GLVIA3

Guidelines for Landscape and Visual Impact Assessment

Third edition

Landscape Institute and
Institute of Environmental
Management & Assessment

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ROUTLEDGE

Guidelines for Landscape and Visual Impact Assessment

Landscape and Visual Impact Assessment (LVIA) can be key to planning decisions by identifying the effects of new developments on views and on the landscape itself.

This fully revised edition of the industry standard work on LVIA presents an authoritative statement of the principles of assessment. Offering detailed advice on the process of assessing the landscape and visual effects of developments and their significance, it also includes a new expanded chapter on cumulative effects and updated guidance on presentation.

Written by professionals for professionals, the third edition of this widely respected text provides an essential tool for landscape practitioners, developers, legal advisors and decision-makers.

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Landscape Institute and Institute of Environmental Management & Assessment

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Foreword

I am delighted that the third edition of GLVIA has now been published, as this updated guidance has been long awaited by those working in the field of LVIA. The new edition is comprehensive and clear, covering the many developments that have taken place in the scope and nature of impact assessment since publication of the second edition. There have been significant changes to the environmental framework within which LVIA is now undertaken, particularly with the UK Government's ratification of the European Landscape Convention, confirming the importance and role of the landscape as used and enjoyed by us all. At the same time, the demands that are put on our landscape to accommodate new development, and to adapt to the changing world environment confirm the need for a strong framework within which the effect of change can be assessed and understood.

The straightforward approach taken in this revised edition emphasises clarity and simplicity in approach, and the importance of sound professional judgement. It also usefully identifies aspects of assessment that are commonly misunderstood or misinterpreted, and advises on approaches to best practice without being prescriptive.

My particular thanks must go to Carys Swanwick, who wrote this edition, to Jeff Stevenson CMLI, Chair of the GLVIA Advisory Panel, and to all involved in producing these guidelines. The guidelines remain the benchmark for landscape and visual assessment.

Sue Illman PLI
President of the Landscape Institute

Preface to the third edition

The third edition of the *Guidelines for Landscape and Visual Impact Assessment* has been produced under the joint auspices of the Landscape Institute and the Institute of Environmental Management & Assessment (IEMA), as co-authors of the guidance. The third edition supersedes earlier editions, and while aimed primarily at landscape professionals is written in such a way as to provide a flavour for those who are simply interested in the subject, as well as more detailed (but less prescriptive) guidance for the professional engaged in Landscape and Visual Impact Assessments.

The third edition clearly recognises that many different pressures have changed and will continue to change landscapes that are familiar to many, whether at national or local community level, and the landscape professional will be of particular importance in bringing forward measured and responsible assessments to assist decision making.

This new edition takes into account recognition of the European Landscape Convention by the United Kingdom government, and subsequently by the devolved administrations, which raises the profile of this important subject and emphasises the role that landscape can play in our day-to-day lives.

It has been produced to reflect the expanded range of good practice that now exists, and to address some of the questions and uncertainties that have arisen from the second edition. It also gives greater recognition to sustainable development as a concept – something that has come further to the fore through government policy and guidance across the UK. However, while mentioning government policy and guidance (whether at the UK level or through the devolved administrations) the third edition seeks to avoid reflecting a specific point in time, recognising that legislative, statutory and policy contexts change so that guidance that is tied to contexts will quickly become dated and potentially out of step.

A clear objective has been to continue to encourage higher standards in the conduct of Landscape and Visual Impact Assessments – something which the two previous editions of the guidelines, published in 1995 and 2002, have already helped to achieve.

The third edition attempts to be clearer on the use of terminology. The emphasis should be on the identification of likely significant environmental effects, including those that are positive and negative, direct and indirect, long, medium and short term, and reversible and irreversible, as well as cumulative effects. This edition encourages professionals to recognise this and assess accordingly.

The Landscape Institute is the recognised expert and professional body for landscape matters and this edition again acknowledges the holistic perspective that landscape

professionals take and the particularly valuable contribution they can make to Environmental Impact Assessment in general and Landscape and Visual Impact Assessment in particular. As such the third edition stresses that it is important that landscape professionals are able to demonstrate high professional standards and that their work should offer exemplars of good practice. It is to be hoped that this edition will further reinforce the professional's skills base by providing sound, reliable and widely accepted advice, aimed at helping professionals to achieve quality and consistency in their approach to Landscape and Visual Impact Assessment.

This edition concentrates on principles and process. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand. The aim has been to make the advice specific enough to meet the needs of UK practitioners but also to avoid too much detail about specific legislation which will make it of less value elsewhere.

Two areas where there has been considerable discussion and where we feel that we are moving forward are in exploring and providing better advice concerning assessing significance of effect, and in identifying and assessing cumulative effects. In both cases, debate will continue as these subjects evolve.

It is especially important (a) to note the need for proportionality, (b) to focus on likely significant adverse or positive effects, (c) to focus on what is likely to be important to the competent authority's decision and (d) to emphasise the importance of the scoping process in helping to achieve all of these.

As Chair of the GLVIA Advisory Panel which oversaw the production of this edition, I offer the most heartfelt thanks to Professor Carys Swanwick of the University of Sheffield, commissioned as the writer of the text, to Lesley Malone, Head of Knowledge Services at the Landscape Institute who co ordinated the project, and to Josh Fothergill of ILMA. Carys is to be praised and very warmly congratulated, given the complexity of the task of balancing the sometimes competing needs and wishes of members, practices, government agencies and interested others, along with the views and input of the Advisory Panel. Producing this new edition has been challenging for all concerned but ultimately highly rewarding.

Government agencies have an important role throughout the LVIA process, particularly at the initial scoping stage and also in reviewing the final assessment. This guidance has been prepared following feedback from English Heritage, Natural Resources Wales (formerly the Countryside Council for Wales), Scottish Natural Heritage (Dualchas Nàdair na h-Alba), Natural England and the Environment Agency.

Thanks are also due to all those who, whether as individuals or as representatives of organisations or agencies, have contributed, with sometimes widely varying opinions and suggestions, to the evolution of the third edition. This edition could not and therefore will not satisfy every interest and opinion, but the Advisory Panel considers that it moves the subject forward considerably from the second edition. Doubtless debate will continue and new questions and issues will arise as this edition is applied and tested in practice but, after all, that is how progress in a subject is made.

The Landscape Institute and IEMA consider it essential to remember that the third edition is a 'step along the way'. Landscape and Visual Impact Assessment, along with Environmental Impact Assessment more generally, evolves and will continue so to do with the role of the professional making professional judgements at the heart of the process.

Jeff Stevenson CMLI
Chair, GLVIA Advisory Panel

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The third edition of the *Guidelines for Landscape and Visual Impact Assessment* was prepared by Professor Carys Swanwick guided by the GLVIA Advisory Panel:

- Jeff Stevenson CMLI (Chair)
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ENGLISH HERITAGE

Cyfoeth Naturiol Cymru
Natural Resources Wales

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

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Part 1

Introduction, scope and context

Chapter 1

Introduction

Chapter overview

- About this guidance
- When is LVIA carried out?
- Impacts, effects and significance
- Who is this guidance for?
- Organisation and structure of the guidance

About this guidance

1.1 **Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.** The Landscape Institute and the Institute of Environmental Management & Assessment (and its predecessor the Institute of Environmental Assessment) have worked together since 1995 to publish guidance on LVIA. Two previous editions of these guidelines, published in 1995 and 2002, have been important in encouraging higher standards in the conduct of LVIA projects.

'Development' is used throughout this book to mean any proposal that results in a change to the landscape and/or visual environment.

1.2 This is the third edition of the guidance and replaces the earlier editions. The new version takes account of changes that have taken place since 2002, in particular:

- changes in the context in which LVIA takes place, including in the legal and regulatory regimes and in associated areas of practice;
- the much greater range of experience of applying LVIA and testing it through Public Inquiries and related legal processes, which has revealed the need for some issues to be clarified and for the guidance to be revised to take account of changing circumstances.

When is LVIA carried out?

1.3 LVIA may be carried out either formally, as part of an Environmental Impact Assessment (EIA), or informally, as a contribution to the 'appraisal' of development proposals and planning applications. Both are important and the broad principles and the core of the approach is similar in each case.

LVIA as part of EIA

1.4 LVIA applies to all projects that could require a formal EIA but also includes projects that may be assessed informally. EIA has been formally required in the UK, for certain types of project and/or in certain circumstances, since 1985. It applies not only to projects that require planning permission but also to those subject to other consent procedures like use of agricultural land for intensive agricultural purposes, irrigation and land drainage requirements or reclamation of land from the sea. The various European Union Directives underpinning this requirement have now been consolidated in Directive 2011/92/EU *The assessment of the effects of certain public and private projects on the environment*. The objective of the Directive is to ensure that Member States

> adopt all measures necessary to ensure that, before consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.
>
> (European Commission, 2011)

The Directive and the Regulations that implement it in different countries of the UK specify the types of project and the circumstances in which EIA may be required. In summary, EIA is a way of ensuring that significant environmental effects are taken into account in decision making.

1.5 Devolution in the United Kingdom has meant growing emphasis on the individuality of approaches in devolved administrations and their related organisations. The framework within which EIA is carried out therefore consists of:

- the European Union Directive;
- UK Country Regulations which interpret and implement the Directive individually for England, Northern Ireland, Scotland and Wales;
- guidance documents produced by government departments to assist in implementation, including planning policy guidance and other forms of more specific EIA guidance, including guidance on specific types of change or development;
- specialised guidance produced by government agencies, or professional bodies (such as the Landscape Institute and IEMA), dealing with specific aspects of implementation.

This means, depending on project location, that the landscape professional must be aware of the relevant devolved government/administration's requirements with respect to EIA so far as it is pertinent to Landscape and Visual Impact Assessment.

1.6 The EU Directive covering EIA and related matters applies equally to all countries of the UK but is implemented through country Regulations that may be different in each and may also change periodically as they are updated. Each country also has a number of specific Regulations that cover a range of named activities, some of them outside the planning system. Such specific Regulations cover (among other things) electricity supply, transport, fish farming, energy production and transmission, gas and petroleum extraction, water abstraction, forestry, land drainage, agricultural improvements on uncultivated land or semi-natural areas and restructuring of rural land holdings.

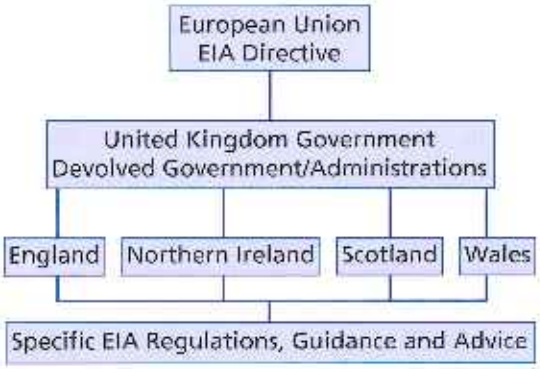


Figure 1.1 The EIA hierarchy

1.7 Planning policy guidance also differs across the four countries, as does the specialised guidance that has been issued by government departments and their agencies. The variety of specialist guidance from agencies and others also changes from time to time. Scottish Natural Heritage has been particularly active in producing advice and guidance both on EIA in general and on issues relating to the effects of wind farms in particular.

1.8 EIA procedures require a wide range of environmental topics to be investigated. The European Union Directive, the Regulations that apply in the UK and the guidance documents that support them all list these, albeit with slight variations in the wording. The topics can be summarised as:

- human beings, population;
- flora and fauna;
- soil, water, air, climate;
- landscape;
- cultural heritage (including architectural and archaeological heritage);
- material assets.

1.9 As well as specifically identifying landscape as a topic to be considered, the Directive and the Regulations also make clear the need to deal with the interrelationship between topics. This raises the issue of how landscape interrelates with matters such as, for example, population, flora and fauna, and cultural heritage. Consequently in the context of EIA, LVIA deals with both effects on the landscape itself and effects on the visual amenity of people, as well as with possible interrelationships of these with other related topics.

1.10 This guidance intentionally does not set out to identify or summarise the complex regulatory framework of legislation, Regulations and policy for EIA in general or for more specific aspects of it. To do so would immediately date it as the regulatory framework changes. The websites of relevant government departments and agencies provide the starting point for finding up-to-date information and will usually contain links to other relevant material. Anyone who may be involved in carrying out an LVIA as part of an EIA must ensure that they are fully familiar with the current legislation, Regulations and guidance documents that may be relevant to the specific project or location they are dealing with.

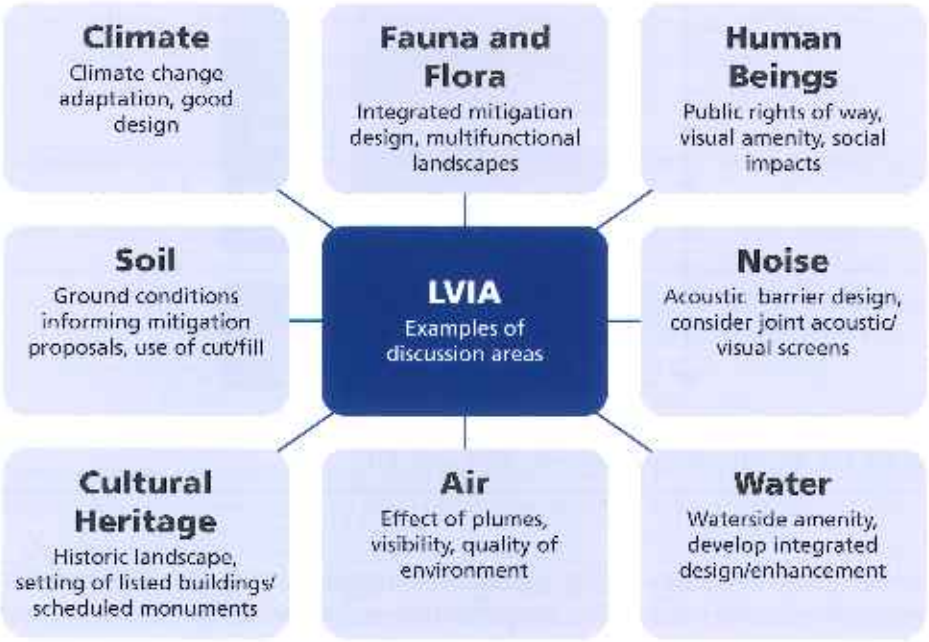


Figure 1.2 Examples of LVIA's relationship with other topics

LVIA in the 'appraisal' of development proposals

1.11 The principles and processes of LVIA can also be used to assist in the 'appraisal' of forms of land use change or development that fall outside the requirements of the EIA Directive and Regulations. Applying such an approach in these circumstances can be useful in helping to develop the design of different forms of development or other projects that may bring about change in the landscape and in visual amenity. Reference is sometimes made to the 'appraisal' of landscape and visual effects when such work is carried out outside the requirements of the EIA Directive and Regulations, and Local Planning Authorities may ask for such 'appraisals' where planning applications raise concerns about effects on the landscape and/or visual amenity. While much of this guidance is concerned with formal requirements for EIA and with the role LVIA plays in that process, the methods described will also be useful in such situations.

LVIA in Strategic Environmental Assessment

1.12 It has been widely recognised that project-level EIA alone cannot lead to comprehensive environmental protection or sustainable development. The European Strategic Environmental Assessment (SEA) Directive 2001/42/EC *The assessment of the effects of certain plans and programmes on the environment* (European Commission, 2001) is intended to address this and ensure that environmental consequences are addressed at strategic as well as project levels. It applies to certain plans and programmes that are developed by the public sector and by private companies that undertake functions of a public nature under the control or direction of government. This Directive is again transposed into UK law by a series of country-specific Government Regulations.

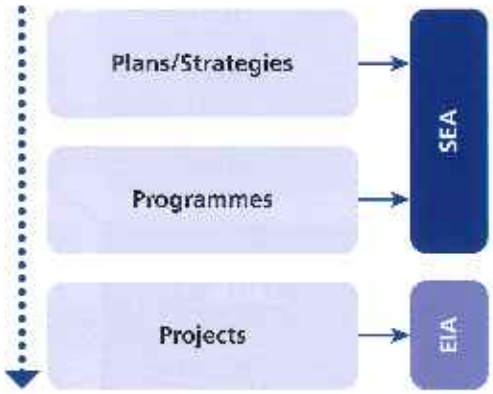


Figure 1.3 Relationship between SEA and EIA

1.13 Government and UK country agency guidance on implementing the SEA Directive and Regulations includes a similar list of environmental topics to the EIA Directive and Regulations, and so includes landscape. The principles of LVIA set out in this guidance are therefore equally applicable to SEA. There is a degree of overlap between the two processes and landscape and visual amenity issues may arise in both. However, as there is no clearly specified project to be assessed in SEA, the approach is more strategic and generic. The SEA process allows the cumulative effects of potential developments to be taken into account at an early stage of planning and alternative strategic approaches to be considered before decisions are taken, all in a way which is transparent. In England there are close relationships between SEA and sustainability appraisals of development plans, which have been carried out in various forms since the 1990s and have become an integral part of spatial planning, covering plans at all levels from national to local. There is a degree of overlap between the two processes and landscape and visual amenity issues may arise in both.

1.14 The approach is generally to judge how far the plan, programme or strategy performs against criteria relating to matters such as:

- conservation and enhancement of landscape character and scenic value;
- protection and enhancement of the landscape everywhere and particularly in designated areas;
- protection and enhancement of diversity and local distinctiveness;
- improvement of the quantity and quality of publicly accessible open space;
- restoration of landscapes degraded as a consequence of past industrial activity.

Impacts, effects and significance

1.15 Terminology can be complex and potentially confusing in this area, particularly in the use of the words 'impact' and 'effect' in LVIA within EIA and SEA. The process is generally known as **impact** assessment but the European Union Directive refers to assessment of the effects, which are changes arising from the development that is being

assessed. This guidance generally distinguishes between the 'impact', defined as the action being taken, and the 'effect', defined as the change resulting from that action, and recommends that the terms should be used consistently in this way. The document itself does use both, using 'impact' where this is the term in common usage.

