Planarch 2
Review of Cultural Heritage Coverage in Environmental Impact Assessments

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with Gill Hey and Klara Spandl

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PLANARCH 2
A REVIEW OF CULTURAL HERITAGE COVERAGE IN ENVIRONMENTAL IMPACT ASSESSMENTS IN ENGLAND

Final Report

By

George Lambrick and Jill Hind

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Oxford Archaeology

May 2005

PLANARCH 2

A Review of Cultural Heritage Coverage in Environmental Impact Assessments in England

Final Report

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ABBREVIATIONS USED

ALGAO	Association of Local Government Archaeological Officers
BAA	British Airports Authority
BC	Borough Council
CBI	Confederation of British Industry
CC	County Council
CofE	Council of Europe
CPD	Continuing Professional Development
CTRL	Channel Tunnel Rail Link
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DoE	Department of the Environment
DMRB	Design Manual for Roads and Bridges
DTI	Department of Trade and Industry
EA	Environment Agency
EC	European Commission
EH	English Heritage
EIA	Environmental Impact Assessment
EN	English Nature
ERDF	European Regional Development Fund
ES	Environmental Statement
EU	European Union
GIS	Geographical Information System
HELM	Historic Environment Local Management
HER	Historic Environment Record
HLC	Historic Landscape Characterisation
HSE	Health and Safety Executive
ICOMOS	International Council on Monuments and Sites
IEMA	Institute of Environmental Management and Assessment
IFA	Institute of Field Archaeologists
LPA	Local Planning Authority
MIV	Monument Interest Value
MPP	Monuments Protection Programme
NHS	National Health Service
OA	Oxford Archaeology
ODPM	Office of the Deputy Prime Minister
PDNP	Peak District National Park
PPG	Planning Policy Guidance
RCHM(E)	Royal Commission for Historic Monuments (England)
ROMP	Renewal of Old Minerals Permission
SA	Sustainability Appraisal
SAM	Scheduled Ancient Monument
SEA	Strategic Environmental Assessment
SI	Statutory Instrument
SMR	Sites and Monuments Record
TAG	Transport Analysis Guidance
UN	United Nations
WHS	World Heritage Site
WSI	Written Scheme of Investigation
WWII	World War II

EXECUTIVE SUMMARY

The **Planarch 2 initiative** aims to promote better understanding, protection and appreciation of the historic environment, particularly the archaeological heritage, in North-West (NW) Europe. One of the key strands of the initiative is to review the quality and effectiveness of Environmental Impact Assessments (EIAs) with respect to cultural heritage.

In Phase 1 of the EIA study the Planarch 2 partner countries/regions have reviewed cultural heritage input to EIAs in their own areas. Phase 2 will see the collation of results and a broader overview. This report, *A Review of Cultural Heritage Coverage in Environmental Impact Assessments in England*, represents the UK's contribution based on an analysis of ESs published between 1999 and 2003 in Kent, Essex, Somerset, Derbyshire and the Peak District National Park.

The broad **Context** of how the EIA process seeks to promote environmental protection while achieving sustainable development and safeguarding and improving people's quality of life is explored. The general principles and key stages of the EIA process are outlined, and the principles of Strategic Environmental Assessment are introduced.

The **Methodology** of the review builds on existing review criteria for EIAs to develop specific checklists appropriate to cultural heritage, a database and grading scheme. Eight 'Benchmark' cases illustrate a range of approaches to the EIA process for various types of development. Stage 1 of the study reviewed 135 ESs identified as falling within the study area for the period concerned. A second stage examined in more detail 43 cases that had progressed further in decision-making and development, backed up by a more informal process of gathering opinions and observational evidence, mainly from local authority curators.

In terms of **Coverage** EIAs are only required for a tiny proportion of all planning applications. The commonest types of development represented in the cases reviewed are housing, commercial 'infrastructure', minerals quarrying and energy schemes, mainly under Town and Country planning regulations. However, this may under-represent some types of development because of a moratorium on new road schemes in the period examined and poor feedback from some regulatory authorities.

The study revealed that 17% of ESs do not deal with cultural heritage issues at all. While the remaining 83% provide at least some consideration of these issues, this varies significantly across different aspects of the cultural heritage. Almost all cover archaeological sites and most cover the built heritage, but rather few cover palaeo-environmental deposits, historic areas, or historic landscape and townscape character.

Cultural heritage input to **Screening** is patchy, and a framework for applying the heritage criteria included within the legislation is needed. **Scoping** is a critical stage in the EIA process, but cultural heritage specialists are not routinely involved. Several examples illustrate how problems could have been overcome by more effective scoping.

While archaeological remains are almost always included in **Baseline** studies, few EIAs benefit from non-intrusive surveys and even fewer involve any intrusive investigation. Consideration of non-Listed Buildings and historic landscape and townscape issues is low. While most studies make some attempt to indicate the importance of heritage features, the basis for this is seldom explicit.

In the **Assessment of Effects**, direct loss or damage, and visual intrusion are commonly considered, but there is considerable variability and inconsistency in approaches to setting. Indirect and cumulative effects, do-nothing scenarios and alternatives are poorly covered.

By far the commonest type of **Mitigation** proposed is archaeological recording, usually as a general catch-all process. Design solutions (siting, appearance, landscaping screening, and preservation through

technical measures) are less common. Provision for monitoring effects on archaeological remains is common.

Consultation with cultural heritage curators is variable and especially low for Conservation Officers.

It is clear that **Outcomes** are often influenced strongly by the role of curators in reviewing ESs and advising decision-makers on the acceptability of proposals and what conditions should be imposed. Cases that have been refused provide useful insights into issues that were not sufficiently clearly recognised in the EIA process as being significant. Both for archaeology and wider heritage issues, a number of examples of strategic frameworks for implementation of mitigation proposals were noted, but the quality of underlying information, and detailed procedures for implementation appear to be critical factors in their usefulness.

Rather few cases (other than the older benchmark cases) have yet proceeded through all stages of mitigation, but there are some useful examples of how archaeological discoveries relate to ES predictions. There is much less information about outcomes in relation to issues of design and the built and landscape heritage.

In terms of **Quality and Effectiveness** of cultural heritage coverage in EIAs, there has not been much change over the period 1999-2003. There are some differences in quality between the different areas covered by the study (possibly reflecting differences in pressures of casework). Public sector developments tend to have better ESs than private sector ones. Heritage consultants and professional archaeological units tend to produce better specialist cultural heritage studies than specialist engineering and environmental consultants.

There is much variation in how effectively key cultural heritage issues are recognised and dealt with. Differences in coverage are examined in relation to: the scope of cultural heritage coverage; the extent of baseline fieldwork; how well significant effects are identified and assessed; the influence of national designations; the role of consultation and the attitudes of developers and lead consultants.

The **Conclusions** indicate a wide variety of ways in which the standards of cultural heritage input to the EIA process can be improved. Three key characteristics of well-informed decision-making need to be promoted:

- Rigour (of research, analysis and assessment);
- Robustness (of solutions and their implementation);
- Reasonableness (of interpretation of regulatory requirements and balancing of competing public and private interests).

Recommendations are made to improve standards of cultural heritage input to EIAs through four principal means:

- Development of a framework for guidance;
- Provision of training;
- Actions for particular stakeholder groups;
- Areas for further research to establish stronger foundations for improving standards.

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PART A - Introduction

1 THE PLANARCH 2 PROJECT

Chapter 1 *outlines the Planarch 2 initiative and sets out the aims and objectives of this project, which is to be 'an aid to the development of best practice in EIA within England and through Planarch 2 more generally in North-West Europe.' It also explains the geographical scope of the project in the UK, covering Kent, Essex, Somerset, Derbyshire and the Peak District National Park, and the time period covered by the UK projects.*

1.1 Introduction

1.1.1 The Planarch 2 project aims to further the protection and enhancement of the historic environment, particularly the archaeological heritage, in North-West Europe through its greater integration in spatial planning. Planarch 2 has four main objectives:

- identifying and recording the common archaeological resource for North-West Europe
- developing ways within the spatial planning process for establishing value for the archaeological resource in relation to potential development proposals
- developing strategies for the management of the archaeological resource in the context of modern development pressures
- promoting the common archaeological resource of North-West Europe

1.1.2 Planarch 2 comprises Kent County Council (UK) - Lead Partner, Essex County Council (UK), Rijksdienst voor het Oudheidkundig Bodemonderzoek - ROB (Ne), Vlaams Instituut voor het Onroerend Erfgoed - VIOE (Be), Universiteit Gent (Be), Ministère de la Région Wallonne - Direction du Hainaut - Service de l'Archéologie (Be), Institut National de Recherches Archéologiques Préventives - INRAP - (Fr), Landschaftsverband Rheinland - Rheinisches Amt für Bodendenkmalpflege - RAB - (De), English Heritage (UK) - Associate Partner, EIA Centre and the University of Manchester (UK) - Associate Partner.

1.1.3 One of the key strands of the overall Planarch 2 project is to review the quality and effectiveness of Environmental Impact Assessments (EIAs) with respect to cultural heritage. This review is divided into two phases, Phase 1 of which comprises a number of Regional/Country studies among the Planarch 2 partners. This project, a *Review of Cultural Heritage Coverage in Environmental Impact Assessments for England*, represents the UK's contribution to Phase 1. It has been funded by Interreg IIIB, the Office of the Deputy Prime Minister (ODPM) and English Heritage (EH). Interreg IIIB is a measure supported by the European Regional Development Fund (ERDF).

1.1.4 In Phase 2 of the EIA review project the results of this Phase 1 study and those carried out in the other partner countries will be used to develop best practice guidelines for the cultural heritage in environmental assessment, which will take into account the overall principles of the European Directives on Environmental Impact Assessment, as well as appropriate national/regional legislation and guidance.

1.1.5 Oxford Archaeology (OA), working with George Lambrick, of George Lambrick Archaeology and Heritage Consultancy, was selected to carry out this Phase 1 project, guided by a Steering Group consisting of representatives of Kent and Essex County Councils (Planarch Partners), Somerset, Derbyshire and the Peak District National Park (other local authorities participating in the study), English Heritage, and Manchester University (academic advisers). Kent County Council has acted as the contractual client for the project on behalf of the Planarch consortium. Seminars were held with the Steering Group at key stages of the project where interim findings

were debated. The feedback obtained was incorporated into the report. Hankinson Duckett Associates, environmental planners with considerable experience in cultural heritage, provided a planning perspective.

1.2 Aims and Scope of the Project

1.2.1 A Brief for the project was provided by Kent County Council on behalf of the project steering group (Appendix 1). The brief included input from all the Planarch 2 partners. This established the overall aim of the project as being '*an aid to the development of best practice in EIA within England and through Planarch 2 more generally in North-West Europe.*' The overall objectives of the Planarch 2 project are shown in Table 1, which also indicates how these closely mirror the key aspects of the EIA process.

Table 1: Overall Objectives of Planarch 2 and the EIA Process

Planarch 2 objectives	Identifying and recording	Value of the resource related to development	Management strategies	Promotion of common archaeological resource
EIA process	Baseline study	Assessment of impact/ effects	Mitigation and monitoring	Public consultation and dissemination

1.2.2 The Brief set four specific groups of objectives to address the following information and/or analyses (Text Box 1).

Text Box 1: Objectives for review of cultural heritage coverage in English EIAs

A) Overview of Process

i) Provide a brief overview of how the European directives (EIA and SEA) are interpreted in England
ii) Assess what provision is currently made for making EIA/ES available to the public and for long-term storage in both paper and digital format.

B) Overall Quantification Listing

i) List ESs undertaken within the study areas indicating date, type of development, organisations involved in the EIA process and regulation, and processes undertaken for the ES
ii) Record the presence or absence of relevant historic environment information
iii) Determine the number of planning applications in each region for the study period.

C) Detailed Review of Individual ESs

i) Consider the scope of cultural heritage issues covered in the ESs studied
ii) Review which processes relating to the historic environment have been undertaken (see Ai)
iii) Assess the quality of information provided
iv) Consider whether the historic environment component is a true reflection of the nature, extent, date and importance of any potential or known historic environment remains
v) Assess the proposals within the ES for any further information gathering, following the production of the ES
vi) Assess if sufficient information is provided within the ES to allow planning advisors to identify clearly the impact of the development on the heritage resource, and to allow decisions to be taken within the planning system
vii) Assess whether mitigation proposals are appropriate to the case
viii) Assess whether the heritage implications are appropriately integrated within the other elements of the ES.

D. Synthesis

i) Combine the results of the individual studies in a synthesis related to questions Ci-viii
ii) Assess what effect the presence of heritage assets of national significance have on the process
iii) Consider generally ways in which the archaeological component of ES/EIA might be improved
iv) Assess the lessons that can be learnt for SEA.

1.2.3 The project has focussed on reviewing project EIAs, but with the specific requirement to consider any implications or lessons that might be learnt for Strategic Environmental Assessment (SEA).

1.2.4 In this report the term Environmental Impact Assessment (EIA) is used to refer to the whole EIA process, extending from initial screening to implementation and monitoring of mitigation. The term Environmental Statement (ES) relates more specifically to the documentation prepared as part of the overall EIA process.

1.2.5 The study covers the counties of Essex and Kent, (Planarch Partners), Derbyshire, including the Peak District National Park, and Somerset. The inclusion of Derbyshire and Somerset in addition to the English Planarch partners (Kent and Essex) was to provide a representative sample of the different environmental, economic and development situations, in both lowland and upland areas, across four English regions: the South-East, the South-West, the East of England and the East Midlands.

1.2.6 Kent, Essex and Derbyshire all contain one or more Unitary Authorities, which operate independently of the County Council including for development purposes. These have been embraced in the scope of the Project. Derbyshire also contains most of the Peak District National Park, which is also an independent planning authority, and which has become an Associate Partner.

1.2.7 Most of Exmoor National Park lies within Somerset, but the Park was not invited to participate in the Project. Similarly the Unitary Authorities of North Somerset and Bath and North East Somerset, which were formed from the former county of Avon, are not included.

1.2.8 All ESs undertaken within this study area in the four-year period from 1999 to 2003 were included within the scope of the project.

1.3 Presentation of the Report

1.3.1 The report is divided into four parts:

- Part A outlines the Planarch 2 initiative and the aims and objectives of this project. It explains the background to the EIA process. It also includes a brief outline of the methodology used for the study, including development of a database and review criteria.
- Part B provides a series of recommendations outlining the principal means for improving standards of cultural heritage input to EIAs, based on the conclusions of the report.
- Part C presents the results of the study, beginning with a general overview and moving into more detailed analysis.
- Part D pulls together the results, presents the conclusions and identifies key issues which could contribute to improvement in the standards of cultural heritage input to the EIA process.

1.3.2 The main text of this report is accompanied by nine Appendices, numbered in a simple sequence. A sequence of figures and tables present statistical results. The figures and tables are numbered according to the section of report to which they refer. Text boxes have been used to summarise key points or to provide examples which illustrate these.

2 BACKGROUND AND OUTLINE STRUCTURE OF EIA AND SEA PROCESS

Chapter 2 *explains the background to the project in terms of the broad context of how the EIA process seeks to promote and contribute to achieving sustainable development and quality of life. It outlines the general principles and key stages of the EIA process. A fuller consideration of these issues can be found in Appendix 2.*

2.1 The Broad Context of 'Quality of Life' and Sustainable Development Strategies

The Cultural Heritage and Common European Standards

2.1.1 Under the Treaties of Rome (Treaty Establishing the European Union, Rome 1957) and Maastricht (Treaty on European Union, Maastricht 1992) and the Draft European Constitution (Draft Treaty establishing a Constitution for Europe, Brussels 2003), conservation of the common European cultural heritage is a consideration for all European Union (EU) activities.

2.1.2 Compared, however, with other environmental issues – water, air, soils, habitats and species – there are no EU Directives covering the cultural heritage. This means (at least in the United Kingdom (UK)) that cultural heritage has much less political status as an environmental issue than those issues that are covered by such Directives.

2.1.3 Almost all European countries have ratified the Council of Europe's Valletta Convention (1992) on the Archaeological Heritage, and the Granada Convention (1985) on the Architectural Heritage, and many (though not yet the UK) are signatories to the Florence Convention (2000) on European Landscape. Most European countries have signed (although several including the UK have not yet ratified) the UN Economic Commission for Europe Aarhus Convention (1998) on Environmental Information.

2.1.4 Increasingly the cultural heritage is being recognised as an important aspect of sustainable development, as is reflected in the Council of Europe's Guiding Principles for Sustainable Spatial Development of the European Continent (2002) and in the EU SEA Directive (2001) and the underlying principles of the EIA Directive (1985).

Cultural Heritage Sustainability and Quality of Life in the UK

2.1.5 The UK strategic framework for sustainable development and quality of life is currently under review. Although the current framework, *A better quality of life: a strategy for sustainable development for the UK* (DEFRA 1999) refers to the cultural heritage (as part of the section on 'Building Sustainable Communities') the historic environment is not a major strand of UK sustainability thinking at a strategic level and hardly figures in the work of the UK Sustainability Commission. This is slowly changing, however, and the Government's statement *The Historic Environment: A Force for Our Future* (DCMS 2001) makes a much fuller statement of how the historic environment contributes to people's quality of life, and addresses its place in development.

2.1.6 At the level of development planning the idea of the historic environment being part of local sustainability has started to become much better, if less overtly, established as an important aspect of sustainability. For example, the principles of sustainability have been evident since the early 1990s in national planning guidance for the historic environment in PPG15 and 16.

2.1.7 Other guidance documents on this subject include English Heritage's statement on sustainability (English Heritage 1997) and a joint statement by English Heritage, English Nature and the Countryside Agency (Countryside Agency *et al*, 2001) promulgating the notion of an integrated approach to *Quality of Life Capital*.

2.2 The EIA Process

2.2.1 The basic structure of the Environmental Impact Assessment and Strategic Environmental Assessment processes as defined by the two European Union Directives (85/337/EC updated by 1997 and 2001/42/EC) are essentially the same, and have been incorporated very closely into UK legislation through a long series of Regulations or 'Statutory Instruments' which are listed in Appendix 3.

2.2.2 The EIA Regulations in the UK are established under a variety of different strands of legislation, which cover both compulsory (EU Directive Schedule 1) and non-compulsory (Schedule 2) types of development. Broadly these are as shown in Table 2.

Table 2: Competent Authorities for EIA projects in England

Area of Regulation	**National Government Department and Agency/Local Authority responsible**
General Development, Minerals and Waste	
Town and Country Planning (England)	Office of Deputy Prime Minister (ODPM); Local Planning Authorities
Old Minerals Permissions	ODPM; Local Minerals Planning Authorities
Marine Dredging	ODPM; Crown Estate; Local Planning Authorities
Energy	
Offshore Oil and Gas	Department of Trade and Industry (DTI);
Offshore Wind Farms	DTI; Crown Estate
Electricity Developments	DTI;
Pipelines (Oil, Gas and Chemicals)	DTI;
Gas Transporters	DTI;
Nuclear Decommissioning	Health and Safety Executive
Water and Rural Land Use	
Water Abstraction	Department of Environment, Food and Rural Affairs (DEFRA); Environment Agency (EA)
Land Drainage (England)	DEFRA; EA
Forestry	DEFRA; Forestry Commission
Uncultivated Land	DEFRA
Transport	
Transport and Works (including Railways)	UK Parliament/Department for Transport (DfT)
Trunk Roads and Motorways	DfT
Ports and Harbours	DfT
Fisheries	
Marine Fish Farming (GB)	Scottish Executive Environment and Rural Affairs Department; Crown Estate

2.3 Stages of the EIA Process

2.3.1 The European Commission guidance notes on the EIA process identifies 11 stages:

A. Developer's preparation of proposals for project;
B. Notification to Competent Authority;
C. Screening to establish need for EIA;
D. Scoping to establish scope of EIA;
E. Environmental Studies (the developer carries out studies to collect and prepare the

environmental information required by Article 5 of the Directive);

F. Submission of environmental information to Competent Authority (as Environmental Statement (ES) and Non-technical Summary);
G. Review by authority of adequacy of the environmental information;
H. Consultation with statutory authorities, other interested parties and the public;
I. Consideration of the ES by the Competent Authority prior to decision-making;
J. Announcement of decision; opportunities to appeal etc.;
K. Post-decision monitoring if project is granted consent.

2.3.2 These 11 stages are reflected in UK guidance and practice, although official guidance varies in how these elements are presented. Appendix 2 discusses in detail some of the key steps in the process and how these apply to the cultural heritage. For the most part these operate within the general legislative framework for protection and management of the cultural heritage provided under heritage and planning legislation and policy, but a number of particular points that arise from the EIA Directive and UK Regulations and Guidance may be noted (Text Box 2).

Text Box 2: Some key issues for the application of the EIA process in England

Screening

- The EU Directive criteria for judging the possible sensitivity of locations (which have been transposed into UK regulations) specifically include *'landscapes of historical, cultural or archaeological significance.'*

Consultation and Scoping

- Local Authorities are always a consultee under the Regulations where they are not the Competent Authority.
- English Heritage is only a statutory consultee for the EIA Regulations covering highways, water resources and uncultivated land, and for the SEA Regulation. English Heritage is otherwise only a consultee in the way it is for ordinary planning applications, i.e. where designated sites are involved.
- However, Government planning guidance (PPGs 15 and 16) establishes that it is standard good practice that early consultation with relevant historic environment curators is highly desirable to agree methods to be used in desk studies and fieldwork. In an EIA context this should mean from the scoping stage onwards.
- Under Listed Buildings legislation, six expert national 'amenity societies' must formally be notified of applications seriously affecting Listed Buildings, and consulted about applications affecting Registered Parks and Gardens.

Baseline Studies and Assessment

- Various pieces of national planning guidance (eg ODPM's general EIA guidance, PPG 16 on archaeology) state that assessment methods should be 'fair, reasonable and practicable'.
- ODPM advice also states that: *'It is important to stress that the authority must obtain all the information it needs to assess and evaluate the likely significant environmental effects of the proposal before it reaches its decision. It cannot adopt a "wait and see" approach or impose a condition requesting further work to identify the likely environmental effects after permission has been granted.'*
- There are well-established professional standards for gathering baseline information through desk studies and fieldwork, guided by written 'briefs' provided by cultural heritage 'curators'. There are also various standards for assessing the importance of cultural heritage resources, but much less guidance on assessing the significance of the effects of development on the cultural heritage.

Mitigation and Monitoring

- There is a well-established principle, both in legislation and policy, that preservation *in situ* is preferable to damage, destruction and loss of heritage features, however well-recorded in advance.
- There are established procedures for local planning authorities (and some other competent authorities) to obtain specialist cultural heritage advice on the acceptability of the development, the need for any more information, and any conditions to be applied for mitigation and monitoring.
- Although not formally required by the EIA Directive and Regulations, a number of established procedures make provision for monitoring the effects of development on the cultural heritage resource by specialists representing the Competent Authority (curators) and/or the developer (consultants/contractors).

3 METHODOLOGY

Chapter 3 *provides a brief description of the Methodology employed. More details are given in Appendix 4.*

3.1 Review Criteria

3.1.1 To assess the ESs reviewed for their compliance with regulations and good practice standards, a set of cultural heritage review criteria was prepared, based on review packages and guidance notes developed in the last 15 years (Lee and Colley 1992; Dandy 2000; IEMA 2001; EC 2001c). The criteria were also checked against the need to address the questions posed by the project Brief. They are set out in Appendix 5.

3.2 Database

3.2.1 A project-specific database was developed, with six proformas operating at three levels of detail. The first level proforma was used to record basic information about the case (*Core data*); the next level provided an overview of coverage (*ES Process*); and the third level, involving the other four proformas, allowed more detailed coverage of different aspects of the EIA process (*Baseline; Impacts and Effects; Mitigation; Outcomes*). The data fields allowed for recording of both basic factual information and free text commentary (see Appendix 6).

3.2.2 The review was conducted in two stages. In Stage 1 the first five proformas were used to record basic information and assess coverage of all the ESs reviewed. For Stage 2 of the assessment, a subset of the total number of cases reviewed was identified where projects had progressed beyond submission of the ES and some further archaeological work had taken place. For these cases the final proforma covering *Outcomes* was completed and the initial assessment was reviewed (and where appropriate revised) in the light of the extra information and discussions with the curatorial officers concerned.

3.3 Grading

3.3.1 For all the cases reviewed a grade was awarded for each main aspect of the ES and for the ES as a whole. The Grades used (A-F and N/A) closely reflect those recommended in well-established ES review packages (Lee and Colley 1991; EC 2001c). They are designed to indicate whether the information presented in the ES provides a sound basis for judgements to be made in the advice given to regulators to underpin their decisions.

3.3.2 Towards the end of the first stage of assessment all the grades assigned to ESs were revisited, and in some cases revised, to ensure that criteria had been applied consistently. Some adjustments were also revised in light of additional information gained in the second stage of

the review, including additional insights provided by local authority archaeology and heritage curators.

3.4 Selection of Benchmark Cases

3.4.1 Eight 'benchmark' cases were selected for detailed study. These should not be seen as necessarily being 'the best' examples of cultural heritage coverage in EIAs, but they all have one or more distinctive features that illuminate how best practice standards might be developed. Not all fall within the study area. Discussion of the benchmark cases is included in Appendix 8.

3.5 Identification of Cases for Review and Assessment Process

3.5.1 All competent authorities were contacted for lists of ESs produced for the Planarch 2 areas in 1999-2003. Most came under the ODPM which has responsibility for EIAs carried out under the Town and Country Planning Act.

3.5.2 The lists were sent to local authorities and the relevant EH regions for checking. Information was also obtained on the total number of planning applications during that period and the involvement of curators and EH in the various stages of the ES.

3.5.3 The majority of the ESs included in the Stage 1 assessment was inspected at the ODPM library, but others were accessed through local authorities, universities or the Internet.

3.5.4 Stage 2 assessment for those projects which had progressed to development or which presented issues of particular interest was carried out during visits to the principal local authority curators. These visits also clarified the status of many cases, led to identification of additional ones and provided valuable opportunities for discussions with curators.

3.5.5 The process of identifying and gaining access to documentation for cases was not simple, as more fully explained in Appendix 4. Several issues arise relating to the archival management of ESs and their supporting documentation which are noted in the conclusions and recommendations.

PART B - Recommendations

4 RECOMMENDATIONS

Chapter 4 *makes recommendations outlining the principal means by which the need to improve standards of cultural heritage input to EIAs might be achieved. They concern four main areas of action:*

- *Development of written guidance;*
- *Provision of training;*
- *Actions that fall to particular stakeholder groups;*
- *Areas where further research could help to establish stronger foundations for improving standards.*

4.1 Overview

4.1.1 The results of the review and the conclusions presented in the following Chapters 5 to 10 outline a wide variety of ways in which the standards of cultural heritage input to the EIA process could be improved. They can be summarised as seeking to achieve this by promoting three key characteristics of well-informed decision-making:

- Rigour (of research, analysis and assessment);
- Robustness (of solutions and their implementation);
- Reasonableness (of interpretation of regulatory requirements and balancing of competing public and private interests).

4.1.2 The recommendations that follow in this chapter, based on these results, outline the principal means by which such an improvement in standards might be achieved. They are presented in terms of four main areas of action:

- Development of a framework for guidance (4.2);
- Provision of training (4.3);
- Actions that fall to particular stakeholder groups (4.4);
- Areas where further research could help to establish stronger foundations for improving standards (4.5).

4.2 Developing a Framework for Good Practice Guidance on Cultural Heritage in EIAs

4.2.1 This review has identified many examples of good practice, but also several areas of weakness in current practice of cultural heritage input to EIA: some weaknesses are found in almost every cultural heritage ES examined.

4.2.2 Existing guidance for EIAs in the UK either does not cover cultural heritage, is too general to be of much use, or is flawed or otherwise inadequate.

4.2.3 The recommendations in this report will hopefully form a basis from which current practice in the UK can be improved. It will then be up to other organisations involved with the EIA process to use such principles and guidance according to how helpful they prove to be and how well respected they become. The Planarch partnership is intending to present and publish principles and outline guidance based on the results of its own research that will be applicable in a broader European context.

4.2.4 There is a need for a framework to integrate the various principles and guidelines. An obvious structure would be a nested hierarchy of guidance:

- European-wide (covering core principles);

- National/regional (interpreting the core principles in the light of national frameworks);
- Thematic (e.g. terrestrial/maritime; types of development, including guidance on relevant specialist areas).

4.2.5 It is suggested that there are five key starting points from which general (European/national) Guidelines for cultural heritage input to EIAs could be developed:

- The established EC ES review criteria and EIA guidelines;
- Council of Europe Conventions (Valletta, Granada, Venice) and other international agreements (e.g. UNESCO World Heritage, Underwater Cultural Heritage);
- Existing national and regional policies for the cultural heritage;
- Professional standards (e.g. as provided by UK Institute of Field Archaeologists and Institute of Historic Building Conservation);
- Results of Planarch 2 reviews.

4.2.6 The Planarch 2 Study could play a particular role in contributing to the European and national/regional levels of guidance. The focus will be on project EIAs, but taking cognisance of the emerging general SEA guidance and lessons outlined above learned from EIAs assessed as part of this review. Further consideration will also need to be given to how any guidance emerging from the Planarch 2 initiative should relate to Strategic Environmental Assessments.

4.2.7 In terms of content, it is suggested that the core guidance on the EIA process could follow the broad principles outlined in Text Box 3 below. These are based on the ES review criteria topics given in more detail in Appendix 5 (based on standard European ES review criteria), EC and other general EIA guidance documents, and the conclusions of this study.

4.2.8 While the ES review criteria given in Appendix 5 cover many of the principles of assessment and presentation of data in an ES, it is envisaged that the guidance will also cover the screening and scoping stages prior to preparation of the ES, and the decision-making and implementation stages following its submission. In addition, preparing guidance based on the Planarch 2 studies will require further work to take account of all the requirements outlined in paragraph 4.2.4 above and to make full use of the findings of this study and expand on some of the practicalities of conducting cultural heritage studies within the EIA process.

4.2.9 Depending on what emerges from other studies and the synthesis of all the Planarch 2 studies, it may prove possible to draft the guidance in a manner that can be adapted to suit all the Planarch 2 partner countries and regions.

4.2.10 It is hoped that circulation of these principles and guidelines (coupled with the publication of this report) will have a practical influence, similar to that derived from the Planarch 1 report *Evaluation of Archaeological Decision-making Processes and Sampling Strategies* (Hey and Lacey 2001). This would speedily promote improvements in standards of EIAs while consideration is given to whether in the longer term more formal official guidance endorsed by regulators and others is needed.

4.2.11 Judging by the process currently underway for the Highways Agency's revision of its DMRB Volume 11 (1993) guidance, which has been in progress since 2001, preparation of formal guidelines could be a lengthy process involving several steps. These would include more detailed work defining needs and the anticipated audience; establishing the scope and auspices (EIA/SEA; national/European); agreeing detailed synopses; drafting the guidance; consulting regulators and other stakeholders; revising the draft and seeking endorsements of regulators and consultees; publishing and disseminating the approved guidance (in both digital and hard copy).

Text Box 3: Principles to be covered in EIA guidance
GENERAL
Details and results of all consultations with heritage curators should be made explicit during all phases of the EIA process.
1 SCREENING AND SCOPING:
Screening
Projects compulsorily needing EIA and those volunteered/requested by planners should be notified to heritage curators for comment.
From their routine screening of applications/consultations, heritage curators should alert regulators to projects that should be subject to EIA on cultural heritage grounds.
Scoping
Heritage curators should always be consulted on the scope of ESs, especially the establishment of baseline data and potential effects to be assessed.
Heritage curators should seek agreement with developer's consultants on the scope and methods (either directly or through regulator).
2 ASSESSMENT OF EFFECTS AND PREPARATION OF THE ENVIRONMENTAL STATEMENT:
Baseline
The description of the project should be sufficient to identify all the elements that could directly or indirectly affect the cultural heritage.
The study area should include cultural heritage that would be directly or indirectly affected by the proposals and should refer to any additional area covered by any appraisals of alternatives considered.
The study area should include a sufficiently wide context to understand the cultural heritage affected by the proposals.
The scope of cultural heritage should include all aspects of the historic environment and should in particular cover the 'archaeological and architectural heritage' if they are significantly affected.
The level and methods used to establish the cultural heritage baseline should be commensurate with the possible significance of the project's effects.
The cultural heritage baseline should be sufficient for all the significant effects of the project to be assessed and as far as possible predicted.
The legislative and planning policy framework for judging whether the project will have 'significant' effects on the cultural heritage should be explained.
The importance of cultural heritage assets significantly affected by the project should be considered and reported and the criteria used to define importance stated.
The main alternatives considered (including a do-nothing scenario) should be outlined and any cultural heritage considerations relating to these should be outlined.
Assessment and Prediction of Effects
Direct adverse and/or beneficial effects arising from different aspects of the project and at different stages in its development should be identified.
Indirect adverse and/or beneficial effects arising from different aspects of the project and at different stages in its development should be identified.
Temporary (long- or short-term) effects as well as permanent effects arising at different stages in the development of the project should be identified.
The basis for identifying effects and judging or predicting their magnitude should be stated.
Any cumulative effects relating to the cultural heritage should be identified and assessed
It should be stated whether identifiable direct, indirect, permanent, temporary and cumulative effects on the cultural heritage are 'significant' (ie in policy terms) and the assessment criteria used defined.
Proposed mitigation and monitoring
Appropriate mitigation measures should be considered and proposed for significant effects on the cultural heritage.
Possible types of mitigation to be considered in addressing cultural heritage effects should include a variety of design, management and recording measures.
The public interest value of mitigation measures (including dissemination of results of archaeological recording) should be an important consideration.

The mitigation strategy should be demonstrably achievable.
Provision should be made for monitoring to enable unforeseen effects to be mitigated.
Communication
The EIA process should include statutory consultation, and should include other consultations including any involvement of the community.
The assessment should convey sufficient background information to judge the wider context of the area and cultural heritage affected and the decisions to be made
The methodologies used and limitations encountered should be explicit.
The assessment results should be clearly set out and made accessible to the non-specialist.
The assessment results should be presented in an objective and balanced way.
The non-technical summary should faithfully reflect the results of the specialist study and should be in non-technical language.
3 DETERMINATION OF PROPOSALS AND APPLICATION OF CONDITIONS TO APPROVALS:
Review of EIA
The cultural heritage curator should review ESs for compliance with scoping and/or EIA Review package and other standards (including section 2 of this checklist).
Potential Requests for further information
The possible need to clarify/amplify descriptions of project/sources of impact should be considered and documented.
The possible need to clarify/amplify cultural heritage baseline through additional desk studies/non-intrusive survey/intrusive evaluation should be considered and documented.
The possible need to clarify/amplify assessment of effects not assessed and/or reconsideration of assessments made in ES should be considered and documented.
The possible need to provide more information on scope, methods, programming and commitment to mitigation and monitoring should be considered.
The cultural heritage curator should communicate requests for further information to developer's representative either formally through the regulator or by informal agreement.
Advice to Regulator
Cultural heritage curators should advise the decision-maker on the acceptability of proposals.
Cultural heritage curators should advise the decision-maker on drafting of conditions if proposals are approved.
4 IMPLEMENTATION
Procedures for Implementation
Procedures should be established for documentation, consultation, monitoring and sign-off.
Documentation
Briefs should be provided by the cultural heritage curator.
Preparation, receipt and approval of detailed design specifications, detailed project plans and programmes, environmental management plans, WSI's for recording work etc.. should be carried out.
Preparation, receipt and approval of reports on each stage of work/aspect of mitigation should be carried out.
Active implementation and monitoring
Progress and implementation should be monitored.
Implementation of mitigation works should be signed off.

4.3 Training

4.3.1 There is a need to improve capacity both to conduct effective cultural heritage ESs and to make informed decisions. This includes a need to:

- Improve cultural heritage specialists' basic skills and professional standards of conducting and using cultural heritage EIAs;
- Raise cultural heritage specialists' awareness of interactions with issues covered by planning, design and environmental specialisms;

- Improve cultural heritage specialists' abilities to understand the implications of development plans for cultural heritage and to understand design drawings, specifications etc.;
- Raise planning, design and environmental specialists' understanding and awareness of cultural heritage issues and how they interact with their topics.

4.3.2 The benefits of such training are not confined to the conduct of EIAs but would provide a structured framework for considerable spin-offs for cultural heritage decision-making in general.

4.3.3 Training provision will need to be adjusted to suit different stakeholders. The following indicate some of the possible target groups and existing initiatives through which better provision might be achieved:

- Local Planning Authority members (e.g. input to EH Historic Environment Local Management (HELM) initiative);
- Planning and environmental consultants (e.g. tailor-made Continuing Professional Development (CPD) courses and/or integrated into other courses);
- Other environmental specialists and officers (e.g. input to other planning and EIA courses; special courses/seminars);
- Archaeologists and other cultural heritage specialists (e.g. short courses in professional archaeology; university postgraduate courses in heritage management and/or planning and EIA).

4.3.4 There is clear potential for some of these to be dealt with through courses and facilities aimed at multiple audiences – but it is also clear that variability of existing levels of skill and awareness means that there is no one-size-fits-all solution.

4.4 The Role of Different Bodies in Promoting Good Practice

4.4.1 All those involved with the EIA process can contribute to achieving better standards and clearer parameters to enable well-informed, rigorous, robust and reasonable decisions to be made. Achieving this within a well-understood framework is in the interest of all stakeholders – and above all, the public interest.

Competent Authorities

4.4.2 'Competent Authorities' (see Chapter 2) are the ultimate guardians of the EIA process in terms of ensuring that the application of the Regulations delivers decisions that are in the public interest and conform with the requirements of the EU Directive.

4.4.3 All Competent Authorities need to consider how their procedures, advice and guidance on cultural heritage input to EIAs might be improved and enhanced in the light of the conclusions that have emerged from this study. In particular they need to examine the following:

- Including requirements for specific consultation on cultural heritage matters in regulatory requirements;
- Improving consultation with cultural heritage advisers on all screening and scoping decisions;
- Addressing key shortcomings in existing guidance as it is reviewed (especially PPGs 15 and 16 and the DMRB Volume 11 (1993)) on matters such as criteria for assessing importance, issues of setting and the definition of indirect and cumulative effects;
- Considering the implications for developing SEA guidance.

English Heritage

4.4.4 English Heritage could helpfully consider how it might help to promote good practice in cultural heritage input to EIAs in relation to its own role, including:

- The very limited scope of its formal role as a statutory consultee;
- Supporting the independent development of professional standards in cultural heritage procedures in the EIA process, both promoting material that already provides the basis for good practice standards and ensuring that this supports a general consensus;
- Enhancing its input to screening and scoping stages;
- Developing and maintaining consistency in its own approaches to review and advice, particularly in relation to issues such as definition and approach to setting;
- Promoting training and capacity building.

Local Authorities and their cultural heritage advisers

4.4.5 Local authorities and their specialist cultural heritage advisers have a clear role as the core public services that guide, review and have a particularly key role to play in addressing the issues raised in relation to:

- Ensuring fuller input to all screening decisions and more proactive screening for cases that could require EIA on cultural heritage grounds;
- Ensuring cultural heritage input to all scoping advice – and enhancing the range and depth of that advice;
- Responding to and promoting better consultation;
- Rigorously reviewing the quality of ESs against standard criteria (such as those outlined in Appendix 5) and requesting further information;
- Insisting on clearer statements of frameworks for implementation of mitigation;
- Requiring more formal monitoring as part of mitigation procedures.

Developers EIA Lead Consultants

4.4.6 Developers and their lead consultants could likewise help to promote good practice in the studies carried out for EIA, with potential spin-offs in terms of easing decision-making by providing all requisite information in a fully coherent, integrated form. Particular areas where they could assist this process include:

- Alertness to what may emerge as 'key' issues;
- Promoting better integration of design and EIA issues, and integration across environmental specialisms;
- Promoting, encouraging and facilitating good teamworking and awareness of issues between specialists;
- Ensuring that specialists fully understand what the development proposals entail
- Recognising and pursuing a special role in assisting all consultants in identifying indirect and cumulative effects.

Cultural Heritage specialists

4.4.7 Specialist cultural heritage consultants (and their professional institutes) have an obvious key role in responding to the challenge to improve standards of cultural heritage input to the EIA process, although often this can only be fully facilitated through the active support of their clients. Numerous specific areas of improvement are indicated in Chapters 7 to 10, and only a few general points are made here:

- Ensuring detailed communication with local authorities at the earliest possible stage;
- Helping to initiate better standards in undertaking consultation, implementing advice and reporting consultations with curators;

- Checking all aspects of what development proposals may entail, and all the ways in which they might affect the historic environment;
- Developing better understanding of technical aspects of development proposals;
- Seeking to have more influence on design issues where these can significantly help to avoid, reduce or prevent adverse effects;
- Achieving a better balance of coverage across all aspects of cultural heritage;
- Giving more weight to the value and potential significance of characterisation approaches, and understanding past and present trajectories of change;
- Making better, more considered use of predictive techniques and their limitations;
- Being clear and consistent in how judgements are made;
- Being more aware of the benefits that development can sometimes bring – especially where these are an integral part of the proposals;
- Ensuring that assessments of importance and judgements of effects are meaningful to a lay audience, not a mechanistic procedure that has more to do with appearances of objectivity than real rigour;
- Ensuring as far as possible that developers understand, and can demonstrate their commitment to deliverable mitigation measures;
- Communicating complex data in clear, balanced ways that focus on issues that matter, making better use of illustrations and graphics to convey the assessments made, not just the baseline information collected;
- Recognising the value of research frameworks and design guidelines for developing the ES and delivering high quality mitigation.

4.5 Potential Areas for Further Research

4.5.1 Notwithstanding the immediate need to develop clearer guidelines for cultural heritage input to EIAs using the results of the present Planarch 2 EIA studies, there are also several potential areas of research that could provide the basis for developing better standards in this area. Four have particularly emerged from this study as warranting further consideration.

4.5.2 A review of cultural heritage reasons for refusals of development proposals could usefully:

- Examine the relative balance of different cultural heritage considerations and their relation to other factors;
- Examine how policy standards are applied in practice;
- Help define thresholds of significance;
- Raise awareness generally that cultural heritage matters.

4.5.3 A review and analysis of approaches to issues of setting could usefully:

- Analyse cases where issues of setting have been material considerations in decisions and appeals;
- Review and analyse the pros and cons of a range of approaches to assessing setting;
- Seek to establish common definition/concept of setting;
- Establish common approach/methods of assessment;
- Establish clearer basis of how policies on setting should be interpreted.

