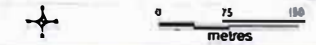


Figure 3.2 Published Landscape Character Assessment information at the national scale – part of the baseline information for an LVIA

Title: Figure 6.2. Extended Phase 1 habitat survey, July 2011
 Project: St Breock windfarm re-powering, Wadebridge, Cornwall

Drawn by: CCH Date: 15/07/2011 Drawing no: D-SB11/01
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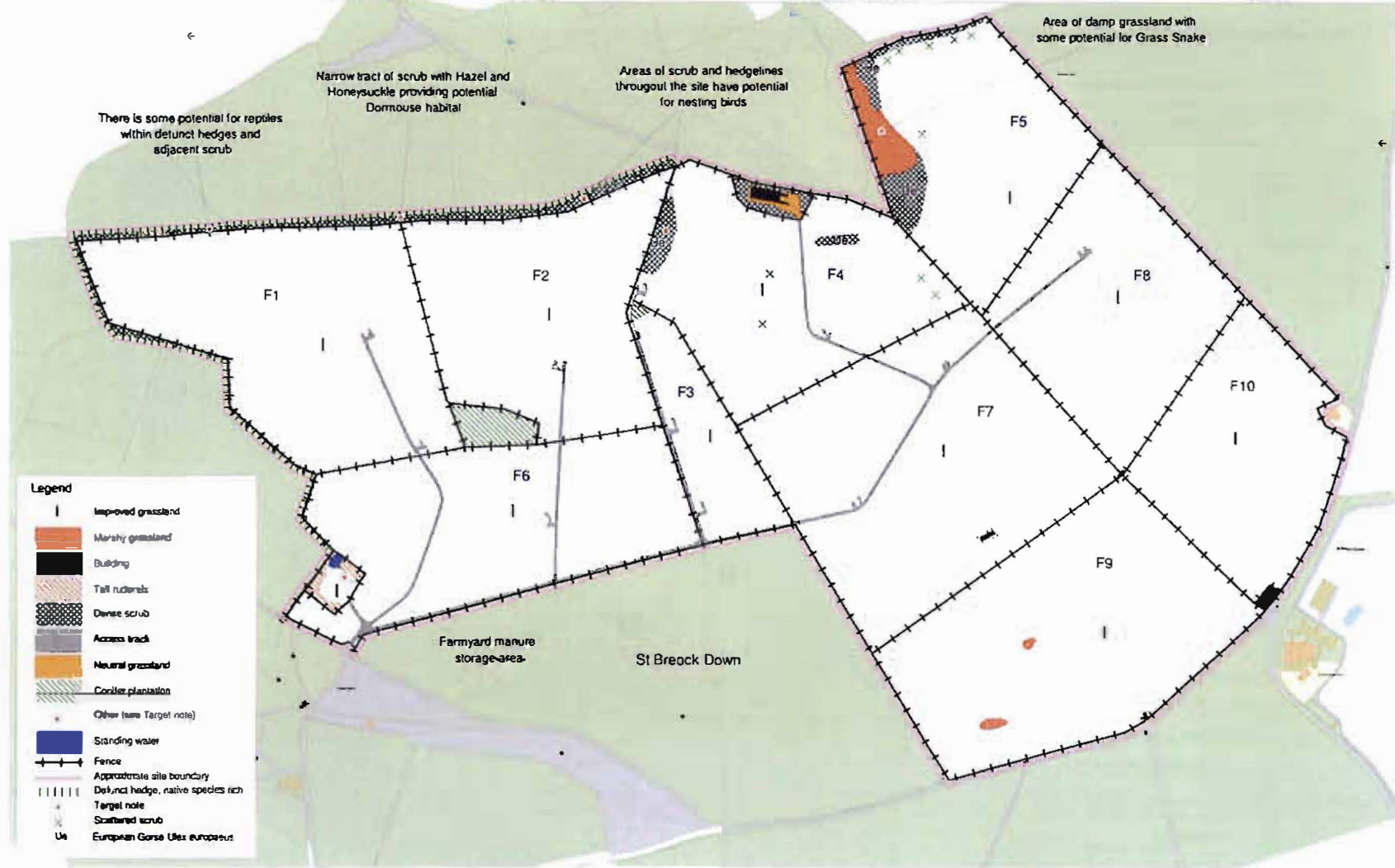