1.16 Other guidance and advice has recognised that practitioners may use the terms 'impact' and 'effect' interchangeably while still adhering to the Directive and Regulations.[1] This may also be true of the wider public who become involved in EIA. This guidance urges consistent use of the terms 'impact' and 'effect' in the ways that they are defined above but recognises that there may be circumstances where this is not appropriate, for example where other practitioners involved in an EIA are adopting a different convention. In this case the following principles should apply:

- The terms should be clearly defined at the outset.
- They should be used consistently with the same meaning throughout the assessment.
- 'Impact' should not be used to mean a combination of several effects.

1.17 The Directive is clear that the emphasis is on the identification of likely **significant** environmental effects. This should embrace all types of effect and includes, for example, those that are positive/beneficial and negative/adverse, direct and indirect, and long and short term, as well as cumulative effects. Identifying significant effects stresses the need for an approach that is in proportion to the scale of the project that is being assessed and the nature of its likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional. This does not mean that effects should be ignored or their importance minimised but that the assessment should be tailored to the particular circumstances in each case. This applies to 'appraisals' of landscape and visual impacts outside the formal requirements of EIA as well as those that are part of a formal assessment.

Who is this guidance for?

1.18 The holistic perspective that landscape professionals take, coupled with the broad scope of their interests as embodied in the Landscape Institute's Royal Charter (Landscape Institute, 2008b) means that they make a particularly valuable contribution to EIA in general and to LVIA in particular, often playing leading or key roles in the multidisciplinary teams who carry out EIAs. It is important that they are able to demonstrate the highest professional standards and that their work should offer exemplars of good practice. While there has been continuous improvement in the standard and content of Environmental Statements – which are the documents resulting from the process of EIA – as experience has grown, there is still a clear need for sound, reliable and widely accepted advice on good practice for all aspects of EIA. Good practice in LVIA is key to this and also applies as much to 'appraisals' carried out informally as to contributions to the 'appraisal' of development proposals and planning applications.

1.19 As with the previous editions, this guidance is therefore aimed primarily at practitioners and is designed to help achieve quality and consistency of approach, to raise standards in this important area of professional work and so to ensure that change in the landscape is considered in an effective way that helps to achieve sustainable development

objectives. The intention is to encourage good practice and achieve greater consistency in the use of terminology and in overall approach.

1.20 The guidance concentrates on principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances.

1.21 Although aimed mainly at those carrying out LVIAs, the guidance should also be of value to others who have an interest in understanding more about the importance of landscape and visual amenity issues, about the role of LVIA and about the way that it is carried out. They may include:

- developers, members of professional development project teams and other organisations who own or manage land and may be involved in projects that have the potential to change the landscape and visual amenity;
- other professionals involved in assessing the consequences of change for other aspects of the environment;
- planners and others within local government and the government agencies who may be the recipients of reports on the consequences of change and development and be required to review them;
- politicians, amenity societies and the general public who may be involved in decisions about proposals for change and development;
- those providing education and training in LVIA as one of a range of tools and techniques contributing to landscape planning and design;
- students and others wishing to learn about the process of LVIA.

1.22 While written primarily in the context of the UK, it is recognised that previous editions of the guidance have also been used in other parts of the world. The aim has been to make the advice specific enough to meet the needs of UK practitioners while at the same time avoiding too much detail about particular legislation which will make it of less value elsewhere.

1.23 If this guidance is used beyond the UK, it will be important to remember that concepts and definitions vary and approaches must be tailored to local circumstances and legislation. There is a focus on the overall approach and methods rather than the specifics of their application in particular places or to particular types of development. More specific guidance may exist for certain types of development, such as roads for example, in which case account will need to be taken of both the general and the specific guidance.

Organisation and structure of the guidance

1.24 Given the different needs of the professional and the wider audiences the guidance is organised in two parts, as follows:

Part 1: Introduction, scope and context is aimed mainly at a wider audience with a more general interest in the topic, although it also contains material of relevance to practitioners. It provides an introduction to LVIA, in the context of some of the changes that have taken place since 2002. It sets the scene but is **not** concerned with the practicalities of actually carrying out LVIA.

- **Chapter 1: Introduction** – this chapter – gives a brief introduction to LVIA and its relationship with EIA and SEA, introducing some key terms and describing the audience at which the guidance is aimed.
- **Chapter 2: Definitions, scope and context** describes the introduction of the European Landscape Convention, and definitions of landscape, seascape and townscape. It discusses the role of LVIA in dealing with landscape change in the context of sustainable development, the role of professional judgement and the relationship of LVIA to the design process.

Part 2: Principles, processes and presentation is the core of the practical guidance. It sets out fundamental principles and provides guidance on methods, procedures and technical issues.

- **Chapter 3: Principles and overview of processes** outlines the process of LVIA and places it in the context of wider EIA processes. It provides a framework for the later chapters on assessing landscape effects and visual effects by setting out the general approach to the core steps of describing the baseline, identifying the effects and assessing their significance.
- **Chapter 4: The proposed development, design and mitigation** describes what those involved in carrying out LVIA need to know about the development or change that is proposed and discusses the detail of approaches to mitigation, which may become part of the scheme proposals through the iterative design process.
- **Chapter 5: Assessment of landscape effects** describes how the general approach and processes apply when assessing landscape effects.
- **Chapter 6: Assessment of visual effects** describes how the general approach and processes apply when assessing visual effects.
- **Chapter 7: Assessing cumulative landscape and visual effects** describes ways of approaching the issue of cumulative landscape and visual effects.
- **Chapter 8: Presenting information on landscape and visual effects** summarises approaches to presenting material about LVIA whether as a chapter in an Environmental Statement or as a standalone document.

Summary advice on good practice

- LVIA may be carried out either formally, as part of an Environmental Impact Assessment (EIA) or a Strategic Environmental Assessment (SEA), or informally as a contribution to the 'appraisal' of development proposals and planning applications. Both are important and the broad principles and the core of the approach are similar in each case.
- Anyone involved in carrying out an LVIA, whether as part of an EIA or not, must ensure that they are fully familiar with the current legislation, Regulations and guidance documents that may be relevant to the specific case they are dealing with.
- This guidance recognises a clear distinction between the **impact**, as the action being taken, and the **effect**, being the result of that action, and recommends that the terms should be used consistently in this way. 'Impact' should not be used to mean a combination of several effects.
- The emphasis on **likely significant** effects stresses the need for an approach that is proportional to the scale of the project that is being assessed and the nature of its likely effects. This applies to 'appraisals' of landscape and visual impacts outside the formal requirements of EIA as well as those that are part of a formal assessment.

Chapter 2

Definitions, scope and context

Chapter overview

- What does landscape mean?
- The importance of landscape
- Landscape change and sustainable development
- The role of LVIA
- Professional judgement in LVIA

What does landscape mean?

2.1 The UK has signed and ratified the European Landscape Convention (ELC) since 2002, when the last edition of this guidance was published. The recognition that government has thus given to landscape matters raises the profile of this important area and emphasises the role that landscape can play as an integrating framework for many areas of policy. The ELC is designed to achieve improved approaches to the planning, management and protection of landscapes throughout Europe and to put people at the heart of this process.

2.2 The ELC adopts a definition of landscape that is now being widely used in many different situations and is adopted in this guidance: 'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). This definition reflects the thinking that emerged in the UK in the late 1980s and early 1990s and was summarised in the 2002 guidance on Landscape Character Assessment. The inclusive nature of landscape was captured there in a paragraph stating that:

> Landscape is about the relationship between people and place. It provides the setting for our day-to-day lives. The term does not mean just special or designated landscapes and it does not only apply to the countryside. Landscape can mean a small patch of urban wasteland as much as a mountain range, and an urban park as much as an expanse of lowland plain. It results from the way that different components of our environment – both natural (the influences of geology, soils, climate, flora and fauna) and cultural (the historical and current impact of land use, settlement, enclosure and other human interventions) – interact together and are perceived by us. People's perceptions turn land into the concept of landscape.
>
> (Swanwick and Land Use Consultants, 2002: 2)

2.3 This guidance embraces this broad interpretation of what landscape means and uses it throughout. It is not only concerned with landscapes that are recognised as being special or valuable, but is also about the ordinary and the everyday – the landscapes where people live and work, and spend their leisure time. The same approach can be taken in all these different landscape settings, provided that full attention is given to the particular characteristics of each place.

2.4 The importance of the ELC definition is that it moves beyond the idea that landscape is only a matter of aesthetics and visual amenity. Instead it encourages a focus on

landscape as a resource in its own right. It provides an integrated way of conceptualising our surroundings and is increasingly considered to provide a useful spatial framework for thinking about a wide range of environmental, land use and development issues.

The ELC definition of landscape is inclusive. Article 2 of the European Landscape Convention states that 2.5

> Subject to the provisions contained in Article 15, this Convention applies to the entire territory of the Parties and covers natural, rural, urban and peri-urban

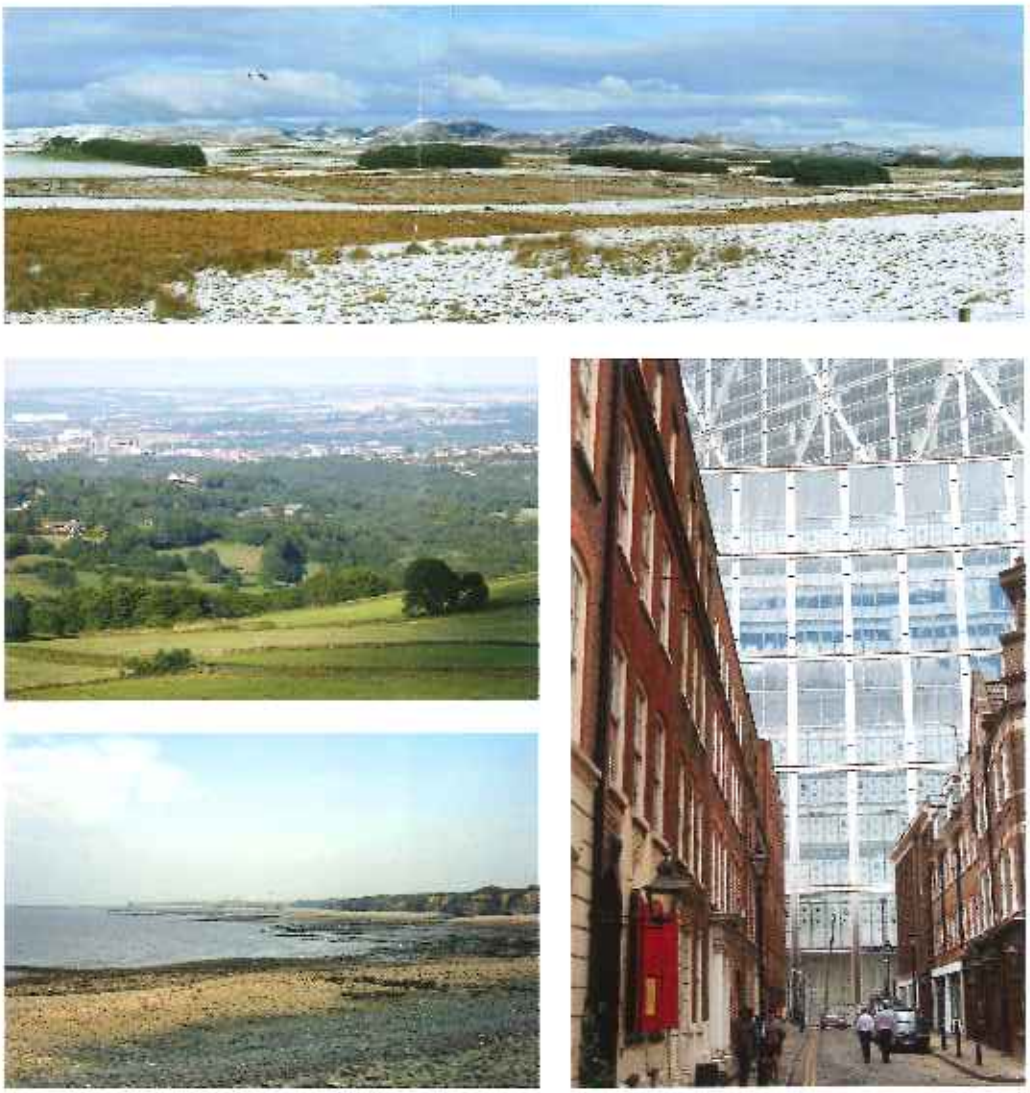


Figure 2.1A–D The European Landscape Convention definition of landscape is inclusive and covers natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas

> areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes.
>
> (Council of Europe, 2000)

The definition therefore applies, among other things, to:

- all types of rural landscape, from high mountains and wild countryside to urban fringe farmland (rural landscapes);
- marine and coastal landscapes (seascapes);
- the landscapes of villages, towns and cities (townscapes).

2.6 Rural landscapes have been the main focus of attention for a number of years. Now both townscape and seascape have also emerged as particular sub-sets of 'landscape' for consideration. This guidance is equally applicable to all forms of landscape and does not separate townscape and seascape out for special treatment. However, for clarity the following paragraphs define these terms. All LVIA work needs to respond to the particular context in which it takes place. Whether the project is located in a rural, an urban or a marine context, attention will need to be paid to the distinctive character of the area and reference made to any relevant specific guidance.

Chapter 5 sets out how the different forms of landscape are assessed to provide baseline descriptions for LVIA.

Townscape

2.7 'Townscape' refers to areas where the built environment is dominant. Villages, towns and cities often make important contributions as elements in wider-open landscapes but townscape means the landscape within the built-up area, including the buildings, the relationships between them, the different types of urban open spaces, including green spaces, and the relationship between buildings and open spaces. There are important relationships with the historic dimensions of landscape and townscape, since evidence of the way that villages, towns and cities change and develop over time contributes to their current form and character.

Seascape

2.8 The importance of coasts and seascapes as part of our marine environment has increasingly been acknowledged, not least due to the growing pressures being placed upon them by new forms of development, notably aquaculture, offshore wind farms, tidal energy schemes and the development of coastal risk management defences. The definition of landscape from the European Landscape Convention includes seascapes and marine environments. As the UK Marine Policy Statement indicates, 'seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other' (HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government, 2011: 21).

Figure 2.2 'Townscape' means the landscape within the built-up area, including the buildings and the relationships between them

Figure 2.3 'Seascape' means landscapes with views of the coast or seas, and coasts and the adjacent marine environment

2.9 This definition includes the meeting point of land and sea but also encompasses areas beyond the low water mark, and so includes both areas near to the shore and the open sea. Any assessment of the landscape and visual effects of change in marine and coastal environments should carefully consider the relationship between land and sea in coastal areas and also take account of possible requirements to consider the open sea.

Relationship to green infrastructure

2.10 Green infrastructure has come to the fore since the publication of the second edition of this guidance. It refers to networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities. Such networks are increasingly being planned, designed and managed to achieve multiple social, environmental and economic objectives. Green infrastructure is not separate from the landscape but is part of it and operates at what is sometimes referred to as the 'landscape scale'. It is generally concerned with sites and linking networks that are set within the wider context of the surrounding landscape or townscape. LVIA will often need to address the effects of proposed development on green infrastructure as well as the potential the development may offer to enhance it.

The importance of landscape

2.11 As the ELC makes clear, particular attention needs to be given to landscape because of the importance that is attached to it by individuals, communities and public bodies. Landscape is important because it provides:

- a shared resource which is important in its own right as a public good;
- an environment for flora and fauna;
- the setting for day to day lives – for living, working and recreation;
- opportunities for aesthetic enjoyment;
- a sense of place and a sense of history, which in turn can contribute to individual, local, national and European identity;
- continuity with the past through its relative permanence and its role in acting as a cultural record of the past;
- a source of memories and associations, which in turn may contribute to wellbeing;
- inspiration for learning, as well as for art and other forms of creativity.

2.12 In addition landscape provides economic benefits, both directly by providing an essential resource to support livelihoods, especially in agriculture, forestry and other land management activities, and in recreation and tourism, as well as indirectly through its now widely acknowledged benefits for health and wellbeing.

Landscape change and sustainable development

2.13 Landscape is not unchanging. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. Today many of these drivers of change arise from the requirement for development to meet the needs of a growing and changing population and economy.

They include land management, especially farming and forestry, and many forms of development, including (among many others): new housing; commercial developments; new forms of energy generation including wind turbines; new infrastructure such as roads, railways and power lines; and extraction of minerals for a variety of uses.

2.14 In the last thirty years there has been growing emphasis on the need to accommodate such change and development in ways that are sustainable. Definitions of sustainable development have been extensively debated but according to the widely accepted definition in the Brundtland report this means 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). It is broadly agreed that it involves finding an appropriate balance between economic, social and environmental matters, and that protecting and enhancing the natural, built and historic environment is an important part of this.

2.15 As a technical process LVIA has an important contribution to make to the achievement of sustainable development. It takes place in a context where, over time, landscapes evolve and society's needs and individual and community attitudes change. This can make the professional judgements about the significance of effects identified through LVIA, and whether they are positive or negative, particularly challenging.

2.16 Climate change is one of the major factors likely to bring about future change in the landscape, and is widely considered as the most serious long-term threat to the natural environment. The need for climate change mitigation and adaptation is now well established at a policy level in the UK and beyond. There are many different ways in which mitigation and adaptation can be addressed and landscape professionals are directed to the Landscape Institute's policy document on climate change (Landscape Institute, 2008a) when considering such matters. Some climate change mitigation and adaptation projects may in themselves require EIA. Further information on climate change and EIA is available in IEMA guidance (e.g. IEMA, 2010a, 2010b).

2.17 There is some emphasis in the UK and elsewhere on appropriate renewable energy development as a means of mitigating climate change. Renewable energy development proposals are subject to the same LVIA process as any other type of development proposal, with the same need for careful siting, design and mitigation, and impartial assessment of the landscape and visual effects. It is for the competent authority to judge the balance of weight between policy considerations and the effects that such proposals may have.