4.5.4 A more detailed review of design and management outcomes, especially in relation to historic buildings could usefully:

- Examine the relationships between an understanding of the factors that determine historic character and good modern design;
- Compare the quality of buildings and structures within the completed development with anticipated beneficial or adverse effects predicted in ESs and other proposals;

- Analyse the mechanisms by which good design proposals are achieved;
- Establish what planning and design frameworks are required and at what level of detail to facilitate and ensure good design is carried through to implementation;
- Examine what factors are crucial for informing decisions through the development control process.

4.5.5 A study to develop cultural heritage approaches and guidelines to SEA, meshing principles of EIA with much more strategic approaches to cultural heritage, could usefully:

- Review coverage of cultural heritage in past SEAs;
- Review strategic approaches to cultural heritage management (including sustainability indicators, quality of life assessment, best value, characterisation, modelling etc.);
- Consider how each of these approaches might contribute to the key stages of EIA (project description, baseline, assessment, mitigation, monitoring);
- Consider implications of how these should be developed in terms of consultation and communication;
- Draft guidance, meshing in with existing SEA guidance, new EIA guidance and other good practice standards and useful case studies.

PART C - Results

5 GENERAL OVERVIEW OF COVERAGE AND ACCESSIBILITY OF ESS

Chapter 5 *provides a general overview of the coverage of ESs and their accessibility. This shows that ESs are required for only a tiny proportion of all planning applications. Most of the cases covered are under Town and Country planning regulations, though this may partly reflect a moratorium on new road schemes and poor feedback from some regulatory authorities. The commonest types of development covered are housing, commercial 'infrastructure', minerals quarrying and energy schemes.*

5.1 Planning Statistics

5.1.1 The ODPM maintains a database of planning statistics which are published on their website. The relevant information for each of the planning authorities covered by the Planarch 2 project for the years 1999-2003 from the ODPM website has been used to assess what proportion of planning applications required, or was accompanied by, an ES. The number of decisions was compared with the number of ESs listed by ODPM in their databases of ESs. This produces a figure of less than 0.1% requiring an ES.

5.1.2 The total number of ESs for each of the local authority areas covered, both according to official ODPM figures and those actually identified (allowing for the duplications and other problems discussed in Appendix 4) are given in Table 5a. Details of the ESs actually identified for review are given in Appendix 7.

Table 5a: Number of ESs by Local Authority

Local Authority	*No. EIAs from official figures*	*No. of EIAs actually identified*
Derbyshire	43	18
Peak National Park	3	14
Essex	53	41
Kent	77	45
Somerset	32	17
Total	*208*	*135*

5.2 Breakdown of ESs by Type of Development and Section of Regulations (Figure 5.2)

5.2.1 The numbers of ESs carried out under the different Statutory Instruments which were reviewed for the Planarch 2 study area are given in Table 5b below. Table 5c shows the distribution of these ESs according to the types of development included in Schedules 1 and 2 of the EU Directive.

5.2.2 There were seven projects where aspects required submission under more than one Statutory Instrument or Schedule category. In five cases, two regulations were required, with one needing three submissions and another four submissions.

5.2.3 The results show that the vast majority of ESs identified come under the Town and Country Planning Act (Table 5b).

Table 5b: Number of ESs submitted 1999-2003 by UK regulation

Regulation No	Regulation	No. of ESs
SI 1999/293	Town & Country Planning	123
SI 2000/2867	Old Minerals Permission	6
SI 2000/1927	Electricity	3
SI 1999/3445	Harbour Works	2
SI 1999/2892	Decommissioning Nuclear Reactors	2
SI 1999/369	Highways	2
SI 1999/1672	Public Gas Transporter pipelines	2
SI 2000/2190	Transport & Works	1
SI 1999/2228	Forestry	1
SI 2000/1928	Long Distance Oil & Gas Pipelines	1
SI 2001/3642	Offshore Wind Farms	1
SI 1999/1783	Land Drainage	0
SI 1999/367	Fish Farming	0
SI 2003/?	Marine Dredging	0
SI 2001/3966	Uncultivated Areas	0
	Private Bill Projects	0

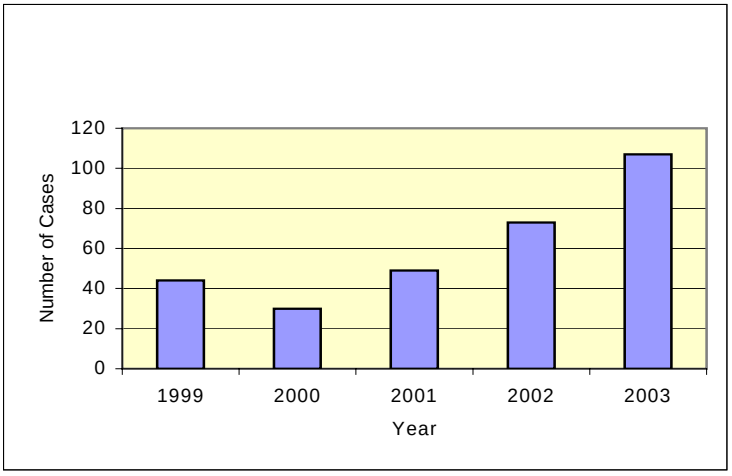
5.2.4 The low number of cases under strands of legislation other than the Town and Country Planning and Old Minerals Permissions regimes should be treated caution. For example:

- The number of Highways projects is low, which may be due to the moratorium on new road schemes introduced after the new Labour Government was elected in 1997
- SI 2003/1641, Water Abstraction, only came into force in 2003
- The Statutory Instrument for Marine Dredging is not yet in place.

5.2.5 In addition, some of the Competent Authorities did not respond to requests for information (or did so too late for data to be included) and the totals for their areas of responsibility may well be significantly too low. For example although Kent, Essex, and to a lesser extent Somerset, have reasonably long coast lines, a very low number of ESs covered the maritime environment, which may reflect the very limited feedback from some of the relevant regulators. The response that was eventually received from DEFRA Marine Consents Unit indicates that over the period 1999-2003 a significant and rapidly growing number of individual consents were issued in relation to projects subject to EIA, (Figure 5.2). Since one overall ES may involve several specific consents, the totals are greater than the number of EIAs, but the growth trend is clear.

Figure 5.2: Number of Marine Consents Involving EIA for Kent, Essex and Somerset

(Source DEFRA)



5.2.6 Table 5c shows the number of ESs recorded in relation to the type of project. The majority fell under Schedule 2 of the EU Directive, where an EIA is not an automatic requirement for the project. Only about 10% fall into Schedule 1, while Schedule 2.10, Infrastructure Projects, represents the largest group. The number under Schedule 2.02, Extractive Industry, is also high, but this may not be representative of the country as a whole. Derbyshire, including Peak District National Park, has a very high proportion of applications relating to quarrying. As discussed above, the number relating to the maritime environment is low.

Table 5c: No. of ESs identified in Planarch counties 1999-2003 by EU Directive Schedule and type of development

Section of Regulations	Type of development	No. of ESs
Not defined		3
Schedule 1. 01	Crude-oil refinery	
Schedule 1. 02	Power station	3
Schedule 1. 03	Nuclear fuel processing	
Schedule 1. 04	Metal working	
Schedule 1. 05	Asbestos	
Schedule 1. 06	Chemical installations	
Schedule 1. 07	Road, rail, runways	3
Schedule 1. 08	Inland waterways, ports	
Schedule 1. 09	Waste disposal installations - hazardous	
Schedule 1. 10	Waste disposal installations - non-hazardous	1
Schedule 1. 11	Groundwater abstraction	
Schedule 1. 12	Transfer of water resources	
Schedule 1. 13	Waste water treatment	1
Schedule 1. 14	Petroleum and natural gas extraction	
Schedule 1. 15	Dams	
Schedule 1. 16	Oil, gas and chemical pipelines	2
Schedule 1. 17	Poultry and pig rearing	
Schedule 1. 18	Pulp and paper plants	
Schedule 1. 19	Quarries and open-cast mining	2
Schedule 1. 20	Oil and chemical storage	

Section of Regulations	Type of development	No. of ESs
Schedule 2. 01	Agriculture and aquaculture	5
Schedule 2. 02	Extractive industry	40
Schedule 2. 03	Energy industry	13
Schedule 2. 04	Production and processing of metals	
Schedule 2. 05	Mineral industry	
Schedule 2. 06	Chemical industry	
Schedule 2. 07	Food industry	
Schedule 2. 08	Textile, leather, wood and paper industries	
Schedule 2. 09	Rubber industry	
Schedule 2. 10	Infrastructure projects	64
Schedule 2. 11	Other projects (testing, waste, waste-water)	8
Schedule 2. 12	Tourism and Leisure	2

5.3 Breakdown of ESs by Type of Developer, Lead Consultant and Specialist (Figures 5.3a-c)

5.3.1 Figures 5.3a to c give a breakdown of involvement of different types of developer, lead consultant and specialist historic environment consultant involved in preparing the ESs reviewed.

5.3.2 From this it is apparent that within this sample:

- Private sector developments strongly outweigh public sector schemes amongst the ESs reviewed;
- 'Lead consultants' are usually the developers themselves, general environmental consultants or planning consultants, with engineering consultants the next largest group at a significantly lower proportion;
- Specialist cultural heritage studies are mainly undertaken by professional archaeological units, general environmental consultancies and to a lesser extent private consultants, with planners, developers themselves and engineering consultants being responsible for most of the rest.

Figure 5.3a: Breakdown of ESs by Type of Developer

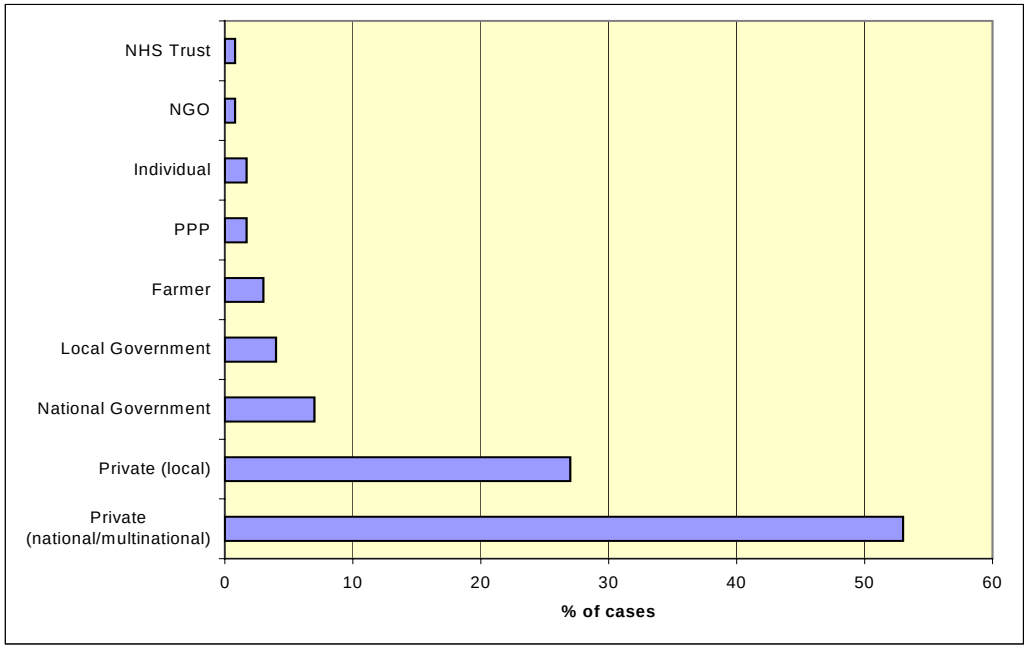


Figure 5.3b: Breakdown of ESs by Type of Lead Consultant

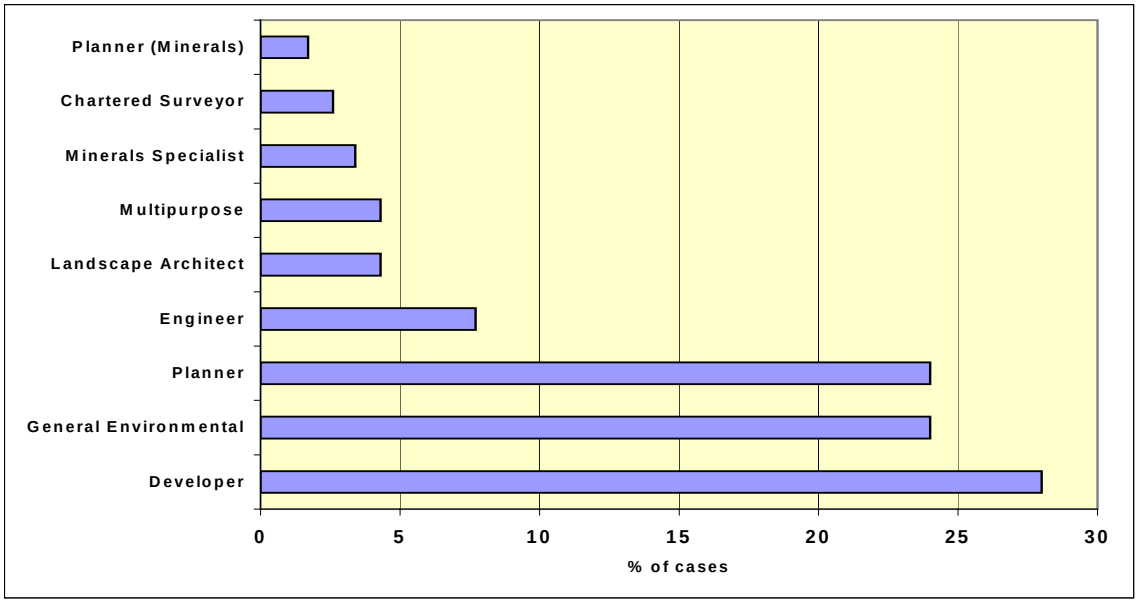
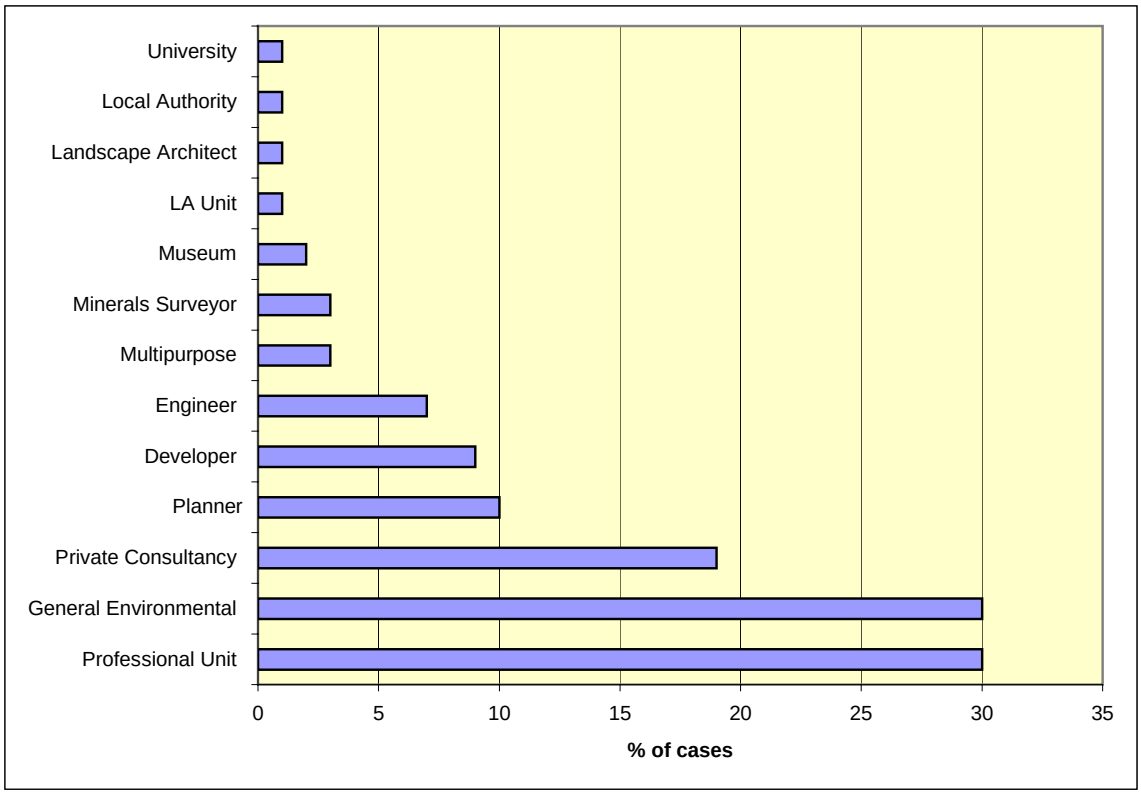


Figure 5.3c: Breakdown of ESs by Type of HE Specialist



5.4 Commentary on Archiving, Access and Identification

5.4.1 The difficulties encountered in locating copies of all ESs from 1999-2003 prepared for projects within the areas covered by Planarch 2 partners reflect the absence, either at national or local government level, of a readily accessible, definitive list of ESs for which a particular body had some involvement. Shortcomings of existing official listings include:

- Inaccuracies in data entry and duplications;
- Projects listed under different names (eg it is not immediately obvious that 'Ramsgate Road Roundabout' is the same as 'East Kent Access Road Phase 1A');
- Whether projects were in fact subject to EIA.

5.4.2 ESs are only part of the total documentation of cases, and further problems of access arise from:

- The substantial physical storage problems involved;
- Filing of long-running projects is often chronological rather than case by case;
- Differences in project names and lack of cross-referencing, making it unclear which pieces of work relate to particular ESs.

5.4.3 The size of many ESs in hard copy format produces a storage problem for everyone concerned. As a result, nobody keeps copies for longer than necessary and access becomes difficult. Although digital format would provide a partial solution to this, it is not easy to use, especially for large ESs and complex plans and drawings.

5.4.4 The diverse nature of the cultural heritage and how institutional responsibilities are divided between competent authorities and their specialist heritage advisers means that cultural heritage specialist material is often not kept with the ESs. This is further complicated by the fact that different aspects of the heritage are usually dealt with by different people, often in different authorities, frequently in different places.

5.4.5 Overall, the level of response to initial requests for information, both in content and time taken to reply, was disappointing. This contrasted with the uniformly helpful support and advice provided when actual visits were made to cultural heritage curators.

5.4.6 Despite the not inconsiderable hurdles encountered in gaining access to material, it is considered that enough ESs were reviewed, and a sufficient proportion of these had proceeded to further archaeological work, for a good range of observations and conclusions to be drawn from the study. These are set out in Chapter 6 of this report.

6 RESULTS: CULTURAL HERITAGE COVERAGE AND KEY ISSUES ARISING FROM 'BENCHMARK' CASES

Chapter 6 *outlines overall coverage of cultural heritage issues and highlights some of the key issues arising from the 'benchmark' cases. 17% of ESs reviewed do not deal with cultural heritage issues at all. While the remaining 83% provide at least some coverage, this can be very thin and varies significantly across different aspects of the cultural heritage. Almost all cases deal with archaeological sites and most deal with the built heritage, but rather few consider palaeo-environmental deposits, historic areas, or historic landscape and townscape character. The benchmark cases include some major infrastructure projects (such as the Channel Tunnel Rail Link and Heathrow Terminal 5) and a number of other studies selected to illustrate a variety of types of development and EIA issues. The issues they illustrate reflect all stages of the EIA process, and are discussed in more detail in Chapters 7-9.*

6.1 Numbers of Cases

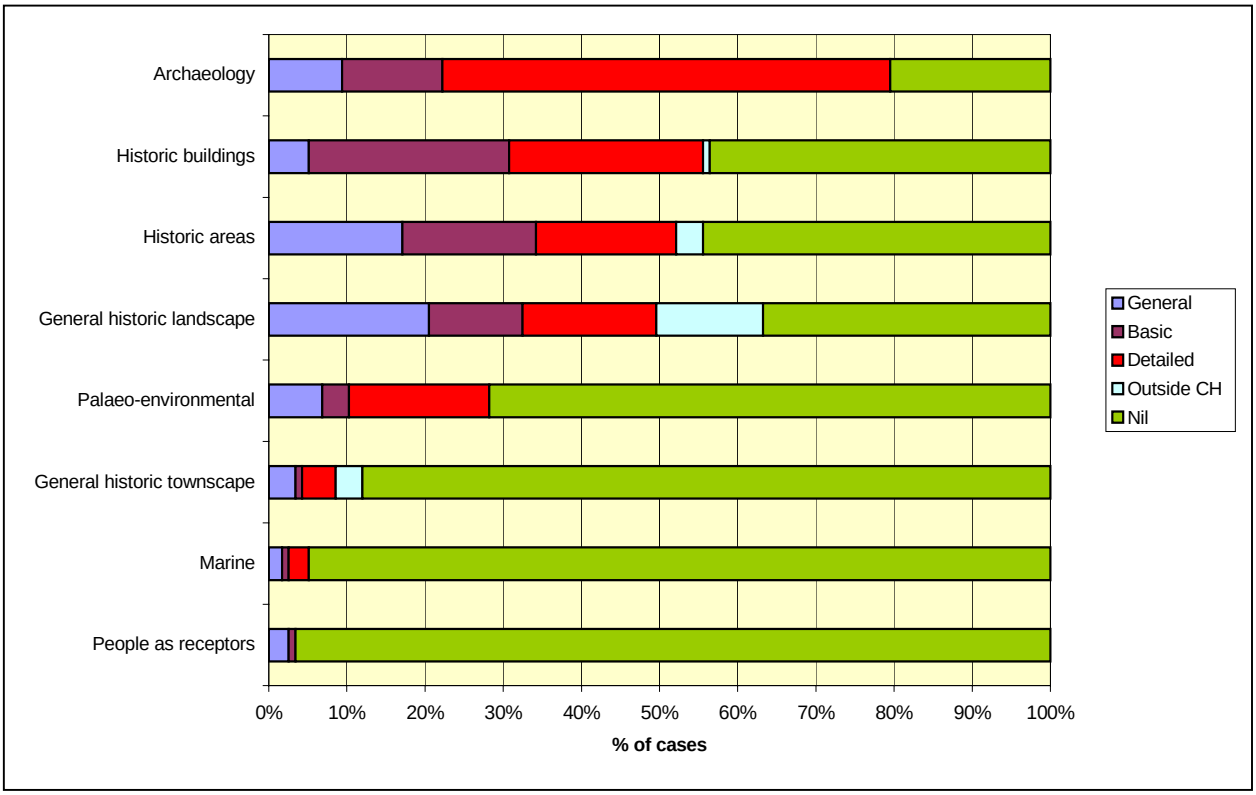
6.1.1 Although in total 135 cases were identified, and had the *Core Data* and *ES Process* proformas completed, not all of these contained coverage of cultural heritage. Of the 120 cases that did, some did not contain any detail and it was only possible to complete the *Baseline, Impacts and Effects* and *Mitigation*, i.e. Stage 1, proformas for 103 cases. The number of cases for which the *Outcomes*, Stage 2, proforma could be completed was much lower, consisting of 43 cases. Where statistics have been analysed, the appropriate total number of cases was used in the calculation. The statistics quoted in this chapter were derived from data obtained during Stage 1 assessment.

6.2 Overall Coverage of Cultural Heritage (Figure 6.2)

6.2.1 120 ESs (83%) contained at least some coverage of the cultural heritage. In one instance a cultural heritage report was prepared and submitted with the planning application along with the ES, but as a completely independent document. There were a number of examples where the ES contained only a brief synopsis of specialist reports that were not themselves submitted.

6.2.2 Figure 6.2 gives a breakdown of the coverage of different aspects of the historic environment. This indicates that 80% of cases cover archaeological sites, 62% cover the historic landscape, 56% cover the built heritage and 55% historic areas, but only 28% cover palaeo-environmental deposits and 12% townscape character. The ESs do not state whether such areas had been scoped out.

Figure 6.2: Baseline Studies: Coverage of Heritage



6.2.3 Although this is broadly as might be expected in terms of the general incidence of such assets (not every development is as likely to affect a registered park as an archaeological site), there are indications that in some cases this reflects a failure to check various sources rather than necessarily being a definite negative result from such checks. An obvious example of this is the low coverage of historic hedgerow boundaries on rural sites. These are more or less ubiquitous in rural areas and criteria for their preservation are established by regulation, but they were covered in only eight cases (7%).

6.2.4 Also noticeable is the lack of coverage of the general historic character of the rural or urban environment, and, in the case of the former, despite each of the Planarch 2 areas having had county historic landscape characterisation (HLC) projects undertaken. This is partly a matter of timing. The Peak National Park assessment was completed in 1999, Derbyshire and Kent in 2000 and Somerset in 2001, while the Essex study is still in draft form. Allowing for an estimated lead-in time of up to a year from the commissioning of a desk study to publication of an ES, it would be reasonable to expect that ESs from 2002 and 2003 in the Planarch 2 study areas might have used these historic landscape characterisations at least for some of the larger types of development. In fact, there has been virtually no use of them, and there has likewise been very little use of more detailed levels of characterisation (e.g. Conservation Area appraisals etc.). Kent CC says that the attention of developers is drawn to the HLC project, but there is a need to develop further methodologies for its use.

6.2.5 A total of 25 ESs (17.2%) contained no coverage of the cultural heritage; in almost all cases it was 'scoped out' as an issue. Such 'scoping out' was usually done on the grounds that the nature of the development could not affect cultural heritage assets, or that nothing had survived previous development.

6.3 Benchmark Cases

6.3.1 This section briefly outlines the major characteristics and key points illustrated by the 'benchmark' cases, which are discussed in more detail in Appendix 8. As explained above they have been chosen as examples that illustrate particular issues, and these are more fully discussed (often alongside other cases) under the appropriate section of the report.

Airport: Heathrow Terminal 5, London (1993, 2002)

6.3.2 The new Terminal 5 for London's Heathrow Airport is one of the largest commercial developments in the UK and went through an extremely protracted public inquiry. The key issues that arise from the Terminal 5 case are:

- How far detailed coverage of the cultural heritage in an ES should go to decide not just whether the development is acceptable, but also what measures are needed to ensure high quality mitigation if it is permitted;
- What level of detail should legally form part of the ES rather than supporting documents;
- The value of developing a mitigation strategy that is based on both a firm and responsive research framework and effective risk management procedures;
- The potential value of deposit survival modelling where this is technically feasible;
- The scope for major projects to support investment in real innovation that can benefit both archaeology and developers;
- The value of a developer having a clear corporate commitment to achieve world-class standards in all environmental aspects of its work including cultural heritage management, without compromising core business aims.

Railway: Channel Tunnel Rail Link, Kent (1994)

6.3.3 The CTRL scheme is the first major mainline railway to be built in the UK since the 19th century and was long in gestation and subject to a very rigorous process of developing route options and the final choice. The key observations and issues that arise from the CTRL case are:

- The value of fieldwalking as a cost effective technique for improving baseline data for a linear rural scheme crossing different geologies;
- The value of full systematic definitions of types and sources of impact, criteria for assessing significance etc.;
- The value of providing clear criteria for making professional judgements without becoming too formulaic;
- The value of concise, integrated descriptions of all aspects of the cultural heritage and explanations of the effects of the scheme (albeit diminished by the absence of clear mapping of the full range and area of impacts);
- The value of thorough coverage of indirect effects;
- The value of clear reporting of a wide range of cumulative effects, both within the cultural heritage and across different environmental factors;
- The value of a clear framework of mitigation and agreed procedures for ongoing consultation and environmental management to secure satisfactory outcomes, although details of the location and extent of mitigation were left open to negotiation post-ES.

Highway: A303 Stonehenge Improvements, Wiltshire (2003)

6.3.4 The proposals for the A303 highway improvements for the Stonehenge World Heritage Site, which include a 2.1 km tunnel past Stonehenge itself, have been examined at a public inquiry but the Government's decision is still awaited. The key issues arising from the A303 case are:

- The importance of explicit description and assessment of construction activities;
- The value of extensive field survey, but also the importance of understanding sampling strategy and its use in predicting the extent of the archaeological heritage;
- The value of being explicit about assessment methods, but also the insensitivity of over-mechanistic approaches to professional judgement and public attitudes;
- The value of extensive consultation to agree methodologies and receive views, but also that the process itself does not confer immunity from criticism;
- The recognition that existing methodological guidance is inadequate in some areas but also the difficulty of trying to establish new standards on the basis of one project.

Rural: Housing Development Sites South of Reading, Berkshire (1997/8)

6.3.5 This case was selected in the absence of any examples found in the Planarch 2 study area to illustrate how issues of historic landscape character relate to the EIA process. The notable features and issues that arise from the South of Reading housing case are:

- The archaeological baseline surveys and results for rival proposals were agreed with the local authority's archaeological adviser;
- The use for Shinfield of a matrix approach to facilitate professional judgement in the assessment of effects on the setting of cultural heritage features;
- The application of historic landscape characterisation and mapping of the surviving integrity of historic landscape as part of baseline studies (Shinfield);
- The use of historic map regression techniques in analysis of the evolving settlement pattern and chronological characterisation of the built heritage (Shinfield);
- The meshing of individual heritage constraints (important hedgerows, Listed Buildings, Conservation Areas) with the historic landscape and settlement character (Shinfield);

- The assessment of effects on historic landscape character both within the ESs for the proposals and in the Inquiry;
- The relevance of a district-wide historic landscape characterisation adopted as supplementary planning guidance;
- The recognition by the Inspector of the overall integrity of historic character and broad landuse as key historic landscape issues, not just retention of specific features;
- The significance of *local* rural historic character as a factor in considering strategic issues of greenfield/brownfield development, contributing to rejection of proposals despite their being within an area of potential development defined by the county structure plan.

Urban development: St Mildred's Tannery, Canterbury, Kent (2002, 2004)

6.3.6 This case is a good example of a complex urban site raising many issues of interest, several of which were dealt with well by the ES, although basic weakness of concept and design remained that led to refusal of the initial proposals. These were subsequently addressed and an amended scheme is now approved. The main issues that arise from the St Mildred's Tannery case are:

- The use of archaeological and geotechnical data in modelling likely survival, depth of 'buffer' material and zones of importance of archaeological deposits;
- The design to preserve nationally and internationally important archaeological remains;
- The full integration of archaeology with engineering, hydrological and contaminated ground issues to establish a common basis for integrated design and mitigation;
- The strategic framework for archaeological mitigation by recording and preservation;
- The building-by-building inspection, recording and appraisal of historic buildings to identify significance, potential for refurbishment and need for recording if lost;
- The consideration of town planning options, including the preservation of the line of the below ground city wall as a feature within the layout;
- The contribution of local consultation in identifying issues of concern about the overall design of the scheme;
- The local authority approval of a Planning Brief commissioned from the developer's consultant that did not fully reflect the feedback from consultation with external heritage bodies;
- The issues of whether townscape layout and building design (by a Viennese architect) suited the local vernacular;
- The proposed demolition of buildings of the old Tannery lying within the Conservation Area;
- The issues of density, height and massing of buildings relative to historic townscape character;
- The issues of appearance and views of the development from an important approach to the City and riverside meadows, in relation to the historic character of Canterbury and views of the cathedral (World Heritage Site).

Mining: Stanley Main, Selby Coalfield, North Yorkshire (1997)

6.3.7 This ES was recommended by the IEMA as being of good quality and of interest in tackling indirect effects of mining subsidence. The main issues that arise are:

- The integration with hydrogeology and subsidence predictions. It was not considered significant but there is some uncertainty about this;
- The procedures already in place for subsidence monitoring of some buildings (though not explicitly on cultural heritage grounds);
- The identification of complex indirect effects (subsidence leading to remedial drainage resulting in disturbance/desiccation of archaeological remains on Selby Moor);
- The varied suite of mitigation, including approaches for assessing complex indirect effects

whose occurrence cannot be predicted accurately;
- The need to be explicit about the full sources used and whether every Listed Building and all Conservation Areas that might be affected were considered;
- The need to be clear about what other indirect effects of additional mining (e.g. extended cumulative effects of ongoing extraction) were considered;
- The need to be explicit about what monitoring would be carried out to check the prediction that no settlement damage to historic buildings would occur.

Pipeline: Drointon to Sutton-on-the-Hill, Staffordshire/Derbyshire (1999)

6.3.8 This ES emerged as being of good quality, with cultural heritage playing a part in all stages from consideration of alternatives through to details of route alignment. The positive features and issues that arise are:
- The overall systematic approach;
- The clarity of communication;
- The very systematic review and updating of the assessment after approval;
- The very systematic execution of mitigation strategy with clear correlation with previous work and predictions;
- The appropriate application of preservation *in situ* solutions during construction;
- The effectiveness and quality of execution, which presented no problems to curators.

Mining: Coombe Down Stone Mines Stabilisation Scheme, Bath and North East Somerset (2002)

6.3.9 Health and Safety issues form the principal consideration for this ES, which covers an area within a World Heritage Site. The main issues arising are:
- The use of specialist criteria developed through the Monuments Protection Programme (MPP) for historic mining sites;
- The inappropriate assessment of the importance of the Conservation Area in the Bath World Heritage Site as regional or local;
- The lack of consideration given to setting issues within the Bath World Heritage Site;
- The consideration of subsidence issues focusing on adverse effects of in-filling mines and failing to identify the key beneficial impact of removal of threat from the Conservation Area within the Bath World Heritage Site.

7 APPROACHES TO CULTURAL HERITAGE IN EIA AND ENVIRONMENTAL STATEMENTS

Chapter 7 *presents more detailed results of the review of approaches to cultural heritage in the ESs reviewed as part of the basis for considering what factors were significant in determining the quality of EIAs and their outcomes. For each topic (which more or less follow the main review topics for ESs) statistical evidence derived from the database is backed up by descriptive comments on cases that illustrate particular points of good practice or shortcomings, and a wider commentary on issues that arise.*

Cultural heritage input to screening is patchy and a framework for applying the heritage criteria given in the legislation is needed. Scoping is a critical stage in the EIA process, but cultural heritage specialists are not routinely involved. Several examples illustrate how problems could have been overcome by more effective scoping. Very few baseline archaeological studies include non-intrusive survey. Coverage of non-Listed Buildings and historic landscape and townscape issues is low. While most studies make some attempt to indicate the importance of heritage features, the basis for this is seldom explicit. While direct loss or damage, and visual intrusion are commonly considered, there is considerable variability and inconsistency in approaches to setting. Indirect and cumulative effects, do-nothing scenarios and alternatives are poorly covered. By far the commonest type of mitigation

proposed is archaeological recording, usually as a general catch-all process. Design solutions (siting, appearance, landscaping screening, and preservation through technical measures) are less common.

Provision for monitoring archaeological effects is common. Consultation with cultural heritage curators is variable and especially low for Conservation Officers.

7.1 Introduction

7.1.1 This chapter presents the results of the review of EIA cases to consider what factors were significant in determining the quality of outcomes in respect of the decision-making process. It begins by considering the available evidence relating to the screening and scoping stages of the EIA process. It then addresses in turn the principal areas which might be expected to be covered by a cultural heritage specialist: baseline conditions, consideration of alternatives (including the do-nothing scenario), assessment of effects and mitigation. The chapter ends by considering some of the more over-arching themes, including integration of cultural heritage, consultation and how well the ES communicates information.

7.1.2 For each of the stages of EIA process four broad strands of evidence were used in the analysis:

- The statistical analysis of the database records (including the benchmark cases);
- The individually noted comments recorded during the review of ESs;
- The more detailed scrutiny of particular cases that have gone through to some stage of further development;
- The discussions with curators and others.

7.1.3 The statistics in this section were derived from the data collected during Stage 1 assessment. For each topic statistical evidence is backed up by descriptive comments on cases that illustrate particular points of good practice or shortcomings, and a wider commentary on issues that arise.

7.2 Screening

7.2.1 Some information about the type of screening which was carried out, including limited references to consultation, was obtained from the ESs themselves. Other information was assembled from the ODPM database and the responses from local authorities.

7.2.2 56 cases do not mention screening. Of the 79 that do, 27 cases were subject to a formal screening process, with six referred to the Secretary of State, and 52 cases appear to have been subject to voluntary screening. In almost all cases, however, there was only a general reference to screening criteria with no further details included, so there is no indication of whether cultural heritage issues were considered.

7.2.3 The ODPM database showed 21 proposals which had been referred to the Secretary of State, of which only two were found to require preparation of an EIA. These do not correspond to the cases identified from the project database.

7.2.4 Results from the questionnaires to local authorities indicated that the cultural heritage was considered in the screening of 60 cases (around 40-50%), but this did not mean that cultural heritage curators were always consulted. Discussions with the curators indicated that:

- While they are mostly aware of the cultural heritage criteria for EIA (see Section 2.3, Textbox 2), curators are rarely involved in screening discussions;
- In some cases planning officers responsible for screening may do a rapid check of Historic Environment Records without alerting the specialist heritage curator;
- Although curators routinely screen planning applications for their implications for the cultural heritage, they seldom propose EIA for cultural heritage reasons.

7.2.5 Thus the curators' approach to screening appears to be mainly reactive, if they are involved at all. This does not mean that the cultural heritage is not covered in the screening process, but other factors are normally much more significant in determining screening decisions, and none of the cases reviewed was *primarily* concerned with a cultural heritage led development (such as a visitor centre or major townscape conservation programme).

7.2.6 The discussions with curators identified three instructive cases where the cultural heritage had been a prime consideration in screening discussions, which raise a number of issues (see Text Box 4 below).

Text Box 4: Cases of EIAs being requested on cultural heritage grounds

- *Kits Coty, Kent:* EH and KCC sought EIAs for two alternative poultry rearing developments close to Kits Coty guardianship monument. The ESs were prepared by the farmer (graded E). The proposals were withdrawn.
- *New Romney, Kent:* KCC supported by EH have sought an EIA principally on cultural heritage grounds for a sewerage scheme affecting all parts of the historic medieval port of New Romney which is also a Conservation Area. The project raises complex issues of physical disturbance of archaeological material, traffic disruption and temporary intrusion in a highly sensitive and complex historic townscape
- *Gorse Hill Farm, Peak District National Park:* The National Park Authority asked for an EIA to be carried out for planting proposals immediately adjacent to a scheduled medieval settlement, affecting the setting of the monument and an associated ridge-and-furrow field system. The size of the area to be planted (3.7ha) fell within the range above 2ha where EIA is optional under Schedule 2. In the UK there are no consent requirements for forestry proposals that are not subsidised by Government grants and fall below the size threshold that makes an EIA compulsory. The Regulator (the Forestry Commission) decided that it would not require an EIA, partly fearing that the extra burden of doing so would mean that the area would be planted with no grant aid and therefore no regulatory control. In the event the developer did not seek grant aid and went ahead with the planting.

Commentary

7.2.7 The cultural heritage is clearly not a prime trigger for EIAs through the screening process, and may not figure much in screening considerations, for which the size and nature of the development and other environmental factors have tended to play a far greater part.

7.2.8 It was not within the scope of this study (which has focused on development proposals for which ESs were prepared) to consider whether there are many cases where an EIA should have been undertaken on cultural heritage grounds, which were not put through the procedure. (To address this properly it would be necessary to consider more cases where EIA was not required and whether the cultural heritage was dealt with any less effectively than those where EIA was carried out).

7.2.9 While this does not mean that cultural heritage issues are neglected where EIAs are required for areas that are historically sensitive, there is nevertheless a case for clarifying how the cultural heritage criteria for requiring an EIA should be applied.

7.2.10 From the cultural heritage point of view, the most obvious circumstances where it could be particularly desirable to apply the EIA process on cultural heritage grounds are:

- to give special weight to cultural heritage issues in particularly sensitive locations
- to ensure that interactions between the cultural heritage and other factors are fully dealt with where effects are likely to be especially complex. The New Romney case is a good example.

7.3 Scoping and the Coverage of Cultural Heritage in ESs (Figures 7.3a-b)

Scoping Procedures for Cultural Heritage

7.3.1 Figure 7.3a shows the numbers of cases where the ESs made reference to the scoping process.

7.3.2 It is common for an initial appraisal of Historic Environment Records to be undertaken (often by the curator in response to an initial inquiry from the developer or main planning authority) and on the basis of this, and/or other desk studies, for the scope of further surveys needed for the ES to be defined during the EIA process.

7.3.3 Involvement of cultural heritage curators in scoping is much more common than their involvement in screening (Figure 7.3b). Multiple consultation took place for many ESs, and these cases are counted in each relevant category. The detailed review of selected cases further indicates that formal or informal advice from cultural heritage curators is more common than is indicated by ESs.

Figure 7.3a: General Evidence for Scoping (from ESs)

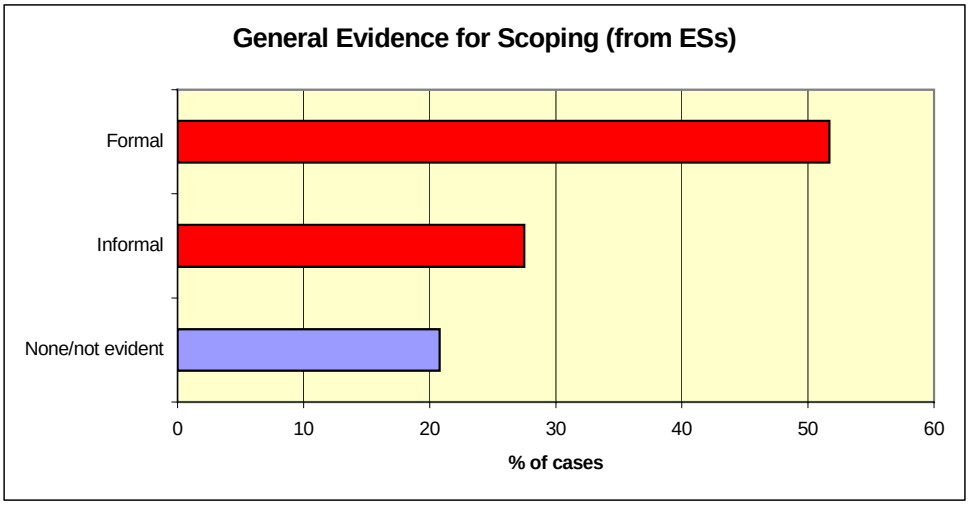
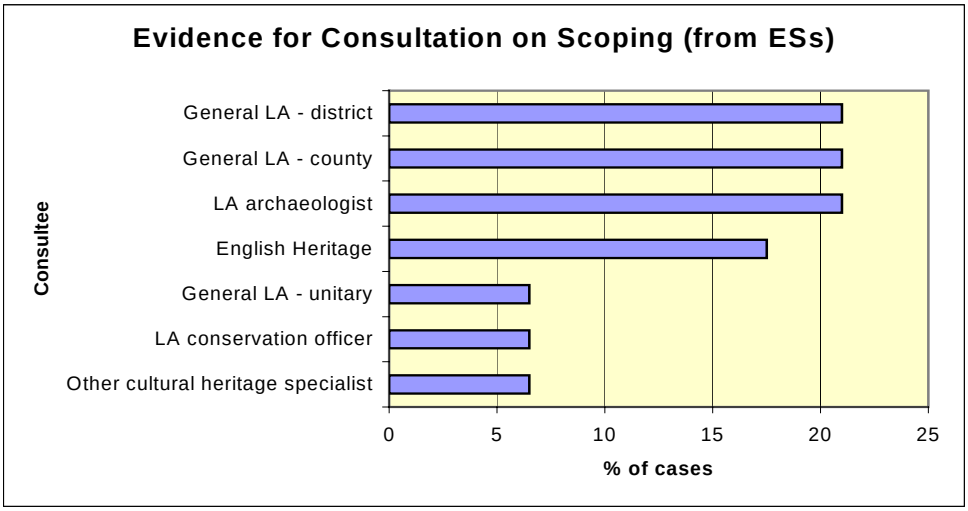


Figure 7.3b: Evidence for Consultation on Scoping (from ESs)



7.3.4 In the few cases where actual scoping reports were seen, and from explanations in ESs or other documentation, it is apparent that most consultation and advice focuses on the establishment of the baseline. Often this is no more than a broad confirmation of cultural heritage interest or potential, though sometimes the sources of evidence to be covered, broad survey methods to be deployed, and detailed specifications for survey work are provided.