Figure 3.3 A Phase 1 habitat plan. A habitat baseline survey can assist in establishing the nature, extent and value of the landscape resource that could potentially be affected by a proposed development

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

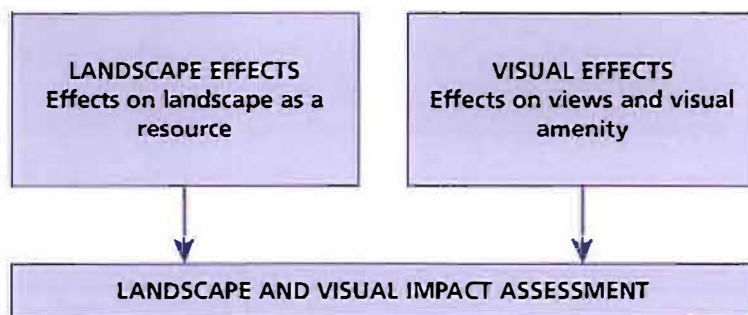


Figure 3.4 Landscape and visual effects

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 (indirect 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 (cumulative 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.

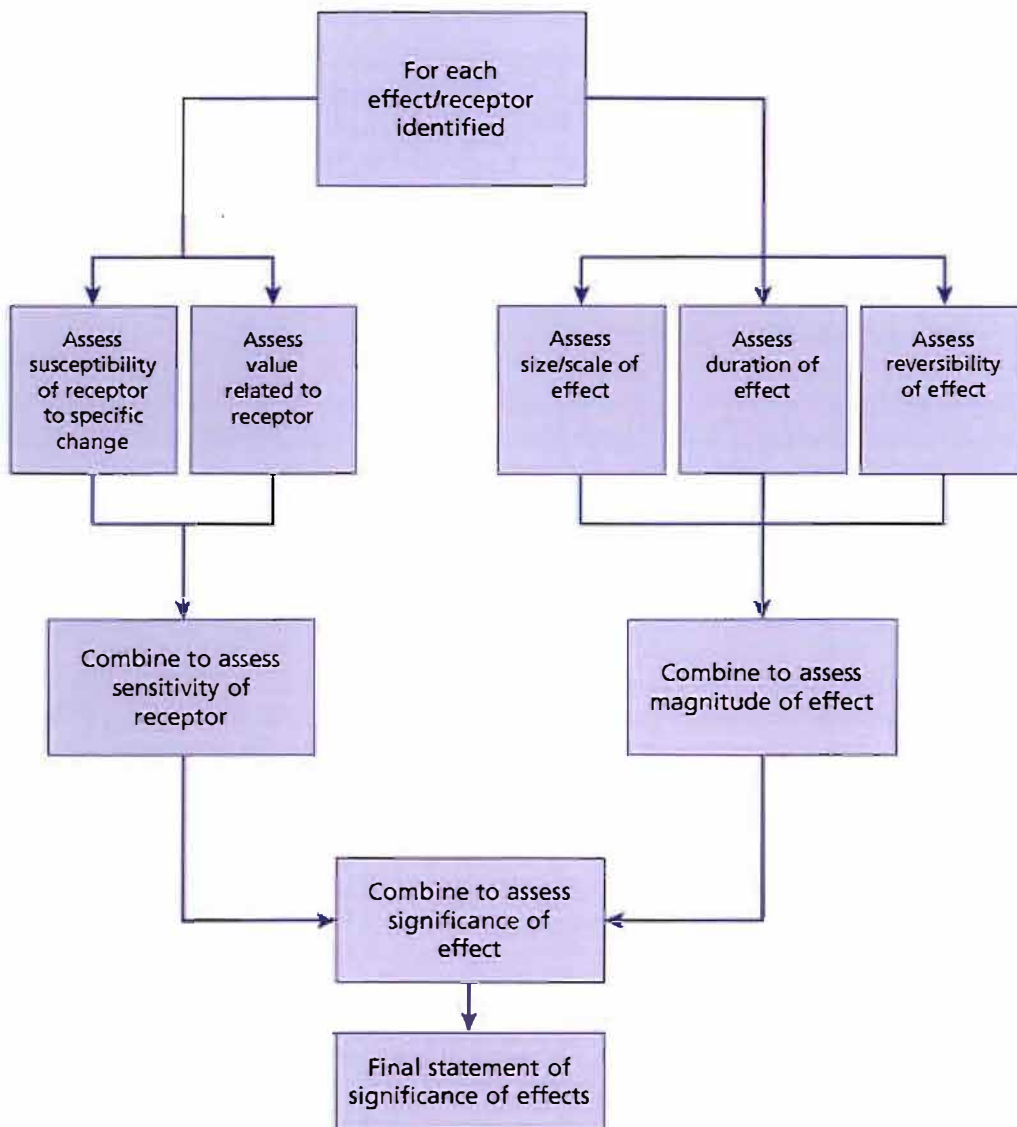


Figure 3.5 Assessing the significance of effects

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 coordinator 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 LVIA's 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.

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. 3.34