The role of LVIA

2.18 LVIA must address both effects on landscape as a resource in its own right and effects on views and visual amenity.

Effects on landscape as a resource

2.19 The ELC definition of landscape supports the need to deal with landscape as a resource in its own right. In the UK this particularly reflects the emphasis on landscape character

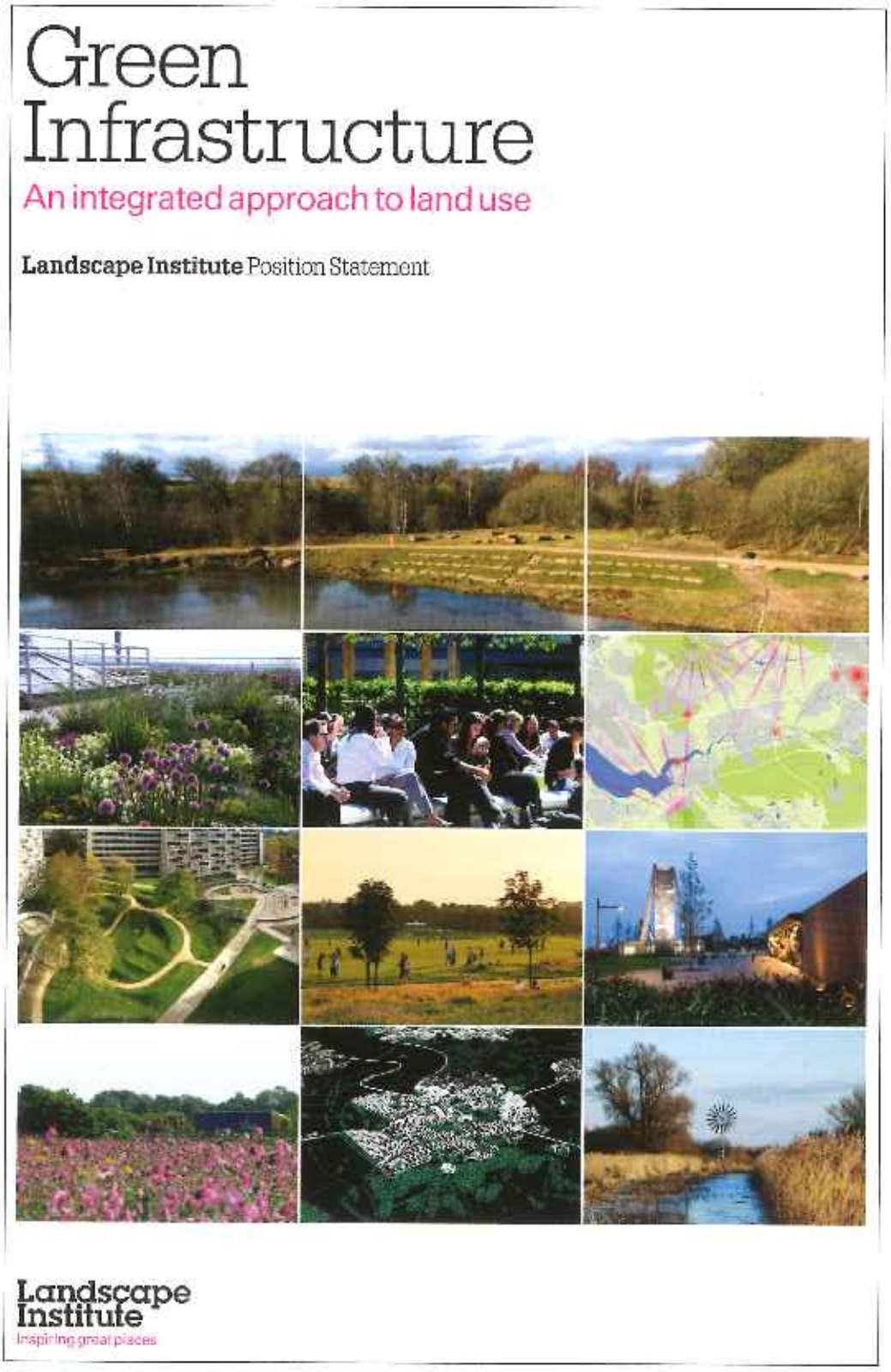


Figure 2.4 Landscape Institute position statement on green infrastructure

that has developed since the 1980s. Landscape results from the interplay of the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create the distinctive character of landscapes in different places, allowing different landscapes to be mapped, analysed and described. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of the landscape that make different places distinctive.

Views and visual amenity

When the interrelationship between people ('human beings' or 'population' in the language of the Directive and Regulations) and the landscape is considered, this introduces related but very different considerations, notably the views that people have and their visual amenity – meaning the overall pleasantness of the views they enjoy of their surroundings. 2.20

Reflecting this distinction the two components of LVIA are: 2.21

1. **assessment of landscape effects**: assessing effects on the landscape as a resource in its own right;
2. **assessment of visual effects**: assessing effects on specific views and on the general visual amenity experienced by people.

The distinction between these two aspects is very important but often misunderstood, even by professionals. LVIA must deal with both and should be clear about the difference between them. If a professional assessment does not properly define them or distinguish between them, then other professionals and members of the public are likely to be confused. 2.22

Professional judgement in LVIA

Professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters, for example the number of trees lost to construction of a new mine, much of the assessment must rely on qualitative judgements, for example about what effect the introduction of a new development or land use change may have on visual amenity, or about the significance of change in the character of the landscape and whether it is positive or negative. 2.23

The role of professional judgement is also characteristic of other environmental topics, such as ecology or cultural heritage, especially when it comes to judging how significant a particular change is. In all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others. Professional judgements must be based on both training and experience and in general suitably qualified and experienced landscape professionals should carry out Landscape and Visual Impact Assessments. 2.24

Even with qualified and experienced professionals there can be differences in the judgements made. This may result from using different approaches or different criteria, or 2.25

from variation in judgements based on the same approach and criteria. Ideally, and especially for complex projects, more than one person should be involved in the assessment to provide checks and balances, especially in identifying the likely significant effects. If, for example, the professional judgements made on behalf of different interested parties vary widely it is the decision makers in the competent authority who will ultimately need to weigh up the evidence and reach a conclusion.

2.26 Landscape professionals are likely to be closely involved in the development of the scheme and its design. If they also undertake the LVIA, they must be able to take a sufficiently detached and dispassionate view of the proposals in the final assessment of landscape and visual impact. In carrying out an LVIA the landscape professional must always take an independent stance, and fully and transparently address both the negative and positive effects of a scheme in a way that is accessible and reliable for all parties concerned.

Summary advice on good practice

- LVIA should adopt the broad and inclusive ELC definition of landscape embracing, among other things, seascapes and townscapes as well as all forms of rural landscape.
- LVIA will often need to address the effects of development on green infrastructure and also the potential for enhancing it. Green infrastructure is not a separate consideration from landscape – rather it is part of it and should be treated as such.
- As a technical process LVIA has an important contribution to make to the achievement of sustainable development, including assessment of proposals for mitigation of and adaptation to climate change.
- LVIA must deal with and clearly distinguish between the assessment of landscape effects, dealing with changes to the landscape as a resource, and the assessment of visual effects, dealing with changes in views and visual amenity.
- Professional judgement is a very important part of LVIA. Ideally, and especially for complex projects, more than one person should be involved in the assessment to provide checks and balances, especially in identifying the significant effects likely to influence decisions.

Part 2

Principles, processes and presentation

Chapter 3

Principles and overview of processes

Chapter overview

- Introduction
- Components of the LVIA process in relation to EIA
- Site selection and consideration of alternatives
- Screening
- Scoping
- Project description/specification
- Baseline studies
- Identification and description of effects
- Assessing the significance of effects
- Mitigation
- Engaging with stakeholders and the public

Introduction

3.1 This chapter introduces the principles of LVIA and outlines the overall process. More detail on how the key parts of the process are carried out specifically for landscape, visual and cumulative effects are included in Chapters 5, 6 and 7 respectively. Those chapters should be read in conjunction with the overview in this chapter.

3.2 LVIA can be carried out either as part of a broader EIA, or as a standalone 'appraisal' of the likely landscape and visual effects of a proposed development. The overall principles and the core steps in the process are the same but there are specific and clearly defined procedures in EIA which LVIA must fit within.

- As a part of an EIA, LVIA is normally carried out as a separate theme or topic study. Landscape and visual matters appear as either separate or combined sections of the Environmental Statement, which presents the findings of the EIA. Landscape and visual issues may also make a contribution to other parts of the EIA, such as site selection and consideration of alternatives, and screening.
- As a standalone 'appraisal' the process is informal and there is more flexibility, but the essence of the approach – specifying the nature of the proposed change or development; describing the existing landscape and the views and visual amenity in the area that may be affected; predicting the effects, although not their likely significance; and considering how those effects might be mitigated – still applies.

Components of the LVIA process in relation to EIA

3.3 Table 3.1 summarises the main components of the impact assessment process. It shows their role in LVIA carried out both in EIA and in landscape 'appraisals' outwith the EIA process. If one of the components is shown as 'not required', especially in landscape 'appraisal', this does not mean that it is not sometimes appropriate to include this, particularly for large or complex projects. The core components of the LVIA process are highlighted. A flow chart of the EIA and LVIA process is given in Figure 3.1 (see p. 29).

Table 3.1 Components of the EIA process and the role of LVIA

Component of EIA process	*Brief description of action in this part of the process*	*LVIA role in EIA*	*LVIA role in landscape 'appraisal'*
Site selection and consideration of alternatives	Identifies opportunities and constraints relating to alternative options and makes comparative assessments of them in order to identify those with least adverse (or indeed most beneficial) effects and greatest potential for possible mitigation and enhancement.	Required (but alternatives should not be invented and it is acceptable if there are none)	May not be required but considering landscape to inform site selection is good practice
Screening	Determines whether an EIA is needed for the proposed development.	Required – by competent authority	Not required
Scoping	Makes an initial judgement about the scope of the assessment and of the issues that need to be covered under the individual topics or themes. Includes establishment of the relevant study area.	Required	Optional
Project description/ specification	Provides a description of the proposed development for the purpose of the assessment, identifying the main features of the proposals and establishing parameters such as maximum extents of the development or sizes of the elements. Normally includes description of any alternatives considered.	Required	Required
Baseline studies	Establishes the existing nature of the landscape and visual environment in the study area, including any relevant changes likely to occur independently of the development proposal. Includes information on the value attached to the different environmental resources.	Required	Required
Identification and description of effects	Systematically identifies and describes the effects that are likely to occur, including whether they are adverse or beneficial.	Required	Required

Table 3.1 continued

Component of EIA process	*Brief description of action in this part of the process*	*LVIA role in EIA*	*LVIA role in landscape 'appraisal'*
Assessing the significance of effects	Systematically and transparently assesses the likely significance of the effects identified.	Required	Not required
Mitigation	Makes proposals for measures designed to avoid/prevent, reduce or offset (or compensate for) any significant negative (adverse) effects.	Required	If required
Preparation of the Environmental Statement	Presentation of the findings of the assessment in written and graphic form.	Required	Appraisal Report
Monitoring and auditing	Monitors and audits the effects of the implementation of the proposal and of the mitigation measures proposed, especially where they are covered by conditions attached to any permission that may be given.	If required	If required

Further details of these components, and of the role that landscape and visual issues play in each, are summarised below.

Site selection and consideration of alternatives

3.4 If alternatives are considered as part of a development that is subject to EIA, landscape and visual considerations may play a part in identifying opportunities and constraints relating to site selection and making comparative assessments of the options in order to identify those with least adverse (or indeed most beneficial) effects and greatest potential for possible mitigation and enhancement. It is then important to:

- demonstrate how landscape and visual effects have been taken into consideration;
- explain the reasoning behind any decisions to reject any of the sites selected and alternatives considered in terms of their landscape and visual effects.

Screening

3.5 This step determines whether or not an EIA is required. The UK EIA Regulations set out the types of project for which an EIA is always required, known as Schedule 1

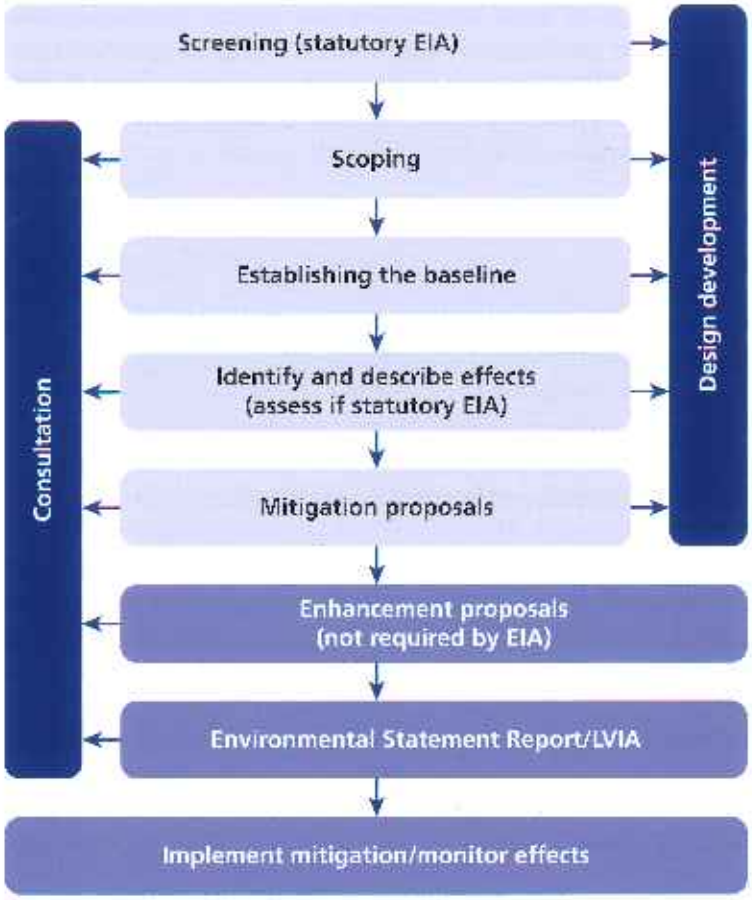


Figure 3.1 The EIA and LVIA process

development. They also include a further list of projects, in Schedule 2, which may require EIA if they are likely to have significant effects on the environment by virtue of factors such as size, nature or location. The screening process considers the characteristics of the development, its location and the characteristics of potential impacts, through reference to Schedule 3 of the Regulations and other relevant guidance, to decide whether or not an EIA is required.

The proposer of a scheme has the option to seek a screening opinion from the competent authority as to whether an EIA is required. The Regulations require that when decisions are made by the competent authority as to the need for an EIA, the criteria to be taken into account include whether or not the development is in a location that falls within a range of 'sensitive areas'. The Regulations indicate that these sensitive areas include a variety of national landscape designations. These designations, and the meaning of 'sensitivity' both in this context and in the broader context of landscape planning, are discussed further in Chapter 6. 3.6

In contributing to the screening process the landscape professional may be called upon to provide a professional opinion as to the landscape and visual considerations that 3.7

may arise in the area likely to be affected by the scheme. In making any judgements and providing such an opinion, it is important to adopt a structured and systematic approach from the outset and record all actions undertaken, information gathered and taken into consideration, assumptions made, limitations, and opinions offered, together with reasoned justifications.

Scoping

3.8 Defining the scope of the EIA study is one of the most critical parts of the process, in that it sets the context for everything else that follows. Unless a screening opinion has been sought, this may be the first opportunity for the competent authority and the developers and their advisers to make contact and ideally it should mark the beginning of an iterative dialogue. Early identification of particular concerns can lead to the resolution of issues before an application is submitted.

3.9 Scoping is the procedure by which the key topics to be examined and the areas of likely significant effects are identified. Under the Regulations, proposers of schemes may ask the competent authority for an opinion on the information to be supplied in an Environmental Statement. The objective of a scoping request is to identify what the competent authority considers to be the main likely effects of the development and to determine the topics on which the Environmental Statement should focus. The competent authority must consult a defined range of bodies (referred to as 'the consultation bodies') and consider the characteristics of the proposed development, the characteristics of the development type concerned and the environmental features likely to be affected.

3.10 An Environmental Statement is not necessarily rendered invalid if it does not cover all the matters specified in the scoping opinion provided by the competent authority. However, as the scoping opinion represents the considered view of the competent authority, a Statement which does not cover all the matters specified in the opinion will probably be subject to a request or requests for additional information. The fact that the competent authority has given a scoping opinion does not prevent them from requesting additional information at a later stage.

3.11 LVIA scoping should be expected to include several key matters, which should ideally be discussed with landscape professionals in the competent authority as well as with consultation bodies and interest groups. Views from local people may also be sought, for example through contact with parish and/or community councils. Key matters include:

- the extent of the study area to be used for assessment of landscape and visual effects (for details on how appropriate study areas are defined see Chapters 5 and 6);
- sources of relevant landscape and visual information;
- the nature of the possible landscape and visual effects, especially those deemed most likely to occur and be significant;
- the main receptors (the word used to mean those parts of the receiving landscape, and the people able to view the proposal, that may be affected by the change) of

the potential landscape and visual effects that need to be addressed in the full assessment, including viewpoints that should be assessed;
- the extent and appropriate level of detail for the baseline studies that is reasonably required to assess the landscape and visual effects of the proposed development;
- methods to be used in assessing the likely significance of the effects that may be identified;
- the requirements with respect to the assessment of likely significant cumulative landscape and visual effects.

Further details on all these matters can be found in Chapters 5, 6 and 7.

3.12 Scoping for LVIA usually requires a desk study and familiarisation with the nature of both the site and the proposed scheme and its possible effects, as well as consultations with the competent authority and the main consultation bodies. An LVIA scoping document can be produced to set out the issues and provide a focus for the competent authority's consideration. It may also include brief details on methods, assessment techniques and the presentation of information to be included in the final Environmental Statement. Although not mandatory, a scoping document can be a helpful way of providing information to the competent authority to inform their consultations with other bodies and to assist them in their considerations.