7.3.5 It is much rarer that methods of impact assessment are discussed, and usually this is confined to the broad criteria and methods of defining significance, seldom identifying the possible direct, indirect, cumulative or temporary effects of the particular development in question. However, a good example of where this was done is the advice that English Heritage and the Canterbury Archaeological Trust gave on the Planning Brief which in effect acted as the scoping report for the St Mildred's Tannery EIA in Canterbury.

7.3.6 It is rare that full desk studies are formally undertaken to define the need for and scope of further surveys (as tends to be more common with some other environmental topics). An example of the preparation of such a study is that for the County Square proposals in Ashford, where in fact it was decided that the cultural heritage did not require detailed coverage in the ES (see below).

7.3.7 Some very large, complex and long-running developments do benefit from enhanced baseline data at the scoping stage, especially where extensive work has been carried out for previous proposals or options. Examples of this include: the CTRL (Kent), Terminal 5 twin rivers (Greater London), the A303 Stonehenge (Wiltshire), Stansted 15 Million+ (Essex) and the A2 (Kent). Procedures under Volume 11 of the Highways Agency's *Design Manual for Roads and Bridges* (1993) involves a very systematic process of considering alternatives and the scoping of final ESs.

Exclusion of Cultural Heritage from ESs

7.3.8 There are seven cases where cultural heritage issues were 'scoped out' of the ES for apparently good reasons because of the nature (and in one case small scale nature) of the development. The cases included:

- The infilling or other development of former quarries and one mine (4 cases);
- The dismantling of a power station (1 case);
- The refurbishment of an existing hospital (1 case);
- The construction of a poultry farm (1 case).

7.3.9 In one further case (proposals for re-landscaping of County Square, Ashford) effects on the setting of Listed Buildings and a Conservation Area were dealt with in the visual and landscape section of the ES, and other cultural heritage issues were scoped out on the basis of a specially commissioned desk study and consultation with English Heritage.

7.3.10 However, in seven other cases there is no obvious reason why cultural heritage effects should have been scoped out, and in two of them (Dema Glassworks and Swalecliffe Wastewater Treatment Works) subsequent work showed this was unjustified. These cases are summarised in Text Box 5.

Text Box 5: Cases where the cultural heritage seems to have been 'scoped out' inappropriately

- *Kedleston Road, Allestree, Derby:* Residential Development. ES says Derbyshire CC archaeologist was asked about SAMs or other notable features – none were reported and area was disturbed by two pipelines, so considered not relevant
- *Dema Glass Works, Derbyshire:* Cultural heritage was scoped out of the ES on the grounds that redevelopment of this brownfield 20th century factory works would not affect

any cultural heritage. Subsequently, a detailed desk study (including identification of extensive documentary records) and examination of the industrial archaeology of the buildings was carried out as part of evidence for a public inquiry examining this and three rival proposals.

- *Chelmsford Bus Station, Essex:* The scoping decision from Chelmsford BC specified ground conditions, noise, vibration and air quality as issues and this is all the ES includes. But the ES was one of four reports prepared and submitted as part of the planning application, the others being 'Transport Assessment', 'Urban Design Statement' and 'Archaeology'. There is no obvious reason why these should not have been included in the ES.
- *Chalet Site, Heybridge, Essex:* No cultural heritage assessment is included in the ES or non-technical summary though the landscape section mentions two Grade II Listed Buildings and effects on their setting, and also mentions a Conservation Area. It is not clear why other aspects of the cultural heritage could not be affected.
- *Swalecliffe Wastewater Treatment Plant, Kent:* This is the only ES reviewed where there was a complete absence of cultural heritage in the ES, but the outcomes led to discovery, investigation and publication of nationally important archaeological remains. The archaeological potential of the site had been recognised in the ES for an earlier development on the site, and the developer had commissioned archaeological recording. The exclusion of cultural heritage in the subsequent ES appears to have been because it was not highlighted as an issue in the scoping advice obtained from the local authority (which had not sought the opinion of the cultural heritage advisers), but it was not deliberately 'scoped out' as a potential issue.
- *Brands Hatch, Kent:* Extensive proposals for development, creation of earth mounds etc. extending into areas of historic woodland and other undisturbed land. Possible effects on buried archaeology in those areas were not considered. The application was withdrawn so there were no other outcomes.
- *Knights Farm, Tunbridge Wells, Kent:* Major housing development on farmland was proposed. There is no obvious reason for cultural heritage not being considered.

7.3.11 Possibly through lack of sufficient specialist advice, it appears that in these cases it was not appreciated that lack of *evidence* for archaeology or historic buildings within a site, need not mean either a real absence of cultural heritage assets, or the absence of potential effects on the historic environment.

7.3.12 In addition to these cases where scoping decisions to exclude the cultural heritage appear to have been wrong or not adequately explained, there are many others where weaknesses and omissions in the ES could easily have been avoided by better scoping. These include a number of refusals and cases where additional information or assessment was subsequently requested prior to determination, or omissions were rectified post-determination. Examples of cases where better scoping would have been helpful are shown in Text Box 6.

Text Box 6: Examples where better scoping would have helped

- *Bridgwater Power Station, Somerset:* Proper scoping should have identified the need to address the indirect effects entailed in supplying bio-fuels for the proposed power plant, the exclusion of which was a significant factor in refusal.
- *St Mildred's Tannery, Canterbury, Kent:* Consultation on the Planning Brief highlighted a wide range of issues for both below and above-ground cultural heritage, but these were not fully adopted in the approved Planning Brief (passed as supplementary planning guidance, which in effect acted as a scoping document for the ES). In particular the need to conserve the built heritage and associated key design issues of density, massing, height, detailing

and views were not addressed. Shortcomings in these areas were the basis for the refusal of the original scheme. These issues had to be addressed in a substantially revised scheme, more sympathetic to conservation issues, which was approved.

- *East Hall Farm, Kent:* One of a small number of cases where the archaeological baseline study was nothing more than the reproduction of the scoping information and comments supplied by the local authority. A full desk study and deposit survival assessment was later carried out under an archaeological condition.
- *Hope Shale and Limestone Quarry, Peak District National Park.* The National Park's development control archaeologist sought clarification to establish whether an immediately adjacent, recently restored historic mine complex might be damaged by blasting operations. This was an issue that had been addressed in the ecological study in relation to an established bat roost in the mine, but the proposed mitigation measure (to control the seasonal timing of blasting operations) would not have dealt adequately with the possible cultural heritage effects which had not been addressed, and remained to be resolved.

7.3.13 More generally, it is clear that in several cases better scoping could have made a significant difference to the quality of assessment presented, and many further examples are included in the discussion of the quality of cultural heritage coverage in ESs in the remaining sections of this chapter, and in the discussion of outcomes in the next.

7.3.14 One of the basic foundations of an effective EIA is ensuring that the nature of the development and all its potential effects for different aspects of the environment are understood. Without this it is difficult to develop a good understanding of how, and, in some cases, which cultural heritage resources and receptors are likely to be affected.

7.3.15 For the archaeological assessment at St Mildred's Tannery, the interactions between archaeological impacts and implications for *in situ* preservation were carefully investigated in relation to layout and design and interactions with hydrology and contamination issues. The need to establish principles for foundation designs and construction techniques compatible with addressing all these issues (as well as other measures to deal with unavoidable residual effects) reflects very close collaboration between the archaeological consultant and engineering, hydrological and geotechnical specialists.

7.3.16 Understanding the spatial extent of potential impacts that could arise from the nature of the development is another important factor in determining the scope of the EIA. For Richborough power station in Kent and the Martin's Hill windfarm on the Somerset Levels, issues of visual intrusion on the setting of important monuments were identified extending up to 5km from the developments. Similarly, the indirect effects of growing bio-fuels for the Bridgwater power station would have covered a far wider area than even its wide visual envelope.

Commentary

7.3.17 The scoping stage is often very significant in determining whether an EIA adequately addresses cultural heritage effects, and whether they are given due weight.

7.3.18 The fact that most of the current EIA Regulations do not require consultation directly involving cultural heritage specialists means that there is no automatic basis for cultural heritage advice feeding into the scoping stage. Instead this relies on:

- Whether developers employ cultural heritage specialists to advise on scoping
- Whether developers consult cultural heritage curators directly
- Whether planners/regulators consult their cultural heritage advisers when asked for a scoping opinion.

7.3.19 In addition, the quality of scoping opinions or advice depends a great deal on how well understood are the nature of the development and the range, significance and potential of the cultural heritage receptors that could be affected.

7.3.20 Cases where cultural heritage issues were inappropriately excluded from ESs or very poorly included within them may reflect a failure to appreciate a number of issues that need to be considered in the scoping process:

- Historic Environment Records are not always up to date, and seldom cover all the information available from other sources, such as the National Monuments Record.
- Some aspects of the cultural heritage (non-designated buildings, historic landscape and townscape features, marine industrial and modern military remains) are often under-represented or even absent from Historic Environment Records.
- The boundary between what is of historic interest and what is not is constantly shifting. This particularly applies to industrial and military heritage in which interest in 20th century remains includes increasingly recent facilities.
- Areas of undisturbed ground are likely to exist within previous developments, and assumptions about levels of previous disturbance can be erroneous.
- Significant effects can occur off-site as well as on-site, including issues of setting, construction requirements and indirect effects (e.g. the intrusion of traffic in historic places – which could either be new or extending existing effects).
- There are numerous reasons why archaeological remains could be present, even where there is no record of them.

7.3.21 In principle only rarely can cultural heritage be scoped out, for example, in the middle of a quarry. The original land surface needs to have been destroyed totally and the evidence for this proven. Even where the development results in no ground intrusion, issues of compaction/changes in water tables etc.. may still need to be considered.

7.3.22 There are various ways in which the quality of understanding of the nature of development proposals in relation to the cultural heritage is evident from ESs or their scoping studies (where carried out). In some cases these relationships have been relatively systematically formulated (e.g. through tabulation or explicit discussion of how different elements of the works could affect the heritage). This is rare, and even if such tabulation exists, there is no guarantee that it covers all the ways in which a development can directly, indirectly, permanently, temporarily or cumulatively affect the cultural heritage.

7.3.23 Some shortcomings of cultural heritage input to ESs (and their outcomes) can be attributed to a failure to appreciate fully all aspects of the scheme in question. This may in some cases result from general shortcomings of developers and their lead consultants to brief cultural heritage specialists adequately about the full impacts of the scheme and the sorts of secondary effects that could arise. This may well be a systematic failure across all aspects of an ES, as exemplified by the Bridgwater Power Station ES which failed to address the indirect effects associated with cultivation of plants suitable for the bio-fuels needed for the power station.

7.3.24 However, this type of shortcoming may equally be due to the failure of the specialists to analyse the design information they are provided with, or to be sufficiently inquisitive to seek information about possible effects that might arise. There is also a lack of training in interpretation of complex development plans and proposals.

7.3.25 One of the conclusions of a seminar of Spanish archaeologists on cultural heritage practice for EIAs (Arce Ruiz 2004) was that the first key task in any assessment should be to consider, and preferably analyse in some detail, what all the potential effects of the development might be, and how large an area they could affect. This is not usual current practice in the UK, but it is exemplified by cases such as the CTRL and Walpole landfill site where inventories of impacts

were developed. These explained not just the types of impact to be encountered, but also their sources i.e. the activities and permanent elements of the proposals that would give rise to these impacts at different stages of the project's development.

7.3.26 Ideally this type of analysis should be part of the scoping process, not least because it may help to define the area over which effects could occur.

7.4 Cultural Heritage Baseline (Figures 7.4a-h)

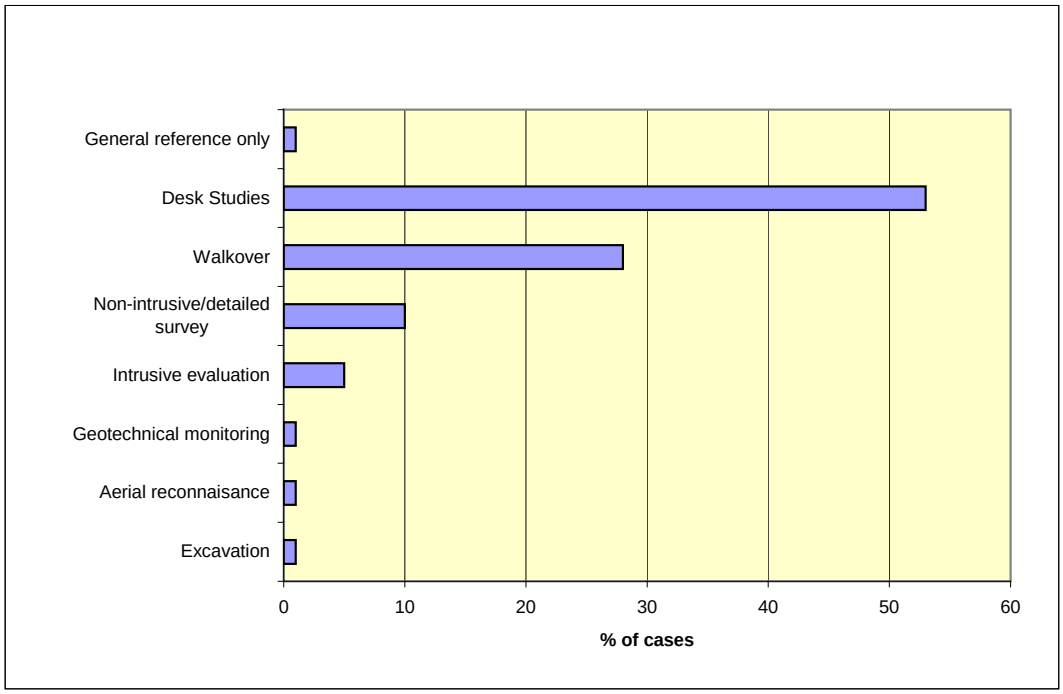
7.4.1 Figure 6.2 gives a broad overview of how the cultural heritage baseline has been covered in ESs, in terms of different aspects of the historic environment and broad levels of coverage. Figure 7.4a provides a basic breakdown of different types of data collection and survey used and Figure 7.4c summarises the incidence of multiple strands of baseline survey. A more detailed breakdown of sources used in the preparation of baseline desk studies is provided in Figure 7.4b.

Coverage of Archaeology and Palaeo-environmental deposits

7.4.2 Archaeological remains are covered in almost 80% of cases, with three-quarters of these looking at them in detail (Figure 6.2). Nearly 30% of ESs include palaeo-environmental issues.

7.4.3 Most surveys (79%) include a desk study and at least 40% a walkover (Figure 7.4a), but archaeological walkover results are very seldom reported in any explicit way. Rare examples are the detailed sketch mapping and gazetteer for Hope Shale and Limestone Quarry in the Peak District and detailed sketch mapping of the area of Cobham Park affected by the CTRL.

Figure 7.4a: Different Types of Baseline Survey



7.4.4 Only a small proportion of cases commission non-intrusive surveys (normally field walking and geophysical survey and occasionally measured earthwork survey – mainly in upland areas). No cases of the use of ground penetrating radar were noted. At least two cases, however, were looked at where the use of radar might have been justified:

- St Mildred's Tannery on the site of part of Canterbury's City wall and major Roman and medieval town
- the very extensive Eagle Centre development on the edge of the centre of Derby, potentially affecting part of the area of a putative medieval castle and some tenements.

7.4.5 Within the cases reviewed, intrusive evaluation is rarely commissioned for the ES prior to determination, though there are several exceptions and a few cases (such as St Mildred's Tannery, A303) benefited from earlier extensive evaluations.

7.4.6 Again, geo-archaeological or palaeo-environmental sampling is rare, but good examples include the very detailed analyses of palaeo-environmental potential for the Walpole Landfill scheme on the Somerset Levels wetlands.

7.4.7 Although access restrictions and other issues (e.g. confidentiality, ownership, safety) can limit surveys at this stage, the project revealed few instances where this presented real problems for obtaining necessary information. One example where there clearly has been a physical restriction on intrusive evaluation is the Eagle Centre in Derby where standing buildings in use have restricted any pre-demolition survey. Another was a proposed Borrow Pit at Broadfields Farm, Rayne, in Essex where the Foot and Mouth crisis prevented access for fieldwork.

Built Heritage

7.4.8 Coverage of historic buildings and historic areas is less widespread, being found in around 55% of cases examined (Figure 6.2). Only around 20% provide detailed studies, and consideration of historic buildings not listed on the SMR is limited. Built heritage and landscape are often covered separately from archaeology, typically in their own sections or in sections on landscape and visual effects. Coverage of historic elements in these instances is variable and overall less than satisfactory.

7.4.9 Where significant historic building complexes are involved (e.g. garrisons, former mental hospitals, urban complexes such as St Mildred's Tannery) internal and external 'walkover' inspections are usually well reported, often supported by photographic evidence. This is less common where isolated buildings are affected, but a good example is East Hall Farm in Kent. In this case, a detailed inspection by a historic buildings specialist of two listed medieval and later farmhouses not only analysed their surviving fabric and history of development, but also linked this to historical patterns of access and approach which could be taken into account in the design of the surrounding development as well as their refurbishment.

Historic Landscape and Townscape

7.4.10 Only 15% of ESs cover the historic landscape in any detail. It was very noticeable that the only reference to a county Historic Landscape Character mapping that was found was a reference to the Peak District HLC, but in effect it was only used as a shortcut to summarise historic map evidence, not to assess how important the area's character was or whether it would be significantly affected.

7.4.11 No case was found that matched the extent to which historic landscape character had been analysed at Shinfield – or influenced decision-making to a comparable extent (see Appendix 8). Some general landscape and townscape assessments incorporated relatively strong historic elements, but were not heritage-led even where historic buildings were predominant characteristics, as in the cases of Shoebury and Colchester Garrisons.

7.4.12 Coverage of historic hedgerows is very low in the ESs reviewed, occurring in only 7% of cases, and very few of these systematically assessed them against the criteria of historic importance set out in the Hedgerow Regulations (SI 1997 No 1160).

7.4.13 In terms of designed landscapes, the ES for Leybourne Grange represents the fullest assessment seen and aspects of this are discussed in more detail in Chapter 8.

7.4.14 Of the ESs reviewed 12% make some reference to townscape issues (including the characters of built rural settlements) but less than 5% in any detail. Very few references were found to urban surveys and Conservation Area appraisals, but this may well reflect a dearth of such documents covering the areas concerned as much as a failure to consider them.

People as Receptors

7.4.15 Only 3% of ESs explicitly cover people as cultural heritage 'receptors,' and all of them do so in only a very limited way.

7.4.16 For example, in the CTRL assessment, this was addressed only in terms of the possible benefits of archaeological work for special interest groups (it was considered that visitors to monuments, residents of historic buildings and the amenity of the historic environment for the general public or local communities were in effect covered by considering issues of setting and intrusion). For the A303 Stonehenge ES and a number of other cases, visitors to monuments were explicitly considered as cultural heritage 'receptors'.

7.4.17 The rationale for including people as baseline 'receptors' is that it can provide a clearer, and relatively fresh light on how the historic environment is relevant to people, as illustrated in Text Box 7 below.

Text Box 7: The rationale for including people as cultural heritage 'receptors'

- Reflects the basic EIA Directive objective to improve 'quality of life'
- Raises the issue of how 'significance' is to be judged by asking the question 'significant to whom?'
- Provides a specific link between a development and its indirect effects such as dereliction, change in use of historic buildings, changes in traffic intrusion etc. which relate to people's reaction to development rather than its direct impact.
- Provides a context for making judgements about amenity and sense of place and community heritage issues
- Provides a basis for assessing effects in relation to 'amenity' and tourism
- Ensures that aesthetic and spiritual as well as academic values are addressed
- Raises issues to be considered in delivery of mitigation to serve the public interest, both in terms of design and dissemination of results of recording action.

Sources of information

7.4.18 Figure 7.4b provides a more detailed breakdown of the sources of evidence used in desk studies and Figure 7.4a shows the use of types of non-intrusive survey and intrusive evaluation. These provide no particular surprises; for example, historic maps and publications are most commonly used to enhance basic records in desk studies, while a range of non-intrusive surveys and intrusive evaluation methods are applied to enhance desk studies and walkover surveys.

7.4.19 ESs normally include a desk study and often some sort of walk-over survey, though as indicated above, there is significant variation in what this entails, especially in relation to historic buildings and historic landscape. As indicated above (Figure 7.4c), only a small proportion of ESs make use of more than two methods of baseline study (typically a desk study and walkover survey or site inspection).

Figure 7.4b: Baseline Studies: Sources of Information

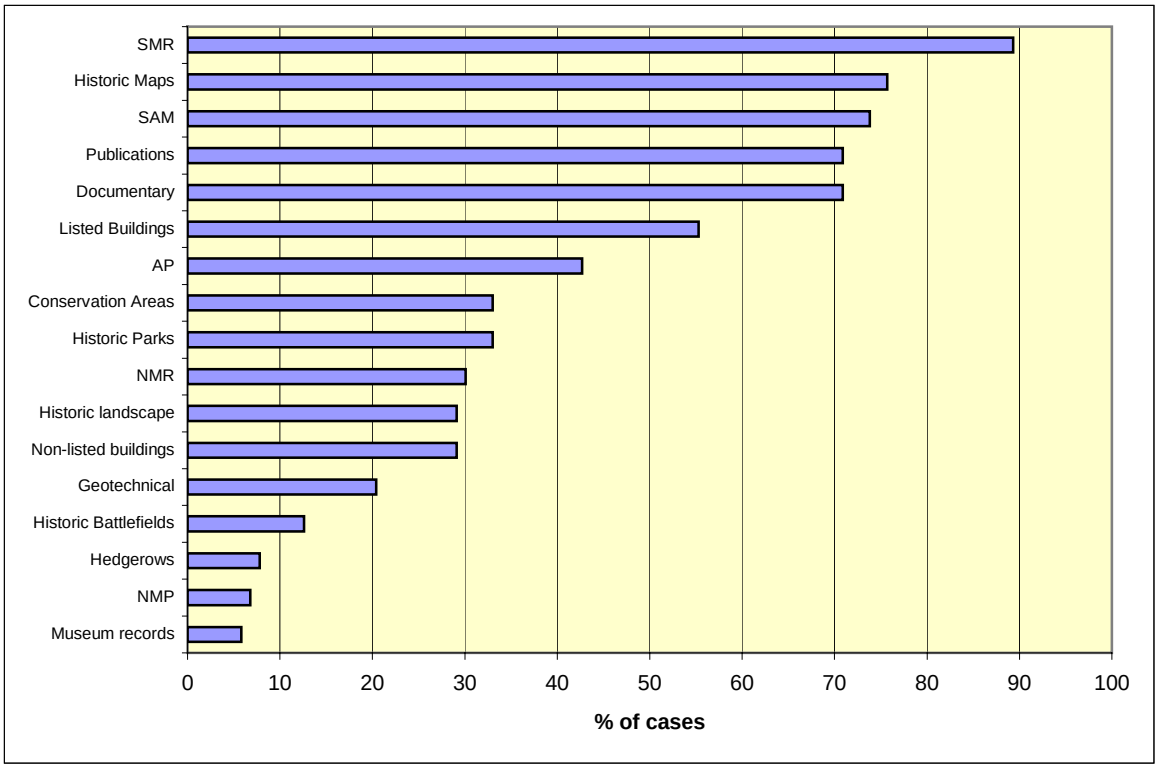
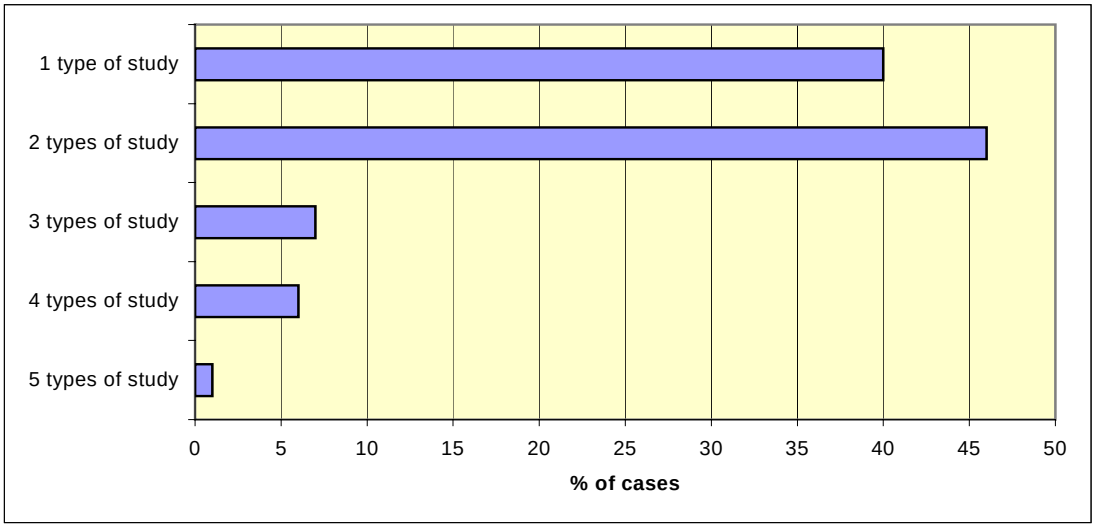


Figure 7.4c: Cases Involving Multiple Types of Baseline Survey



7.4.20 In a small number of cases, 'desk' studies for the ES did no more than quote the curator's initial scoping feedback based on the Historic Environment Record, which was accompanied by advice (not quoted) that a proper desk study was required. Examples of this, such as the Shakespeare landfill site and East Hall Farm (both Kent), do no more than regurgitate what decision-makers already know, and when coupled with no impact assessment (as in the case of Shakespeare Landfill proposals) are of no use at all.

Importance of Cultural Heritage Resources

7.4.21 Figures 7.4d and e give a breakdown of how the importance of the cultural heritage elements are dealt with. A 'Nil' category covers projects for which no relevant section of the ES was seen.

Figure 7.4d: Baseline Studies: Importance Criteria

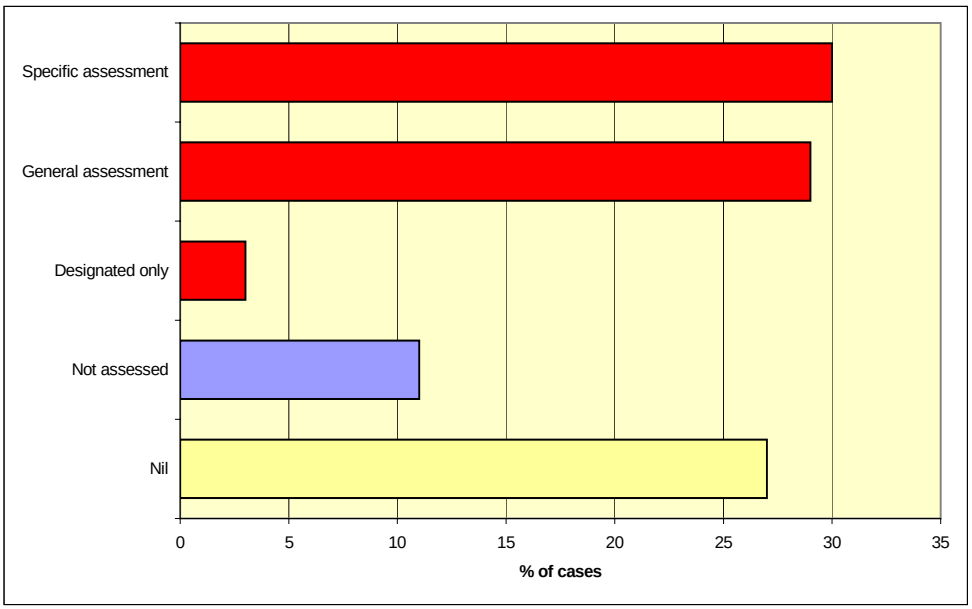
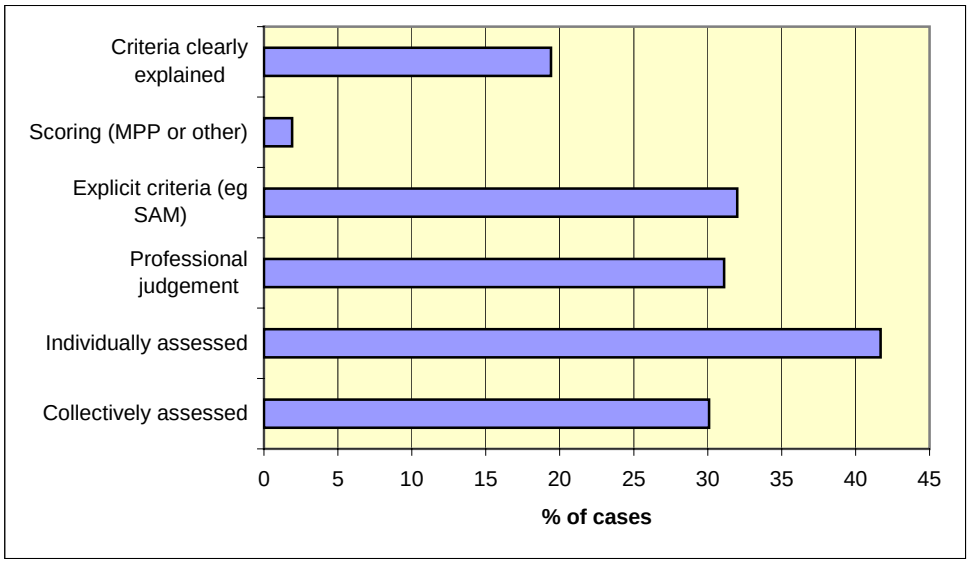


Figure 7.4e: Assessment of Importance



7.4.22 In most cases only very general assessments of importance are made. Specific criteria are quoted in 32 cases (30%), and a range of ways of grading and scoring are evident in a few cases, shown on Figure 7.4e. Criteria used, or adapted, are most commonly based on scheduling and/or listing criteria, but there are some examples where more specific sets of guidance have been used and limitations considered. Examples where specific criteria were

relevant include:

- The *Coombe Down Mines* project where specific national criteria developed though the Monuments Protection Programme (MPP) for historic mining sites were used;
- *Woodville Woodlands* (Derbyshire/Leicestershire), where, building on a good baseline study using historic maps, use of company records and a thorough site walkover with good photographs, the importance of the industrial features was assessed in detail. The MPP on clay industries concentrates on brick-making and therefore does not present a good basis for assessing the importance of features related to pipe-making.

7.4.23 Some assessments appear to have adopted the Highways Agency's *Design Manual for Roads and Bridges* Volume 11 (1993) guidance. Unlike most other cases that adopt this type of grading approach, the A303 assessment sought to relate this type of grading to the system of scoring used by EH for judging the importance of sites and structures potentially eligible for scheduling (the 'MIV or Monument Interest Value Score' in the table below).

Table 7.A A303 Stonehenge Assessment Grading of Importance of Resource

MIV Score	Grading	DMRB Grades of Importance of Resource
Above 35	Very Important	Sites of national importance, including Scheduled Monuments, or monuments in the process of being scheduled or that otherwise meet scheduling criteria, all Listed Buildings Grades I and II*, and Registered Historic Parks and Gardens Grades I and II*.
31 –35	Important	Sites of importance within a regional or county context, including Conservation Areas, Grade II Listed Buildings and Registered Historic Parks and Gardens Grade II.
21 – 30	Moderately Important	Sites of importance within a District context.
10 – 20	Minor Important	Sites of local importance. These sites may have been partially destroyed by past land use, whether by agricultural activity or previous built development.
Less than 10	Not Important	Sites that are so badly damaged that too little now remains to justify their inclusion in a higher grade.

7.4.24 The *Drointon to Sutton-on-the-Hill* assessment adopted a rather different approach to grading, much more clearly related to the status of features in policy terms. Thus their Grade A features were all those legally protected, and Grade B those of national or regional importance (giving brief examples) that are not actually legally protected. Both these grades were assigned a policy-related mitigation category of 'to be avoided'. For Grade C (locally important) features the policy context was given as 'avoidance recommended'.

Commentary

7.4.25 There is noticeable variation in cases that use formal grading systems and seek to assign combined levels of significance across different types of cultural heritage asset as to what status to give to Grade II Listed Buildings and Conservation Areas. The DMRB guidance (Highways Agency, 1993) appears to reinforce a view that these should be treated as regionally important, though this is highly debatable.

7.4.26 The CTRL ES pointed out that while these designations are made under national statute, the Listing Grades are non-statutory and the statutory level of protection is no lower for Grade II buildings than for others. The idea that all Conservation Areas are of regional or county, rather than national importance is unrealistic where they cover the historic core of major historic cities like Canterbury (cf St Mildred's Tannery) or the Bath World Heritage Site (cf Coombe Down Mines).

7.4.27 A mechanistic approach, uniformly treating Grade II Listed Buildings and Conservation Areas as being less than nationally important, arguably fails to address much broader issues in terms of the national importance of retaining the fabric and character of a wide variety of lower graded and non-designated features to maintain the country's regional diversity and local distinctiveness.

7.4.28 A distinct merit of the Drointon to Sutton-on-the-Hill approach is that in seeking to avoid and preserve assets of county or regional as well as national significance, it linked importance to design objectives that the type of project could reasonably accommodate.

7.4.29 The rigid adoption of national/regional/local scales of importance reflects much broader issues of cultural heritage value in relation to types and Grades of designation bound up in the current Government review of heritage protection. Some organisations fear potential changes will merely embed further the rather limited, mechanistic concepts of value based on whether designation consents are dealt with at national or local level.

7.4.30 No examples reviewed offered any serious, systematic alternatives to this well-established, but ultimately somewhat limited, value system of geographical scales of importance (international, national, regional/county local). However the broad characterisation methods used in the Shinfield case, and the planning inquiry Inspector's comments based on such characterisation, do point to an approach that is much more in tune with concepts of sustainability, community value and limits of acceptable change (see Text Box 8 below and Appendix 8**)**

Text Box 8: Planning Inspector's comments on local heritage values in the south of Reading housing development case

- The Grazeley settlement pattern of small isolated hamlets, farms and dwellings set in a relatively tranquil landscape retains a character of pre-twentieth century England. It is a character that is worth preserving in my view. The proposals to superimpose a new settlement of the size contemplated would be quite incongruous and would, in my view, destroy any remaining historic identity the landscape has. I agree with those who argue that even with the burden of dealing with accommodating a strategic housing requirement of the size faced by Wokingham District, planning policies should be used to protect the remaining areas of historic settlement pattern, maintaining regional diversity and local distinctiveness, rather than reinforcing the trend that has led to the destruction of too much of that pattern.

7.4.31 In addition, no examples were found that used the *Quality of Life Assessment* approach advocated by the Countryside Agency supported by other environmental agencies (including English Heritage) which seeks to develop a much more integrated approach to assessing environmental value (see Text Box 9 below).

Text Box 9: The Countryside Agency's summary of the *Quality of Life Assessment* approach

'Managing environmental, social and economic benefits Quality of Life Assessment is a tool for maximising environmental, economic and social benefits as part of any land-use planning or management decision. Promoted by the four agencies (Countryside Agency, English Heritage, English Nature and the Environment Agency), it reflects the Government's integrated approach to sustainable development. The Quality of Life Assessment Approach:

- stands back from areas or features and considers the **benefits** that they provide for human well-being ("what matters and why?")
- provides a **systematic** and **transparent** evaluation framework for **all scales of decision-making**

- **integrates environmental, social and economic issues**
- emphasizes **improvement of quality of life** rather than acceptance of the status quo
- **values the commonplace** as well as the unusual and rare
- puts professional/expert judgements alongside the concerns of local people
- **works with other tools and processes** including Environmental Impact Assessment, Sustainability Appraisal, Community Planning and Best Value.'

Baseline uncertainty and prediction of potential

7.4.32 Figures 7.4f and 7.4g. show the approaches of the ESs reviewed towards issues of uncertainty and the prediction of potential of unidentified archaeology or other cultural heritage elements. The intrinsic uncertainty that surrounds the character and extent of the buried archaeological heritage is acknowledged in 92% of the ESs examined. It is much rarer for explicit issues of uncertainty to be addressed (38% of ESs) and in only 10% of cases can this be regarded as systematic.

Figure 7.4f: Prediction of Uncertainty

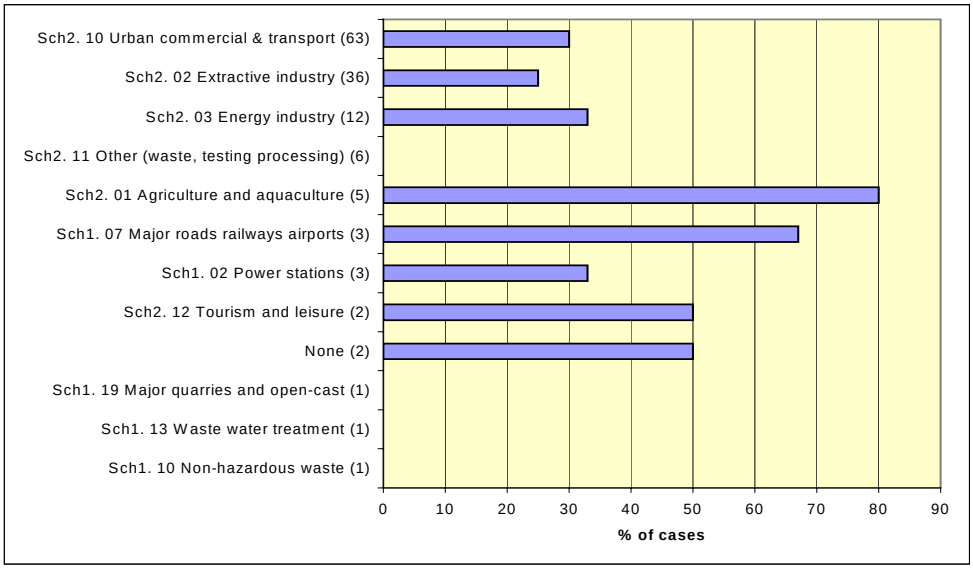
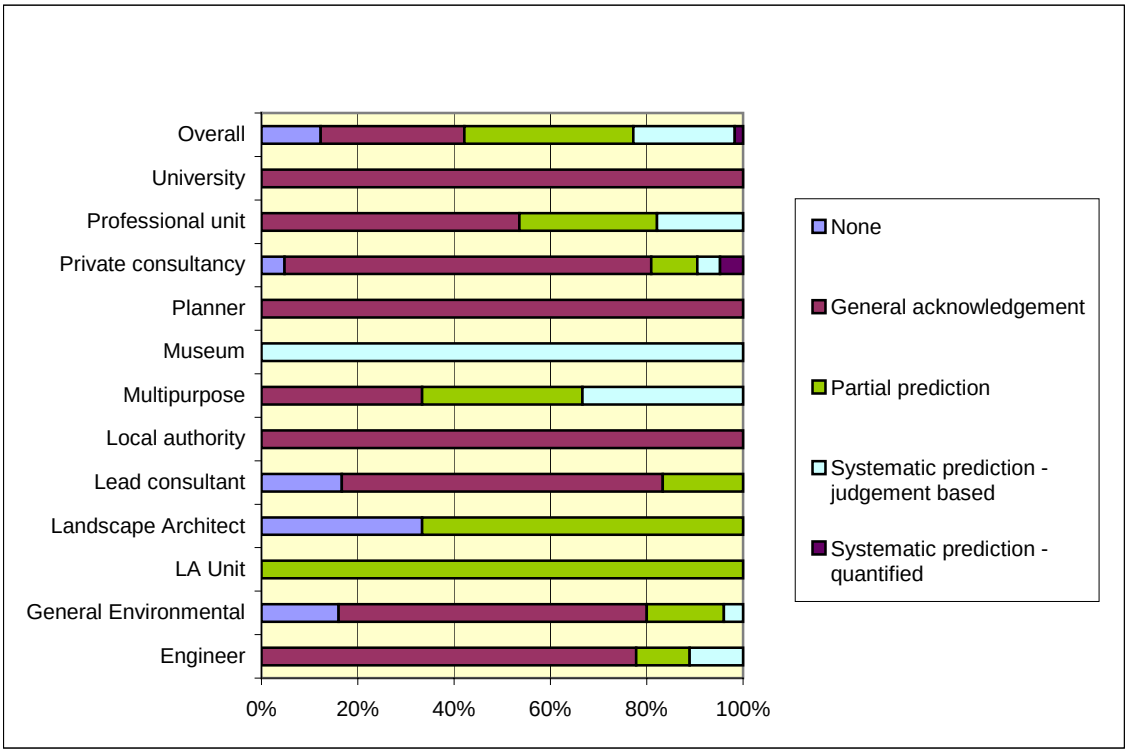


Figure 7.4g: Prediction of Risk by Type of HE Specialist



7.4.33 These approaches often include some consideration of basic topographical and geological conditions, especially the incidence of alluvial and colluvial deposits. Consideration of broader influences of topography and landform on the location of archaeological resources, and hence potential, is rarer (e.g. CTRL) and not systematised. This is partly because the relationship between apparent topographical patterns of past preferential landuse and proximity to known resources is intimately bound up with complex issues of the survival and detectability of archaeological remains.

7.4.34 In the cases of a number of large-scale development proposals, the ESs have included various forms of deposit modelling using archaeological and/or geotechnical field data. There are a number of specific examples where issues of risk assessment and uncertainty have been addressed more explicitly in terms of predictions of deposit survival, extent, and research potential/importance. Examples of cases where deposit modelling was used are discussed in Text Box 10 below.

