the deposits which fill the cut, including linings etc.

12. **Other comments:** For example: 'not bottomed', 'eroded on eastern side', 'naturally formed gully' (all such natural linear cuts should be examined *in situ* by the Site Environmentalist).

Draw profile overleaf: After you have completed your description draw one or more measured profiles of the cut on the reverse of the context sheet. A cut is a 3-dimensional context which is best understood by means of a 3-dimensional record.

3.2 ENVIRONMENTAL ARCHAEOLOGICAL SAMPLING – INTRODUCTION:

This section is intended as a guide to the reasons for, and the methods of, taking samples for environmental analysis. It can only be a general guide and should not replace on-site discussion with staff of the Environmental Department.

Why take samples ?

Environmental remains can provide three general categories of information:

Environmental: Information on the general climatic, environmental or ecological conditions prevailing on or near the site.

Economic: Contributions to our understanding of the economy of a site or period. At its simplest level this may relate to what was eaten on the site and comprise a list of plants and animals identified from food waste. At a more complex level it can be used to reconstruct the contemporary agricultural economy or to illustrate social or even racial/religious differences across a site or between sites.

Behavioural: It has become clear from recent studies that the biological remains contained in layers or pits and/or their distribution across a site relates to various aspects of the contemporary human behaviour. At its most obvious the threshing and winnowing of cereal crops on agricultural settlements produces recognisable patterns among the botanical assemblages. The practising of crafts or commercial activities, such as bone working or butchery, yields characteristic assemblages of animal bone. Often more difficult, but still potentially attainable on some sites, is an interpretation of the function of specific rooms, structures or features (the easiest perhaps being cess-pits) and the recognition of patterns of disposal, or of the selection of timber for different structural requirements.

Each of these is an important aspect of the archaeology, whether it is discussed on the 'structural' level or a complete reconstruction of the life on the site is attempted. Therefore a WELL THOUGHT OUT and ORGANISED sampling strategy is essential for each site. There are no sites on which sampling is not relevant. The table below (Table 1) outlines the kinds of environmental remains that are to be expected

TABLE 1: ENVIRONMENTAL REMAINS AND METHODS OF SAMPLING:

Animal and plant remains do not survive in all archaeological deposits. The following table outlines the kinds of environmental remains that are to be expected on archaeological sites, the soil conditions under which they survive and what can be learnt from such study. Before taking any bulk environmental samples make sure that the material for which you are sampling has survived, and that the context is well stratified and dated. There must be no or minimal residual or derived material present.

Kind of remains	Sediment type	Information available from investigation	Method of extraction and examination	Volume to be collected
ANIMAL REMAINS				
Human remains*	All but very acidic	Diet, disease, demography, lifestyles, burial practice	Hand sorting, trowelled sediment and sieving	
Large mammal bone	As above	Diet, husbandry, butchery, disease, social status, wealth, behaviour, craft techniques	Hand sorting, trowelled sediment and sieving	Whole context trowelled except when bulk samples are taken
Small mammal bone	As above	Natural fauna, ecology and synanthropic spp	Sieving to 1mm	75 ltr
Bird bone	As above	See large and small mammal bone	See large and small mammal bone	As above
Fish bone, scales and otoliths	As above	As below plus fishing technology and industrial development, and seasonal activity	See large and small mammal bone	As above

Large molluscs (shellfish)	Alkaline and neutral	Diet, subsistence, trade, season of collection, shellfish farming	Hand sorting, trowelled sediment and sieving	As above
Small molluscs	Alkaline	Past vegetation, soil type, depositional history	Laboratory sieving to 500 microns	10 ltr.
Insect remains* (charred)	All sediments	Climate, vegetation, living conditions, trade, human diet	Laboratory sieving and paraffin flotation to 300 microns	10-20 ltr.
Insect remains* (uncharred)	Wet to waterlogged	As above	As above	As above
Parasite eggs	As above	Intestinal parasitic diseases, sanitation, cesspit ident.	Laboratory extraction and high power (×400) microscopy	0.25 ltr.

Continued overleaf – Plant Remains.

PLANT REMAINS

Charred plant remains (grain, chaff, charcoal)	All sediments	Vegetation, diet, plant materials used in building crafts, technology, fuel, processing of crops and behaviour	Bulk sieving or flotation to 300 microns	75 ltr.
Uncharred plant remains (seeds, mosses, leaves)	Wet to waterlogged	Vegetation, diet, plant materials used in building crafts, technology and fuel	Laboratory sieving to 300 microns	10-20 ltr.
Wood/(charcoal*)	Wet to waterlogged, charred	Dendrochronology, climate, building materials and technology	Low power microscopy (×10)	Hand or lab. collection
Diatoms*	Waterlain deposits	Salinity and levels of water pollution	Laboratory extraction and high power (×400) microscopy	0.10 ltr.
Pollen*	Buried soils, waterlogged deposits	Vegetation, land use	As above	0.05 ltr. or column sample
Phytoliths*	All sediments	As above	As above	As above
Soil*	All	Detailed description of how the deposit formed and under what conditions	(Must be examined *in situ* by environmental staff)	(Column sample)

*Always consult the Environmental Section when taking these samples.

on archaeological sites, the soil conditions in which they survive and what can be learnt from such study.

What should be sampled?

Before undertaking any environmental analyses the following criteria must be met.

Preservation: It is self-evident that an analysis can only proceed if the study material survives. Animal and plant remains do not survive in all archaeological deposits and are dependent on certain sedimentary conditions to promote their preservation. Many samples can be collected of ostensibly 'waterlogged material' in which very little preserved organic material survives. Where organics are present they may be poorly preserved and be only a fraction of the 'original' content of the layer, bacterial, earthworm and wireworm action having reduced all but the most resilient components. The conditions in which the different categories of material are preserved are listed in Table 1.

Context: Environmental studies are intended to yield information on aspects of contemporary environment, economy and behaviour. They are only useful therefore when applied to samples taken from contexts that can be dated, are well stratified, contain no or minimal residual material and are archaeologically understandable or related to other contexts on the site. Isolated study of anomalous features is likely to be of little value and poorly stratified or undated layers are of NONE.

In summary, if the environmental material is to be sampled the material must have SURVIVED, the context must be WELL STRATIFIED AND DATED, and it must be possible to take a large enough sample to yield the required MINIMUM OF IDENTIFIABLE MATERIAL in a manner unlikely to produce a SAMPLE BIAS. It may be difficult, at the time of excavation, to determine whether these requirements are fulfilled. When in doubt a sample should be taken. If subsequent post-excavation analysis shows it to be unsuitable it can then be discarded, but the opportunity to sample it will not have been missed.

How should samples be taken?

Recovery and sampling can be done in a number of ways and tends to vary with the material intended for study. However, it is important to emphasise that analysis can only proceed if the environmental material is recovered in a manner suitable for study. Three points concern us here: recovery techniques, sample size and procedure.

Recovery techniques

Mattocking: This is an unsuitable method for the recovery of environmental materials, although careful breaking-up of spoil and the extraction of finds may sometimes be less destructive than trowelling. Analysis of the animal bone randomly collected during mattocking may be of no value and in even the best circumstances will probably only merit superficial study in contrast to that recovered from trowelling or sieving.

Trowelling: This, combined with careful non-selective hand collection of all material, is a suitable recovery procedure for animal bones and large marine shells.

Sieving: This can be carried out with or without water on a coarse or fine scale. Coarse bulk sieving at a mesh size of 5 to 10 mm is usually carried out on selected samples, such as good pit groups or reclamation dumps rich in refuse. Sieving at this scale is useful not only for the retrieval of an unbiased sample of animal bone but also for the recovery of finds missed during excavation.

Bulk sieving (wet): Such sieving carried out with mesh sizes of between 1mm and 5mm is the least biased recovery procedure for mammal, bird and fish bones and marine shells. It is, however, rarely practical to sieve the whole of a context, let alone the whole site. This technique is therefore used to sub-sample large deposits whose other recovery/excavation technique may be trowelling, mattocking or bulk wet/dry sieving at a coarse mesh.

Bulk flotation: This is normally combined with bulk sieving and involves the collection of the carbonised material that floats off during washing, and the checking and sorting of the residue.

The finest level of sampling is the recovery of unwashed sediment for micro-analysis in the laboratory. This includes analysis for water-logged plant remains, insects, molluscs, pollen and diatoms.

Sample size

It is a prerequisite of environmental studies that the quantity of identifiable material from each sample exceeds a certain size. If it does not then the application of statistical analyses is not possible. Table 1 provides a synopsis of these different kinds of remains, the methods of extraction and the volume to be collected.

Pollen, diatoms and other microscopic material is normally sub-sampled from an intact 'column' sample of the deposits or sampled *in situ* by a specialist. Deposits such as buried soils, river silts or natural peats should be column sampled *in situ*, preferably by a specialist or under the instruction of the Environmental Department, since it is essential for the researcher to see these deposits *in situ*.

Sampling procedure

When taking samples, for whatever reason, the following procedure should always be followed:

All samples should be double bagged in strong polythene bags or sealed in 10 litre plastic boxes provided by the Environmental Department. They should have two labels (of spun bonded polythene labelled with spirit-based marker pens), one facing outwards between the bags and the other attached to the top of the bag. When using the plastic boxes use the self-adhesive spun bonded polythene labels; stick one to the outside of the body of the box, and always put one in with the sample. All bags and boxes should then be properly sealed. (If inadequately sealed the sample may dry out and renewed bacterial decay during storage will probably render the sample unsuitable or useless for future analysis).

Labels should include: site code
context number
context type
sample number

Tools should be cleaned between samples to prevent cross-contamination, especially when taking samples for laboratory analysis. Please write clearly on the labels and the sample record sheets and take care of the samples. Loss of labels and split bags are the two most common reasons for the loss of sample material.

Sample recording sheets

Sample recording sheets have been designed for two purposes. First, they are intended as a record of the sample, including the basic archaeological information and any processing thay may have taken place on the site or subsequently in the laboratory. Secondly, they are intended to assist in the forward planning and assessment of the archaeological and environmental post-excavation programmes. With the number of excavations currently taking place in London each year this is extremely important and the ability to assess the priorities and potential of each site will be a major factor in the efficiency of the Environmental Department.

There are two types of sample forms

The 'soil sample' sheet is intended to be used with sediment samples that subsequently require 'on site' or laboratory processing. The 'single item sample' sheet is for recording of 'spot' finds, C14 samples, dendrochronological samples and individual items for identification.

In addition to the sample sheets there is an environmental sample register in which an account of the sample's context number and context description must be kept. At the end of an excavation all environmental recording sheets must be given to the Environmental Department, together with the samples. A copy of the sample register should be retained by the supervisor to ensure that they are aware of the contexts sampled and the character of the sample.

3.2.1 HOW TO COMPLETE THE SAMPLE RECORDING SHEETS

The sample recording sheets are similar in format to the general Context Recording Sheet and so there is some overlap in the information required and the method of presentation. For further information about those elements that are common to both sheets see Section 3.1.

COMPLETING THE 'SOIL' SAMPLE RECORDING SHEET (Fig.22)

Sample: Number assigned to the sample and recorded in the Environmental Sample Register.

% of whole context: This should be an approximation, as indicated on the form. It is needed to allow general assessments of the total quantity of environmental material.

Dimensions of sample: Measurement of the length, width and depth of the area of sample itself.

Taken from: It is important to know if the sample has been taken in plan during excavation or subsequently from a section face.

Size of sample: If 10-litre plastic buckets are not used, remember that as a rough guide one bucket of the sort used on site holds approximately 15 litres.

Degree of contamination: Although the sampling of contaminated contexts is not to be encouraged, inevitably contamination does occur. Therefore, it is essential to determine the extent of such contamination.

Inclusions: These provide a clue to the character of the deposit and assist in the assessment of the potential of the sample.

Context type: This should be a brief description of the nature of the context: for example 'layer', 'hearth', 'ditch fill'. This information is very important for the subsequent analysis and interpretation of the sample.

ENVIRONMENTAL SOIL SAMPLING SHEET

Grid Square(s)	Area/Section	SOIL SAMPLE	Site Code	Context	Sample
100/215	C		XYZ 89	123	4

% of whole context (tick) ▸	<5	5-15 ✓	25-50	>50	100
Dimensions of sample ▸	0·50 m/~~mm~~ x 0·50 m/~~mm~~ x 0·30 m/~~mm~~				
Taken from ▸	plan ✓	section			
Size of sample in litres ▸ one bucket holds approx 15 l	75 l				
Number of bags ▸	7				
Method of excavation ▸ eg trowel, mattock, other	TROWEL AND HAND SHOVEL				
Conditions of excavation ▸	WET, OVERCAST				
Degree of contamination	none	some	heavy		
with : modern materials ▸	✓				
other deposits ▸	✓				
Inclusions ▸	bone ✓	ceramic ✓	wood ✓	organic ✓	other

Context type : FILL OF WELL Context same as : Provisional date :

Stratigraphic matrix

106

This sample is from context 123

210

Reason for sampling : CLAY SILT MATRIX WITH FEW STONES, VERY GOOD ORGANIC PRESERVATION INCL. TWIGS. SMALL BONES ALSO VISIBLE

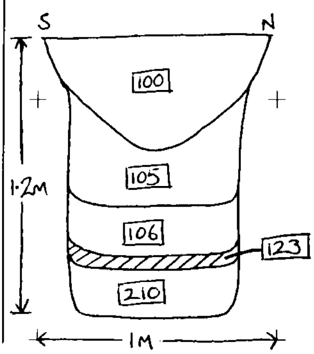
Specific questions about sample : DOES FILL REPRESENT NATURAL ACCUMULATION IN WELL OR HAS DOMESTIC RUBBISH BEEN ADDED. IF SO WHAT DOES IT SAY ABOUT DIET.

Destination of sample : this site other site (code) MoL ✓

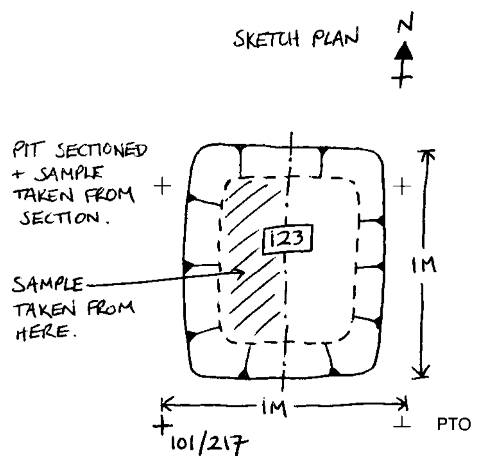
Plan nos : P 123	Other drawings : S/E	Initials & date NH 21/8/89
Photographs : ☐	Card nos :	Checked by & date SP 23-9-89

Sketch feature in plan or section showing sample

SKETCH SECTION



SKETCH PLAN



PTO

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22 *An example of a completed 'Soil' Sample Recording Sheet.*

Provisional date: As for general Context Recording Sheet (see Section 3.1). This, like context type, is very important.

Reason for sampling: Describe what the context looks like and its condition. For example, is it clayey, sandy, sticky or dry? State why the sample was taken. Note, for example, if environmental material such as charred or waterlogged plant remains, and/or mammal, bird or fish bone was visible in the sediment, or if the context was such as to suggest that preservation may have occurred (for example, a cess pit).

Specific questions about sample: These are archaeological questions relevant to the context and/or the site. For example, is the deposit cess, did the ditch contain flowing or standing water?

Destination of sample: Samples may be processed on the site of excavation or on another site if there is a suitable location for the equipment. If this is not possible samples are stored at the Museum of London and processed there.

Sketch: A simple sketch, in plan and/or section, of the location of the sample in relation to the adjacent contexts. Annotate the sketch.

COMPLETING THE SINGLE ITEM SAMPLE SHEET (Fig. 23)

Any individual item or specific sample that requires identification should be recorded on this sheet. As with the 'Soil' Sample Sheet many elements are similar to those of general Context Recording Sheet (see Section 3.1).

Sample: Number assigned to the sample and recorded in the Environmental Sample Register.

Sub-samples: If it is a dendrochronological sample and several slices have been cut from a single timber, state this here and give appropriate sub-sample numbers.

Sample type: Tick box that corresponds to the item. Is it 'wood', 'charcoal' (either a single piece or a cache of carbonised material) or 'miscellaneous' – anything else that requires identification or analysis.

Type of feature: Briefly describe the feature.

Provisional period or date: Estimate the period or date (see Section 3.1).

WOOD

Sampled for: Tick appropriate box. All wood samples are identified and their potential for dendrochronology assessed.

Sample is: It is important to know if the sample is the whole or part of the timber, or if it is a slice. If the latter, what it is a slice of?

Item is: Is the piece part of a structure or is it a stray piece with no other associated wood or structural evidence?

If structural, part of: If the sample is part of a structure state what that structure is; give context/structure number, if assigned.

Evidence of reuse: Does the shape or features of the wood suggest that it has been reworked?

Original use: If the wood has been reused, is it possible to determine what the original use was?

Other drawings: Remember to refer to any timber drawings.

CHARCOAL

Sampled for: Tick the appropriate box. If you think a C14 sample should be taken inform the Environmental Department. Sample very carefully and avoid ALL contamination.

Sample is: See WOOD above.

Taken from: Identify the type of context that the sample has been taken from. This is important as it helps to determine the nature and origin of the charred contents.

ENVIRONMENTAL SINGLE ITEM IDENTIFICATION OR DATING SHEET

Grid square (s)	SINGLE ITEM SAMPLE	Site Code	Context	Sample
110/220		XYZ 89	481	15

Sample type (tick): wood | charcoal | misc ✓ — Sub samples :

Type of feature : PIT (CESS PIT?) — Provisional period or date : MEDIEVAL

Sampled / recorded by & date : NH. 15/9/89 — Checked by & date : SP 17-9-89

WOOD :

Sampled for ▸	ID	dendro	C14 (& see misc)	other	
Sample is ▸	whole	part	slice	(of item)	
Item is ▸	stray	structural			
If structural: part of ▸					
Evidence of reuse ▸	yes	no	unknown		
Original use ▸	boat	building	waterfront	unknown	other

Plan nos : P — Other drawings : S/E

Photographs : ☐ Card nos :

CHARCOAL :

Sampled for ▸	ID	C14 (& see misc)	other		
Sample is ▸	whole	part	slice	(of item)	
Taken from ▸	hearth	oven	burnt structure	other	

Plan nos : P — Other drawings : S/E

Photographs : ☐ Card nos :

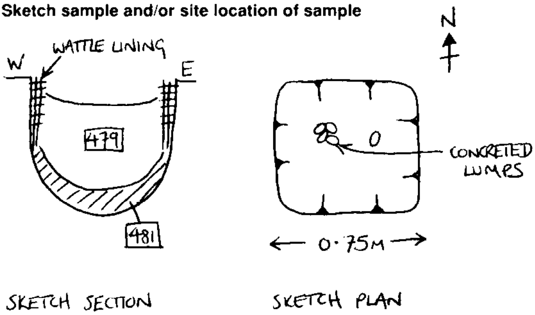
MISC (eg C14, coprolites etc) :

Material type ▸	COPROLITE ?
Description ▸	OBLONG SHAPED CONCRETED LUMPS FOUND CLOSE TOGETHER IN PIT (WATTLE LINED)
Sampled for ▸	ID ✓ | C14 | other IDENTIFICATION OF CONTENTS ?