Project description/specification

3.13 An overall description of the characteristics of the proposed development, sometimes referred to as the 'project specification', makes an important contribution to an LVIA, as well as to other environmental topics in an EIA. It provides the description of the siting, layout and other characteristics and components of the development on which the landscape and visual assessment will be based. It also plays an important part in assisting understanding by all parties of exactly what is proposed. Knowledge and understanding of the proposals will grow during the course of the project. Outline information will be known at screening, and more detail at scoping and even more detail will emerge through the assessment process.

3.14 In incorporating this information into the final Environmental Statement, it is not usually necessary to repeat the information in individual sections of the Statement dealing with particular topics. Rather it is important to make sure that the project description provides all the information needed to identify its effects on particular aspects of the environment. For LVIA it is important to understand, from the project description, the essential aspects of the scheme that will potentially give rise to its effects on the landscape and visual amenity.

The key aspects of the project that need to be understood for LVIA are described in Chapter 4.

Paragraphs 3.15–3.39 describe the steps that are the core of the LVIA process illustrated in Figure 3.1.

Baseline studies

3.15 The initial step in LVIA is to establish the baseline landscape and visual conditions. The information collected will, when reviewed alongside the description of the proposed development, form the basis for the identification and description of the changes that will result in the landscape and visual effects of the proposal:

- For the landscape baseline the aim is to provide an understanding of the landscape in the area that may be affected – its constituent elements, its character and the way this varies spatially, its geographic extent, its history (which may require its own specialist study), its condition, the way the landscape is experienced, and the value attached to it.
- For the visual baseline the aim is to establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points.

Details of baseline studies for assessment of landscape and visual effects are provided in Chapters 5 and 6 respectively.

3.16 The level of detail provided should be that which is reasonably required to assess the likely significant effects. It should be appropriate and proportional to the scale and type of development and the type and significance of the landscape and visual effects likely to occur. It should also be appropriate to the different stages of the assessment process. For example, at the site selection, screening and scoping stages a preliminary desk-based site appraisal may be adequate using primarily, for example, landscape designations, existing Landscape Character Assessments, information about historic landscapes and known sites of recreational interest. Once the preferred site has been selected more comprehensive and detailed baseline studies are usually required.

3.17 Principal sources of background information include the competent authority, the consultation bodies and local special interest groups and organisations. It is important that the information assembled is considered alongside information from other parallel studies, such as cultural heritage and ecology studies, to ensure an integrated approach. The EIA co-ordinator will usually play an important part in facilitating such integration across the topic areas.

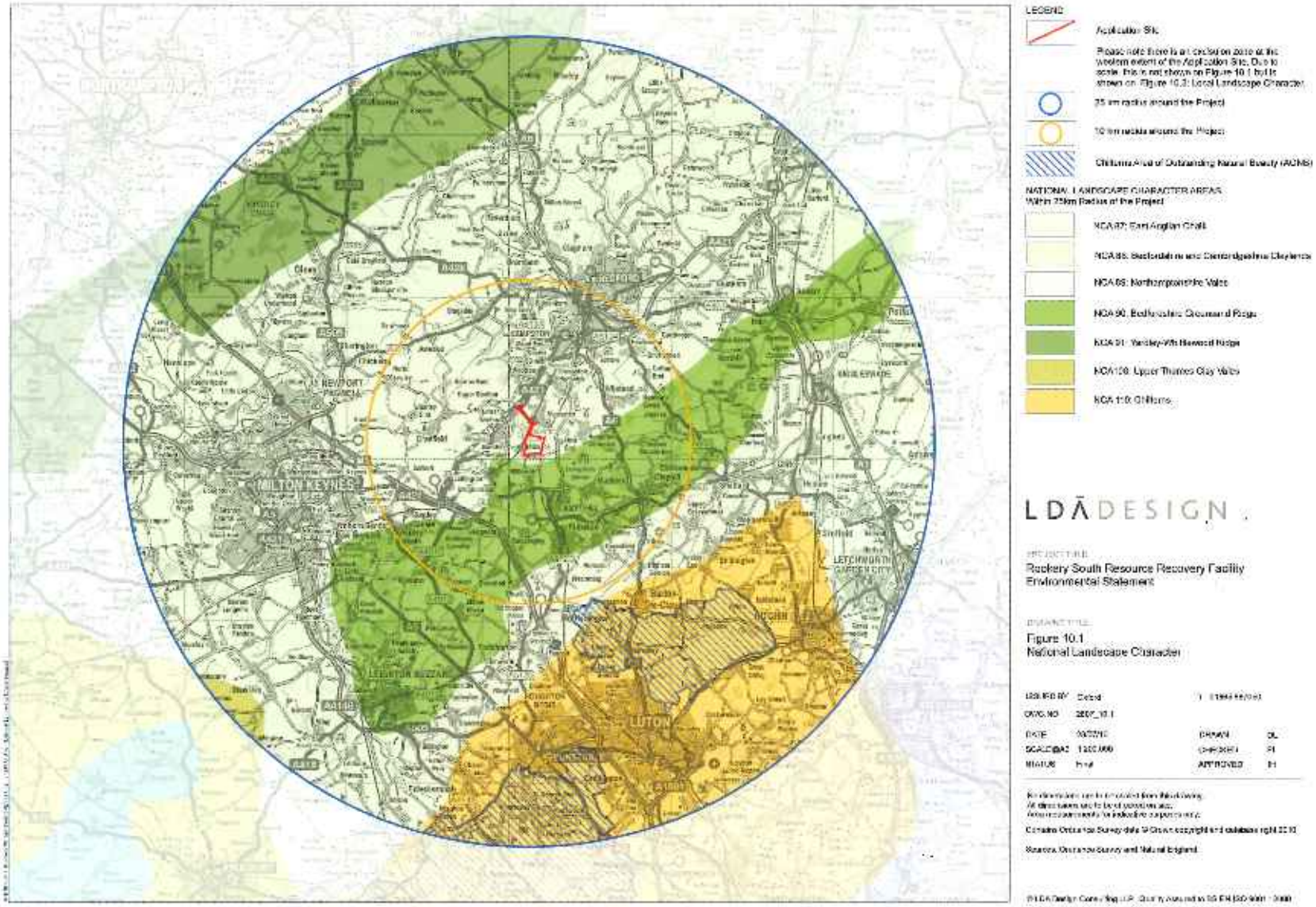


Figure 3.2 Published Landscape Character Assessment information at the national scale – part of the baseline information for an LVIA

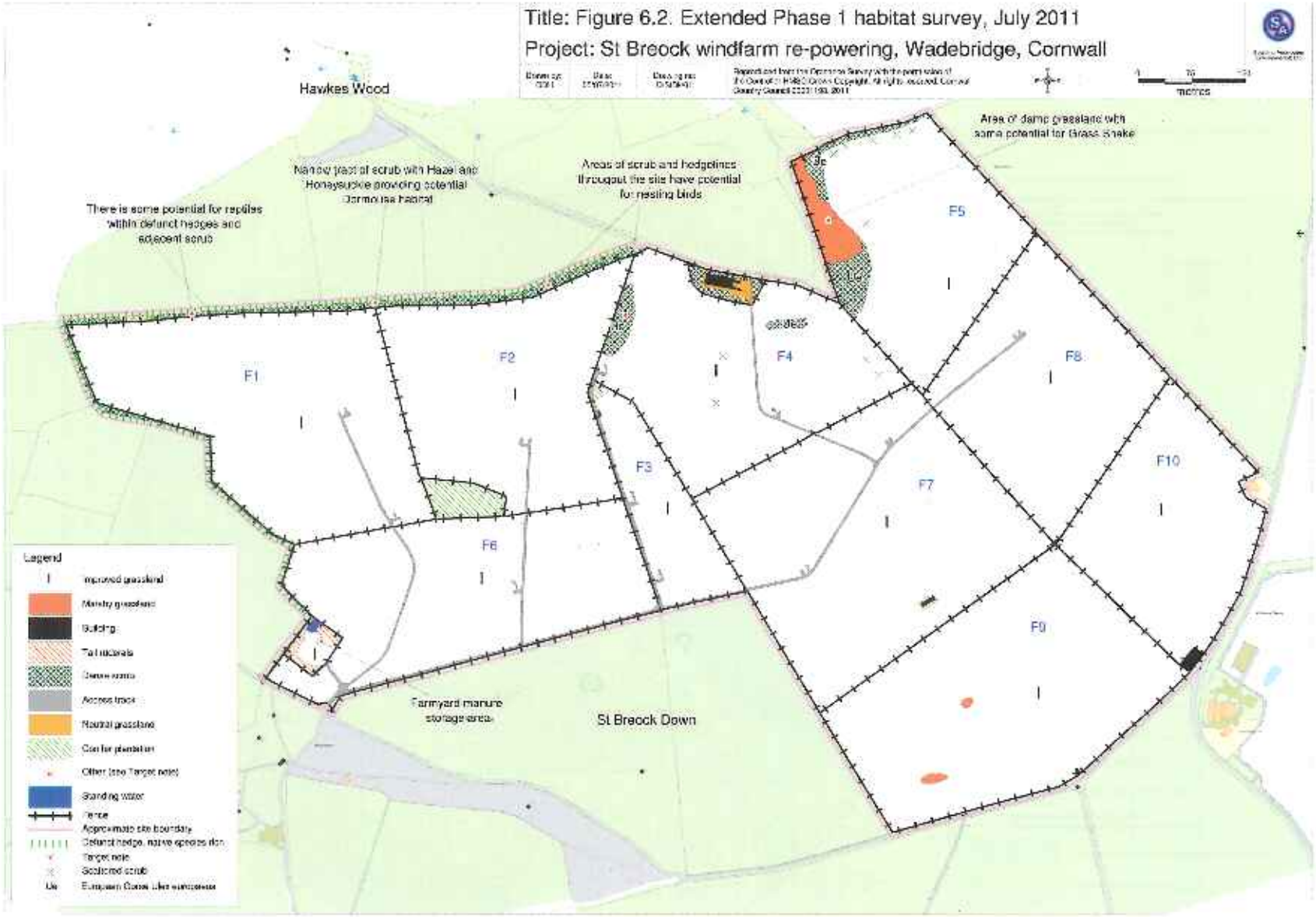


Figure 3.3 A Phase 1 habitat plan. A habitat baseline survey can assist in establishing the nature, extent and value of the landscape resource that could potentially be affected by a proposed development

Identification and description of effects

Once the key aspects of the proposed development that are relevant to landscape and visual effects have been determined, and the baseline conditions established, the likely significant effects can be predicted. There is no formulaic way of doing this. It is a matter of systematic thinking about the range of possible interactions between components of the proposed development, covering its whole life cycle (for example: for built development, usually construction, operation and decommissioning stages; for mineral extraction, usually operation, restoration and aftercare stages), and the baseline landscape and visual resource. 3.18

Some possible effects will already have been identified during the screening and/or scoping processes. Some may have been judged unlikely to occur or so insignificant that it is not essential to consider them further – this is sometimes referred to as the 'scoping out' of effects. Others may have been addressed by amendments to the scheme design through the iterative design/assessment process – either being designed out altogether or rendered not significant. Both situations must be made clear in the final Environmental Statement, so that there is transparency about how the landscape and visual considerations have influenced the final design, when compared to earlier, alternative design iterations. Other than any effects that are considered and eliminated at an earlier point, likely significant effects must be considered in the assessment stage of LVIA. 3.19

In most cases it will be essential to give detailed consideration to both: 3.20

- effects on the landscape as a resource (the **landscape effects**); and
- effects on views and visual amenity as experienced by people (the **visual effects**).

Sometimes there may be likely significant effects on the landscape resource but the development may be in a location that does not affect visual amenity significantly. It is also possible, although less common, that there may be likely significant effects on visual amenity without effects on the landscape resource.

Predicting what effects are likely depends upon careful consideration of the different components of the development at different stages of its life cycle, and identification 3.21

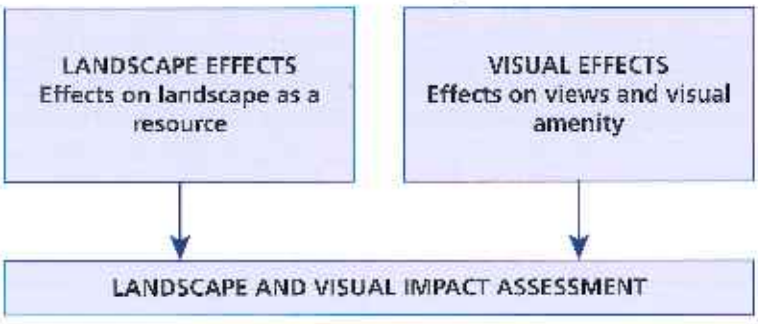


Figure 3.4 Landscape and visual effects

of the receptors that will be affected by them. In LVIA there must be identification of both:

- landscape receptors, including the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas; and
- visual receptors, that is, the people who will be affected by changes in views or visual amenity at different places.

The effects are identified by establishing and describing the changes resulting from the different components of the development and the resulting effects on individual landscape or visual receptors.

3.22 The Regulations specify that an EIA must consider the direct effects and any indirect, secondary, cumulative, short-, medium- and long-term, permanent and temporary, positive and negative effects of the development. This means that in LVIA thought must be given to whether the likely significant landscape and visual effects:

- result directly from the development itself (**direct effects**) or from consequential change resulting from the development (in**direct and secondary** effects), such as alterations to a drainage regime which might change the vegetation downstream with consequences for the landscape, or requirements for associated development, such as a requirement for mineral extraction to supply material or a need to upgrade utilities, both of which may themselves have further landscape and visual effects;
- are additional effects caused by the proposed development when considered in conjunction with other proposed developments of the same or different types (**cumul**ative effects);
- are likely to be short term or to carry on over a longer period of time;
- are likely to be permanent or temporary, in which case their duration, as above, is important;
- are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity (this is sometimes referred to as the 'valency' of the effect but as this word has a formal definition relating to chemistry it is best avoided).

Assessment of the significance of effects takes account of the nature of the effects, as well as the nature of the receptors. These topics are discussed in Paragraphs 3.23–3.36 and in more detail in Chapters 5 and 6.

Cumulative effects are discussed in detail in Chapter 7.

Assessing the significance of effects

The EIA Directive and UK Regulations refer to projects likely to have **significant** effects on the environment. This means that identifying and describing the effects of a project is not enough in itself. They must also be assessed for their significance. This is a key part of the LVIA process and is an evidence-based process combined with professional judgement. It is important that the basis of such judgements is transparent and understandable, so that the underlying assumptions and reasoning can be understood by others. 3.23

LVIA, in common with other topics in EIA, tends to rely on linking judgements about the sensitivity of the receptor and about the magnitude of the effects to arrive at conclusions about the significance of the effects. These terms are effectively a shorthand 3.24

Box 3.1

EIA significance terminology

The State of EIA Practice in the UK (IEMA, 2011b: 60–62) discusses the evaluation of significance in EIA, recognising that it is a complex and often subjective process. The factors used to evaluate significance relate to both the effect and the receptor. Ongoing IEMA research into significance has identified that problems can arise where separate topic assessments use the same or similar terminology in the evaluation of significance, but define these terms differently. Partly in response to this, and also to aid the simple communication of the complexity of significance evaluation, the terms **magnitude** and **sensitivity** have become shorthand in EIA practice for the range of factors relevant to each effect (e.g. probability, reversibility, spatial extent, etc.) and receptor (e.g. value, importance, susceptibility, resilience, etc.). This shorthand terminology can generate its own problems, particularly when it appears to be the basis for the evaluation of significance and stakeholders perceive that a wider range of factors has not been explicitly considered in assessing the significance of effects. This lack of transparency reduces the quality of the EIA's findings and can lead to objections from stakeholders that cause delays to the consenting process.

To improve transparency in EIA practice and increase discussion around the complex interaction of factors leading to the determination of a significant effect, IEMA promotes the use of new overarching terminology related to the two components of significance evaluation:

1. nature of receptor (to replace the shorthand 'sensitivity');
2. nature of effect (to replace the shorthand 'magnitude').

For further detail of the relationship between the nature of the effect and the nature of the receptor please see Figure 6.3 in IEMA (2011b).

way of describing the wider array of factors that underlie the **nature of the receptor likely to be affected** (sensitivity) and the **nature of the effect likely to occur** (magnitude). Further background to this is given in Box 3.1. Landscape professionals should assess the nature of a landscape or visual receptor's sensitivity by combining judgements about its susceptibility to change arising from the specific proposal with judgements about the value attached to the receptor. When considering the nature of a predicted effect its magnitude should be determined by combining judgements about matters such as the size and scale of the change, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration. It is important to note that in this approach each judgement already combines several separate judgements.

3.25 A step-by-step process, as illustrated by Figure 3.5, should allow the identification of significant effects to be as transparent as possible, provided that the effects are identified and described accurately, the basis for the judgements at each stage is explained and the different judgements are combined in easy to follow ways.

Step 1: Assess against agreed criteria

3.26 The initial step should be to consider each effect in terms firstly of its **sensitivity**, made up of judgements about:

- the susceptibility of the receptor to the type of change arising from the specific proposal; and
- the value attached to the receptor;

and secondly its **magnitude**, made up of judgements about:

- the size and scale of the effect – for example, whether there is complete loss of a particular element of the landscape or a minor change;
- the geographical extent of the area that will be affected; and
- the duration of the effect and its reversibility.

Consideration of all these criteria should feed into a comprehensive assessment of significance.

> In Chapters 6 and 7 the meanings of 'sensitivity' and 'magnitude' are defined as they relate to landscape effects and to visual effects respectively.

3.27 In assessing the identified effects against these criteria, two key principles should normally apply:

1. Numerical scoring or weighting of criteria should be avoided, or at least treated with considerable caution, since it can suggest a spurious level of precision in the judgements and encourage inappropriate mathematical combining of scores.
2. Word scales, with ideally three or four but a maximum of five categories, are preferred as the means of summarising judgements for each of the contributing criteria.