Text Box 10: Examples of deposit surveys and predictive modelling

Deposit surveys:

- The use of geo-archaeological surveys on some parts of the *CTRL* in Kent
- Combined geotechnical and archaeological data used to model archaeological survival and relationships to hydrology and contamination at *St Mildred's Tannery Canterbury*
- Detailed palaeo-environmental assessments for the *Walpole landfill* proposals ES.

Predictive modelling:

- Area-specific assessment of archaeological potential (*CTRL*);
- Mapping of areas of previous disturbance from historic maps (*London Gateway; Stansted*

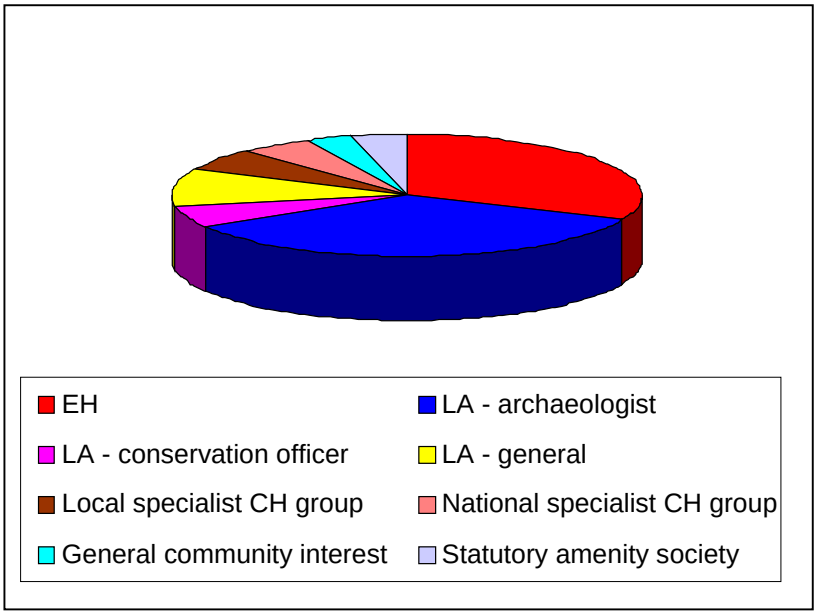
15 Million+; East Hall Farm)
- Zoning and grading of archaeological deposit survival (*Stansted Airport 15 Million+; Heathrow Terminal 5 post ES; Ashford, Temple and Rowcroft Barracks*)
- Zoning and grading of both archaeological survival and predicted significance/potential (*Colchester Garrison; Shoebury Garrison; St Mildred's Tannery*).

7.4.35 While the results of the Planarch 1 study (Hey and Lacey 2001) have clearly influenced levels of fieldwork sampling needed to clarify potential, the potential to use these results in reverse, to give a broad statistical confidence rating to predictions based on evaluation sampling, has not been attempted (though this was raised as an issue at the A303 Stonehenge Inquiry).

Baseline Consultation

7.4.36 Figure 7.4h gives the incidence (as revealed by the ESs for all cases reviewed) of consultation with relevant authorities on various stages of the EIA process, including the cultural heritage baseline. Although consultation was recorded on both methods and results, this did not always mean that these were fully agreed by the two sides as a result of the discussions. Developers did not always act upon the advice received. Approximately 33% of the ESs recorded some formal consultation, but only 12% recorded agreement on methods and 17% agreement on results for the baseline. These figures are therefore more significant in indicating the broad incidence of consultation rather than its quality and effectiveness.

Figure 7.4h: Formal Consultation (based on information in ESs)



7.4.37 More detailed review of cases that have gone through to development, and discussions with curators have shown that consultation is very variable. References in ESs to consultation often mean that they have consulted bodies at some stage to acquire baseline data, rather than seeking advice, comments or agreement on how baseline data should be developed.

7.5 Alternatives

7.5.1 Although a majority of the ESs reviewed (60 cases, 61%) dealt with alternatives, explicit coverage of the cultural heritage considerations is rarely reported (only 12 cases, 13%), even if

they did form part of the process of assessment (as with the CTRL). A few particular cases were encountered in the detailed review providing examples of both good and poor practice in this area, as shown in Text Box 11 below.

7.5.2 The Highways Agency's *Design Manual for Roads and Bridges* Volume 11 (1993) provides explicit guidance on how alternative route options should be considered across all aspects of the environment, and the *A2 Pepperhill to Cobham* assessment exemplifies the process. In this case the selected route was that which was worst for cultural heritage, as its consideration was outweighed by distance from residential areas and level of traffic disruption.

Text Box 11: Examples of approaches to considering alternatives

- The ES for the *Drointon to Sutton-on-the-Hill pipeline* gives a clear account of the consideration of alternative route corridors for development of a long, narrow feature, the route selection process within the preferred corridor, and the refinement of the final route, all of which took account of cultural heritage constraints. This was based on clear criteria for avoiding impacts on nationally and regionally/locally important cultural heritage assets of all types, taking into account potential for restoration (e.g. below ground pipeline crossing an area of parkland but avoiding trees).
- The ES for the *Walpole landfill site* in Somerset not only gives a very full account of how alternative sites were considered, but also the means by which the very complex set of environmental, economic and social issues were weighed up using a weighted scoring methodology [see Appendix 9]
- Another good example of consideration of alternatives is the case of *Leybourne Grange, Kent*, a listed 19th-century country house and its outbuildings and parkland that had been developed as a mental hospital with numerous additional buildings in the 1930s. In this case the cultural heritage assessment considered the likely effects of different potential new uses (residential, nursing home, offices, hotel) and a do-nothing scenario.
- The ES for a new NHS facility immediately adjacent to a scheduled prehistoric fort at *Fossetts Farm, Southend* is also unusual in providing detailed evidence of how alternatives were considered, reproducing the reports prepared in the course of site selection. The site had been removed from designation as green belt as a result of a High Court ruling which effectively made it very ripe for development. An initial site selection report covered 17 possible sites, looking in detail at four, and identified the principal constraints and benefits for each. In the case of Fossetts Farm these included the Local Plan Policy in line with PPG16 (including the presumption in favour of preserving nationally important monuments and their settings) though it also stated that the constraint could be dealt with by recording action. A further report (prepared by a different planning consultant) to inform the final choice between two shortlisted sites (the other one a derelict brickworks) only alluded to the archaeological constraint without quoting the local and national policy, merely restating the assumption that any physical remains could be dealt with by recording action. In contrast, more detailed discussions were presented of the policies and issues for ecology (bats versus badgers) and landscape (no national or local designations on either site). In effect the archaeological constraint was noted but portrayed, before being assessed as non-significant despite there being a *prima facie* likelihood of the development being contrary to national and local policy.

Commentary

7.5.3 The regulatory requirement for ESs to cover what alternatives have been considered is stated in very general terms, only requiring an explanation of how the main environmental factors influencing the choice were evaluated. In this context, it is not surprising that discussion of cultural heritage factors is so rare. In complying with the regulations it is reasonable that the cultural heritage should only be alluded to where it is part-and-parcel of the selection process (as with the Walpole Landfill case) or where the cultural heritage is a key environmental factor (as with Leybourne Grange).

7.5.4 The Fossetts Farm case is interesting in illustrating a mismatch in terms of weight given to different environmental factors, which may reflect some political considerations in determining the choice, without positively ignoring the issue. It contrasts vividly with the patently even-handed approach displayed by the Walpole and Drointon to Sutton-on-the-Hill cases, and the positive recognition of comparable national policy issues displayed by Leybourne Grange.

7.5.5 The Shinfield case is highly unusual in reflecting the potential importance of historic landscape character (and to a lesser extent issues of setting) as one of several factors that led to rejection of three major proposals after a year-long public inquiry because brownfield alternatives had not been considered.

7.5.6 Taken together, these few cases illustrate how site selection, different development scenarios (and more rarely choices in processes or operation) can be major factors that influence how significantly proposals will affect the cultural heritage. Both the Shinfield/Grazely and the Fossetts Farm cases illustrate how strategic development plan decisions about allocating greenfield land for development can lead to flawed consideration of alternatives by local authorities bent on development.

7.5.7 In the case of Fossetts Farm it is perhaps ironic that this was apparent because of the highly exceptional thoroughness of the ES in explaining how alternatives were considered, but unlike Shinfield/Grazeley the local authority's decision was not challenged through a public inquiry.

7.5.8 The outcome of the Shinfield/Grazeley inquiry, overturning the local authority's decision to allow development at Grazeley (as well as rejecting the other two alternative sites within the area earmarked for housing development by the structure plan) is of particular interest for the weight attached by the Inspector to the local character of the historic landscape and settlement pattern.

7.6 Do-nothing Scenarios

7.6.1 Although a number of ESs reviewed (18%) alluded to a do-nothing scenario, few dealt with this systematically enough to weigh up the beneficial or adverse effects of development against the do-nothing scenario, or their relative significance. It seems that most of the time there is simply an assumption that do-nothing in effect means no change as compared to the effects that may arise from development.

7.6.2 Where the do-nothing scenario was covered, the commonest issues noted were the current condition and vulnerability of historic buildings and the ongoing effects of arable cultivation. Examples are discussed in Text Box 12 below.

7.6.3 The consideration of the do-nothing scenario for proposals involving complexes of historic buildings is generally much more consistent than for other schemes. The ESs for all the main cases involving regeneration of historic building complexes (including three army barracks/garrisons, a former tannery and two former mental hospitals) involved internal inspection (and usually photography) of each building. These almost invariably included comments on their current condition, state of occupancy and use in relation to potential ongoing

dereliction or options for reuse.

7.6.4 Several of the ESs reviewed for the Peak District (and a few elsewhere) are for ROMPs (Reviews of Old Minerals Permissions). In these cases old permissions are 'live' until new consent conditions and agreements are imposed as a result of the review process, including EIAs. In a number of the cases reviewed the benefits of not proceeding with some permitted operations or areas of extraction were identified. No cases, however, were found of ESs for ROMPs where there had been a formal, systematic analysis of all the possible 'do-nothing' impacts on the cultural heritage of allowing old permissions to run unchecked, as compared with the proposed adjustments and mitigation of the scheme.

7.6.5 The inclusion of ongoing plough damage to archaeological remains as a do-nothing scenario is perfectly legitimate in principle but in none of the cases reviewed was this remotely demonstrated from a technical point of view (Oxford Archaeology 2002, *Management of Archaeological Sites in Arable Landscapes*).

Text Box 12: Examples of assessment of do-nothing scenarios

- *Leybourne Grange:* A do-nothing scenario of further loss of historic coherence of parkland landscape and setting of historic buildings due to lapse of usage potentially leading to selling off and piecemeal development of existing buildings was compared with various alternative options for more comprehensive redevelopment.
- *St Mildred's Tannery:* The do-nothing scenario considered was of no disturbance to nationally important archaeological deposits, together with the closure of a historically significant, but no longer viable and environmentally unacceptable urban tannery. This raised the prospect of a combination of brownfield dereliction, including increasing problems of retaining historic Conservation Area buildings, and continued visual intrusion on the character of the historic city and cathedral. Interestingly, the initial scheme for doing something was rejected because amongst other things it would have directly resulted in the loss of historic buildings and would not have improved sufficiently on other do-nothing outcomes.
- *Coombe Down Mines:* The benchmark case involved a do-nothing scenario of ongoing subsidence threatening the physical fabric of an overlying Conservation Area and several Listed Buildings, which the project was designed to prevent. Although the ES clearly set out this problem, the cultural heritage section paid much more attention to the adverse effects of in-filling the historic mines than the benefits of preventing the long-term do-nothing scenario of part of the built heritage collapsing into them.
- *Longstone Edge in Peak District National Park:* The ES highlighted the potential benefits, compared with the do-nothing scenario, of restricting mining of fluorspar beneath a number of Scheduled Monuments and other sites, and of much improved restoration proposals for the setting of a number of monuments. However, it did not identify the full extent of archaeological remains that might be affected or the full range of potential impacts of the do-nothing scenario. Prior to determination further baseline work and assessment based on a walkover survey was requested by the National Park's archaeological officer. This identified various areas containing remains, and the need for a range of mitigation measures to protect and/or record them was agreed in principle. One area where additional archaeological remains were identified, however, was subsequently worked without any archaeological mitigation – as was permitted by the existing consent – before the new consent and conditions were imposed.
- *Fordsham Hall Farm Woodland:* Archaeological damage was one of few adverse effects noted in the scheme and the mitigation was for non-intrusive survey to identify areas of

potential, then to avoid planting over them, and to take them out of cultivation. The claim that the development would be better than the do-nothing scenario for archaeological remains was based on removing the potential for plough-damage. It lacked, however, consideration of possible effects of damage caused by felling or by self-sown trees within the mitigated areas.

- *Fingrinhoe, Essex:* A reference to a do-nothing scenario of ongoing plough damage was made in the ES, but the subsequent evaluation report discovered a late Iron Age and Roman site (including undamaged cremation urns). Since material of this date-range was NOT reflected in disturbed ploughsoil artefacts recovered in fieldwalking, the claim of ongoing plough damage was unsubstantiated as ploughing appears not to have extended deep enough to disturb archaeological remains and bring them to the surface.

Commentary

7.6.6 Because the cultural heritage is a fundamentally non-renewable resource that is sensitive to any change, there is a general tendency to place most emphasis on adverse effects. In doing so there is a common assumption, sometimes quite justified, that the do-nothing scenario amounts to no more than the absence of adverse effects.

7.6.7 Since the changes wrought by development (whether adverse or beneficial) usually tend to be much greater than doing nothing, the common implied assumption of a static do-nothing baseline in cultural heritage EIA studies can in many cases be a reasonable basis from which to make assessments. As indicated above, however, there can be particular circumstances where such assumptions are not valid, including cases where:

- The current situation is demonstrably uncontrolled and not static; demonstrable and significant change is already taking place
- Circumstances of usage and/or ownership of the area have already changed so that a steady state of gradual or no change can no longer be assumed
- Specific, significantly damaging development or other activities are already permitted and will continue unchecked.

7.6.8 In these circumstances (and they may affect a wide range of potential, direct, indirect and cumulative effects) assessing the do-nothing scenario can be important in determining the acceptability of the development and how far it may have adverse or beneficial effects on the cultural heritage.

7.6.9 The assessment of do-nothing scenarios for historic buildings appears to be reasonably well established, at least in principle, and is often the subject of inspection surveys. While this is fairly consistent in terms of identifying ongoing physical neglect and deterioration, there remain issues about what assumptions should be made about issues of ownership and economic viability, including whether a literally do-nothing scenario is in fact likely.

7.6.10 In ROMP cases, the whole basis of the procedures is to impose some control and mitigation on impacts that would otherwise occur as a result of old consents that had inadequate environmental input. ROMPS are thus a *prima facie* type of EIA where effective consideration of the do-nothing scenario not only should be an essential element of the ES, but also could normally be expected to provide the basis for identifying significant beneficial effects as compared with the existing inadequate environmental controls on extant permissions. In the particular case of Longstone Edge outlined above, both the absence of a full, systematic analysis of the do-nothing scenario and the length of time taken to resolve the whole case (from submission of the ES in November 2000 to the works carried out under the existing consent in March 2004) appear to have contributed to the failure of the system to prevent damage.

7.6.11 A number of mineral extraction cases (such as Shardlow in Derbyshire) have gone as far as to claim that a *beneficial* effect of quarrying a site would be to enable the recording of archaeological remains that are to be totally destroyed by quarrying, compared with a do-nothing scenario of them gradually being destroyed by ploughing with no record.

7.6.12 Where there is no technical consideration of the issue, actual evidence of ongoing damage or consideration of do-something agri-environment options, these arguments are superficially plausible, but often unjustified. This type of claim is especially spurious where trench evaluations were carried out, but with no attempt to assess whether or not plough damage was actually occurring.

7.6.13 The benefits of preventing otherwise significant adverse effects of doing nothing can be a very real issue, but do need to be substantiated properly; paying lip-service to issues without demonstrating their significance may be positively misleading.

7.7 Assessment of Effects (Figures 7.7a-d)

7.7.1 Figure 7.7a shows the range of types of effect assessed, of which physical loss, and damage and intrusion on the setting of assets, are by far the commonest. Other types of effect are much less commonly covered, for example regeneration and air pollution. This is at least partly because they genuinely arise less frequently. Figure 7.7b shows the incidence of cases where more than one type of effect has been considered.

7.7.2 Some types of effect that relate to the overall coherence of cultural heritage assets or the historic character and amenity of areas (like severance and 'islanding', and effects on people as 'receptors'), which were defined and considered in the CTRL study in the early 1990s, have not been adopted more widely as kinds of effect that should normally be considered.

7.7.3 The idea of significant effects being represented by a combination of the importance of heritage resources and the extent to which they will be affected by the development is implicit in most assessments, and sometimes explicitly stated – but only occasionally fully explained.

Figure 7.7a: Different Types of Effects Considered

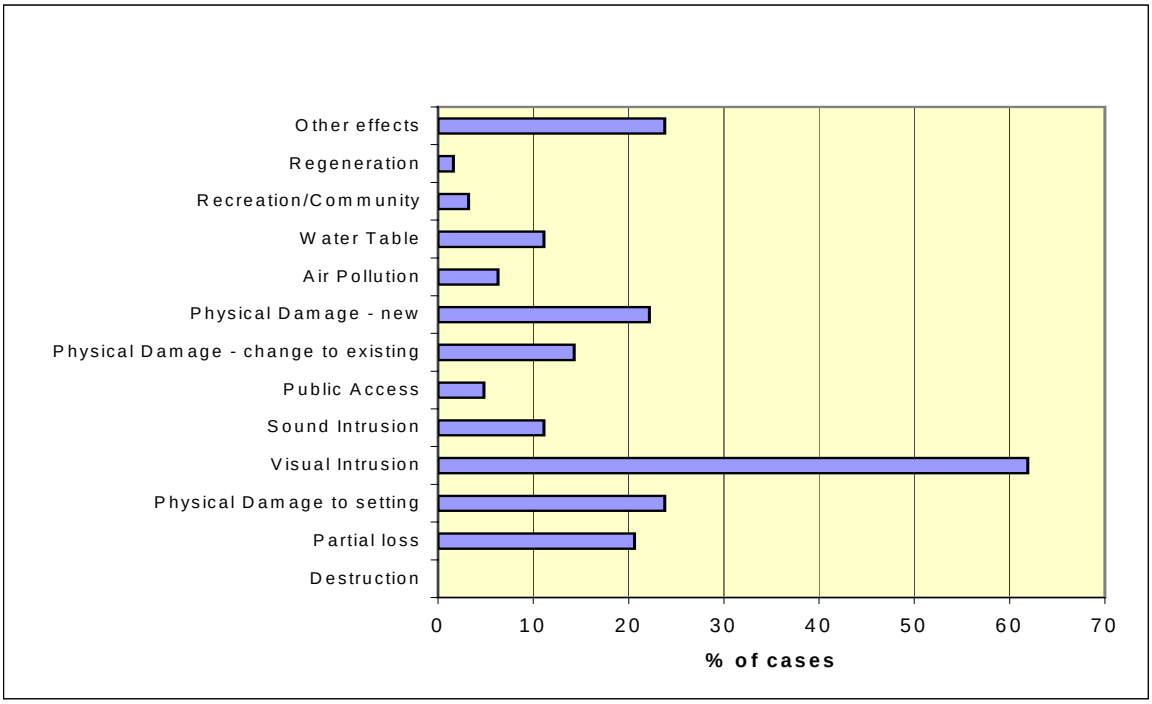
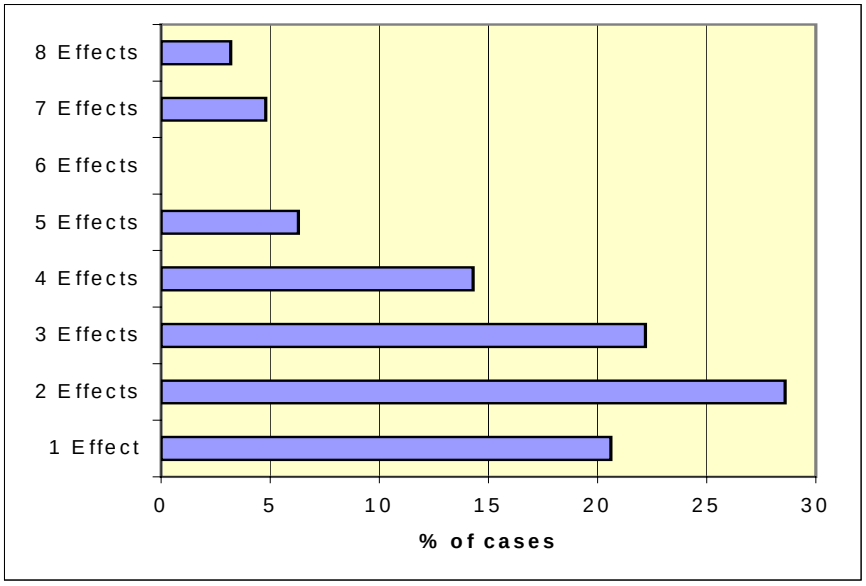


Figure 7.7b: Cases Considering Multiple Types of Effect



7.7.4 However, the acknowledgement of uncertainty and the possibility that unidentified archaeological remains could be affected is almost universally stated. It is evident that such uncertainty almost always arises from shortcomings in the level of baseline information about resources that will be affected, which is commonly addressed in relation to below ground archaeological remains (and palaeo-environmental deposits where they are considered). This reflects the very low proportion of cases that have involved intrusive evaluation, and in turn leads to general proposals for further investigations being the commonest mitigation strategy.

Destruction and damage

7.7.5 The loss, and very often potential loss, of archaeological sites (and less commonly palaeo-environmental deposits) is much the most common type of effect assessed. In most instances the aspects of developments that result in this destruction or damage are fairly obvious, and most ESs (88%) cover such effects. Mostly these include impacts arising both from permanent landtake for the development (including principal subsidiary features such as access roads) and permanent loss or damage during temporary use of land for construction activities.

7.7.6 The nature of such loss or damage almost always refers to physical disturbance; issues such as compaction damage and severance of sites or areas of historic interest are not necessarily very often relevant but are certainly very seldom considered.

7.7.7 The risk of accidental damage to features during construction is sometimes considered, though far from routinely. For example, this issue was raised as a matter to be resolved prior to determination in relation to both scheduled and non-scheduled sites in a number of ROMP cases such as Longridge Edge and Hale Limestone and Shale Quarry in the Peak District National Park as described above (Section 7.3, Text Box 5).

7.7.8 Assessment of loss of, or damage to, industrial and military remains tends to represent an overlap between treatment of archaeological sites and the built heritage, probably as a result of the more comprehensive coverage of this resource in archaeological records. Coverage of these issues is patchy in ESs, and is an area where curators quite often seek more information, including assessment of the significance of losses.

7.7.9 Relatively few of the schemes reviewed involved the demolition of other historic buildings and structures (at least as far as designated parts of the built heritage are concerned). The main cases where assessment of the loss of the built heritage was an important issue include CTRL, the Colchester, Shoebury and Ashford Garrison sites, St Mildred's Tannery, Colchester Hospital and Leybourne Grange. In all these cases, the significance of the loss of both designated and non-designated buildings was assessed (and in the case of the CTRL was seen as a cumulative scheme-wide effect of particular importance).

7.7.10 The refusal of the St Mildred's Tannery scheme, partly on the grounds that the loss of non-listed Conservation Area buildings was not acceptable, is an indication that the significance of the effect had not been properly assessed and appreciated in the EIA process. This appears to have stemmed from the planning design brief not giving the issue sufficient weight (despite the advice of English Heritage), which then fed through into the development of the proposals by the town planners and architects. Although the assessment by the historic buildings consultant identified the loss of non-Listed Buildings contributing to the character of the Conservation Area as a significant effect, and relevant planning policies were quoted, this had not been fed back into the design process.

7.7.11 Apart from Leybourne Grange, which is subject to an inquiry that has not yet reported, the approval of other schemes (subject to conditions) might be taken to indicate that the assessment of the significance of the loss of built heritage (including avoidance of such effects where possible) was broadly correct. However, this does depend significantly, as was recognised by the local authority members in the Tannery case, on issues of flexibility and the capacity of the development area and type of development to allow retention and refurbishment.

7.7.12 Compared with the Tannery, the CTRL effects in terms of overall loss of historic buildings was much more serious, but also much less avoidable and relatively more acceptable given the overall importance of the project.

7.7.13 Issues of damage and loss of fabric arising from refurbishment and conversion of buildings to other uses is very seldom addressed, perhaps mainly because studies seldom look beyond the principle of seeking to keep historic buildings in appropriate use as a broadly beneficial means of retaining them. The Leybourne Grange assessment, which considered in general terms the likely effects of different types of reuse for the key buildings on the site is a very unusual exception. It is far from clear whether the common failure to assess this issue is a serious omission, mainly because the relevant developments where it might be clear are not sufficiently advanced, or cannot readily be monitored without detailed inspection.

7.7.14 None of the cases reviewed affected registered battlefields, and very few involved loss of or damage to Registered Parks and Gardens (see Text Box 13).

Text Box 13: Examples of physical disturbance of historic parkland

- The *CTRL* scheme crossed registered Cobham, Chilston and Sandling Parks, involving impacts of landtake and severance, adding cumulatively to previous impacts of past road and rail schemes. The effects of severance and landtake for an area of non-registered parkland landscape in the Boxley valley were also assessed.
- The *Drointon to Sutton-on-the-Hill* pipeline crossed Sutton Park, but was designed to avoid parkland trees and other features
- The *Leybourne Grange* proposals for housing development in a large area of parkland, included an assessment of what key parts of the parkland would be affected, and in several cases avoided, with opportunities to enhance their management.
- At *Colchester Hospital* the grounds were registered as a historic park and garden during the compilation of the ES and again the physical loss and retention of key aspects were

assessed.

Apart from with the CTRL, a characteristic of these schemes was that there was sufficient flexibility in the original design to avoid the loss of important aspects of the parkland. It was recognised in most of these cases that damage had already been done by previous developments.

7.7.15 The loss of other (much more common) features that contribute to the general historic character of the landscape is much less consistently considered. The very low level of identifying historically significant hedgerows is naturally mirrored in the extent to which impacts upon them were assessed, even when the ecological impacts were considered.

7.7.16 Where the loss (or retention) of significant hedgerows was considered, this was seldom translated into the overall effect on the historic character of the environment. At Stansted 15 Million+ the outline proposals would minimise physical loss of such hedgerows, but the broader cumulative effect on the historic character of converting the fields they define to car parks (as with previous car park expansion proposals) was not assessed.

7.7.17 The Shinfield benchmark case is an unusual example where an attempt was made not only to consider loss of historically important hedgerows but also how significant this was in relation to the overall coherence of historic field patterns and the nature of future uses (e.g. housing, recreational open space, habitat creation). Along with other considerations of the value of the local historic environment (unregistered parkland, broad character of historic settlement patterns not designated as Conservation Areas) this contributed to a refusal of three applications that had not considered brownfield alternatives more carefully (see Text Box 14).

Text Box 14: South of Reading Case - Planning Inspector's comments on historic landscape issues

- With respect to an area of historic fields close to Shinfield: *It is unfortunate that the University's [agricultural] research activities have been allowed to destroy the historic integrity of some of the farms in the area. However, on the eastern edge of the existing settlement, the well-preserved enclosure field system, identified by the Wokingham District Historic Landscape Survey, is a special feature worthy of protection, in my assessment. I consider that the proposals' attempt to preserve this feature by laying out playing fields on part of the field system would be inappropriate and an ineffective way to achieve preservation.*
- With respect to an area of old fields close to Spencers Wood: *Whilst I accept that the proposals could incorporate existing hedgerows and trees, it seems to me obvious that the integrity of the historic landscape there would be destroyed.*
- With respect to parkland associated with Stanbury Park and Highlands at Spencers Wood: *It is true that they are not registered parks or gardens. My view is that the land was laid out and used as parkland certainly by the end of the 19th century. I believe that it is perceived by local residents as an historic feature that is important to the character and appearance of Spencers Wood, even though the parkland has been compromised by existing adjacent development. On that basis, I do not consider that the proposed development of the significant part of the land would be consistent with the general objective of Government guidance and Development Plan policies to retain and enhance features of historic significance.*

7.7.18 No cases were found within the Planarch 2 study area where the loss of broad historic landscape character (as reflected in county-wide historic landscape character mapping or site-specific characterisation) had been assessed.

7.7.19 No cases reviewed fully considered loss of, or changes in, the historic character of more urban contexts (e.g. change of urban character for the Eagle Centre in Derby; military character of garrison sites; industrial character of the Canterbury Tannery).

Commentary

7.7.20 Destruction and damage to archaeological sites arising from development are commonly addressed within ESs, although too often consideration is limited to permanent landtake and permanent damage caused by construction activities. The risk of accidental damage during construction is considered and buffer zones sometimes proposed, for example for undersea areas associated with the Kentish Flats Windfarm.

7.7.21 Damage to industrial and military remains is often not considered sufficiently and curators often have to seek more information. These types of remains are sometimes considered as archaeological sites and sometimes as built heritage. Loss of or damage to historic buildings, both designated and non-designated, was an issue in relatively few of the schemes reviewed. Loss of historic buildings was a major consideration for CTRL, where the nature of the project made avoidance more difficult. Inadequate consideration of the potential effects on non-designated historic buildings contributed to the refusal of the St Mildred's Tannery scheme.

7.7.22 None of the schemes reviewed affected registered battlefields, but a number of projects involved Registered Parks and Gardens. In most instances, the Drointon to Sutton-on-the-Hill pipeline for example, disturbance could be largely designed out. Damage to historic landscape character or historic townscape character is much less commonly assessed. No cases were found during the Planarch 2 review which addressed wider landscape issues, and the effects on urban character, including a number of military garrison sites, were not dealt with fully.

Effects on the Setting of Heritage Assets

7.7.23 Assessment of effects on the setting of monuments and buildings is a common component of ESs, occurring in almost as many cases as consideration of physical loss or damage. This section addresses both direct and indirect effects on setting.

7.7.24 Published guidance on EIAs demonstrates conflicting opinions on whether setting should be regarded as 'indirect'. Definitions of 'indirect' effects are given in EC guidance (Hyder 1999, *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*) and elsewhere, including advice contained in PPG 15 (1994) concerning transport and traffic, where setting is included as a 'direct' effect. However, surprisingly, the Highways Agency's guidance on EIA in their *Design Manual for Roads and Bridges* Volume 11(1993) considers effects on setting as 'indirect'. In the majority of developments the effects would be direct, as for example, in the construction of modern warehousing next to a SAM at Fossetts Farm.

7.7.25 A few cases were noted where this type of effect should have been assessed but was not, the most obvious example being Stansted 15 Million+, which involved proposals for additional car parking and other development in the immediate vicinity of a listed former farm and associated barns within the airport, as well as possible intrusion on the setting of features outside the airport perimeter.

7.7.26 A much more general problem is the lack of any agreed professional framework for considering issues of setting. The vast majority of cases treat effects on the setting of heritage assets simply in terms of visual intrusion (58%), sometimes coupled with noise intrusion (10%). 22% considered effects on setting in terms of physical change to the surroundings of the heritage asset. The rest did not consider setting issues.

7.7.27 Very few ESs clearly set out what factors are taken to constitute the setting of heritage assets, or systematically describe them in any detail. A good example of an attempt to do this is Leybourne Grange where the physical characteristics of the surroundings of the Listed Buildings and the park in which they stood were described in some detail.

7.7.28 The CTRL specialist report set out nine factors considered to contribute to the setting of heritage assets. This was subsequently developed further, leading to the approach adopted for the Shinfield ES (part of the South of Reading Housing case in Appendix 8) based on the same key factors (see Text Box 15).

Text Box 15: The Shinfield approach to setting

- Key factors contributing to the character of setting:
  - the character of the feature itself
  - its location in relation to surrounding landform
  - surrounding vegetation
  - character of nearby buildings and structures
  - archaeological context
  - scale and character of visual envelope
  - views of and from the feature
  - visual ambience of surroundings, especially approaches
  - character of noise environment
- For each historic asset whose setting was affected, (such as Lane End Farm reproduced in Appendix 8) a matrix was used tabulating for each factor:
  - a description of its salient characteristics
  - a consideration of what contributed to or detracted from the historic character
  - how its character would be affected by the proposals
  - how significant the impact would be
- The assessment of the overall level of impact also took into account which factors were most important in defining the character of the setting of the particular asset being assessed.

7.7.29 The A303 Stonehenge study (see Appendix 8) provides a rather different example of an attempt to systematise the analysis of effects on the setting of heritage features. This was based on considering three contributory factors (see Text Box 16).

Text Box 16: The A303 approach to setting

- Key factors contributing to the impacts on setting:
  - visual intrusion
  - noise intrusion
  - loss of 'context'
- For each historic asset whose setting was affected, each of these factors was scored on a points scale (three grades of beneficial change, and three of adverse change)
- To arrive at a score for the level of impact the gradings awarded for the three key factors listed above were totalled, and then combined with the significance of the asset to give an overall score of the significance of effect.
- In the condensed version of the impacts table from the ES included in Appendix 8, two specific instances are highlighted to show how effects were assessed:
  - the major Winterbourne Stoke barrow cemetery would have a much larger junction with the dualled A303 in a cutting immediately adjacent, replacing the current roundabout and single carriageway road

- the Grade II listed milestone (site 54) would have the current trunk road removed from its vicinity to be replaced by a byway.

- Thus in the two cases highlighted (both nationally important) the scoring of the changes in *noise* intrusion was a key factor in assessing the effect on the barrow cemetery as only 'moderate adverse' and the effect on the milestone as 'major beneficial.'

7.7.30 The A303 is one of very few cases amongst those reviewed which sought to demonstrate effects of the scheme on the setting of monuments through the use of photomontages, though this was largely restricted to the main beneficial effects, not the adverse ones. Other cases where photomontages had been used include the Martin's Hill Farm windfarm on the Somerset Levels (which was visible from a prehistoric hill fort on high ground up to 5km away) and Richborough power station (visible from the Roman fort and amphitheatre also a few kilometres away).

7.7.31 Whereas the Richborough scheme for which the photomontages were prepared would have had a beneficial effect, separate proposals for a waste-fuelled generator on an immediately adjacent site were refused, with one of the contributory factors being concern over the effects on the setting of the fort, which had not been fully assessed.

7.7.32 Proposals that affect the setting of Scheduled Monuments are often commented on by English Heritage, and several cases were noted where such assessments were considered. These included the Richborough cases and Endcliff and Lee quarries in the Peak District, where considerable concern was expressed about increased intrusion on the amenity and setting of the whole Stanton Moor complex, not just the Nine Ladies Stone Circle.

7.7.33 The scheduled prehistoric fort at Fossetts Farm, Southend, where three ESs for different developments have been reviewed, provides a good example of the complexity of effects that can arise in relation to developments affecting the setting of heritage assets. The case illustrates how cumulative direct and indirect effects of successive developments on the setting of a nationally important monument, already affected by a Waitrose store nearby, was a key cultural heritage issue for new development close to this monument. The issues are summarised in Text Box 17 below.

Text Box 17: Fossetts Farm Southend - issues of setting

The physical aspects of setting and how intrusion on the setting can indirectly threaten the fabric of a feature:

- The first Fossetts Farm scheme was for a football stadium. In addition to the physical change to the surroundings of the site and significant visual and noise intrusion, the proximity of the stadium would probably have led to significant attrition to the monument itself from large numbers of football fans.
- This scheme was subsequently withdrawn, but two other proposals were subsequently approved in quick succession (for a B&Q store and NHS facility) which, in addition to the *direct* physical loss of setting and visual and noise intrusion, were considered by English Heritage and the Local Authority's archaeological adviser as being likely to lead to *indirect* effects of exacerbating existing problems of fly tipping and loss of amenity on the monument itself.
- The options for reducing the effects are limited because the location of the NHS facility buildings is also constrained by the topple zone of pylons for an adjacent power line.
- A legal agreement for the future management of the monument and limited public access to it (suggested by English Heritage and the Local Authority's archaeological adviser, but not proposed in the ES as a mitigation measure) is being prepared.

Commentary

7.7.34 Referring to effects on setting as being 'indirect', as discussed in paragraph 7.7.24, is also unhelpful. Developments can and do result very *directly* in physical change to the surroundings of a heritage feature and they *directly* affect how people appreciate the visible heritage. In addition, people's responses to such changes can also *indirectly* lead to impacts on the asset itself – as the Fossetts Farm case illustrates. The CTRL assessment illustrated this point in considering whether the levels of noise intrusion might be such that some historic buildings might require noise insulation involving physical alterations to their windows, or in extreme cases might cease to be viable altogether, with consequences for their physical survival – and two Listed Buildings affected in this way were indeed translocated.

7.7.35 Compared with the scoring method developed for the A303, the CTRL/Shinfield approach for assessing effects is based more on systematic professional judgement taking account of how several different factors may be more or less important for different types of asset in different localities, without relying on a relatively mechanistic application of scoring. The Inspector at the south of Reading Inquiry did not comment on the various methods adopted for assessing impacts on setting at Shinfield and the rival sites, but the intrusion of development on the setting of one building was one of many contributory factors to the decision to turn down the Shinfield proposals.

7.7.36 While scoring approaches such as that for the A303 may seem 'objective,' there are dangers in treating all heritage assets as if the key factors contributing to the setting were the same for every type, or that all issues affecting setting were of equal concern. Thus giving as much weight to noise intrusion as to other factors, and not giving more weight to other issues such as the loss of physical surroundings and topographical context was also questioned at the Inquiry. Within the context of the Stonehenge World Heritage Site some concern was expressed at comparative results for the assessment for the two features highlighted above in Text Box 16; removing a road from the setting of a milestone could be classed as a major beneficial effect while a major road development immediately next to a barrow cemetery of international importance was only considered moderately adverse.

7.7.37 The following comment quoted from the cultural heritage specialist's section of the ES for the Fossetts Farm NHS case further illustrates the lack of a clear definition of what constitutes the 'setting' of a heritage asset and the absence of any agreed assessment methodology: *'it is not immediately clear how a setting can be 'preserved in situ' and opinions differ on how to define [it].'*

Indirect and Secondary Effects

7.7.38 Indirect effects are defined in EC guidance (Hyder 1999, *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*) and PPG 15 (Paragraph 5.2) as those that arise from complex pathways (one effect leading to another) or from how the proposals may facilitate, encourage or inhibit other developments or changes to the environment not within the control of the developer.

7.7.39 Secondary effects that arise from directly associated developments or from measures incorporated into the design of the proposals that are needed to mitigate other effects are quite often covered in the ESs reviewed. They include the impacts of landscape mounding, planting or decontamination works on cultural heritage. They are normally dealt with as direct effects of the construction stages of the project, or in the case of associated development, as separate sections of the ES (as for London Gateway).

Technical Indirect Effects

7.7.40 The most common indirect effects to be assessed are those that arise from complex pathways of physical change that are not part of the intended outcomes of development, such as hydrological draw-down (11 cases) and settlement over tunnels and mines (5 cases). This can include the indirect beneficial effects of withdrawal of mining from previously permitted areas (two cases in the Peak District National Park) and preventing subsidence in a Conservation Area in the Bath WHS (Coombe Down mines).

7.7.41 In some cases there is no more than a reference to the possibility of such effects arising, in others there is more specific cross-referencing to other specialist studies with specific commitments to monitor these effects and adopt remedial measures. No examples were seen where this has been followed through and reported.

Planning and Landuse Related Indirect Effects

7.7.42 Indirect effects are also likely to arise from a wide variety of landuse changes induced by, but not part of, the development being assessed. Predicting the circumstances likely to give rise to such effects can be difficult, and coverage of these types of effects is very rare and of variable quality and thoroughness. Out of about 30 cases that make some reference to indirect effects of this type, only a dozen can be said to illustrate this well (see Text Box 18).

Text Box 18: Examples of planning and landuse related indirect effects

- Improvements to Scheduled Monument (*Colchester Garrison* removing traffic from and improving surroundings of Abbey Gateway)
- Reductions and increases of traffic intrusion in historic places through: bypass (*Edenbridge*), new road layouts (*Maidstone*), increased traffic (*Leybourne Grange*)
- Withdrawal of previously permitted mining and quarrying (*Longstone Edge*; *Hope Shale and Limestone quarries*)
- Possible loss of historic landscape coherence due to area being split up into multiple ownership before full landscape strategy agreed (*Leybourne Grange*)
- Potential non-viability of Listed Buildings (and their consequential dereliction or removal) due to noise and visual intrusion (*CTRL*)
- Potential archaeological damage caused by need to relocate part of golf course (*CTRL*)

Other instances illustrate cases where the issue has been considered but not addressed in a fully balanced way:

- A claimed benefit of reducing possible (unsubstantiated) archaeological plough damage as compared with the advantage of recording prior to destruction by quarrying (*Shardlow Quarry Derbyshire*; *Fingrinhoe, Essex*)
- Identifying some indirect positive effects for implementation of a WHS management plan but not indirect adverse effects (*A303 Stonehenge*)
- Not covering possible induced/facilitated development (*A303 Stonehenge* in relation to Visitor Centre and access proposals; *CTRL* in relation to creation of corridor for A2 improvement).

Temporary Effects

7.7.43 Most ESs deal with temporary effects for the cultural heritage, and, for example, usually clearly distinguish between permanent and temporary effects of temporary construction activities.

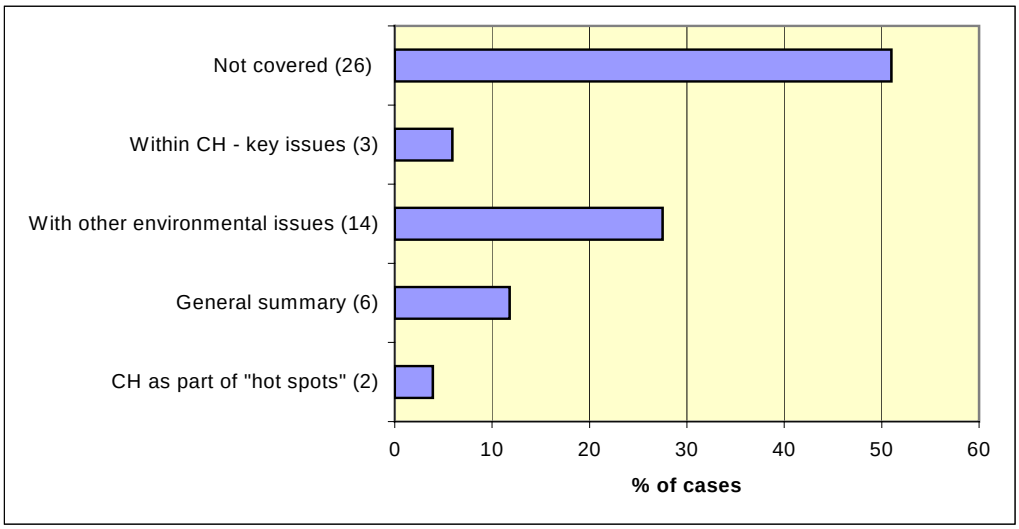
7.7.44 Whether all such activities are always addressed is more questionable, and one of the few potential archaeological impacts that appears not to have been assessed (or reported) for the St Mildred Tannery case is whether temporary foundations for cranes would have any impact.