Plan nos : P — Other drawings : S/E

Photographs : ☐ Card nos :

Sketch sample and/or site location of sample



For laboratory use	Initials	date
received :		
processed :		
identified :		
stored :		
disposed :		

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23 An example of a completed Single Item Sample Sheet.

MISC

This section covers anything that is not wood or charcoal and does not merit a 'Soil' sample sheet. Examples are coprolites, hair or fibres, contents of baskets or bottles or any other oddity that requires identification.

Material type: As far as possible identify the material type.

Description: Describe the context in which the material was found, the material itself and add any other information that may assist in identification and interpretation.

Sampled for: As above.

Sketch: Provide a simple sketch in plan and/or section of the location of the sampled item in its context. If it is a dendrochronological sample indicate the location of the timber on the site and show its relation to any other timbers or contexts that have been sampled.

3.3 RECORDING MASONRY STRUCTURES

INTRODUCTION

Masonry foundations and walls are one of the more obvious features that the excavator will be able to recognise. The study of masonry structures can provide valuable information on subjects such as topography, architecture, construction techniques and – by analysis of the materials and methods employed in construction – economics.

All excavation necessarily involves the destruction of archaeological features. This is true even of masonry, except in rare cases where the structure is to be preserved *in situ* or dismantled for subsequent reconstruction. It therefore follows that the only surviving record is normally the field record. This will become the primary source of information for the study of the structural design and construction techniques. It is clearly important that the quality of the masonry record should be such that this study can be supported. The system employed for recording masonry in the urban rescue environment must therefore be standard in method but also flexible enough to allow comparable records to be produced in a variety of recording situations, from controlled excavation to rapid salvage work.

A wide variety of structures may be encountered, for example wells, drains, pit linings, crypts, hypocaust systems, monumental structures and buildings. Such structures are sometimes built from re-used stones taken from parts of other structures which are not usually preserved *in situ*.

The BASIC MINIMUM RECORD of a masonry structure may be defined as the collection of sufficient data to:

- Establish its stratigraphic position and situation in relation to other features on the site;
- Establish its form within the limitations of the excavation;
- Enable an isometric projection to be drawn up;
- Enable it to be dated.

For these reasons masonry recording involves the following elements:

- Every element of a masonry structure has a separate written description compiled on a Masonry Recording Sheet.
- Every structure has a general context number and a description written on a general Context Recording Sheet;
- Every structure is drawn at 1:20 in plan and 1:10 in elevations and sections (see Section 2.2);
- Every worked stone is recorded as described in Section 3.3.3
- Samples are taken of all mortars and renderings used in the structure, together with samples of brick types and each different geological stone type (see Sections 3.3.4 and 4);
- Ceramic building materials are collected in accordance with the finds collection policy and the advice of the Building Materials Researchers (see Section 4);
- As full a photographic record as possible is made of the structure *in situ*, possibly including recording by photogrammetric methods.

3.3.1 HOW TO COMPLETE THE MASONRY RECORDING SHEET (Fig. 24)

This sheet should be used whenever masonry structural features are recorded. Many parts of the sheet are identical in design and function to those of the general Context Recording Sheet (see Section 3.1). Those parts that are unique to the Masonry Recording Sheet are explained below.

Masonry prompts:

1. **Materials:** This should include all forms of building material used in the feature being described.

2. **Size of materials:** Note the size range of all materials used (in mm up to 100mm thereafter in m). Record dimensions of bricks if used.

MASONRY RECORDING SHEET

Grid Square(s)	Area/Section	MASONRY	Site Code	Context
115/210 - 215	B		XYZ | 89	148

1. Materials
2. Size of materials (brick : BTL in mm)
3. Finish of stones
4. Coursing / bond
5. Form
6. Direction of face(s)
7. Bonding material (brick : Height of 4 courses & 4 bed joints in m)
8. Dimensions of masonry as found
9. Other comments

1) RAGSTONE AND FLINT NODULES 2) RAGSTONE VARIES FROM 310mm x 230mm x 330mm TO 200mm x 210mm x 300mm (INFILL 290mm x 220mm x 420mm) - FLINT NODULES VARY FROM 100mm x 70mm x 200mm TO 130mm x 100mm x 190mm AND ARE SLIGHTLY MORE UNIFORM IN SIZE THAN THE RAGSTONE. 3) ROUGHLY HEWN 4) RANDOM COURSED 5) WALL FOUNDATION 6) N/A 7) CREAMY PINK MORTAR, VERY HARD, INCLUSIONS OF MODERATE SMALL ANGULAR PEBBLES + OYSTER SHELL FRAGMENTS; SMALL FRAGMENTS AND FLECKS OF TILE AND CHARCOAL; OCCASIONAL LUMPS OF CHALK AND LIMESTONE. 8) N-S AXIS = 4·85M E-W AXIS = 480mm, THICKNESS (DEPTH) = 420mm 9) N/A

PTO

Stratigraphic matrix

138	140	88								

This context is 148

166										

Your interpretation : ~~Internal~~ (External)

LARGE BLOCKS OF UNWORKED RAGSTONE LAID IN CUT [166] WITH FLINT NODULES LAID IN TWO PARALLEL LINES AND SET IN MORTAR. TOP OF FOUNDATION REMOVED WHEN WALL ABOVE WAS ROBBED (?) NORTHERN END OF WALL TRUNCATED BY WELL CUT [88]

Associated contexts : POSSIBLY FOUNDATION FRAGMENT [101] TO NORTH (?)

Context same as : —

Worked stones : NONE

PTO

Plan nos : P 148 (X)	Site book refs :	Initials & date NH. 29/8/89
Other drawings : S/E (X)	Matrix location : C3	Checked by & date SP 14-9-89
Photographs : ✓ Card nos :		

Levels on reverse		**Samples**	
Tick when reduced and transferred to plans : ✓		Petrological : 12+13	4 Regular bricks : —
Highest :	Lowest :	Mortar : 15	Special bricks : —

Checked interpretation :

PTO

Provisional period	Group	Structure no	Initials & date

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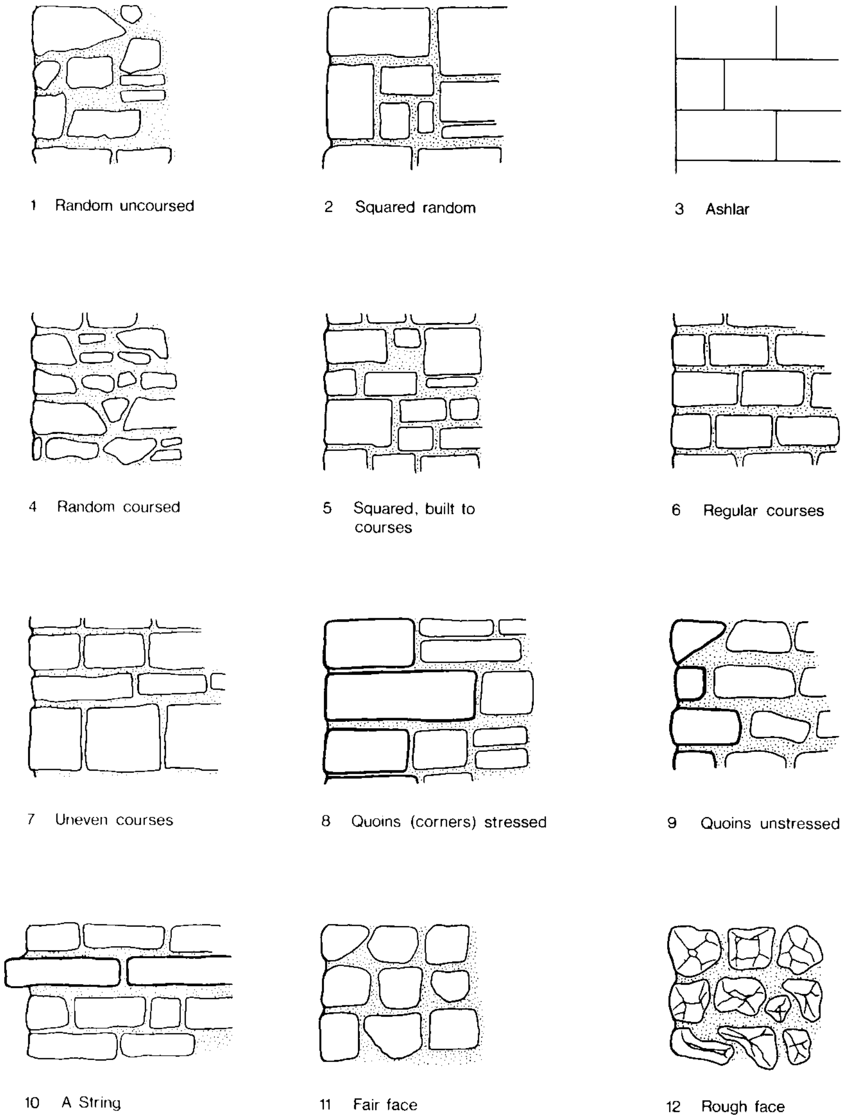
24 An example of a completed Masonry Recording Sheet.

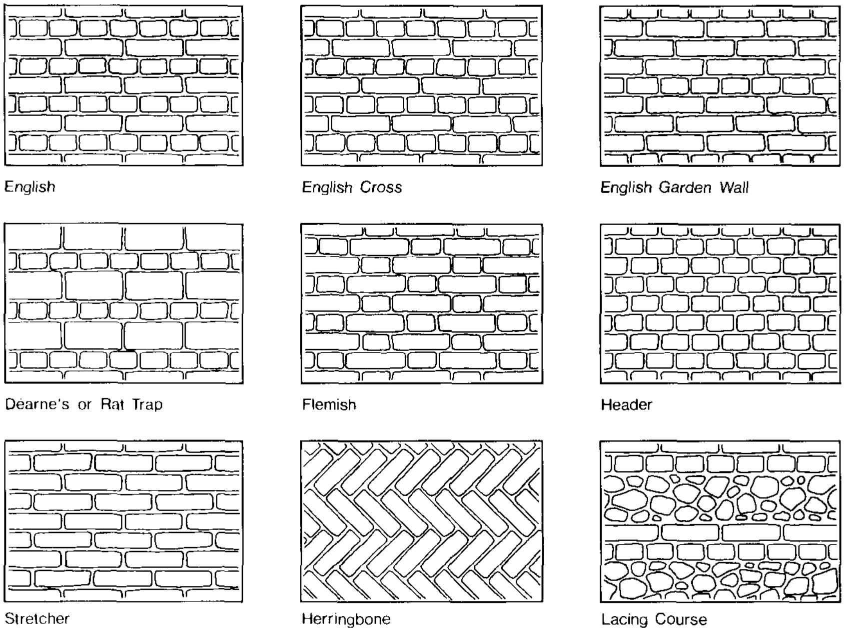


25 Main styles of stone finishing and coursing.

3. **Finish of stones**: For example, ‘roughly hewn’, ‘squared’; see Fig. 25.

4. **Coursing/bond**: Describe coursing or bonding pattern (Fig. 26).

Brick bonds



26 Typical brick bonding patterns.

5. **Form**: Describe the form of the feature. For example, is it a wall, a foundation, arched, a rebuild or a repair? Ensure, however, that the description is not confused with interpretation, which should be recorded separately (see below).

6. **Direction of face(s)**: If the feature has one or more faces which way do they face? Remember that a facing plaster or render should be treated as a separate context.

7. **Bonding material**: Describe the composition of the bonding material as if it were a deposit. If brickwork, record the height of four courses and four bed joints. This will allow accurate measurement of the thickness of the bed joints to be made.

8. **Dimensions of masonry as found**: Note the overall measurements of the extant masonry of this context.

9. **Other comments**: Note, for instance, any special brick types, mason's marks, unusual structural formations, the presence of worked or reused materials.

Your interpretation: As well as providing a detailed interpretation of the feature, some consideration should be given to its relationship with other associated structural elements. Other masonry contexts which are clearly associated should be listed on the relevant line. Note should also be made of the presence, and accession numbers, of any worked stone retrieved from the context (see Section 3.3.3).

Samples: Tick the box if, for example, mortar or petrological samples have been taken from the context and note the type, number of bags, and sample number(s) in the relevant spaces below.

Sketches on reverse of the sheet: It is very useful, both for detailing dimensions and for describing associated contexts, to draw one or more annotated sketches. Do not be afraid to attempt 3-dimensional representations. Remember you are dealing with a context which can only be fully understood when considered in 3-dimensions.

3.3.2 SOME FURTHER NOTES ON RECORDING MASONRY STRUCTURES

Coursing: If a wall or foundation is complex it may be necessary to describe it course by course or in groups of courses. A new context number should be employed for repairs or sections of the same wall or foundation which have been built differently. Do not make this equivalent (=) on the matrix, as differently-built sections may well represent rebuilds or later additions which have their own place in the sequence.

Coursing in foundations is not always clearly defined and in many cases when material is thrown or 'poured' into a trench does not exist, but it can be worthwhile trying to find out the exact method of construction. In trench-built foundations stone may be laid or packed in 'layers' forming courses. Look for traces of alien material between courses: trodden soil, for instance. Similarly, even trench-built rubble and mortar cores are often laid in courses and 'tamped'. When dismantling try to follow smooth mortar surfaces uninterrupted by rubble. In addition be aware of: (i) medieval arched foundations, which have laid courses above the arches to present a level surface when reaching ground level, and (ii) Saxon and early medieval stone foundations (examples from late 7th to mid 13th century) composed of alternate layers of stone, probably with Roman building material and pounded or rammed gravel, but without mortar.

Materials: Special attention should be given to the following types of inclusions:

- Roman building material in post-Roman walls and foundations; for example, tile, *opus signinum,* or stones with mortar still adhering to them (compare with surrounding mortar). Sample these stones and mortar.

- Unusual stones (marble, for example) and any sculpted fragment. For the latter, if reused (ie. not in its original place), make sure that it is drawn in place in the wall/foundation (usually by elevation). The moulded or dressed face of a reused stone is often set into the wall or foundation, however, and only becomes visible once dismantling has begun. Try to dismantle course by course and plan the stone *in situ*, if possible, annotating any drawn elevations.

- Medieval rooftile and oysters, often used to level up courses or fill cracks. Sometimes small stones were pressed into the joints for decoration.

When describing inclusions use the size range categories previously stated. A range of sizes and measurement of selected blocks may also be useful, particularly where a certain size of blocks has been used deliberately: for example, large blocks at the base of a wall or on the edges of a foundation, with smaller material above or in the middle.

Mortar or bonding material: Does the bonding material vary from the core to the outside of the wall or foundation, or along it? Walls may be bonded with clay, earth or gravel, but mortar is the commonest material. The following mortars are typical of their period:

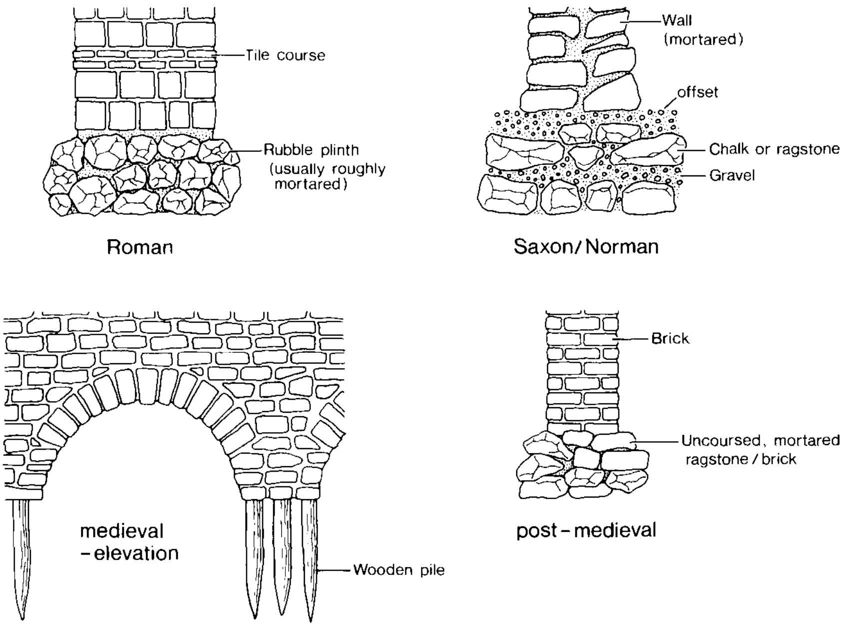
- Roman – pinkish, from frequent inclusions of tile flecks or brick dust; or orange, from sand and gravel content.

- Saxon – grey, poor, few inclusions.

- Early medieval – orange/brown, high sand content.

- Late medieval – high proportion of charcoal flecks, light grey.

These should only be treated as a rough guide and should not always be taken to be indicative of period. Also look out for small shells



27 Some typical foundation types.

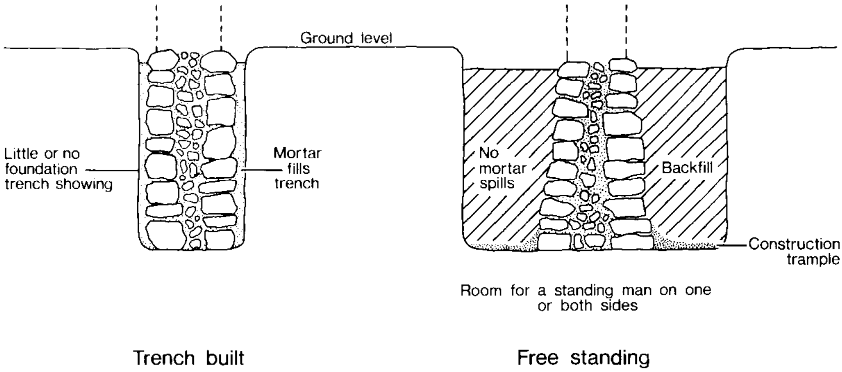
in the sand or gravel. Sometimes the mortar will be coloured for decorative effect; for example, charcoal was added to make black mortar for flint-faced walls.