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: 3.35

- 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.

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. 3.36

Mitigation

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. 3.37

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 3.38



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.

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.

3.39

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

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.

3.40

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.

3.41

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.

3.42

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

3.43

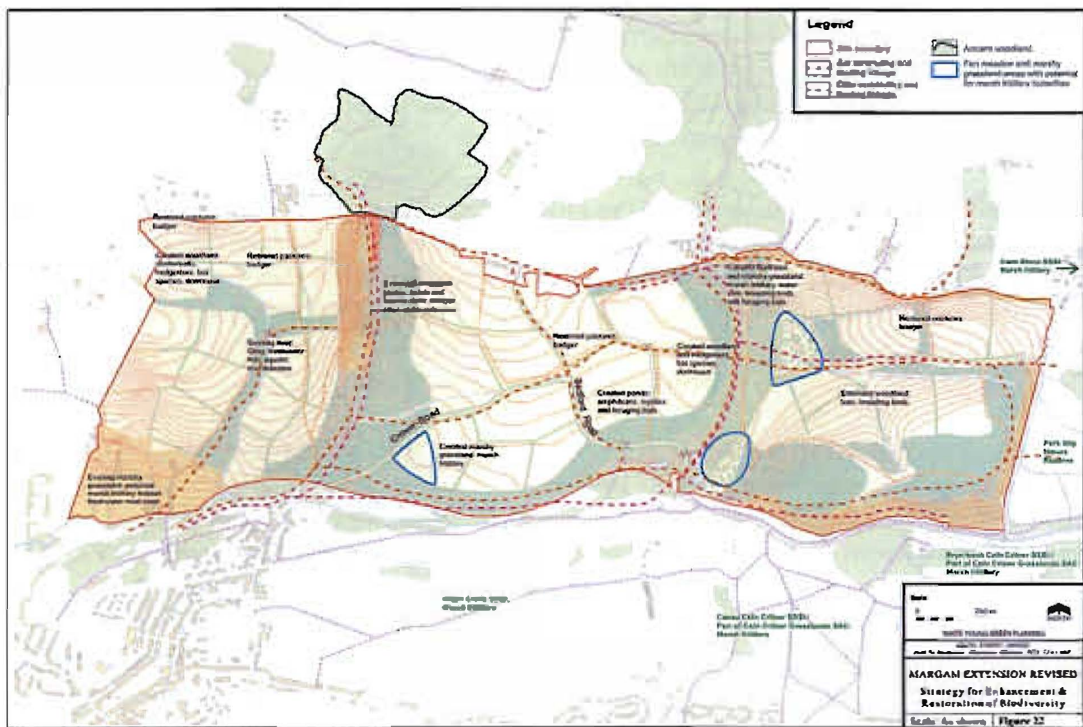
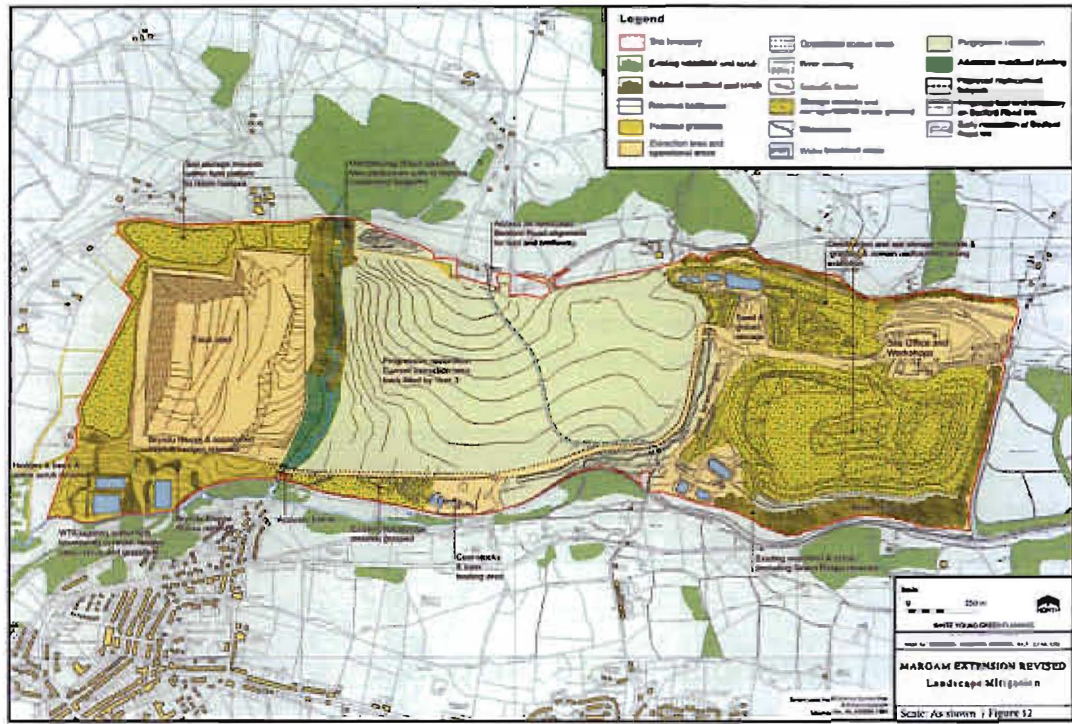


