

# PLANNING FOR THE PAST

## VOLUME 1

*A review of archaeological assessment procedures in England 1982–91*



ENGLISH HERITAGE

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# Preface

The issuing of *Planning Policy Guidance 16: Archaeology and Planning* (PPG 16) in November 1990 placed archaeological site management firmly within the structure of the planning system, recognising that ‘the key to the future of the great majority of archaeological sites and historic landscapes lies with local authorities, acting within the framework set by central government, in their various capacities as planning, education and recreational authorities’.

In general terms, the effectiveness of the archaeological input into planning procedures depends on three key factors, the availability to planning authorities of reliable archaeological advice provided by the staff of locally-based sites and monuments records, the inclusion within development plans of appropriate archaeological policies, and archaeological assessment procedures which provide planning authorities with detailed information on which to base decisions on the archaeological sensitivity of development proposals.

Over the last decade, English Heritage has assisted local authorities with the establishment of staffed sites and monuments records. Every county authority and a small number of district authorities in England now have their own archaeological advisory staff. In

addition, English Heritage is currently making provision for the creation of complementary urban archaeological databases for 30 of England’s principal historic cities.

Archaeological conservation policies have now been included in the majority of structure and local plans reflecting the importance attached by PPG 16 to the careful management of the archaeological resource. In order to promote best practice in the drafting of these policies, English Heritage has recently published advisory notes for local planning authorities on *Development plan policies for archaeology* (English Heritage 1992) and, jointly with the Countryside Commission and English Nature, on *Conservation issues in strategic plans* (Countryside Commission et al 1993).

This document addresses the third aspect of the archaeological planning process by providing a review of archaeological assessment procedures in the period leading up to and immediately following the issuing of PPG 16. It summarises aspects of two inter-related surveys of assessment procedures by the Universities of Bournemouth and Southampton, highlighting areas of continuing concern and making recommendations aimed at consolidating and improving on current best practice.

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December 1994

# The review

## Introduction

The assessment of the archaeological sensitivity of development sites has become a familiar exercise over the last decade. It has assumed an increased relevance in recent years through the improved awareness of local planning authorities, promoted by government advice, of the need to conserve the archaeological resource wherever possible.

In 1987 DoE Planning Circular 8/87 confirmed that archaeology is a material consideration in the planning process and that the preservation of archaeological remains and their settings is desirable. In November 1990 the Department of the Environment issued *Planning Policy Guidance Note 16: Archaeology and Planning* (PPG 16) which consolidated and expanded upon Circular 8/87. PPG 16 stressed the finite and non-renewable nature of archaeological remains and emphasised the desirability of securing their physical preservation wherever feasible. It also emphasised that where a development proposal was likely to affect archaeological remains, planning authorities should ensure that they had enough information on the nature and importance of the archaeological site and its setting to take an informed decision.

Archaeological advice on individual planning applications is normally provided at a local level by county archaeological officers or, in a few cases, by district archaeological officers. Initially this advice is based on a consideration of existing data held within the sites and monuments record (SMR), a process referred to here as an *appraisal*, and subsequently, where appropriate, on more detailed information provided by applicants through site-specific studies of the application area. This research may include a desk-top study (a *desk-based assessment*) and limited archaeological fieldwork (a *field evaluation*). These stages in the archaeological response to a development proposal are referred to collectively as *archaeological assessment* and are in accordance with the statutory powers conferred on planning authorities by Regulation 4 of the *Town and Country Planning (Applications) Regulations Act 1988* to request background information on planning applications. The typical sequence and relationship of the respective stages of assessment are set out in Fig 1 (although the stages need not necessarily be discrete) and more detailed definitions of the key terms are provided in the Glossary.

Paragraphs 19, 20, and 21 of PPG 16 address the advantages to both developers and planning authorities of the archaeological assessment procedure:

In their own interests, therefore, prospective developers should in all cases include as part of their research into the development potential of the site, which they undertake before making a planning application, an initial assessment of whether the site

is known or likely to contain archaeological remains. The first step will be to contact the County Archaeological Officer or equivalent who holds the SMR ...

These consultations will help to provide prospective developers with advance warning of the archaeological sensitivity of a site. As a result they may wish to commission their own archaeological assessment by a professionally qualified archaeological organisation or consultant.

Where early discussions with local planning authorities or the developers own research indicate that important archaeological remains may exist, it is reasonable for the planning authority to request the prospective developer to arrange for an archaeological field evaluation to be carried out before any decision on the planning application is taken. This sort of evaluation is quite distinct from full archaeological excavation. It is normally a rapid and inexpensive operation, involving ground survey and small-scale trial trenching...

A study commissioned by English Heritage in 1992 confirmed that the requirements of PPG 16 are now widely reflected in structure and local plan policies and the practices of local planning authorities (Pagoda Projects 1992). As a consequence of these policy developments, a great deal of archaeological assessment work has been carried out in recent years, providing considerable practical experience, bringing to light significant new archaeological information, and ensuring the preservation of important archaeological remains.

Naturally the work to date has raised a number of academic, methodological, and practical questions. Given the rise in the number of archaeological assessments likely to be undertaken in future, English Heritage considers the continued development of effective assessment and field evaluation procedures, and careful consideration of these, to be of paramount importance. Areas of particular concern include the need to establish nationally an appropriate degree of consistency in the application of archaeological assessment and field evaluation procedures, the need to improve field methodologies, and the need for better dissemination of the results of archaeological assessment in order to enhance the growing body of knowledge about the archaeology of England.

In 1992 English Heritage commissioned a national survey of archaeological assessment projects carried out during the previous decade to examine these issues further. This work was carried out by Professor Timothy Darvill, Stephen Burrow, and Deborah-Anne Wildgust of Bournemouth University. In addition, a

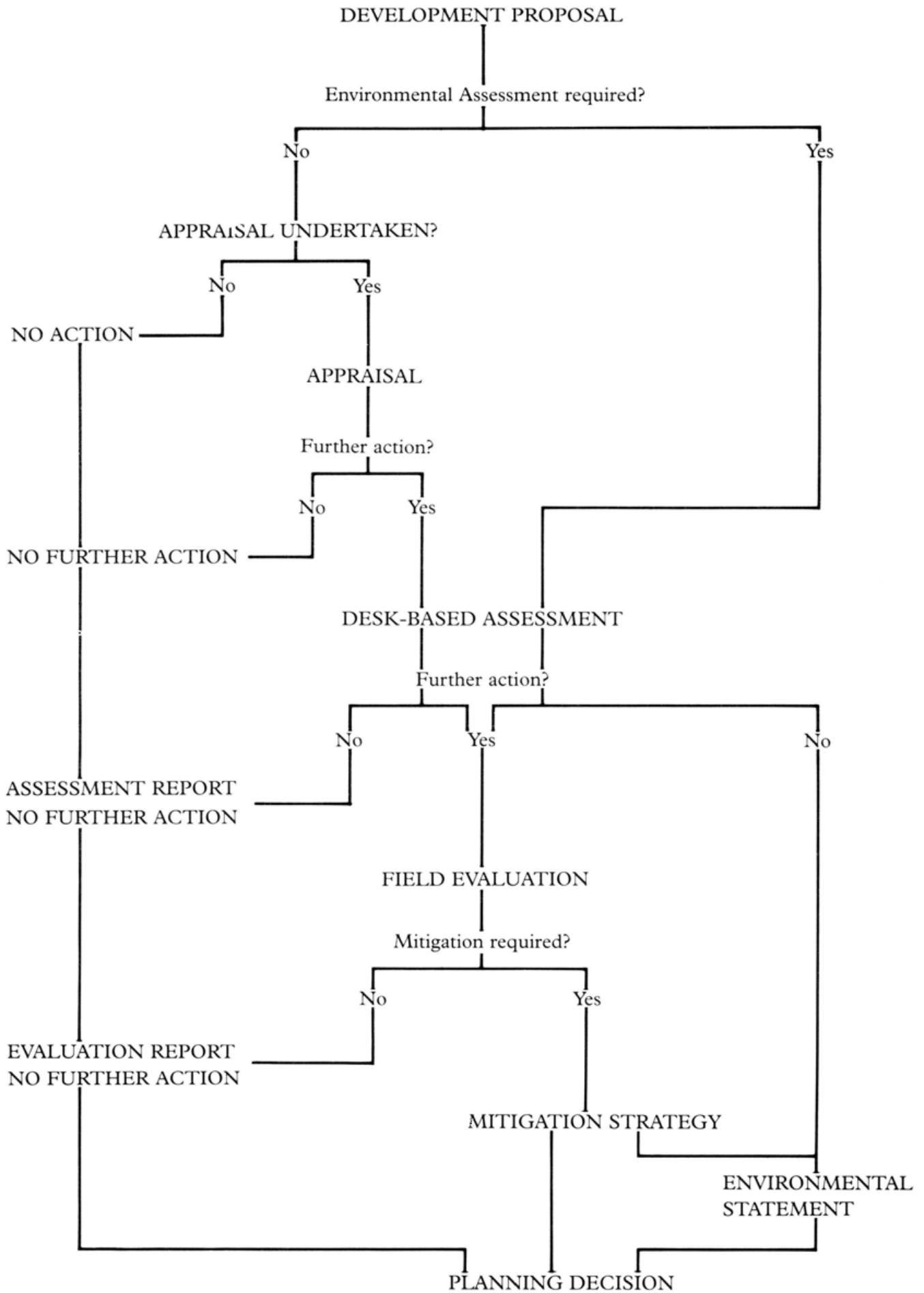


Fig 1 The stages of the archaeological assessment process



detailed case-study examining the development, application, and efficacy of assessment procedures in the counties of Berkshire and Hampshire was commissioned from Dr Timothy Champion, Dr Steve Shennan, and Paul Cuming of Southampton University. These counties were selected for study because of their early adoption of conservation-led archaeological planning policies and the resulting comparatively large data-set of assessment projects. The case study did not include archaeological assessment work carried out within urban centres as these were perceived to be subject to a differing range of practical constraints.