7.7.45 The most common types of temporary effects addressed tend to be short term intrusion on the setting of buildings and monuments. These are typically considered unlikely to be significant compared with long term or permanent effects.

Cumulative effects

7.7.46 In 42% of cases cumulative effects are not considered at all, and in another 42% they are only considered in very general terms, giving a summary overview of key issues for different aspects of the cultural heritage with little or no integration with other environmental issues (see Figure 7.7c).

Figure 7.7c: Consideration of Cumulative Effects



7.7.47 A range of different types of cumulative effects was identified as possible issues to be explored in this review (reflecting definitions in EC guidance and elsewhere) including:

- Multiplicity of different types of impact on the same cultural heritage resource
- The cumulative significance of several individually non-significant effects of the same type or in the same area
- Multiple effects of the same kind on particular types of resource or key cultural heritage characteristics
- The cumulative effects of impacts on different environmental resources in the same area
- The aggregate effects of several different developments
- The aggregate effects of expansion of repeated new developments diminishing the cultural heritage of an area over time
- The cumulative effects of direct and indirect impacts on an area.

7.7.48 It is very seldom that cumulative effects are considered in terms of how a new development adds to the effects of previous development, sometimes to the threshold of non-viability or complete loss of the asset. Instead, previous development is typically regarded as merely having devalued the resource.

7.7.49 Despite the common use of map regression and air photographic interpretation to identify aspects of the historic environment, these methods appear never to be used to analyse the cumulative trajectory of recent change in the historic character, interest or potential of an area. Similarly there is no example in the cases examined of any attempt to use or develop the concept of 'limits of acceptable change' as a means of measuring the significance of effects.

7.7.50 The CTRL assessment remains unusual in the range of cumulative effects considered (see Text Box 19), but it did not cover all the issues identified above.

Text Box 19: The range of cumulative effects covered by the CTRL ES
This is the clearest example reviewed where a range of different kinds of cumulative effect on the cultural heritage were considered, including:

- A number of route-wide effects being cumulatively of added significance (such as loss of listed historic buildings and individually non-significant effects on the railway heritage).
- Several different kinds of impact on different aspects of the cultural heritage occurring in some particularly sensitive areas (such as Cobham Park and the Boxley valley)
- The combined effects likely to arise from concurrent development proposals (such as CTRL and M2 widening in the area of the Medway crossing)
- The cumulative effect of the CTRL adding to the impact of previous developments, especially adding to landtake, severance and intrusion impacts already caused by the M20 (such as Grade II Chilston Park and on two Listed Buildings whose viability was put in doubt because of the combined intrusion of the two schemes).

However, like all the other ESs reviewed, the CTRL was less good in identifying places where direct and indirect effects would combine (such as creating a corridor for future widening of the A2 in the Northfleet area, which is the subject of another ES covered by this review).

Beneficial effects

7.7.51 Beneficial effects of one sort or another were noted as being considered in 31% of cases recorded. A strong emphasis on adverse effects is to be expected given that the historic environment is fundamentally non-renewable, so losses are irreplaceable and cannot be recreated or substituted in any genuine way. Although, however, the review indicates that both adverse and beneficial effects are assessed, the relative range and levels of coverage observed indicates a clearer emphasis on adverse effects than the bare figure suggests.

7.7.52 Perhaps because damaging effects are so common, there appears to be a relative blind spot in identifying benefits, which in some cases can be quite fundamental. For example, it was only after consultation that the scoping report for the A303 Stonehenge Improvements EIA identified the likely benefits of the proposed tunnel scheme as a key issue. Similarly, the Coombe Down Mines project ES did not identify the benefits of preventing subsidence of a Conservation Area within the Bath World Heritage Site as being a key beneficial effect of the scheme.

7.7.53 In the case of the built heritage, the benefits of refurbishing unoccupied and run-down Listed Buildings or areas and bringing them back into use is much more commonly considered where this issue arises.

Effects on People

7.7.54 Although effects on people are seldom assessed in explicit and systematic terms, the benefits to people from dissemination of archaeological results is fairly frequently referred to, usually in general terms, and less often in relation to special interest groups or the general public (see mitigation provisions). Visitors to monuments were considered in a number of cases, discussed in Text Box 20.

Text Box 20: Cases assessing effects on visitors to monuments

- *A303 Stonehenge:* In relation to the benefits the scheme would bring to visitors to Stonehenge itself and to a few of the surrounding monuments;
- *Combined Cycle Gas Turbine Power Plant, Richborough:* Reduction of visual intrusion for visitors to Richborough Castle Roman fort and amphitheatre;

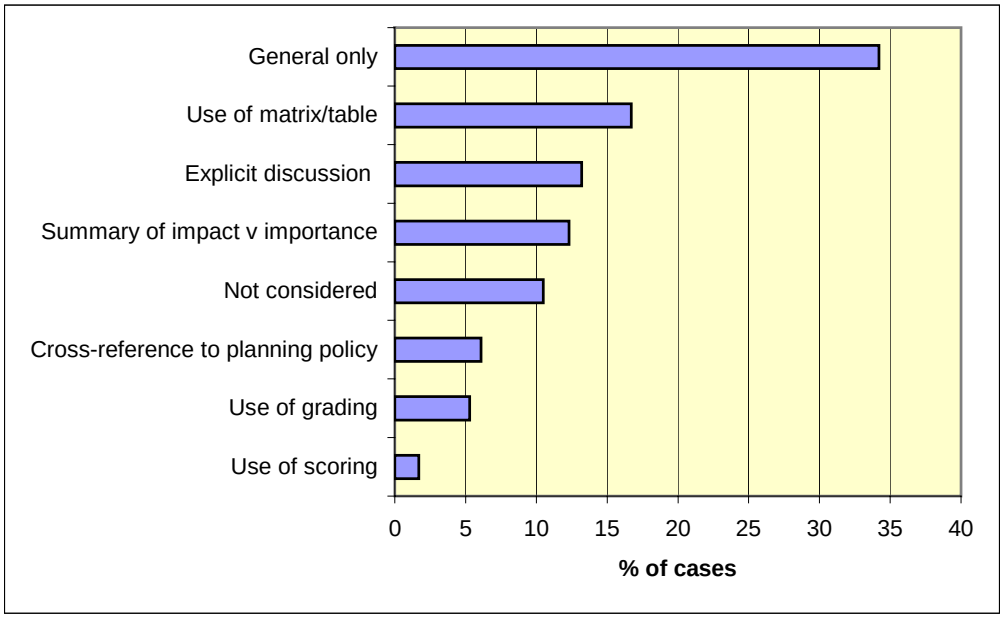
- *Endcliffe and Lees Cross Quarries:* Adverse amenity effects on visitors to Nine Ladies Stone Circle – and broader concerns of English Heritage for visitors to Stanton Moor prehistoric monument complex in general;
- *Longstone Edge Quarry:* Amenity benefits for visitors to monuments on nearby moorland;
- *Football Stadium and New Leisure Development, Fossetts Farm:* There are implications for setting and overuse, but increased public awareness and access are seen as positive. A visitors centre is proposed.

Significance of Effects

7.7.55 A small number of the ESs reviewed (14%) made no attempt to assess whether effects of development on the cultural heritage were significant. Otherwise, approaches to assessing significance varied markedly, as shown in Figure 7.7d. Most cases (52%) do not set out explicit criteria, and many make only a very general assessment based on an overall judgement.

7.7.56 Between 10% and 20% of the ESs reviewed discussed effects in detail, made more explicit references to balancing the scale of impact against the importance of the resource, or made some effort to use a matrix or table to give a more detailed breakdown of effects. Only 6% of cases made any attempt to grade the significance of effects in a systematic way, and extremely few used scoring techniques to achieve such grading.

Figure 7.7d: Significance of Impacts/Effects



7.7.57 The *Drointon to Sutton-on-the-Hill* case is of interest as a rare example where the importance of cultural heritage assets and significance of effects on them are linked to policy standards to avoid impacts.

7.7.58 The *A303 Stonehenge Improvement* scheme illustrates an elaborate tabulation of effects based on a scoring methodology (Appendix 8) that was subject to some criticism at the Public Inquiry for being too mechanistic, as explained above in relation to issues of setting.

7.8 **Mitigation** (Figures 7.8a-f)

7.8.1 Figure 7.8a gives a breakdown of the types of mitigation proposed. By far the commonest type of mitigation proposed for cultural heritage impacts involved further stages of evaluation and recording through archaeological investigations. Figure 7.8b shows the number of cases where more than one type of mitigation is proposed. In the sample reviewed, in the majority of cases only limited fieldwork had been carried out before submission of the ES. As a result a significant proportion of cases acknowledged problems of uncertainty about the presence and/or significance of archaeological remains, and stated that further stages of investigation would be required.

Figure 7.8a: Types of Mitigation Proposed

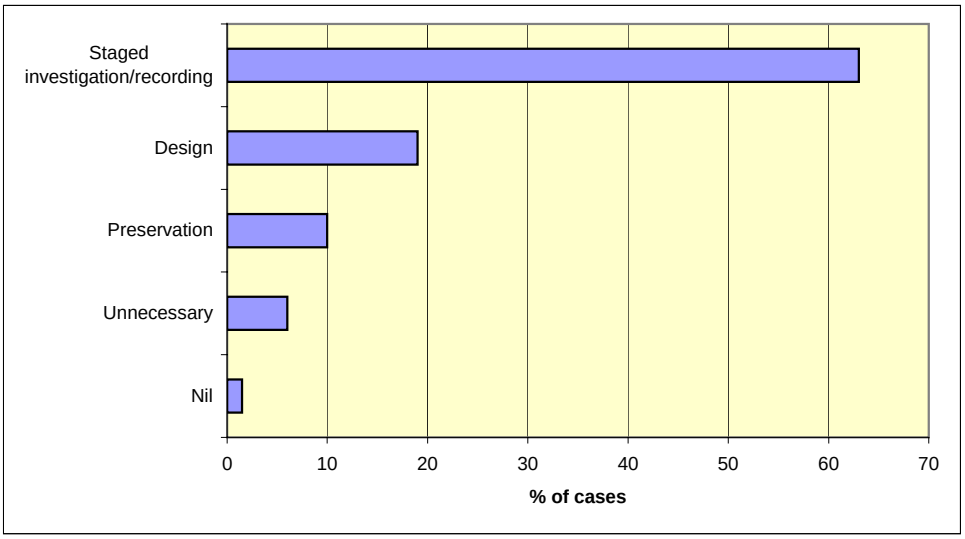
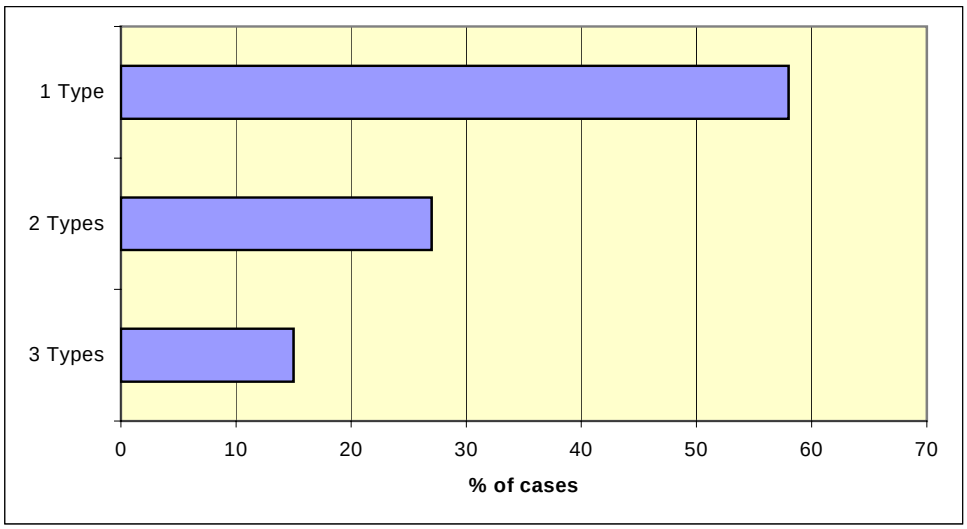


Figure 7.8b: Number of ESs for which More Than One Type of Mitigation Proposed



7.8.2 These often included one or more types of non-intrusive survey that had not been done for the ES, but it was surprising to find some cases (like East Hall Farm in Kent) where full desk studies were proposed as part of the post-determination mitigation process.

7.8.3 In the majority of cases these take the form of a staged programme of work, as shown in Figure 7.8c, with most work carried out either just prior to or during construction. Figure 7.8d shows how many the stages of archaeological mitigation were proposed, two stages being the most common.

Figure 7.8c: Stages of Work for Mitigation

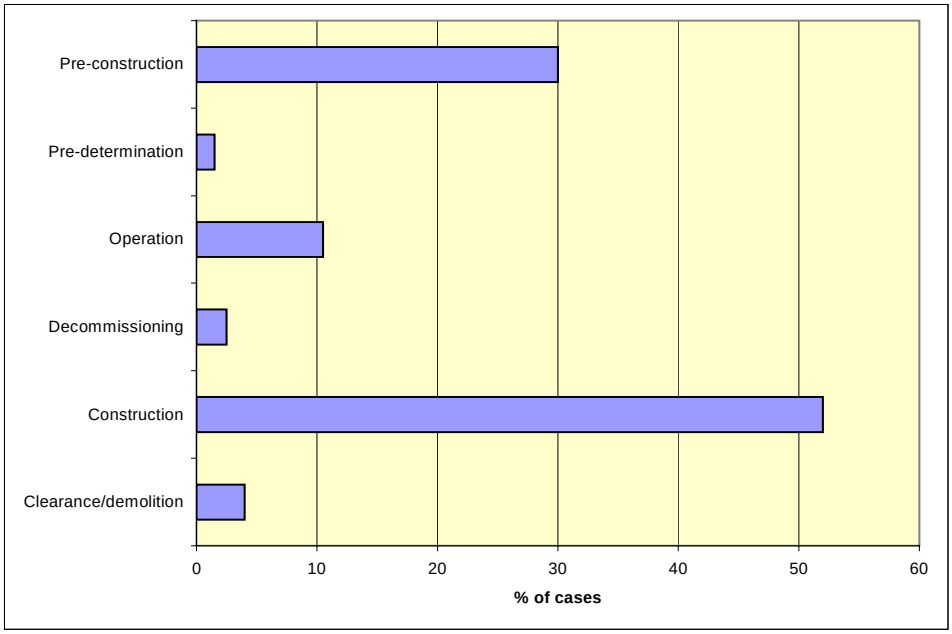
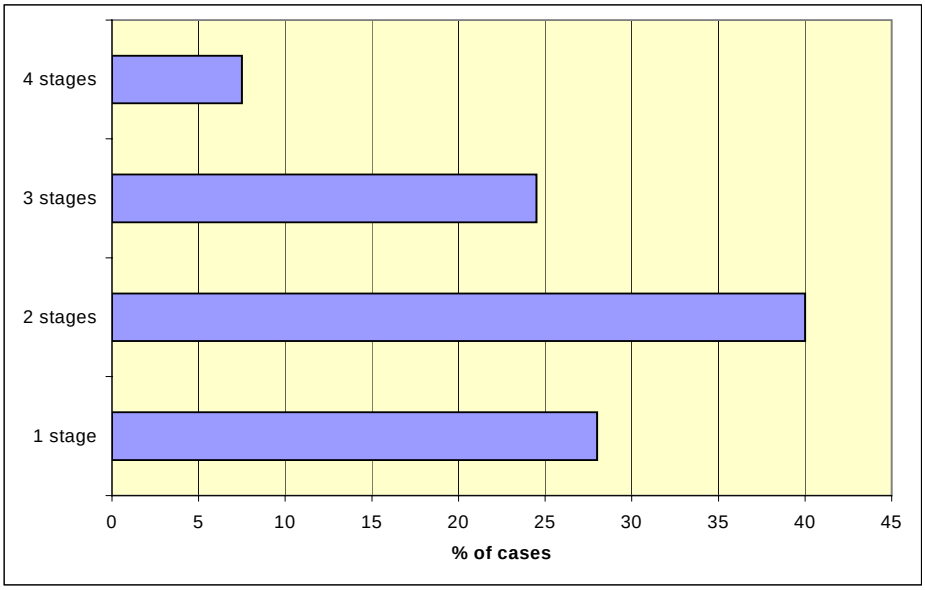
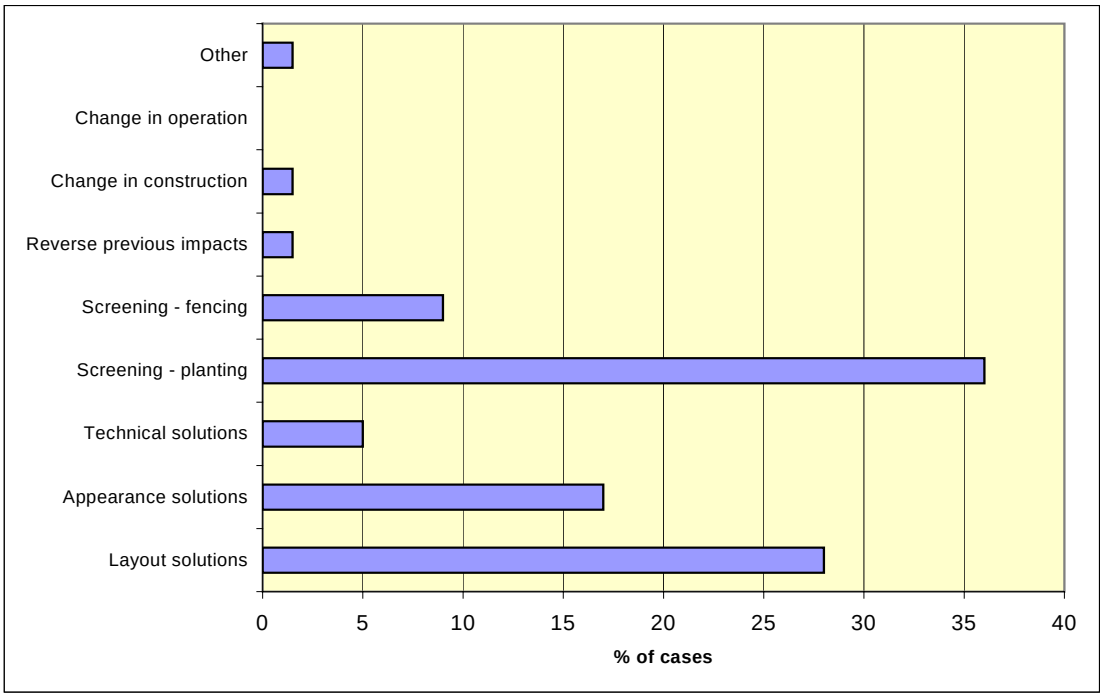


Figure 7.8d: Number of Stages of Mitigation



7.8.4 In terms of design-based mitigation for archaeological remains, the commonest types proposed related to issues of screening, appearance and layout. Management-based forms of mitigation, such as creation of buffer zones around archaeological sites, were less commonly proposed (Figure 7.8.e).

Figure 7.8e: Design-based Mitigation Types



7.8.5 Mitigation proposals for the built environment include a range of design briefs, conservation-friendly uses, landscaping etc.. built into the design of schemes. Mitigation of residual effects through recording, relocation, or other measures is much less common**.**

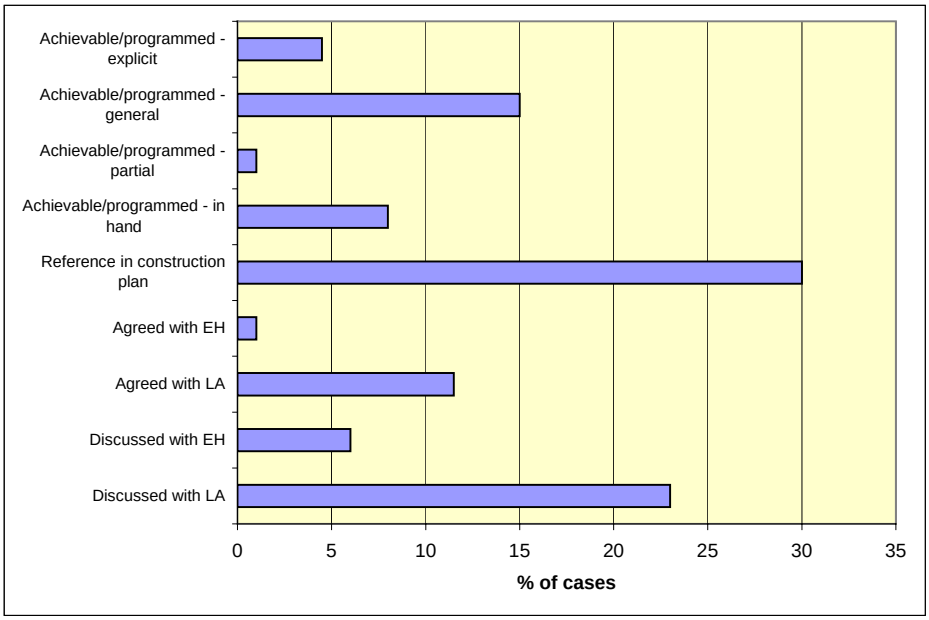
Text Box 21: Cases including specific design-based mitigation proposals

- *Colchester Garrison:* Improvements to the setting of the SAM at the priory, including redirection of traffic route away from priory gateway;
- *St Mildred's Tannery:* Construction tailored towards preservation *in situ* of Roman remains, incorporating pile layout, buffer zones, contamination barrier to maintain chemical preservation and root membrane in planting zones;
- *Hope Shale and Limestone Quarry:* Redesign of quarrying areas to allow preservation *in situ* of area of known archaeological importance. Mitigation of possible blast damage was not addressed;
- *Doveholes Quarry:* Restitution of dry stone walls and field boundaries during decommissioning stage;
- *Shoebury Garrison:* Former military links preserved through road names in new development and creation of a small heritage centre;
- *CTRL:* In addition to extensive programme of archaeological excavation and recording, building recording and translocation of historic buildings were carried out.

7.8.6 Figure 7.8f illustrates trends in terms of commitment to mitigation. Rather few ESs made reference to how far mitigation measures had been agreed with curators or taken into consideration in the practical implementation of development. There were some variations in approach for different types of development and different sorts of developer, but as discussed below (see Section 10.11) this may not be very significant in determining the final mitigation package. About 85% of ESs made a reasonably clear commitment to the mitigation proposed,

(see Figure 7.8f), but only 20% of ESs reported that the scope of mitigation had been discussed with the local authority and 10% with English Heritage. Less than half these stated that mitigation proposals had been agreed.

Figure 7.8f: Commitment to Mitigation



7.8.7 Explicit commitments to the basic decision-making processes and standards to be applied in staged archaeological investigation were moderately common, though relatively few couple this with defined research objectives (such as Colchester Garrison, Stansted 15 Million^{+} and London Gateway). This type of approach was an important post-ES feature of the much earlier studies for Terminal 5 and the CTRL.

Commentary

7.8.8 Although the range of options available for mitigation is extensive, the majority of ESs concentrate on evaluation and recording through archaeological fieldwork, mostly either shortly before or during construction. Design-based approaches to mitigation are principally concerned with issues of screening through planting or construction of earth mounds.

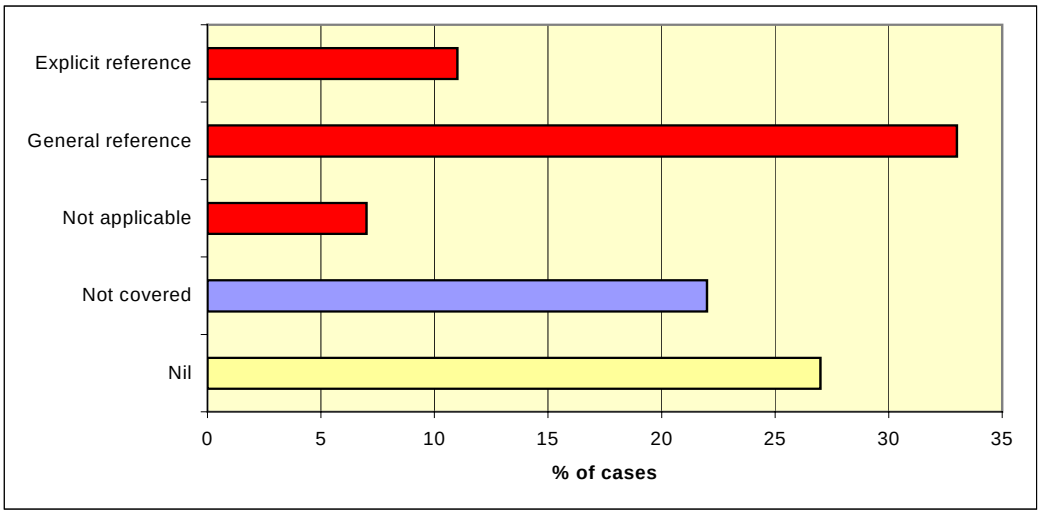
7.8.9 The level of commitment to mitigation by developers is relatively high, with around 85% of cases expressing some degree of commitment to proposals, but the extent to which proposals have been discussed or agreed with curators is much lower, around 20%.

7.8.10 For the majority of cases reviewed the development process had not reached a stage where mitigation had begun. Those projects where some mitigation has been carried out are discussed in Chapter 8.

7.9 Monitoring (Figure 7.9)

7.9.1 To accompany proposals for mitigation through further stages of archaeological investigation (see above) it is fairly common that some form of monitoring is proposed (even if the details are not explicitly stated). Figure 7.9 indicates how references to monitoring are addressed. A 'Nil' category covers projects for which no relevant section of the ES was seen.

Figure 7.9: Proposals for Monitoring



7.9.2 The outcomes of monitoring are discussed below in Chapter 8. One example of a less common approach to mitigation was included in the ES for the Managed Realignment of Hamford Water. Annual visits by curator to monitor possible erosion of archaeological material from the realigned flood banks were proposed.

7.10 Integration (Figure 7.10)

7.10.1 Figure 6.2 indicates the coverage of different aspects of the cultural heritage in the ESs reviewed. This shows relatively low levels of coverage of some aspects, but this clearly depends at least partly on the nature of the locality concerned (e.g. only three cases had significant marine elements).

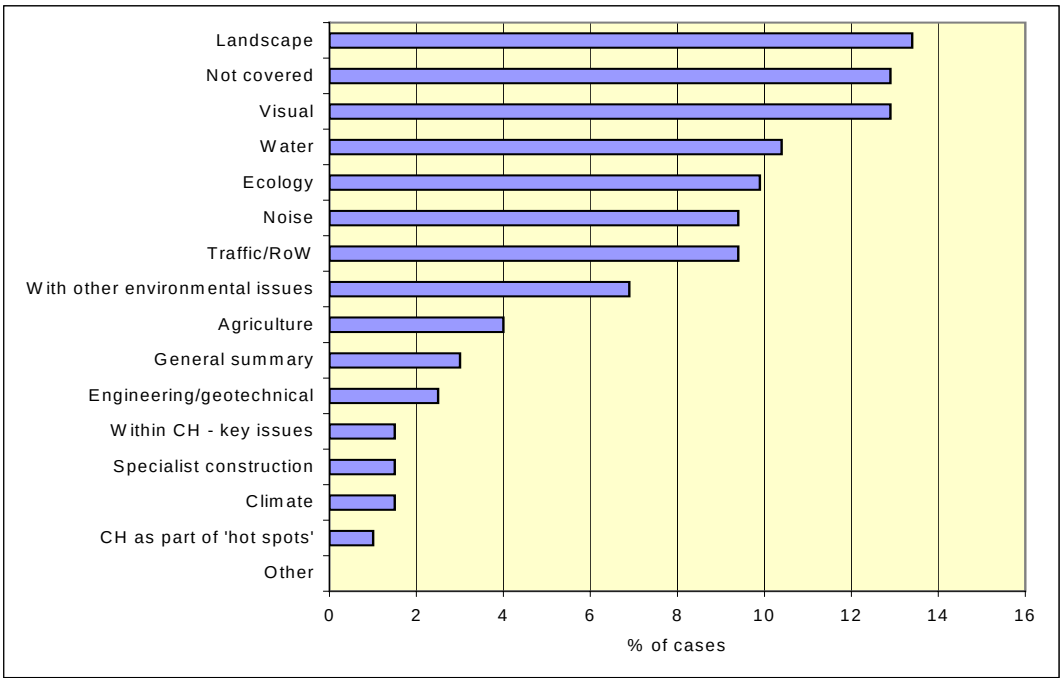
7.10.2 This Figure (Fig. 6.2) also notes cases where some cultural heritage issues were dealt with in parts of the ES other than sections dedicated to archaeology or the cultural heritage. While this reflects a less integrated approach to the cultural heritage as a whole, it does in some cases reveal a conscious attempt to integrate aspects of the historic environment with other factors, usually landscape and visual and sometimes buildings and material assets. However, this does not indicate that such integration is particularly well done.

7.10.3 Indeed, the strong impression gained was that where such aspects of the cultural heritage are assessed outside the cultural heritage section, it usually means that issues of historic landscape and setting are dealt with superficially adding little or no real historical perspective to the rest of the landscape and visual approach. It would appear that the practice is merely reflecting a relatively thorough application of established standards in landscape and visual assessment (which is meant to take account of historic resources) and not a fully integrated approach.

7.10.4 It can be beneficial if historic buildings are dealt with in separate sections dedicated to detailed treatment of the built heritage. This results in a much fuller treatment by buildings specialists than is often achieved by cultural heritage sections that are dominated by archaeological considerations. *St Mildred's Tannery, East Hall Farm* and *Leybourne Grange* are good examples.

7.10.5 In terms of how cultural heritage studies draw on the assessments carried out for other environmental issues, Figure 7.10 gives a breakdown of the incidence of references to other specialist evidence in cultural heritage assessments.

Figure 7.10: Integration with Other Specialisms



7.10.6 These clearly vary with the nature of the environment affected. The overall level of such cross-referencing is distinctly low (at around 25%) considering the fundamental relationships between cultural heritage and other aspects of the environment. Of particular note are the figures for cross-referring to other specialist reports compared with types of effect assessed (cf Figure 7.7a). Specific points arising are that:

- Whereas 60% of cases cover historic landscape issues (Figure 6.2) only 25% of cultural heritage studies indicate any integration with landscape assessments;
- Although nearly 40 cases include some assessment of visual intrusion, only just over 25 cross-refer to the specialist visual assessment.

7.10.7 Also of interest are figures where the reverse patterns seem evident (i.e. references are made to other specialist reports although any effects arising are not actually assessed). This might be because the cross-referencing was intended to add to the description of baseline conditions and was not considered when actually assessing effects, but nonetheless, the comparison is quite striking:

- Whereas only around seven cases actually refer to assessing hydrological effects, over 20 refer to integration with water-related specialist studies
- Similarly only around seven cases refer to sound intrusion, but again nearly 20 refer to integration with noise studies.

Commentary

7.10.8 Overall, the pattern of integration is patchy, and generally rather poor. In practice this often relies very heavily on how the EIA process is managed by the developer and/or the lead consultant, and good integration is seldom possible if there is no direct interaction between specialists.

7.10.9 The figures quoted above illustrate both that too little use is made of other specialist evidence, and that some references to such integration may be little more than paying lip-service to the concept, rather than contributing much to the real assessment of effects.

7.10.10 Some superficial integration may derive from editing of the overall ES by lead consultants, but this cannot make up for the value of real specialist integration such as that displayed in the archaeological assessment for *St Mildred's Tannery*, where the implications of complex interactions were clearly discussed, and solutions sought at a technical level.

7.11 Consultation (Figures 7.11a-c)

7.11.1 The proportion of cases where general consultation has been identified from the ES, is shown in Figure 7.4h**.** Much more rarely, is it apparent that consultation has been carried out for the main EIA steps (screening, scoping, establishment of baseline, assessment of impacts and effects, mitigation proposals). These results are given in Figures 7.11a to c.

Figure 7.11a: Amount of Consultation for Different Stages of EIA (evidence from ESs)

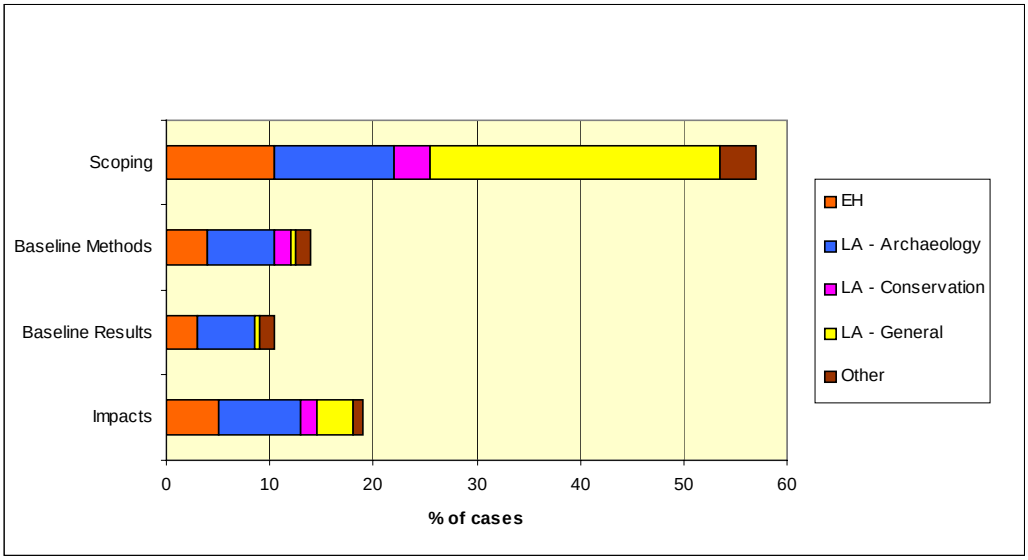


Figure 7.11b: Screening Consultation (from ESs)

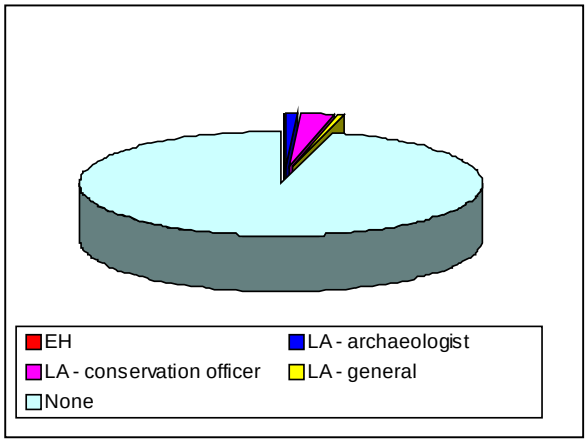
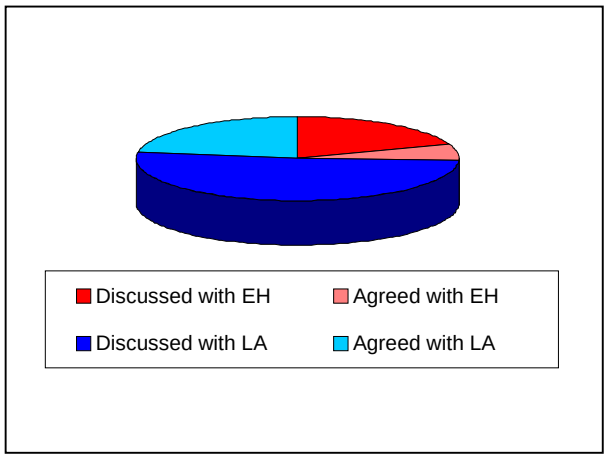


Figure 7.11c: Mitigation Consultation (from ESs)



7.11.2 The breakdown indicates that local authorities are consulted most frequently (36%), followed by English Heritage (22%). Conservation Officers appear to be consulted much less often than local authority archaeologists. Consultation with specialist and community groups is rare.

7.11.3 There is very little reference to consultation in the screening of cases and much more for scoping studies, as discussed in Sections 7.2 and 7.3. The low levels of reported consultation for other stages of the EIA process might be more a shortcoming of reporting than a real pattern. What does seem apparent, however, is that consultation at these stages is almost entirely with specialist advisers, whereas many of the scoping consultations are only with local authorities in general, not their specialist advisers.

Commentary

7.11.4 Cultural Heritage sections of ESs are generally very poor in reporting what consultations were carried out, with whom and for what purpose or with what results.

7.11.5 The fuller review of cases that have proceeded to further stages in the decision-making and development process has in many cases revealed more extensive consultation than is reported in the ESs. In most of these cases it is clear that this has had a positive influence on the scope and thoroughness of the work carried out for the ES.

7.11.6 A very noticeable trend, which seems apparent for all stages of the EIA/ES process, is the low level of consultation with Conservation Officers. This partly reflects the general predominance of cases that do not involve major areas of built heritage, but the reported incidence of consultation is far less than might be expected given the number of cases where issues of setting for historic buildings and areas arise. While it is possible that in fact there has been more consultation than is evident from the ESs (very few cases had progressed sufficiently to discuss outcomes with Conservation Officers to check this in detail), the trend also seems to be borne out by the responses of local authorities commenting on their involvement in the EIA process.

7.12 Communication of Results (Figures 7.12a-b)

7.12.1 Figures 7.12a-b give a breakdown by grade of how well the cultural heritage results of the EIA process were communicated in the ES. The scale has Grade A as the best and Grade F the worst. This shows reasonably good results for clarity of language and logic and structure, but much weaker use of diagrams, maps and illustrations, and cross referencing.

Figure 7.12a: Distribution of Communication Grades

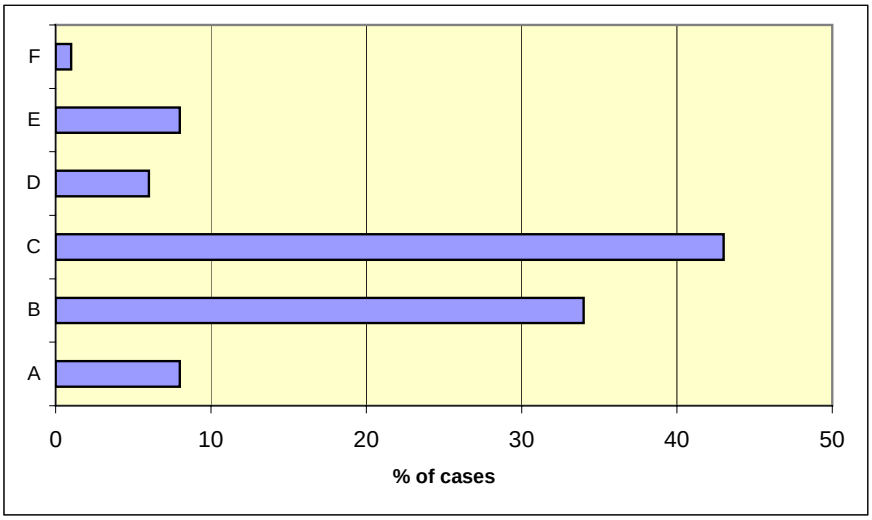
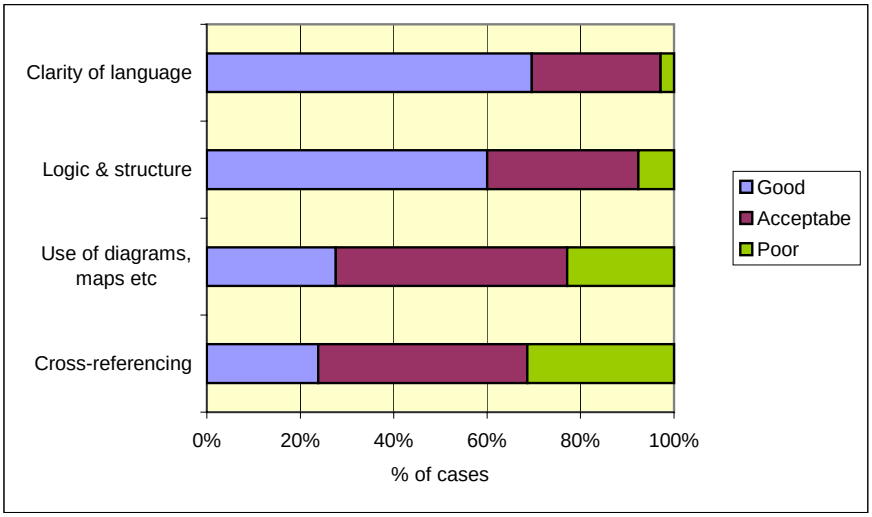


Figure 7.12b: Quality of Communication for Different Elements



Commentary

7.12.2 This pattern may partly be influenced by the role that lead consultants and developers play in the final compilation of an ES. They are typically likely to comment most on how well the text is explained, that the logic of assessment process should be clear and that it usually conforms with the rest of the ES. They may not feel as qualified to comment on diagrams, drawings etc., and if they do it may be to impose standard formats that may not be ideal for conveying cultural heritage information.

7.12.3 A significant factor in the relatively poor use of maps, diagrams etc. seems likely to be a question of the priorities (and scope of involvement) of cultural heritage specialists, who tend to put most effort into mapping baseline characteristics and rather little into using illustrations to explain impacts and effects.

7.12.4 The relatively poor level of cross-referencing reflects lack of integration and in some cases lack of sufficient consideration of how the report will be used. Quite often this can be due to insufficient co-ordination by the lead consultant.

8 OUTCOMES

Chapter 8 *looks at the cases from the perspective of outcomes and effectiveness for decision-making. Whereas Chapter 7 concentrates on the content of the ESs, this chapter draws much more on other evidence related to the whole EIA process, including both cases that were refused, and the outcomes (to date) of those that have gone forward to development. It is clear that outcomes are often influenced strongly by the role of curators in reviewing ESs and advising decision-makers on the acceptability of proposals and what conditions should be imposed. Cases that have been refused provide useful insights about issues that were not sufficiently clearly recognised as being significant. Both for archaeology and the wider heritage there are a number of strategic frameworks for implementation of mitigation proposals, but the quality of underlying information and detailed procedures for implementation appear to be critical factors in their usefulness.*

Rather few cases (other than the older benchmark cases) have yet proceeded through all stages of mitigation, but there are some useful examples of how archaeological discoveries relate to ES predictions. There is much less information about outcomes in relation to issues of design and the built and landscape heritage.