Figure 3.7A–B Example of a comprehensive strategy for mitigating landscape effects during the operational life of a coal surface mine, complemented by specific measures for ultimate ecological enhancement

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.

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.

4.4

LVIA and the design process

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.

4.5

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

4.6

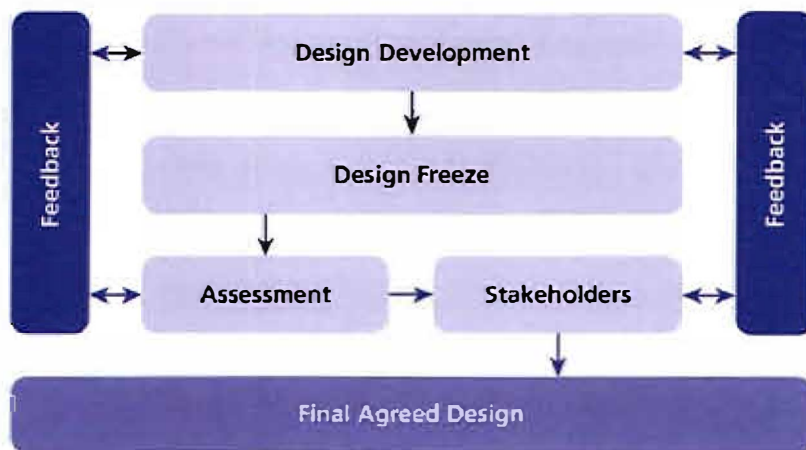


Figure 4.1 Feedback loops in design

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

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:

4.11

- 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.

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

4.12

- 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.