Levels: Elevations and sections will provide most of the required level information. A reasonable number of levels need to be taken along the top surfaces of any surviving structure, however, and will be necessary for the drawing of accurate isometric and axonometric views during post-excavation work. Some of the important questions levels can answer are:

- Where was the contemporary ground level? How deep was the foundation?

- Is the wall part of a cellar? What is the relationship between its internal floor levels and the walls?

- What other foundations on the site were cut to this absolute depth? Can they be put in the same or similar 'phases', although spatially separated? These and similar questions should be asked of the material at an early stage in its recording.



28 Trench-built and free standing foundations.

Description of foundations: Stone or brick walls generally sit on specially-made foundations which should be described separately from the walls themselves. Clearly, foundations are more frequently found since walls are removed during demolition, but it is often possible to say much about the walls from the surviving foundations. Brick and stone cesspits and some cellars are a cross between a foundation and a wall and should be described, as required, with characteristics of both.

Often walls or foundations are based on timber, either piles driven into the bottom (and sometimes the side) of the foundation trench, or horizontally-laid timbers (sometimes reused from an earlier structure). These should be described and sampled as instructed in Section 3.4.

Sometimes inference can be made about the wall which stood on a foundation even if the wall itself has been removed. When walls are robbed they are often lifted off the foundation, which is left in the ground. A mortar scar may survive to show the position of the wall and its width. This scar should have a separate context number and be described as a deposit. Alternatively, the robber trench may not be as wide as the foundation below, indicating roughly the width of the wall. A robber trench should also have a separate context number, and so should its fill (usually unwanted scraps of robbed walling and mortar).

The foundation trench will require a separate context number and is treated as a cut feature. Note, however, if the foundation fills the trench or if there is a gap on either side or in parts of either side.

Description of walls: Describe the faces of the wall. Do the two sides differ, in stone or method of dressing? Most surviving masonry walls will be external walls of buildings. Hard stone will tend to be on the outside with softer stone on the inside, perhaps plastered. Similarly one side may show more weathering than the other. Soft stone on both faces would tend to suggest that the wall was not exposed to the weather and was an inner partition.

Does the material differ from face to core? In cesspits and cellars the lining may be of a hard stone and the core, pressed against the foundation cut, of a softer stone. Describe the inner face as for a wall, and add a brief description of the material behind as for a foundation.

Describe plaster or rendering with the deposit conventions. Record carefully where rendering ends at the sides and bottom, as this may indicate wooden partitions and the floor level.

Look out for the following marks:

- Evidence of tools used: axe, chisel or stone saw. Each will leave a distinctive trace on the face of a block. Remove good examples after drawing the elevation; brush gently to clean. Mark the top of the block with a letter T in ink. If there are several blocks sampled from the same context, use sub-letters or sample numbers.

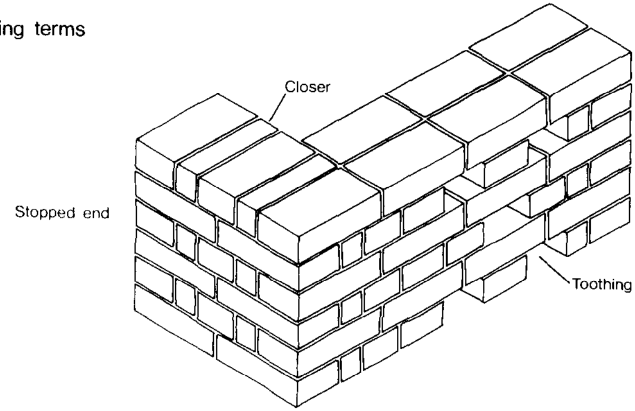
- Mason's marks: several categories. Some are of the banker, who squared the block up on the bench; others indicate the true face to be exposed. Sometimes they represent the sequence of work (compare with carpenters' marks on timber), and can represent the amount of work done in a day or other work period. Draw onto the elevation and also at 1:1 or 1:5 depending on size.

- Graffiti: keep a look out for the Roman and later vandal! Most such marks should be individually photographed.

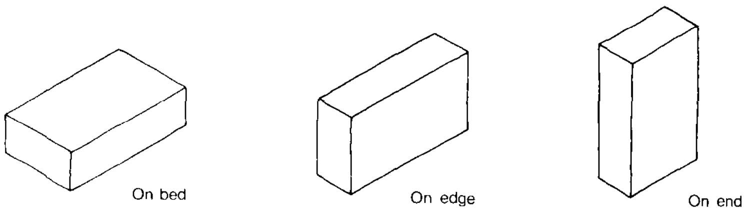
Description of brickwork (Fig.29): The fundamental methods of identifying a building sequence are the same for brick as for any other solid building material, but a specialised terminology has evolved for the description of brick building.

- Orientation: In laying a brick any of its three basic faces can be used. 'On bed' is the commonest. 'On edge' is often used in copings, sills etc but can be used in non-load-bearing walls to economise on the number of bricks used; in such walling it is often used in combination with strengthening courses of brick on bed as in Dearne's or Rat trap Bond (see Fig.26). Brick surfaces (courtyards, floors) are often of bricks laid on edge so as to be more resistant to

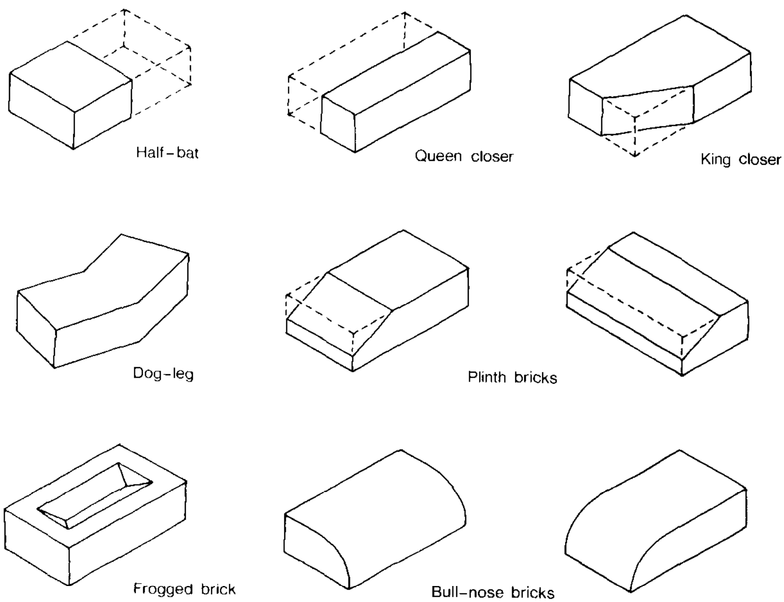
Walling terms



Orientation



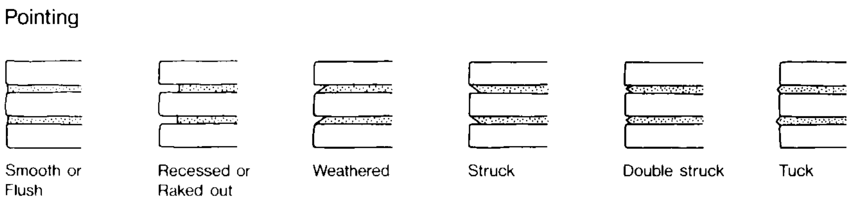
Special bricks



29 Brick and brick walling terms.

wear. The laying of bricks 'on end' is rare except when a single course (termed a 'soldier course') heads a flat arch. The only exceptions to these orientations, i.e. the placing of bricks at an angle, are found when bricks are used as infilling or as a decorative feature.

- Mortar: The nature and treatment of the gaps between bricks can provide information on the type and appearance of a building. Pointing will usually indicate (a) an external face, since interior faces of walls were normally concealed by plastering, panelling, etc., and (b) contemporary ground surface, since this will coincide roughly with the lowest level at which the brickwork is pointed. Some styles of pointing are shown below (Fig.30).



30 Pointing types.

- Jointing: The horizontal gap between two courses of brickwork is termed the 'bed joint', the vertical is termed the 'perpend'. 'Jointing' is the use of mortar between bricks as bedding and spacing material.

3.3.3 RECORDING WORKED STONES

The following describes the procedures to follow when worked stones are found. The detailed recording techniques are a specialist field which are dealt with in greater detail in the *Recording Worked Stone Manual.*

Blocks and fragments of worked stone are recorded and processed as individual objects, besides being recorded as constituents of any stratigraphic context in which they might be found. All worked stones are so recorded, even though they may be unstratified. As well as being intrinsically informative such stones may not have travelled very far, perhaps deriving from previous buildings on or near the site. Many, but not all, worked stones are 'moulded stones'.

In buildings where stone is used many architectural elements, especially openings such as doorways, windows or vaulted ceilings, are commonly elaborated in distinct and often regular ways. Individual blocks of stone will have been moulded to form, with other blocks, recognisable architectural features. For example: columns and shafts (either free-standing or attached to a wall or pier), bases and plinths, capitals and corbels, vault ribs and intervening cells, arches or lintels, door jambs and sills, window jambs, mullions and sills, coping stones from wall tops and pinnacles from parapets or roofs. Medieval architectural features are generally datable on stylistic grounds to within 50-75 years. Roman architectural features are less variable but are capable of being closely dated. In addition, mouldings and other characteristics of worked stones may allow the larger structure of which the stones formed a part to be analytically reconstructed.

Definitions of terms commonly used in the recording system

Worked stone: A block or fragment of stone is 'worked' if any part of its surface has been cut and finished so as to form either a dressed face or part of an architectural moulding. All building stone will have been quarried, hewn and then cut to size, but a 'worked stone' shows a further stage of fabrication which has left it in a more distinctive and finished state. Blocks and fragments that are not worked in this sense – for example, rubble infill or blocks that remain only roughly hewn – may be recorded as constituents of a particular context, and petrological samples can be taken, but they are not recorded individually.

Dressed face: The block has not only been cut but worked further with hammer, chisel and other tools or abrasive, to leave a relatively smooth face. Generally, faces of a block are so dressed either to show on the surface of the larger structure of which the block forms a part (exposed faces) or to fit better with adjoining stone (non-exposed faces).

Ashlar: A block without a moulding, but with one or more dressed faces; these faces may be at right angles or parallel to each other.

Scoinson: A block without a moulding, with two or more dressed faces that are neither at right angles nor parallel to each other (unlike ashlar).

Moulding: One or more outer, exposed faces of a block may be elaborately cut and dressed so as to form, when several such blocks are fitted together, a distinct and continuous architectural feature or ornament. Particular mouldings on individual blocks and fragments are most easily recognised in profile, where one block fits against the next. The profile of a moulding will therefore be visible usually on the inner, non-exposed, faces of a block of stone.

Typestone: A 'typestone' is a block or fragment that is the best surviving example of a particular type of ashlar, scoinson or moulding (in fact most typestones represent types of moulding). Typestones are fully recorded. Every other block or fragment of stone, although not itself a typestone, is an example of one of these types. The recording process for any of these stones is simplified by reference to the appropriate typestone.

On site recording procedure

All worked stones should be recorded as part of their context. This includes completing suitable context sheets, and drawing 1:20 and 1:10 plans and elevations. Photographs should be taken *in situ*, whenever possible. All worked stones must then undergo a further level of recording, even if unstratified.

Numbering stones: All worked stones should be allocated individual 'accession' (or 'small find') numbers. A sequence of numbers can be obtained from the Site Finds Assitant or the Finds Section. The numbers should be recorded on the Worked Stone Register, and should, where possible, be cross-referenced onto the relevant context sheet. The number, with the context number and site code, should be indelibly marked on the stone or on a label securely attached to it.

BEFORE UNDERTAKING ANY FURTHER RECORDING OF WORKED STONES ADVICE AND ASSISTANCE SHOULD BE SOUGHT FROM THE MASONRY AND STANDING STRUCTURES CO-ORDINATOR AND FROM THE FINDS SECTION BUILDING MATERIALS RESEARCHERS.

Records: A Worked Stone Recording sheet should be completed for each block or fragment. The basic information should be compiled immediately.

Drawings: Each block or fragment should be drawn at 1:2. Tool marks should be recorded at 1:1 by making rubbings.

Samples: Petrological samples from non-exposed faces and, if necessary, paint samples should routinely be taken.

If the stones are to be moved from the excavation site to another location for recording, care should be taken to ensure that they are not damaged in transit. Suitable lifting equipment should be used, during loading and unloading, to prevent injury to site workers.

3.3.4 LONDON'S MAIN BUILDING STONES

Common types of building stone found in London. Used in all periods unless otherwise stated. If in doubt about a stone identification consult with the Building Materials Researchers.

1. **Ragstone:** From Cretaceous Lower Greensand beds.

1.1 **Kentish Rag:** Very hard, grey or blue-grey glauconitic limestone. Containing glauconite, a mineral appearing as frequent dark green or black specks, and varying quantities of quartz sand. Mostly from near Maidstone, Kent. Rough, hard and unsuitable for fine working, may be found used in roughly squared blocks, for example, in exteriors, foundations, or the City Wall.

1.2 **Hassock:** Moderately hard, grey glauconitic calcareous or argillaceous sandstone. From the same geological formation as 1.1 but a lighter grey in colour, softer and sandier.

2. **Reigate Stone:** Moderately soft, light green-grey micaceous calcareous malmstone or sandstone. Noticeably green when wet. From Upper Greensand beds near Reigate and Merstham, Surrey. Lighter in weight and much less hard than 1.1. Soft when first quarried but hardens on exposure. Easily worked for mouldings, for example, door and window jambs and sills and vault ribs, but weathers badly. Specimens of weathered, abandoned mouldings may be found reused, for example in wall cores or foundations. Medieval; not found in Roman contexts.

3. **Chalk:** Varies between hard and moderately soft, white, occurs widely in southern England. Consequently particular sources are not closely identifiable. Weathers very badly and, therefore, not

normally used for exposed exteriors or mouldings; typically used in wall cores and foundations. All periods, but Roman use limited.

4. **Limestone:** Sedimentary rock, consisting mainly of calcium carbonate, from numerous sources.

4.1 **Oolitic Limestone:** Moderately hard, creamy-white or white-coloured limestone. Composed of extremely small spherical particles with varying quantities of small shell fragments. From a variety of sources in a zone running SW–NE across England, for example Portland, Ketton, Barnack. May be found worked and carved.

4.2 **Portland Stone:** Hard white-grey, oolitic limestone, containing frequent small shell fragments. From Portland beds, Dorset. Used as building stone in medieval and post-medieval periods.

4.3 **Caen Stone:** Moderately hard, cream coloured, very fine-grained limestone. Imported from Normandy, France. May be finely worked, but was clearly an expensive, prestigious, building material. Medieval contexts only.

4.4 **Tufa:** Moderately hard, friable, white, yellow or brown limestone. Used as rough blocks in foundations.

4.5 **Purbeck 'Marble':** Hard, grey or dark grey limestone. Composed of large quantities of small rounded shells. From Upper Jurassic beds, Dorset. Takes a high polish, and was often used decoratively and for mouldings.

4.6 **Purbeck Limestone:** Moderately hard, medium to coarse-grained, creamy grey or light brown shelly limestone, from the same beds as Purbeck 'marble'. Used for paving flags, ashlar blocks and (outside London, at least) stone roof tiles.

4.7 **Fine-grained Laminated Limestone:** Hard, very fine-grained, light to mid-grey, without visible inclusions; finely banded with a tendency to laminate. Used for paving flags and tiles.

4.8 **Magnesian Limestone:** Hard, fine to medium-grained, yellow to creamy white limestone, from Notts, Derby and Yorks. Rare in London, probably only post-medieval, and deteriorates easily in a chemically polluting atmosphere.

5 **Flint:** Extremely hard, very dark blue, grey or brown, occurring as nodules, the original surface (cortex) of which has weathered white. Found used in irregular fragments, often within wall cores or foundations, although sometimes knapped for use in wall faces.

6 **Slate:** Hard, finely laminated, smooth, grey-blue or green metamorphosed mudstone. Almost always found in thin fragments, used as a roofing material in medieval and, possibly, late Roman contexts. Also found in post-medieval contexts used as a roofing or damp-proofing material.

7 **Ferruginous Sandstone:** Moderately hard but crumbly, coarse, rust-red or brown sandstone. Obtained from the Folkestone beds in the Weald of Kent. Found used in the plinth of the Roman City Wall.

8 **Coade Stone:** Very hard, off-white fired clay with frequent cream and white inclusions of sand and rock fragments, and occasional specks of red iron oxide. Artificial stone invented in 1769 and widely used in small architectural features.

9 **Niedermendig Lava, Mayen Lava:** Extremely hard, porous, grey-black basaltic lava. Imported as quernstones from the Eifel mountains in the Rhineland, sometimes found reused as a building material.

10 **Septaria:** Very fine-grained, yellow-grey to light brown calcareous mudstone nodules, from the Thames estuary and Essex coast. Used as rubble in Roman foundations and walls.

11 **Wealden Shale:** Hard, dull grey-black, fine-grained laminated mudstone, from Kent and Surrey. Used for tesserae, paving tiles and wall veneers in the Roman period.

3.4 RECORDING TIMBER AND TIMBER STRUCTURES – INTRODUCTION

If the conditions are suitable, wood can survive for thousands of years. Detailed recording of timber structures is of great interest in itself, but the examination of the wood is of equal importance, yielding valuable information on subjects such as the contemporary environment or woodland management.

The archaeologist must always be aware of the two distinct types of information which the study of timber can provide:

(a) the structural and constructional aspects gained from studying the timbers as TIMBER – i.e. worked wood;

(b) the environmental and dendrochronological aspects gained from a study of the timber as WOOD – ie. as part of a tree.

When timbers are found on excavations they are only rarely retained and conserved. It therefore follows that the only surviving record of most archaeological timbers is the field and environmental record. This will become the primary source of information for the study of structural design and woodworking techniques. It is clearly important that the quality of the timber record should be such that this study can be supported.

Although many nautical archaeologists employ photogrammetry and other 1:1 recording techniques to produce a complete and highly accurate record of ship/boat timbers, for two reasons this is generally not a viable approach to timber recording on urban sites. First, the occurrence of complex major ship and boat finds is limited, whereas the occurrence of simpler structures such as pit linings, drains and revetments is more frequent; thus, such detailed recording is not normally required for these structures to be understood. Secondly, the system employed for recording timbers in the urban rescue environment must be standard in method but also flexible enough to allow comparable records to be produced in a variety of recording situations, from controlled excavation to rapid salvage work.

A wide variety of structures may be encountered, for example wells, drains, pit linings, mills, bridges, buildings, boats and revetments. Many such structures, moreover, are found to have been constructed of re-used timbers taken from parts of buildings, boats and other structures which are not usually preserved *in situ*.