8.1 Identification and Review of Cases that have Progressed to Further Stages (Figure 8.1)

8.1.1 Identification of projects that have proceeded to development, or where other significant further work has taken place since the ESs were submitted, has relied on feed-back from local authorities. In addition, a number of cases were noted which had been refused for reasons that had some bearing on cultural heritage issues or for which more information was required prior to determination. Overall a total of 45 cases, including the benchmark cases of which some were outside the study area, were selected for further consideration.

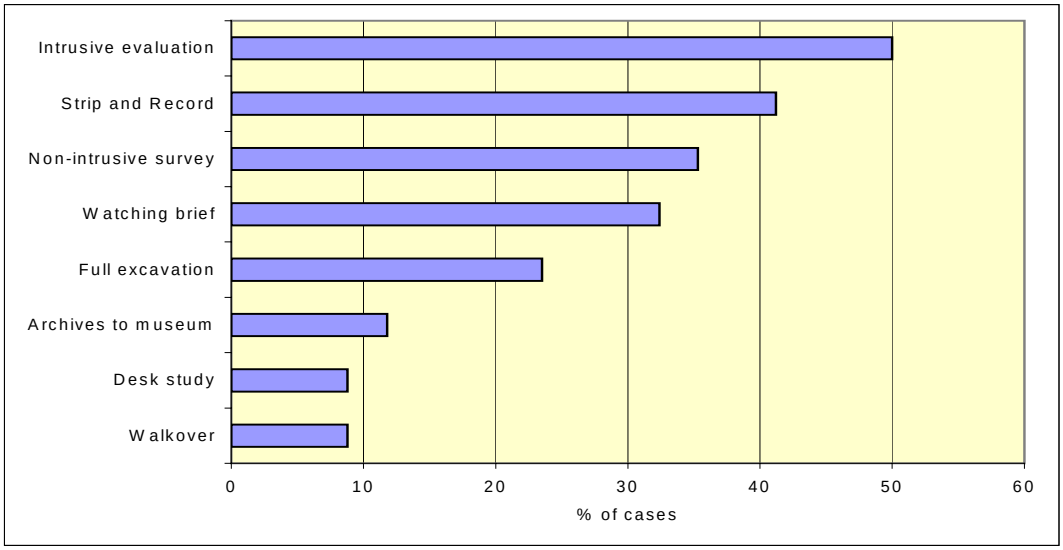
8.1.2 These cases were considered in the Stage 2 review in more detail than in the initial examination of the ESs, including examination of casework reports and correspondence and involved discussion with local authority curators. This often provided additional insights into the quality and adequacy of the ESs, especially where curators had requested more information or had made other comments prior to determination. This resulted in some reappraisal and modification of the initial Stage 1 assessment of the ESs.

8.1.3 Following submission of an ES with a planning application three very broad types of outcome can be recognised from which some insights may be gleaned:

- Pre-determination provision of further information or clarifications of assessments to improve the basis for decision making
- Post-determination investigations, surveys and other studies as part of a staged process to ensure that mitigation is well focused.
- Refusal of consent for reasons that may include cultural heritage considerations

8.1.4 Figure 8.1 gives a breakdown of the number of cases involving different types of further work. This reflects a very wide spectrum of further stages of progress since submission of the ES, and some projects may yet involve further approaches to mitigation before their completion.

Figure 8.1: Type of Mitigation



8.2 Pre-determination Provision of Additional Information

8.2.1 Twenty-five cases were noted where further baseline work was undertaken after the ES was submitted and prior to determination. Six of these reflected a commitment within the ES to complete surveys prior to determination; in the other 18 cases it arose as a result of a request for more information from the curator. These figures include CTRL where an on-going process of fieldwork continued during the Parliamentary Approval process, and Terminal 5 where further work was done during the Public Inquiry to prepare a mitigation strategy.

8.2.2 Requests for more information in order to determine applications and/or decide what conditions might be appropriate included examples reflecting the following circumstances:

- Baseline studies relying purely on desk study and walkover and not adequate as basis for prediction of effects (variously needing non-intrusive surveys or various forms of intrusive evaluation);
- Baseline studies not covering aspects of the historic environment;
- The whole cultural heritage section based on inaccurate cut-and-paste reuse of a section of previous ES for an adjacent site;
- Assessment of effects not adequately covered; including effects of intrusion on the setting and amenity of major archaeological monuments, the impact of blasting on underground heritage features of mines and the need to protect sites from damage.

8.2.3 Requests for further information prior to determination were noted in each of the Planarch 2 study areas. They were normally officially conveyed to the applicant or their consultants through the planning case officer or other regulator, without having to invoke formal legal powers to request further information.

8.2.4 In each of the four study areas a range of types of research, survey or intrusive investigation was requested. However, it is noticeable (and not surprising) that some fairly typical patterns characterise each area because of a combination of recurrent types of development and/or regional differences in environment or landuse. For example, walkover surveys and boundary wall surveys are commonly required in the upland Peak District, while fieldwalking to a standard methodology is a normal requirement in lowland arable Essex.

8.2.5 In Kent, requests for pre-determination field survey and trenching are rather less common than the other areas. It appears that this reflects a number of practical issues concerning the pressure of casework. These include the need to meet targets for resolving planning applications, and concern about requiring such work unless there is good reason to suppose that there might be serious constraints on development that could not readily be accommodated through a condition.

8.3 Post ES Refusals and Withdrawals

8.3.1 The review of 'outcomes' included a number of cases where development proposals were refused or withdrawn. These reflect a number of ways in which the cultural heritage issues had not been identified adequately in the ES for the proposals concerned. On the whole refusals are seldom purely for cultural heritage reasons.

Text Box 22: Examples of grounds for refusal and withdrawal

Refusals

- *Westhay Moor:* ES entirely non-compliant (on all or several matters, not just cultural heritage)
- *Bridgwater Power station:* Indirect effects not adequately assessed (impact of planting energy crops for a biomass power station on all matters, not just cultural heritage)
- *Shinfield (and other sites):* Failure to consider brownfield alternatives to greenfield proposals for which cultural heritage issues were part of the reason for rejection (major housing developments south of Reading)
- *St Mildred's Tannery:* Assessment not attaching sufficient importance to particular aspects of built heritage
- *Richborough waste energy power plant:* Failure to consider effects on archaeology, palaeo-environmental deposits and the setting of a guardianship monument (among other reasons)
- *Linshall's Quarry*: Concerns about impacts on nature conservation over-rode the need for matching building stone in Conservation Areas.

Withdrawals

- *Fossetts Farm Football Stadium:* Included concerns about direct and indirect effects on setting of Scheduled Monument
- *Shakespeare landfill:* Included effects on archaeological potential and a pillbox
- *Wragg's Quarry:* Conflict with heritage landscape management plan for Chatsworth estate.

8.4 Post-determination Implementation and Strategic Frameworks for Mitigation

8.4.1 Patterns of post-determination mitigation typically follow the proposals contained within the ES where these were accepted by the regulators. However, in some cases the mitigation proposals in the ES were considered by the cultural heritage curator to be insufficient, and additional or modified measures were subsequently required under the terms of very broad standard consent conditions and legal agreements. Such conditions and agreements are the key legal instruments by which developers can legally be required to deliver mitigation proposals that are appropriate to the case, whether or not they were identified within the ES. The wording typically reflects a standard 'Grampian' condition, as outlined in PPG 16 paragraph 30**,** to the effect that development shall not proceed until a programme of archaeological investigations has been agreed in writing with the regulator. The basic breadth and flexibility in this type of condition is essential if archaeological mitigation measures are to respond effectively to new discoveries as stages of investigation proceed.

8.4.2 A somewhat comparable approach can be applied to other aspects of ensuring that appropriate mitigation is carried out, based on agreeing design details and other specifications for mitigation works such as requirements for monitoring structural movement or accidental damage. This is often achieved through a Section 106 (Town & Country Planning Act 1990) agreement specifying that detailed designs must be agreed before proceeding to construction work.

8.4.3 It is worth noting that there can be some conflict between the desire of developers and regulators to agree mitigation in advance (and for a commitment to implementing this to be reported in the ES) and regulators' concern to retain enough flexibility to ensure that they can control how appropriate mitigation measures are implemented to take account of unexpected discoveries. In practice this is a matter of balance, in which both regulators and applicants recognise that the final mitigation proposals may only emerge during further stages of detailed design and assessment as the full implications of the scheme become clear. In some cases this will not be until construction is well underway.

8.4.4 The cases reviewed reveal a wide range of practical applications of these approaches. One of the key issues is how far developers and/or their consultants agree the broad framework and approach to mitigation with the curatorial bodies. Wide variation in agreement levels was found.

8.4.5 A growing pattern appears to be the development of much more explicit research strategies as part of the archaeological mitigation process. This is especially evident in the cases of Heathrow Terminal 5, the CTRL, Colchester Garrison, London Gateway and Stansted 15 Million+. Comments from curators indicate that such frameworks can be extremely helpful where they reflect a real commitment on the part of the developer to deal with archaeological issues fully. From the developer's point of view, such research frameworks (especially if they are expressed in non-technical language) can help demonstrate that the work required is justified and geared to answering worthwhile questions. This in turn may result in a greater level of commitment to mitigation, though it may still require some persistence on the part of the curator to negotiate, monitor and enforce the details of full implementation.

8.4.6 For major archaeological complexes and very extensive developments, such research frameworks need constant updating in the light of discoveries. At Heathrow Terminal 5 a continuous process of renewal and updating of research aims and questions has been designed into the whole approach to excavation and recording as an inbuilt feedback loop of results influencing questions. At Colchester Garrison a process for formal review and updating of the overall archaeological research strategy has been established.

8.4.7 In other cases such research frameworks are less explicitly part of an evolving archaeological programme and a means of assigning priorities. Nevertheless it is worth underlining that research that is increasing understanding is a fundamental justification for mitigation measures based on programmes of archaeological investigation and recording. For example, the Drointon to Sutton-on-the-Hill pipeline archaeological mitigation strategy was implemented without such an overarching framework, though the research potential and value of discoveries that were made has been part of the reporting process, albeit not accompanied by proposals for formal publication.

8.4.8 In other instances, recognition of what is required and justified in terms of investigating and recording archaeological remains and areas of potential prior to destruction has been much less forthcoming. For example, at Shardlow Quarry the lack of a clear research framework from the outset seems to have hampered recognition of the significance of the archaeological potential of the site and the measures needed to investigate the remains effectively. At every stage of this case the archaeological curator has been actively involved in providing advice, comments, requests for clarification and requirements for resubmission of the proposals for investigation, which even then needed further amendment.

8.4.9 While the development of overarching strategies for mitigation may seem most pertinent to archaeological investigations, similar considerations can apply to the built heritage to provide a basis for drawing up, approving and implementing detailed layouts and designs. In this context, the relationship between outline consents for which an ES has been prepared and detailed consents to control implementation for each phase of development can be critical, and if there is not a good overarching design strategy which clearly addresses densities, layouts, massing, style and detailing guidelines, there are obvious dangers of losing control over ensuring a final result appropriate for its context.

8.4.10 For example, at Shoebury Garrison there has been an overall broad-brush allocation of density and types of building assigned to each major development plot amongst existing historic buildings. However, the absence of sufficiently clear conservation-led design guidelines for the development may be making it relatively difficult to ensure high quality design that respects the historic character of the existing built environment in terms of scale, style and detailing of buildings and layouts that respect and enhance key views and vistas. The refusal of the St Mildred's Tannery site can, to a significant extent, be put down to shortcomings in the historic buildings and townscape aspects of a planning brief that paid too little attention to principles of conservation-led design.

8.5 Archaeological Outcomes in Relation to Predictions - General

8.5.1 Despite the large number of ESs reviewed, very few have reached a stage of development where all or most of the post-determination fieldwork, and relevant development designs have been completed, implemented and reported.

8.5.2 It is only in the last few months, ten years after their inception, that the results of the massive fieldwork campaigns associated with Terminal 5 (ES dated 1993) and Section 1 of the CTRL (ES dated 1994) have been collated prior to preparing reports for publication. Several of the major quarrying and housing schemes that make up the bulk of cases that have progressed to post-ES stages are only beginning similarly long programmes of development, which will last several years.

8.5.3 The stages to which post-ES work has progressed in the cases reviewed is thus very variable and in almost all cases further stages of archaeological fieldwork have yet to be undertaken, let alone reported or published.

8.5.4 A further limitation comparing archaeological outcomes against predictions is the very limited extent to which ESs make any specific assessments or predictions rather than a general acknowledgement of uncertainty or potential.

Overview of significance and methods of discovery

8.5.5 Of the 45 cases that have progressed to further stages after the submission of the ES (including the benchmark cases), further archaeological work has been noted in 34 cases, of which 11 have led to significant new discoveries, several in some instances. Eight of these cases included one or more discoveries of national significance, and five cases included one or more discoveries of county/regional significance with some projects yielding both. The circumstances and nature of these discoveries are discussed in Section 8.6.

8.5.6 However, these figures do not provide a complete picture of archaeological outcomes in relation to effects identified in ESs because in almost all cases there are several further stages of work to be done before the full process of mitigation is complete. This is reflected in the breakdown of the range of methods of mitigation given in Figure 8.1.

8.6 Archaeological Outcomes in Relation to Predictions - Specific Cases

8.6.1 There are a number of specific cases where the post ES archaeological fieldwork is complete (or nearly so) – albeit not necessarily fully reported – and comparisons can be made between final outcomes and predictions in the ESs. These are given below.

Heathrow Terminal 5

8.6.2 Follow-up work to the original 1993 ES has been substantial, both before and during the public inquiry, and after the development was approved. The desk-based assessment was enhanced by a new desk study and detailed plotting of air photographs for the whole area of the airport in 1994. For the Terminal 5 Inquiry the mitigation proposals were worked up in significantly more detail into an overarching *Archaeological Strategy: Written Scheme of Investigation* to act as a research design for the whole project. Although the original specialist report has not been reviewed, this need for significant enhancement would suggest that it was probably of Grade C or D standard.

8.6.3 Archaeologically the challenge of Terminal 5 was how to respond effectively (both in terms of practical logistics and research objectives) to the loss of an area of complex, nationally important archaeology covering a large area. The archaeological strategy effectively set out how the development proposals would affect the archaeological potential of each part of the development and what should be done to mitigate the impact within an overarching assessment of the research potential of the area and a clear strategy of interactive sampling and interpretation of the site.

8.6.4 The 1998 research design was a deliberate attempt to re-establish, within a modern theoretical framework, the need for continuous interaction with the evidence. This engaged the whole archaeological team in constantly analysing the evidence and asking and modifying questions in the field, rather than relying on retrieving a supposedly 'objective' pre-determined sample to provide all the answers after the event through the post-excavation process.

8.6.5 The scale and culture of the project meant that it was possible for new procedures relating to the archaeology to be introduced. This led to developing a new GIS-based recording system and innovative ways of engaging the whole team in interpretation and analysis.

8.6.6 Under the umbrella of the archaeological strategy a series of other key strategic studies were undertaken. These included a new Cultural Heritage Audit and innovative deposit modelling techniques which were successfully tested in the field. Before the final consent for the project was granted, some very major excavations associated with decommissioning a sewage treatment area allowed the new methodology to be fully tested and refined.

8.6.7 Thereafter, all stages of the archaeological response benefited from refinements and more detailed extensions to the original research design, always building on feedback from the excavations. The results have more than fully confirmed the archaeological significance of the area, and the on-site analysis and interpretation have enabled a massive GIS-based project archive to be made rapidly available for post-excavation analysis and reporting.

8.6.8 What is particularly interesting about the Terminal 5 case is how, with an exceptionally positive attitude on the part of the developer (the British Airports Authority), an extremely generalised proposal for archaeological mitigation has acted as a hook on which to hang the delivery of an outstandingly impressive and innovative approach to very large-scale archaeological fieldwork. Quite apart from its direct value as a piece of archaeological research, this has had knock-on effects for other developments. It has effectively embedded the mitigation proposals for the second ES (and other work at Heathrow) into a framework of demonstrable success, and the

approach has been adopted by the company for its other airports, under a cultural heritage policy within the company's overall environmental management system.

8.6.9 In effect, what Terminal 5 demonstrates is that in the right circumstances even quite superficial coverage of the cultural heritage in an ES *can* lead to mitigation works that are not only firmly rooted in real research priorities but can make fundamental contributions to the technical development of archaeological field techniques. This is not going to happen routinely, however, and developers' attitudes are seldom as far-sighted in identifying the mutual benefits of an innovative, research-led approach as has been the case at Terminal 5.

Channel Tunnel Rail Link

8.6.10 The CTRL is one of only two linear developments reviewed where an approach making a significant number of area-specific predictions of archaeological potential can be assessed against actual outcomes. This overview is based on a rapid assessment of results for Section 1 of the project covering most of the Kentish part of the CTRL (work is still ongoing assessing the results for the Essex and London section).

8.6.11 The CTRL ES was accompanied by a specialist report that incorporated the results of a first stage of fieldwalking. This had identified areas for further evaluation or survey in addition to further areas suggested on the basis of other evidence obtained from desk studies, a walkover survey and one aerial reconnaissance flight. This gave a total of 40 specific areas recommended for evaluation and survey, followed by further investigations (and in some cases preservation *in situ*) where significant archaeology was found.

8.6.12 Although in the ES there was only a firm commitment to this programme of work for eight areas, in fact the accompanying legal agreements and environmental protocols adopted for the project enabled the cultural heritage curators (Kent County Council and English Heritage) to negotiate for all 40 identified areas to be evaluated. In addition a further 25 areas were examined as a result of various factors:

- further discoveries made during additional fieldwalking, geotechnical monitoring, and geophysics
- investigation of areas of potential identified in the ES but not originally recommended for evaluation
- testing of some 'blank' areas
- watching briefs on preliminary and later works.

8.6.13 As a result, a total of 65 specific areas were investigated archaeologically, excluding the fabric and sites of a number of Listed Buildings that were dismantled after recording and relocated.

8.6.14 It is not possible within the scope of this project to conduct a definitive review of the CTRL results in relation to the predictions made in the specialist cultural heritage study that underpinned the ES, but Table 8A provides a summary overview of a more detailed tabulation. This matrix plots the significance of discoveries made as a result of several further stages of fieldwork in 65 areas along the route against the level of prediction and mitigation proposals made for these areas in the ES.

8.6.15 In addition the whole area of the land disturbed for Section 1 of the CTRL was monitored for discoveries through an extensive watching brief, and significant discoveries made in this process are recorded in the matrix, as well as those made in set-piece investigations.

8.6.16 The numbers within the cells of the matrix represent the number of archaeological sites or areas (including archaeological recording of buildings) corresponding to each combination of grading of discovery in relation to prediction/mitigation. The areas of investigation varied considerably in size, and in the number and range of different types of field investigation carried out.

Table 8A: CTRL ES Archaeological Predictions and Outcomes

EIA prediction & mitigation	**Significance of Discoveries**					
	Nil	Negligible	Local	Regional	National	Totals
Nothing predicted	*5*	*2*	*7*	*3*	-	*17*
Reference to potential	*1*	*1*	*1*	*3*	*1*	*7*
General mitigation	-	-	-	*1*	-	*1*
Optional evaluation	*1*	*7*	*8*	*14*	*2*	*32*
Agreed evaluation	-	-	*1*	*3*	*4*	*8*
Totals	*7*	*10*	*17*	*24*	*7*	*65*

8.6.17 The shaded areas of the matrix (towards the top right hand corner) indicate where the ES failed to a greater or lesser degree to predict discoveries. Of the 17 cases for which the ES did not predict any potential or suggest any specific mitigation, most of the 10 locally or regionally significant discoveries were in unsurveyed areas. They could not have been predicted individually at that stage, but were part of a generalised prediction of potential of the route that was subject to further prospection and evaluation which did lead to their identification.

8.6.18 The 7 cases where some potential was recognised, but no mitigation was recommended are mostly instances where the full impact of the proposals had not been fully appreciated. This includes a nationally important Roman cemetery that was discovered in stripping the route for a major service diversion early in the project programme. The cultural heritage ES report had identified the general area as being archaeologically sensitive, with a commitment to further investigation of areas affected by other works, but had not identified this particular service diversion as needing mitigation. It was successfully dealt with through a general mitigation strategy for unexpected discoveries.

8.6.19 The 8 (7 + 1) 'optional evaluation' cases furthest towards the bottom left corner of the matrix, are instances where significant potential was predicted and further evaluation carried out, but nothing (or virtually nothing) was found. These cases can in effect be seen as reflecting an application of the precautionary principle.

8.6.20 There are 32 cases where predictions in the ES and optional or agreed recommendations for further evaluation work led to local, regional or national discoveries. These represent instances where the predictions of the ES were borne out by the results, but it is worth noting that many of these cases were based on results of fieldwalking and some proved to be of interest for remains of a date different from that which was anticipated.

8.6.21 The overall picture is that in very broad terms the ES was reasonably successful in predicting areas of potential, and that the proposals for mitigation were successful in ensuring that important archaeological sites were investigated before being destroyed (though in two or three cases discoveries of unexpected importance did occur at a very late stage). More details about a number of these cases can be found in the report of the Planarch 1 study (Hey and Lacey 2000).

8.6.22 The extent to which options for preservation *in situ* were implemented and how far these were successfully carried through has not been examined in detail, but there are several examples of this being done, in a few cases through minor adjustments of alignment, and more commonly under non-structural landscape mounding and temporary works.

8.6.23 There has not been any formal monitoring of the outcomes of the CTRL for historic buildings, but all the recommendations for recording and relocation of buildings to be demolished were carried out, and recording of more minor structures proposed was also done, as was recording of

some structures not identified by the ES (notably two WWII army camps). As recommended in the ES, most of the solutions to the final destination of the buildings (re-erected for use elsewhere or as museum exhibits) were arranged before demolition began, avoiding unnecessary storage, delays and uncertainty about the final outcome.

8.6.24 There were a number of Listed Buildings where the ES had identified levels of visual and noise intrusion that put in question their continued viability as usable properties. One of these was added to those that were fully recorded, and dismantled for re-erection, and another was physically moved to a different location nearby. Other buildings potentially at risk because of excessive noise and visual intrusion were screened as proposed, and appear to have remained occupied.

8.6.25 The ES also dealt with issues of less serious intrusion on the setting of historic buildings and places, and the severance of areas of historic landscape interest. Mitigation proposals to limit these effects were generally built into the design of the railway and its landscaping, but the actual level and significance of intrusion has not been compared with the ES assessment.

Drointon to Sutton-on-the-Hill Pipeline

8.6.26 This scheme reflects what in many ways is an exemplary example of the EIA process in terms of overall approach and outcomes. The reporting of the whole process is unusually thorough and systematic. References are made elsewhere to the consideration of alternatives and the ES assessment methodology. In the ES, areas of potential were identified on the basis of the desk study, identified using one area of soil/cropmarks and earthwork features and topography (river floodplains).

8.6.27 The ES proposed a staged process of investigation, together with a number of cases of design solutions to avoid specific sites. The investigations included a fairly standard range of fieldwalking, geophysics, hand augering and trenching, with provision for full excavation, and a watching brief to locate and record any other sites. Unusually, the reporting of each stage of work (including reassessment of a post-determination tweaking of the pipeline route) included systematic reappraisal of the results of previous stages. This included some tabulation of the processes of discovery.

8.6.28 The summary table below (drawn up in the same manner as that for CTRL above) excludes numerous minor post-medieval and modern records.

Table 8B: Drointon to Sutton-on-the-Hill ES Archaeological Predictions and Outcomes

EIA prediction & mitigation	**Significance of Discoveries**					
	Nil	Negligible	Local	Regional	National	Totals
None	-	-	-	*3*	-	*3*
Reference to potential	*4*	*1*	*2*	*4*	-	*11*
Explicit mitigation	-	-	*1*	-	-	*1*
Totals	*4*	*1*	*3*	*7*	*0*	*15*

8.6.29 The only explicit mitigation referred to in the ES was the avoidance of two sites by detailed design and the need to re-evaluate a third in the light of the non-intrusive surveys. The discoveries resulted from a well-executed process of non-intrusive survey, a few trenches prior to construction, and an effective watching brief that led to a number of specific excavations. In one case landtake was reduced to minimise disturbance.

8.6.30 It may be noted that of the discoveries in areas of identified potential, six were palaeo-channels in alluvial floodplains which the ES had generally recognised as having potential. Only one of

the channels produced a useful palaeo-environmental sequence, but another important floodplain discovery was an unexpected Roman settlement (and earlier and later remains) stratified within the alluvium. Although the floodplains were augered as part of the mitigation strategy, they were not subjected to geophysics (on the grounds that the technique is unpromising in alluvial areas - cf Yarnton in Hey and Lacey 2001) or test pitting.

8.6.31 The table above contrasts with that for the CTRL in that all of the most significant discoveries lie within the shaded areas (i.e. potential was only partly recognised and except in one instance no specific mitigation was proposed other than the overall process of staged evaluation). This difference does not particularly reflect differences in the broad process of assessment from desk studies to full excavation and monitoring, or the quality of the outcomes, but that compared with the CTRL, the ES for this pipeline was published at a much earlier stage in the assessment process, before even a walkover survey had been undertaken.

8.6.32 The pipeline ES placed some stress on the policy to avoid sites and areas of regional or national importance (which is significantly more practicable for a pipeline than a railway), and in fact this was carefully considered at each stage of the route selection and route refinement processes. The level of work done for the ES did not allow this principle to be carried through to cover sites that were not already identifiable just from desk studies. It is not, however, clear in practical terms whether the regionally important remains, which in the event were affected, could or would have been avoided if they had been known about in advance. This is almost impossible to judge, especially where more detailed post ES surveys were not subsequently carried out (e.g. the Roman floodplain site).

8.6.33 As with the CTRL, the results of the walkover and non-intrusive fieldwalking, magnetometer and magnetic susceptibility surveys tended to produce further indications of potential but seldom clear-cut evidence of what was actually found. The fieldwalking produced evidence of potential in two areas, and geophysics provided further evidence for one of these and successfully indicated another area of potential. Trenching of two of these areas failed, however, to provide much further evidence, and the final results relied heavily on the watching brief both to identify sites and allow time for recording them.

8.6.34 In addition to the specific archaeological sites that were discovered, the post ES process also identified further areas of ridge-and-furrow. The ES had indicated 28 such areas from the desk study, the walkover identified a further eight and the watching brief during construction a further 18. In seven of these areas the earthworks were sufficiently prominent and coherent to be considered worth reinstating as part of the post-construction land restoration.

8.6.35 In conclusion, it appears that, had the ES been prepared after the non-intrusive survey stage, some of the significant archaeological discoveries that were made might have been predicted somewhat more accurately, but not entirely so. In the event all the effects were mitigated satisfactorily and with very little prompting from the curators. There remains an issue of fully publishing the more significant discoveries.

Swalecliffe Wastewater Treatment Works

8.6.36 Of all the cases reviewed, only one (the Swalecliffe Wastewater Treatment Works in Kent) has run through the full process from ES to full publication of archaeological investigations in a peer-reviewed journal. Ironically, this case is also the clearest example of how the overall planning process can ensure that the impact of development on some entirely unpredictable remains of national importance can be dealt with appropriately, even when the ES contains absolutely no coverage of the cultural heritage.

8.6.37 The fact that the ES for this development contained no consideration at all of archaeology is especially striking. This is not just because the developer was a water company with a statutory

8.6.38 duty to take account of the cultural heritage in all its activities, but even more because a previous ES for the same site and the same company in 1996 *did* include an archaeological assessment that identified significant potential.

8.6.39 Notwithstanding the absence of any archaeological assessment in the ES, the potential interest of the site was indicated both by the presence of Pleistocene and Holocene palaeo-environmental deposits, and the possibility of later prehistoric activity suggested by previous discoveries in the area, including a Bronze Age hoard and pottery fragments. The regulator (Kent CC) imposed a standard archaeological condition. A Brief was issued for both geo-archaeological test pits to assess the potential of Pleistocene deposits and further evaluation integrated into the development process to investigate archaeological levels after a thick overburden of made-ground had been removed. This revealed what initially appeared to be a rather unpromising palaeo-channel containing a few bits of timber.

8.6.40 The persistence of the archaeological curator to establish whether these deposits were of more interest led to further intensive excavation of what turned out to be an unprecedented series of 17 Bronze Age wells containing timbers, artefacts and placed pots suggesting a sacred use. A full academic report on the site with dendro-chronological dating and other specialist evidence was published in the *Antiquaries Journal* (Masefield *et al*. 2003).

Other instances of discoveries of national importance

8.6.41 A number of other examples of nationally important discoveries made during further works were noted, reflecting a variety of circumstances of prediction and stages of discovery (see Text Box 23). What they all have in common is that the procedures for mitigation and monitoring successfully allowed these remains to be investigated and recorded, and in some cases preserved (there is obviously no knowing whether other nationally important remains may have been missed altogether in these or other projects).

8.6.42 What is rather less certain is how far these might have been identified in the ES had more extensive fieldwork been completed for the ES rather than at later stages of assessment and mitigation. With the exception of the log boat and wooden figurine (see Text Box 23) it appears that the national significance of these discoveries emerged during the evaluation process. Such fieldwork could possibly have been carried out as part of the EIA process.

Text Box 23: Discoveries of National Importance

- *Shoebury Garrison*: Late prehistoric material associated with scheduled fort (predicted – post determination planned excavation and preservation *in situ*).
- *Colchester Garrison:* Roman *Circus* monument (not explicitly predicted but in area identified as having a particularly high potential for important Roman remains – evaluation; potential preservation *in situ* still under discussion).
- *A1159 Southend Priory Crescent road scheme:* Princely Saxon burial (not explicitly predicted but in area of identified potential for Saxon burials – post-ES, pre-determination evaluation; fully excavated)
- *Shardlow Quarry:* Bronze Age log boat (not explicitly predicted, though ES noted similar find in adjacent quarry – watching brief for haul road; special arrangements implemented for preservation *in situ*)
- *Hill Farrance flood alleviation scheme:* Bronze Age enclosure and pit containing wooden figurine (potential not predicted – watching brief; excavated)

8.7 Archaeological Outcomes in Relation to Predictions - Predictive Modelling

Zoning of Archaeological Potential

8.7.1 Unfortunately very few such cases where ESs have used predictive modelling have proceeded to full recording to allow the efficacy of such predictions to be fully assessed, but a number of cases illustrate both the value and some of the pitfalls of such attempts.

Text Box 24: Examples of Zoning Areas of Archaeological Potential

- At *Heathrow Terminal 5* (subsequent to the ES) a comparison of a detailed historic topographical survey of surface levels with modern survey data was carried out, allowing an accurate assessment to be made of the impact of a sewage farm on below-ground archaeology. The predictions of survival levels were very substantially confirmed by subsequent archaeological excavation.
- For the *Colchester Garrison* development, the zoning of archaeological potential based on a mixture of desk study, non-intrusive survey and some evaluation work has been very largely confirmed by subsequent detailed evaluation. There have been some significant unexpected discoveries, but so far they have been confined to areas that were identified in the ES as being of high potential.
- At *Shoebury Garrison* the prediction of zones of potential for later prehistoric remains and deeply buried Mesolithic deposits has so far proved broadly correct.
- At *East Hall Farm, Kent* (subsequent to the ES) a 1:10,000 map regression exercise was undertaken to map areas of deposit destruction and survival on a very extensive site, much of which had been subject to extraction of brick earth. It has recently been confirmed that, as expected, an area of unquarried land adjacent to a known Roman cemetery found during brickearth extraction does contain archaeological remains. At the other end of the development area Bronze Age remains have been identified in a watching brief for a new access road across a small area of historic woodland that was mapped in the ES as part of the quarried area (though the woodland was consistently marked on historic maps reproduced in the ES).

8.7.2 As a more general observation on the use of deposit modelling, the Essex County Council development control archaeologist noted that the very broad-brush archaeological deposit model for the strategic archaeological audit of Stansted Airport 15 Million+ (mainly based on geotechnical data) was a very useful starting point for zoning archaeological potential in terms of basic survival. However, it was pointed out that in some parts of the site where archaeological work had already taken place the model had proved inaccurate in some instances, demonstrating the importance of 'ground truthing' predictions based on data from other specialisms rather than archaeological fieldwork (as exemplified by the Terminal 5 case).

8.8 Management Outcomes

8.8.1 It is possible to assist the preservation of cultural heritage features by carrying out work on the development according to particular systems. Examples of such can include the use of buffer zones around archaeological sites, protocols for movement of site traffic or dumping waste or the use of protective barriers. In other instances, structures or buildings may be removed to storage and re-erected following completion of works.

8.8.2 Several instances of proposals to protect cultural heritage assets from damage were noted in the ESs, but there is rather little documentation of outcomes. This may imply that in most cases proposals have been implemented effectively and that no problems arose. There are a few cases where outcomes were noted following some reasonably formal monitoring.

8.8.3 The most obvious is the CTRL where monitoring the implementation of *in situ* preservation and other protective measures formed part of the work required under watching briefs for sections where such protection was required. These appear for the most part to have been successful, though in one case where a mistake occurred on a newly discovered site, excavation and recording was implemented instead as a corrective measure.

8.8.4 Overall, it would appear from these cases that problems can and do occur, especially on large complex construction projects, and that formal environmental management plans for construction can be very helpful in establishing the basis for on-site monitoring and taking corrective action.

8.8.5 The idea of cultural heritage forming part of environmental management plans featured in some relatively early ESs including that for the CTRL, and the outcomes for that project (and others subsequently) clearly suggest the benefits to be gained. The analysis of the ESs suggest that this form of mitigation is becoming more common, and in some cases routine, but appears not yet to have become a standard part of written schemes of investigation for watching briefs.

8.9 Design Outcomes

8.9.1 The issue of the protection *in situ* of cultural heritage features may have an influence on the design of a development. Layouts can often be altered to avoid areas of known archaeological significance or the details of the foundations of the construction may take buried features into account. The most common approaches to mitigation through design are usually those related to setting, where screening by planting or construction of earth mounds is used.

8.9.2 No cases were encountered where the actual outcomes of intrusive effects on the setting of heritage assets had been monitored against predictions made in the impact assessment.

8.9.3 Apart from the instances of archaeological preservation *in situ* alluded to above (the Drointon pipeline for example), it is very difficult to establish how far design outcomes have been successful, as these are very seldom formally monitored. No cases were identified of audits of design issues having been carried out, nor were any cases reported to us that have been subject to enforcement notices to ensure designs were implemented.

8.9.4 Of the cases involving significant built heritage complexes, only two shed any light on how outcomes relate to the assessment made in the ES (Text Box 25).

Text Box 25: Outcomes related to design issues and the built heritage

- The refusal of consent for the *St Mildred's Tannery* proposals was entirely due to the inadequacy of the original scheme to address layout and design issues in relation to the historic character of the area and the retention of Conservation Area buildings of historic interest. The revised scheme involving a local architect addressed these issues, leading to the retention of more of the existing buildings.
- At *Shoebury Garrison* there has been a fairly significant level of intervention in determining detailed planning consents for blocks of residential development to seek improvements of massing, scale, layout, vistas, architectural style and detailing to respect the historic character of the Garrison and the setting of Listed Buildings within it.

9 THE QUALITY AND EFFECTIVENESS OF CULTURAL HERITAGE COVERAGE IN ESS

Chapter 9 *examines factors affecting the quality and effectiveness of cultural heritage coverage in ESs. Over the period 1999-2003 the number of bad ESs has decreased with the proportion of medium quality projects increasing, but also fewer good ones. There are some differences in quality between the different areas covered by the study (possibly reflecting differences in pressures of casework). Public sector developments tend to have better ESs than private sector ones. Heritage consultants and professional archaeological units tend to produce better specialist cultural heritage studies than specialist engineering and environmental consultants. Planning consultants and developers themselves tend to produce significantly poorer specialist studies.*

There is much variation in how effectively key cultural heritage issues are recognised and dealt with. This appears to relate to factors such as the scope of cultural heritage coverage; the extent of baseline fieldwork; how well significant effects are identified and assessed; the influence of national designations; the role of consultation and the attitudes of developers and lead consultants.

9.1 Introduction (Figure 9.1)

9.1.1 This section examines how well overall cultural heritage is covered in the EIA process in relation to a number of different factors that can influence their quality. The grading of ESs was based on standard EIA review criteria (see Section 3.3) using the broad criteria outlined in Appendix 5 covering the main EIA tasks:

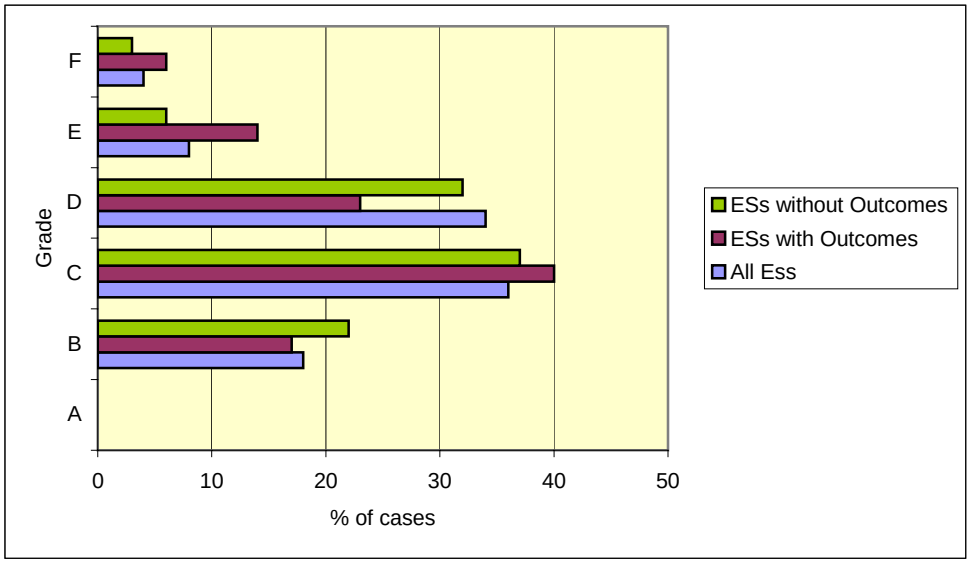
- Baseline description;
- Assessment of impacts and effects;
- Mitigation and monitoring;
- Communication.

9.1.2 As explained in Chapter 3, the review of ESs was carried out in two stages, with a sub-sample of those where 'outcomes' could be examined being subject to more detailed scrutiny of accompanying documentation and discussion with curators. Figure 9.1 gives the percentage of cases assigned to the different grades, divided into three separate groups:

a) All the ESs reviewed (Stage 1);
b) Those subject to more detailed review of 'outcomes' (Stage 2);
c) Those not subject to more detailed review of 'outcomes.'

9.1.3 None of the cases was considered so flawless as to deserve an overall Grade A. Otherwise the Figure indicates some fairly significant differences in the grading of those that were subject to more detailed review and those that were not. The incidence of Grades E and F is higher for those ESs with outcomes (assessed as part of the detailed Stage 2 work). Although this may partly be fortuitous, it also reflects a significant level of downgrading of those where detailed review occurred – mainly from B to C, and some from D to E or F. This reflects the extra depth of insight into the shortcomings of ESs as revealed by the curator's actions (both in comments and correspondence and requests for clarification etc.).

Figure 9.1: Comparison of Overall Grade Distribution



9.1.4 A strong impression gained while carrying out the more detailed review was that it is not always easy to tell how good an ES is from superficial appearances – especially if it looks thorough and has covered all the basic steps. Several instances were noted where curators had picked up sometimes serious shortcomings that would not be immediately apparent to anyone who did not know the area and/or the case.

9.1.5 Although the differences between the cases subject to detailed review and the remainder are quite significant, it was felt that the relative sizes of sample and overall coverage meant that it would be best to use the gradings based on the whole sample of ESs (i.e. those in category 9.1.2a above) in any statistical analysis. Nevertheless the comparisons noted above should be borne in mind in the commentary on gradings that follows.

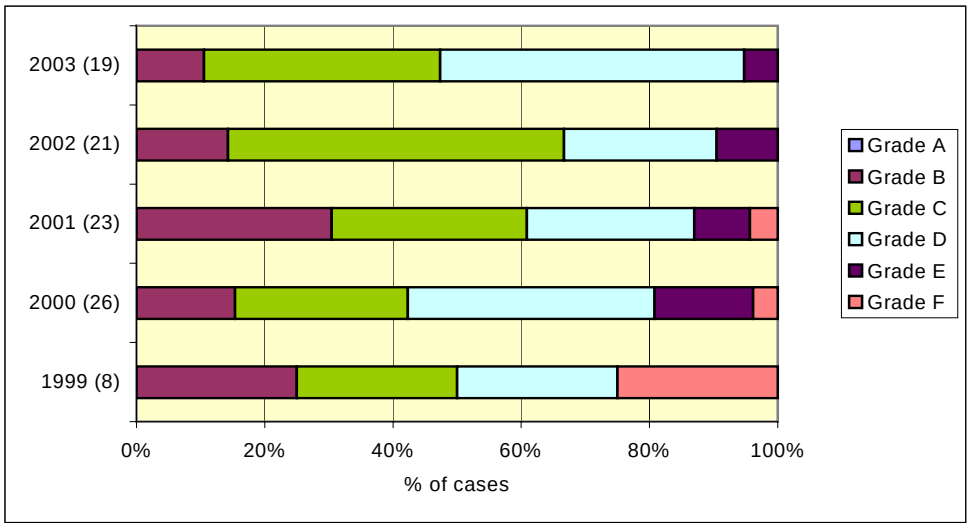
9.2 Chronological Trends (Figure 9.2)

9.2.1 A number of general studies reviewing the quality of ESs have indicated that there have been distinct improvements since the requirement for EIAs to be carried out was first introduced in 1985, and Dandy (2000) specifically detected an improvement in coverage of the cultural heritage over the period 1995 to 1999.

9.2.2 The changing proportions of overall grades over the 5-year time scale (1999-2003) covered by this study are given in Figure 9.2. This indicates that there has not been any significant improvement: there have been fewer bad ESs and an increasing proportion of medium quality projects, but also fewer good ones. Similar figures were plotted for each aspect of the EIA process, which show little difference from this overall pattern.

9.2.3 However, the significance of this finding needs to be treated with some caution because of the nature of the sample, which was partly influenced by accessibility to ESs for some types of development. For example the relative dearth of ESs for transport schemes within the sample (reflecting a Government moratorium on new road schemes) means under-representation of a key type of development where EIA procedures for the cultural heritage have been most fully developed.