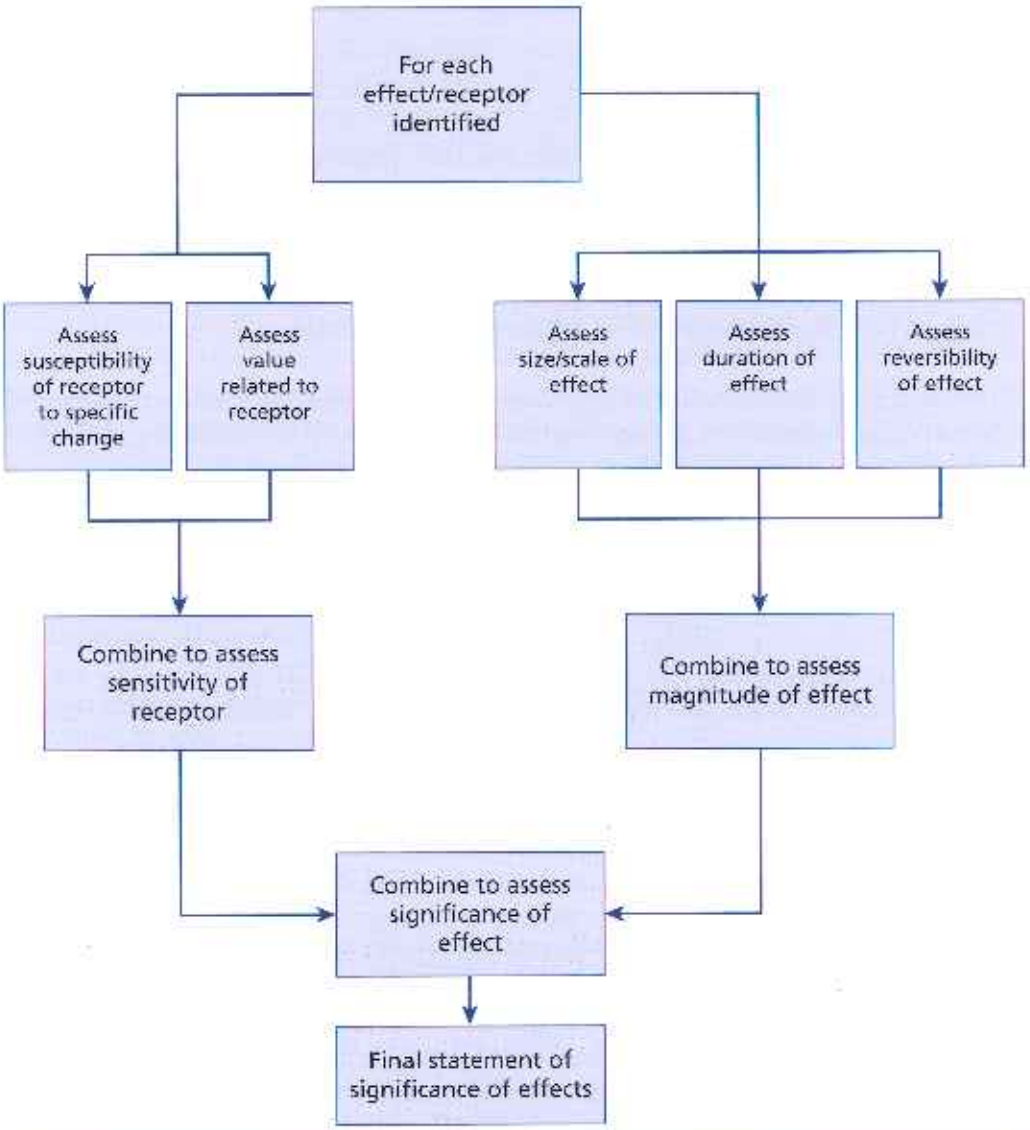


Figure 3.5 Assessing the significance of effects

The words used will usually be specific for each criterion – for example the value of landscape receptors could be categorised as international, national, regional, local authority or local community, while the duration of the effect might be categorised as short term, medium term or long term, with each specified in years. The scales that are used tend to vary from project to project but they should be appropriate to the nature, size and location of the proposed development and may need to be consistent across the different topic areas in the EIA.

Step 2: Combining the judgements

3.28 The next step is to combine the separate judgements on the individual criteria. The rationale for the overall judgement must be clear, demonstrating:

- how susceptibility to change and value together contribute to the sensitivity of the receptor;
- how judgements about scale, extent and duration contribute to the magnitude of the effects; and
- how the resulting judgements about sensitivity and magnitude are combined to inform judgements about overall significance of the effects.

3.29 Combining judgements should be as transparent as possible. It is common practice to arrive at judgements about the significance of effects simply by combining the judgements about the sensitivity of the receptor and the magnitude of the effect. This can be useful but is also an oversimplification unless it is made clear how the judgements about sensitivity and magnitude have themselves been reached.

3.30 There are several possible approaches to combining judgements, including:

- **Sequential combination:** The judgements against individual criteria can be successively combined into a final judgement of the overall likely significance of the effect, with the rationale expressed in text and summarised by a table or matrix.
- **Overall profile:** The judgements against individual criteria can be arranged in a table to provide an overall profile of each identified effect. An overview of the distribution in the profile of the assessments for each criterion can then be used to make an informed overall judgement about the likely significance of the effect. This too should be expressed in text, supported by the table.

3.31 Both of these methods have been advocated by different EIA guidance documents and both can meet the requirements of the Regulations provided that the sequence of judgements is clearly explained and the logic can be traced. The approach adopted in an LVIA will often be influenced by the overall approach in an EIA and the EIA co-ordinator will often seek internal consistency within a project.

Step 3: Judging the overall significance of the effects

3.32 The Regulations require that a final judgement is made about whether or not each effect is likely to be significant. There are no hard and fast rules about what effects should be deemed 'significant' but LVIAs should always distinguish clearly between what are considered to be the significant and non-significant effects. Some practitioners use the phrase 'not significant in EIA terms' to describe those effects considered to fall below a 'threshold' of significance but this can potentially confuse since the phrase has no specific meaning in relation to the EIA Regulations (IEMA, 2011b: 61).

3.33 It is not essential to establish a series of thresholds for different levels of significance of landscape and visual effects, provided that it is made clear whether or not they are considered significant. The final overall judgement of the likely significance of the

predicted landscape and visual effects is, however, often summarised in a series of categories of significance reflecting combinations of sensitivity and magnitude. These tend to vary from project to project but they should be appropriate to the nature, size and location of the proposed development and should as far as possible be consistent across the different topic areas in the EIA.

3.34 When drawing a distinction between levels of significance is required (beyond significant/not significant) a word scale for degrees of significance can be used (for example a four-point scale of major/moderate/minor/negligible). Descriptions should be provided for each of the categories to make clear what they mean, as well as a clear explanation of which categories are considered to be significant and which are not. It should also be made clear that effects not considered to be significant will not be completely disregarded.

3.35 In reporting on the significance of the identified effects the main aim should be to draw out the key issues and ensure that the significance of the effects and the scope for reducing any negative/adverse effects are properly understood by the public and the competent authority before it makes its decision. This requires clear and accessible explanations. The potential pitfalls are:

- over-reliance on matrices or tabular summaries of effects which may not be accompanied by clear narrative descriptions;
- failure to distinguish between the significant effects that are likely to influence the eventual decision and those of lesser concern;
- losing sight of the most glaringly obvious significant effects because of the complexity of the assessment.

3.36 To overcome these potential problems, there should be more emphasis on narrative text describing the landscape and visual effects and the judgements made about their significance. Provided it is well written, this is likely to be most helpful to non-experts in aiding understanding of the issues. It is also good practice to include a final statement summarising the significant effects. Tables and matrices should be used to support and summarise descriptive text, not to replace it.

Mitigation

3.37 Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible remedy identified effects), including landscape and visual effects, should be described. The term 'mitigation' is commonly used to refer to these measures; however, it is not a term used in the EIA Regulations although it is used in some specific legislation, such as the Electricity Act 1989, and in guidance. Mitigation measures are not necessarily required in landscape appraisals carried out for projects not subject to EIA procedures, although some local authorities may request them and even if they do not it is nevertheless often helpful to think about ways of dealing with any negative effects identified.

3.38 As EIA practice has evolved the terminology used to refer to mitigation measures has been adapted; for example, it has become common practice to use the term

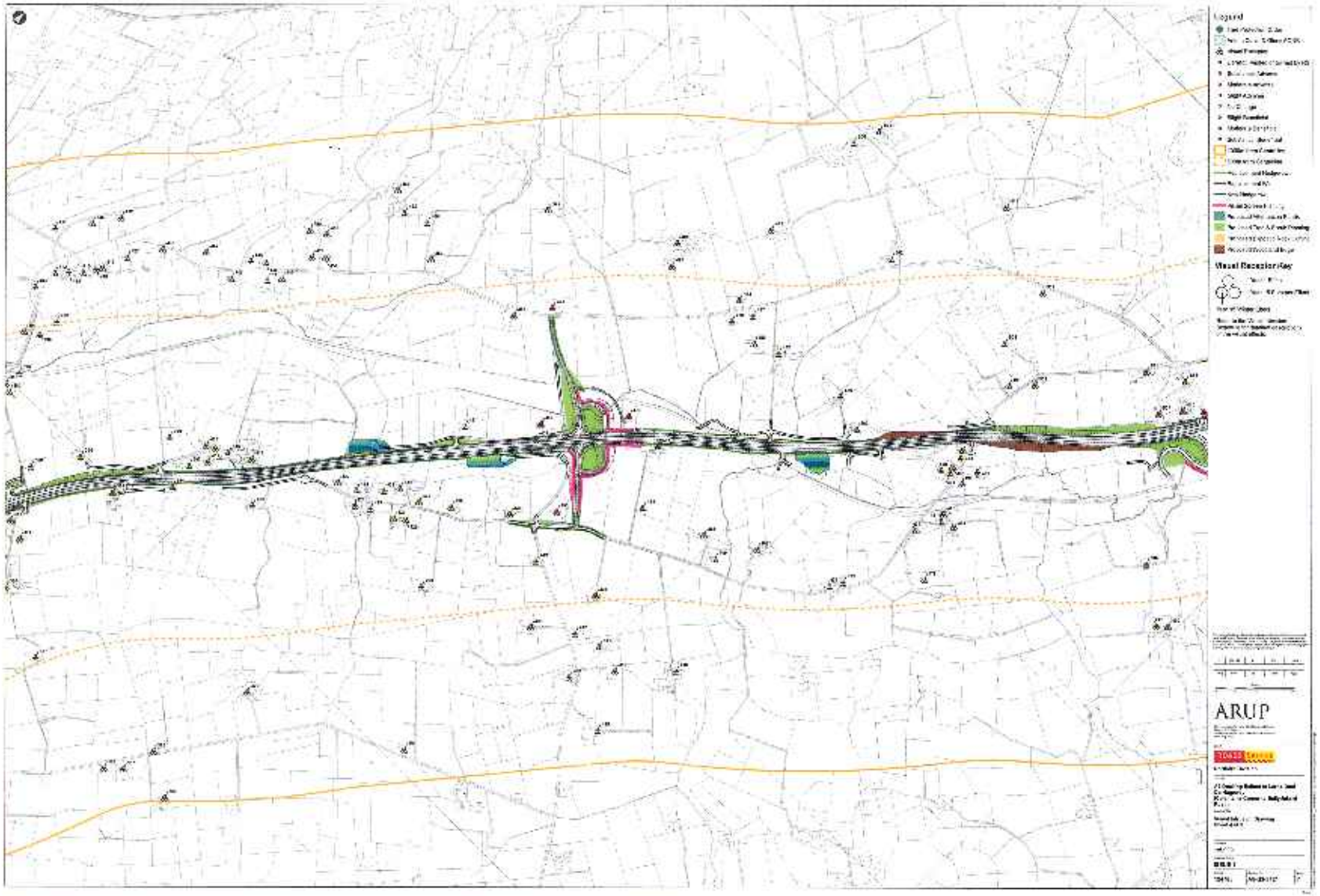


Figure 3.6 Plan showing mitigation measures designed to reduce the effects on surrounding visual receptors and integrate the proposal into the surrounding landscape

'compensate' instead of 'offset'. While the terminology of the EIA Regulations takes precedence, the alternatives may be used provided they are explained. Both terms are referred to in this guidance.

3.39 Enhancement is not a formal requirement of the Regulations. It is often referred to incorrectly as an outcome of proposed mitigation measures – for example where planting is proposed to mitigate landscape and/or visual effects but will also achieve an enhancement of the baseline condition of the landscape. In practice enhancement is not specifically related to mitigation of adverse landscape and visual effects but means any proposals that seek to improve the landscape and/or visual amenity of the proposed development site and its wider setting beyond its baseline condition.

> Mitigation and enhancement are both closely related to the development proposal and its design. Both are discussed in further detail in Chapter 4.

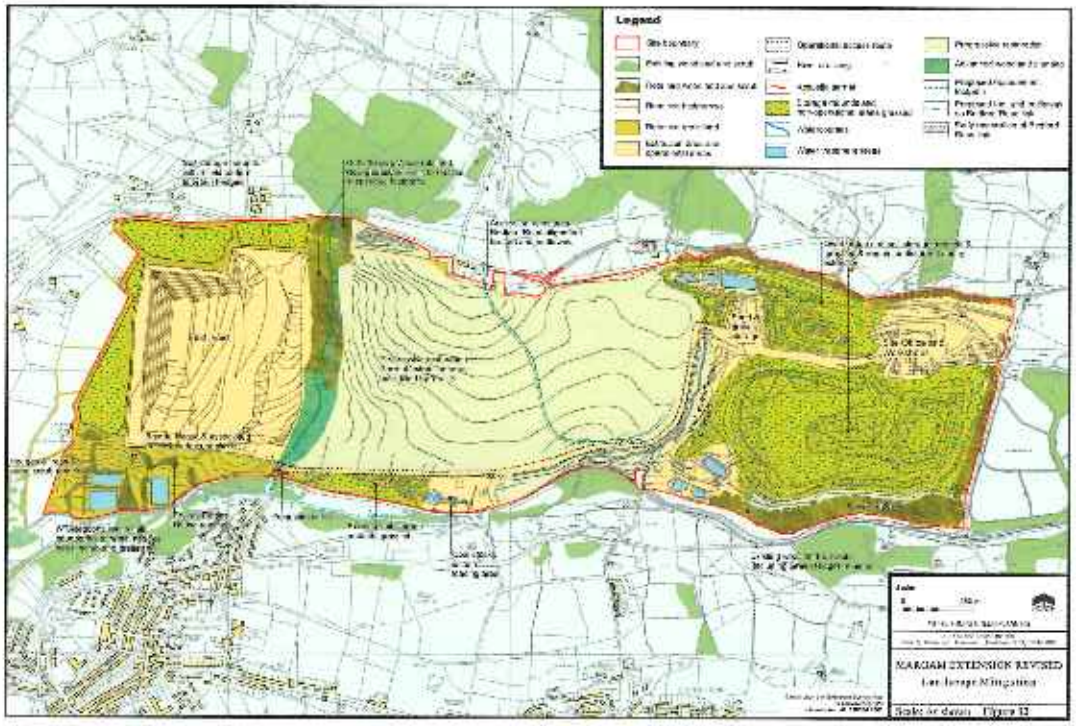
Engaging with stakeholders and the public

3.40 In general the EIA procedures only formally require consultation with the public at the stage of submission and review of the Environmental Statement, although in some cases there may be a requirement for pre-application consultation. Nevertheless there are considerable benefits to be gained from involving the public in early discussion of the proposals and of the environmental issues that may arise. This can make a positive contribution to scoping the landscape and visual issues.

3.41 Since the last edition of this guidance was published there has been growing emphasis on consultation and public involvement in EIA. This has arisen principally from the ratification by the UK in February 2005 of the Aarhus Convention (UNECE, 1998), which encourages widespread, timely and effective participation in environmental decision making, and has been reinforced by changes in legislation on planning and related matters that place greater emphasis on local communities.

3.42 Consultation is an important part of the Landscape and Visual Impact Assessment process, relevant to many of the stages described above. It has a role in gathering specific information about the site, and in canvassing the views of the public on the proposed development. It can be a valuable tool in seeking understanding and agreement about the key issues, and can highlight local interests and values which may otherwise be overlooked. With commitment and engagement in a genuinely open and responsive process, consultation can also make a real contribution to scheme design.

