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Understanding Historic Buildings

A guide to good recording practice



ENGLISH HERITAGE

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The nation's historic buildings, spanning more than a thousand years of history, have much to tell us about the ordinary lives of past generations – how people of all classes and creeds lived and worked, worshipped and spent their leisure time. We can also learn from them how buildings were constructed and adorned, the traditions they embodied and the aspirations they expressed. They are a living record of our social, economic and artistic history, as well as being powerful contributors to our sense of place and to feelings of local, regional and national identity. This document is the outcome of extensive consultation among practitioners with many years' experience in the field. It provides clear, practical guidance on the ways in which the wealth of historical evidence embodied in buildings can be gathered and disseminated for the lasting benefit and enjoyment of all.

1 Introduction

1.1 The historic environment is a precious and irreplaceable resource from which a large and growing section of the population derives enjoyment, instruction and inspiration. Unless we take steps to understand the historic environment we are unlikely to manage it appropriately for the benefit of future generations. Historic buildings form a conspicuous component of the urban and rural scene, and constitute a rich store of information about the past, some of it unique. Unlocking that store calls upon concepts, skills and techniques from a range of historical and archaeological disciplines as well as those long associated with the architectural and surveying professions. A fundamental activity is the gathering, analysis and interpretation of evidence embodied in the fabric of extant buildings and in a range of documentary sources. The resulting understanding underpins our appreciation and stewardship of individual buildings and of the historic built environment as a whole. It may be presented in single-building studies or in

works of synthesis, but the essential units of information in either case are records of single buildings or complexes. An informed approach to the management of the historic environment therefore places heavy demands upon the quality of those records.

1.2 This document sets out guidance on the recording of historic buildings for the purposes of historical understanding, and is a revised and expanded version of *Recording Historic Buildings: A Descriptive Specification* (RCHME 1996). It aims to assist professional practitioners and curators, managers of heritage assets, academics, students and amateurs in compiling or procuring records that are reliable and suited to the purposes for which they are intended. For those undertaking recording themselves it provides practical advice on approaches, techniques and conventions. It is also designed to assist those engaged in the management of the built environment in setting appropriate specifications for the recording of historic buildings by others. Finally, for all those who use



Figure 1 The benefits of an understanding of historic buildings are widely spread, enhancing public enjoyment and appreciation. (Carlisle Castle, Cumbria)



Figure 2 Understanding is also a key component of the planning and conservation processes.

historic-building records but may not be familiar with their creation, it provides information on their nature and on the circumstances of their compilation.

1.3 Records of historic buildings are generally compiled for one or more of the following reasons:

- to promote the understanding and appreciation of historic buildings, individually and collectively;
- to inform the day-to-day and long-term management and use of individual buildings;
- to secure an understanding of a building and its significance sufficient to inform the preparation of a scheme of conservation, repair or alteration, or decisions relating to such a scheme as part of the planning or conservation process;
- to document buildings, or parts of buildings, which may be lost as a result of demolition, alteration or neglect;
- to assess the significance of groups of buildings, settlements and landscapes, and provide a basis for strategic heritage management;
- to provide underpinning data for thematic, topographic or period-specific works of synthesis by recording a sample of surviving structures;
- to inform academic research across a range of disciplines;
- to deposit a permanent record in an established archive.

1.4 Recording undertaken for such widely differing purposes will inevitably vary in scope, emphasis and level of detail, but at any level above the most basic the outcome will be a mixture of description, analysis and interpretation, providing information about the building's design, construction, function, evolution and context.

1.5 Historic-building records must provide information that is accessible and readily intelligible to a range of professional, academic and lay users. In producing and curating them certain guiding principles should be borne in mind:

- a record should chart the historical development of the building or site, explaining and illustrating what is significant and providing dates for significant parts or phases of development wherever possible;
- a record should aim to be accurate, clear and concise;
- the scope and level of the record and its limitations should be stated;
- a record should make a clear distinction between observation and interpretation, thereby allowing data to be reinterpreted at a later date;
- wherever practicable a record should take account of the site's context, including its wider archaeology, known and potential, whether in terms of below-ground deposits or of landscape archaeology;
- a record should include an indication of any sources consulted;
- a record should identify its compilers and give the date of creation, and any subsequent amendments should be similarly endorsed;
- a record should seek to embody the benefits of peer review;
- the report and supporting material should be produced in a medium which can be copied easily and which ensures archival stability;
- a record should be made accessible through deposit in a permanent archive and signposting in a recognised internet finding aid.

1.6 In addition it is important that those creating a record should be mindful at all times of:

- the rights and sensitivities of owners and occupants;
- the health-and-safety implications of working in historic buildings.

1.7 This document is not intended to be definitive. Circumstances will often arise when those involved with the care, repair or understanding of an historic building require records with an emphasis or content which may differ from those described below. It is expected, however, that the forms of record outlined here will fulfil the requirements of the majority of those for whom historical understanding is the principal objective. Those seeking more detailed guidance on particular topics should consult the sources listed under Further Reading (*see* Section 9). The role of recording within the planning process is the subject of a separate English Heritage document, *Understanding Historic Buildings: Policy and Guidance for Local Planning Authorities* (EH, forthcoming).

Note Throughout this document, the word 'building' denotes, where appropriate, not only individual buildings, but complexes, sites and wider groupings of buildings.

2 Forms and levels of recording

2.1 The compilation of any but the most cursory building record requires a significant commitment of time. No recording should be undertaken, therefore, without first establishing whether relevant information already exists and assessing its merits. An appropriate form and level of recording will build upon existing knowledge, and will be shaped both by the nature and perceived significance of the building and by the circumstances prevailing at the time, including the intended purpose of the record and the needs of its likely users. A clear understanding of these issues will help to determine the format in which the resulting information is presented, and will also enable an estimate to be made at the outset of the resources needed to carry out the work.

2.2 Recording will often take place as a requirement of the planning process. In these cases the required form and level of recording will be set out in a brief, produced or agreed by the local planning authority or other regulatory body, and based on the best information available at the time. The brief will indicate what is currently known about the building, describe the circumstances (typically proposals for change) which make

recording desirable, identify the main areas in which understanding or information are lacking (referring particularly to parts of the building which may be affected by the proposals) and specify the detailed elements of recording needed to make good the deficiency. Outside the planning system recording may be governed by a similar brief from a commissioning body or individual, by a project design or by a looser set of research aims and objectives. Briefs and project designs are important ways of focusing recording activity on needs and priorities, but they should also be flexible enough to allow for modification as understanding of a subject develops or circumstances change.

2.3 Most records will incorporate some form of written description and analysis, drawing on either an investigation of the building's fabric, or research in documentary sources, or both. They will also typically include a visual record made by photography and/or drawing. However, the time devoted to each activity, and consequently the content of the record, will vary considerably according to the nature of the building and the circumstances of the recording project.

2.4 Most records aiming at historical understanding will correspond broadly to one of four main levels of record, described more fully below (*see* Sections 5 and 6). They range from Level 1, the simplest, consisting of photographs and brief notes, to Level 4, containing a full historical and architectural analysis, supported by a comprehensive drawn and photographic record. The benefits of these levels may be summarised as follows:

- they provide published, easily accessible and clearly defined terms of reference, giving those compiling records guidance about how they are expected to work;
- they define a common standard, allowing records which may vary considerably in detail and content to be categorised, grouped and compared in broad terms;
- they provide guidance to those commissioning, procuring or specifying work by others with a checklist of what may be included in the record of a building, and in what circumstances;
- they enable users of the completed record to know the intensity of



Figures 3 and 4 The methods and approaches needed to deal efficiently with a large number of buildings are generally quite different from those appropriate to the detailed understanding of a single building or complex.