The BASIC MINIMUM RECORD of a timber structure may be defined as the collection of sufficient data to:

- Establish its stratigraphic position and situation in relation to other features on the site;
- Establish its form within the limitations of the excavation;
- Enable an isometric projection to be drawn up;
- Enable it to be dated.

For these reasons timber recording involves the following elements:

- Every timber has a separate written description compiled on a Timber Recording Sheet (each timber has a unique context number, taken from a separate number sequence if required eg. 5000+);
- Every structure has a general context number and a description written on a General Context Recording Sheet;
- Every structure is drawn at 1:20 in plan and 1:10 in elevations and sections (see Section 2.2);
- Every structural timber (unless identical to others already drawn from that structure) is drawn as an edge and face timber drawing at 1:10 (see Section 2.3);
- As many dendrochronological/species-identification samples that can be taken from any one structure are taken (assuming that it is not to be conserved and displayed);
- As full a photographic record as possible is made of the structure *in situ*, the dismantling operation and the individual timbers.

3.4.1 HOW TO COMPLETE THE TIMBER RECORDING SHEET (Fig.31)

This sheet should be used whenever timbers are recorded. Many parts are identical in design and function to the general deposit/cut context sheet and reference should be made to Section 3.1 for details of how to complete them. Those parts unique to the Timber

TIMBER RECORDING SHEET

Grid Square(s) 120/310	Area/Section	TIMBER	Site Code XYZ 89	Context 5010

1. Type — 1) BASEPLATE
2. Setting — 2) HORIZONTAL
3. Orientation — 3) E-W
4. Cross-section (see below) — 4) RECTANGULAR
5. Condition — 5) SOLID, BUT BROKEN BY MACHINE AND ANCIENT CUT
6. Dimensions in m/mm — 6) 1·93M × 250mm × 135mm
7. Conversion — 7) BOXED HEART
8. Tool marks — 8) SAWMARKS, AUGER TIP MARKS.
9. Joints & fixings — 9) EAST END HAS COMPLEX "BRIDLED SCARF" SECURED WITH TWO 25MM DIAMETER OAK PEGS. TIMBER ALSO MORTISED WITH DOUBLE RECTANGULAR MORTISES SECURED WITH ONE SIMILAR OAK PEG.
10. Intentional marks — 10) NONE
11. Surface treatment — 11) NONE
12. Other comments — 12) LAY BELOW [5009] SPIKED TO IT
13. Methods & conditions — 13) DETAILED RECORD - GOOD LIGHT

Stratigraphic matrix

5005 | 5009 | 5006 | 5007 | 5008

This context is 5010

5037

PTO

Your interpretation / discussion : MORTISES FOR TWO POSTS WITH DOUBLE TENONS ? TIMBER [5010] WAS REUSED UNDER REVETMENT [1039] MAIN BASE PLATE, AS PACKING. MAY DERIVE FROM EARLIER BUILDING? LARGELY SAWN OUT - EARLY POST-MED? TOP OR BASE PLATE IN BUILDING.

PTO

Reused No ☐ Unknown ☐ Yes ☑ Discussion of previous use (overleaf) :

Specialist recording form nos : Building ☐ Boat ☐ Other ☐

Plan nos : P 1 (X 2)	Structure context no : 1039	Initials & date NH 5/8/89
Other drawings : S/E 59	Site book refs : —	
Timber drawing no : 5010	Matrix location : A1	Checked by & date SP 6-8-89
Photographs : ☐ Card nos :		

Levels on reverse

Tick when reduced and transferred to plans : ☑

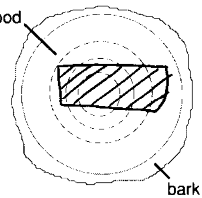
Highest : 0·0 OD Lowest : -0·20 OD

Environmental samples

Species : OAK sp	Initials : NH
Dendro sample (tick) : ✓	Date : 5/8/89
Other samples :	

Timber cross section

	Yes	No
Bark	☐	☑
Sapwood	☑	☐
Knotty	☐	☑
Straight-grained	☐	☑



Checked interpretation / discussion :

PTO

Provisional period	Accession no < >	Group	Initials & date

MUSEUM OF LONDON

TIMBER

31 An example of a completed Timber Recording Sheet.

Recording Sheet are explained below. (N.B. Wattle structures require a special approach to recording; see below, Section 3.4.3).

Timber prompts

1. **Type**: Define whether the timber is a baseplate, post, brace, plank, top-plate, stake etc.

2. **Setting**: Describe the position of the timber, whether vertical, diagonal (ie leaning) or horizontal. If diagonal, note the inclination of the timber in terms of its gradient. Note whether this is the setting of the timber as found or the assumed original setting if, for example, it is part of a structure.

3. **Orientation**: If the setting was diagonal or horizontal note the orientation of the timber in terms of compass bearings, eg. N-S, NW-SE.

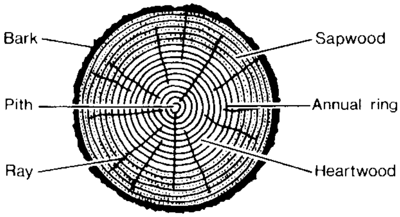
4. **Cross-section**: Describe the cross-section in terms of its shape and draw this on the diagram at the bottom of the sheet. If the cross-section varies along the length of the timber note this.

5. **Condition**: Note whether the timber is complete; if not, whether it was broken in antiquity or as a result of modern activity or truncation. Also note the presence and position of any decay, as this may provide information useful when determining the contemporary water table/tidal levels. Also note if the timber has been burnt, charred, worn, suffered insect attack etc.

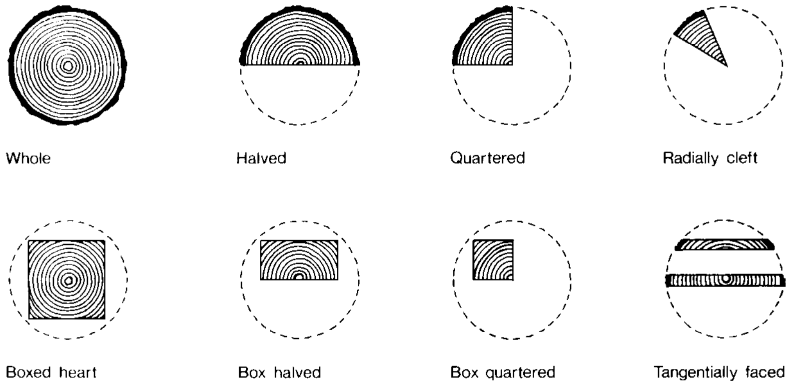
6. **Dimensions in m/mm**: Record the maximum length (in m), and the breadth and depth or diameter (in mm). Sketches can be drawn on the reverse of the sheet.

All measurements should be recorded as soon as the timber is exposed, as it will shrink radially (i.e. in width) by up to 25% thereafter regardless of how often it is sprayed. The thinner the timber, the greater the shrinkage – a tenon will therefore shrink more than the rest of the timber, whereas its associated mortise will often open up on drying and be wider at the end of the excavation than at the beginning. Always state whether the length quoted excludes tenons and other features which are not normally visible until after the structure has been dismantled.

7. **Conversion**: Describe the method of conversion (Fig. 32).



Timber conversion



32 Diagram to show methods of timber conversion.

8. **Tool marks:** Any evidence for saw, axe, adze, auger, chisel or other tool marks should be described. If possible make a measured sketch, on the timber drawing, of any well-preserved tool mark(s). Remember to do this as soon as possible, because when the timber starts to dry out and drying cracks appear the evidence for the working will disappear. Such information can be used to provide rough dating for a timber.

9. **Joints & fixings**: Describe any joints or fixings. Note the type, number, dimensions and whether they are, or may be, residual features from a previous use. Each different type of joint and/or fixing should be drawn, either as part of the general timber drawing or, if particularly complex, separately at 1:1. (For joint types see Section 3.4.4 below).

10. **Intentional marks**: Describe any marking-out lines, lines around joints, assembly marks, tally marks or graffiti. (All these should be drawn/traced at 1:1).

11. **Surface treatment**: Note the presence of any paint or pitch, limewash, charring, moulding or carving. (The profiles of all mouldings should be drawn at 1:1).

12. **Other comments**: Note, for example, colour variations, stains from fixings or impressions of other timbers.

13. **Methods & conditions:** Note whether the description was made before or after excavation of the timber, whether the timber was retained for detailed recording, and the general conditions on site at the time – the weather, the light, if it was a watching brief etc. Also state whether the timber had dried or become distorted before recording took place.

Reused: Tick the appropriate box and, if the timber is reused, discuss in detail overleaf its possible previous use. When a reused timber is identified the supervisor or the Timber Specialist should be contacted for advice and assistance. Some reused timbers may be recorded at 1:1 at this stage or be removed from the site to a more secure store. Ideally, record photographs should be taken as soon after excavation as possible.

Timber cross-section: Draw over the printed outline the shape in cross-section. Be careful to position your drawing accurately on this diagram in order to reflect the conversion method and the approximate degree of sapwood and bark survival. Tick the relevant boxes to indicate the presence or absence of bark and/or sapwood, and whether the timber was particularly knotty or straight-grained. This will help to explain why and how the timber was selected for a particular job, and may also help to answer questions about woodland management.

Environmental samples: If species identification is carried out on site – for example, on discarded timbers – the species should be noted here. The person making that identification must enter their initials and date, so that they can be contacted later if discrepancies arise.

If a dendrochronological sample is taken, tick the box and enter the relevant sample number. Before sampling any timber check that it has been drawn and that it will not be kept. Look for the position of the maximum number of rings from pith to sapwood/bark; the sample should be between 30mm and 50mm thick. Sapwood is crucial for providing an accurate felling date; the sample can be bound with masking tape to ensure that these rings are not lost. It should be noted that planks can often have more rings than large posts.

All dendrochronological samples should be separately bagged and sealed with two permanently marked labels. They should then be passed, with copies of the Timber Recording Sheet, or Single Item Sample Sheet, to the Site Environmentalist. All dendrochronological samples must be entered on the dendrochronological sample register. It is only necessary to take a separate sample for identification if no dendrochronological sample is taken.

3.4.2 SOME FURTHER NOTES ON RECORDING TIMBER STRUCTURES

The written record: Each timber structure should be assigned a single unique context number to facilitate cross-referencing with the rest of the site records. A general descriptive record should be made of all timber structures once fully exposed, on a general Context Recording Sheet. This should include such information as positioning, orientation, degree of survival and general stratigraphic position; it should also cross-refer to the numbers of all the individual timbers that comprise the structure, give the numbers of all drawn and photographic records, state how many dendrochronological samples were taken, and provide a general description of the approach taken to the recording and excavation of the structure. Finally of course the general description should include interpretative notes on the structure's possible function(s).

The drawn record: All timber structures should be drawn in plan at 1:20. It is not necessary to draw each structural timber on a separate plan sheet at this stage, unless they are obscured by other elements of the structure. Consideration should be given to stratigraphic relationships with other contexts, as this may require a number of plans to be drawn to satisfy the demands of the single context recording system. The structure should be drawn in elevation from as many sides as possible; similarly, cross-sections through the structure should be drawn whenever possible, especially to show constructional detail. Elevations and sections should be drawn at 1:10.

All drawings of timber structures should include an indication of the direction of grain of each individual timber and be supplied with as many levels as possible. If all the above are carried out successfully the creation of isometric/axonometric drawings should be easy.

After a timber structure has been dismantled as many representative structural timbers as possible should be drawn as edge and face drawings at 1:10. Non-structural timbers should not be drawn in this manner unless they exhibit evidence of reuse.

The photographic record: Surviving timber structures must be photographed in such a way that their 3-dimensional nature can be seen. It is important that in addition to general views as many detailed photographs are taken as possible. These might include certain elements of the structure, details of joinery or fixings, joint assembly marks, working photographs of the dismantling of the structure and individual record photographs of timbers after dismantling to show details not visible in the assembled structure.

Environmental / dendrochronological analysis: The analysis of a complete set of samples from a timber structure should attempt to answer the following questions:

- How many species are involved?
- Is the structure of one build of primary timber from one source, or are there instances of repairs or reused timbers?
- What age was the timber when it was cut?
- How was it dressed? In other words, how were the trees converted into the required timber? Squared; halved; quartered; planks radially faced or tangentially faced?
- What was the minimum number of trees required to build the structure?
- What was the size of those trees?
- Can the mean dendrochronological curve for one structure be matched with the curves for other structures on the site, thus providing a relative chronology?
- Can calendar dates be postulated for the felling of the timbers by acceptable matching of the structure's mean curves with a Master Curve, thereby providing an absolute chronology?
- Can any climatic or woodland-management practices be inferred from the growth ring pattern?

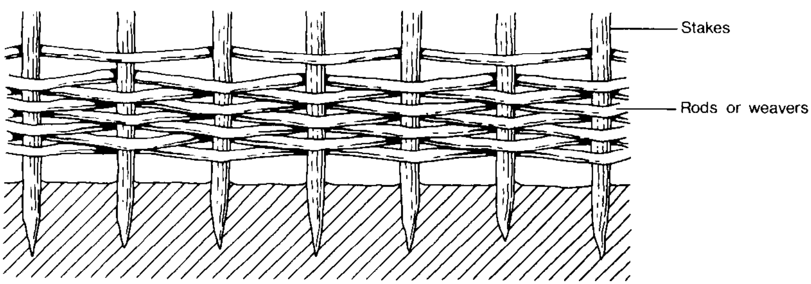
3.4.3 RECORDING WATTLE STRUCTURES

Structures made of woven small timbers are often found on urban sites. Most commonly they survive as pit linings on what are otherwise dry sites. On waterlogged sites wattle can also be found used as fences, walls or revetments, and horizontally-laid as floors or trackways.

Recording wattle structures is often difficult because of the large number of individual timbers. Although constraints of time and the degree of preservation of the wattle will affect the detail with which it can be recorded, it is essential to indicate the nature of the weave. The normal recording procedure – plans drawn at a scale of 1:20 and elevations at 1:10 – should be carried out, but additional records and sampling should follow the guidelines below.

Heavy wattle structures (Fig.33)

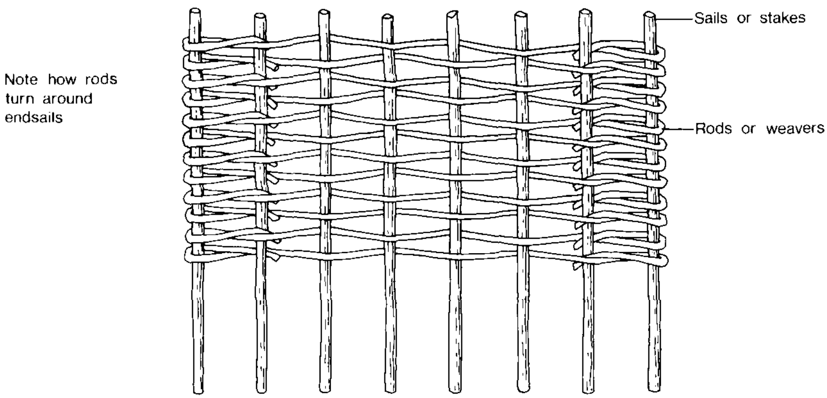
When recording heavy wattle structures woven *in situ*, individual uprights (stakes or 'sails') can be numbered and described as for any other timbers (though drawing only a sample in detail may save time and duplication). The horizontal elements (rods or 'weavers') can be described briefly on the general Context Recording Sheet allocated to the entire structure: reference should be made to their dimensions and cross-section. Samples should be taken in the form of slices from each of the uprights, whereas the horizontals can be sampled by the method decribed below. The slices from uprights should be assigned their relevant context numbers; samples from the horizontals should be numbered with the context number of the structure.



33 Diagram of a heavy wattle structure.

Wattle hurdles (Fig.34)

Light wattle structures or wattle hurdles – portable wattle panels where some of the horizontal elements are twisted back around the last upright – are best recorded on a single general Context Recording Sheet.



34 Diagram of a wattle hurdle.

Sampling wattle

Analysis of the wood used in wattle structures can yield information not only on the species of wood exploited but also on the coppicing cycle. From this it is possible to analyse methods and circumstances of woodland management. Where wattle is well preserved, extensive recording and sampling is necessary if such information is to be obtained. The following steps should be followed:

(a) Locate individual rods and sails.

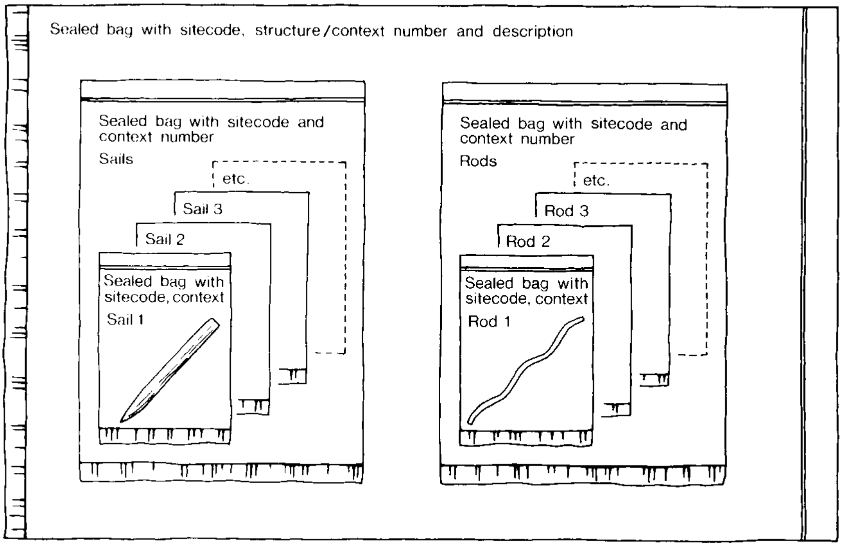
(b) Locate the thickest end of the rod. This is the part that was closest to the stool; it will have the most rings and so will be the most useful for study.

(c) Take a sample about 100mm long of each rod and each sail.

(d) Bag and label each sample – ie. each individual rod or sail – separately.

(e) A Single Item Sample Sheet should be completed for every sample and the position of each sample clearly marked on the plan and/or elevation.

(f) Put all bagged rod samples from one structure into one bag, and all the bagged sail samples into another bag. Keep both bags



35 Diagram to show arrangement for bagging and labelling wattle samples.

together in a further bag labelled with the context number and description (Fig.35).

(g) All samples, together with copies of Context and Sample Sheets, and plans and elevations, should be passed to the Site Environmentalist.