3.43 The timing of engagement with the public and other interested parties will depend upon many factors, including the nature of the development, but, in general, the earlier the better. Well-organised and timely consultation and engagement with both stakeholders and public can bring benefits to a project, including improved understanding of what is proposed and access to local environmental information that might otherwise



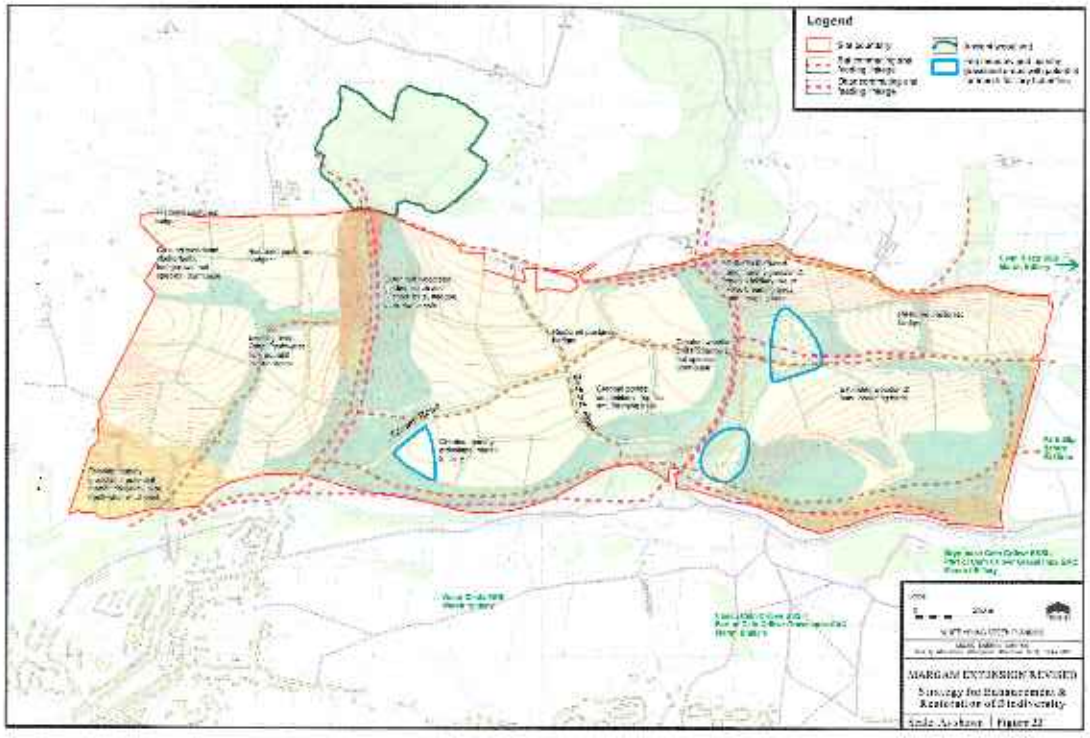


Figure 3.7A–B Example of a comprehensive strategy for mitigating landscape effects during the operational life of a coal surface mine, complemented by specific measures for ultimate ecological enhancement

not have been available to the assessment. This can be of benefit to LVIA in providing better understanding of the landscape and of local attitudes to it. In its most useful form, participation in consultation will improve the quality of the information influencing the scheme design, and may result in positive changes to the design.

Successful engagement will be assisted by the following good practice principles, which although not specific to LVIA should provide a starting point for practitioners involved in LVIA, both within and without the EIA procedures. 3.44

- Consultation must be genuine and open. The temptation to make the most of consultation for information gathering while being reluctant to disseminate information should be resisted.
- The timing of consultation should be carefully planned to prevent premature disclosure, which might encourage blight or make developers commercially vulnerable. There may be occasions where controlled release of information or confidentiality safeguards are required.
- Requests for participation by stakeholders and the public should be timely. There is no point in seeking ideas and views if it is actually too late for the scheme design to be modified, but equally it is difficult for people to respond if consulted too early when the proposals are not sufficiently far advanced for the range of implications to be clear.
- Sufficient time must be allowed for those consulted to be able to consider and act on the information provided.
- The objectives of consultation should be clearly stated. Information presented to consultees should be appropriate in content and level of detail, clearly identifying those issues on which comment is being sought.

Methods of engaging with different groups should be carefully considered and appropriate. The approach to consultation is likely to be common across all the EIA topics and determined by the EIA co-ordinator, and LVIA consultation will need to fit in with this. There is also a great deal of guidance available on appropriate consultation and participation techniques, which should be consulted where appropriate.[1] 3.45

Summary advice on good practice

- LVIA can be carried out either as part of a broader EIA which considers the likely significant landscape and visual effects, or as a standalone 'appraisal' of the possible landscape and visual effects of a proposed development.
- The overall principles and the core steps in the EIA and 'appraisal' processes are the same, but there are specific and clearly defined procedures in EIA which LVIA must fit within.
- As a part of an EIA, landscape and visual issues are dealt with in a separate topic assessment but may also make a contribution to other parts of the EIA, such as site selection and consideration of alternatives, and screening.
- In a standalone 'appraisal' the process is informal and there is more flexibility, but the essence of the approach still applies.

- If **alternatives** are considered as part of a development that is subject to EIA, landscape and visual considerations may play a part in identifying opportunities and constraints relating to site selection and in making comparative assessments of the options.
- In contributing to the **screening** process the landscape professional may be called upon to provide a professional opinion as to the landscape and visual issues that may arise in the area likely to be affected by the scheme.
- For LVIA, **scoping** should be expected to consider the extent of the study area(s); sources of information; the possible effects that might occur; the main receptors to be considered; the extent and the appropriate level of detail for the baseline studies; methods to be used in assessing significance; and the approach to assessment of cumulative landscape and visual effects.
- Establishing the **baseline landscape and visual conditions** will, when reviewed alongside the description of the development, form the basis for the identification and description of the landscape and visual effects of the proposal.
- **Identifying landscape and visual effects** requires systematic thinking about the range of possible interactions between aspects of the proposed development and the baseline landscape and visual situation.
- In most cases it will be essential to give detailed and equal consideration to both effects on the landscape as a resource (see Chapter 5) and effects on views and visual amenity as experienced by people (see Chapter 6).
- All types of effect should be identified, and for each effect a judgement should be made about whether it is positive/beneficial or negative/adverse.
- **Assessing the significance of landscape and visual effects** is a matter of judgement. It is vital that the basis of such judgements is transparent and understandable, so that the underlying assumptions and reasoning can be examined by others.
- A step-by-step approach should be taken to make judgements of significance, combining judgements about the nature of the receptor, summarised as its sensitivity, and the nature of the effect, summarised as its magnitude.
- The contribution of judgements about the individual criteria contributing to sensitivity and magnitude should be clear, and the approach to combining all the judgements to reach an overall judgement of significance should be as transparent as possible.
- LVIAs should always distinguish clearly between what are considered to be the significant and non-significant effects.
- It is not essential to establish a series of thresholds for different levels of significance of landscape and visual effects, provided that it is made clear whether or not they are considered significant.
- If, however, more distinction between levels of significance is required a word scale for degrees of significance can be used (for example a four-point scale of major/moderate/minor/negligible).
- Reporting on the assessment of the significance of the identified effects in LVIA should aim to provide information in a manner that will help decision makers.

- To ensure that the reasoning behind the judgements is clear there should be more emphasis on narrative text describing the landscape and visual effects and the judgements made about their significance, with tables and matrices used to support and summarise the descriptive text, not to replace it. The key issues must be made clear.
- In accordance with the EIA Directive and relevant country Regulations, **mitigation measures** should be proposed to prevent/avoid, reduce and where possible offset/remedy any significant adverse landscape and visual effects identified. It has become common practice to use the term 'compensate' instead of 'offset'.
- **Enhancement** is not a formal requirement of the Regulations. 'Enhancement' means any proposals that seek to improve the landscape of the site and its wider setting beyond its baseline condition, and is not specifically related to mitigation of adverse landscape and visual effects.
- Well-organised and timely **consultation and engagement** with both stakeholders and public can bring substantial benefits to a project.

Chapter 4

The proposed development, design and mitigation

Chapter overview

- Understanding the proposed development
- LVIA and the design process
- Consideration of alternatives
- Describing the proposals
- Stages in the project life cycle
- Mitigation of landscape and visual effects
- Enhancement
- Securing implementation of mitigation and enhancement measures

Understanding the proposed development

4.1 Information about the proposed development needs to be assembled, considered in relation to its relevance for assessment purposes, kept under review during the planning and design stages of a project, updated where appropriate and then 'fixed' to enable the assessment of effects to be finalised. This information is needed for LVIA as well as for other topics within an EIA. It should include, as a minimum:

- a description of the project that is sufficiently detailed for assessment purposes;
- information about alternatives that have been considered, where relevant;
- information concerning relevant stages in the project's life cycle including, as appropriate, construction, operation, decommissioning and restoration/reinstatement stages.

4.2 The assessment of likely effects must be based on a description of the development that is sufficiently detailed to ensure that the effects can be clearly identified, although the level of detail provided will vary from project to project. It is now established in case law that the project must be defined in sufficient detail, even in an outline planning application, to allow its effects on the environment to be identified and assessed.[1] This acknowledges that details of a project may evolve over a number of years, but that this must be within clearly defined parameters established through the planning process.

4.3 An EIA prepared in these circumstances must similarly recognise that the project may evolve, within the agreed parameters, and be able to identify the likely significant effects of such a flexible project. Within the defined parameters the level of detail of the proposals must be such as to enable proper assessment of the likely environmental effects and consideration of the necessary mitigation. It may be appropriate to consider a range of possibilities, including a reasonable scenario of maximum effects, sometimes referred to as the 'worst case' situation. Mitigation proposals will need to be adequate to cope with the likely effects of this worst case. Separate issues may arise in projects involving multi-stage consents, involving a principal decision and then another implementing decision, usually relating to planning conditions. The effects on the environment must be identified and assessed at the time when the principal decision is considered but assessment of effects that are not identifiable then must be undertaken at a subsequent

stage. Multi-stage EIA is still an evolving area of practice but voluntarily leaving for later assessment effects that could have been identified earlier is not acceptable.

4.4 Where the landscape professional considers that key data on project characteristics is lacking, it will be necessary to add a caveat to the assessment. If going further and estimating what is likely to occur, perhaps based upon a reasonable maximum effects or 'worst case' scenario, then the assumptions on which such judgements may be based should be made explicit. The sources of information used in the assessment should also be clearly set out and, prior to finalising the assessment and the Environmental Statement, there should be communication with the EIA co-ordinator to ensure the information used is up to date, to agree the scope of any maximum effects or 'worst case' scenario that is to be used and to ensure that different topic assessments are using consistent assumptions about the proposal. If they are not the Environmental Statement will need to explain and justify any such variations.

LVIA and the design process

4.5 Design plays an increasingly important part in the development planning process. This has been emphasised by the introduction of statutory requirements for the production of design statements, or design and access statements, for many planning proposals in different parts of the UK. Such statements explain the design principles and concepts underpinning the proposal and the process through which it has evolved. This includes the ways in which the context of the development, including the landscape, has been appraised or assessed and how the design of the development takes that context into account in relation to its proposed use.

4.6 EIA itself can be an important design tool. It is now usually an iterative process, the stages of which feed into the planning and design of the project. The iterative design and assessment process has great strength because it links the analysis of environmental issues with steps to improve the siting, layout and design of a particular scheme. Site

Figure 4.1 Feedback loops in design

planning and detailed design, as well as initial appraisal of a development project in the screening and scoping stages, are informed by and respond to the ongoing assessment as the environmental constraints and opportunities are revealed in progressively greater detail and influence each stage of decision making. This approach can result in more successful and cost-effective developments and can reduce the time required to complete the assessment. Such an iterative approach is appropriate to any form of new development of whatever scale or type and applies equally to informal 'appraisal' of projects falling outside the EIA requirements.

4.7 Landscape professionals should be involved as early as possible in this iterative approach to ensure that the likely landscape and visual effects of a proposal play an important part in the evolution of a development proposal. This is good practice as it allows analysis of the landscape and visual character of a site and its context, and approaches to siting and design, to minimise possible landscape and visual effects early in the process. Projects may otherwise progress to a stage where the opportunity to minimise effects can no longer be realised by the time the landscape professional becomes involved. It is better to get the siting and design right first than to rely on costly mitigation measures. Early involvement also allows opportunities for landscape enhancement to be identified before the design has progressed too far.

4.8 Once the preferred development option has been selected, the landscape professional initially works with the design team to scope the range of possible effects in more detail. Then, as the scheme is developed more fully, work continues to identify and describe the landscape and visual impacts that are likely to occur, to propose appropriate measures to avoid or reduce the adverse effects and, if possible and appropriate, to promote potential benefits. This may result in a modified scheme design, allowing further cycles of impact prediction and mitigation until nothing further can be done in the design stages.

4.9 Research has shown that the iterative design approach to EIA is now common among practitioners and its value is widely recognised (IEMA, 2011b). It can, however, give rise to difficulties in deciding whether or not likely effects that have been avoided through the design process should still be included in the final Environmental Statement. Some argue that they should be, in order to demonstrate how environmental considerations have influenced scheme design to achieve better final solutions. On the other hand, this to some degree conflicts with the need to concentrate on the significant environmental effects of the development as proposed.

4.10 Landscape professionals will need to find ways of dealing with this issue in preparing material for inclusion in the final Environmental Statement. There is no simple solution but useful approaches are:

- To include in the Environmental Statement a section or sections related to 'Design Development' or 'Design Evolution', where the process of early avoidance or reduction of landscape and visual impacts through the adoption of particular siting and design approaches as integral parts of the proposed development is clearly explained. This should clearly show the approach taken to avoiding or minimising adverse landscape and visual effects, and how these considerations have been balanced against other development considerations to reach the development proposal which forms the basis for the LVIA and other topic assessments in the EIA.

- To include in the Environmental Statement simple tables that summarise the possible effects identified in the early stages of the project development alongside the measures incorporated into the design to overcome them. If dealt with briefly in this way, the desire for transparency about all stages of the design and about the incorporation of mitigation measures would be met.

These approaches are not mutually exclusive and may support each other, but a balance is needed to ensure that the Environmental Statement does not become excessively long and the focus is still on the significant effects of the final scheme as submitted.

Consideration of alternatives

4.11 It is not a requirement that alternatives should be identified and considered. However, if they have been (and it is considered that they should be, as a means of achieving potentially more sustainable development) then an outline description should be provided of any alternatives considered, together with an indication of the main reasons (including environmental reasons) for the final choice. The iterative design and assessment process can be helpful in providing evidence that such alternative sites and/or designs have been assessed in terms of their landscape and visual effects. It is therefore important to:

- record how the scheme has developed throughout the life of the project;
- demonstrate how landscape and visual effects have been taken into account;
- show why some alternative options have been rejected on the basis of landscape and visual considerations.

4.12 The landscape professional should usually expect to advise on a number of different alternatives, which might include:

- alternative locations or sites;
- different approaches in terms of scheme design, or the size/scale/orientation of the proposed development;
- alternative site layouts, access and servicing arrangements;
- a 'do minimum' scenario that may be a genuine alternative to the development proposed – it might, for example, include only essential maintenance and improvement work.

4.13 Depending on the type of study that is being carried out and the stage reached in the assessment process, more than one project alternative may be taken forward for comparative assessment, with a detailed project description required for each alternative. The most common examples of this occur in the field of linear development, such as transport infrastructure, long-distance gas or water pipes, grid connections and flood risk management structures along rivers. In such cases appraisals of alternative routes are frequently undertaken before a decision is made on the preferred option. A more detailed assessment is then carried out of the chosen route. Other types of project can also benefit from a similar hierarchical approach to the consideration of alternatives.

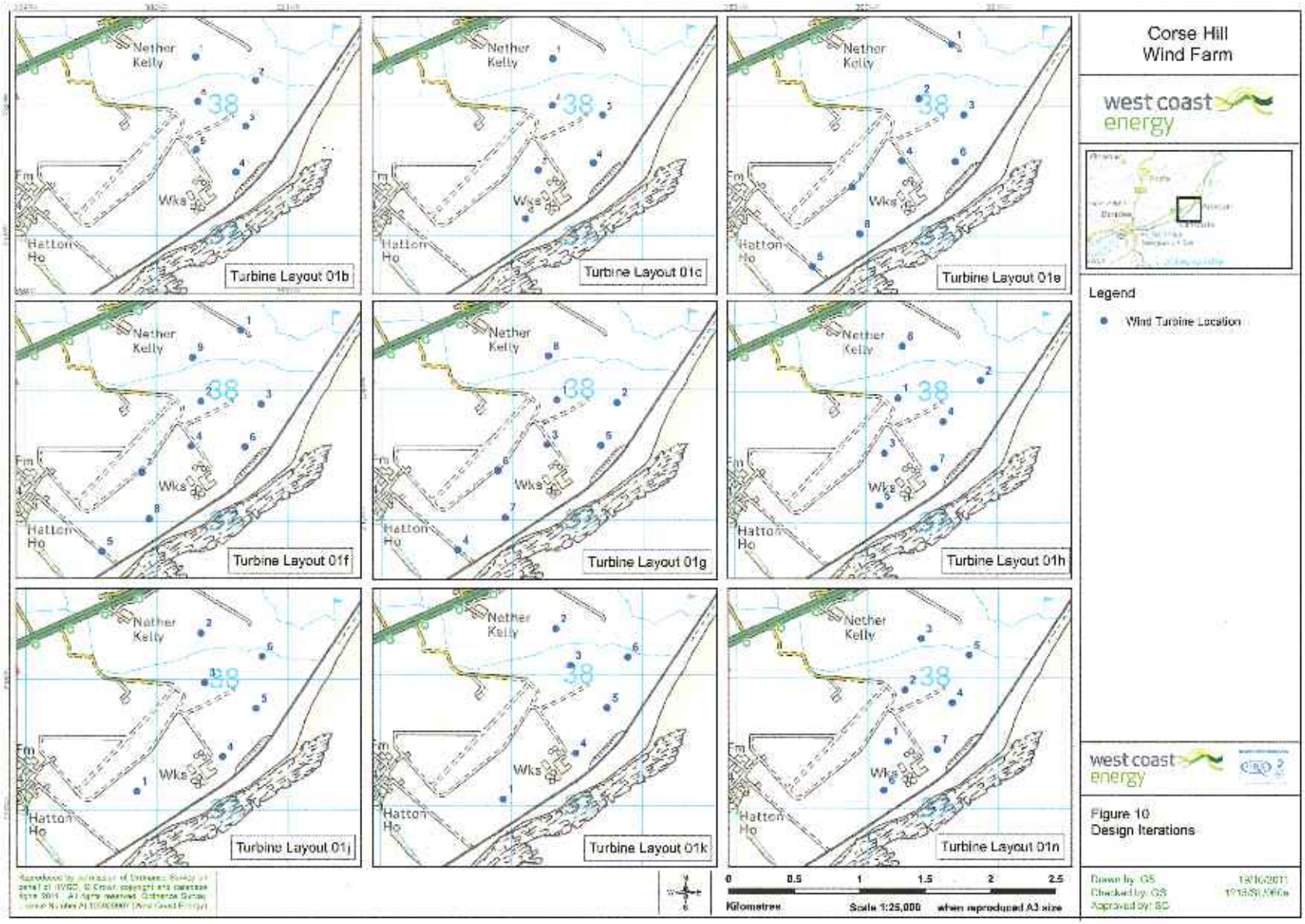


Figure 4.2 An example of iterative design of layouts for a wind farm development

Describing the proposals

The project description/specification should provide a clear and concise but also comprehensive description of the development proposal. As a minimum it should describe the siting, layout and characteristics of the proposed development. The project description/specification, which is the common point of reference for all topics addressed, is usually a separate section of the Environmental Statement. Only particularly relevant features and aspects of the project need to be reported on separately in the part of the Environmental Statement dealing with the assessment of landscape and visual effects. 4.14

It is essential that the development proposals are clearly presented and illustrated. Ideally this requires: 4.15

- easy-to-read proposal maps at a size appropriate to the scale of the development, together with other selected drawings, which may include cross sections;
- for complex projects or those of long duration, for example power stations or major mineral workings, a series of drawings showing the situation at different stages, such as construction, operation, and decommissioning, or different phases in the development;
- illustrations that will help the reader to gain a proper understanding of what is proposed, including:
  - layout plans of the main design elements, access and site circulation, land uses, contours and site levels;
  - cross sections and elevations of buildings and other important elements, including key dimensions;
  - the proposed landscape framework including landform and planting;
  - appropriate sketches, photomontages or other forms of visualisation.