Fig 3 (above) Oxburgh Hall, Oxborough, Norfolk. (BB032383)

Fig 4 (below) Aerial view of Nelson, Lancashire. (NMR 17502/10 SD 8537/54)



recording employed and to understand the survey methods upon which conclusions have been based.

2.5 Section 3 of this document offers guidance on the optimum timing of recording activity. The principal activities that may be combined to create a record

are set out in Section 4 under the following headings:

- documentary research
- investigation
- survey and drawings
- photography
- the written account

Section 5 describes ways in which drawings, photographs and text may be combined to form records at each of the above-mentioned four levels of detail. Although these levels are broadly applicable across a range of circumstances, the precise form which a record takes should represent an informed response to both the nature of the building and the purpose of the record. Advice on selecting the most appropriate level and form of record will be found in Section 6. Archiving and related issues are discussed in Section 7, and architectural drawing conventions (illustrated with sample drawings) are set out in Section 8.

3 When to record

3.1 The value of recording undertaken in association with changes to the fabric of a building may be very significantly enhanced if it is appropriately timed. Recording that precedes change to a building's fabric often documents features that no longer exist once work has been completed. It can also help to guide the process of change by drawing attention to the significance of the building as a whole or of those parts of the building liable to damage or loss. By identifying the likelihood of survival of hidden features it can help to steer proposals away from potentially damaging interventions, or highlight the need for further recording as building work progresses. In the planning and conservation processes an early record is invaluable even though it may subsequently require amplification.

3.2 Where possible, the timing of a record should also take other factors into consideration. Buildings typically yield more information in certain situations than in others, although the conditions best suited to one form of recording or one type of building may not be the same as those best adapted to another. An empty building will facilitate fabric analysis but may produce lifeless photographs, whereas one cluttered with contents will be more difficult to investigate and survey but may result in a richer photographic record (which may also document a significant episode in the building's history). Similarly, scaffolding may permit access to areas normally inaccessible, but is a hindrance to all but detailed photography. In such circumstances compiling the optimum record may require a number of visits; where time and resources are limited the



Figure 5 Industrial buildings are peculiarly vulnerable to the removal of machinery and other fixtures, which give meaning and purpose to otherwise often plain interiors. A photographic record compiled before removal is invaluable. (Stott Park Bobbin Mill, Colton, Cumbria)

best balance of advantages must be sought.

3.3 Particular building types will benefit from particular approaches. Where industrial buildings house processes which are of intrinsic historic interest they are best recorded when plant is still intact and preferably when processes are still active, safety considerations permitting. The documenting of industrial processes can in itself form a valuable component of the record. In many historic buildings, alterations connected with later uses obscure much of the earlier fabric. While later features are in themselves frequently of interest and worthy of record, their removal during a scheme of conservation or repair sometimes affords valuable opportunities to examine earlier fabric.

It should be emphasised, however, that features should not be removed until an appropriately qualified inspection has been carried out and any necessary permissions have been obtained. In certain circumstances the removal of fabric may need to be monitored to ensure that significant features are not damaged or lost.

3.4 Records inevitably reflect the state of knowledge prevailing at the time they are made, and the completion of even a detailed record does not preclude re-examination of the building, or its record, at a later date. New evidence may come to light and may need recording. Both new evidence and more general advances in understanding may prompt a reappraisal of existing interpretations.



Figure 6 Pitchford Hall was photographed prior to the dispersal of its contents, assembled over many generations. (Pitchford Hall, Pitchford, Salop; BB92/09259)



Figure 7 Photographs of empty interiors may depict architectural forms and decoration with valuable clarity, but contribute little to our understanding of the social context of architecture. (Townhead, Slaidburn, Lancs; DP003063)

4 Creating a record

In all but the simplest cases, creating a record of an historic building embraces a range of activities. These are described separately below, but in reality they are often – and ideally should be – overlapping and mutually informing. Some practitioners will aim to be proficient in many or all of these activities, but often collaboration will be required and here it is important that the

insights generated by different specialisms are shared promptly and are fully integrated in the final record. In many circumstances choices will need to be made: is a feature best captured by drawing, photography or written description, or by a combination of the three? The guiding principles should be accuracy, intelligibility and efficiency, together with a view of the purpose of the record.

4.1 Documentary research

4.1.1 At a basic level documentary research should form a component of every recording project. As a preliminary, reasonable steps should always be taken to establish whether there is an existing record, and if so, whether it is sufficiently detailed, comprehensive, accurate and up-to-date either to make further recording unnecessary or to influence the form it should take. The likeliest repositories for historic-building records (as opposed to historic plans etc) include the National Monuments Record (where records created by English Heritage and the former Royal Commission on the Historical Monuments of England (RCHME) are deposited), local Historic Environment Records (formerly known as Sites and Monuments Records), record offices, local-studies libraries, archives of county and local societies, and local buildings records where they exist. In addition many buildings have been discussed in periodical and other literature. All relevant, readily available material, including historic Ordnance Survey maps, should normally be reviewed before embarking on recording. While there are certain advantages in investigating a building with one's mind unclouded by existing (and possibly erroneous) interpretations, it is equally true, especially where time is limited, that preliminary research can expedite investigation and reduce the risk of significant features being overlooked. It may also identify individuals associated with the building, who can be pursued if further research is undertaken.

4.1.2 The extent to which more detailed research is necessary or desirable will depend on the intended level of record, the extent to which an understanding of the existing fabric would benefit from research, and the merits of any surviving documentary sources. The range, scope and survival of these sources vary considerably from one period to another, from one building type to another and from place to place: they survive in greater abundance for later historical periods, and higher-status buildings are generally better documented, and more easily identified in the documentary record, than lower-status buildings. Nearly all buildings leave some documentary or cartographic trace. However, many record types, such as Hearth Tax records, can be matched to individual structures only if the historic ownership or tenure of the building has

been established, while others can be made to illuminate the history of individual buildings only after lengthy analysis. Economies of scale typically result from the study of groups of buildings. The use of rate books, for example, or the records of the 1910 National Property Valuation, may be warranted when a number of buildings are being studied in the same area, but may be too costly in respect of a single building.

4.1.3 In many circumstances exhaustive research will not be possible or cost-effective, and attention is likely to focus on those sources which most readily lend themselves to an understanding of the design, construction, ownership, use and development of buildings. These include historic maps, plans and views, building accounts, title deeds, inventories, sale particulars, census records, trade directories and literary references (for example, in topographical literature). For buildings of the later 19th and 20th centuries, surviving Building Control Plans are an invaluable source, although it is important to bear in mind that schemes were not always executed as planned. Most Building Control Plans will be found either in record offices or other archives, or in the offices of local planning authorities. The full range of potentially useful sources is vast, but each requires critical evaluation. Whichever class of document is selected for consultation, it is important to be aware of its original purpose, scope and limitations.

4.2 Investigation

4.2.1 The field investigation of a building will normally follow preliminary documentary research. At its simplest, investigation involves identifying address details and reconciling the building with a National Grid map base so that a grid reference can be obtained. In all other cases it will involve direct observation of the building in order to ascertain what information it provides about its origins, form, function, date, development and so on. For the lowest level of record, investigation may be limited to external observation, although this does not preclude the drawing of reasonable inferences about a building's internal layout. For all other levels, internal inspection will invariably be required, its extent dependent on the purpose of the record, the complexity of the building and

the resources available. An initial aim of this internal inspection will be the clarification of what an appropriate record should consist of, if this is not already apparent from external observation.

4.2.2 Detailed investigation entails a thorough examination of the building's external and internal fabric, with particular attention to stratigraphic relationships, architectural styles, plan elements, decorative schemes, fixtures and fittings, and other details which help to date the building or its various stages of evolution. The objective is not only to break the building down into a series of intelligible phases of development, but to analyse how it was used at any given point in its history, and how contemporaries would have understood the arrangement, form and decoration of its various parts. Investigation, which will normally be accompanied by structured note-taking and often by photography, will also help to identify whether a drawn record is appropriate, and if so, which drawings will make the most useful contribution to a record. Wherever possible, all parts of the exterior and interior should be examined, and a note should always be made of any areas that are inaccessible.