Where the rods are fragmentary and difficult to follow, samples of c.100mm long should be taken of the sails and rods. These should be bagged separately as rods and sails, but single bags for each 100mm length are not required. These samples will be identified to species but not used for age determination.

3.4.4 GLOSSARY OF CARPENTRY TERMS (Fig.36)

Bare-Faced: with only one shoulder, instead of the normal two.

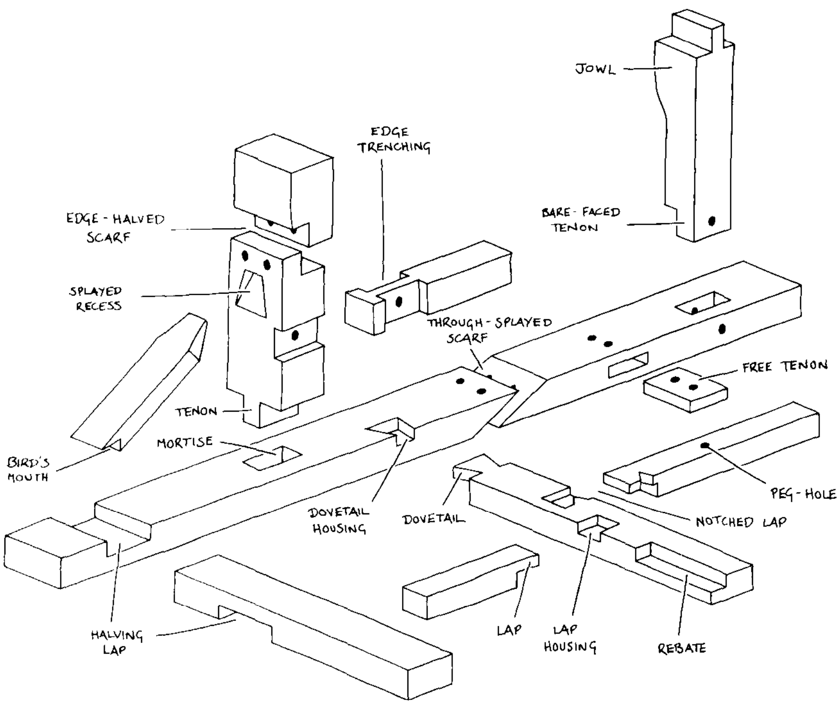
Bird's Mouth: any joint the profile of which resembles an open beak.

Brace (or shore): any diagonally-set supporting structural timber.

Butt: terminal point.

Cladding: the external covering applied to a wall or roof. The most common cladding for revetments was horizontal planking laid edge to edge.

Dovetail: see 'lap joints' below.



36 Some common carpentry joints.

Edge and Face: a dressed timber will usually have two faces wider than its two edges unless it has been literally 'squared'. The 'best face' or 'upper face' is the surface most radial to the circle of the log prior to conversion. This is the surface first prepared, from which joints are marked and from which pegs are driven.

Edge-Trenching: a cut or trench in the edge of a timber, into which a similarly edge-trenched timber may be set.

Heartwood: the part of the tree between the pith and sapwood. It contains no living cells and is often impregnated with substances such as tannins, making it more resistant to decay than the surrounding sapwood. It is usually harder and denser.

Growth Rings: concentric rings showing the extent of one year's growth. Each ring comprises the large early-wood vessels and the small late-wood vessels.

Joists: Framed floor timbers on which the floor planking would be laid.

Jowl: the end of a timber which swells out so that the strength of its end joint may be enhanced.

Lap Joints: a category of joints in which one part of a timber overlaps another. They could be either face-to-face or end-to-face joints.

> **Halving:** the removal of half the depth of each of two timbers so that they may cross each other at any angle without variation in thickness.
>
> **Notched Laps:** as opposed to standard 'squint laps' (see below) these have a 'V'-shaped notch which prevents withdrawal of the timber.
>
> **Secret Notched Lap:** this has an additional web of wood on the outer face of the notched timber which obscures it from view, rendering it 'secret'.
>
> **Squint Laps:** are set at an angle other than 90 degrees.

Mortise and Tenon: a category of joints in which a tongue (tenon) at the end of one timber is housed in a slot (mortise) in the edge or face of another. Often used to join posts to principal base-plates.

Chase Mortise: this has one vertical end and one inclined end to accept the tenon of a timber running diagonally from the mortised timber.

Bare-Faced Tenons: these have only one shoulder rather than two.

Tusk Tenon: a tenon which extends beyond the furthest face of the timber it joins, after which it is fixed with a peg or key.

Free-Tenon: a small piece of wood buried at both ends in mortises cut into adjacent edges of abutting timbers.

Peg: wooden dowel used to lock a joint securely, used in the manner of a nail (see also 'treenail').

Pith: the centre of the tree. In living trees its function is to store food substances.

Plate: horizontal timber at the top or bottom of a framing. In the case of a revetment, the principal posts are tenoned into the 'principal base-plate'; the plate supporting the feet of the braces is known as the 'subsidiary base-plate'.

Rays: thin-walled cells running radially and horizontally from the centre of the tree outwards.

Scarf: an end-to-end joint used to make one long timber from two or more shorter lengths.

Soffit: the underside of a timber.

Tie-Back: horizontal timber tied to a principal vertical timber or plate of a frame.

Timber: or *meremium* in medieval Latin, was material of a size suitable for heavy construction work.

Treenail: neatly made wooden dowel with ends expanded so as to lock a joint securely; used in the manner of a rivet, often found where water-tight joining is required (see also ‘peg’).

Wood: or *boscus*, was smaller material, such as poles or brushwood, suitable for light construction work or firewood.

3.5 RECORDING AND EXCAVATION OF SKELETONS AND COFFINS – INTRODUCTION

When recording skeletons and burials it is often useful to adapt the standard recording methods to take account of the particular type of deposits expected to be found. Retention of the single context recording procedure is essential however. The types of deposit and their level of preservation may require a specialised recording programme to be devised, and this may need to be changed or updated throughout the course of the excavation. All the following people/sections should be consulted before full excavation begins:

- Historians should provide an assessment of the potential worth of the skeletal material where burial registers or other records, such as information on local population composition or working practices, are available. These considerations are more likely to be relevant in the case of later medieval or early modern inhumations.

- The human osteologist will be able to decide a suitable collection policy by taking into account the following factors: numbers of skeletons, state of preservation, method of burial, date range and density of inhumations (the last of these factors will determine the completeness of the skeletons). It may be that the skeletal material has little or no worth for post-excavation research, and this will obviously affect considerably the recording and excavation methods employed.

- The archaeologist should similarly be aware that skeletons and burial cuts which are inter-cutting or have been truncated by other features are more useful in stratigraphic terms as they will permit the construction of a stratigraphic matrix of the site sequence.

- Consultation with the Environmental Department about the viability of sampling deposits from burials should be made as soon as possible. Sampling from around skeletal material can be highly time-consuming, but if it is shown that preservation of organic material is good then a controlled sampling procedure may be required. It is also possible that more specialised sampling may be required for bone and soil analysis, and it may be necessary to provide instruction and advice for staff who carry out this sampling.

- In general the site supervisor should make sure that all the specialised digging equipment is provided: 'plasterer's leaves', dental tools, soft brushes, protective clothing, plastic numerals and targets for photography, and the correct finds bags and labels for collection of bones. All these should be available to the excavation team from the first day of excavation.

3.5.1 HOW TO COMPLETE THE SKELETON RECORDING SHEET (Fig.37)

See Section 3.1 for information about elements common to this sheet and the general Context Recording Sheet.

Type: This space is for any brief note, such as 'standard burial', 'chalk burial', 'juvenile' or 'cremation', if required by the circumstances of the excavation.

Coffin: If a coffin is present note its context number here.

Skeleton diagram: Use the printed diagram both as a guide to recording the skeleton and as a record of what bones were present. If a bone is present it should be filled in on the diagram. This is best done as the skeleton is being lifted. Note also any abnormalities, and the extent of truncation.

Plan: Draw a sketch plan overleaf, showing the skeleton in simple outline only (if no sketch plan is drawn, explain why not at Prompt 10). Show clearly the orientation of the skeleton, its position within the grave cut and the coffin (if applicable), and its relationship with other elements of the grave (such as tiles, deposits of 'chalk', grave goods or clothing). Show the extent of truncation. Show the position of photographic markers and note their grid coordinates in the boxes on the front of the sheet.

Note in the box at which end of the grave the head lies.

Vertical photograph: This is usually preferable to drawing a detailed plan by hand (see Sections 3.5.2 and 6). Note the photographic image number here.

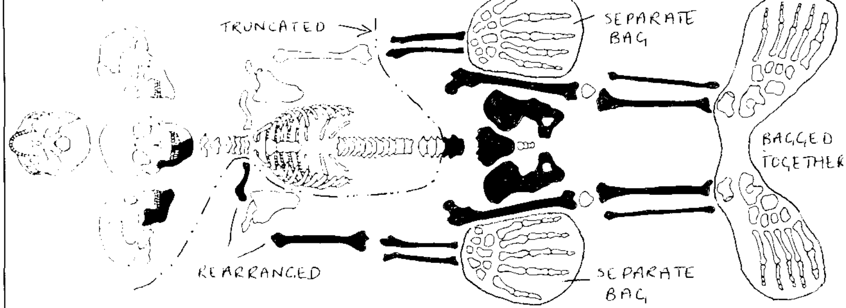
Other plans: Exceptionally, a burial may be so elaborate that it will require, in addition to a photograph, a full and accurate plan

SKELETON RECORDING SHEET

Grid Square(s)	Area/Section	SKELETON	Site Code	Context
105 - 110 / 215 - 220	F		XYZ 89	1439

Type:	Grave Cut: 1441	Fills: 1438	Coffin: 1440

Shade bones present and mark extent of truncation



Plan overleaf ✓ If none explain below	Vertical photograph ✓ Image no:		
Head at W end of grave	109 90 / 219 80	◀ Co-ords of markers ▶	110·40 / 219 75

Attitude of:	
1. body	(1) EXTENDED, SLUMPING DOWN TO WEST, SUPINE
2. head	(2) MISSING, EXCEPT RIGHT MANDIBLE FRAGMENT
3. right arm, location of right hand	(3) EXTENDED, BY SIDE, HUMERUS IS TOP TO BOTTOM, CLAVICLE LEFT TO RIGHT,
4. left arm, location of left hand	(4) EXTENDED BY SIDE. ~~SCAPULA MISSING~~
5. right leg	(5) EXTENDED
6. left leg	(6) EXTENDED, UNDER HAND
7. feet	(7) EXTENDED, DIFFICULT TO SEPARATE
8. Extent of in situ bone degeneration	(8) AROUND KNEES, OTHERWISE LITTLE
9. State of bone after lifting	(9) GOOD, SOME DAMAGE TO EPIPHYSES
10. Other comments	(10) ADULT. UPPER PART REMOVED BY LATER INTRUSION, THE CUT FOR WHICH WAS NOT

OBVIOUS AND WAS NOT SEEN WHEN OVERLYING BURIAL [1049] WAS EXCAVATED.

PTO

Stratigraphic matrix

[1438]

This context is 1439

[1441]

Environmental samples (nos, type, location)

Finds directly associated with skeleton (type, location on skeleton, co-ords, level)

Levels overleaf
Tick when reduced and transferred to plans

Highest		Lowest	

Plan nos: P — (x)	Site book refs:	Initials & date L.D. 16·10 89
Other drawings: S/E —	Matrix location:	Check by & date
Other photographs	nos:	

Provisional period	Group	Burial no.	Initials & date

MUSEUM OF LONDON

37 An example of a completed Skeleton Recording Sheet.

on a sheet of film (if so, note this in the box for plan numbers on the Skeleton Recording Sheet). Draw this plan at a scale of 1:10 (adjust the coordinates of the bottom left hand corner to keep all the skeleton on one sheet). Individual grave goods or other items can be added to this plan as they are exposed during excavation. These should be listed with their coordinates and levels. If finds are attached to or similarly directly associated with the skeleton, record this information also on the front of the Skeleton Recording Sheet.

Description: Follow the order of the prompt numbers.

Describe the attitude of different parts of the skeleton: which way the head faces; whether the body is prone (front down), supine (front up) or crouched; whether arms are straight or flexed, at the side, over the chest or on the pelvis, and the position of the hands; whether legs are straight or bent, crossed left over right or right over left, and the position of the feet.

Degeneration of bone *in situ* is important to record. Any unusual features which might disintegrate on lifting should be described and, if possible, photographed. If in doubt, consult a human osteologist about such features. Note any accidental or unavoidable damage to the skeleton that occurs during excavation or lifting. A human osteologist must have this information to be able to reconstruct the skeleton.

Other comments: Describe the extent of truncation or disturbance, if complicated, in addition to marking the skeleton diagram and sketch plan.

Note obvious pathologies or burial practice. Include here such items as a female with foetus in position or any other complex burial situation.

Note also any treatment carried out by conservators before lifting.

Stratigraphic matrix: Fill in these boxes even if the skeleton is stratigraphically an adjunct to a coffin (if there is a coffin, the skeleton and the coffin will usually have the same stratigraphic relationships). In this case make sure that the same relationships are entered on the Coffin Recording Sheet.

Levels: Take levels on the highest and lowest parts of the skeleton and on the two ends (usually the highest point of the skull and feet). If unusually distorted, take levels on other points.

Environmental samples: Note the numbers, type and location on or around the skeleton of any samples, including samples taken as a control.

Finds: Note here only finds directly associated with the skeleton, usually attached to it. Also note if any special finds recovery method was used: metal detecting or sieving, for example.

3.5.2 SOME FURTHER NOTES ON RECORDING AND EXCAVATING SKELETONS

Photographing skeletons: Photography is now generally accepted as the best way of recording a skeleton *in situ*: it is both rapid and accurate. First, the skeleton must be carefully cleaned, starting at the skull and working down towards the feet. A good result can be achieved with the use of small paint brushes, spoons and dental tools. The cleaning of small bones such as hands, feet and ribs can cause disturbance, and it is often best to excavate only the minimum amount of soil necessary to show their position. The foot and hand bones can then be collected in the form of a bulk sample with the surrounding fill. If the bones are well preserved the use of a small sponge and clean water will aid definition during photography. If the bones are poorly preserved a fine water spray may achieve the same result. Skeletons should not, however, be repeatedly wetted and allowed to dry, as this may result in disintegration of the bone. It is important to arrange for the photography to take place as soon as possible after the skeleton is exposed.

It has been shown that site drawings at a 1:10 scale of skeletons *in situ* are often inaccurate; they are also time-consuming. Locating the photographed skeleton in relation to the site grid therefore becomes a priority. First, locate the skeleton on the plan of the grave cut (at 1:20); this is best achieved by recording precisely the outlines of the skull, pelvis and long bones. At the post-excavation stage overlaying the photograph and, if necessary, tracing off the rest of the bones can then be performed. It is important that both the skeleton number and a suitable scale are included in the photograph so that the skeleton can be identified and prints made to scale (usually 1:10). The use of co-ordinate targets is an alternative method of positioning the plan relative to the photograph. Large-headed nails painted white can be used for this purpose. The site grid references for the two markers can then be recorded on the Skeleton Recórding Sheet. This method is quicker than drawing the parts of the skeleton in the manner described above, but will not be as useful if distortion occurs in the photographs because of a nòn-vertical camera position.

Basic skeleton excavation techniques: The methods used for excavating skeletons have varied from site to site. Ultimately the way that the skeletal material is removed will be determined by all the factors mentioned above in the Introduction, by the reason for the excavation, and by the conditions on site. Generally, however, there are some practical points which should be considered before, during and after excavating any skeleton.

Early identification of the grave outline, if possible, greatly aids efficient excavation. The edges of coffins and clusters of stray long bones can often indicate the extent of a burial. Grave fills should ideally be excavated from outside the grave, so avoiding damage to skeleton or grave goods. Stray bones should not be removed until it is clear that the burial is not multiple.

Care should always be taken when cleaning a skeleton for photography (see above). Skeletons should be lifted as soon as possible after excavation. The human osteologist should always be consulted BEFORE the first skeleton is lifted. When dealing with neonates the human osteologist should again be contacted to arrange excavation and sieving programmes.

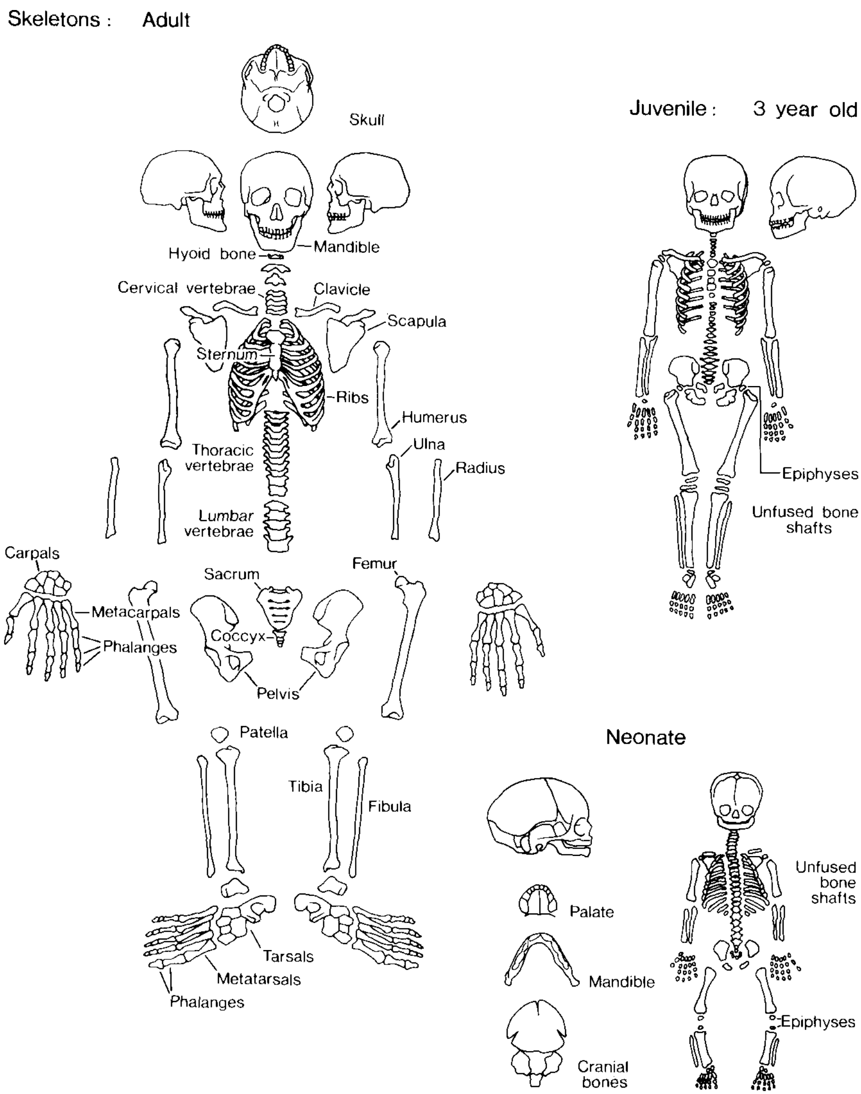
Lifting and handling: It should be remembered that the quality of information obtainable from the skeleton is directly related to the completeness of the skeleton. Fig.38 shows the location of all the bones in the skeleton of an adult, a juvenile and a neonate.