This review summarises some of the findings of both projects. For a detailed account of the research undertaken and the findings which resulted, see the individual project reports (Darvill *et al* 1995; Champion *et al* 1995). In addition, the Bournemouth survey included the compilation of a consolidated directory of those archaeological assessments, field evaluation reports, and the archaeological components of environmental assessments made available to the Bournemouth project team (Darvill *et al* 1994).

## Appraisal

While appraisal is the most important stage in the assessment procedure, it is the most poorly documented due to its routine nature. For the purposes of the survey, appraisals were divided into two groups, simple appraisals of the kind that could be done from local knowledge and experience, and detailed appraisals involving searches and checks. The outcomes of appraisals might have been given verbally, in correspondence or as file notes. Only in a small number of cases were formal reports produced. The majority of appraisals were carried out by archaeological curators

at county or district level either as a result of inquiries directed to them from developers or as a first response to formal planning applications. In addition, the survey revealed the existence of a small number (less than 50 in 1991) of privately commissioned appraisals, which may reflect the increase in pre-planning stage enquiries encouraged by PPG 16.

It is useful to consider the demand for appraisals against the backdrop of the general pattern of planning applications over the last decade. Fig 2 shows an analysis of total planning applications nationally for the years 1982–91 (figures for the north of England were available only for the period 1988–91) The trend in the total number of applications clearly reflects general economic conditions of growth followed by recession. While the survey indicated that there is a reasonable coverage of appraisals throughout England, it did reveal regional variations in their application and demonstrated that some district planning authorities are still neither consistently or systematically covered.

Although it was not possible to collect adequate data on the frequency of simple appraisals nationally, figures were available from the Berkshire case study which are likely to be broadly representative of the wider picture. These indicated that the proportion of applications examined varied with general economic conditions. From a peak in 1987, when 10.2% of all Berkshire applications were appraised and 1.45% required a further archaeological response, the proportions at the depth of the recession in 1991 had fallen to 4.9% and 0.8% respectively.

National figures for detailed appraisals are better recorded and are illustrated in Fig 2. The graph demonstrates a steady increase in the number of detailed appraisals carried out and it is notable that, despite recession, the proportion of applications subject to detailed appraisal continued to rise in 1990 and

Total planning applications against % of applications subject to detailed appraisal

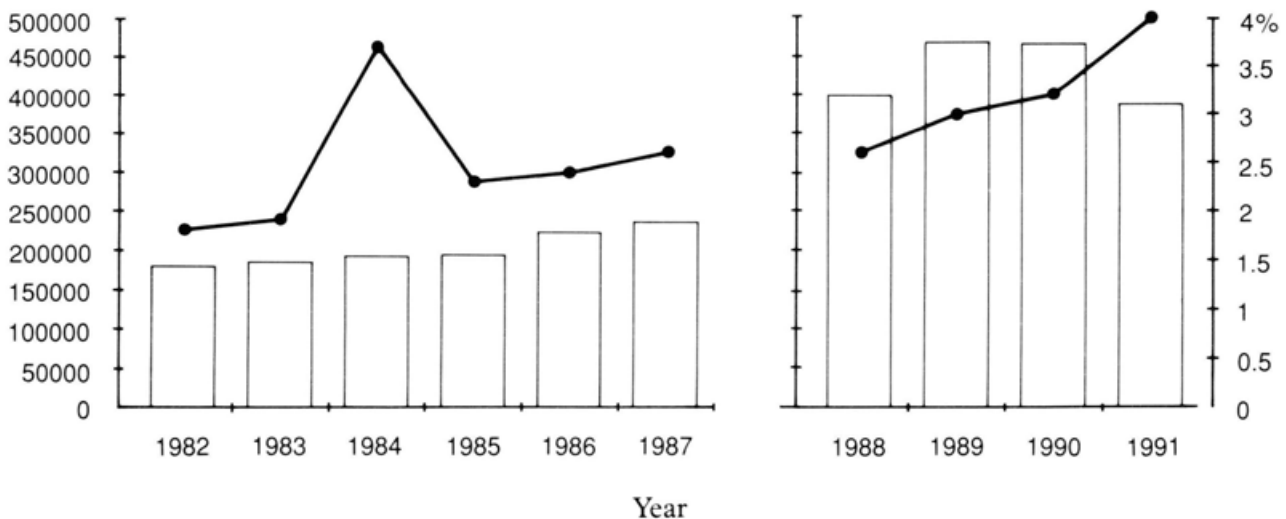


Fig 2 Total numbers of planning applications histogram with percentage of applications subject to detailed archaeological appraisal. 1982–87 figures are for South and Midlands regions, 1988–91 figures are for all England

1991, perhaps reflecting increased curatorial staff resources and awareness of the technique as well as the effect of PPG 16. During 1991, figures indicate that some 15,653 detailed appraisals were carried out across the country, representing an average of 301 per week, resulting from some 4% of all planning applications nationally. The survey also demonstrated that throughout the study period there was a clear upward trend in the number of planning applications where a detailed appraisal confirmed an archaeological dimension that needed further consideration. This probably reflects both an improvement in appraisal techniques during the study period as well the continued development of SMRs.

These figures have two implications for archaeological resource management. Firstly, despite the diminution in the absolute number of applications at the end of the study period, the level of applications is likely to remain considerably higher than in the early 1980s. Secondly, future work-load trends should not assume annual increases in the number of applications but might be more realistically modelled on cyclical patterns of growth and recession.

### The commercial context of assessment procedures

An analysis of the developments which have been subject to archaeological assessment and field evaluation during the study period indicates an early concentration on major development types (road construction, mineral extraction, and housing) being replaced by a far wider range of development types in 1990 and 1991. This suggests that PPG 16 is having a major impact in extending archaeological assessment procedures to all kinds of development.

Throughout the study period, the number and percentage of archaeological field evaluations funded by commercial sector developers increased, with the publication of PPG 16 accelerating this trend. In 1991, for example, funding from this source accounted for some 70% of all funding for field evaluations. The corresponding decrease in funding for archaeological assessment procedures by local authorities and English Heritage confirms this assumption of responsibility by the private sector and also by public sector bodies, most notably the Department of Transport.

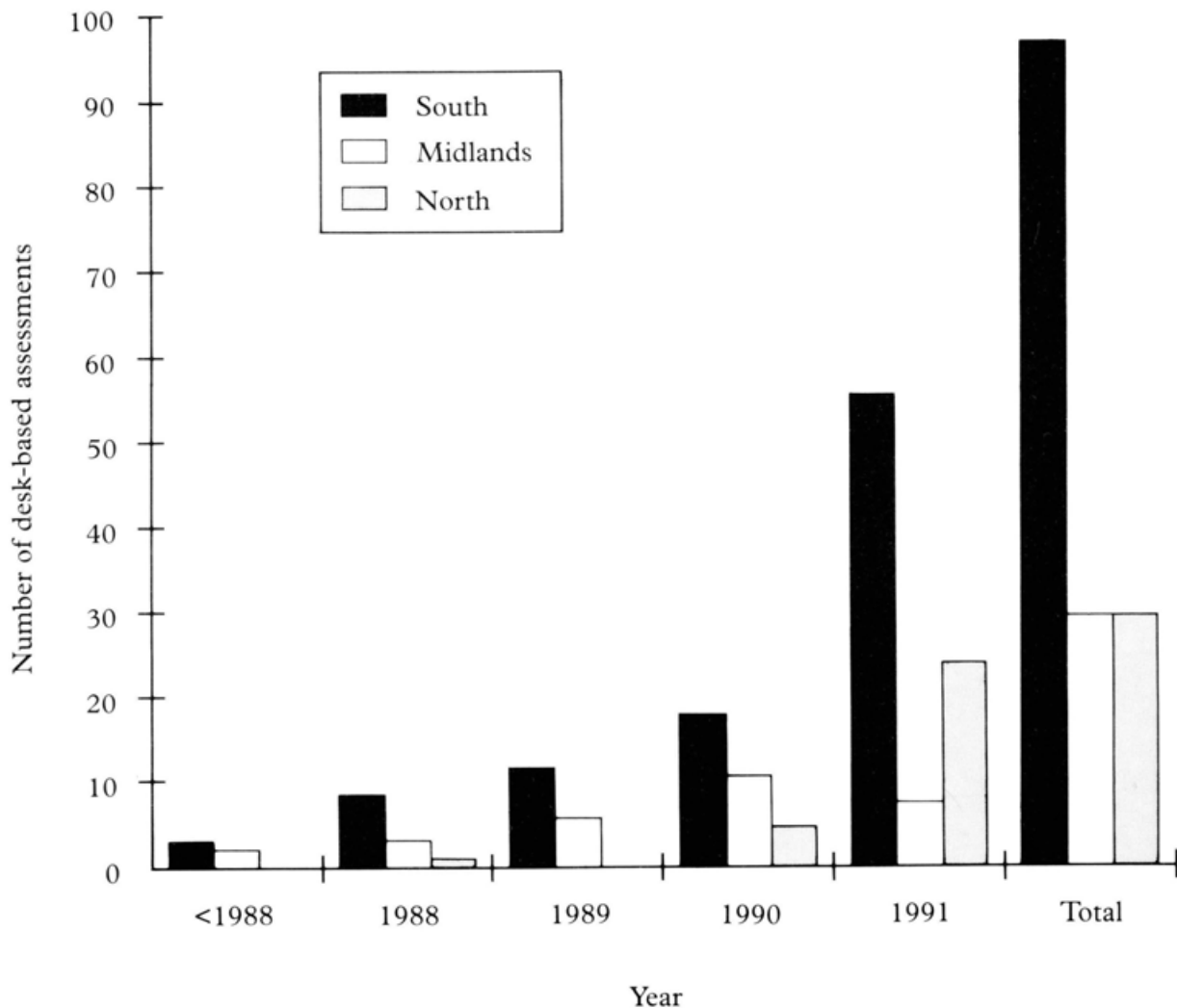


Fig 3 Total numbers of desk-based assessments carried out nationally and by region 1982-91