4.2.3 Strict rules for the manner in which a building is investigated cannot be laid down. The working practices of individuals will vary, and constraints of time and access will frequently impose



Figure 8 Investigation – the examination of physical evidence provided by the fabric of a building – relies upon good observation, analytical skills, thoroughness and methodical note-taking. (Baguley Hall, Manchester)

arbitrary variations on ideal practice. Where possible, however, it is preferable to commence with a quick overview, identifying functions and establishing the main phases, their physical limits and their defining characteristics. Using this preliminary framework (which may need to be revised) it is then generally helpful to analyse each phase in chronological order and in more detail. The advantage of this method is that it encourages consideration of the building as a functioning and evolving whole, not as an assemblage of discrete parts. It expedites investigation by prompting a sequence of questions and directing attention to where answers may be found, thus allowing developing interpretations to be tested at once against the evidence of the building's fabric. It also draws attention to the fact that localised alterations to a building's fabric are frequently an indication of more profound changes in the way the building was used. The noting of individual features, room by room and regardless of date, is no substitute for a chronological analysis. If pursued in isolation it can result in the deferral of much necessary analysis and interpretation until later, by which time access to the building – to test hypotheses – may no longer be possible.

4.2.4 In certain situations separate specialist investigations may be desirable. These may include dendrochronology (tree-ring dating) and analyses of decorative schemes (either art-historical or scientific in focus) or particular building materials. The full potential of such investigations is unlikely to be realised unless they are informed by and integrated with more broadly based investigation and research.

4.2.5 In the investigation of historic buildings, as in other areas of building conservation and archaeology, there is a general presumption in favour of non-destructive techniques, since these minimise the erosion of irreplaceable historic fabric. In most circumstances such an investigation, based on careful and informed observation and analysis, is entirely non-destructive. Moreover, the range of information potentially obtainable without damage to building fabric is likely to expand with developments in remote-sensing technology. Where destructive techniques offer a means of extending understanding – typically through sampling materials or revealing hidden fabric – it is vital to

consider the resulting losses, known and potential. Even procedures which entail only minimal loss, such as dendrochronological sampling or the lifting of floorboards, can cause unnecessary damage if carried out negligently. More extensive physical investigations, such as the removal of areas of plaster or the opening up of blocked features or inaccessible voids, are by their very definition destructive, even if the materials are later reinstated. In listed buildings such operations require specific consent. They should never be justified purely on the grounds of 'finding out more', seductive though this may appear.

4.2.6 Keeping historic buildings in continued beneficial use will entail periodic repairs and alterations, and these will inevitably result in some loss of fabric. Where a qualified assessment determines that significant fabric cannot, by virtue of its condition, be saved, or where its removal is formally approved as part of a scheme of alterations, it is appropriate to seize the opportunity afforded by the loss for recording and enhanced understanding. Among materials that would otherwise be irrevocably lost may be objects accidentally or ritually deposited in a building, which may themselves merit analysis, recording or even preservation.

4.3 Survey and drawings

4.3.1 Besides their illustrative value, drawings are an efficient way of conveying the evidence on which an interpretation is based, and a powerful analytical tool in their own right. Drawings derived from accurate measured survey have the additional virtue of facilitating interpretations based on metric analysis (for example of bay lengths, wall thicknesses and alignments etc). They are, however, relatively time-consuming to produce, and care is therefore needed in determining whether drawings are required and, if so, which drawings will best address the nature of the building and the needs of the recording project. Existing plans made by architects or surveyors for purposes of design or alteration may form a satisfactory basis for understanding, but their accuracy will need to be ascertained and they may need to be adapted or annotated to show a greater range of historical evidence. In certain circumstances, for example where severe time constraints apply, it may be

appropriate to produce annotated sketch drawings. Indeed it may not be necessary to produce any drawings at all of simple or repetitive building types, for which a photograph, or the incorporation of key dimensions in the written account, may suffice. Even with such buildings, however, drawings may be useful for purposes of illustration or of comparison with other buildings. Furthermore, the act of measuring up for drawings imposes a salutary discipline, requiring methodical observation of all parts of a structure, and generally results in additional information coming to light.

4.3.2 A set of drawings may contain one or more of the following:

- 1 Sketched plan, section, elevation or detail drawings (if a more thorough drawn record is not made). Sketches may be roughly dimensioned.
- 2 Measured plans (to scale or fully dimensioned) as existing. These may extend to all floors, or may be limited to one or a few. The latter option may be appropriate, for example, in a town-centre building where upper floors have been little altered but modern retail use has obscured evidence for an earlier form of the ground floor. Buildings with a repetitive structure (such as some industrial buildings) may also be planned on one floor only, but a note or sketch plan should indicate the arrangement of other floors. Plans should show the form and location of any structural features of historic significance, such as blocked doors, windows and fireplaces, masonry joints, ceiling beams and other changes in floor and ceiling levels, and any evidence for fixtures of significance, including former machinery.
- 3 Measured drawings recording the form or location of other significant structural detail, such as timber or metal framing.
- 4 Measured cross-sections, long-sections or elevational sections illustrating the vertical relationships within a building (floor and ceiling heights or the form of roof trusses, for example).
- 5 Measured drawings showing the form of any architectural decoration (the moulding profiles of door surrounds, beams, mullions and cornices, for example) or small-scale functional detail not more readily captured by photography. A measured detail

drawing is particularly valuable when the feature in question is an aid to dating.

- 6 Measured elevations, where these are necessary to an understanding of the building's design, development or function and not more readily obtained by photography.
- 7 A site plan, typically at 1:500 or 1:1250, relating the building to other structures and to related topographical and landscape features.
- 8 A plan or plans identifying the location and direction of accompanying photographs.
- 9 Copies of earlier drawings throwing light on the building's history.
- 10 Three-dimensional projections when these are of value in understanding the building. If these are to be considered as components of the record they must always be supported by measured plans, sections and elevational details.
- 11 Reconstruction drawings and phased drawings, when these are of value. Since these are by their nature interpretative, the evidence on which any reconstruction or phasing is based must always be given. Successive phases of a building's development may be shown by graded tone (dark to light, with the darker being the earlier), by colour, by sequential diagrams or by annotation. Whenever phased drawings are included in a record, they must be accompanied by the unmarked drawings on which they are based.
- 12 Diagrams interpreting the movement of materials (process flow) or people (circulation), or the segregation of people or activities (eg permeability diagrams), where these are warranted by the complexity of the subject. As with items 10 and 11, the evidence supporting the interpretations must be provided.

4.3.3 Plans and sections are particularly valuable in that they show, at a glance, a range of features which are not visible simultaneously and which therefore cannot be shown in a single photograph. They can also highlight structural relationships and decorative hierarchies, and clarify the movement of people or industrial processes through a building. Plans conventionally adopt a cut-line at a height which provides the maximum information (doorways, windows, fireplaces). Detail above and below the cutting plane is also included, and is

distinguished by line styles and weights. Section lines are similarly chosen to convey the maximum information, and for this reason may be 'joggled'. Sections are especially useful for elucidating the structural and decorative form of timber or metal frames, including roof construction, and wherever vertical relationships are important to an understanding of the building or have been obscured (for example, where an upper floor has been inserted in a medieval open hall). Roof trusses and machinery parallel to the cutting plane are shown in elevation.

4.3.4 Elevational information can often be obtained by photography at a fraction of the cost of a drawn record, but elevational drawings (including full elevational sections) may be justified where they incorporate important information that cannot be captured in a single photograph, or where the stratigraphy is so complex as to render features difficult to interpret in a photograph. Where architectural details are concerned a similar judgement is required as to whether drawing, photography or written description is the most effective method of capture.