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.

4.13

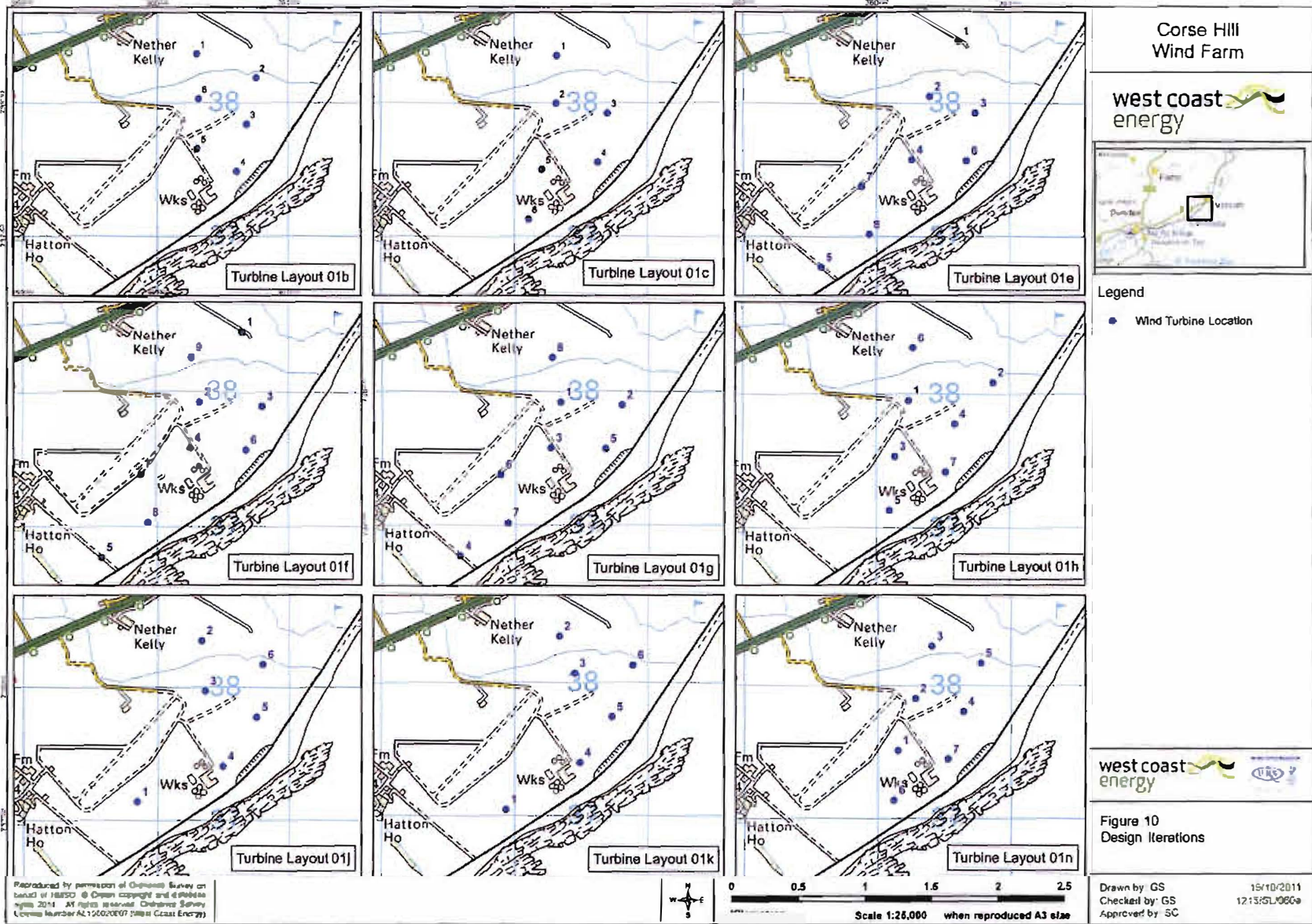


Figure 4.2 An example of iterative design of layouts for a wind farm development

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;