The skeleton should be removed from the ground as follows:

(a) Lift and bag the right arm, then lift and bag the right hand. Repeat the operation for the left arm and hand.

(b) The same procedure should be followed for the legs and feet.

(If it is not possible to separate out the hands or the feet, then they should be bagged together (i.e. right AND left hands *or* right AND left feet). Special care should be taken when bagging up the hands and feet, since these bones are often the least well represented. Soil from the surrounding areas should be sampled for wet sieving later, to recover the small bones of the limb extremities).



38 The main bones of the human adult, juvenile and neonate skeleton.

(c) Bag the skull and mandible together. Skulls should never be picked up by the eye orbits, and must be supported with both hands.

(d) The torso (pelvis, vertebrae etc.) may be bagged together.

(e) When lifting juveniles and infants it is important to realise that the epiphyses – the ends of juvenile bones – have not fused with the bone shafts, and so special care should be taken to recover them. When excavating infant skeletons the soil immediately surrounding the skeleton should be collected and bagged to ensure complete recovery. An infant's epiphyses resemble small pebbles.

GREAT CARE SHOULD BE TAKEN WHEN CLEANING AND LIFTING JUVENILE SKELETONS AS THEY ARE EXTREMELY FRAGILE.

(f) All bags must be well stapled shut and have a label both inside and outside. Skeletons should be boxed as soon as possible after lifting, even before washing, to minimise crushing.

(g) Air should be trapped in with the bones when bagging, to prevent crushing. It is most important to keep each infant limb separate from the others, because the younger the infant the more difficult it is to identify the individual bones. Infants and juveniles must be kept separately from adult skeletons because they are VERY FRAGILE.

(h) If a cremation is found in a complete pot it should be lifted whole and excavated on site, if possible by the human osteologist. If the cremation is in a broken pot or in a pit it is most important to make sure that the whole context is bagged up, including any surrounding soil which the cremation may be mixed with. Excavating a cremation is often a very slow process, especially if the soil is compacted, but the more complete the pieces, the more information can be retrieved.

Material associated with the skeleton: Hard structures are often produced by the human body during life and, in some circumstances, may persist after burial so that they can be retrieved during excavation. Kidney, bladder, sinus and gall stones, like epiphyses, resemble small pebbles and are therefore difficult to recognise. Hyatid cysts – cysts produced as a reaction to the tapeworm parasite – can be found in many regions of the skeleton, but more usually in the abdomen, thorax and cranium. These cysts are normally of a thin calcareous structure and roughly spherical in shape. Biological material to be expected include stomach contents and coprolites: these may contain cereal fragments, seeds of food plants and the eggs of intestinal parasites. Although they may be preserved by mineralisation, these are most likely to occur in waterlogged deposits.

3.5.3 HOW TO COMPLETE THE COFFIN RECORDING SHEET (Fig.39)

Note that this sheet can be used not only for wooden coffins but also for lead coffins and for other burial features such as stone cists or tile-lined graves. See Section 3.1 for information about elements common to this sheet and the general Context Recording Sheet.

Grave fills: List the context numbers of all the grave fills, preferably in stratigraphic order, with the latest first.

Grave cut: Note the context number of the grave cut.

Skeleton: Note the context number of the associated skeleton.

Shape, dimensions and distinguishing characteristics: Draw the shape of the coffin here and include coffin furniture (for example, handles, decoration, breastplates) with their approximate locations. Make a note of all the dimensions in the relevant places. If the coffin is decorated, contact the site supervisor to arrange special recording – for example, close-up photography, 1:1 tracing and/or entire lifting by conservators.

Description: Describe the coffin, giving details of design and construction, materials used, unusual features, text of breast-plates etc.

Stratigraphic matrix: Only enter the relevant stratigraphic relationships here (ie. the grave fills and cut numbers). DO NOT enter the skeleton number (it is stratigraphically 'within' the coffin number and in terms of chronological sequence is contemporary).

Preservation of coffin: Tick one of these boxes to indicate how well the material of the coffin survived. If preservation is variable give details in the Description part of the sheet above.

Treatment: An entry should be made here if the coffin underwent any treatment from conservators before excavation or during lifting.

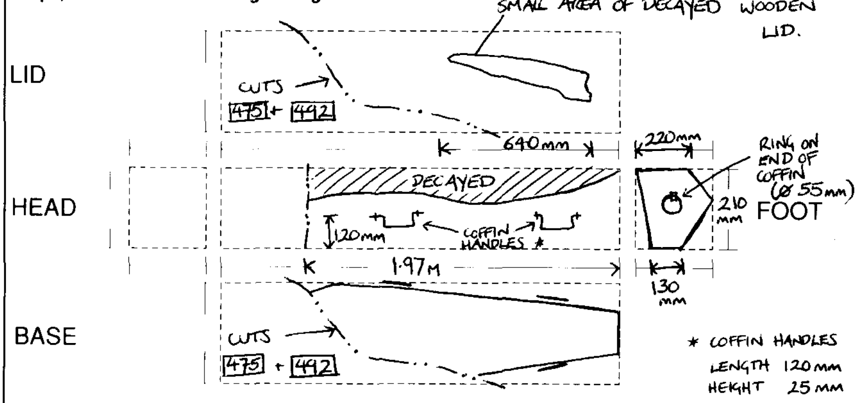
Finds: Enter details of any coffin furniture and of any other finds closely associated with the coffin.

COFFIN RECORDING SHEET

Grid Square(s)	Area/Section		Site Code	Context
115/210	B	COFFIN	XYZ | 89	536

Grave fills : 532, 533 & 535 | Grave Cut : 548 | Skeleton : 537

Shape, dimensions and distinguishing characteristics :



Description : VERY DECAYED SHOULDERED AND TAPERED COFFIN. LID COMPLETELY DECAYED. ON NORTH SIDE TWO PLAIN HANDLES (GRIPS), ONE SURVIVED ON SOUTH SIDE. AT FOOT OF COFFIN A CIRCULAR GRIP WITH HINGE ATTACHED WAS RECOVERED. THE HEAD AND MOST OF THE SOUTH SIDE WERE TRUNCATED BY CUTS 475 + 492. SOME SMALL FIXING NAILS FOUND NEAR FOOT OF COFFIN.

Your discussion : COFFIN OF SKELETON 537

PTO

Stratigraphic matrix

535

This context is 536

548

Preservation of coffin Good ☐ Moderate ☑ Poor ☐

Treatment : N/A

Plan nos : P 536 (X)	Site book refs :	Initials & date NH 14/10/89
Other drawings : S/E	Matrix location : E7	
Photographs : ☑ Card nos :		Checked by & date SP 21-10-89

Levels on reverse

Tick when reduced and transferred to plans : ☑

Highest : | Lowest :

Finds (tick)

None	Breast plate	Grip	Grip plate	Hinge	Brac-ket	Fixing nails	Shroud pins	Fabric
☐	☐	☑	☐	☑	☐	☑	☐	☐

Environmental Samples

Sample nos & type : (87) WOOD I.D.

Other finds (specify) :

Finds sample (BM) nos :

Provisional period	Group	Burial no	Initials & date

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39 An example of a completed Coffin Recording Sheet.

3.5.4 SOME FURTHER NOTES ON THE IDENTIFICATION, RECORDING AND EXCAVATION OF COFFINS

A wide range of burial practices have been encountered on excavations in London. These vary according to custom and period. Tile-lined burials have been found on Roman sites, as have stone and lead coffins, and wooden coffins sealed at the edges with lead strips; occasionally, stone or lead coffins may be found on medieval sites. The use of stone or lead would probably have depended on factors of wealth or status; most medieval burials were made either in wooden coffins or without coffins at all, the body simply being tied in a shroud before inhumation.

> IMPORTANT: IF A SEALED LEAD COFFIN IS UNCOVERED, GREAT CARE SHOULD BE TAKEN TO PREVENT THE SEAL BEING BROKEN. A SEALED LEAD COFFIN SHOULD ROUTINELY BE REBURIED WITHOUT MAKING ANY ATTEMPT TO OPEN IT. IF, HOWEVER, IT IS THOUGHT DESIRABLE TO OPEN IT, ARRANGEMENTS SHOULD BE MADE FOR SPECIALISTS AND VIDEO-RECORDING FACILITIES TO BE PRESENT. THE LOCAL PUBLIC HEALTH OFFICER MUST ALSO BE CONTACTED BEFORE IT IS OPENED.

In some cases the wood of the coffin may be preserved, but in others a coffin may be represented simply by nails. The number of nails in a grave may be deceptive, however, as to the original extent of the coffin: it is possible for example that the sides of the coffin were jointed rather than nailed, and that nails were only used to secure the lid. When most of the wood has decayed it is important to record exactly in 3-dimensions the position of all nails found during excavation of the grave fill; this will allow later reconstruction of the coffin's dimensions. Such 3-dimensional recording should indicate clearly both the head/point of the nail and the orientation of the nail shank. Wooden coffins were sometimes designed with outer and inner coffins; lead coffins usually have one or more inner wooden coffins. It can sometimes be useful, when excavating a complex coffin, to record various elements of the structure on a composite plan as the grave fill is removed. Remember to take a sample of a wooden coffin for species identification.

Within the coffin there may have been a chalk, ash or charcoal lining, as well as the shroud in which the body was wrapped. These coffin linings and/or shrouds may survive in various degrees of preservation, depending upon the ground conditions. The purpose of chalk or charcoal linings in graves or coffins is a subject of some debate, but it seems more likely that they were for purposes of hygiene rather than ritual. Crushed chalk occurs within graves from the Roman period onwards, both those which are probably Christian and those which almost certainly are not. Chalk should not, therefore, be thought of as an indicator either of date or of any particular ritual practice. Chalk, or a form of chalk, may also occur when it has been used as 'quicklime' to aid the decomposition of the flesh; an obvious example of this practice is in the mass graves of epidemic victims. On occasion other substances have been found used in this manner, for example red ochre. Always sample such deposits for laboratory analysis and identification.

The shape of a grave cut may help in determining whether the burial was made in a coffin or simply in a shroud. In graves without coffins an effort may have been made to dig the grave to fit the body, perhaps with a rounded extension for the head, tapering down towards the feet. Cuts for coffins are almost always of a more regular shape.

Although grave markers may occasionally have been of stone, it is probable that most graves were marked with wooden boards. As for all wooden artefacts, the survival of such markers depends primarily upon the soil conditions. If conditions do favour organic preservation, shroud fabric may survive; this should be carefully lifted with a supporting block of 'soil'. Also preserved sometimes, especially in post-medieval contexts, are coffin breast-plates. It is important that these are retrieved from the site. In both cases the Conservation Department should be informed. The Photographic Section may be able to undertake specialist photography of breast-plates or other coffin furniture or decoration before lifting is attempted.

4. FINDS ON SITE – INTRODUCTION

Finds can provide both dating evidence and information about the activities carried out in the past at particular locations. Such evidence can indicate social or economic status, and can therefore have direct implications for the interpretation of the excavated structural sequence. It is also possible to elucidate patterns of production and trade by assembling the finds evidence from a number of different sites.

The Finds Department has now worked out a detailed chronological framework for the Roman, Saxon, medieval and post-medieval ceramic sequences. Future excavation will help to refine this framework, which, it should be noted, depends largely on associated dendrochronological dating and/or independently datable objects gathered from a large number of sites. Many points remain open to question on grounds of interpretation, and assemblages for which absolute dating can be claimed are very few indeed. Some parts of the sequences have suprisingly little evidence: for example, the late Roman period, the entire Saxon era and the 15th–16th centuries.

The close relationship of recently excavated finds with a well-recorded structural sequence with an accessible archive is the cornerstone of most of the work undertaken by MoLAS. Many objects may be residual in the context in which they are found, however; even so both these and entirely unstratified finds can contribute significantly to research. They can extend knowledge of a particular category of find with new variants, more complete examples, and/or with a range of fresh detail. The mere fact that an item was found on a particular site in London can in itself be valuable information: valid inferences can be made to improve on the lack of associated data for many objects in the established collections both of the Museum and other institutions.

Finds retrieval: Finds of all categories, and of all periods, are recovered as a matter of routine during excavation. In an ideal situation total recovery should be practised, but this is rarely achieved owing to a variety of constraints. Special techniques can be used to improve recovery – for example, sieving for total recovery of small items or fragments, and detecting for all metals. Such methods will be appropriate where it is important that as much finds evidence as possible should be recovered.

During normal excavation it is important for the excavator to keep an open mind about collection policy: in particular, objects which do not seem to be chronologically correct should still be retained. Biased evidence can easily result from selective collection within certain categories. For example, the preferential collection of samian ware – being bright red it is highly visible – has led to inaccurate inferences being made in subsequent reports. Similarly all fragments should be collected, as more than one vessel, or object, of a particular form may be present. Sherds from the walls of vessels, for instance – even small fragments – can often be as informative as larger pieces.

Non-retrieval of finds should not be considered unless discussion has previously taken place with the Site/Finds Liaison Supervisor. This is particularly important when large quantities of a single find type are excavated; in this case the implications for current research need to be considered by the appropriate specialist. If any advice is required from the Finds Section the Site/Finds Liaison Supervisor should first be contacted. They will be able to arrange for specialists to visit excavations and can arrange 'spot-dating' of significant contexts during excavation if this is essential.

It is important that where there is a possibility of obtaining information about industrial processes all relevant material should be collected, so that a full range both of the goods made and the stages of manufacture can be established. Samples from hearths, drains, pits or other features associated with industrial activity or industrial waste should be collected. Consult the Site/Finds Liaison Supervisor and the Site Environmentalist before sampling.

Waterlogged deposits, notably in the waterfront area, the Walbrook Valley and the parts of the City Ditch, include a wide range of non-ceramic objects in a fine state of preservation that are often of great significance. Pits and wells have also been found occasionally to produce remarkable assemblages of well-preserved objects. The Site Conservator should be contacted if such conditions are expected, before objects begin to be recovered.

4.1 GENERAL FINDS COLLECTION POLICY

ALL finds are collected with the exception of the following:

- unstratified unworked animal bone.
- shell, unless deliberately deposited in a single context as one action (see Section 3.2).
- unstratified building material of a type that would not normally be accessioned (ie. NOT decorated or stamped tiles, or moulded stones).
- building material smaller than 50 sq. mm, except for *tesserae,* wall plaster, keyed clay walling and material that would normally be accessioned.
- *opus signinum,* mortar, ashlar, stone rubble, cobbles or post-medieval bricks, unless taken as samples.

IF LARGE QUANTITIES OF BUILDING MATERIALS ARE RECOVERED, (IE. MORE THAN ONE CRATEFULL), THE BUILDING MATERIALS RESEARCHERS MUST BE CONSULTED.

4.2 SOME FURTHER GUIDELINES ON FINDS RETRIEVAL METHODS

CONTEXT TYPE	RETRIEVAL METHOD
Pit fills	Generally hand retrieval. Bulk sample if prolific pottery (in particular, late Roman, Saxon or 15th-16th century date) or other finds. Sample concentrations of manufacturing waste, eg. worked bone (in this case any worked and unworked bone should be sampled together). Bulk sample groups of pits sealed by the same layer, (in consultation with the Site Environmentalist and the Site/Finds Liaison Supervisor).
Wells/ Cesspits/ Drains	As above, but: Metal-detect spoil (or remainder of spoil if sampled); good metal preservation is likely in waterlogged conditions.
Waterfront reclamation dumps/ Foreshore deposits	Hand retrieval, and: Bulk sample (*c*. 50 bags). Metal-detect remainder of spoil. Particularly important are late Roman and 15th/ 16th century deposits. Saxon waterfront contexts tend to be sparse in finds, but should still be metal-detected and bulk sampled. Saxon clay banks are usually all void of finds.
Marsh deposits Ditch fills	Hand retrieval. Test spoil with metal-detector, as good preservation of metal is likely.
'Dark Earth'	Hand retrieval. Test spoil with metal-detector.
Middens	Hand retrieval. Bulk sample. Test spoil with metal-detector.
Floor surfaces/ occupation layers	Total bulk sample (ie. 100%); 3-D plot if possible. (Eg. floor of sunken building).

Floor surfaces laid	Hand retrieval. Metal-detect *in situ*. (eg. tessellated floor).
Make-up dumps/Walls/ Destruction dumps	Hand retrieval. Metal-detect spoil for dating evidence (eg. coins). Consult Building Materials Researchers.
Roads	Hand retrieval. Metal-detect *in situ* or as spoil for dating evidence (eg. coins).
Hearths	Bulk sample.
Industrial deposits	Bulk sample industrial residues (e.g. slag). Metal-detect remaining spoil if metal waste products are present.
Grave fills	Metal detect *in situ* for shroud pins, jewellery and coffin nails/furniture. Look out for concentrations of nails which could represent hobnail boots: these should be lifted by a conservator. Sample appropriate area if there are very small items, eg. beads. (NB. 3-D plot grave goods).
Coffins	Consult appropriate curator and conservators via Site/Finds Liaison Supervisor, also consult Site Environmentalist.
Natural deposits	Is it natural? Test for prehistoric activity by continued excavation or sondage. Fluvial deposits may contain discarded objects which have settled below the surface: metal-detect top 100 mm and spoil.
Any layer/Fill	Look out for concentrations of artefacts (e.g. coin hoards): sample or metal-detect surrounding area as appropriate. Concentrations of nails may represent decayed organic artefacts (eg. hobnail boots, or wooden structures).

These guidelines complement those set out for environmental sampling (Table 1). Bulk samples are taken both for finds and environmental material, but where a sample is taken solely for finds – for example to retrieve a concentration of very small artefacts – this should be made clear on the labels/sample sheets.

Bulk samples will vary in size according to the size of the context to be sampled. From large contexts, such as waterfront reclamation dumps, 50–70 large bags should be sufficient. Samples from cut features will usually be much smaller. It may be worth taking 100% of some contexts, for example well fills. Always consult the Site/Finds Liaison Supervisor and the Site Environmentalist before taking bulk samples.