4.3.5 Surveys are made by direct measurement using tapes and rods, but may be supported by Electronic Distance Measurement (EDM, including its reflectorless successor, REDM). The



Figure 9 Site constraints may make it impossible to render elevational information photographically, and in such cases a drawn record might be considered. (130a High St, Oxford)



Figure 10 Where the view of an elevation is unimpeded an elevational photograph, taken in good light, may make an elevational drawing superfluous. (Whorlton Castle, Whorlton, N Yorks)



Figure 11 EDM or REDM theodolites can confer immense benefits in both time and accuracy, in surveys of large, complex or irregular buildings, although they cannot make up for poor observation or a lack of understanding. (Apethorpe Hall, Apethorpe, Northants; AA044523)

EDM survey is particularly valuable on larger or more complex sites, where it may save time as well as improving accuracy. Hand-held laser-measurement devices are also available as a supplement to direct measurement. The technical precision of most modern surveying instruments is formidable, but their accuracy in use depends on the skill and judgement of the operator. Measured surveys may be augmented by other techniques designed to record detail, such as photogrammetry, rectified photography and orthophotography. The advantages and disadvantages of each of these methods, including relative costs, must be

understood before they are employed in recording. All survey methods in widespread use rely on human selection of suitable points for measurement; consequently a survey is only as good as the critical observation on which it is based.

4.3.6 Where dimensioned site-sketches are produced for drawing up off-site they form part of the primary record; as such they should be made in a durable medium and should remain unaltered. Any subsequent amendments should be clearly distinguished from the original record.



Figure 12 Traditional hand-surveying methods are necessary even where electronic equipment is available. With care they can produce highly accurate results in all but the most difficult conditions. (Apethorpe Hall, Apethorpe, Northants; AA044522)

4.3.7 Drawings derived from a measured survey are produced by hand, using pen and ink, or in a computer-aided design (CAD) medium. For hand drawings the scale must be appropriate to the building, typically 1:100 or 1:50 for plans, and 1:50 or 1:20 for sections. A complex structure or one with much fine detail may occasionally merit drawing at a suitable larger scale, but in most cases enlarged details will suffice. Conversely, scales smaller than 1:100 may be appropriate for plans of very large buildings or complexes. In either case it is preferable that the finished drawing is of a size which can be easily photocopied. Where an individual building record forms part of a wider project, particularly where publication is envisaged, the same scales should so far as possible be adhered to throughout, to allow for easy comparison. Line weights should be chosen so that drawings and their labelling will be legible when reduced for publication, the degree of reduction often depending on the amount of detail required.

4.3.8 CAD drawings are produced in a virtual 1:1 environment and can be plotted at any required scale. They must nevertheless be produced with regard to the intended scale of the final plots, and this in turn must reflect the level of detail of the original site measurements. Level or layer conventions allow different versions of the same drawing to be plotted from the same computer file, so that, for example, fine detail can be omitted from

small-scale plots where it might be illegible and prone to ‘blocking in’. Levels or layers should be allotted so as to ensure clarity of detail and appropriate line weights at the scales at which plots will be required. English Heritage observes a layering protocol in the production of architectural CAD drawings to ensure consistency (see 8.3).

4.3.9 It is recommended that drawings aiming to convey historical understanding or to support historical interpretation adopt the drawing conventions set out in Section 8. These supplement well-known, long-standing architectural drawing conventions with a range of additional symbols dealing with features of particular relevance to historical interpretation. They will be found applicable to most of the purposes outlined in this document, although very large-scale drawings may tend to adopt a more representational, less conventional, approach.

4.4 Photography

Like drawings, photographs amplify and illuminate a record. In many cases they are a more efficient way of capturing data than either drawings or written description, but they also valuably supplement and verify drawn or written records. This section provides general guidance on the relative merits of conventional and digital media and formats (although it should be appreciated that digital media are subject to rapid

technical development) and outlines the principal applications of photography to record-making.

Film

4.4.1 Conventional photographic film is a very cost-effective way of capturing and storing images for record purposes, and may still be stipulated by some archives. When properly processed and stored, silver-based black-and-white film remains the most stable archiving format. Chromogenic black-and-white film offers attractive flexibility in use, but its dye-based processing results in inferior archival performance. The archival performance of colour photography is inferior for the same reason, although it can be extended by careful handling and storage. However, colour photography captures an additional layer of information and is now the primary medium of record. Even where black-and-white images are preferred for archival reasons, supplementary colour photography will be required for certain subjects (stained glass, for example). Film can also be scanned to produce digital image files, in which case the advice below on digital data should be noted.

4.4.2 The popular 35mm (135-format) film is adequate for many purposes, and is ideally suited to rapid note-taking photography. There will be occasions, however, when a higher-quality image is necessary. The quality of images captured on the larger formats favoured by professional photographers (such as 120-format roll film or 5in x 4in sheet film) will greatly exceed those captured on 35mm film, allowing for enlargements of specific areas without major loss of image quality. Large-format cameras also provide the benefit of ‘camera movements’, which avoid the distortion caused by converging verticals.

Digital images

4.4.3 The development of still digital cameras in recent years has presented the possibility of capturing images of a quality once obtainable only with film. While film images currently contain more information than most digital images, and have a proven longevity, digital capture can deliver good quality provided a high-resolution camera – with a field exceeding about five megapixels – is used.

4.4.4 Of the many available formats for digital image files, two – TIFF and JPEG

– are in particularly widespread use, being easily transferable and readable on most computers. TIFF files are uncompressed and therefore large. JPEG files, being compressed, are relatively much smaller, although compression results in the loss of some information, and repeated opening and saving of JPEG files leads to further degradation. While JPEG is well-adapted to the incorporation of digital images in word-processed documents, uncompressed formats such as TIFF are preferred by most archives that accept digital data. RAW (camera-specific) file types are of high resolution, but they should not be used for images intended for transferral, as special software from the camera manufacturer is needed to open them. Neither is the use of in-camera processing software recommended, as changes to images at this stage cannot subsequently be reversed.

4.4.5 In view of the currently unproven archival performance of digital data it is always desirable to create hard copies of images on paper of appropriate archival quality. When creating prints from digital files, greater clarity and longevity can be obtained through the use of photographic printing paper. More commonly available outputs via inkjet and laser printers have a limited life, sometimes only months if stored incorrectly. Many agencies and photographic laboratories will produce suitable prints at minimal cost. When preparing files for printing, a resolution of 300dpi at the required output size is appropriate.

The selection of images

4.4.6 Photography is generally the most efficient way of presenting the appearance of a building, and can also be used to record much of the detailed evidence on which an analysis of historic development is based. It is also a powerful analytical tool in its own right, highlighting the relationships between elements of a building and sometimes bringing to light evidence which is barely registered by the naked eye.

4.4.7 Site photography may include:

- 1 A general view or views of the building (in its wider setting or landscape, if the views noted in 2 below are also adopted).
- 2 The building's external appearance. Typically a series of oblique views will show all external elevations of the

building, and give an overall impression of its size and shape. Where an individual elevation embodies complex historical information, views at right angles to the plane of the elevation may also be appropriate.

- 3 Further views may be desirable to indicate the original design intentions of the builder or architect, where these are known from documentary sources or can be inferred from the building or its setting. In the case of building elevations which have been conceived as formal compositions, views at right angles to the plane of the elevation may again be appropriate.
- 4 The overall appearance of the principal rooms and circulation areas. The approach will be similar to that outlined in 2 above.
- 5 Any external or internal detail, structural or decorative, which is relevant to the building's design, development or use and which does not show adequately on general photographs. When photographing details it can be helpful to include a clearly marked and suitably sized scale next to the subject and parallel to one edge of the photograph.
- 6 Any machinery or other plant, or evidence for its former existence.
- 7 Any dates or other inscriptions, any signage, makers' plates or graffiti which contribute to an understanding of the building or its fixtures or machinery, if not adequately captured by transcription. A contemporaneous transcription should be made wherever characters are difficult to interpret.
- 8 Any building contents or ephemera which have a significant bearing on the building's history (for example, a cheese press or a malt shovel), where not sufficiently treated in general photographs.
- 9 Copies of maps, drawings, views and photographs, present in the building and illustrating its development or that of its site. The owner's consent may be required.