## Desk-based assessment

The number of desk-based assessments undertaken nationally has increased considerably from a handful prior to 1988 to 97 undertaken in 1991 after the issuing of PPG 16 (Fig 3). The earlier steady upward trend is likely to reflect completion of the establishment of SMRs nationally, the adoption of improved development plan policies, and a growing familiarity and confidence amongst curators in the assessment procedure itself.

The majority of desk-based assessments relate to extensive developments often too large for consistent, economic, and detailed field evaluation. Among smaller-scale assessments, a high proportion occur in

an urban context where the quantity and detail of documentary sources allows a more reliable analysis of the potential of individual sites. Analysis of the sources of the brief for desk-based assessments indicates that before 1988 contractors were the principal originators of briefs. In the period since 1988 county archaeological officers have provided the majority of briefs, underlining their central role in the assessment process, although contractors still provided between 30% and 40% of briefs. A significant but declining proportion were also produced by consultants.

Two main methods of inquiry were employed for desk-based assessment, searches of existing documentation and visual site inspection in the field. All the assessments included searches of sources but only 65%

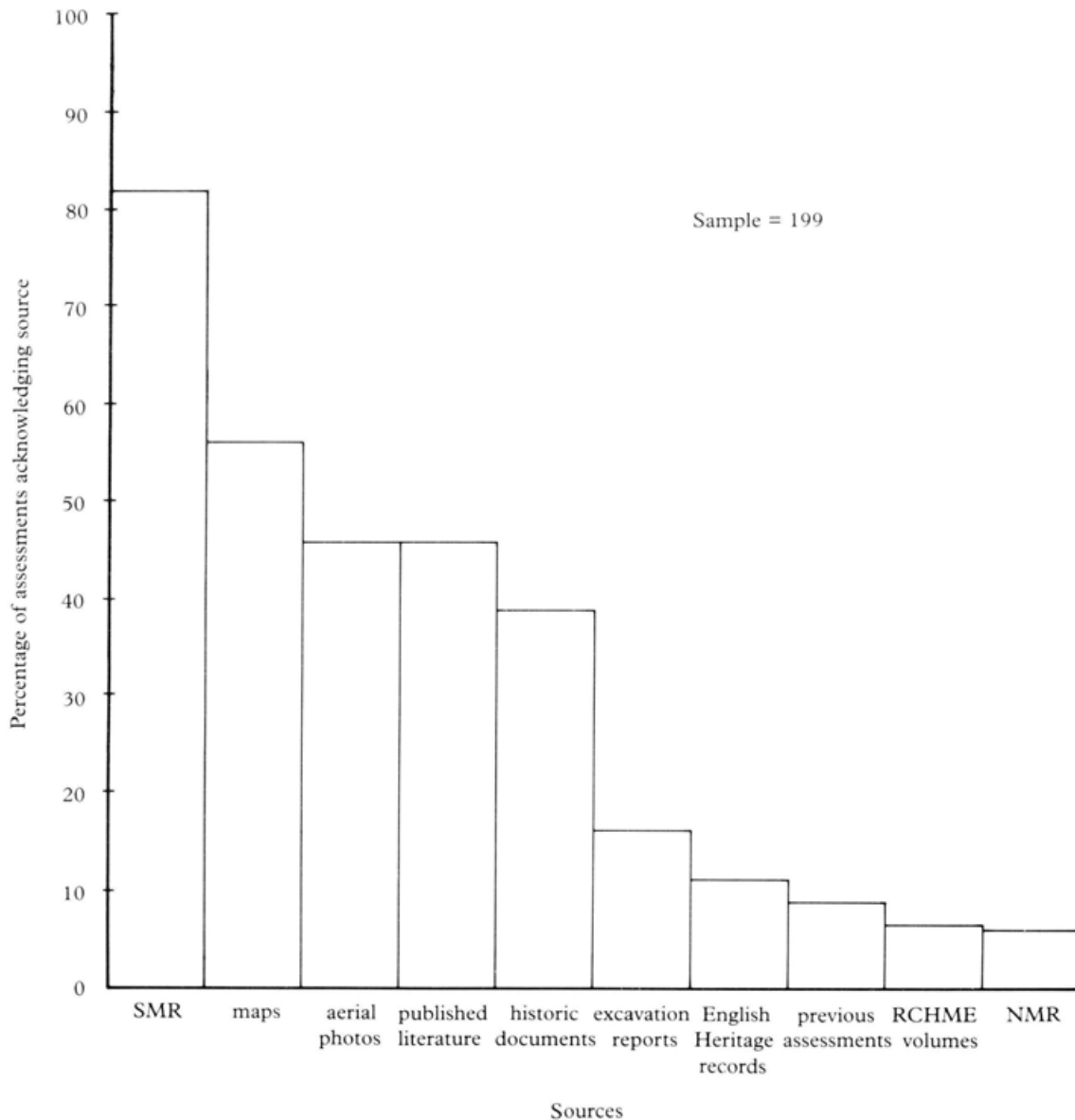


Fig 4 Sources of data acknowledged by desk-based assessment reports 1982-91

recorded the use of visual inspection. Of the 199 desk-based assessment reports examined by our survey, very few included a detailed list of sources consulted, rendering uncertain their academic value and reliability. Analysis of the sources consulted in producing desk-based assessments (Fig 4) indicates routine use of SMRs and frequent use of publications, aerial photographs, historic maps, and documentary evidence. The use of the Royal Commission's county volumes, where they exist, or the National Monuments Record appears to have been surprisingly limited. Overall, the range of sources used for this study falls short of that proposed in the *Interim standard and guidance for archaeological desk-based assessments* issued by the Institute of Field Archaeologists (IFA 1993a; 1994a).

The survey asked contractors and consultants about the cost and time required to produce desk-based assessments. In general it was found that costs of research and production were low compared with field evaluation, and anecdotal evidence suggested that a well-researched assessment could save time and money in any subsequent field evaluation by allowing more precise framing of the brief/specification. In general, desk-based assessments could be prepared in less than three to four weeks and only one case recorded in the survey cost more than £5,000 (at contemporary prices).

The Pagoda report (1992, 12) states that curators are better placed to persuade local planning authorities to seek field evaluations before determining a planning application where a developer has already undertaken desk-based research. However, the progression from assessment to field evaluation is not inevitable, as any archaeological remains located may be regarded as of limited interest and not worth further field evaluation, or of such importance that the site is deemed inappropriate for development. Among the 199 desk-based assessments recorded by the survey, the absolute number giving rise to field evaluation has risen steadily from 3 in 1988 to 65 in 1991, although in percentage terms there has been a decline from 81% in 1988 to 67% in 1991 (Fig 5).

## Field evaluation

### General

The survey recorded a total of 1333 field evaluations carried out between 1982 and 1991. This total includes examples of investigations carried out before 1988 which may not have been called field evaluation but which fulfilled the same purposes and were carried out within comparable parameters. Fig 6 shows the overall rise in the number of field evaluations carried out both nationally and regionally during the survey period. The greatest single increase in numbers (63%) occurs between 1990 and 1991, following the introduction of PPG 16.