Good practice in presenting landscape and visual effects in the Environmental Statement is described more fully in Chapter 8.

Stages in the project life cycle

The characteristics of projects, and hence the possible landscape and visual effects they may have, are likely to vary throughout the life of the project. The construction, operation, decommissioning and restoration/reinstatement phases of a development are usually characterised by quite different physical elements and activities. A separate, self-contained description of the development at each stage in the life cycle is therefore needed to assist in understanding the scheme and then in prediction of landscape and visual effects. 4.16

Construction stage

4.17 Depending on the nature of the project, the relevant information for the construction stage could include:

- the location of site access and haul routes (which are likely to differ from permanent access proposals), movement of traffic and machinery;
- the type of machinery to be used, including size and, where relevant, colour;
- the positions and scale of cut, fill, borrow, disposal and other working areas;
- the origin and nature of materials and locations for stockpiles;
- the type and location of construction equipment and plant;
- the provision of utilities, such as water, drainage, power and lighting, including the nature and times of temporary site lighting when work is in progress;
- the scale, location and nature of temporary parking, and on-site accommodation;
- measures for the temporary protection of existing features and temporary screening;
- the programme of work, including any proposed phasing of construction.

For minerals projects the construction phase is equivalent to the preliminary or site establishment stage, and may include establishment of features such as soil storage or screening bunds and mounds, and water treatment areas.

Operational stage

4.18 The aspects of the operational stage which may be most relevant to the Landscape and Visual Impact Assessment could include:

- the phasing of the development over the operational stage;
- the location, scale and design of buildings, structures, mineral processing plant and other features, including choice and colour of materials;
- for minerals projects, which include both surface and underground mines, features such as the excavation void and its phasing, and overburden, spoil or quarry waste storage mounds;
- details of servicing arrangements, storage areas, infrastructure/utilities and/or other structures;
- access arrangements and traffic movements;
- lighting;
- car parking;
- the noise and movement of vehicles in so far as they may affect perceptions of tranquillity in the landscape;
- visible plumes from chimneys;
- signage and boundary treatment(s);
- outdoor activities that may be visible;
- the operational landscape, including landform, structure planting and hard landscape features;
- land management operations and objectives.

Decommissioning and restoration/reinstatement stage

This stage may also give rise to landscape and visual effects. Important aspects could include: 4.19

- decommissioning and site restoration activities (including for example demolition, deconstruction, and dismantling of buildings and structures, and backfilling of voids and landform restoration for minerals projects), movement of materials and plant around the site and temporary access arrangements;
- residual buildings and structures;
- after-use potential and plans;
- the disposal or recycling of wastes and residues.

Information requirements

For each of these stages in the project life cycle and, where relevant, for the various scheme components, a range of qualitative and quantitative information will be valuable in giving a proper and proportionate understanding of what is proposed, to assist in assessments of landscape and visual effects. The information needed may include: 4.20

- areas under different uses;
- dimensions of major plant, buildings and structures, and landform features;
- volumes of material;
- numbers of scheme components such as houses and parking spaces;
- the design of scheme components (including layout, scale, style and distinctiveness);
- the form of scheme components (including shape, bulk, pattern, edges, orientation and complexity);
- materials (including information concerning texture, colour, shade, reflectivity and opacity);
- operational characteristics, including plumes and moving structures;
- movements of plant, materials, vehicles and people, both construction workforce and occupants, during operation.

While it is a requirement that the development is described in sufficient detail to enable the effects to be identified and assessed it is also recognised that it is often difficult to provide accurate and complete information on all the varied aspects of a development proposal (see Paragraphs 4.2 and 4.3 for further information). In that case the assumptions made should be stated.

Mitigation of landscape and visual effects

In accordance with the EIA Regulations, measures proposed to prevent/avoid, reduce and where possible offset or remedy (or compensate for) any significant adverse landscape and visual effects should be described. In practice such mitigation measures are now generally considered to fall into three categories: 4.21

1. primary measures, developed through the iterative design process, which have become integrated or embedded into the project design;

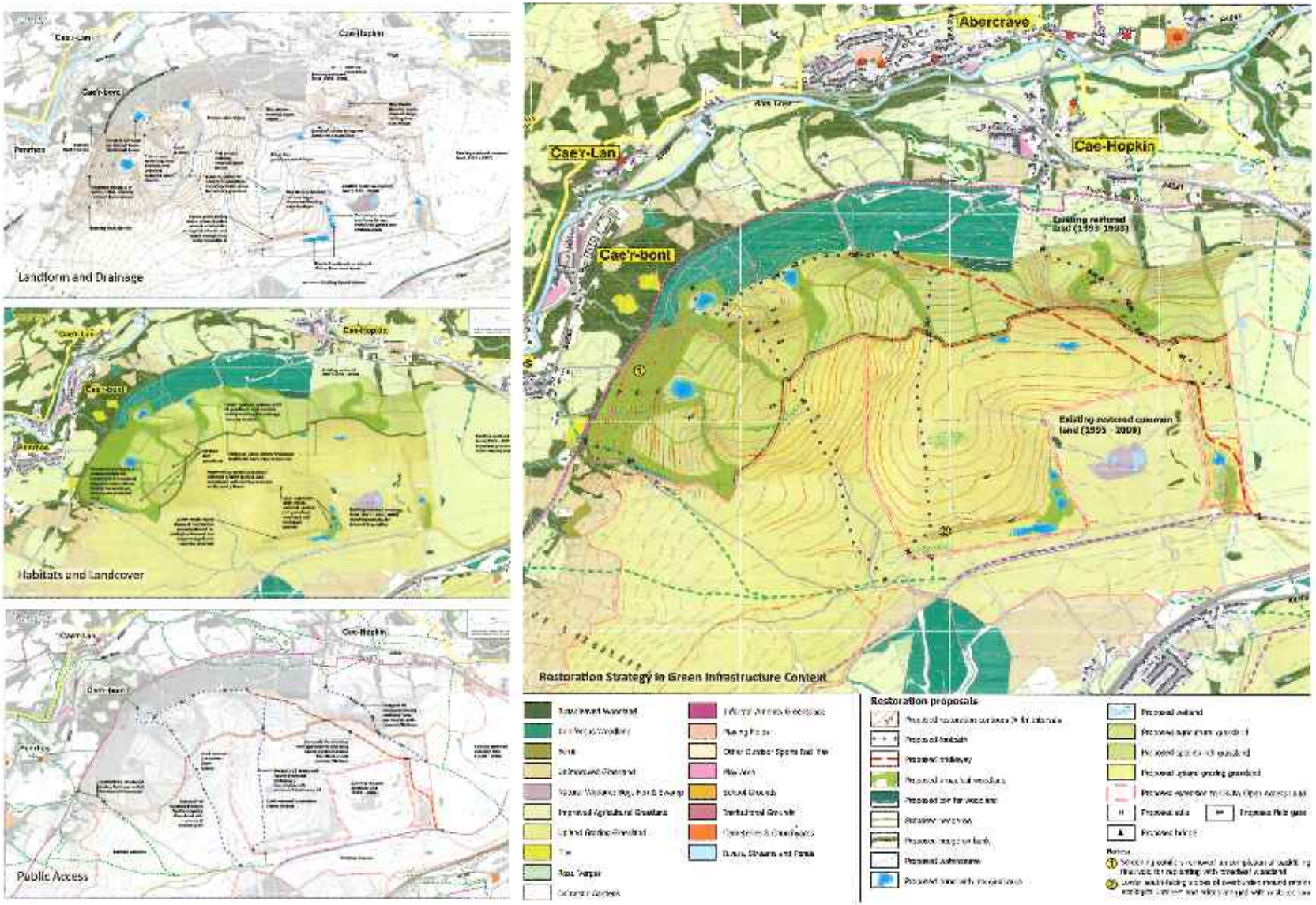


Figure 4.3 The restoration strategy for a coal surface mine: components and context

2. standard construction and operational management practices for avoiding and reducing environmental effects;
3. secondary measures, designed to address any residual adverse effects remaining after primary measures and standard construction practices have been incorporated into the scheme.

4.22 The primary mitigation measures and the construction and operational management practices should ideally be included in the project description/specification (and also in the design and access statement for the project). So too should the possible effects identified early on and the design responses that have been introduced, for example modifications to siting, access, layout, buildings, structures, ground modelling and planting. It can be expected that both these types of mitigation measure will definitely be implemented as they are to be an integral part of the scheme. They could therefore be secured by conditions on a consent (discussed in Paragraph 4.41).

4.23 Secondary mitigation measures are those that are not built into the final development proposals and are considered in relation to the assessment of the landscape and visual effects of the scheme as the means of addressing the significant adverse effects identified. As they are not incorporated in the scheme being assessed, there will need to be careful consideration of how they can be secured. In an ideal world, applying Landscape and Visual Impact Assessment as an iterative planning and design tool would allow all necessary and desirable mitigation to be incorporated into the project design, such that secondary mitigation should not prove necessary. This will not always be possible but that should not discourage the landscape professional from trying to achieve such an outcome.

4.24 The three forms of mitigation to address significant adverse effects form what has been termed the 'mitigation hierarchy' and good practice should aim to achieve mitigation at the highest possible level in this hierarchy. The ideal strategy is one of prevention/avoidance. If this is not possible, alternative strategies, first of reduction and then of offsetting/remedying (or compensating for) the effects, may need to be explored, depending on individual circumstances. Some of the main issues associated with these different strategies are outlined below.

Prevention/avoidance

4.25 Some likely significant adverse landscape and visual effects can be prevented or avoided through careful planning, siting and design. In many cases time and costs may be reduced if significant environmental constraints can be identified and avoided during the early stages of scheme development. This may be achieved by the selection of a site that can more readily accommodate the proposed development or through innovative design within the selected site. This is closely related to the consideration of alternatives outlined in Paragraphs 4.11–4.13, and will often be dealt with as part of the design process and reported in the project description.

Reduction

4.26 If potentially significant adverse effects cannot be prevented or avoided, the strategy should be to reduce those that remain as far as possible. In general the emphasis should

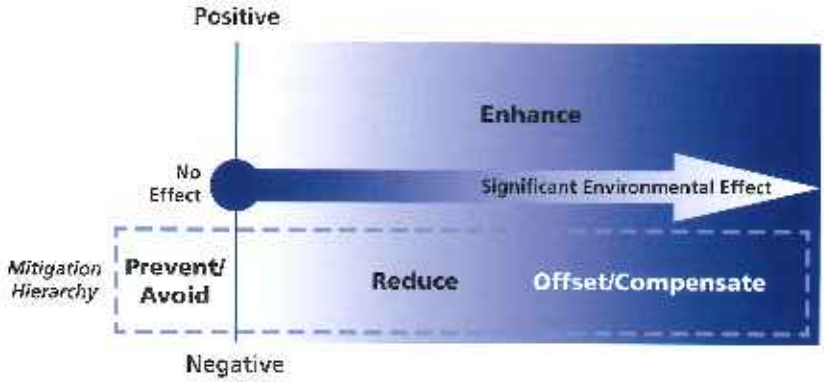


Figure 4.4 The mitigation hierarchy (from IEMA, 2011b)

be on modifying scheme design through successive iterations to reduce adverse effects. Sympathetic treatment of external areas can, in some circumstances, help the integration of a new development into the surrounding landscape, but measures that are simply added on to a scheme as 'cosmetic' landscape works, such as screen planting designed to reduce the negative effects of an otherwise fixed scheme design, are the least desirable. It should also be remembered that well-designed new development can make a positive contribution to the landscape and need not always be hidden or screened.

4.27 Mitigation measures that may help to reduce potentially negative landscape and visual effects include, but are not limited to:

- adjustment of site levels;
- use of appropriate form, detailed design, materials and finishes where it is neither desirable nor practicable to screen buildings and associated development – in these circumstances, the design of the structures and materials, colour treatments and textural finishes should be selected to aid integration with the surroundings;
- alterations to landforms (including creation of bunds or mounds) together with structure planting on and/or off site;
- avoiding or reducing obtrusive light – lighting for safety or security purposes may be unavoidable and may give rise to significant adverse visual effects; in such cases, consideration should be given to different ways of minimising light pollution and reference should be made to appropriate guidance, such as that provided by the Institution of Lighting Professionals (ILP, 2011).

4.28 All of the adverse landscape and visual effects that are considered likely to occur throughout the project life cycle (including its construction, operation, decommissioning and restoration/reinstatement stages) may be considered for mitigation where this is possible. However, the emphasis should be on those effects considered to be significant as this is the focus of the statutory requirements. Mitigating a significant adverse effect may reduce its severity or alter its nature while also possibly reducing its significance.

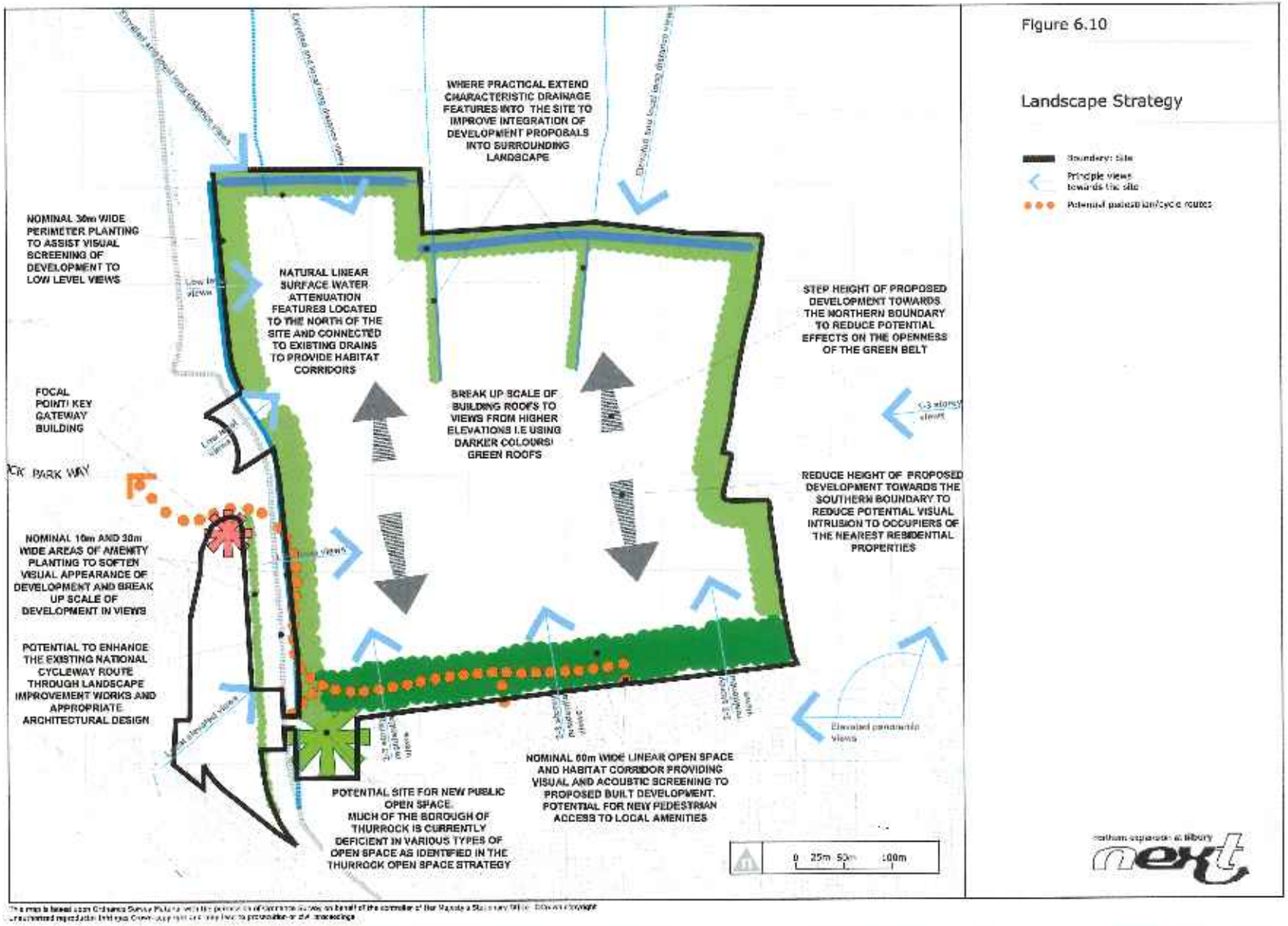


Figure 4.5 Landscape strategy plan incorporating proposed mitigation measures

4.29 Mitigation measures can sometimes themselves have adverse effects on landscape or on visual amenity, as well as on other matters such as cultural heritage or ecology, and their planning and design needs careful consideration. They should be designed to fit with the existing character of the landscape where this is a desirable landscape objective, respecting and building upon local landscape distinctiveness, for example in use of materials that are locally derived. They should also respond, where possible, to landscape objectives that may have been set in development or management plans or strategies for the area.