Metal-detecting can be carried out by site staff, a MoLAS detector operator, or members of the 'Society of Thames Mudlarks and Antiquaries'. The Site/Finds Liaison Supervisor will provide metal-detectors and arrange for operators to visit the site as required.

4.3 CONSERVATION OF FINDS ON SITE

Objects in the ground will decay to a point at which they are in equilibrium with the sediments surrounding them. After that point is reached, decay will proceed only very slowly. When an object is removed from its environment this equilibrium ceases, and decay will accelerate unless a new equilibrium is attained. It is important, therefore, to treat finds as soon as they are removed from the ground.

In general terms it is advisable to retain finds within an environment approximating to that from which they have been removed. Finds from damp environments should be kept damp, and finds from desiccated environments should be kept dry. Few finds need to be cleaned immediately, and in many cases attempts to clean an object when first recovered may cause damage. If the excavator is uncertain about identification or treatment, the find should be maintained within the conditions in which it was excavated and the Site Conservator and the Site/Finds Liaison Supervisor should be contacted.

Table 2 below provides some basic on-site conservation guidelines for excavators.

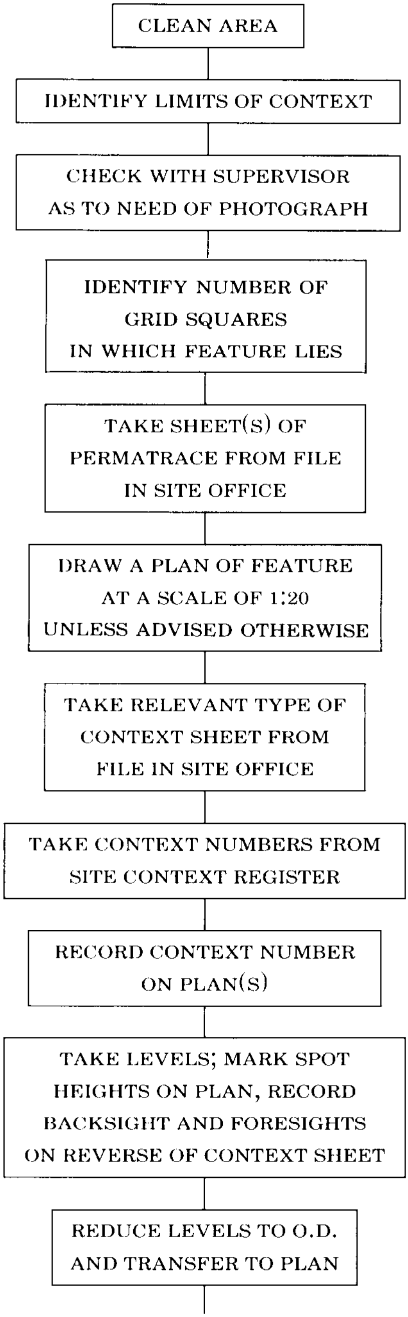
TABLE 2

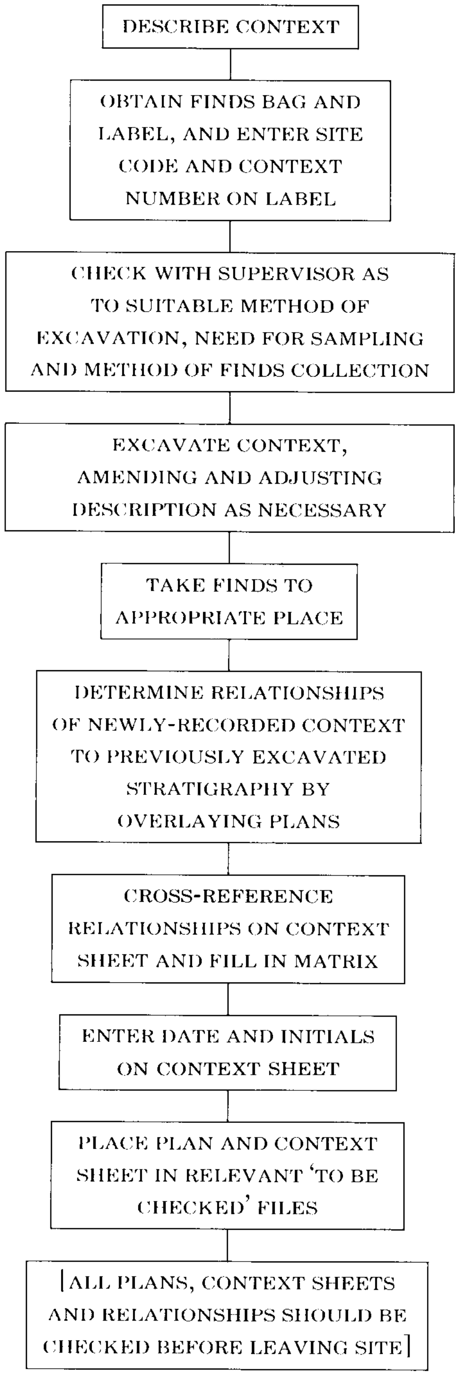
MATERIALS	TREATMENT	PACKAGING	COMMENTS
INORGANIC			
METAL – DRY SITES	Do not clean	Punched polythene bag in 'DRY BOX' (containing silica gel); if fragile, cushion on acid-free tissue in a clear plastic box.	To avoid damaging objects all bags containing 'small finds' must be stored in a separate container to bulk finds.
METAL – WET SITES (eg. Walbrook/waterfront)	Do not clean	Air dry on trays, then as above	
CERAMIC STONE WALL PLASTER	If delicate, flaky or 'crumbly' may need extra support or lifting by conservation dept.	Polythene bag; handle painted surfaces with care. Put articulated sections on a flat support	As above
SHALE JET	Do not clean; keep wet	Double bag, put in 'DAMP BOX'	Take to finds section on day excavated
GLASS	If plain and robust (ie. most Roman and post med.) bag dry; saxon, med. and decorated glass should be kept damp or wet	Do not bag with bulk bone and pottery. Store med. and decorated glass in 'DAMP BOX'.	Treat glass as a 'small find'. Procedures may change for sites with large quantities of med glass (ie. Monastic sites)

Continued overleaf

ORGANIC			
LEATHER WOOD FIBRE WORKED BONE ANTLER IVORY HORN TORTOISESHELL AMBER	Do not clean; keep damp or wet Check daily that damp or wet objects do not dry out while stored on site	Double bag; avoid handling. Store in 'DAMP BOX'. Do not separate components (eg. shoes)	Contact finds section if waterlogged deposits encountered. Take individual finds to finds section as soon as possible
COMBINATIONS			
FOR EXAMPLE SHOE WITH BUCKLE KNIFE WITH HANDLE	Treat as for organics	Treat as for organics. These objects may need extra support	Take to finds section on day excavated; these objects often need immediate attention

5. FLOW DIAGRAM TO SHOW ORDER OF OPERATIONS TO FOLLOW WHEN USING THE SINGLE CONTEXT RECORDING SYSTEM (FOR ALL CONTEXT TYPES)




DESCRIBE CONTEXT
OBTAIN FINDS BAG AND LABEL, AND ENTER SITE CODE AND CONTEXT NUMBER ON LABEL
CHECK WITH SUPERVISOR AS TO SUITABLE METHOD OF EXCAVATION, NEED FOR SAMPLING AND METHOD OF FINDS COLLECTION
EXCAVATE CONTEXT, AMENDING AND ADJUSTING DESCRIPTION AS NECESSARY
TAKE FINDS TO APPROPRIATE PLACE
DETERMINE RELATIONSHIPS OF NEWLY-RECORDED CONTEXT TO PREVIOUSLY EXCAVATED STRATIGRAPHY BY OVERLAYING PLANS
CROSS-REFERENCE RELATIONSHIPS ON CONTEXT SHEET AND FILL IN MATRIX
ENTER DATE AND INITIALS ON CONTEXT SHEET
PLACE PLAN AND CONTEXT SHEET IN RELEVANT 'TO BE CHECKED' FILES
[ALL PLANS, CONTEXT SHEETS AND RELATIONSHIPS SHOULD BE CHECKED BEFORE LEAVING SITE]

6. PHOTOGRAPHY

Photographs can convey complex visual information better than either drawings or words. Good photographs complement other forms of site record: do not take photographs as a substitute for making other records, except in very well-defined situations (for example, rectified photographs of wall elevations: see 'technical photographs', below).

A photographic image usually yields information of value in proportion to the amount of care that goes into choosing the subject, the direction and field of view, making the subject clearly visible, and collating the photographic record with other records. It is much better and more economical in the long run for a site to be represented by relatively few well-prepared images, which are easy to understand and index, than by a large number of sloppily-made images, which cannot be understood by anyone who did not see the site at first hand and are hardly worth the cost of indexing.

Always bear in mind that an image is not only an archival record but may also be reproduced in a publication or projected on a screen. Such images should be of publication quality: whatever appears in them should be presented as clearly as possible, without distractions.

Usually a supervisor decides what to photograph on site, in order to call on specialist photographers' time economically, and in view of the time and effort that site staff must spend preparing for a good photograph. All site staff, however, should know what is worth photographing and how to prepare for a photograph, and should be ready to consult the MoLAS Photographers about this.

What to photograph:

- Anything inherently difficult to record by means of plans, drawings and written description alone – structures, surface detail showing patterns of wear, other evidence of function and use.

- One or more contexts representing a significant feature. Would this image be useful as a lecture slide or in a publication or an exhibition describing the history of the site?

- Two or more significant contexts, in order to show a notable relationship between them (for instance, they are interpreted as being in association, or contemporary, with each other – although this interpretation at the time of excavation may be reinterpreted later). Excavation is usually organised so as to be stratigraphically 'in phase', as far as possible, facilitating such photographs.

- Anything a record of whose appearance more or less as found would help post-excavation assessment and analysis, even – or perhaps especially – if it seems difficult to interpret at the time.

Examples are:

- A structure of stone, brick, timber, clay or wattle, to show how its parts interrelate and to show three-dimensional aspects that otherwise might be difficult to record and visualise;

- A complicated cut, difficult to record and visualise three-dimensionally;

- Any significant detail of construction, use, destruction or disuse (such as prefabrication marks, mason's marks, graffiti, misfitting or empty joints, evidence of repair, wear or reuse);

- The surface detail of a layer, showing evidence of use or disuse;

- Collapse *in situ* of structural components and materials;

- The apparent association of contexts interpreted as being in phase with each other, such as a surface in relation to a contemporary wall, drain, pit or hearth, the lining of a pit, a scatter of industrial waste, an array of post holes, a cremation vessel *in situ*;

- A section showing a possible truncation or destruction horizon, such as the transition between early Roman deposits and 'dark earth'.

It has sometimes been possible to photograph a complicated timber structure several times, firstly as found intact, and then at different stages of progressive dismantling to show how it fitted together. Conversely, redeposited worked stones have been photographed firstly as found, individually, and then together, as they might have been assembled originally in a structure (see Sections 3.3.3, 3.4.1, and 3.4.2).

'Working shots': These are taken to show the setting of the site, site conditions (especially affecting archaeological work, such as waterlogging, intrusions, depth or difficulty of access), and staff or machinery at work (such as machine clearance, trench shoring, unusual arrangements for spoil disposal or public visits, as well as techniques of excavation, surveying, finds recovery, conservation and environmental sampling). Working shots should be taken on all evaluations and watching briefs, even if nothing else is worth photographing.

These images must be numbered and indexed in the same way as all other images.

Preparing for a photograph: The subject of every photograph must be clearly visible. Except in the case of working shots, clarity and visibility require that everything in an image be punctiliously cleaned. Archaeological strata must be cleaned carefully, anyway, for their stratification to be understood.

By comparison with drawn plans and sections, a photographic image is relatively unselective and contains much more visual information; yet a good image must also be as unconfusing and self-explanatory as possible.

In cleaning, take special care to define precisely all the distinct elements of a subject. Structural elements, especially, should be well-defined. For example, remove all extraneous dirt from brickwork to show its materials, bond and pointing with maximum clarity. Do not, however, attempt to emphasise or exaggerate edges unduly (for example, by scribing lines between contexts in a section face).

Do not leave trowel marks, smears, dust, or any extraneous, loose particles of soil. When entirely clean and just before a shot, spray gently with water to restore freshly-excavated colours: avoid creating puddles or unreal patterns.

If you cannot avoid leaving something irrelevant or anachronistic in the image then, to prevent misunderstanding, this should be made obvious: so, for example, a pit that was irrelevant to the subject of a photograph could be filled with water or loose spoil.

The best lighting is usually diffuse, without shadows, but sometimes strong sunlight emphasises the relief or form of a subject. Elements of a subject can be deliberately emphasised in other ways, for example, by picking out inscribed marks in timber with white chalk, but these images must be supplementary to others without such enhancement.

Keep all distractions out of the image if you can. Footprints, handprints, tools and equipment, labels, finds bags, clothing and personal belongings, or people, should not appear unless serving a purpose in the image. Do not remove grid pegs, but do remove their labels and protective blocks.

At least one metric scale rod must appear in the image to give the subject scale. MoLAS uses scale rods of different lengths (100 mm, 0.2 m, 0.5 m and 1 m), with alternating red and white divisions, each size being recognisable by the number and arrangement of these divisions. Use a scale rod appropriate to the size of the subject, without obscuring it or distracting from it. Generally, for horizontal subjects lay the scale rod parallel to the lower edge of the image and for vertical subjects place the rod on end parallel to one side of the image.

Do not put numbers, a north arrow or other extraneous information in an image, except in the case of certain technical photographs. An image can then be used more easily for many different purposes.

Technical photographs: These are usually medium or large format black and white, and typically record data that will be processed further and perhaps converted into some other form.

Examples are:

- Vertical photographs of skeletons (see Section 3.5.2);

- A rectified photograph (ie a photograph taken at right angles to the plane of the subject, incorporating surveyed targets, and printed to scale – equivalent to an elevation drawing);

- Stereo pairs from which photogrammetric plots may be computed and reproduced (forming elevations, plans and profiles of structures);

- Photographs using film sensitive beyond the visible spectrum (ultraviolet, infrared).

In general, these images must be capable of being scaled, measured and located accurately. They often include targets whose site grid coordinates and level are recorded. They may also include numbers. Always consult MoLAS Photographers about these types of photograph.

In excavating human remains, observe the conditions of any Home Office licence. Do not allow frivolous or unauthorised photographs to be taken.

Taking and identifying photographs: A single image may exist in several different formats. Usual MoLAS practice is to have a medium format black and white photograph and a 35 mm colour transparency of each image, the black and white negative being the most durable form of photographic record. Medium format colour photographs are also taken, but not normally as a matter of routine.

All photographs are numbered and indexed by image. MoLAS Photographers will supply an image number (based on year and serial number) when they take a photograph. Site staff must note this at the time on relevant context sheets. A contact print is made later of each negative and archivally mounted on a numbered card (Fig 40). The supervisor should fully annotate these cards, identifying the contexts in an image by context number, specifying direction of view, reason for taking the photograph and adding other interpretative comments. The size of the scale rod appearing in the image should be noted. In due course, when an image is published its caption should also be recorded on this card.

In certain circumstances nominated staff may be issued with 35 mm cameras and film to take photographs, during a small evaluation or watching brief, for example. These staff must have been trained by MoLAS in archaeological photography and will be on a list of qualified photographers held by MoLAS Photographic Section. These staff will be issued with pre-numbered photographic record sheets to be filled in with appropriate context numbers, etc, and returned to MoLAS Photographers for processing and archiving.

The main purpose of the images made under such circumstances is to amplify the site record and assist interpretation. It is understood that these images are not intended for publication and are not expected to be of publication quality: they represent the minimum photographic record required of any site. All staff should be aware that if a subject is striking enough for its image to be worth publishing, then the requisite photographs should be made by MoLAS Photographers.

In general, a site archive may include photographs of vital archaeological information from any source, provided the images are numbered and indexed as usual.

NEG. NO.	FORMAT		TRANY	SITE CODE		CONTEXT	ACCESSION NO.
286/88/1	6x9	12	35	LHY	88	135, 152, 156, 159, 168-9, 73	< >

DATE APRIL 18th. 1988

SITE LOTHBURY

DIRECTION OF VIEW VERTICAL / NORTH — NE

REASON FOR PHOTOGRAPH
GENERAL VIEW OF CHANNELLED HYPOCAUST [168] WITH CENTRAL DOUBLE UPDRAUGHT FLUE HYPOCAUST [168] HEATED ROOM AREA TO WEST OF WALL [73]. EASTERN ROOM WAS NOT HEATED.
P.T.O.

OBJECT

MATERIAL

PERIOD

INTERPRETATION/COMMENTS
THIS IMAGE PUBLISHED (IN COLOUR): MOL 1989 'DIGGING IN THE CITY 1988' p. 22
CAPTION: 'THE SHAFT EXCAVATED AT LOTHBURY PRODUCED EVIDENCE OF SUBSTANTIAL MASONRY BUILDINGS OF THE ROMAN PERIOD. SHOWN ABOVE IS THE UNUSUAL H-SHAPED HYPOCAUST, SEPARATED FROM AN AREA OF RED TESSELLATED PAVEMENT BY A LARGE STONE WALL'.
SCALE: 10 X 100 mm

NAME

SUPERVISOR

PHOTOGRAPHER

40 An example of the front (top) and back (bottom) of a photographic contact card – an index card for a contact print of an image – annotated by the supervisor.

7. SURVEYING

Accurate location of an archaeological site with reference to the Ordnance Survey (OS) national grid and datum is as important as the accurate location of archaeological data within a site, both in plan and in height.

In a controlled excavation, plans of contexts are drawn by reference to a site grid (see Sections 1.2 and 2.1), and sections and elevations must also be located by reference to this grid (see Section 2.2). A site grid should therefore be set out on site as soon as possible. A base plan can be drawn on site to show the layout of a grid in relation to areas of excavation, basement walls and other landmarks (Fig 41). From this and other survey data a Site Plan should be drawn or plotted (Fig 42). Do this soon enough to enable its accuracy to be checked on site.

Even where no controlled excavation takes place, the position of contexts should still be recorded as accurately as practicable. For example, the position of sections drawn during a watching brief or small evaluation should be plotted accurately on a plan and their height ascertained.

Most surveying is done by a MoLAS Surveyor, using a total station. This incorporates a theodolite, co-axial EDM (for electronic distance measurement) and data logger. In some circumstances it may be possible to use a total station continuously on site (for example, to record the position in three dimensions of scattered struck flints). Usually, however, this equipment can only be used to set up or check a site grid, and to determine the position of a site grid in relation to the OS national grid. By means of CAD (computer-aided design), the logged data can then be used to make a Site Plan. Combined with OS digital data or digitised printed plans, such a Site Plan can be plotted accurately and easily in relation to the national grid.