Fig 7 illustrates the number of field evaluations nationally as a proportion of the total number of planning applications since 1988. The proportions rise

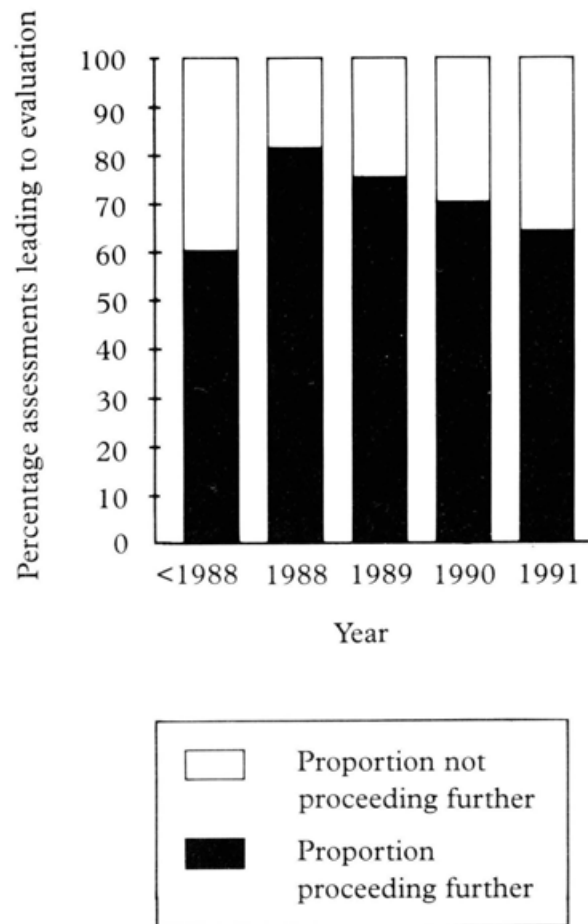


Fig 5 Proportion of desk-based assessments leading to a field evaluation 1982–91

steadily from *c* 0.04% in 1988 to *c* 0.06% in 1990, with the marked increase in field evaluations in 1991 producing a rise to *c* 0.12% despite a concurrent decrease in the levels of planning applications made nationally. In Berkshire, where field evaluation procedures were firmly established in the structure plan throughout this period and where the SMR had been enhanced by large-scale field survey, proportions of total planning applications requiring field evaluation were generally higher, reaching 0.31% in 1988 and 1990 but falling to 0.16% in 1991. It is notable that the general rate of requirements for field evaluation based on soundly researched figures is considerably lower than the 1% which previous estimates have suggested (eg Pagoda 1992, 10). It is also interesting to note that although the number of planning applications with an archaeological dimension has levelled off or declined for most parts of the country, the number of field evaluations is still rising. This presumably reflects a changing response by local planning authorities to field evaluation as a result of PPG 16.

### Selection of sites for evaluation

Detailed consideration of the basis for site selection for field evaluation in Berkshire and Hampshire indicates the primary importance placed on sites and

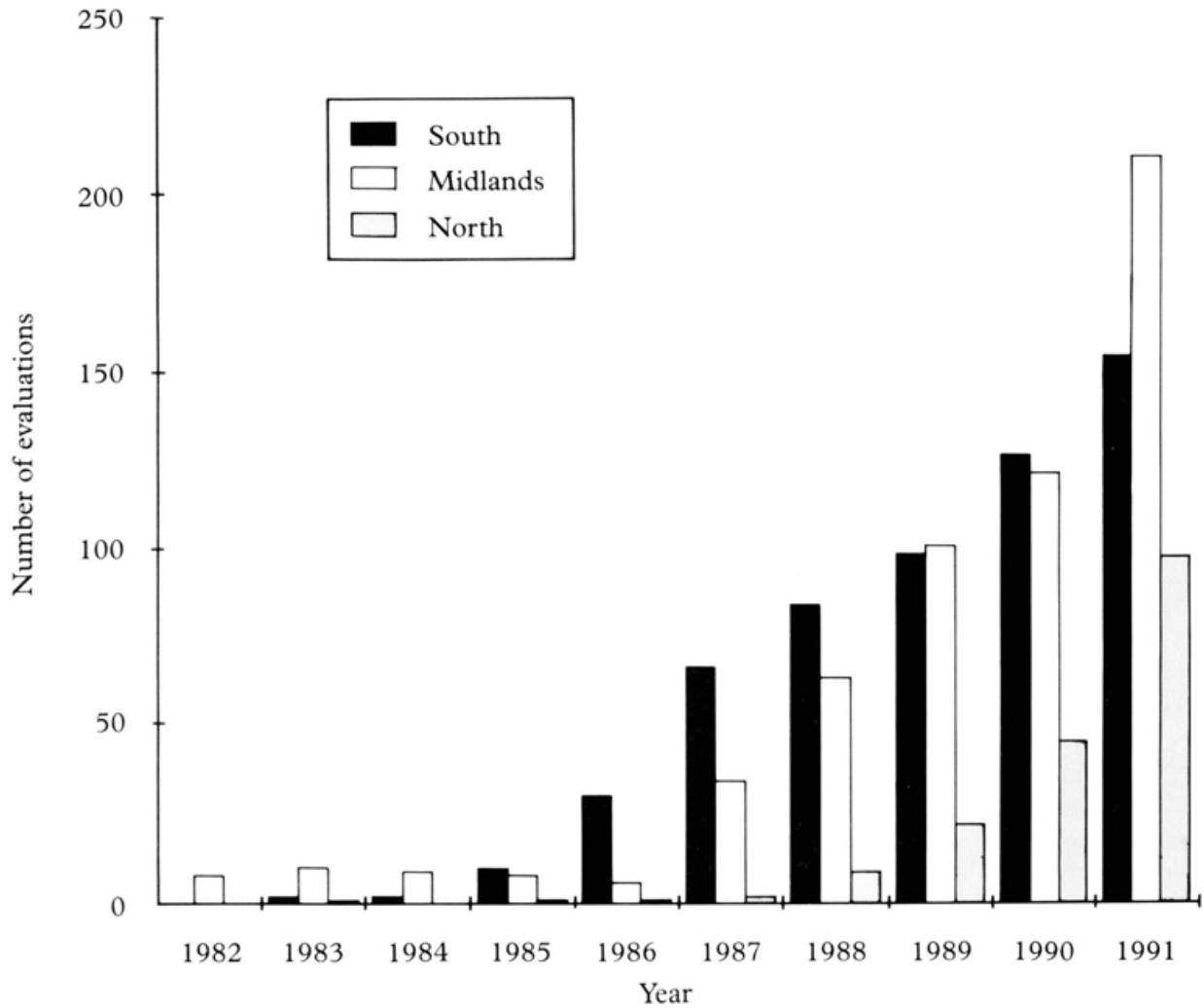


Fig 6 Total recorded numbers of archaeological field evaluations carried out nationally and by region 1982-91

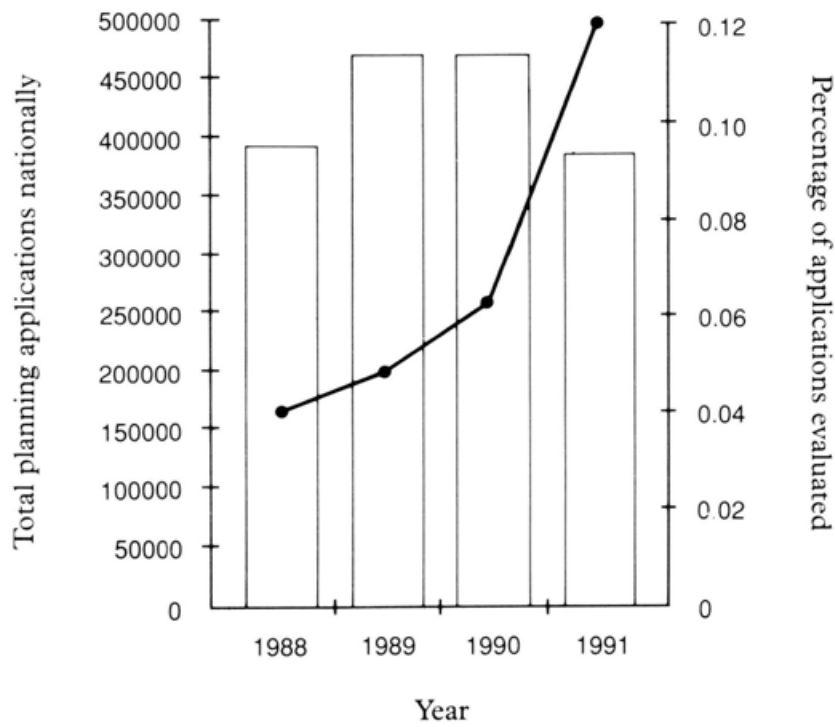


Fig 7 Total numbers of planning applications in England 1988-91 histogram with percentage of applications subject to archaeological field evaluation

monuments information by curators in identifying cases for evaluation. This is confirmed by figures from the national survey which indicate that less than 40% of the sites selected have no known archaeology either extending into or adjacent (ie within c 200 metres) to the development site area.

Detailed analysis of the relevance of information from the Berkshire and Hampshire SMRs to the probability of locating archaeological remains during field evaluation suggests that it can be considered to be relatively reliable in terms of its implications for the Romano-British and later periods, but less so for prehistory. This is clearly a function of the 'visibility' of the archaeology of later periods and indicates the need both for SMR enhancement for the earlier periods and for the development of predictive models designed to aid the location of prehistoric sites.

The Berkshire/Hampshire study also demonstrated that while the curators attained a high degree of success in selecting sites for evaluation and a high level of consistency in the criteria they adopted for selection, it is possible that some sites were not selected for evaluation when they should have been. Further carefully-designed studies of curatorial decision-making would illuminate this issue.

Finally, it is noteworthy that the national survey indicates that the proportion of evaluation areas containing scheduled monuments has fallen from c 11% prior to 1988 to c 7% in 1991, presumably reflecting the presumption in favour of the preservation of nationally important sites and their setting contained within PPG 16 and many recent structure and local plans.

**Briefs and specifications**

The protocols for providing briefs and specifications have only recently received detailed scrutiny (ACAO

1993), so the results of this review must be regarded as provisional.