4.30 In addition, mitigation measures for effects in other topic areas may have additional consequences for the landscape and for views and visual amenity. The iterative design process should allow these to be assimilated and their additional effects taken into account in the overall mitigation strategy. For example, culverts and other features required to maintain safe passage for wildlife could themselves be visually intrusive. Design measures can ensure both their effectiveness in mitigating adverse ecological effects and their appropriateness in terms of fit with landscape character, where appropriate. Similarly, landscape or visual mitigation may require planting where the design considerations would also include the ecological acceptability of the species used. The EIA co-ordinator may have a role in ensuring that such reciprocal effects of mitigation measures on other topic areas are taken into account.

4.31 Mitigation measures, especially planting schemes, are not always immediately effective. Advance planting can help to reduce the time between the development commencing and the planting becoming established. If such planting forms part of the scheme design it should be included in the design and access statement and in the project description. Where planting is intended to provide a visual screen for the development it may be appropriate to assess the effects for different seasons and periods of time (for example, at year 0, representing the start of the operational stage, year 5 and year 15) in order to demonstrate the contribution to reducing the adverse effects of the scheme at different stages. In such projections the assumptions made about growth rates of planting should be clearly stated.

Offset, remedy or compensate

4.32 Where a significant adverse landscape or visual effect cannot be avoided or markedly reduced, consideration should be given to any opportunities to offset, remedy or compensate for such unavoidable effects. Here the aim should be, as far as possible, to replace like with like or, where this is not possible, to provide features of equivalent value. To achieve this, a reliable assessment is needed of the nature, extent and value of the resource that would be lost or damaged (drawing upon baseline information supplemented with additional material where necessary).

4.33 It is debatable whether full offsetting of adverse effects is possible. For example, a new area of woodland may eventually offset the loss of an existing highly valued mature woodland in visual and landscape character terms, but it is unlikely that it would compensate for the loss of established habitat or amenity value in the period between its establishment and its full development. Similarly loss of an area of ancient woodland cannot, by definition, be compensated for other than in timescales extending over generations. Therefore, offsetting and compensation should generally be regarded as measures of last resort.

4.34 It is increasingly common for offsetting measures to be offered that are not closely related to the lost or damaged features. Such measures may sometimes be actively sought by local communities or local authorities to offset unavoidable negative effects. They might include, for example, the provision of new local amenity areas, parks or green spaces, or the creation or provision of a work of art. Such measures should normally be linked to the development in some way. The terms 'offset' and 'compensation' should not be confused with 'enhancement' (which is discussed in the next section).

Enhancement

4.35 While mitigation is linked to significant adverse landscape and visual effects, enhancement is not a requirement of the EIA Regulations. It means proposals that seek to improve the landscape resource and the visual amenity of the proposed development site and its wider setting, over and above its baseline condition. Enhancement may take many forms, including improved land management or restoration of historic landscapes, habitats and other valued features; enrichment of impoverished agricultural landscapes; measures to conserve and improve the attractiveness of town centres; and creation of new landscape, habitat and recreational areas. Through such measures environmental enhancement can make a very real contribution to sustainable development and the overall quality of the environment.

4.36 Ideally, enhancement proposals should not be an 'afterthought' in project development but should be an integral part of the design of a development proposal, seeking to identify from an early stage opportunities to enhance the baseline conditions and integrate these proposals into the overall development project. If they can be brought sensibly into the project planning and design stage and then form part of the overall proposal, they may legitimately be assessed as part of the proposal. Depending on circumstances, they may in turn give rise to further positive effects that should be identified and assessed.

4.37 Enhancement proposals should be based on a sound baseline assessment of the landscape and visual amenity of the area and of any trends likely to bring about future change. The following questions could usefully be considered, but local circumstances may vary and different questions may also be relevant:

- Can the development help improve the visual amenity of the area?
- Can it help to restore, reconstruct or provide new local landscape character and local distinctiveness?
- Can it assist in meeting landscape management objectives for the area?
- Can it help address specific issues and/or opportunities, for example restoration of damaged or derelict land, opportunities for habitat improvement and the scope for cultural heritage benefit?

Securing implementation of mitigation and enhancement measures

4.38 It is essential to demonstrate that any measures included as part of the mitigation proposed to respond to adverse landscape and visual effects can be delivered in practice. This may be considered a part of the assessment of effects and taken into account by decision makers. Similar considerations apply to enhancement measures proposed for inclusion in the scheme, where a firm commitment to and method of delivery must be included.

4.39 If mitigation or enhancement measures are material factors likely to influence the outcome of a project proposal then a judgement needs to be made about whether they are technically achievable, practically deliverable and likely to be sustainable in the future. This should begin with technical considerations – for example, whether like-for-like replacement habitat creation measures can be realised successfully. Expert scientific, technical and design advice may be required to make sure that such proposals are well founded and where possible based on successful precedents. However, it is important that such proposals do not give rise to a further round of impacts and effects with respect to other topics in the assessment, for example cultural heritage. It would be counterproductive if 'successful' replacement or compensation in one quarter gave rise to significant adverse effects in another.

4.40 Ways in which the mitigation measures, and any agreed enhancement proposals, will be delivered in practice are now commonly dealt with through an Environmental Management Plan (EMP). An EMP is defined as 'a practical tool for managing the effects of a specific project in the post-consent phase, typically in the run up to, and during, the construction phase of a project, and potentially into the operational phase' (IEMA/Land Use Consultants, 2008: 1). Such plans, which may also appear under other names, can be started during the design stages of a project, but at the latest should be available after consent has been given but before the start of construction. In wider EIA practice it is increasingly argued that EMPs should form part of the Environmental Statement. They should ideally make clear how mitigation and enhancement is to be achieved and may extend to identifying who is responsible and the timing of implementation. This might include any measures to mitigate adverse landscape and visual effects that may be proposed on land outside the site, provided it can be demonstrated that there is a reasonable chance of securing their delivery – for example off-site planting proposals secured by legal agreement.

4.41 On-site mitigation measures designed to reduce adverse landscape and visual effects can often be secured through conditions attached to a consent, provided that the mitigation is described in a way that allows this. They should, for example, be clear and specific, and compliance with the condition must be possible.[2] The competent authority should make sure that all the promised mitigation measures are, where appropriate, covered by conditions or, if this is not the case, by suitable legal agreement. Relevant conditions should be able to be monitored, and it should be made clear who is to implement and monitor the measures that are put forward. Enhancement measures not included in the development proposal can also be secured through conditions but may be better incorporated into planning obligations that are agreed as part of the consent procedures.

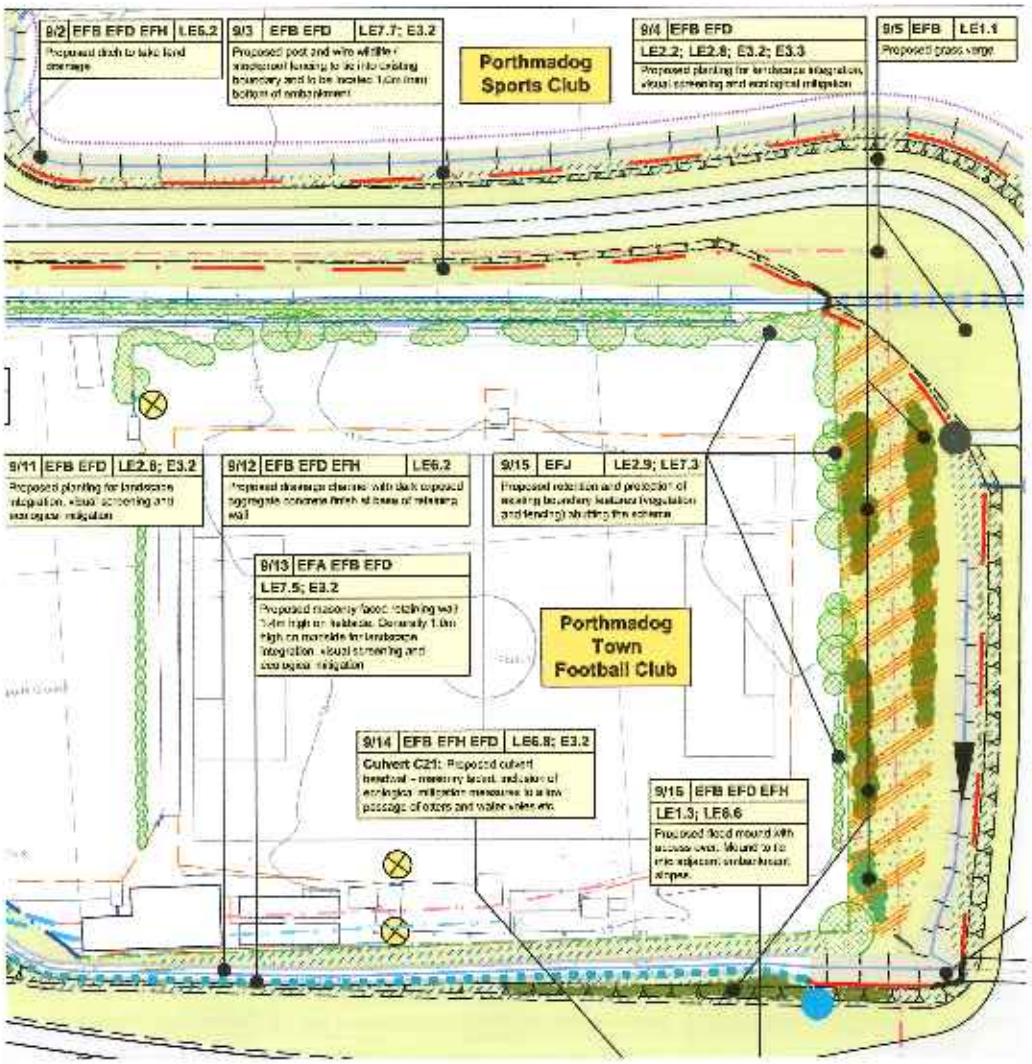


Figure 4.6 Extract from an example of an Environmental Master Plan gathering together all the environmental commitments including landscape and other mitigation measures, and forming part of an Environmental Management Plan

Mitigation measures should be linked to suitable specifications and performance standards, covering for example the establishment, management, maintenance and monitoring of new landscape features. They should describe what is required for mitigation to be effective, in sufficient detail to allow conditions to be drafted and/or for detailed schemes to be submitted for approval before implementation. Assumptions about plant growth or other changes over time should be realistic and not over optimistic. The design concept for the mitigation has to have a good chance of being achieved in practice to be taken seriously by the competent authority. This requires not only a good understanding of the design of the mitigation but also the conditions and pressures in which that mitigation will have to survive. 4.42

4.43 Some form of contingency planning may be desirable, in the event that mitigation measures should prove to be unsuccessful. It can be helpful to seek technical advice to review the wording describing mitigation and enhancement measures, as failures in language and understanding can hinder their effective implementation. In short, mitigation of landscape and visual effects is most likely to be successful if it is appropriate, feasible and effectively communicated.

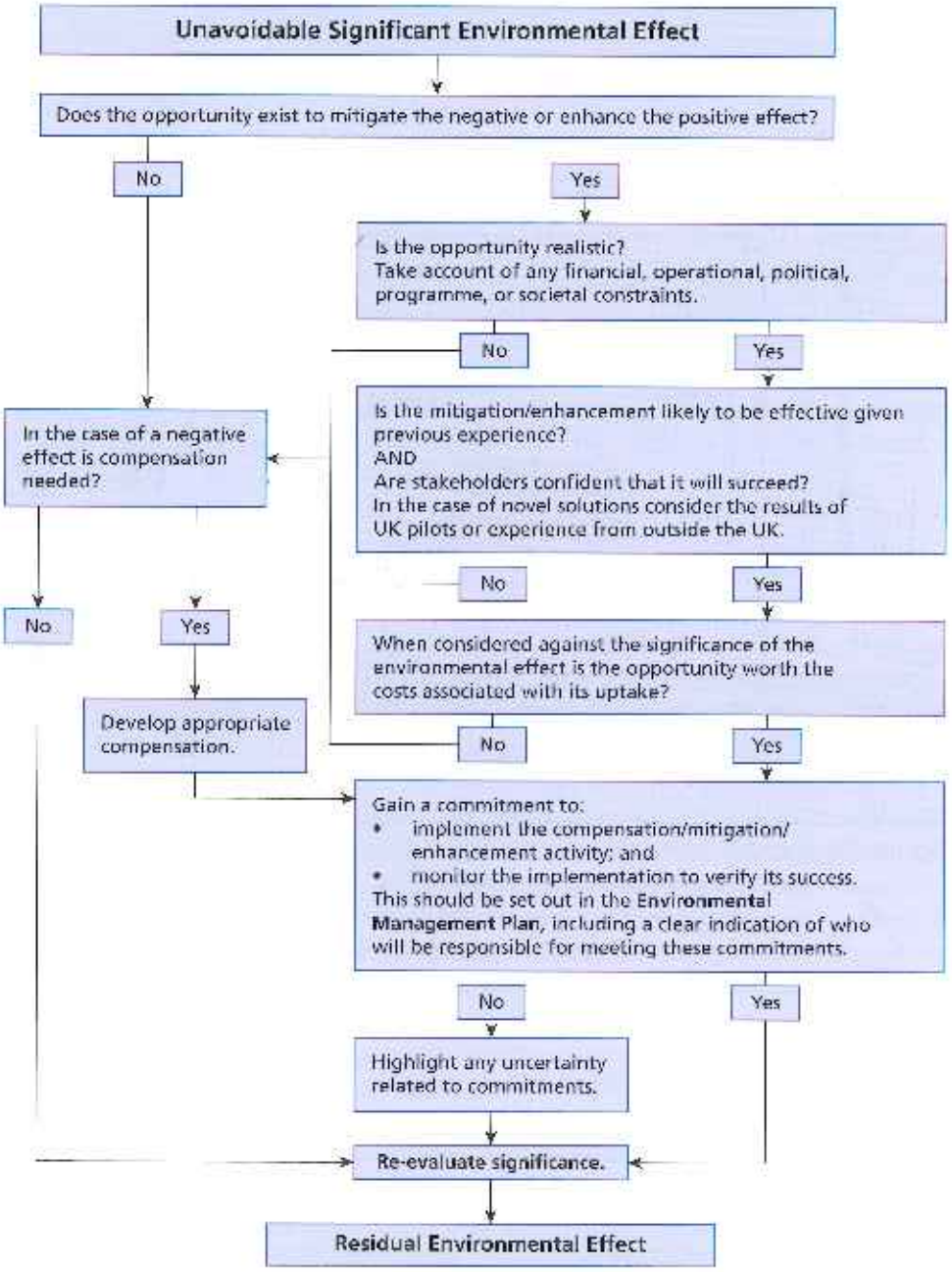


Figure 4.7 Mitigation/enhancement decision tree (from IEMA/Land Use Consultants, 2008)

Summary advice on good practice

- Information about the development that is of relevance to the assessment of landscape and visual effects needs to be assembled, kept under review during the planning and design stages, updated where appropriate and then 'fixed' to enable the assessment to be finalised.
- The assessment of likely effects must be based on a description of the development that is sufficiently detailed to ensure that the effects can be clearly identified. Where only outline information about the scheme is available, parameters within which the development may evolve must be established.
- Where the landscape professional considers that key data on project characteristics is lacking, it will be necessary to add a caveat to the assessment to make this clear, or to state the assumptions made or the parameters adopted.
- EIA can be an important design tool and is usually an iterative process, the stages of which feed into the planning and design of the project.
- Landscape professionals should be involved as early as possible in this iterative process to ensure that the likely landscape and visual effects play an important part in the evolution of a development proposal.
- An outline description of the main alternatives considered should be provided together with an indication of the main reasons for the final development choice, including why some alternative options have been rejected on the basis of landscape and visual considerations.
- The project description/specification should provide a clear and concise but also comprehensive description of the development proposal. It is usually a separate section of the Environmental Statement and only particularly relevant features and aspects of the project need to be reported on separately in the part of the Statement dealing with the assessment of landscape and visual effects.
- Construction, operation, decommissioning and restoration/reinstatement phases of a development can have quite different physical characteristics, so a separate, self-contained description of the development at each stage in the life cycle may be needed to assist in the prediction of landscape and visual effects.
- In accordance with the EIA Regulations, measures proposed to prevent/avoid, reduce and, where possible, offset or remedy (or compensate for) any significant adverse landscape and visual effects should be described.
- In practice mitigation measures are now generally considered to fall into the categories of: primary measures, developed through the iterative design process and integrated or embedded into the project design; standard construction and operational management practices; and secondary measures specifically intended to address significant residual adverse effects but not built into the final development proposals.
- Prevention/avoidance, reduction, and offset, remedy or compensation together form what has been termed the 'mitigation hierarchy'. Good practice should aim to achieve mitigation at the highest possible level in the hierarchy, so the ideal strategy is one

of prevention or avoidance. If this is not possible, alternative strategies, first of reduction and then of offset, remedy or compensation, may need to be explored.

- Mitigation measures, from the LVIA or other topic assessments in the EIA, can themselves have adverse effects on the landscape or on visual amenity, or on other matters such as cultural heritage or ecology. Their planning and design needs careful consideration, taking into account their potential effects.
- Where the strategy is to offset, remedy or compensate for such unavoidable effects the aim should be, as far as possible, to replace like with like or, where this is not possible, to provide features of equivalent value.
- While mitigation is linked to significant adverse landscape and visual effects, enhancement is not a requirement of the EIA Regulations. Enhancement means proposals that seek to improve the landscape resource and the visual amenity of the proposed development site and its wider setting in comparison with the existing baseline conditions. Ideally enhancement should be an integral part of the design of the development proposal and not an 'afterthought'.
- It is essential to demonstrate that any measures included as part of the mitigation of adverse landscape and visual effects, and any proposed enhancement measures, can actually be delivered in practice. The best way to achieve this is through the inclusion of a draft Environmental Management Plan in the Environmental Statement.