4.4.8 In record photography the needs of the record should be paramount, but pictorial qualities, which often give life and meaning to architectural forms, should not be neglected. Photographs which aim to convey the 'atmosphere' of a building, typically using available light, can be especially evocative, but should form a supplement to, not a

substitute for, a series of well-lit images. An analytical, or narrative, approach to photography can also be valuable, helping to explain features by relating them to each other rather than photographing them in isolation.

Photographic techniques and equipment

4.4.9 All photographs forming part of a record should be in sharp focus, with an appropriate depth of field. They should be adequately exposed in good natural light or, where necessary, sufficiently well-lit by artificial means.

4.4.10 Site photography should be scheduled to take advantage of variations in natural light. A north-facing elevation, for example, may be best photographed early or late on a bright summer's day when sunlight falls across it or, if this is impracticable, on a bright overcast day.

4.4.11 Photography requires careful attention to rules governing composition and viewpoint. The use of a tripod is recommended, not only to avoid the effects of camera shake but because the act of placing the tripod and levelling the camera imparts a helpful discipline to image composition. For the most truthful and least distorted exterior images a standard (50mm) or slightly telephoto (>50mm) lens is recommended. Even with careful use a wide-angle lens can distort the image, and may tempt its user to approach the subject too closely, with the result that roofline information can be lost. However, the use of wide-angle lenses (preferably 28mm or less) is almost always necessary for interior photography. Care in camera placement and the removal of nearby objects will help to minimise distortions. A perspective-control or 'shift' lens – particularly valuable for eliminating converging verticals – should be used with a tripod for reliable results. With digital images, similar corrections can be made after the event.

4.4.12 For interior photography, the most commonly used source of artificial light is electronic flash. Being similar in colour to daylight, it is the preferred choice for most colour image capture. Colour film is calibrated to record accurate colour either with daylight or electronic flash, or with other types of artificial light, and using the wrong film



Figure 13 Conventional photographic media and equipment continue to deliver effective and economical results in a range of formats. Here a 35mm SLR camera is tripod-mounted, levelled and fitted with a rising front or 'shift' lens to minimise distortion of verticals.

will result in colour-distorted images. Inclusion in the composition of standard colour cards, available from professional photographic suppliers, will assist the photographic laboratory to achieve the correct colour balance during image reproduction. (Digital capture is more flexible than film in that the light-sensitive cell can be adjusted for light of varying 'colour temperature'.)

4.4.13 Camera-mounted electronic flash produces harsh shadows and has a flattening effect, diminishing the perception of surface modelling. An 'off-camera' light source will generally produce greater relief and a more pleasing result. Light bounced from a reflector or a white ceiling will produce a softer, more even illumination than a direct source will. Integral flash, as supplied with many compact cameras, is rarely powerful enough to meet the demands of architectural work.

4.4.14 There are many suitable cameras in both conventional and digital format. The most appropriate models will be those allowing manual override of automatic features, incorporating a tripod bush and a synchronisation socket (for off-camera flash), and accepting a range of lenses. For the best image quality, and wherever conditions are technically

challenging, professional expertise will be required. Professional photographers will have a range of equipment, including specialist lighting, appropriate scales and colour cards, and the skills required to achieve high-quality results.

Specialist photography

4.4.15 In some circumstances special photographic techniques may be needed. Rectified photographs allow accurate

measurements to be derived, and are often used as a basis for elevational drawings, although the technique is only suitable for subjects without major projections or indentations. Photogrammetric image capture also allows for the production of scaled drawings, and has the additional virtue of enabling three-dimensional surface modelling. Such work must be undertaken by specialist contractors.

4.5 The written account

4.5.1 The written account underpins all other elements of the record by providing locational information, together with context, description, analysis and interpretation not readily communicable by other means. In all but the simplest records it gathers together insights derived from the full spectrum of activities described above, sifting and interpreting a wide range of evidence. The importance of the written account can hardly be exaggerated, as drawings and photographs on their own present evidence but seldom convey understanding.

4.5.2 The main components of the account will generally be selected from the following list, according to the level of record adopted:

- 1 The building's precise location, as a National Grid reference and in address form.
- 2 A note of any statutory designation (listing, scheduling or conservation area). Non-statutory designations



Figure 14 Digital photography offers attractive flexibility in use. Falling costs and rapid technical advances mean that it is likely to be more and more widely adopted, although the archiving of digital images poses particular problems. (Chalgrove Manor, Chalgrove, Oxon)

- (historic parks and gardens registers, local lists etc) may be added.
- 3 The date of the record, the name(s) of the recorder(s) and, if an archive has been created, its location.
 - 4 A summary (if no further details are called for) of the building's type or purpose, historically and at present, its materials and possible date(s), in so far as these are apparent from a superficial inspection.
 - 5 A table of contents and a list of illustrations or figures.
 - 6 An expansion of 4, if appropriate, summarising the building's form, function, date and sequence of development. The names of architects, builders, patrons and owners should be given if known. The purpose of such an expansion is to describe the building when no fuller record is necessary, to serve as an introduction to the more detailed body of the record that may follow, and to satisfy those users who may need no more than a summary of the report's findings.
 - 7 An introduction, setting out the circumstances in which the record was made, its objectives, methods, scope and limitations, and any constraints which limited the achievement of objectives. Where appropriate the brief for the work or the project design should be stated or appended.
 - 8 Acknowledgements to all those who made significant contributions – practical, intellectual or financial – to the record or its analysis, or who gave permission for copyright items to be reproduced.
 - 9 A discussion of published sources relating to the building and its setting, an account of its history as given in published sources, an analysis of historic map evidence (map regression) and a critical evaluation of previous records of the building, where they exist.
 - 10 An expansion of 9, if appropriate, drawing additionally on primary documentary sources.
 - 11 An account of the building's overall form (structure, materials, layout) and its successive phases of development, together with the evidence supporting this analysis.
 - 12 An account of the past and present uses of the building and its parts, with the evidence for these interpretations. An analysis of any circulation pattern or decorative, iconographic or liturgical scheme. An account of any fixtures,

- fittings, plant or machinery associated with the building, and their purposes. For an industrial building, a sequential account of the ways in which materials or processes were handled.
- 13 Any evidence for the former existence of demolished structures or removed plant associated with the building.
 - 14 A summary of the findings of any specialist reports (dendrochronology or paint analysis, for example).
 - 15 A discussion of the building's past and present relationship to its setting: for example its relationship to local settlement patterns, to a field system, to a park, garden, moat, graveyard or other artificial landscape; its part in any larger architectural or functional group of buildings; its visual importance as a landmark.
 - 16 An assessment of the potential for further investigative or documentary work, and of the potential survival of below-ground evidence for the history of the building and its site.
 - 17 A discussion of the architectural or historical context or significance of the building locally, regionally or nationally, in terms of its origin, purpose, form, construction, design, materials, status or historical associations.
 - 18 Copies of historic maps, drawings, views or photographs illustrating the development of the building or its site (the permission of owners or copyright holders may be required).
 - 19 Copies of other records of the building, including specialist reports (again with any necessary permissions), or a note of their existence and location.
 - 20 Any further information from documentary sources, published or unpublished, bearing on any of these matters, or bearing on the circumstances of its building, designer, craftsmen, ownership, use and occupancy, with a note on the sources of the information.
 - 21 Relevant information from owners, builders, architects or others who may be acquainted with the building, including oral history. The sources of the information must be given and it is important that the particular strengths and weaknesses of oral information are weighed.
 - 22 Full bibliographic and other references, or a list of the sources consulted (in long reports it is preferable to include both). Websites

- which may prove to be ephemeral should be avoided as references wherever possible; where their use is unavoidable the date on which the site was consulted should be noted.
- 23 A glossary of architectural or other terms likely to be unfamiliar to readers. If few in number, terms may be explained more economically within the text or in foot or endnotes.
- 4.5.3 Whatever the chosen level of record, items 1–3 plus either 4 or 6 should always appear as identifying or introductory material, in a form which will be determined by existing practices and formats, any requirement for compatibility with an existing database, the circumstances of the record and the uses for which it is intended. The choice of other items will similarly vary with the nature of the building and the purpose of the exercise. Items 11–13 (the detailed historical analysis of the building) provide the range of description and analysis required at Levels 3 and 4, but the way in which this information is presented may vary from building to building: clarity in the record is more important than a rigid structure. The items in the list above are those most relevant to furthering historical understanding; other elements may be added as necessary, for example to meet the wider needs of a conservation project.