An analysis of their sources (Fig 8) indicates an early pattern of briefs provided by developers, consultants, or contractors. This has been superseded in recent years and briefs produced by curators, primarily county archaeologists, are now the norm. There remains a range of opinion and practice amongst archaeological curators on the responsibility for writing specifications (ACAO 1993, 15). In this context, the differing practices adopted by Berkshire and Hampshire county councils are worth consideration. Hampshire County Council does not set separate briefs, instead preferring to write its own specifications and thus control directly the performance of evaluation fieldwork. Berkshire County Council, in contrast, prefers to set briefs and allow contractors to create their own fieldwork specifications for the approval of the curator. This approach requires fewer resources and fully utilises the fieldwork experience of archaeological contractors. Variations to these systems occur elsewhere.

As part of the Berkshire/Hampshire case study the quality of field evaluation briefs (Berkshire only) and specifications (both counties) was examined by scoring them against a series of criteria. The results of this analysis indicated that the quality of briefs and specifications has improved over time and that there was a relationship, albeit a moderate one, between the quality of the brief provided and the subsequent specification produced.

**Field methodologies**

The survey revealed that across the country there is considerable variation of opinion as to the most appropriate way of approaching a field evaluation

Sources of brief for archaeological field evaluations: the national picture

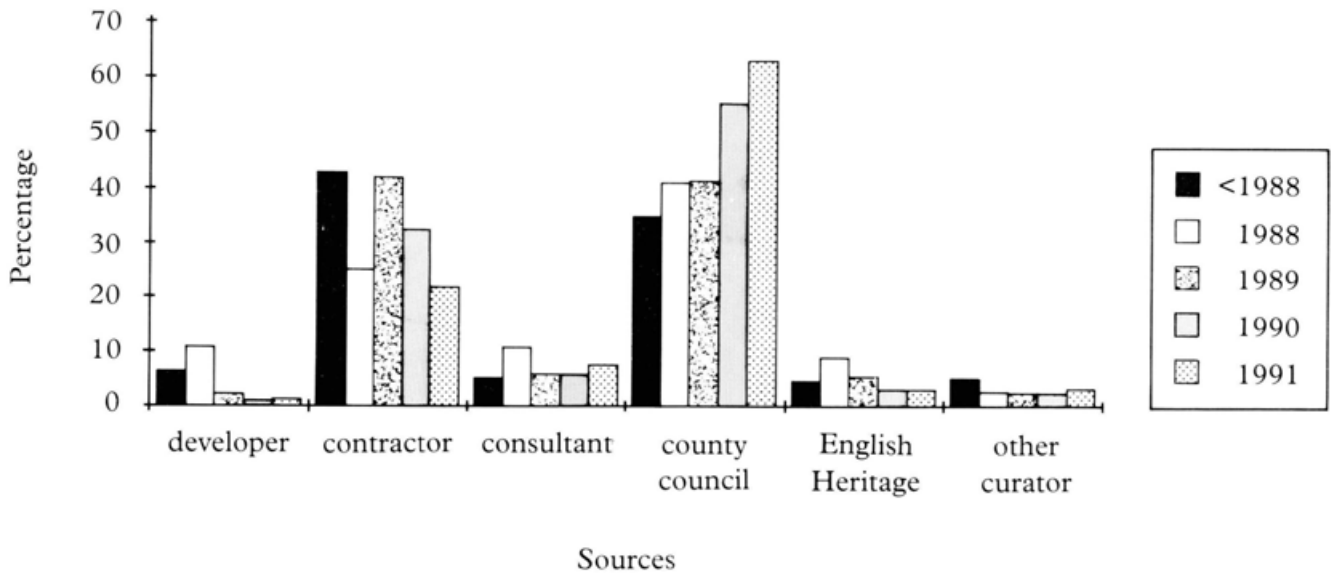


Fig 8 Sources of brief for archaeological field evaluations in England 1982-91

exercise. Time and cost are obviously strong constraints (as they are in any other area of archaeology), but there is also the practical problem posed by 'windows of opportunity' in which techniques such as fieldwalking can be deployed. It is rare for enough time to be available for the conduct of a field evaluation exercise to allow the most opportune timing for different techniques to be selected. It might be expected that undertaking field evaluations in stages would overcome these problems but the survey revealed that only *c* 9% of field evaluations had been carried out in more than one phase.

**Table 1 Summary of the main field evaluation techniques used in 1982-91**

<i>technique</i>	<i>incidence</i>	<i>% of evaluations</i>
fieldwalking	123	11.8
resistivity	59	5.7
magnetic susceptibility	7	0.6
magnetometry	112	10.8
phosphate studies	4	0.3
test pits	167	16.0
targeted trenches	565	54.5
random trenches	335	32.3
topographic survey	73	7.0
aerial photography	22	2.1
documentary searches	131	12.6
ground probing radar	11	1.0
auger survey	12	1.1
metal detector survey	3	0.2

Table 1 provides an analysis of the incidence of the main techniques deployed in the 1333 field evaluations included in the national survey.

Surface collection survey (fieldwalking) is normally favoured on sites greater than 20 hectares in extent and is used most frequently in the south and midlands, reflecting the greater proportion of arable land in these regions than in the north. Geophysical prospection is most commonly used in the north, perhaps reflecting the less frequent deployment of fieldwalking. Magnetometry is the most favoured of the geophysical techniques, presumably reflecting its rapidity of coverage although resistivity is also used widely.

In view of the fairly specific forms of information on site location, extent, and quality which curators require from an evaluation, some form of excavation will normally be necessary. The most widely used technique is machine trenching. This is generally perceived as the most effective method of field evaluation, capable of being dug quickly and relatively inexpensively while allowing an acceptable level of detection of archaeological remains. Trench placement can be varied from random, systematic, specifically problem-orientated layouts, or any combination of these, providing considerable flexibility. The method has two

principal weaknesses. Firstly, it tends to destroy archaeological remains and can damage sites subsequently deemed to merit physical preservation. Secondly, it has comparatively poor recovery rates of artefacts, posing potential problems of site interpretation or even, for some site types which contain no or few archaeological features (eg mesolithic flint scatters), site detection.

Nationally, targeted trenching (judgement sampling of features detected by desk-based assessment or survey) was deployed in 42% of recorded field evaluations. Non-targeted trenching (either randomly or systematically arrayed) was used for 25%. The latter is widely regarded as the best technique available in cases where little or nothing is known about any archaeological deposits within the evaluated area but, generally, there is very limited evidence that the arrangement, spacing, or size of trenches is based on the application of statistically meaningful sampling strategies.

The predominance of machine trenching among field evaluation techniques nationally was confirmed by the Berkshire/Hampshire case study where over 93% amongst a sample of 104 field evaluations have used this method, with strategies equally divided between uniformly distributed trenches and randomly positioned trenches together with targeted trenches. The average fraction of the site sampled by machine trenching was 2.5% (3.16% in Hampshire and 2.26% in Berkshire).

Test pits (regularly-placed small holes to investigate sub-surface deposits and/or topsoil artefact content) appear to have been used in two different circumstances. Firstly on small sites (less than 1 hectare) where they provide more flexibility than full-size trenches, and secondly on very large sites where they can serve a useful role in the identification of sites over large areas. Since 1989 there has been an increasing trend towards combined trenching and test-pitting as part of an integrated field evaluation strategy, particularly in southern England.

Other techniques were adopted far less frequently. These include commissioning new aerial photographic coverage, topographic (earthwork) survey, augering, and ground-probing radar. Fieldwalking, geophysical prospection, and, in some cases, test pitting can each be seen as preliminary phases used to inform the decision as to where to locate trenches since it is normally only through sample excavation that questions relating to the importance of archaeological remains can be resolved.

The national survey also considered the manner in which different techniques were combined. This indicated that the range of techniques deployed for field evaluations decreased over time and that up to 70% of field evaluations adopted only a single technique. This approach is presumably intended to keep the cost and duration of the evaluation exercise as low as possible. Even where several techniques were employed for a field evaluation, they were often confined to the same

phase of work, limiting the level of interpretation which could be placed on the results of survey techniques prior to the placing of trenches.

Again, these national trends were confirmed by the case study. For over 60% of the evaluations undertaken in Berkshire and Hampshire only one technique was deployed (although in Berkshire many evaluation sites have previously been fieldwalked to a high standard and further fieldwalking is not warranted) and in 57% of cases this was machine trenching.

## Trenching and test-pitting strategies

In recent years there has been much discussion of the result of varying trench dispositions and, in particular, sample size on the effectiveness of field evaluation results. At the same time, the 2% sample fraction appears to have become established as something of an industry standard and has been widely adopted as an acceptable proportion of an evaluation area to be excavated. However, this figure is not supported by any particular archaeological reasoning, deriving rather from what contractors and curators considered to be an acceptable balance between the need for archaeological information and cost minimisation, and its widespread adoption may have resulted in a reluctance in some instances to insist on larger-scale work.

The Berkshire/Hampshire case study paid particular attention to the design of sample trenching and test-pitting strategies, including a detailed consideration of six sites which had undergone field evaluation and produced results sufficiently significant to require a further programme of archaeological excavation. The examples chosen were selected to represent a range of site types and sizes, periods of archaeology, and archaeological contractors. Data from the evaluation and the subsequent excavation were subjected to two forms of analysis, firstly, comparison between the evaluation and the whole site excavation record in order to determine whether the evaluation had produced a representative picture, both quantitatively and qualitatively, of the archaeological character of the whole site, and whether there were any aspects of the site consistently successfully or unsuccessfully addressed by the evaluation strategies, and secondly, simulation of alternative machine trenching and test-pitting strategies involving a range of sample fractions and trench/test pit layouts.