All site staff should know how to use and maintain a site grid (by drawing, for example, a base plan to record the layout of a site grid), what to do in the absence of a grid (in small evaluations and watching briefs, and inside standing structures), how to take levels and how to record the position of sections and elevations. All staff must be aware of the importance of the Site Plan for the proper location of archaeological information.

Site grid: This should cover the site with a notional set of coordinate lines, equivalent to a map grid. Measurements are made in metres from an origin at the south-west corner of the grid. Coordinates can be applied to any point within the grid, measurements eastwards (eastings) always preceding measurements northwards (northings).

The coordinates of the origin should be chosen so as to be able to distinguish eastings from northings at a glance, and avoid negative values: most sites, measuring less than 100 m from west to east, can therefore be covered by a grid whose origin has coordinates 100/200 (the eastings could run from 100 up to 199, the northings from 200 onwards). Put the origin of the grid slightly outside the physical limits of the site, so that the grid is sure to cover the whole site. If possible, position a grid so that it runs roughly west-east and north-south, to avoid confusion, but do not attempt to align it exactly with the OS national grid or with true north.

A grid is set out by marking suitable grid points on the ground, usually starting with a base line. The base line should run across the centre of the site and not through the origin of the grid. This is to ensure that a grid is set out most accurately where it is most needed.

Set out further grid points by measuring directly from the base line, if possible. You can do this by hand if you set out right-angled triangles from the base line (for instance, with sides in proportion 3:4:5). Set out points at the intersection of suitable grid lines, so the grid is clearly divided into 5 m squares for making plans. Note that these 5 m plan squares, although aligned to the grid, don't have to coincide with every unit of 5 m on the grid: they should simply be arranged to cover areas of excavation economically.

Mark grid points by pegs in the ground and nails in floors and walls, to which tapes can be attached for further local measurements (usually to set up planning frames square to the grid, and to measure in the ends of sections and elevations). An awkwardly-placed feature, such as the top of a standing wall, can be planned on its own local grid line, the ends of which are located on the site grid as if they were the ends of a section.

Remember that a site grid exists only in the horizontal plane. Take care to make all measurements of distance as closely to the horizontal as possible, especially across sloping ground, gaps and obstacles. Always use a plumb bob to ascertain the true position of a point on the grid, if necessary. Measure distances on the grid to the nearest 10 mm, expressing grid coordinates in whole metres and to two decimal places of a metre, where appropriate.

Although grid points are marked as firmly as possible, pegs inevitably move position slightly as the ground is reduced in the course of excavation. For this reason, check the position of grid pegs from time to time by measuring from the base line or a control station established by the surveyor. For similar reasons, when planning a context do not rely on measurement from the sides of a trench – limits of excavation tend to contract as excavation proceeds.

Mark pegs with their grid coordinates, written on weatherproof labels tied to the pegs. Do not mark the protective wooden blocks that fit over grid pegs.

If possible, project grid lines onto basement walls and foundations. Mark these points so as to be able to reinstate the grid lines if grid pegs have moved and grid points have become uncertain, and record these site landmarks and limits on a base plan, preparatory to the Site Plan.

Sometimes it may be necessary to set out more than one grid to cover different parts of a site, for example, inside the basement rooms of a standing building. In this case the Site Plan must show how these grids interconnect.

A grid can be constructed and superimposed retrospectively, where none originally existed, after a watching brief, for instance. This makes the plotting of sections and subsequent references to information in plan easier.

Taking levels: The position of contexts must be recorded in three dimensions. Measure levels (ie spot heights) on site in relation to a fixed datum level or TBM (temporary or transferred bench mark). A TBM must be established on site as soon as possible, on some durable and accessible point. If other TBMs are established, measure their height in relation to the first TBM at once.

When taking levels, do not sight over more than 50 m. Read levels to the nearest whole division on the staff, ie the nearest 10 mm, writing these to two decimal places of a metre. Any attempt to be more precise than this is unnecessary and often unrealistic.

Determining the height of a TBM: The height of a TBM should be determined in relation to the known height of the nearest reliable OS bench mark. Do this without delay, so that site staff can reduce levels on context sheets and transfer the reduced values onto plans, checking the levels in the process (see

Section 3.1.1). Determine the height of a TBM by taking a chain of levels from the OS benchmark to the TBM, returning to the OS benchmark in a closed traverse. In this way, the value at the end of the traverse should be the same as that at the beginning, making the process self-checking. A discrepancy (or closure error) is practically inevitable, however, and all one can do is keep it acceptably small.

An allowable closure error must be less than a certain amount in relation to the number of intermediate instrument stations in the course of the traverse. The allowable closure error is given by

$$c = \pm 5 \sqrt{n} \text{ mm}$$

where n is the number of intermediate stations. The error, if within the limits of c, is distributed equally among the reduced levels for all the staff points.

In this traverse it is worth trying to make measurements more precisely than on site: read these levels to the nearest half division on the staff, ie the nearest 5 mm, expressing these readings to three decimal places of a metre. Keep the horizontal distances of the foresight and the backsight from any one station roughly equal and no greater than 50 m. Write down all workings, and initial and date them.

Locating trenches and other areas of excavation: The edges of every excavated area should be recorded at their maximum extent on a single plan at a suitable scale, usually 1:100 (Fig 41). Use this base plan to record how the site grid is established on site, plot the location of sections/elevations and plan the position of basement walls, foundation stanchions, building lines and other existing landmarks in relation to the site grid (see above). This plan can then be incorporated in the Site Plan prepared by a MoLAS surveyor and plotted in CAD (Fig 42).

Note that trench edges drawn on some context plans (as a dash-dot-dash line) do not necessarily indicate an area of excavation at its maximum extent, as the sides of a trench may slope or be stepped inwards in the course of excavation.

All trenches and areas of excavation should be identified unambiguously, preferably by letters. All plans that are not single context plans must be numbered in one continuous series, and listed in the site register with initials and date (see Section 8).

Locating sections/elevations: Sections and elevations are usually drawn in relation to a fixed datum line, marked by a string running horizontally between nails in the face of the section/elevation. Horizontal distances along the face can be measured off a tape fastened to the same nails, but a tape is not to be regarded as a substitute for a datum string. On tall, narrow faces, a datum string (and a tape) could be hung vertically rather than horizontally. Set up planning frames square to the datum string to draw the details of sections/elevations efficiently.

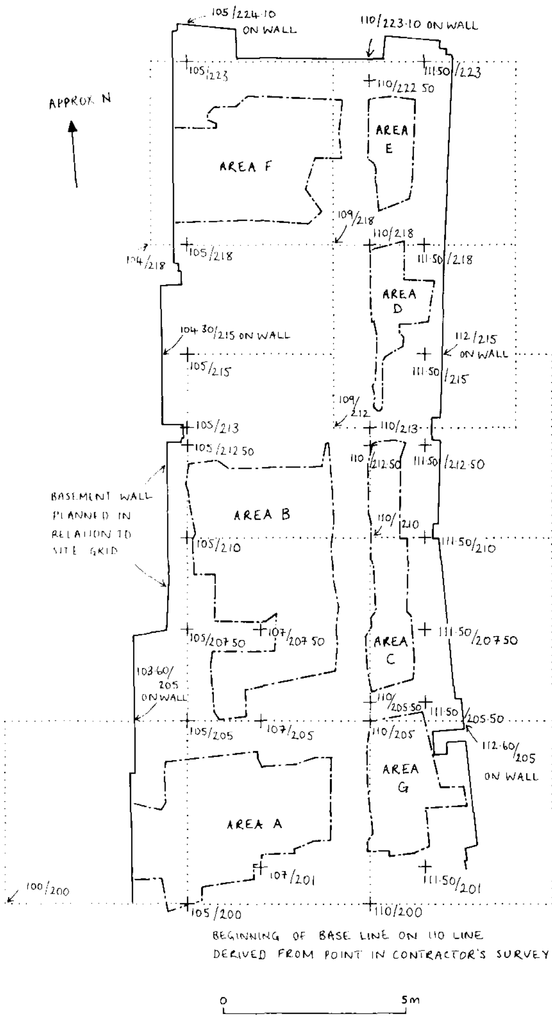
Always take care to locate the ends of a section/elevation, and any changes in direction, in relation to the site grid. Write the grid coordinates in appropriate positions on the drawing. Add a sketch plan, if necessary, to make the shape of a section/elevation clear. Note that if nails are not exactly at the ends of a section/elevation, grid coordinates of the nails alone will not be what is required on the drawing. Write the level, both as measured and as reduced, of a horizontal datum line or the top of a vertical datum line on the drawing.

All sections and elevations should be numbered in one continuous series, and listed in the site register with grid coordinates, datum level, initials and date (see Section 8).

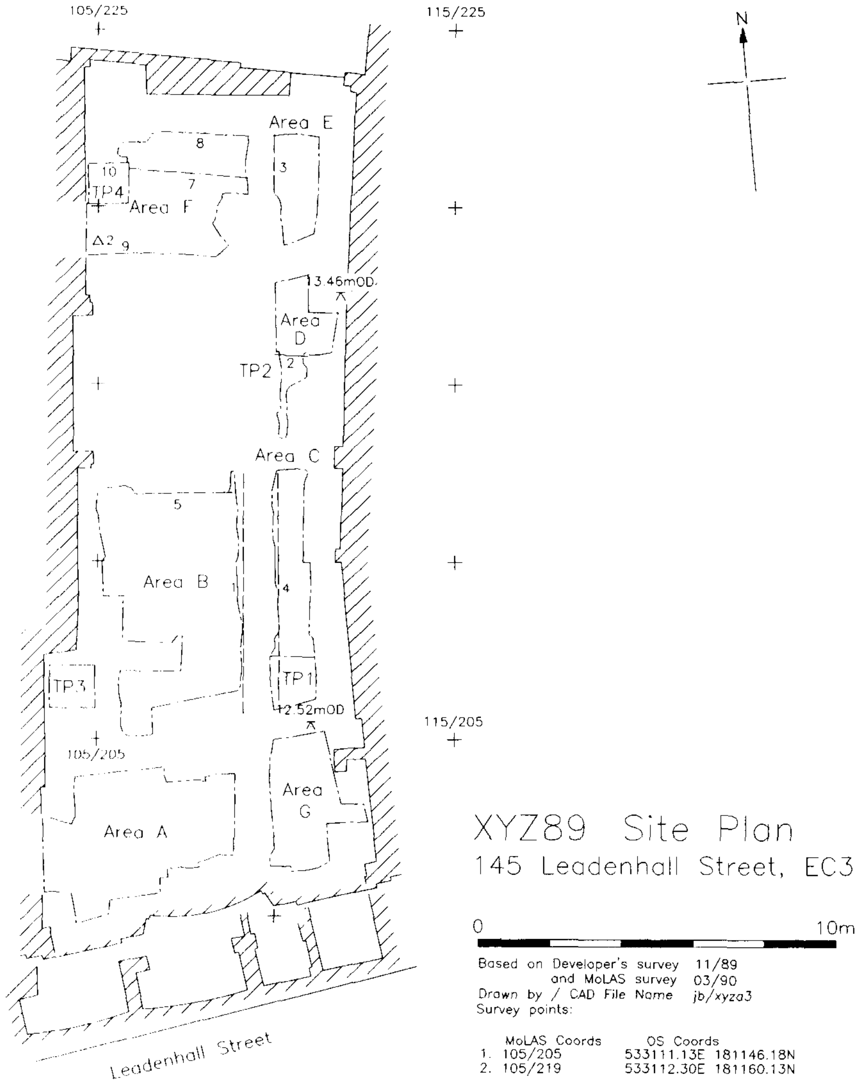
Location with respect to the OS national grid: This should normally be ascertained by the surveyor. The preferred method is to extend the OS control network (which consists of triangulation pillars, intersected trig points, permanent traverse stations and similar control points established across the country) onto a site and derive the OS national grid coordinates for at least two points on the site grid.

This can be carried out either by link or closed traverse, using the nearest OS control points, or by resection, taking bearings to a spread of OS control points on the horizon (such as church spires or radio masts). The allowable error (or misclosure) when closing a traverse should be 1:25,000 or better (the misclosure being expressed as a fraction of the total length of the traverse). Generally, this should allow the selected grid points to be located with respect to the OS national grid to within 0.02 m (ie an error of plus or minus 10 mm).

Any other, less precise method, such as mapping a site boundary and comparing it with a printed OS plan, should locate a site ideally to within 0.2 m (ie an error of plus or minus 100 mm).



41 An example of a base plan drawn on site, originally at a scale of 1:100. This shows the site grid (especially the base line and grid points used), the layout of 5 m plan squares, the edges of areas of excavation and the position of other landmarks, such as basement walls. Dotted lines here denote the edges of each 5 m plan square, which do not have to coincide with every 5 m on the grid. A base plan of this kind assists in making context plans and is a useful preparation for a Site Plan (see Fig 42 for an example of a Site Plan corresponding to this plan).



42 *An example of a Site Plan plotted in CAD, using electronic survey data gathered by a MoLAS surveyor, information recorded in plan by other archaeologists on site (see Fig 41) and survey data obtained from, for instance, a developer's contractors and the Ordnance Survey. This example shows selected site grid points, points to which OS grid coordinates have been applied, areas of excavation (lettered), section lines and test pits (numbered), temporary bench marks, and the edge of the site at basement level. At modern ground level, only the street frontage of the site is shown.*

Site Plan (Fig. 42): A Site Plan must be made of every site where contexts are recorded. This Site Plan has two linked purposes: to locate archaeological information internally, and to locate the site externally in relation to the OS national grid and datum.

A Site Plan is normally plotted out at a scale of 1:100, showing:

1 – site grid or grids (eg points at 10 m intervals)
2 – location of sections and elevations
3 – edge of areas of excavation (to their maximum extent)
4 – site limits ('footprint') and building lines at ground level
5 – basement outline
6 – street kerb lines.

If different pieces of information overlap and some must be omitted for clarity, then follow the order of precedence above (for example, break site limits to show an edge of excavation clearly or break an edge of excavation to show a section line clearly).

Grid points to which OS grid coordinates have been applied must appear clearly, and OS grid north must be indicated. Identify sections and elevations by number, putting this on the same side of the line as the face that was drawn, if possible. Indicate the source of outside locational information (such as contractors' plans and OS digital data) and its date.

The site, defined by its limits or 'footprint', is usually the whole ground area subject to development. If a plan of this has been drawn for a pre-fieldwork desk-top assessment, its accuracy should be checked at the beginning of any subsequent fieldwork.

Check the location of basement walls, building lines and similar existing landmarks by putting them on a preparatory base plan with, for example, the site grid and trench outlines (see 'site grid' and 'locating trenches', above).

A very extensive site can be covered either by plotting a Site Plan in sections, at a scale of 1:100, with a key plan to show how these sections interrelate, or by plotting in CAD at a large scale and printing the plan at a smaller scale (for example, 1:625), appropriate to the level of detail the plan contains.

8. THE SITE ARCHIVE

Original site records must be stored safely and accessibly in a site archive, to enable proper use to be made of them. Many of the requirements of site records described in this manual are for this purpose; some more general requirements are specified here.

These specifications conform to the Museum of London's requirements, as curator of the archive, set out in *Guidelines for the preparation of archaeological archives to be deposited with the Museum of London* (forthcoming), as well as to *Guidelines for the preparation of excavation archives for long term storage* (UK Institute for Conservation, 1990) and *Standards in the museum care of archaeological collections* (Museums and Galleries Commission, 1992). The definition of a site archive accords with that given in *Management of archaeological projects* (English Heritage, 2nd edition 1991).

Materials: Preprinted sheets, such as paper sheets for context descriptions and film sheets for plans, are designed to be easy to store in the archive as well as to be easy to use in the field. Any other paper or film used for site records should be of similar size and quality.

Use good quality paper for photocopies and notes. Use A4 size only for written notes and text. Leave a good margin for two-hole binding (as on the preprinted sheets). Write in black ball-point ink (for clarity of reproduction when records are microfilmed and safety copies are made).

Use standard-sized sheets of film for drawings and matrices, and in any case none larger than A1 (see Sections 2.1 and 2.2). Draw on these sheets with lead pencil, 4H or harder. Do not use coloured pencils or felt-tip pens.

Do not leave sheets of paper or film stapled or glued together.

Site code: This uniquely identifies the records made on each site, as well as the finds and environmental samples that are collected. Remember that a site code serves as a shelf mark and indexing device in the site archive, and any records (including computerised records) without a site code are effectively lost. Every separate sheet of paper and film in the records of a site must bear the correct site code.

As soon as any records are to be made or finds and environmental samples are to be collected on a new site, a new site code must be obtained from the Museum of London Archive

Officer (see Section 3.1.1).

An existing site code may be reused if fieldwork resumes on a site after a pause (for instance, an excavation follows a prior evaluation, or a watching brief follows some time after an excavation), but check first with the Museum Archive Officer before doing this. Use exactly the same code, without changing the year digits: this ensures that all relevant records are archived together, no matter when they were created. Take great care, however, to number the later contexts, sections, samples, etc, so as to follow on from those that already exist, avoiding duplicate numbers.

An existing code should not be reused if a substantial amount of post-excavation work has already been done on the existing records and using the same code would cause confusion.

Context register: There must be a separate register for every site, kept up to date as and when contexts are recorded (see Sections 3.1.1 and 5). Use bound site books, if possible, for durability. It may be convenient to use the pages in a site book in pairs, forming a double-page spread with context numbers down the far left-hand edge and a line for each context running across both pages. This maximises the space available for columns to the right of each context number, which may be useful in post-excavation work as well as on site. The minimum information needed in the register for every new context corresponds to some of the information written on the context sheet, as follows:

- Context number
- Context type (deposit/cut/masonry/timber/skeleton/coffin)
- Area of excavation, if applicable (usually a letter)
- Plan number, if applicable and if different from the context number: for example, a multicontext plan (PA and number – these should be numbered in one continuous series for each site)
- Section/elevation, if applicable (S and number – both sections and elevations should be numbered in one continuous series for each site; a section that wraps around a small trench should have one number, the different faces being marked with letters appropriately)

• Your initials and the date.

More information can be added as necessary in other columns, during excavation (for example, site grid coordinates) and in post-excavation work (for example, subgroup number, basic interpretation, group number and associational interpretation).

Other lists, for example, of sections/elevations, plans that are not single-context plans, photographs, environmental samples, etc, should be included in the same books.

Make sure all site books are numbered and bear the correct site code.

Site Records Index: This is a computerised version of the register, with fields for context number, context type, plan number, section/elevation number, and photograph number.