4.5.4 A well-structured, well-written report will convey more information in fewer words than one which is poorly constructed and badly expressed. Throughout the written account it is important to use words precisely and economically, and to aim at clarity even when presenting complex information or arguments. Unnecessary description of features that are clearly shown in drawings or photographs should be avoided, and information that might be included in a written account may sometimes be more effectively conveyed by annotated drawings.

5 Recording levels: a description

This section describes the four main recording levels, setting out guidelines for their use. A further level, the photographic survey, is also described. Each level represents a minimum specification, to which additional elements may be added. Each is distinguished primarily by the

intensity of its analysis, which correlates closely with the scope and detail of the written account. In broad terms there is usually also a correlation between intensity of analysis and the need for supporting graphic or photographic material, although there are instances – for example, buildings with highly decorated elevations or interiors but no complex history of development – which demand a high degree of graphic or photographic recording but may require only modest analysis.

In selecting the level of record it is important to consider both the nature of the building and the purpose for which the record is intended. Section 6 therefore offers advice on the levels of record appropriate to a range of generic circumstances.

Note The following descriptions refer to the numbered lists in sections 4.3.2 (Survey and drawings), 4.4.7 (Photography) and 4.5.2 (The written account).

5.1 Level 1

Level 1 is essentially a **basic visual record**, supplemented by the minimum of information needed to identify the building's location, age and type. This is the simplest record, not normally an end in itself but contributing to a wider aim. Typically it will be undertaken when the objective is to gather basic information about a large number of buildings – for statistical sampling, for area assessments or historic landscape characterisation, for a pilot project, to identify buildings for planning purposes, or whenever resources are limited and much ground has to be covered in a short time. It may also serve to identify buildings requiring more detailed attention at a later date.

Level 1 surveys will generally be of exteriors only, although they may include superficial interior inspection for significant features. Only if circumstances and objectives allow will any drawings be produced, and these are likely to take the form of sketches.

A Level 1 record will typically consist of:

<i>drawings</i>	sometimes 1
<i>photography</i>	1, sometimes 2
<i>written account</i>	1–4

5.2 Level 2

This is a **descriptive record**, made in circumstances similar to those of Level 1 but when more information is needed. It

may be made of a building which is judged not to require any fuller record, or it may serve to gather data for a wider project. Both the exterior and the interior will be viewed, described and photographed. The record will present conclusions regarding the building's development and use, but will not discuss in detail the evidence on which these conclusions are based. A plan and sometimes other drawings may be made but the drawn record will normally not be comprehensive and may be tailored to the scope of a wider project.

A Level 2 record will typically consist of:

<i>drawings</i>	sometimes 1, sometimes one or more of 2–7
<i>photography</i>	1, 2, 4
<i>written record</i>	1–3, 6

5.3 Level 3

Level 3 is an **analytical record**, and will comprise an introductory description followed by a systematic account of the building's origins, development and use. The record will include an account of the evidence on which the analysis has been based, allowing the validity of the record to be re-examined in detail. It will also include all drawn and photographic records that may be required to illustrate the building's appearance and structure and to support an historical analysis.

The information contained in the record will for the most part have been obtained through an examination of the building itself. If documentary sources are used they are likely to be those which are most readily accessible, such as historic Ordnance Survey maps, trade directories and other published sources. The record will not normally discuss the building's broader stylistic or historical context and importance at any length. It may, however, form part of a wider survey – thematic or regional, for example – of a group of buildings, in which additional source material contributes to an overall historical and architectural synthesis. A Level 3 record may also be appropriate when the fabric of a building is under threat but time or resources are insufficient for detailed documentary research, or where the scope for such research is limited.

A Level 3 record will typically consist of:

<i>drawings</i>	normally 2; sometimes one or more of 3–12
<i>photography</i>	1–9
<i>written account</i>	1–3, 6–9, 11–13, 22; sometimes 5, 14–16, 18–20, 23

5.4 Level 4

Level 4 provides a **comprehensive analytical record** and is appropriate for buildings of special importance. Whereas Level 3 analysis and interpretation will clarify the building's history in so far as it may be deduced from the structure itself, the record at Level 4 will draw on the full range of available resources and discuss the building's significance in terms of architectural, social, regional or economic history. The range of drawings may also be greater than at other levels.

A Level 4 record will typically consist of:

<i>drawings</i>	2; sometimes one or more of 3–12
<i>photography</i>	1–9
<i>written account</i>	1–3, 5–8, 10–22; sometimes 23

5.5 Photographic survey

A photographic survey differs from other surveys in that it provides a very full visual record, accompanied by a brief written account, but without an analytical or drawn survey at a comparable level of detail. A comprehensive photographic survey may be appropriate for a building which has complex and important decoration or historic furnishing but which is under no threat, and for which there is no immediate need for detailed analysis. It may also be appropriate for a building of a well-known type which is under threat but for which existing documentation is in other respects adequate.

A photographic survey will consist of:

<i>photography</i>	1–9
<i>written account</i>	1–3

5.6 Other levels

No record is ever complete. While the levels specified above cover most eventualities when a building is recorded for historical purposes, there will be circumstances in which more detailed records are desirable. The type of record required by an architect, builder or engineer to monitor a conservation project or to reconstruct a fire-damaged historic building will be very different from those described here. The purpose of the record must always determine its nature and content.

6 Selecting the level and form of record

6.1 The four levels outlined above are intended as a rough guide only. Records will often tend towards one level or another rather than being precisely classifiable. Other things being equal, the intensity of the record may vary with the degree of threat, actual or potential, to historic fabric. Since destruction is irremediable a more detailed record may be required when fabric will be lost than when it will be preserved. The intensity of the record should nevertheless remain proportionate to the significance both of the fabric at risk and of the building of which it forms part.

6.2 It is not possible to prescribe forms and levels of record for all circumstances. It is often necessary to adjust the content of a record to provide elements which supplement existing surveys or which give due weight to particular aspects of the building. Nonetheless the usefulness of a record will always be enhanced if the purpose for which it was made and the level to which it most closely corresponds are made clear.

6.3 Those defining the content of a record should be familiar in general terms with the type, form, materials and historical period of the building concerned. If possible they should inspect it before arriving at firm conclusions or, if this is not practicable, should be prepared to modify the proposed form of the record in light of subsequent inspection or advice.

6.4 In general, recording which is publicly funded, or which is privately funded in fulfilment of planning requirements, should adopt the most economical path consistent with the principal needs which the record is intended to satisfy. Table 1 (*see* page 16) indicates the kind of record likely to be appropriate in certain generic circumstances.

6.5 The circumstances presented in Table 1 may be regarded as a dynamic range. For example, while lower levels of record may be appropriate for the management of a property portfolio, proposed alterations to a building within the portfolio may require more detailed recording if significant fabric might be lost.