A number of broad conclusions can be drawn from the analysis of field evaluation practices in Berkshire and Hampshire:

- in general qualitative terms, the actual field evaluation strategies adopted have proved successful at identifying the presence/absence and, to a lesser degree, the period, nature, extent, quality, and rarity of the archaeological remains on-site. In none of the six cases were the original conclusions from the field evaluation seriously challenged by subsequent excavation, although in most of these examples it was not possible to establish fully the detailed extent and nature of the sites that the evaluation had discovered until they were excavated
- in quantitative terms, the samples produced by the evaluations, or by any of the simulations, are not accurate reflections of the whole-site archaeological record, consistently underestimating the range of different find and feature types across the whole site and distorting their relative proportions. This is of considerable importance for academic work concerned with inter-site comparisons based on partial excavation
- the use of trenching as the sole evaluation method in a high proportion of field evaluations suggests that earlier prehistoric remains in particular may remain undetected in some evaluations, given that these are generally identified from finds rather than from features
- concepts of sample fraction (ie the proportion of the evaluation area actually excavated) have no direct relevance to the design of evaluation strategies. Much more important are the number, location, and size of the sample units needed to locate archaeological sites with a suitable probability. These factors should determine the chosen sample fraction, not vice-versa
- designing strategies based upon a quantitative, as well as a qualitative, idea of what archaeology may be present brings an enormous benefit to the curator. The effectiveness of the evaluation strategy in detecting and investigating sites can be greatly improved if the size, number, and spacing of sample units is based on a specific idea of the likely size, shape, and density of any archaeological sites likely to be present in the evaluation area. This suggests that an effort should be made to gather suitable figures describing the diameter, density, and shape of different site types of different periods in order to allow curators to assess the likely parameters of potential sites in future evaluations, based on the parameters of nearby sites of the same period or form
- where non-uniform strategies are adopted, trenching is usually concentrated on parts of the evaluation area most likely to contain sites on the basis of desk-based assessment or survey results, often at the expense of other supposedly blank areas. This results in an unknown probability of archaeological remains of all periods remaining undetected. The use of a structured sampling strategy assures an even coverage of the evaluation area
- the use of specific parameters to design structured strategies can guarantee that any site of the appropriate size will be intersected by a sample unit. If, therefore, a field evaluation is aimed at a particular site type, the curator can design a strategy that maximizes the probability that the site will be detected



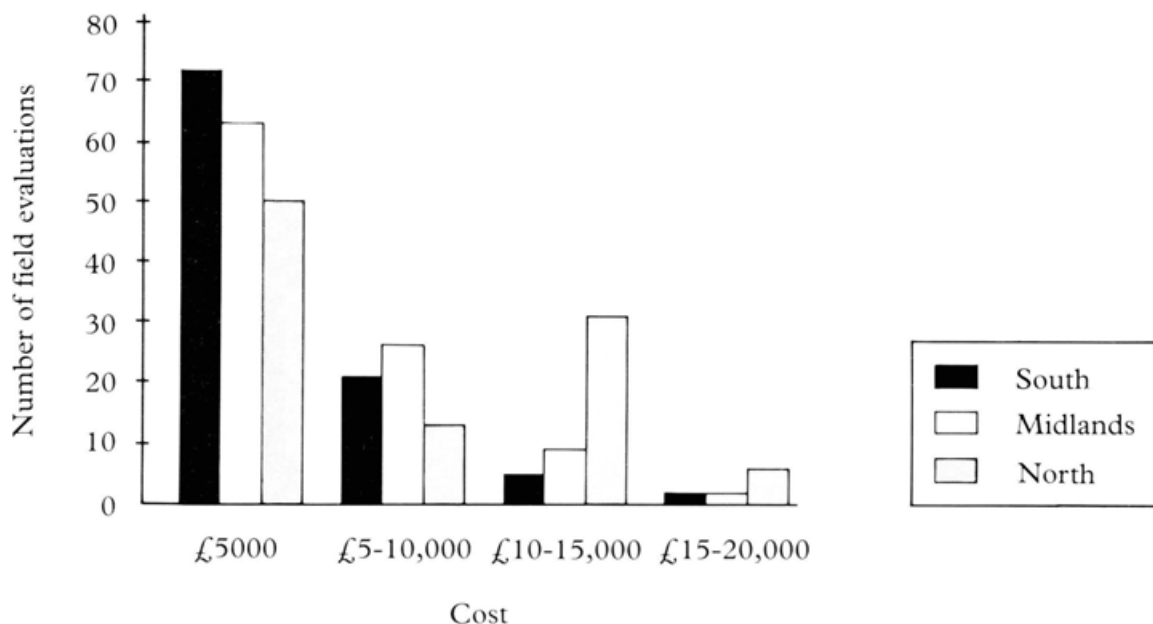


Fig 9 Approximate costs of a sample of 118 archaeological field evaluations by region

### Cost considerations

In the majority of cases, field evaluation involves the recovery by excavation of a sample of the on-site archaeological resource in order to provide the archaeological curator with the information necessary for an appropriate decision to be made. As with the gathering of any sample, there is a relationship between the size of the sample and the confidence in the inferences which may be drawn from it. As the sample size is expanded, inferences become firstly possible and then increasingly secure. Eventually, increasing the sample size further becomes decreasingly worthwhile as the additional information has less and less effect on the curators' comprehension of the on-site archaeology. Thus, in general terms, there is a definite trade-off between the excavation of a sample of the site (and consequently the cost of the evaluation) and the amount of information which can be derived from the sample.

Two considerations tend to limit the evaluation sample size sought by curators. Firstly, the cost of the evaluation must meet the test of reasonableness and curators seek to ensure that their evaluation strategies are both cost-effective and adequate to secure the information required. Secondly, given the desirability of preserving archaeological remains, the level of

destruction caused by invasive evaluation techniques needs to be kept to the minimum commensurate with obtaining adequate information.

The Berkshire/Hampshire case-study included a cost analysis of the six exemplar field evaluation strategies as actually performed and of the series of simulated strategies. This demonstrated that the cost of the real field evaluations was considerably lower than that of the hypothetical strategies designed to produce wider ranges of information, thereby indicating that curators are attempting to keep costs low in designing evaluation strategies. While this has an inevitable bearing on the effectiveness and reliability of those strategies, the analysis also suggested that the potential information loss in many instances is not significant and that, in most cases, the evaluations are largely succeeding in addressing the aims of the curators.

The national survey confirmed the general cost-effectiveness of field evaluation by asking contractors and curators to identify in round terms the approximate cost of evaluation programmes. Fig 9 shows an analysis of costs for a sample of 118 field evaluations for which data was available. Over 60% of the field evaluations in the sample cost less than £5,000 at contemporary prices, nearly 90% cost less than £10,000, and only one project in the sample cost over £20,000.

**Table 2 Summary of field evaluation outcomes compared with the presence or absence of archaeological remains previously recorded on site**

<i>archaeological remains already recorded on site?</i>	<i>significant archaeological remains revealed by field evaluation?</i>	<i>percentage of total projects (sample size 1333)</i>
yes	yes	44.0
yes	no	31.2
no	yes	17.0
no	no	7.3

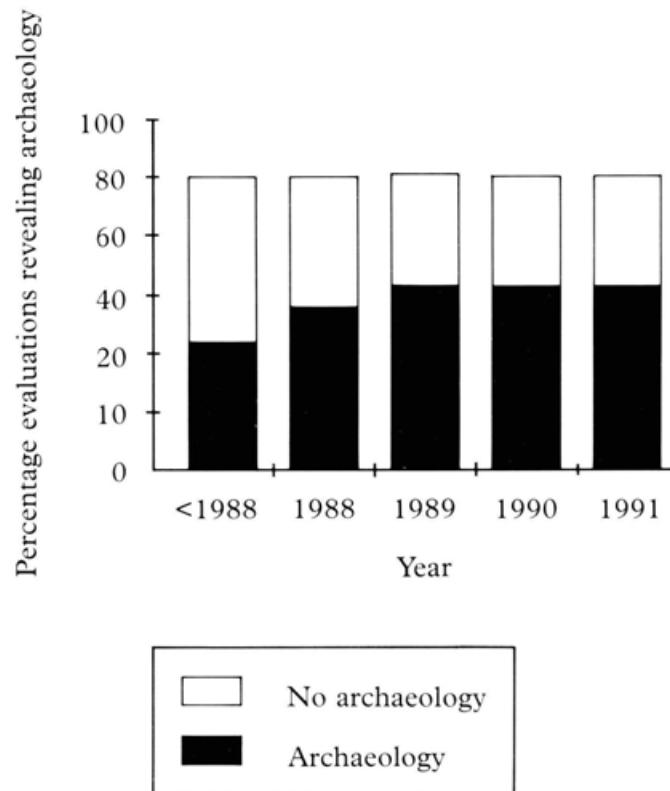


Fig 10 Proportion of archaeological field evaluations in England detecting archaeological remains 1982–91

## Results

Table 2 provides a summary of the outcomes of all field evaluation programmes recorded in the survey and compares them with the presence or absence of known archaeology on site prior to the field evaluation itself. Four possible outcomes are defined and from this it is notable that while 44% of field evaluations effectively confirmed the presence of archaeological deposits (where archaeological remains were previously recorded on the site), 31% (38% in 1991) revealed no significant archaeology despite the fact that there were previous records of archaeological remains on site. Balanced against this must be the observation that 17% of evaluations revealed archaeological remains on site where none had previously been recorded. These results confirm the need for direct intervention through field evaluation during the archaeological assessment procedure, rather than an uncritical reliance on information in sites and monuments records.