Figure 9.2: Overall Grade by Year

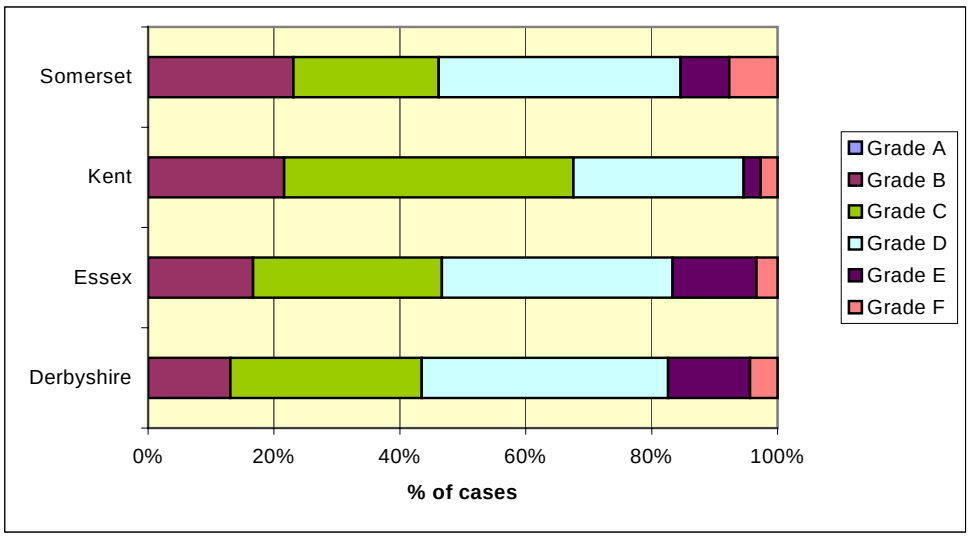


9.2.4 Perhaps the most obvious conclusion to draw is a negative one – there is no inexorable improvement in the quality of ESs of a kind that might negate the need for clearer guidelines.

9.3 Regional and County Trends (Figure 9.3)

9.3.1 The proportions of overall grades and grades for each main aspect of the ESs reviewed in each of the four Planarch 2 areas are given in Figure 9.3. At first sight this appears to indicate that ESs prepared for Derbyshire and Essex are less satisfactory than those for Kent and Somerset.

Figure 9.3: Overall Grade by County



9.3.2 This may, however, at least partly reflect differences in curatorial response. In finalising the ES grades, cases where curators had asked for more information prior to determination were graded D, i.e. below the standard of information needed to determine the case.

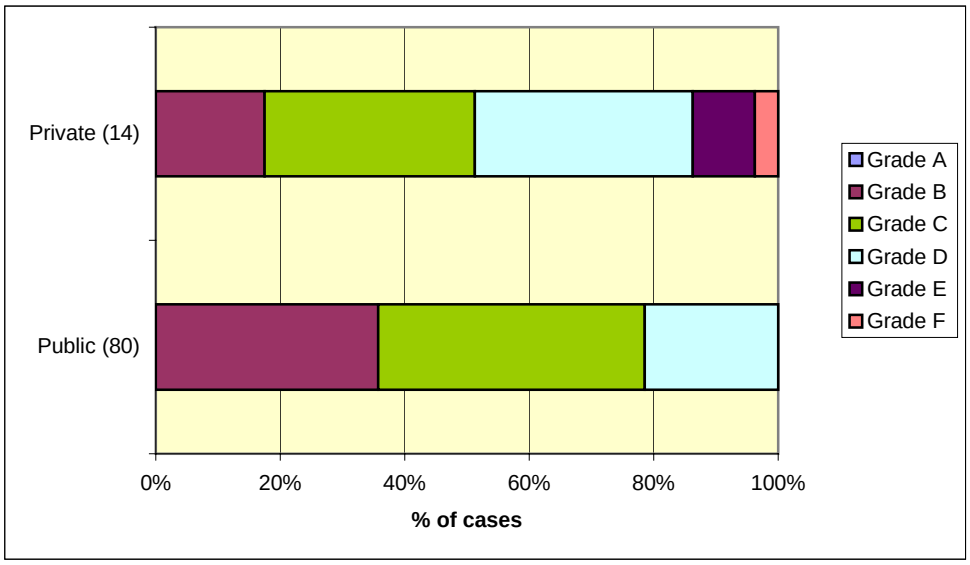
9.3.3 Discussions with the archaeological curators suggests that different pressures (in terms of the overall through-put of all planning cases and targets for determining them) are likely to influence the threshold at which more information is requested. In Kent it appears that such pressures tend to lead to somewhat more reliance on completing surveys as part of the mitigation works to be carried out under condition, rather than pre-determination. This does not indicate less stringency, but an acceptance that given the overall workload, it makes sense that unless information is likely to be an essential factor in the overall determination of the case, it is sensible to use conditions to achieve the desired outcome, thereby concentrating effort on getting the mitigation right for those cases that do proceed to development. In practice, many proposals where more information is desirable do not in fact come to fruition for reasons unrelated to heritage issues.

9.4 Types of Development (Figure 9.4)

9.4.1 The overall grading and the grading of the main aspects of the ESs covered by the study were examined for the main types of development, but the very limited number of some development types makes this uninformative. Such variation that is discernible is not easy to interpret.

9.4.2 A similar breakdown for categories of developer was examined, but again the sample numbers are problematic, with the vast majority of development proposals put forward by large private companies. Figure 9.4, however, provides a very broad comparison between private sector developers (large and small) and public sector ones (covering national and local government bodies, a NHS Trust and one or two Public Private Partnerships).

Figure 9.4: Overall Grades for Public and Private Sector ESs



9.4.3 This comparison suggests that coverage of the cultural heritage in ESs tends to be distinctly better for public sector than private sector projects, with around 80% graded C or better compared with 50% of private sector cases. The relatively small number of private sector cases and the relatively low proportion that were reviewed in detail, mean that this difference still needs to be treated with some caution.

9.4.4 Given the character of the sample and the range of other potential factors influencing this, it may be reasonable to conclude that coverage of cultural heritage issues in public sector ESs

tends on average to be better. It is uncertain whether this would bear up to detailed analysis of a larger sample of public sector cases, but the trend might reflect the fact that public bodies commissioning EIAs are rather less varied in character, size and outlook than the private sector, and are perhaps rather more attuned to procedures which weigh up different public interest concerns.

9.5 Developers and Lead Consultants (Figures 9.5a-e)

9.5.1 The overall grading and the grading for different aspects of the ESs drawn up by different categories of lead consultant are given in Figures 9.5a-e (some broader comments on their roles in influencing the quality of the EIA process are given separately at the end of this Section).

Figure 9.5a: Overall Grade by Lead Consultant

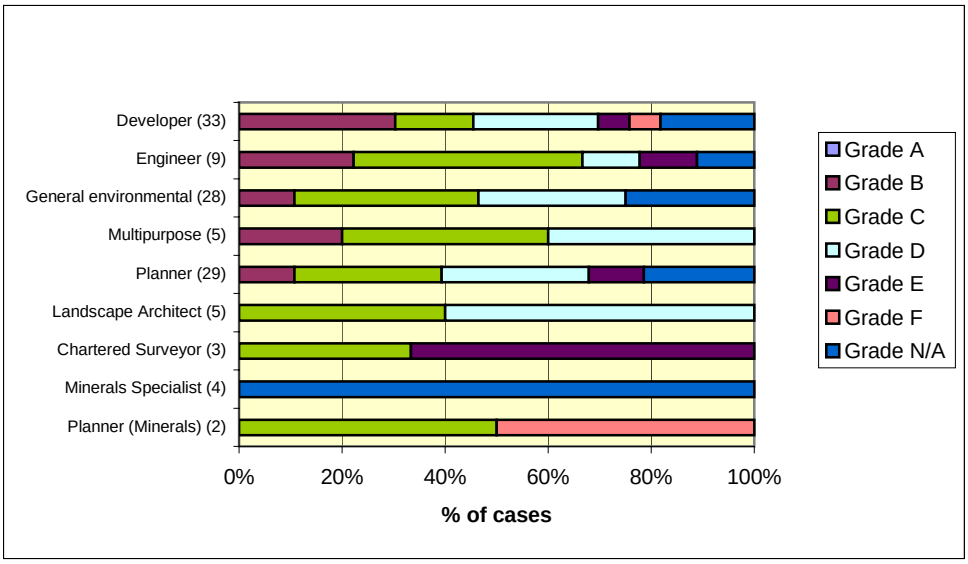


Figure 9.5b: Baseline Grade by Lead Consultant

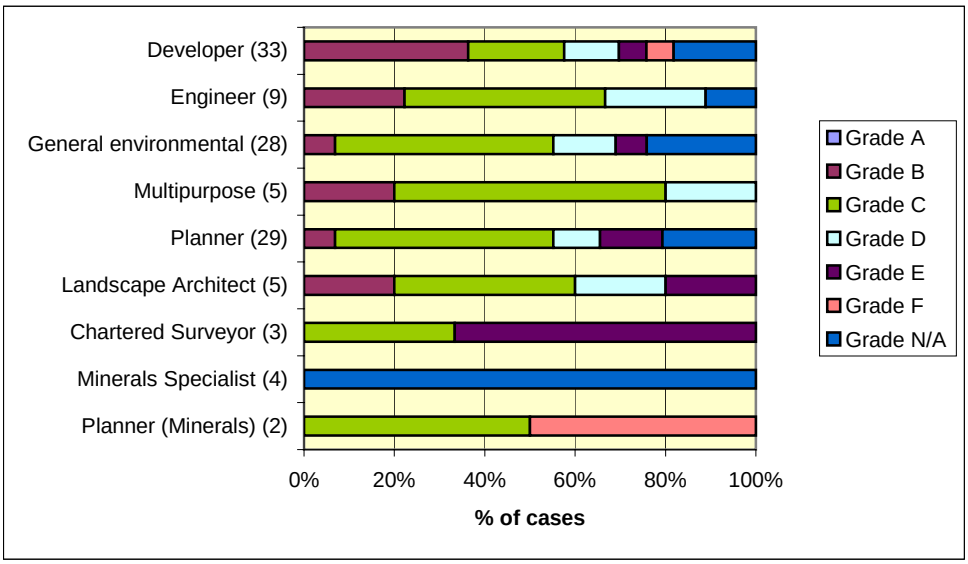


Figure 9.5c: Impact Assessment Grade by Lead Consultant

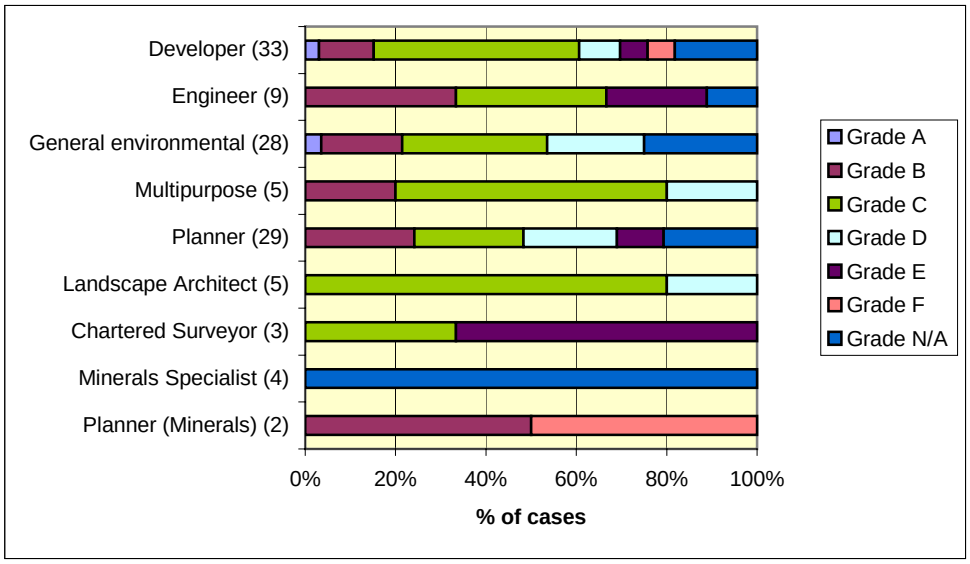


Figure 9.5d: Mitigation Grade by Lead Consultant

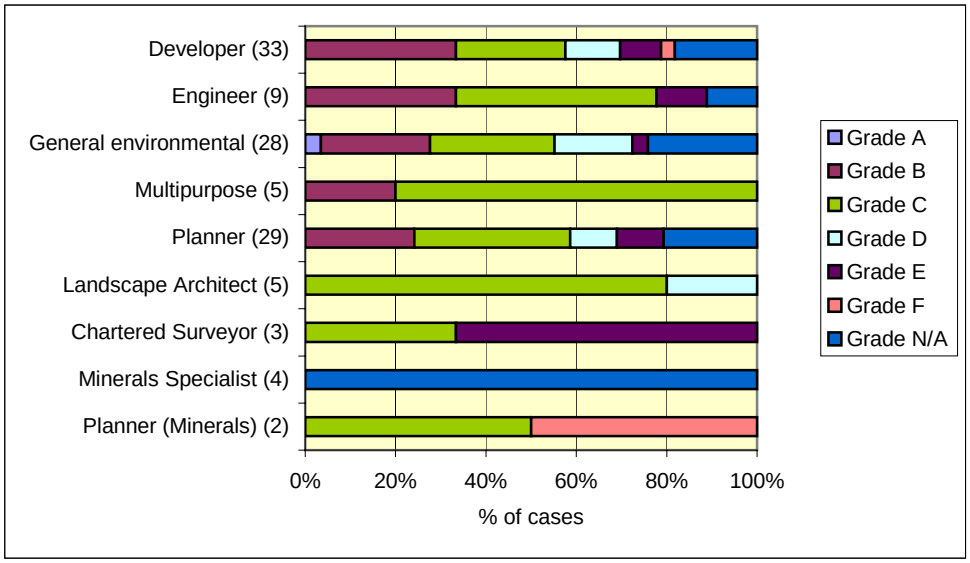
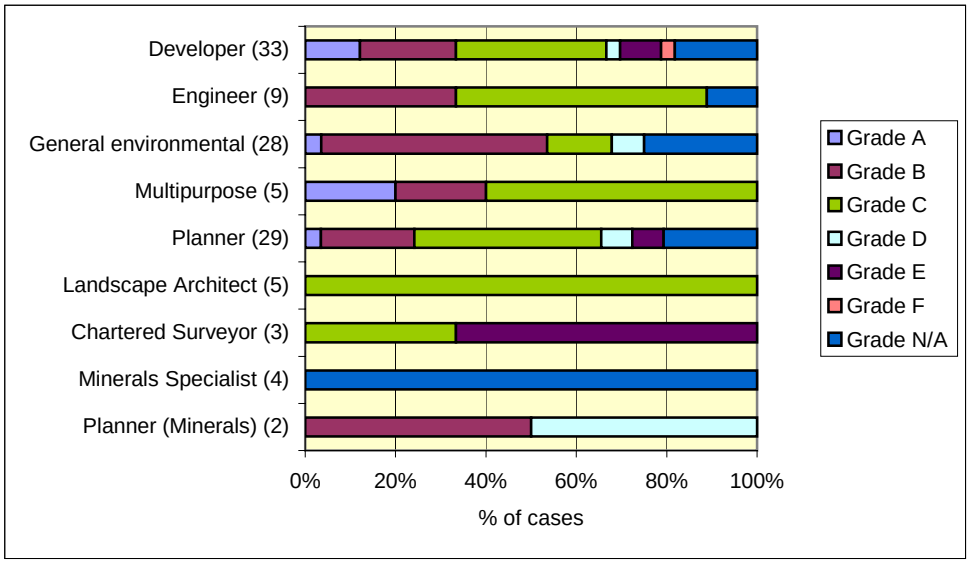


Figure 9.5e: Communication Grade by Lead Consultant



9.5.2 In a number of instances (33) the developer also acted as the lead consultant. The results highlight the varied influence of developers on the quality of outcomes. Although the number of cases is rather small, some cases where the developer acted as lead consultant, commissioning specialist input directly, achieved a relatively high standard, but others were very poor. The better ones appear to be produced by companies with a great deal of experience (who can effectively co-ordinate EIAs themselves with either in-house or external specialists), while the much poorer ones tend mainly to be for relatively small, one-off projects by developers for whom the process was unfamiliar.

9.5.3 An impression was gained that some major developers who regularly have to prepare EIAs have started to develop some standards of good practice, presumably because of the learning curve and feedback from previous cases, together with improved teamwork using regular consultants. This is most discernible where there has been some significant development of a corporate policy towards the historic environment in major organisations such as the Defence Estates Agency. It is also reflected in the approach developed by the British Airports Authority stemming from the Heathrow Terminal 5 inquiry, with the establishment of an ongoing relationship with an archaeological consultant and contracting joint venture, which has fed through into other BAA work (both at Heathrow and Stansted).

9.5.4 However, BAA's 2003 ES for the expansion up to 15 million passengers at Stansted also illustrates a potential pitfall of trying to be too progressive. The relatively novel (and highly commendable) approach that emerged from the Terminal 5 project in developing a corporate audit-based policy towards managing archaeological issues at a strategic level was used as the basis of an EIA for specific development proposals for expanded passenger facilities. The result, which focused heavily on modelling potential archaeological effects within a broad research-led framework, did not fully address historic building and historic landscape issues, and was if anything less thorough than the original Terminal 5 ES in its coverage of some relevant cultural heritage effects.

9.6 Cultural Heritage Specialists (Figures 9.6a-e)

9.6.1 The proportions of overall ES review grades and grades for different stages of the EIA process for different categories of specialist consultant are given in Figures 9.6a-e. This excludes

categories with too few cases to provide any meaningful picture (two dealt with by multipurpose consultancies, and one each by a university, a Government agency, a museum, a local authority, a landscape architect and an amateur).

Figure 9.6a: Overall Grade by Cultural Heritage Specialist

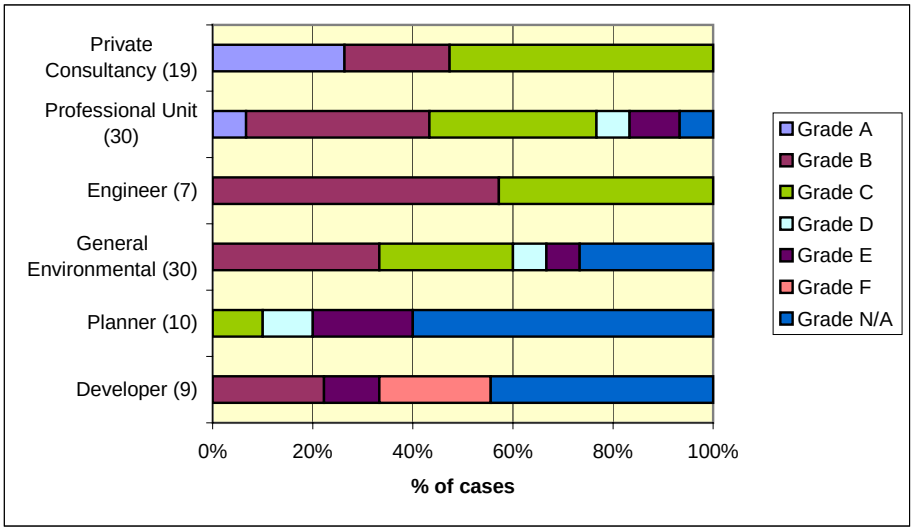


Figure 9.6b: Baseline Grade by Cultural Heritage Specialist

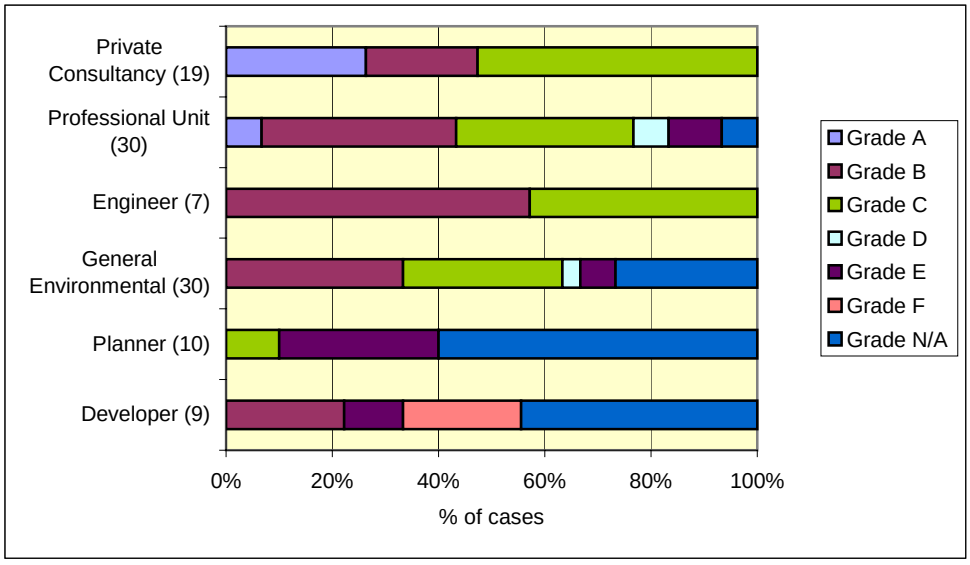


Figure 9.6c: Impact Assessment Grade by Cultural Heritage Specialist

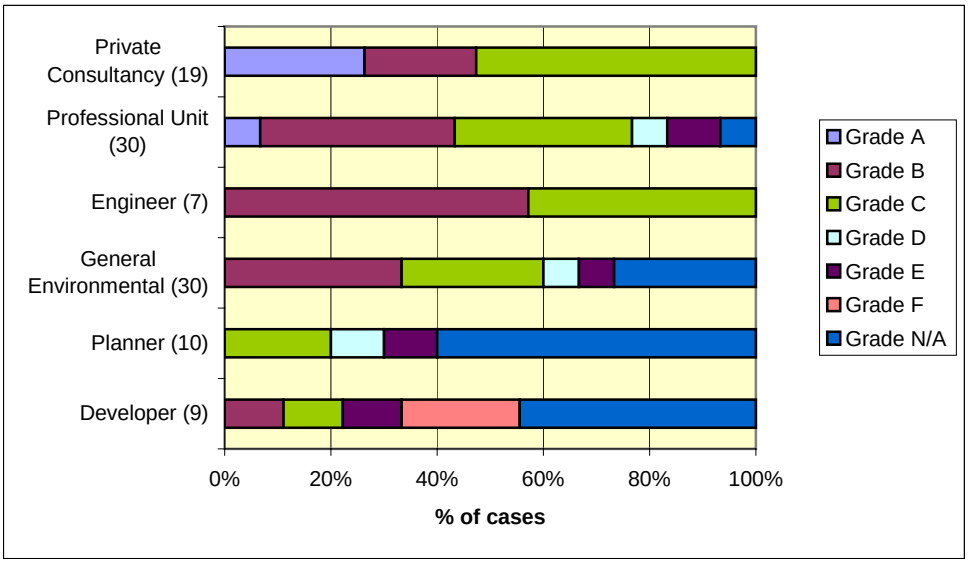


Figure 9.6d: Mitigation Grade by Cultural Heritage Specialist

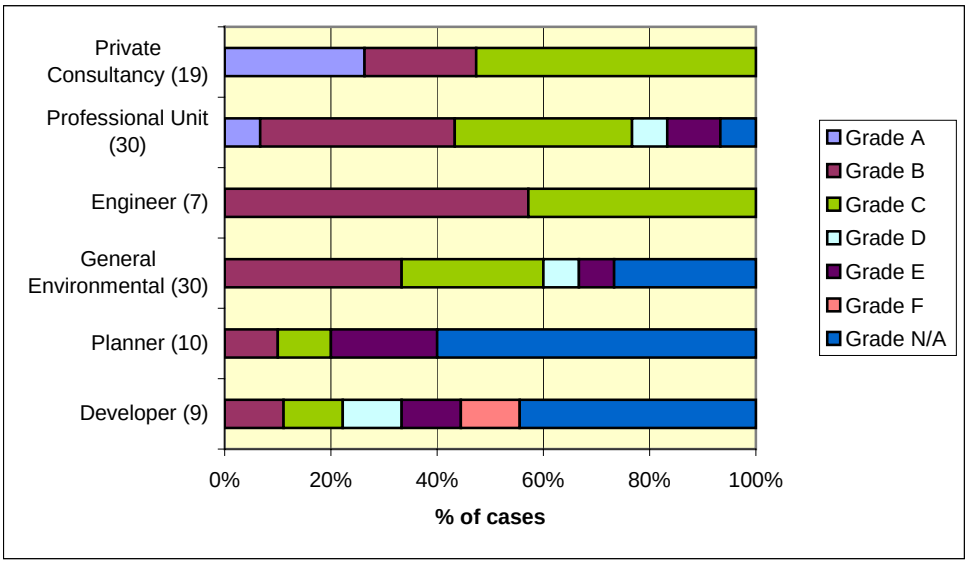
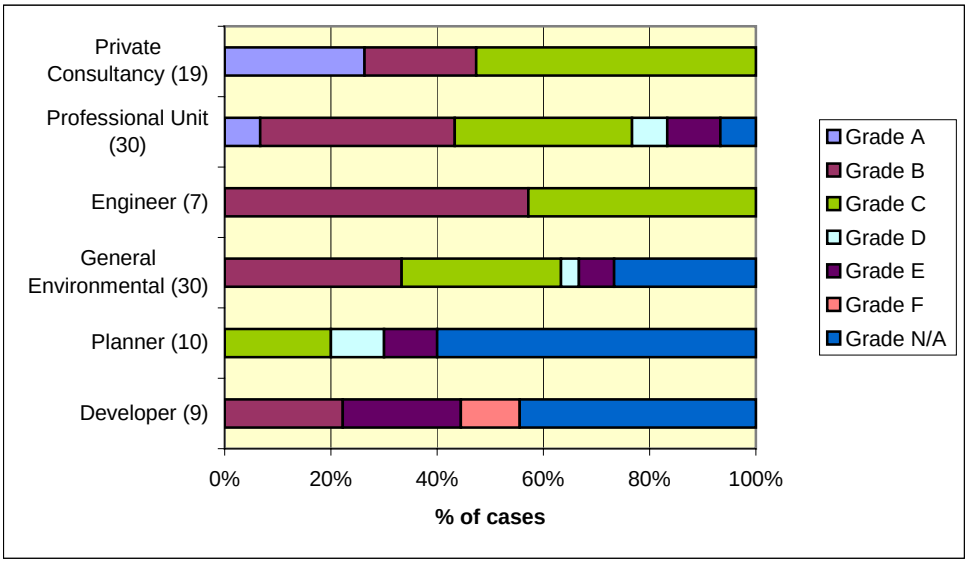


Figure 9.6e: Communication Grade by Cultural Heritage Specialist



9.6.2 The results indicate that specialist cultural heritage studies carried out by heritage consultants and professional archaeological units tend to achieve somewhat better results than those done by specialist engineering consultancies and general environmental consultants. Planning consultants, developers themselves and minerals consultancies tend to produce significantly poorer specialist studies.

9.6.3 The indications that engineering consultancies produce generally competent studies (with very few poor studies) may not be significant given the low number of cases, but could reflect the development of in-house expertise in some of these firms, together with good understanding of the project.

9.6.4 The number of cases where the specialist cultural heritage input was provided by planners, developers and minerals consultants is low, so the relatively poor figures might not be very significant. It would not be surprising, however, if these categories of consultant tend to be more concerned with serving their client in terms of securing the development, and therefore focus on those environmental issues that they perceive as being politically more sensitive than the cultural heritage.

9.6.5 In some cases it is possible to see how approaches developed by particular specialist consultants for one project have rubbed off on others involving the same specialists (e.g. some aspects of the BAA approach is discernible in the London Gateway ES).

9.6.6 Several specialist consultancies exhibit a ‘house style’ in terms of their basic approach, methods and presentation of data for an ES, which (depending on the quality of such relatively routine methodologies) has probably tended to embed both strengths and weaknesses in the studies they conduct.

9.6.7 While the strengths of such methods may help to improve the approach adopted by lead consultants and developers for whom these specialists work, there is also a danger that such approaches do not look beyond the routine, especially when innovation is necessary to identify and address some key effects. There are numerous examples quoted in the preceding sections both of spreading good practice and overlooking or underestimating key issues, which highlight some broader issues:

- The basic procedures for archaeological assessment, mitigation and monitoring have become relatively standard, but linking them firmly to research objectives has not;
- Competent but relatively mundane approaches to town planning and architectural design not linked to a real analysis and appreciation of local historic character can lead to missed opportunities for high quality design, or even a rejected scheme;
- Particular types of effect, both negative and beneficial, that may be important may be overlooked;
- Over-rigorous adherence to standard methods related to site-specific data may result in important overall characteristics of the historic environment being overlooked.

9.7 Effectiveness in Identifying Key Cultural Heritage Issues

9.7.1 One of the key issues for the effectiveness of the EIA process in relation to the cultural heritage is how well assessments of significance are related to national and local planning policies and adopted supplementary planning guidance, including how cumulative effects are assessed. It is extremely rare for this to be explicit, even in the best ESs. While basic policy standards expressed in PPGs and local plan policies (and national legislation and international conventions) are often quoted, what they mean for any particular development will depend not just on its effects in relation to such policies, but also on how badly the development is needed and its intrinsic capacity for flexibility in location and/or design. This clearly varies from one type of development to another, and from one proposal to another.

9.7.2 For example, the need for the CTRL and its capacity to be designed to avoid cultural heritage assets was very different from a linear pipeline such as that from Drointon to Sutton-on-the-Hill. It is in some respects ironic that more non-intrusive field survey was done for the CTRL, for which the alignment was much less flexible and the landtake much greater, than was done for the pipeline, which positively aspired to avoid all but the most minor sites, yet resulted in a number being excavated, largely through a watching brief.

9.7.3 In policy terms, the PPGs coupled with most local planning policies establish a fairly well-defined set of principles against which the significance of effects can be judged. It is quite common for ESs to conclude that merely because there are proposals to reduce or mitigate them, residual effects are not significant. This usually reflects the lead consultant or developer's policy for presentation of the ES across all issues, effectively wanting their development to have a clean slate environmentally.

9.7.4 This approach misses the basic point, common to most planning decisions, that even with mitigation some residual effects may be significant, but that the need for the development may be deemed to outweigh this. Destroying cultural heritage assets is intrinsically no less significant for one development than another: the issue is how this relates to the need for that development. Dismantling a series of Listed Buildings for the CTRL was acceptable because the nature of and need for the development justified it, not because the mitigation measures to record and relocate the buildings always renders such demolition insignificant.

9.7.5 How well ESs identify key cultural heritage issues is thus not the same as how they identify significant cultural heritage effects. This can be very difficult to judge, not least because there is very little material that summarises how cultural heritage issues have played a part in cases that have been refused and/or gone to appeal. Comments on examples of poor practice in preceding sections illustrate how failures to address key issues adequately are reflected in curators' comments and concerns, in their requests for more information and in some of the observations made in examining the ESs covered in this review. These are illustrated in Text Box 26 below.

Text Box 26: Cases demonstrating inadequacies in coverage of key issues
These examples reflect inadequacies in coverage of key issues in relation to almost all aspects of cultural heritage input to EIAs, including:

- Scoping (Swalecliffe Wastewater Treatment);
- Consideration of alternatives (South of Reading; Fossetts Farm NHS);
- Coverage of and relative weight given to different aspects of the cultural heritage (St Mildred's Tannery; Stansted 15 Million+; Torr Quarry);
- Issues of scheme design and layout (St Mildred's Tannery; Shoebury Garrison);
- Types of potential physical damage (Ballidon Quarry);
- Importance of setting issues (Endcliffe and Lees quarry; Fossetts Farm NHS);
- Understanding and assessing archaeological risk (Shardlow Quarry);
- Identification of beneficial effects (Coombe Mines);
- Assessment of indirect effects (Bridgwater biomass power station);
- Nature and significance of cumulative effects (Fossetts Farm NHS);
- Adequacy of recording mitigation and reporting in relation to research potential (Shardlow Quarry).

9.7.6 Refusals and withdrawals reflect cases both where key cultural heritage effects that became part of the grounds for not proceeding were identified (e.g. St Mildred's Tannery and the South of Reading case), and where they were not (e.g. Fossetts Farm football stadium; Rochester waste energy). In other broadly comparable situations, however, other factors may have meant that developments were allowed to go ahead despite their cultural heritage shortcomings.

9.7.7 A further recurrent observation of this review is the extent to which different aspects of the cultural heritage emerged as a key issue. This seems to be most apparent with the potential significance of historic landscape or townscape character and setting issues. In some cases (such as Torr Quarry) it can be suspected that historic landscape character would have been significant had it been considered, but it was never really assessed. In other cases such issues were identified as significant in the EIA process (e.g. the Conservation Area buildings at St Mildred Tannery or settlement pattern and historic landscape character at Shinfield in the South of Reading case) but had not been fully recognised by the developer and/or his lead consultants as potentially being a determining or contributory issue to eventual refusal.

9.7.8 Other examples quoted in this review also help to give some indication of these issues, but as individual cases the lessons to be drawn from them are again observational. Taking a broader view, it is clear that the attitude of developers, their lead consultants and specialists (including overarching planning specialists) can all play an important part in identifying what may be critical, determining issues. The consultants may fail or succeed in identifying them; they may or may not be listened to if they have identified them. Extensive experience of previous cases can be immensely helpful, but is only really telling where cultural heritage has been a determining issue. There remains a need to collate such evidence from past cases to make it easier to identify what may be key issues in comparable circumstances.

9.8 Predictions, Mitigation Proposals and Outcomes

9.8.1 A further consideration in judging the effectiveness of the EIA process as a means of identifying key cultural heritage issues is how the effects that they predict relate to actual outcomes.

9.8.2 At the technical level of archaeological sampling techniques, this has already been examined in some depth in the Planarch 1 study (Hey and Lacey 2001), and is being examined further by a separate review of the effectiveness of the systematic surface collection survey protocol in

Essex undertaken for another strand of Planarch 2. The current review has sought to take a rather wider view of how the broad process of assessment, mitigation and outcomes reflects the ability to predict effects.

9.8.3 The Hey and Lacey (2001) study stressed the significance of field survey work (both non-intrusive and intrusive) in identifying remains. This review of EIAs broadly reinforces these conclusions, both in terms of what clearly emerged from fieldwork carried out for ESs and in what emerged through post-determination evaluations. More comparisons of the type attempted here for the CTRL and the Drointon to Sutton-on-the-Hill pipeline, where fieldwork is relatively complete and has been summarised, would be worthwhile, but these cases would appear to support the view that non-intrusive survey is very important as a basic means of improving the reliability of predictions.

9.8.4 The results of this review suggest that while very broad predictions of archaeological potential can be quite good, or at least have sufficient value to be worth taking seriously, identifying the precise nature of that potential is much more difficult. Four main points may be made:

- Desk studies are very seldom adequate, even to identify areas of potential, and may in effect provide little more than a general statement of uncertainty;
- Non-intrusive surveys can be very productive in identifying areas of potential but can be highly misleading as to what such potential is;
- Intrusive evaluation can be much better at defining potential, but as Hey and Lacey (2001) showed, many sites are intrinsically difficult to locate, making it difficult to predict the presence or absence archaeological remains from whole chronological periods;
- Better predictive procedures are desirable, although it is not entirely avoidable that some discoveries of regional and occasionally national importance will still emerge at a very late stage in watching briefs.

9.8.5 A combination of desk-based, non-intrusive and intrusive evaluation is likely to give the best understanding of potential. Accordingly it is reasonable to suggest as *minimum* standards that, unless, in exceptional circumstances, it is clearly demonstrable that there is little or no potential for survival of archaeological remains, or there are very significant physical impediments to fieldwork that:

- Non-intrusive surveys should always be done as part of the EIA process where a desk study is not backed up by extensive previous fieldwork;
- Intrusive evaluation should normally be carried out for an EIA where there is potential for the existence of archaeology worthy of preservation *in situ* (judged in the context of the type of development and need for it), or which might justify detailed investigation.

9.8.6 How far prior evaluation or strip-map-and-sample techniques undertaken early in the construction process (or both) are seen as the most effective responses to define where detailed investigations should be concentrated depends on pragmatic considerations of the nature of the archaeological potential defined and the flexibility and logistics of the development proposals to accommodate preservation *in situ* and/or full investigative work.

9.9 Commitment to Mitigation, Monitoring and Flexibility to Respond (Figures 9.9a-b)

9.9.1 Although very few ESs made clear commitments to carry out proposed mitigation measures (Figures 9.9 a-b**)** and fewer had agreed them with curators (see Section 7.11 above), in almost all of the cases examined where outcomes of archaeological recording are known they had been implemented largely as proposed or to a higher standard.

Figure 9.9a: Commitment to Mitigation by Type of Developer

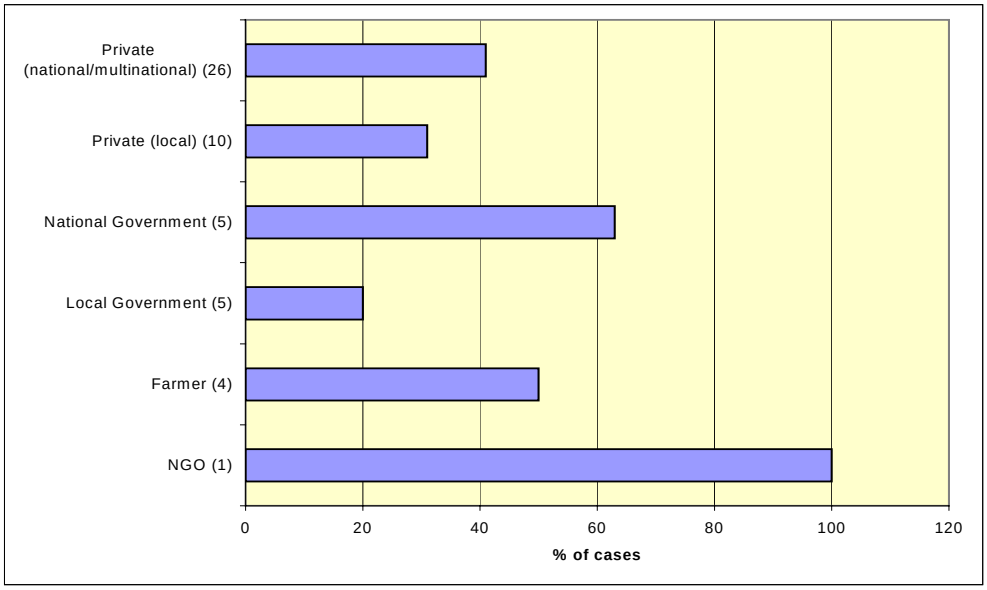
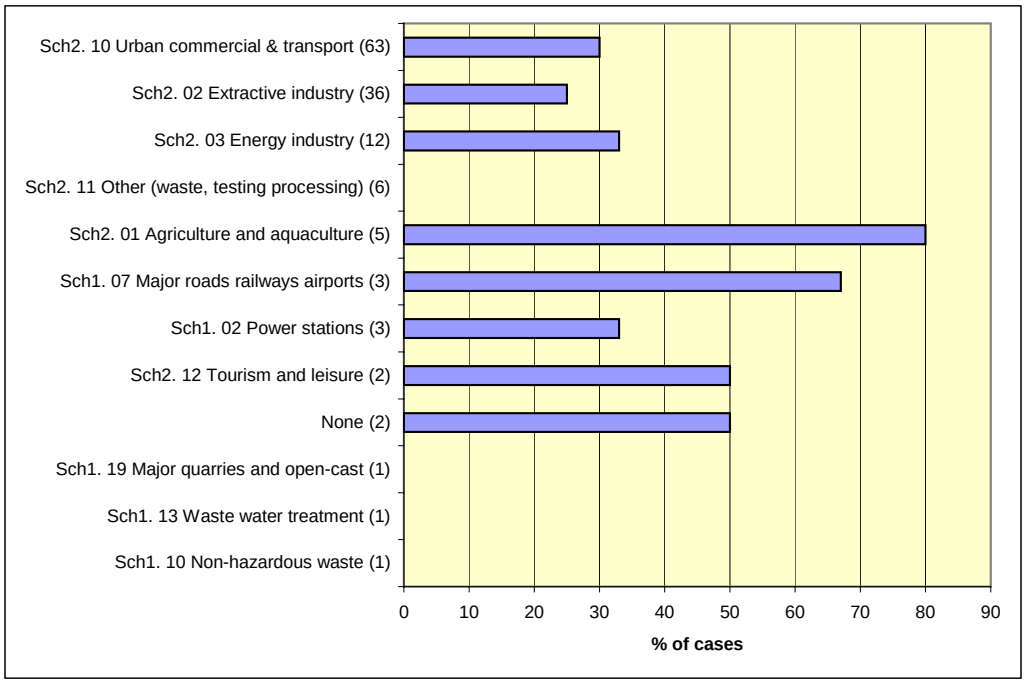


Figure 9.9b: Commitment to Mitigation by Type of Development



9.9.2 To some extent this indicates (as might be expected) that there is a greater voluntary commitment to mitigation than developers or their consultants might be prepared to make formally in advance of determination and imposition of conditions. However, the eventual outcome also reflects the role of curators using flexible 'Grampian' conditions (PPG 16 1990, para 30) to secure appropriate levels of mitigation, which can be more thorough than originally proposed.

9.10 What Difference National Designation Makes

General

9.10.1 This issue has been examined mainly from the benchmark cases and review of other cases that have proceeded beyond the ES stage, but some issues also emerge from the general review.

9.10.2 For the purposes of considering this issue, 'national designation' is taken to mean sites recognised under international convention, statutory legislation or registered through powers conferred on English Heritage. This includes both designations of individual assets (such as Scheduled Monuments, Listed Buildings, Protected Wrecks) and areas (World Heritage Sites, Conservation Areas, Areas of Archaeological Importance and sites on English Heritage's national registers of Parks and Gardens and Battlefields, established under the 1983 National Heritage Act).

9.10.3 Some cultural heritage specialist studies do not recognise Grade II Listed Buildings and Conservation Areas as buildings and areas of national importance, and there is currently some significant debate about this (particularly in respect of Conservation Areas) in the Government's ongoing review of heritage protection.

Baseline studies

9.10.4 Only 4% of cases were noted as covering only designated archaeological sites (though in one case a Scheduled Monument immediately adjacent to the proposed development was not included in the baseline). The presumption established by PPG 16 in favour of *in situ* preservation of nationally important sites and their settings 'whether scheduled or not' appears to act as an incentive to assess non-designated remains in case they prove to be nationally important. And while this may simply reflect established standards for archaeological assessment, a number of the ESs reviewed did assess undesignated archaeological remains as being nationally important.

9.10.5 It is clear that undesignated examples of historic buildings and designed landscapes are much less often covered (or if they are, tend not to be subjected to full assessment of impact). It may be noted that while PPG 15 clearly recognises the value of the local character and diversity of the historic environment there is no explicit requirement to consider undesignated heritage assets equivalent to that included in PPG 16.