6.6 The content of a record can be varied, although any substantial departure should be

noted. For example, it may be appropriate to record a whole building at the simplest level, but to undertake a detailed analysis of a part of the structure. In surveying a group of buildings it may be appropriate to record some at one level and some at another, depending on their intrinsic interest; in such circumstances the value of the individual records may be materially enhanced by an account of the history and evolution of the complex as a whole.

7 Preserving the record

If a record is worth making, it is worth securing its long-term survival, accessibility and intelligibility. This entails:

- considering the physical properties of the materials of which it is composed;
- including sufficient information that the record and all its constituent parts (which may become separated) are clearly identifiable;
- ensuring that copies of the report are deposited with appropriate local bodies;
- arranging for the deposit of the full record in a permanent archive;
- making use of emerging internet ‘signposting’ mechanisms, so that information about the record and its location is widely available;
- in appropriate cases, publishing the report or an abbreviated version of it.

7.1 Materials and identifying information

The following notes provide guidance on various components of a record, including those held in digital formats. Further advice can be obtained from the National Monuments Record (*see* Section 10).

Drawings

7.1.1 Drawings represent a considerable investment of time and other resources, and final copies should therefore be made in an archivally permanent medium. Polyester-based film has been used for many years (although the widespread adoption of CAD has led to a decline in its use). It is chemically and physically very stable. The minimum recommended thickness for long-term dimensional stability is 150 microns (0.005in). More expensive alternatives are acid-free paper and rag paper.

7.1.2 Water-based permanent black ink should be used. Etching inks are unsuitable for use on polyester film. Any of the technical

pens produced by major manufacturers (Rotring, Staedtler or Faber-Castell, for example) are adequate in producing final copies of inked survey drawings.

7.1.3 Dry-transfer lettering and tones are not archivally permanent, nor are most products which rely on pressure-sensitive adhesives to maintain contact with film or paper. They are therefore unsuitable for use on final drawings intended for the archive, and particularly unsuitable for use in carrying locational or scale information.

7.1.4 CAD drawings are subject to the same considerations as other digital data (*see* below). The production of hard copies, using stable materials, is therefore recommended in addition to digital storage.

7.1.5 Every drawing should include the following basic information:

- The name and address of the building, the civil parish and county, London Borough or unitary authority, and a National Grid reference;
- The name of the individual(s) responsible for the drawing (and for the survey, if different), the survey date, and the name of the originating body or institution;
- Drawn metric and imperial scales rather than, or in addition to, a stated scale (for example, 1:50), as the former remain accurate if the drawing is subsequently reduced;
- A grid north point on all plans. Plans of single buildings normally place the principal entrance at the bottom, and plans of churches are conventionally oriented with ritual east to the right (adherence to these rules assists comparison but for the same reason may sometimes need to be varied); plans of building complexes should place grid north at the top;
- All sections should give directional indications. The locations of section lines, including any ‘joggles’, should be shown on the plan (as A–A1 or B–B1, for example, not as A–B or C–D). Sections or elevations not accompanied by a plan should be titled more fully;
- A drawn frame, to indicate the area of data for copying and so prevent the loss of titling, scale and north point;
- Drawings forming a set must be cross-referenced to one another (‘drawing 1 of 3’, for example).

Table 1

Circumstance	Principal need	Level of record	Form of record
Strategic heritage planning at national, regional or local level; studies of landscapes, common building types, areas and larger settlements; pilot projects.	Information on distribution, variation, significance and survival of large building populations, defined geographically, typologically or chronologically, and an understanding of their evolution, to inform national or local policy initiatives, to underpin heritage-management decisions or as a contribution to academic knowledge.	Generally low-level record. Building-specific information may be highly selective or variable (typically Level 1 or 2, but in some cases 3 or 4).	May make extensive use of external photography, supplemented by written accounts of individual buildings and/or synthetic text providing background or context. Drawn element may be omitted, simplified, limited to maps or restricted to key examples.
Management planning for property portfolios and for individual buildings or sites.	Baseline information on the nature and significance of buildings, providing a foundation for long-term decision-making and identifying where further information is required.	For portfolios, a medium-level record (2 or 3), which may vary with the perceived significance of the building; for single buildings or sites the level may be higher (3 or 4).	Measured drawings may form an important and cost-effective component, meeting a range of non-historical as well as historical needs. Where buildings form a tight geographical group, or belong to an historic estate, more extensive documentary research may be practicable.
Proposed alterations to a significant building.	An understanding of the fabric at risk within the context of the building as a whole, and an assessment of its significance, allowing proposals to be formulated and evaluated, and loss minimised; also a record of what is to be lost, where significant.	Variable, depending on the significance of the fabric at risk, and both the complexity and current understanding of the building as a whole and of the class to which it belongs (Level 2–4).	An account of the building as a whole (summary for minor alterations, more detailed for a major intervention), with detailed discussion of affected areas. Measured drawings are more likely to be required for major alterations.
Extensive repairs or alterations to a significant building with complex stratigraphy.	In addition to the above, detailed information on the nature and development of the building's fabric, in the context of its significance and that of its various parts.	Medium to high (Level 3 or 4).	The drawn record may be more detailed than the norm, to inform step-by-step decision-making.
Catastrophic damage to a significant building (a major fire, for example).	Where not a prelude to demolition (<i>see below</i>), an understanding of the nature and development of the building's fabric, in the context of its significance and that of its various parts.	Variable, depending on the significance of the building, the extent of loss and safety considerations.	Attention will focus initially on areas most vulnerable to loss (debris, charred timber, water-damaged plaster etc), which may be recorded in greater detail than normal to assist reconstruction.
Dismantling prior to re-erection.	Detailed understanding of the fabric of the building, and of the craft processes which shaped it.	Medium to high (Level 3 or 4).	The drawn and photographic record is likely to be extensive, and will be made both prior to, and during, dismantling. Any proposed reconstruction, including departures from traditional practices and materials, may also be documented. In special circumstances and where resources permit, it may be appropriate to undertake additional recording (including the application of excavation-derived 'finds' techniques) during dismantling, or to elucidate the site's context or earlier history through excavation.
Proposed demolition.	Assessment of the significance of the building and a record of what is to be lost.	Variable, depending on the significance of the building. Other things being equal, the level will be higher than for buildings of comparable significance which are not similarly at risk.	

Photographs

7.1.6 Each record print should be clearly labelled with the subject, the orientation and the date taken, and cross-referenced to its negative or digital file. In the case of a photographic-only survey the prints should be accompanied by a brief written account, setting out the circumstances in which the record was made and the basis on which buildings or shots were selected. Negatives should be placed in appropriate archival-quality enclosures and stored separately from prints. Black-and-white prints should be made on fibre-based (not resin-coated) paper. For digital data, *see* below.

Reports

7.1.7 Paper used for reports should be of good quality. Recycled paper has a very short lifespan and should be avoided for any document intended for archiving. Acid-free paper represents an ideal, but expensive, alternative to standard papers.

7.1.8 Reports should contain the name and address of the body or individual(s) responsible for producing the report. The dates of the survey or investigation, and of the report's compilation, should be indicated. Illustrations should be titled with subject and, where appropriate, orientation. Where possible a unique identifier should allow cross-reference to the original negative or digital file. The inclusion of a contents list, and of headers or footers on every page identifying the building in question, guard against the accidental dispersal of parts of the report, for example if a binding fails or when loose leaves are being photocopied. The copyright of the report, and of any images or other material included by permission, should be clearly stated.

7.1.9 Where graphic and photographic images are integrated in the body of the report, as is often the case with desktop-published (DTP) reports, it is likely that the images will be of relatively low resolution in order to keep file sizes manageable. In this case additional hard copies should be provided with the images at an appropriate size and resolution.