Fig 10 presents the results of this analysis, confirming an increase over time in the number of field evaluations which do reveal archaeological remains followed, from 1989 onwards, by a consistent pattern of around 60% of field evaluations locating archaeology. This may reflect an increasingly rigorous selection of sites for field evaluation in the sense that only those sites considered most likely to contain archaeological remains are being considered for evaluation.

The Berkshire/Hampshire case study examined the archaeological response recommended by curators on the basis of the results of field evaluation and the mechanisms employed to secure that response. As can

be seen from Tables 3 and 4, the number of sites located and sampled by field evaluation which are believed to warrant some form of physical preservation is comparatively small – only 22% of Berkshire cases and 20% in Hampshire. Equally, in both counties the number of evaluated sites not felt worthy of any further archaeological response is small – only 16% in Berkshire and 24% in Hampshire. The great majority of evaluated sites are felt to require a programme of archaeological recording or a watching brief but not to merit complete or partial preservation *in situ*. The means by which the local planning authorities have sought to secure the recommended archaeological response during the survey period overwhelmingly favours Section 106 legal agreements and planning conditions (which account for 79% of Berkshire cases and 78% of Hampshire cases) although it should be noted that, since the end of the study period, there is evidence to suggest the use of legal agreements has declined in favour of ‘Grampian’ or ‘negative’ conditions reflecting wider trends in planning practice. On no occasions did the curators *recommend* refusal of planning permission, although in at least one instance permission was refused when a developer declined to make adequate arrangements for an archaeological recording programme.

## Reports and dissemination

It is now normal practice to package the results of a desk-based assessment or field evaluation as a single client report. The exact nature and content of these

**Table 3 The planning objective arising from the evaluations in the Berkshire/Hampshire case study**

<i>planning objective</i>	<i>number of cases</i>
Hampshire and Berkshire	
total physical preservation	1
physical preservation within development	6
combined physical preservation and excavation	16
excavation	29
watching brief or salvage	30
no action	17
total	99

**Table 4 Planning outcomes in Berkshire/Hampshire case study**

<i>planning outcome</i>	<i>number of cases</i>
Hampshire and Berkshire	
development proceeds with conditions	24
development proceeds in full	21
application withdrawn (reason unknown)	14
permission not yet implemented	26
refused (archaeological grounds)	0
refused (non-archaeological grounds)	6
evaluation requested but not yet performed	24
unknown	23
total	138

reports is not standardised and considerable variations can be seen in both the content and the style of reports throughout the country. The Institute of Field Archaeologists has recently issued draft standards on desk-based studies (ie desk-based assessments) and field evaluation which includes a report content scheme (IFA 1993a, 1993b, 1994a, 1994b).

The primary users of assessment reports are the developer and their project team (architects, engineers etc) and the local planning authority's archaeological curator. The report needs to balance the provision of technical data with sufficient non-technical data to satisfy the developer.

In addition, as field evaluation programmes rarely allow work other than that required for completion of the client report, this is likely to comprise the only documentation of the project and must perforce serve as its academic record. In most cases it is unsuited to this purpose, since the client report is normally designed to answer particular questions relating to site preservation rather than interpreting the past. The different weighting which contractors throughout the country have given to the potential readership of their reports is a contributory factor in the variation of presentation and content.

Once the field evaluation is completed, its context may be lost and the reasons for choosing a particular

field evaluation strategy forgotten. Where invasive techniques are used, replication of the exercise is impossible. In order to allow the archaeological profession to be able to judge the validity of an assessment report and the role of the participants in the project it seems essential to include the brief and specification in the final report. In addition, if at a later date the site appears to merit further investigation or research, it would be very helpful if the eventual decision regarding the development proposals were to be lodged in the SMR upon the conclusion of the application process.

The variety of publications to which reports are submitted is very erratic. The poor coherence and limited analysis of the archaeological data from most field evaluations makes comprehensive publication in journals unlikely and the survey found very little evidence for the placement of client reports in major libraries and limited instances of units depositing paper or fiche copies of reports with the NMR. Regional CBA volumes, county journal 'round-ups' and, where they exist, unit or county council annual reports do include information on assessment work but on a non-systematic basis.

The Berkshire/Hampshire case study examined the quality of a sample of 104 field evaluation reports drafted between 1985 and 1992 against set criteria. The analysis confirmed the trend noted for briefs and specifications with a marked increase in the quality of field evaluation reports submitted over time in both counties. Further tests demonstrated that the quality of the evaluation reports is related to the availability of a preliminary brief or specification.

## Archaeology in environmental assessments

Environmental assessment, unlike either desk-based assessment or field evaluation, is a procedure established by statute. The starting point for the legislation applied in the UK is an EC directive entitled *The assessment of the effects of certain public and private projects on the environment* (85/337/EEC) which was adopted on 27th June 1985. The directive was given legal effect in the UK through the *Town and Country Planning (Assessment of Environmental Effects) Regulations 1988* (SI no 1199) which came into force on 15 July 1988.

Archaeology is one of the subjects mentioned in the original EC directive under the theme of material assets (Annex III paragraph 3), although the UK government's interpretation of the directive archaeology is not mentioned directly but subsumed under the general terms *material assets* and *cultural heritage*.

Between the coming into effect of the legislation and the end of 1991 it is estimated that some 600 environmental assessments had been carried out in

England (information from Institute of Environmental Assessment) of which our survey was able to locate 350. Of these 147 (42%) were found to contain a section relating to archaeology or closely related matters (ie material assets or cultural heritage) and these form the basis of the figures offered below.

An (inevitably subjective) analysis as to whether the archaeological component of the environmental statement was carried out by a recognised archaeologist or by a non-archaeologist indicates that it was only after 1990 that the proportion of reports dealing with archaeology which were prepared by a qualified archaeologist rose above 40%, and then only to a maximum of about 60% in the south in 1990 and *c* 70% in the north in 1991. There are two main implications of these findings. Firstly, that the level of competence brought to bear on the analysis and interpretation of the archaeological data reported in a high proportion of environmental statements is rather less than is appropriate given the nature of the studies involved. Secondly, that archaeological organisations and professionally qualified practitioners do not appear to be very heavily involved in the only areas of archaeological assessment work which has a statutory basis.

As with reports from other types of assessment, few find their way into academic libraries and there is no designated national repository of planning environmental statements even though the regulations require the submission of monitoring forms and a copy of the statement itself. Major (but incomplete) national collections have been established at Manchester University (Environmental Assessment Centre), Oxford Brookes University (Impacts Assessment Unit), and at the Institute of Environmental Assessment.

## Conclusions and recommendations

### Future growth in archaeological assessment

The national survey summarised in this report shows that over the last decade there has been a rapid growth in the number and scope of assessment exercises of all types and an equally rapid development of methodologies, procedures, and standards. This is a considerable achievement of which the archaeological profession can rightly be proud.

It is also clear that this rapid growth has continued since the end of the project study period. Predictions of future growth based on the figures collected in the survey are naturally tentative since they will be influenced by a variety of factors including general economic trends and because the longer-term impact of PPG 16 is as yet poorly understood. It can be assumed however that, at some stage in the future, the proportion of planning applications resulting in some

form of archaeological assessment will reach a ceiling at which time a consistent relationship will become apparent. An estimate of future growth in the number of field evaluations based on the rates of increase since 1988 suggests that between 1,900 and 2,500 field evaluations could be carried out in 1995 (compared to the 468 projects carried out in 1991). This represents a substantial increase in workload for all branches of the profession and will place a particular strain on archaeological curatorial staff.

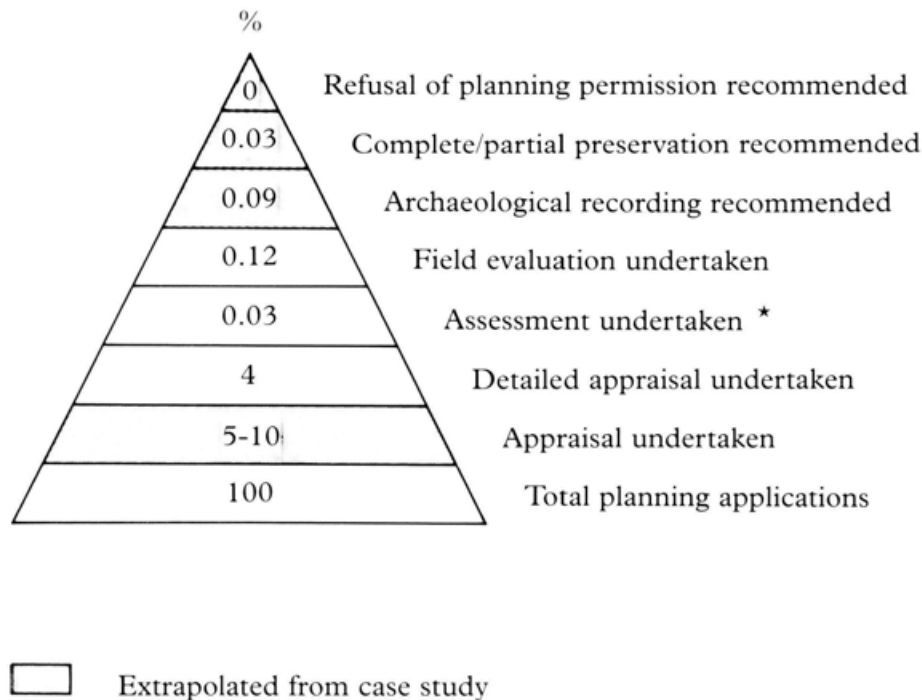
While the results of this report are necessarily provisional, they nevertheless provide an important contribution to the process, begun by the Pagoda study (English Heritage 1992), of gauging the impact of the implementation of PPG 16 on the development industry. The review clearly demonstrates the small number of planning applications which require field evaluation (0.12% nationally in 1991 and never exceeding 0.31% in the Berkshire/Hampshire case study) and the generally low cost of evaluation. In addition, our detailed case study has demonstrated that even though 23% of evaluation cases in Berkshire and Hampshire resulted in the complete or partial physical preservation of archaeological remains, this was achieved without a single necessary refusal of planning permission solely on archaeological grounds. Fig 11 provides a breakdown, based on actual and estimated figures, of the proportion of planning applications sieved by each stage of the archaeological assessment procedure and the resulting recommended planning outcomes. These figures suggest that the requirements of PPG 16 do not constitute a serious constraint on development in England.