9.10.6 Where the importance of cultural heritage features is clearly assessed in ESs, monuments, buildings and areas that are designated are generally recognised as the most sensitive. However, as indicated above, this applies much more obviously to avoiding physical damage or disturbance than it does to issues of setting, over which there is no common practice in approach or standards. It is also clear that there is considerable ambiguity in the treatment of Conservation Areas and World Heritage Sites compared with Scheduled Monuments and Listed Buildings.

Assessment of effects and mitigation

9.10.7 In general, the basic principle of preserving Scheduled Monuments and Listed Buildings *in situ* is well-established, including the principle of ensuring continued viability of Listed Buildings. This becomes much less clear-cut in the case of area designations, notably World Heritage Sites and Conservation Areas (there are too few cases of effects on registered parks and battlefields to provide much comment).

9.10.8 Practice is variable for the assessment of effects on the setting of nationally important features, and basic recognition of the issue is clearest for Listed Buildings and Scheduled Monuments. The cases of the Coombe Down mines, St Mildred's Tannery and the A303 at Stonehenge indicate that the issue becomes even more nebulous when consideration is given to the setting

of World Heritage Sites and other area designations.

9.10.9 Examples of both good practice and of inconsistency, omissions or poor practice in relation to nationally important heritage amongst the cases reviewed are included in Text Box 27.

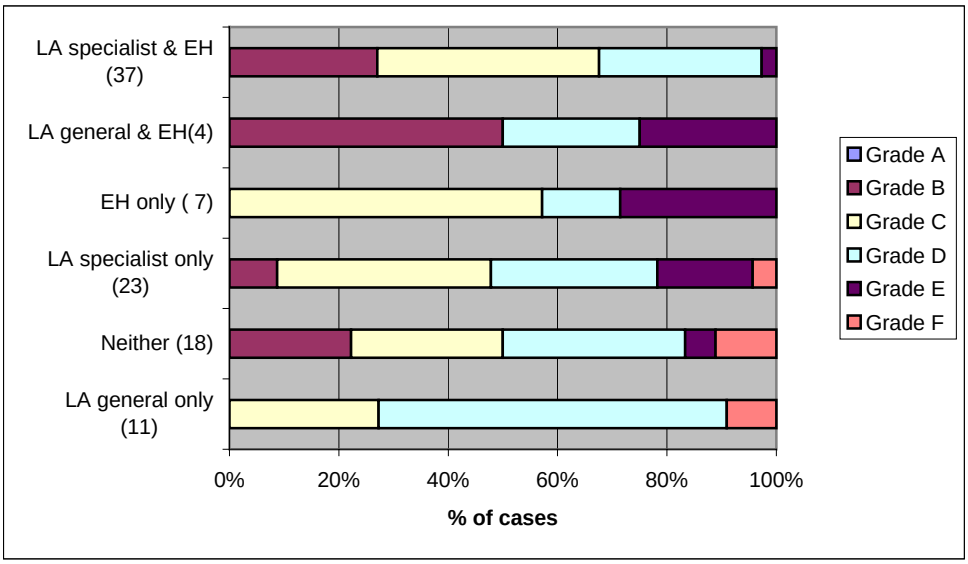
Text Box 27: Treatment of nationally important heritage in selected EIAs

- *Drointon to Sutton-on-the-Hill:* Use of design criteria to avoid nationally and regionally important resources.
- *CTRL:* preservation *in situ* and/or full excavation of non-designated sites of national importance and of remains in the vicinity of Scheduled Monuments; relocation/re-erection of key demolished Listed Buildings to museums or for other uses; provision of cut-and cover tunnels to avoid/reduce intrusion on Conservation Areas, Listed Buildings and a registered park; recording of features lost from nationally important parks and gardens
- *Terminal 5:* Comprehensive excavation of major area of archaeological remains of national importance
- *Coombe Down Mines:* Clear use of specialist criteria of importance to identify nationally significant non-designated industrial archaeology within WHS and to mitigate for effects on these. But relative failure to identify significance of the core benefit of the scheme in safeguarding Conservation Area within WHS from subsidence.
- *A303 Stonehenge:* Use of criteria to identify archaeological remains of national importance and provision of major tunnel to reduce new and reverse existing effects of intrusion on setting and amenity of major national monument. But disputed issues include assessment of effects on key characteristics of WHS; methods of assessing effects on the setting of Scheduled Monuments, listed milestones and the WHS; and approaches to indirect effects on long term aspirations of WHS Management Plan.
- *Canterbury, St Mildred's Tannery:* Clear recognition of and measures to preserve *in situ* non-scheduled archaeology of national and international importance (within a statutory Area of Archaeological Importance). But proposals to demolish most unlisted historic buildings in affected part of Conservation Area; no consideration of effects on setting of WHS (medium/distant views).
- *Ballidon Quarry, Peak District National Park:* Failure to include Scheduled Monument immediately adjacent to development in baseline study; no assessment of potential risk of damage and effects on setting; no measures to protect Scheduled Monuments.
- *Endcliffe and Lee Quarry, Peak District National Park:* Inadequate assessment of effects on setting and amenity of Stanton Moor Scheduled Ancient Monument complex.

9.11 The Quality of ESs in Relation to Consultation with Curators (Figure 9.11)

9.11.1 Figure 9.11 gives a breakdown of grades of ESs in relation to who was consulted. This was produced mainly from the evidence in the ESs themselves.

Figure 9.11: Overall Grade v Consultation with Local Authority and/or English Heritage



9.11.2 In comparison with the overall pattern of grade distribution (see Figure 9.1) this suggests that projects where there has been consultation with both English Heritage and local authority specialists, ESs fare significantly better (rather more Grade Bs; similar Grade Cs and Ds but significantly fewer Es and no Fs).

9.11.3 Cases involving consultation only with local authority specialists appear not to have resulted in significant improvements; indeed they do not achieve the average represented by Figure 9.1. Cases involving consultation with bodies other than English Heritage and local authorities are more in line with general grades.

9.11.4 Consultation with these bodies does not produce a direct cause-and-effect relationship:

- Reported 'consultation' may mean nothing more than a request for data
- Consultation does not necessarily mean that advice is listened to or even reported, as shown by a number of cases examined in detail
- The absence in ESs of any comments on the consultation process does not mean that no contact has been made
- There is some indication that effective consultation tends to be undertaken by consultants who are reasonably assiduous in their assessment anyway.

9.11.5 Nevertheless, it is clear that good consultation has in many cases triggered effective input from curators (including requests for and definition of the scope of baseline fieldwork), which has definitely improved the quality of the ESs.

9.11.6 It is very apparent that low graded ESs have seldom benefited from effective consultation, which might have made them better.

9.11.7 Enquiries to English Heritage's Regional Offices elicited only limited feedback, but essentially indicated that they do not normally respond unless schemes directly affect designated sites for which they have a statutory role (Scheduled Monuments, Grade I or II* Listed Buildings and registered parks or battlefields). This appears to reflect observable practice so far as can be gleaned from the cases examined.

9.11.8 In general, English Heritage is far less often recorded as a consultee than English Nature (EN) and the Environment Agency (EA) (whose views are regularly quoted in the better ESs). This

may superficially make EH appear less responsive, but appears to reflect a number of factors that make its role less critical for many ESs:

- EH is not a statutory consultee for the main EIA regulations (see Appendix 2);
- Heritage designations are identified locations and mostly relatively limited in extent, whereas EN and EA have more general statutory responsibilities for protected species (many of which are mobile) and water and air quality;
- Wildlife, water, air and other environmental issues for which EN and EA are regulators are covered by EU Directives, giving additional weight to the need for consultation;
- Information systems (and to some extent specialist advice services) for cultural heritage tend to be better developed within local authorities and curatorial input is less reliant on the national agency.

9.11.9 With respect to local authority consultations, it is seldom clear from the ES and/or specialist reports whether consultations were held directly with the cultural heritage specialist or with the local authority as a corporate entity, and in the latter case, whether the specialist was able to offer advice indirectly through other officers. The results of the questionnaire sent to local authorities helped to elucidate certain aspects of this for several cases where consultation was not evident from the ES, and more insights were gained from discussions with curators.

9.11.10 The overall impression is that effective consultation can play a vitally important part at every stage of the EIA process, but that it is very badly recorded. Even where it is mentioned it is not clear if 'consultation' means mere data gathering, discussion of issues, or agreement about results and proposals.

9.12 The Attitude of the Developer and Lead Consultants, and Relations with Specialist Consultants

9.12.1 Some issues concerning the roles, relationships and attitudes between key partners in the EIA process were observable from the documents reviewed, and/or emerged from discussions with curators and some informal comments of cultural heritage specialists. The results, outlined below in Text Box 28, cannot be taken as a definitive for these issues, but help to provide some context for other observations.

Text Box 28: Interactions between developers, lead consultants and heritage specialists

Terminal 5

- Appointment of archaeological consultants with a very clear research-led agenda;
- A developer promoting collaborative management and innovation as a company strategy;
- Well-developed, research-led strategic relationship between archaeological consultants and local planning authority providing for effective archaeological mitigation.

Stansted 15 Million+

- Problems of a well-developed formula for archaeology being applied at too generic a level and failing to be modified to cover other aspects of the historic environment affected by the 15 Million+ proposals;
- Well-developed, research-led strategic relationship between archaeological consultants and local planning authority providing for effective archaeological mitigation.

St Mildred's Tannery

- Possible conflict of interest in town planning consultant retained by developer being responsible for drawing up design brief on behalf of local authority;
- Example of good team-working between archaeological consultant and other specialists on technical engineering issues;
- Importance of local high profile of cultural heritage in influencing political decision going further than officers' advice to safeguard heritage interest.

Colchester Garrison
- Well-developed, research-led strategic relationship between archaeological consultants and local planning authority providing for effective mitigation.

9.12.2 A wide range in the attitudes of developers (and their relationships with their consultants) can be detected in how responses for requests for additional information or specifying and executing mitigation measures were handled. Five broad, variously overlapping scenarios were noted:

- The developer voluntarily offers a better level of mitigation than originally set out in the ES (eg *Terminal 5*; preservation *in situ* of log boat at *Shardlow Quarry*);
- The project proceeds to agreement and implementation of proposed mitigation measures in close liaison with curators and with minimal input required from them (eg *Drointon to Sutton-on-the-Hill*; *Colchester Garrison*);
- The developer requires some persuasion to ensure that mitigation is carried out to a sufficient extent and/or standard, but it is then done well (eg *Swalecliffe Wastewater Treatment Works*);
- The developer demonstrates significant reluctance to undertake mitigation required even though it has been agreed in principle (eg *Rowcroft and Templar Barracks*);
- The developer challenges and queries the curators' comments and requests, sometimes respectfully but in one or two cases in an aggressive, unprofessional manner (eg *Rowcroft and Templar Barracks).*

9.12.3 These attitudes do not entirely reflect the quality of the ESs – some very poor ESs can be accompanied by very positive attitudes to achieving good outcomes, and vice versa.

PART D – Conclusions

10 CONCLUSIONS

Chapter 10 *pulls together the results to highlight a wide number of issues reflecting both good practice and shortcomings for each stage of the EIA process. The conclusions outlined indicate a wide variety of ways in which the standards of cultural heritage input to the EIA process could be improved. They are informed by the need to pursue three key characteristics of well-informed decision-making: rigour in research, analysis and assessment; robustness of solutions and their implementation; and reasonableness in the interpretation of regulatory requirements and balancing of competing public and private interests. The areas for improvement are cross-referenced to the relevant stages of the EIA process as identified in the EC guidance.*

10.1 The Status of Cultural Heritage in the EIA Process

10.1.1 While several cases reviewed show that the cultural heritage has been accorded full weight alongside other issues in the EIA process (e.g. CTRL), there are probably more where it has not been (Fossetts Farm and Swalecliffe Wastewater Treatment Works) or was not been given *sufficient* weight (St Mildred's Tannery).

10.1.2 The Fossetts Farm and St Mildred's Tannery cases, exhibit almost opposite aspects of how the cultural heritage may or may not be valued in the political decision-making process. In the St Mildred's Tannery case it was the locally elected politicians who decided to refuse the original scheme because the designers had not given enough weight to important heritage and urban character issues. By contrast, the Fossetts Farm area was earmarked (and promoted) for development despite significant cumulative effects which were contrary to national policy on preserving the setting of a nationally important monument, but appear to have carried little political weight locally.

10.1.3 This is part of a much wider national and international issue of how the cultural heritage is valued in relation to other environmental and social assets in political terms. This is not an issue to be addressed through the EIA process alone, but the rigour that it seeks to promote does present an opportunity to help improve political awareness of the value of the historic environment.

10.2 Compliance with EIA Regulations and Professional Standards

10.2.1 Several cases reviewed were effectively judged to be non-compliant with the EIA Directive from a strict cultural heritage point of view. Whether this would hold good in a legal sense is another matter, but it might well do so in the *c.*12% of cases graded E or F, and perhaps for some of those graded D where significantly more information was required before a decision could be made.

10.2.2 In general, shortcomings are less serious than this, with about 56% overall being assigned to the broad range of satisfactory or better grades (B to C). No cases, however, were seen that could not have been improved to at least a modest extent in one part of the process or another, so none achieved an overall A Grade, although several achieved this for one or more aspects of the process.

10.2.3 Overall, standards are very variable. It appears, however, that the IFA standards for archaeological desk studies and fieldwork have had a strong role in influencing how well baseline studies are conducted, though there is still much variation in coverage.

10.2.4 The lack of comparable standards for historic buildings, field survey and for historic landscape and townscape characterisation may be part of the reason for much more uneven coverage and quality. Although some reference is made in some cases to RCHM building recording standards, this tends to be in respect of mitigation proposals rather than baseline surveys.

10.2.5 The lack of basic conceptual definitions, clear professional standards and methods for analysing issues of setting has resulted in extremely confused, inconsistent and variable approaches.

10.2.6 Similarly, the lack of (or lack of recognition of) clear conceptual definitions, standards and methods for addressing indirect, cumulative and temporary effects has resulted in inconsistent and variable approaches, including failure to identify key effects.

10.2.7 Overall, lack of standards in these areas can cause problems of:

- Inconsistent and variable approaches;
- Failure to identify some key effects;
- Little basis for consistent application of heritage policy;
- Insufficient basis for ensuring high quality outcomes.

10.3 The Significance of the EIA Process in Ensuring Satisfactory Outcomes

10.3.1 There is a limit to how far it is possible from this study to draw any conclusions about how significant the EIA process may be in ensuring satisfactory outcomes, not least because it was not within the scope of the study to make any comparison with cases not subject to EIA.

10.3.2 Taking a broader view, the issue is not so much whether formal application of EIA Regulations makes the difference, but how the *principles* of the EIA process can be used well or badly both within and outside formal EIAs.

10.3.3 Some ESs are clearly inadequate and non-compliant, and in some cases this has in itself been part of the grounds for refusal of consent. But other cases where the ES has fairly obviously been non-compliant (or certainly very inadequate), perhaps most notably the Swalecliffe Wastewater Treatment Works, have nevertheless resulted in ultimately satisfactory outcomes.

10.3.4 At its most basic level this shows that mere application of the EIA process to a project is not in itself enough to ensure satisfactory outcomes for the cultural heritage. The quality of professional judgement is critical. Indeed, the Swalecliffe example illustrates a danger of the formality of the process where failure to identify the cultural heritage as an issue at the scoping stage may actually lead to worse coverage than if it was a normal application.

10.3.5 The more detailed scrutiny of cases that have progressed to further stages has shown that initial impressions of the quality of ESs can often be superficial and misleading. Mere compliance with the requirements of the EIA process does not guarantee good judgement. It was repeatedly found that the role of curators is more important in ensuring satisfactory outcomes than mere adherence to the formal steps of the EIA procedures.

10.3.6 None of these observations, however, means that the EIA process has no value or significance. It is important for its potentially holistic nature and longer time frame which allows for additional information to be gathered and considered decisions to be made. With much clearer standards and adherence to how the cultural heritage should be dealt with in all its stages, the EIA process *could* make a much more definite contribution to good decision-making, both within and beyond the formal application of EIAs. Although there are weaknesses in relation to cultural heritage, the process raises issues such as setting and cumulative effects.

10.3.7 The EIA process may not be essential to ensure satisfactory outcomes, and it certainly does not guarantee them; but it does provide a very robust set of principles for informed decision-

making. The value of its application is to provide a more formal basis on which such standards can be required than tends to apply in ordinary consent procedures.

10.3.8 The EIA process is thus a powerful opportunity to ensure satisfactory outcomes, not a panacea for delivering them.

10.4 Key Aspects of the EIA Process that Need Improvement

10.4.1 Throughout Section 10.4, the areas for improvement are cross-referenced to the relevant stages of the EIA process as identified in the EC guidance (c.f . 2.3.1 above).

The EIA Process as a Whole (EC Stages A-K)

10.4.2 There is a need for better integration of cultural heritage issues into the conceptual development of proposals with planners, architects and engineers throughout the process of development. Earlier involvement of cultural heritage specialists can help to identify issues that need to be taken into account from the site selection process onwards. This principle is well-established as a formal part of the process for highways, but is not adequately built into other types of development.

10.4.3 As SEA becomes established, the relationship between the SEA and EIA processes in site selection, alternatives and broader issues of indirect and cumulative effects will become increasingly complex and demand better integration on all specialist areas of EIA.

10.4.4 It is clear that team-working between all the different environmental specialists and designers involved can, and often does, play a key role in determining the quality of the EIA at every stage. Conversely, the absence of such collaboration can result in key issues not being identified, not given adequate weight or just ignored. Evidence of the benefits of such collaboration is very clear in some cases, but overall it appears to be an area of weakness that has diminished the quality of assessment in many ESs.

10.4.5 The review has indicated the importance of involving cultural heritage specialists in key aspects of the process, and the danger of other professions undertaking tasks for which they are not qualified. This does not mean that other specialists with relevant experience should not be involved with this topic (some aspects are often better understood by them), but there is a need to ensure that appropriately qualified cultural heritage specialist expertise is applied to every task where it is relevant.

10.4.6 The need to ensure that cultural heritage input to the EIA process is always provided by appropriately qualified persons applies as much to Competent Authorities as it does to Developers and EIA practitioners. One of the most obvious instances of this is the need for specialist input into all aspects of scoping EIAs and providing advice to regulators in making their decisions.

10.4.7 Integration of a greater level of survey work in the earlier stages of the EIA process is another key feature that is fundamental to its general success. All aspects of assessment, mitigation and implementation rely on sound baseline data. It is clear that non-intrusive surveys and intrusive fieldwork does make a significant difference and should be much more the norm than is apparent from the results of this review.

10.4.8 One further general aspect of good practice that applies to most aspects of the EIA process is that of being clear about negatives. For example:

- Generally stating limitations;
- Explaining that possible sources of baseline data have been checked even if no historic features were identified;

- Listing all the types of potential effect considered, even if no effects were identified as being likely to occur for some types of development.

Notification and Screening (EC Stages B, C)

10.4.9 There is a clear need to clarify advice on the basis for applying the cultural heritage screening criteria to different types of development that may be deemed to require an EIA under Schedule 2 of the EU Directive. This needs more detailed analysis in terms of how the criteria should be applied, either as a *principal factor* triggering an EIA or as a *contributory factor*.

10.4.10 As the *principal factor*, the cultural heritage sensitivity of the proposed development location should be considered as the key issue where:

- *either* the proposals are directly related to developing a heritage asset;
- *or* where development is in a particularly sensitive cultural heritage location and its effects are likely to involve several, potentially inter-related effects for other environmental or social factors.

10.4.11 As a *contributory factor*, the cultural heritage sensitivity of the proposed development location should normally be considered as a potentially relevant issue in all cases, and should be quoted as such where significant sites and areas or other complex heritage assets are liable to be affected.

10.4.12 Effective screening for cultural heritage issues needs to be carried out by, or in consultation with, the curatorial specialist, and not by planners alone.

Scoping (EC Stage D)

10.4.13 There is a very clear, and in many respects critical, need for specialist heritage curators *always* being involved in scoping consultations, ensuring that the advice provided by Competent Authorities is based on professionally qualified input.

10.4.14 There is no reason why this should not immediately be achieved by clarifying requirements under existing consultation procedures carried out by Competent Authorities. Formal protocols are needed to ensure that regulators always consult cultural heritage specialists.

10.4.15 There is a further need to improve coverage of *all* aspects of cultural heritage assessment in scoping studies, not just issues of how to establish baseline conditions. Better standards are needed for cultural heritage scoping:

- It is not enough just to say there is cultural heritage so an assessment is needed;
- It is vitally important to understand the nature of development and how in very broad terms it could affect the cultural heritage;
- It is necessary to be clear that potential impacts need to be considered, over what area and for what range of cultural heritage resources and receptors.

10.4.16 There is a need for the scoping stage for the cultural heritage to be seen much more as a dynamic, iterative part of the EIA process, not just a definition of procedures. The following points should be considered:

- Finalisation of scoping should be done after desk studies are available;
- Early identification of the need for evaluation/fieldwork should be done to enable it to be factored into the EIA timetable;
- Earlier involvement of cultural heritage specialists working with other EIA consultants as a team should be carried out and would greatly help to improve the quality of scoping;
- Specialist curators should be involved in *all* scoping consultations.

Consultation Procedures for the ES (EC Stages A-K, specifically H)

10.4.17 Consultation is relevant at all stages of the EIA process, often as a legal requirement, but almost always as an aspect of good practice that improves the quality of the information presented and the judgements made.

10.4.18 The role of consultation should clearly be developed and clarified in fulfilling three distinct purposes, which may arise in most stages of the EIA process:

- Data gathering;
- Discussion and clarification of issues, methods, results or proposed mitigation;
- Agreement on methods, results or proposed mitigation.

10.4.19 There is a clear need for better consultation and clearer, more accurate reporting of the extent and depth of consultation carried out in respect of:

- *what* type and level of consultation is undertaken in terms of the three purposes defined above and at what stages of the EIA process;
- *who* has been consulted at what level;
- *which* aspects of the cultural heritage have been covered by the consultations;
- *how* comments and advice provided in consultees' responses have been acted upon.

10.4.20 Establishing a much clearer standard for undertaking and reporting consultations, coupled with consultees themselves being more rigorous in their responses, could make a significant difference to the quality of cultural heritage input to the EIA process.

Project Descriptions (EC Stages A to F)

10.4.21 One of the key initial tasks of any cultural heritage input to the EIA process, which currently is hardly recognised at all, should be a systematic and rigorous analysis of what the development entails and the identification of how all aspects of how cultural heritage may be affected.

10.4.22 The idea of this being the *first* step in any cultural heritage input to the EIA process was one of the conclusions of a seminar of Spanish cultural heritage specialists looking at the EIA process (Arce Ruiz, 2004). Such analyses should cover:

- Construction activities (permanent and temporary effects);
- Off-site as well as on-site effects;
- Beneficial as well as adverse effects;
- Possible indirect effects as well as direct ones.

10.4.23 Although these considerations are sometimes covered in general terms (occasionally in scoping studies, more often in identifying effects), the lack of rigour in systematically analysing them appears to contribute to important effects being overlooked or underestimated. Treating such an analysis as a distinct part of the process of compiling input to an ES would undoubtedly help to focus more attention on the assessment process, in contrast to the current tendency to over-emphasise general historical background, conditions and potential.

Baseline Conditions (EC Stages D, E)

10.4.24 Within cultural heritage baseline studies there needs to be better and more consistent coverage of:

- Palaeo-environmental conditions and potential;
- Palaeolithic remains;
- Built heritage (including non-designated historic buildings);
- Historic landscape and townscape character and features.

10.4.25 In particular there needs to be a very much clearer recognition that issues of historic landscape and townscape character and setting can be key issues of concern. They are in many ways much

more difficult to deal with as long term effects than buried archaeology, and therefore merit full and systematic baseline analysis.

10.4.26 As part of this, clearer standards of baseline survey and reporting need to be established for different aspects of heritage (as has been achieved through IFA standards for many aspects of archaeology).

10.4.27 A much clearer basis of principles and practice for treating people as cultural heritage 'receptors' needs to be established, building on existing tentative explorations of this subject.

10.4.28 It is clear that non-intrusive surveys and intrusive fieldwork make, or would make, a significant difference to the identification of the extent, survival quality and potential of cultural heritage resources likely to be affected – and how these may relate to people as 'receptors'. The suggestion above, that desk studies should be regarded as an essential part of an iterative scoping stage for any assessment, should be coupled with a greater contribution from fieldwork.

10.4.29 A more consistent approach is needed for the assessment of the importance of cultural heritage resources. There is a need for:

- Consistent criteria for all aspects of the cultural heritage; and
- Particular need to agree when resources are nationally important but not designated.

10.4.30 Approaches to predicting archaeological potential and risk analysis need to be put on a firmer footing. Particular improvements could be made through better and more extensive use of existing principles and techniques including:

- Greater understanding of principles of dealing with uncertainty, sampling and risk analysis;
- Sounder use of sampling strategies and the understanding of their strengths and limitations for use as predictive tools;
- More extensive use of deposit modelling;
- Basing assumptions on evidence rather than supposition (e.g. with respect to whether archaeological sites are subject to ongoing cultivation damage).

10.4.31 The description of the cultural heritage baseline conditions and potential would greatly benefit from much more rigorous fieldwork testing and confidence rating and statements on the limitations of predictions of archaeological potential.

Assessment of Effects (EC Stage E)

10.4.32 As a general observation approaches to assessment of effects could be greatly improved in most cases through:

- Clear explanation of the basis on which judgements are made;
- Clear and concise explanations of specific judgements (including use of tabulation and matrix techniques);
- Good use of systematic, well-defined professional judgement;
- Avoidance of over-reliance on mechanistic statistical and scoring methods if they are not well-attuned to reflecting key issues and characteristics for different kinds of heritage asset;
- Good use of evidence from other specialist studies.

10.4.33 A much clearer agreed concept of 'setting' is urgently needed, rooted in how it contributes to people's understanding and appreciation of historic places and assets, both in terms of enriching understanding and recognising aesthetic, spiritual or other values.

10.4.34 Likewise, there is a need for better techniques to assess the significance of effects in terms of amenity, sustainability, people and sense of place issues. This is closely related to the need for

greater coverage of issues of historic landscape and townscape character. Much more attention needs to be paid to identifying and assessing types of impact such as severance, islanding, loss of coherence and integrity, which reflect broader concepts of the historic environment than the increasingly out-dated treatments of the cultural heritage as point data that permeate most EIAs.

10.4.35 There is a need for much clearer standards for defining indirect effects, and much more consistency in identifying, assessing and reporting them.

10.4.36 Likewise, there is a need for much clearer standards for defining, identifying, assessing and reporting cumulative effects. A key issue in this area is establishing principles for recognising that the ongoing gradual degradation of assets can be as much a basis for assessing the cumulative effect of yet further impacts as it is for defining their quality, survival and importance.

10.4.37 There is a general need for better integration with other environmental factors, especially those where complex interactions may occur; where mitigating other effects may introduce additional cultural heritage effects; or where multiple benefits may occur. A clearer basis needs to be established for linking the significance of effects to basic design objectives and mitigation options related more explicitly to policy standards. This would be greatly assisted by a review of past cases where cultural heritage issues have been material considerations contributing to refusals of consent.

Avoidance and Mitigation of Effects (EC Stages A, E, K)

10.4.39 More consideration needs to be given to a wide range of design and management measures to avoid, reduce or prevent adverse effects. The concept of 'mitigation' should not be treated as an afterthought but as an iterative process of minimising adverse effects on the historic environment and maximising benefits throughout every stage of the EIA process. This process should be much more clearly reported in ways that demonstrate how these issues have been considered and implemented.

10.4.40 Notwithstanding the emphasis on staged investigation and recording as the commonest form of mitigation, more provision needs to be made for recording historic buildings to be demolished or substantially altered. The need for recording should also extend to hedgerows, earthworks and other landscape features which are to be removed where they can contribute to valid research questions.

10.4.41 Clearer linkages need to be made between how the cultural heritage will be affected and what design, management, monitoring and recording solutions have been put forward to address these effects.

10.4.42 The growing practice of defining and establishing strategic frameworks to agree the design and approval of detailed mitigation measures should become normal practice. As part of this, there is a need for more consistent and clearer commitment to all aspects of mitigation, monitoring and flexibility. This includes:

- Establishing agreed research and design strategies for mitigation with specialist curators representing regulatory bodies;
- Drawing up strategic frameworks for practical standards of recording, protection and detailed design;
- Establishing protocols for drawing up agreements and/or conditions for the process of agreeing detailed design and recording specifications;
- Establishing and assessing deliverability of mitigation in terms of site capacity (e.g. in relation to density and basic structure of development and site ownership);

- Establishing a clear basis for assessing the deliverability of mitigation in terms of construction methodologies, programming, resources and other key parameters that can impede or facilitate satisfactory delivery of mitigation proposals;
- Establishing protocols for responding to unforeseen effects.

10.4.43 There is also a need to establish a clearer basis for ensuring that mitigation measures serve the public interest. Some of this may be achieved by ensuring that public consultation and community liaison procedures are maintained throughout the EIA process into the implementation phases of the project. Specific examples of this could include procedures that build on strategic frameworks such as:

- Master planning and design briefs that reflect sense of place;
- More opportunities for access to fieldwork during the course of development;
- More commitment to dissemination and publication of archaeological results, both academically and for the general public.

Decisions (EC Stages G, I, J)

10.4.44 As indicated above, the EIA process provides a framework within which to achieve good decision-making, but whether this is achieved depends on four essential attributes: firstly how the scope of ESs is defined and executed, secondly how the results are reviewed and judged, thirdly how decisions are reached, and fourthly how outcomes are implemented. To be executed properly and achieve successful outcomes reflecting the public interest each of these stages and processes must be characterised by attributes of:

- Rigour;
- Robustness;
- Reasonableness.

10.4.45 These qualities represent the foundations for achieving a more consistent application of standards in implementing heritage policy, but are not in themselves enough. More needs to be done to learn from past decisions and judgements.

10.4.46 It is clear from the cases reviewed that cultural heritage curators' input after submission of an ES is often crucial in ensuring that appropriate decisions are made. It is clear that local knowledge can often identify weaknesses in coverage or assessment that may not be immediately evident from the superficial compliance of an ES with legal requirements.

10.4.47 Such interventions, including requests for more information are usually covered by correspondence, often on the basis of meetings to discuss issues that emerge from review of the ESs, but there is seldom any documentation to show that ESs have been reviewed against all the requirements. In some cases significant shortcomings were noted that could have been given more weight had the review been more systematic.

10.4.48 The use of review criteria coupled with a checklist of requirements of the kind developed by Lee and Colley (1992; 1999) and now recommended by the EC (2001c) and IEMA (2001) and developed further by Dandy (2000) and for this study (Appendix 5) would help to provide more rigour in the process, both prior to submission of ESs and in their review prior to advice being offered by cultural heritage curators to the regulators.

10.4.49 As with the screening and scoping process, regulators should always explicitly seek the advice of their specialist curatorial advisers before decisions are made, as well as carrying out other external statutory consultations.

10.4.50 Judgements about the significance of effects could be greatly improved if there was a better system of creating and maintaining a record of appeal cases where the cultural heritage issues have contributed to decisions, perhaps especially where it has been a factor in refusals. More

general feedback about more formal review of quality of cultural heritage ESs against checklists would be helpful. It would also be useful to know the extent to which regulators make recommendations on standards and the potential need for additional information or clarification.

Implementation and monitoring (EC Stage K)

10.4.51 Although monitoring is still not a compulsory part of EIA procedures it is very widely regarded as a key issue in terms of good practice. From the results of this review it is clear that there is a need for improvement in two general respects:

- Ensuring project documentation links back to the ES;
- More formalised feedback, by archaeological contractors, comparing outcomes with predictions.

10.4.52 The well-established principles of the staged approach to archaeological mitigation already offers a very sound basis for predicting and monitoring the effects of development and making provision for remedial action, but:

- Existing frameworks for updating research designs and proposals in the light of different stages of fieldwork could easily be adapted to provide a more formal process of reviewing the results of archaeological monitoring;
- It would be much easier to do this as part of the normal reporting process than through retrospective review.

10.4.53 There needs to be a much better and clearer basis for monitoring and/or recording outcomes of mitigation other than archaeological investigation, through design, protection or other management solutions.

10.4.54 Better documentation and guidance on design issues in relation to retaining and complementing historic character is needed to ensure quality detailed design.

10.4.55 There is also a need to institute monitoring of actual intrusion and severance effects etc. against predictions to provide feedback from which lessons of success and failure might be more widely drawn.

Archiving (EC Stage K)

10.4.56 Current provision for how ESs and their associated documentation are archived is extremely complex. This can be seen as an issue for monitoring in the more general sense of being able to monitor the effectiveness of the EIA process and being able to learn lessons from past practice.

10.4.57 Maintaining effective archives of ESs and their associated reports, correspondence and other data is important if cases are to be tracked effectively and monitored so that lessons can be learnt, whether through reviews of the type conducted in this study or other kinds of auditing. Being able to establish such feedback mechanisms is essential if lessons are to be learnt from past experience to continue to improve present and future practice.

10.4.58 The plethora of documents and correspondence that EIAs generate coupled with the complexity of the roles of different authorities and specialist advisers in the process means that it is not possible, or even desirable, to seek to define any particular answer for what is in many ways an intractable problem.

10.4.59 Nevertheless, there are four relatively simple improvements that could be instigated at little or no cost for better future archiving of ESs both locally and centrally:

- Requiring hybrid digital/hard copy publication;
- Establishing, agreeing and implementing consistency of naming and numbering of each case to establish a clear basis for retrieving all data related to it;
- Requiring all reports and documents to refer back to the ES for which they are prepared;

- Establishing much more rigorous procedures to ensure accurate listing of cases in the central databases of EIAs held by the ODPM and other statutory regulators, including deposition of a digital copy in pdf format to be available to produce hard copies for public examination.

Communication (EC Stages A-K)

10.4.60 Good communication and teamwork between developer, lead consultants and specialists is critical to achieve good assessments of the cultural heritage effects of developments, and to ensure that significant adverse effects are identified, avoided and/or mitigated, and that, as far as possible, potential beneficial effects are realised.

10.4.61 Areas that generally need improvement are:

- Better use of non-technical language wherever possible, and genuinely non-technical summaries;
- Better descriptions, mapping and diagrams to show survival potential and significance;
- Better use of clear diagrams and plans to show the relationship of development to the cultural heritage affected;
- Better explanations and use of diagrams to show how proposals will affect cultural heritage at different stages;
- Better overall clarity and focus on aspects that matter (e.g. paying more attention to fully explaining significant effects and how they are to be dealt with and less on offering detailed treatises on their background context);
- Better cross-referencing, including between specialist sections.

10.5 Lessons for SEA

10.5.1 The lessons to be learnt for SEA from the experience of EIAs reviewed by this study are somewhat sobering. There are plenty of examples of approaches and techniques that could be developed and extended effectively to SEAs. Unfortunately, they are almost all features that are extremely rarely done well, if at all, in project EIAs. It is these elements of environmental assessment which translated into a SEA context are likely to be of critical significance.

10.5.2 A general conclusion, therefore, is that while many lessons can be learnt from EIA, they are almost all in areas that are not done well at present. It is precisely the more strategic aspects of EIA, which are most applicable to SEA, that are least well done. Assuming therefore that input to SEAs can just be developed from existing EIA practice would be a mistake, likely to reinforce and exacerbate current limitations of EIAs. Instead, the lessons of EIA should be considered as only one of several strands to the management of the cultural heritage that might be deployed to inform the development of good practice standards for cultural heritage input to SEAs.

10.5.3 Other strands to be considered include current and ongoing work in developing a wide range of strategic approaches to describing and characterising the cultural heritage, recognising its social, economic, educational and environmental value and analysing broad trends in terms of pressures threats and risks. These include:

- Historic environment and townscape characterisation;
- National, regional and thematic research frameworks;
- *Heritage Counts;*
- Archaeological risk studies;
- Condition and ‘at risk’ surveys of heritage assets;
- Heritage input to master planning and development plans;

- Conservation-led regeneration;
- Econometric and polling analyses of the economic and social value of heritage;
- Strategic tourism studies;
- Studies on the social and educational value of heritage;
- Studies of public participation in the heritage;
- Initiatives to address issues of social exclusion and the heritage;
- Best Value indicators;
- Heritage sustainability indicators;
- Quality of Life assessment;
- Research Frameworks.

10.5.4 Within this perspective of more over-arching studies of the value of heritage to society, current practice in EIAs can be seen as being far too narrowly focused on individual features to be much use in addressing broader strategic issues through the SEA and Sustainability Appraisal (SA) process.

10.5.5 The clear role for Historic Environment Records (HERs) recognised in the draft ODPM guidance on Sustainability Appraisal and Strategic Environmental Assessment is to be welcomed. However, the growing range of strategic studies carried out at national, regional and increasingly local level, which themselves often synthesise or draw upon HER data, are also likely to be crucially important in the SEA process.

10.5.6 The big challenge for SEA and the cultural heritage is the very broad issue of how to ensure that the considerable contribution that the cultural heritage makes to people's quality of life and the well-being of society will be fully recognised and promoted. Developing an effective approach to cultural heritage input to the SA and SEA processes will rely on establishing at a technical level how these broad strategic approaches can effectively utilise data to be derived from HERs and other sources to address these wider issues within the general framework of EIA principles.

Particular aspects of EIA practice that offer lessons for SEA

10.5.7 Within the review of the treatment of the cultural heritage in EIAs contained in Chapters 6, 7, 8 and 9 there are innumerable specific lessons that might be learnt, both from strengths and from shortcomings in current EIA practice.

10.5.8 A few particular examples of such lessons and areas or approaches to assessment that might be developed include:

- The need to consider cultural heritage aspects of alternatives much more thoroughly;
- The value of MPP type assessments of the broad value of assets as a framework for distinguishing the strategic value of different types of asset;
- The value of Research Frameworks for focusing on the historic environment as a source of knowledge and understanding of history and long term change;
- The importance of not underestimating characterisation studies and other strategic assessments;
- The principles of modelling survival, potential and areas of 'risk';
- The potential of map regression for developing better approaches to understanding trajectories of change and cumulative effects;
- The need to consider indirect effects and interactions much more rigorously;
- The importance of building cultural heritage issues into consideration of issues of development density allocations and capacity for change;
- The importance of building cultural heritage issues into broad planning briefs and design statements.

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GLOSSARY

Abstraction (water) - removal of ground water for use in construction projects etc.

Aggregate effect - cumulative effect

Alluvial - water born deposits usually deposited on river floodplain

Amenity - benefits accrued by a particular archaeological or protected site in terms of its value to the community

Archaeology - physical remains of past human activity

Augering - manual borehole sampling of deposits

Brief - detailed requirements for a project prepared by the client or curator to inform contractor

Brownfield - an area of land previously developed for urban or industrial use

Characterisation - description of an area, rural or urban

Colluvial - land based erosion deposits e.g. hilllwash

Competent Authority - body responsible for determining an application for development

Conservation Area - area of importance protected by national designation

Contamination - damage to cultural heritage features or artefacts by invasive substances

Cultural Heritage (CH) - includes not only physical elements such as archaeological and historic sites and artefacts, buildings and landscapes, but non-physical elements resulting from human interactions with and perceptions of heritage

Cumulative effect - effects which arise or are increased as a result of a number of developments occurring in an area over a period of time

Curator - a cultural heritage specialist, often a County Archaeologist, responsible for setting requirements for and monitoring mitigation works

Deposit Modelling - the process of building computer models of soils and archaeological features

Designation - legal process of protection and preservation of important sites and monuments

English Heritage (EH) - body to which responsibility for the historic environment has been delegated in England

European Regional Development Fund (ERDF) - EU body which allocates funding to projects

Evaluation - process of assessing the archaeological potential of a site

Fieldwalking - above ground archaeological survey by walking in a grid formation recording/retrieving artefacts

Geophysics, geo-physical surveys - non-intrusive survey of below-ground archaeological features using a variety of computer based techniques

Greenfield - an area of land that has not been developed

Guardianship Monument - a Scheduled Monument under a management agreement between English Heritage and the owner for continued protection and preservation

Health Impact Assessment (HIA) - procedure required under US law, not often carried out in UK

Heritage Audit - audit of cultural heritage features known or likely to exist within a site

Historic Environment - a combination of archaeological sites and artefacts, buildings, landscape and townscape

Hydrology - the study of ground and surface water and related technology

Impacts - actions which affect a cultural heritage feature for better or worse

Infilling - the policy of allowing new building within urban areas

In situ - the exact position where an archaeological feature was uncovered

Intrusive evaluation - the process of investigation by archaeological excavation, often using trenches

Listed Building (LB) - designated as important by legislation, worthy of protection and preservation

Local Planning Authority (LPA) - relevant level of local government which will determine an application

Map Regression - process of research using maps from the earliest to the most recent to understand the historic landscape

Massing - the process by which buildings are developed into coherent blocks within a townscape

Matrix - a plan of an archaeological site showing chronological relationships between features ***or*** a type of chart used for comparing elements of a development

Methodology - the way in which a project is planned, developed and delivered

Mitigation - process of reducing the damaging impact of development upon cultural heritage sites

Non-intrusive - does not cause any damage or destruction to archaeological features

Non-renewable resource - a cultural heritage feature that cannot be replaced

Office of the Deputy Prime Minister (ODPM) - national government department whose remit includes planning

Outcomes - the final result of a process such as an EIA

Overburden - a deposit or layer that overlies an archaeological feature

Palaeo-environmental - ancient, Palaeolithic environment

Peak District National Park (PDNP) - National Park covering parts of Derbyshire, Staffordshire and Yorkshire

Plough damage - damage caused to archaeological remains by modern ploughing techniques

Quinquennial - every five years

Receptor - elements of the historic environment or people who 'receive' the impact of an action from elsewhere

Research Design - the overall scope, shape and scale of a proposed research project

Scheduled Ancient Monument (SAM) - sites and features of national significance, protected by legislation

Sampling Strategies - a range of technical processes whereby archaeological samples may be collected

Scoping - the process of setting criteria prior to the design of an EIA

Setting - the environs of a cultural heritage feature, combining a number of factors including the feature itself, nearby features, the surrounding landscape, and the historical context

Severance - the separation or isolation of an area of land from its context by development

Topography - the ups and downs, principle rivers etc. on a landscape

Topsoil Stripping - a common archaeological practice of removing topsoil by mechanical means

Townscape - the visual character of an urban area

Visual Envelope - the area viewed from without, and within an archaeological feature or protected building

Walkover Survey - a visual survey of an area conducted on foot to assess known features and topography, to identify new features and to provide an assessment of potential

Watching Brief (WB) - project to ensure recording or, where appropriate, preservation of previously unknown archaeological features revealed during the construction process

Written Scheme of Investigation (WSI) - detailed plan for proposed archaeological investigation prepared by contractor

Zoning - the process of allocating characteristics to different areas of archaeological importance