7.1.10 DTP reports are commonly converted to PDF files for electronic dissemination. While PDF is likely to remain a stable format for as long as the existing software continues to be supported, in the longer term it is subject to the same risks as any digital data format (*see* below).

Digital data

7.1.11 Records are now often produced wholly or partially in digital form, whether as a word-processed computer file, an EDM (or REDM) site survey, a CAD drawing or a digital photographic image. Various elements may be combined in a single format, such as PDF, for convenient dissemination, but for archiving purposes the separate storage of each element is recommended. Furthermore, whilst in theory it is possible to store all such material in digital form in perpetuity, experience shows that the storage media themselves can be rapidly superseded by technical developments, and mechanisms for the long-term preservation of magnetic and digital data are still in development.

7.1.12 It is necessary to distinguish between data stored in an active computer system (on-line) and those stored in other media such as floppy discs, compact discs or DVDs (off-line). In the case of on-line data, curation problems are reduced if the system is regularly backed up, and the data adequately migrated when the system is itself upgraded, but it is important to appreciate that the advent of new software and hardware platforms may result in restricted access or functionality.

7.1.13 Where digital data are to be deposited as part of the archive record it is imperative that the intended repository be consulted before a decision is taken to rely on the archiving of digital formats. This will help to ensure that the repository is willing and able to accept and access the data in the hardware and software configurations used. While some national archive repositories can store data in on-line systems, most local repositories are likely – at least in the short term – to store material in off-line formats.

7.1.14 Where records are written to off-line storage media it is recommended that at least two copies be created, preferably in different media, and that these be stored in different locations. The long-term storage of off-line data presents a number of maintenance and curation problems. It requires stable conditions, regular copying to ensure that magnetic-based information is not lost, and regular upgrading in line with software upgrades. Additionally, the pace of change in computer hardware means that some early storage formats have already become obsolete, and it may be necessary to transfer data between different media to ensure continued use.

7.1.15 At present, therefore, it is always advisable to include a hard copy of all data deposited in digital form. Whilst digital records may hold information which cannot be reproduced adequately in hard copy (such as three-dimensional views or extremely fine detail), the paper archive at least ensures the currency and accessibility of most of the information. Further guidance on digital data issues can be obtained from the Archaeology Data Service (for contact details *see* Section 10).

7.2 Dissemination and publication

7.2.1 The practical utility of records depends on their being available to anyone with a legitimate interest in the building concerned. Copies of reports should be sent to owners and occupants, not only as a matter of courtesy but as a means of fostering understanding, appreciation and stewardship of the historic environment. Many records will be created in connection with changes which are subject to control through the planning process. In such cases it will be normal to circulate the report to the relevant officers of the local planning authority, to a range of statutory consultees, and to architects and others directly engaged in the project. While these recipients can make immediate use of the report's findings they cannot be expected to provide public access to it, so it is also important to ensure that copies are sent to the local Historic Environment Record and the appropriate local-studies library, at a minimum. It may also be useful to furnish copies to the relevant record office, local archaeological and historical societies and selected universities (those with regional-studies centres, for example).

7.2.2 When planning a record it is important to consider the possibility of publication, and to make appropriate provision of time and resources. Buildings of regional or national significance – particularly those where important discoveries have been made, insights gained or established interpretations challenged – may merit publication in county, regional or national journals as a way of disseminating knowledge and fostering debate. In exceptional cases the intrinsic interest or celebrity of a building, or the adoption of an innovative approach to understanding it, may justify publication in the form of a monograph. For buildings not commanding sufficiently wide interest, publication may consist of a brief notice in a roundup of recent work (these now appear in

a number of county archaeological journals). Thus signposted, the records of these lesser buildings will not be overlooked and may materially assist others in the production of works of synthesis.

7.3 Archiving and signposting

7.3.1 The recording archive, including master copies of the report, together with photographs, drawings, research notes etc, should be deposited in a local repository which has suitable arrangements for the long-term preservation of such material. This may be the relevant record office, the local museums service or a local-studies library or local-history centre. Where the record is part of a regional or national study an institution with a wider remit, such as the National Monuments Record, may be more appropriate. The proposed repository should be contacted in advance of deposit to ensure that any guidelines on acceptable formats and documentation can be adhered to. Where records are compiled in fulfilment of a planning condition, the local planning authority must ensure that this condition includes deposit of the record in a public archive.

7.3.2 Archived reports, drawings, photographs etc incur a year-on-year cost for storage and curation, and should not be needlessly bulky or difficult to handle and reproduce. Each generation must try to judge, as well as it can, what future generations may wish to know about the past, and not burden archives with masses of unrewarding material.

7.3.3 Record creators should where possible take advantage of new initiatives such as OASIS (Online Access to the Index of Archaeological Investigations; see Section 10 for contact details) to publicise recorded sites and the location of archives and reports. This will allow wider professional and research communities to identify, via the Excavation Index of the NMR, the local Historic Environment Record and the on-line catalogue of the Archaeology Data Service, what recording work has been carried out.

8 Architectural drawing conventions

8.1 Objectives

The endorsement of a set of drawing conventions is intended to:

- promote standard practice within the heritage sector in the preparation of architectural drawings for planning and conservation purposes, for research, publication and the archive;
- facilitate the exchange of graphically-based historical information within the planning and conservation processes;
- indicate a minimum level of information that should be included in a record drawing;
- indicate to recorders the level of information and the preferred conventions for drawings acceptable for the NMR archive;
- promote a set of standard conventions adapted to the peculiar problems of recording and interpreting historic buildings;
- facilitate the comparison of different buildings through a uniform system for recording common features.

There will be many occasions when it is not appropriate to use conventions and where a direct representation or an

annotation will be preferable. The conventions given here are therefore a minimum, to be used when they are sufficient for the purpose in hand.

8.2 Drawing conventions

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8.3 CAD layering conventions

The following layering protocol (see Table 2) has been adopted by English Heritage for architectural survey drawings. It represents a core of fundamental layers or levels, which can be supplemented as required. The prefix '0A' in the layer name identifies the source discipline as architectural survey. Each layer belongs to a group which defines the style of representation ('wall' means a solid line).

8.4 Sample drawings

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Table 2

Layer name	Description	Group	No.
0A-Point Control	EDM Survey detail point cross	1 (point)	1
0A-Point Number	EDM Index number detail point	1 (point)	2
0A-Point Height	EDM Height of detail point	1 (point)	3
0A-Point Code	EDM Feature code of point	1 (point)	4
0A-Annotation	Text annotation for final prints	2 (text)	7
0A-Grid	Grid crosses, and indexing text	2 (text)	8
0A-Titles	Titles, scales, north point etc	2 (text)	9
0A-Wall	Ground floor outlines, steps, details etc	3 (wall)	10
0A-Wall-1F	First floor outlines as for 0A-Wall (10)	3 (wall)	14
0A-Wall-Roofline	Roof line	3 (wall)	17
0A-Wall-Detail20	Details less than 40mm wide	3 (wall)	20
0A-Wall-Detail50	Details less than 75mm wide	3 (wall)	50
0A-Wall-Ground	Ground line at battered walls	3 (wall)	60
0A-Overhead	Details behind cutting plane	4 (dashes)	11
0A-Overhead-1F	Details behind cutting plane 1F	4 (dashes)	19
0A-Reconstruct	Reconstruction or conjectural	4 (dashes)	12
0A-Hidden	Info masked by other details	4 (dashes)	13
0A-Inserted Ceil	Inserted ceiling and beams	5 (inserted)	16
0A-Inserted Wall	Inserted walls and details	5 (inserted)	15
0A-Construction	Construction lines and text	0	5
0A-Traverse	Traverse lines and survey stations	0	6
0A-Supplementary	Modern or superfluous details	0	18
0A-Source	Other existing or digitised surveys	0	63