- In 1995 English Heritage will commission a survey of archaeological assessments carried out since 1991 in order to provide a more reliable index of trends since the issuing of PPG 16.
- English Heritage will additionally commission a follow-up to the 1992 Pagoda study
- English Heritage will continue to assist local authorities with the establishment of archaeological development control posts wherever there is demonstrable need.

### Sites and monuments records

This review underlines the pivotal role of local authority-based curatorial staff and SMRs in the archaeological aspects of development control. In addition, it highlights the potential academic contribution which the assessment process can make to archaeology locally, regionally, and nationally and the importance of the local curator in this process. Realising this potential is arguably one of the most exciting challenges facing the archaeological profession this century.

The survey clearly demonstrated an explicit linkage between the strengths and weaknesses of SMRs and the



\* Discrete assessment reports; does not include assessment published in evaluation reports

Fig 11 Proportions of planning applications subject to archaeological assessment and archaeological planning conditions in 1991. Proportions of appraisals and planning conditions are extrapolated from the Berkshire/Hampshire case study

effectiveness of archaeological development control, confirming the importance of the continued upgrading, enhancement, and validation of the basic records on which archaeological knowledge and inference are based. Development control-led archaeological assessment work will make an important contribution to this process, but there is a continuing and pressing need to improve the record through new programmes of pro-active survey work. The Berkshire/Hampshire case-study has, for example, drawn attention to the need to improve the reliability of the data for the prehistoric period. Alongside survey work, the development of models and working propositions designed to predict the likely size, character, location and relationships of as-yet-unrecorded archaeological sites will also make an important contribution both to development control procedures and to our academic comprehension of the archaeological resource.

The deployment of the archaeological assessment process within planning procedures is quite clearly a matter that requires considerable skill and critical professional judgement. The curator often has to strike fine balances between the required level of information and a reasonable level of cost in the demands made upon applicants. For this reason it is appropriate that best practice is periodically recorded and reviewed, a process which has already begun with the issuing of the Association of County Archaeological Officer's *Model briefs and specifications* (1993) and the Institute of Field Archaeologist's work on draft standards in archaeology

(IFA 1993a, 1993b, 1994a, and 1994b). It is also most important that curators continue to keep systematic records of their decisions and reasoning in development control matters in order to make the process explicit and accountable and, wherever possible, keep records of the outcome of their planning advice. The survey suggested that, although considerable advances had been made in this sphere in recent years, there is still room for improvement.

- English Heritage will continue, in consultation with The Royal Commission on the Historical Monuments of England, to support SMR enhancement projects and, where appropriate, will support predictive modelling exercises designed to improve the reliability of the record for development control and academic purposes.
- English Heritage recommend that SMRs make every effort to ensure that archaeological assessment data is well-ordered and easily retrievable and that up-to-date statistics for assessment work are available including, wherever possible, the nature and results of development control advice.
- English Heritage also recommend that, wherever resources permit, archaeological curators continue to improve the documentation of their decisions relating to development control work. In this context, we recommend that all archaeological assessment programmes are provided with a clear and reasoned methods statement.

## Methodologies, training, and research

The range of techniques deployed for field evaluation was comparatively limited and, surprisingly, appeared to be diminishing with time. Indeed, a considerable proportion of field evaluations adopted a 'one club' approach by using only a single field technique, predominantly machine trenching. The methodologies which are used for field evaluation are generally those developed for research rather than the practicalities of archaeological resource management. Although such techniques do prove useful in assessment projects they have constraints in cost, time, and ease of use. Consequently, there is a need both for the critical examination of the techniques already in use in terms of the effectiveness and utility of their results and also for the development of new extensive survey techniques with direct application in field evaluation.

In addition, the survey adduced little evidence to suggest that those techniques which were being used were deployed in any way that took advantage of theoretical or statistical models and it noted instances where there was a disjunction between the methodologies applied and the results expected from assessment programmes. Of obvious concern here is the approach to sample size in the specification of field evaluations. There is good evidence from the survey that curators are successfully keeping field evaluation costs low but also that in doing so they are frequently adopting the use of a 2% sample fraction without critical consideration of its appropriateness in particular circumstances.

There is, therefore, a need for careful consideration of the theoretical basis of archaeological assessment, particularly field evaluation, and for the practical training and provision of work experience for staff engaged in specifying or carrying out assessment work.

- English Heritage, in collaboration with other bodies such as the Science-Based Archaeology Committee (SBAC), will continue to encourage the development of new archaeological survey techniques.
- English Heritage will commission further research into the theoretical and statistical basis of field evaluation techniques.
- English Heritage will support initiatives aimed at the professional development of archaeologists, particularly curatorial staff, in matters pertaining to archaeological assessment.

## Reports and publication

The preparation of client reports on assessment programmes has reached a high presentational standard since the widespread availability of desk-top publishing systems and high-quality copying and mapping equipment. However, the circulation of such reports is very poor, rendering archaeological information inaccessible and limiting opportunities for peer review. The survey found that many assessment reports lacked the sort of basic information that would make cataloguing and indexing easy. Even where reports were deposited in public records, retrieval was often difficult.

In addition, the format of reports varied considerably and frequently lacked useful information such as source lists and copies of the brief and/or specification which informed the assessment work.

- English Heritage recommends that all assessment reports should include copies of the brief and/or specification which informed the project and a list of relevant sources consulted.
- English Heritage recommends that copies of assessment reports are routinely deposited with the National Monuments Record as well as with the appropriate Sites and Monuments Record.
- English Heritage recommends that all assessment reports are notified to British Archaeological Bibliography for listing alongside other kinds of report and publication.
- English Heritage will sponsor the production through British Archaeological Bibliography of a consolidated gazetteer of assessment reports from the period 1982–91 and at regular periods thereafter.

## Environmental assessment

It is a matter of some concern that archaeological contractors and consultants are not more frequently involved in the archaeological components of environmental statements and that the standards of these documents are consequently compromised. In some quarters it does not seem to be understood that archaeological concerns require specialist interpretation and professional guidance.

- English Heritage recommends that the archaeological components of environmental statements are undertaken only by qualified archaeologists with suitable skills.

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## Glossary

### *Archaeological curators*

Organisations with a remit to manage the archaeological resource through ancient monuments legislation, planning procedures, or estate management. They are the normal source of advice on the future preservation and conservation of archaeological remains, and include national organisations such as English Heritage and the National Trust, county and district archaeologists, and national park archaeologists.

### *Archaeological contractors and consultants*

Organisations or individuals acting as advisors and/or undertaking archaeological projects on behalf of clients.

### *Archaeological assessment*

The process by which the character, date, extent, condition, and importance of archaeological remains is determined. It may comprise a number of not necessarily discrete stages, including appraisal, detailed appraisal, desk-based assessment, and field evaluation.

### *Appraisal*

The process of checking planning applications or development proposals to identify, using local knowledge and experience, those with a potential archaeological dimension which needs further clarification.

### *Detailed appraisal*

A thorough review of the SMR and other sources to determine whether there may or may not be an archaeological dimension to a development proposal. This sometimes involves visually inspecting the site.

### *Specification*

A list of archaeological works giving enough detail for them to be quantifiable, implemented, and monitored.

### *Desk-based assessment*

Primarily a desk-top exercise commissioned to consolidate, examine, and validate the recorded archaeological resource of an area potentially affected by development proposals. Usually involves visually inspecting the site but stops short of collecting and synthesising new data through fieldwork or other primary research.

### *Field evaluation*

A systematic and problem-oriented programme of site investigation involving invasive and/or non-invasive fieldwork, designed to supplement and improve existing information to a level of confidence at which planning recommendations can be made.

### *Environmental assessment*

A multi-disciplinary programme of investigation which collects data from a defined archaeological resource and examines the likely effects of a proposed development programme on that resource. The results are called an environmental statement and its content and scope are defined by law.

### *Brief*

An outline of the planning and archaeological situation relating to a proposed development site indicating the scope of the works that will be needed.

### *Mitigation strategy*

A plan for minimising the impact on archaeological remains from a proposed development. This may involve works to ensure *in situ* preservation, archaeological recording of remains unavoidably threatened with destruction, or a combination of both approaches.

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