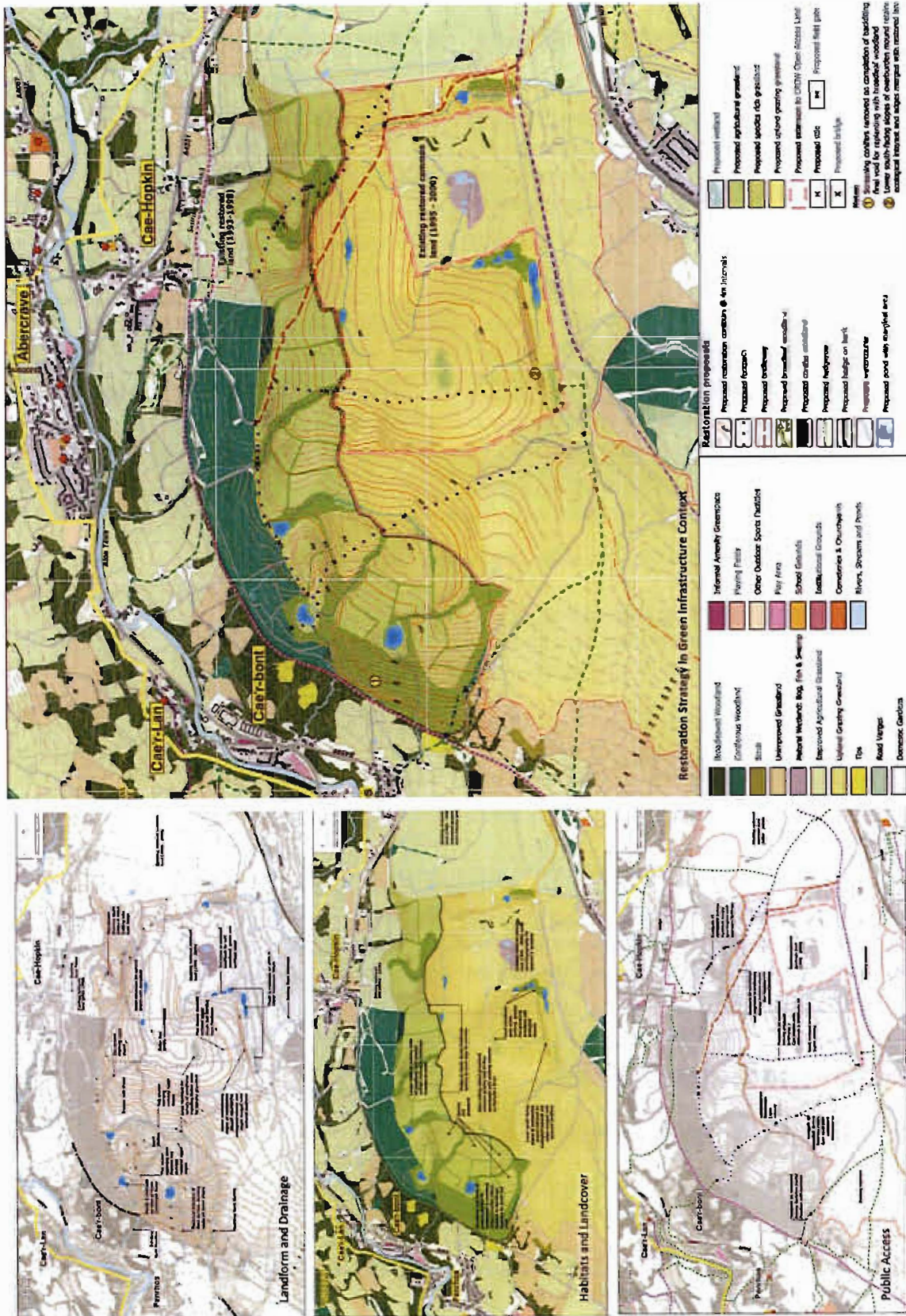


Figure 4.3 The restoration strategy for a coal surface mine ; components and context

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.

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). 4.22

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. 4.23

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. 4.24

Prevention/avoidance

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. 4.25

Reduction

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 4.26

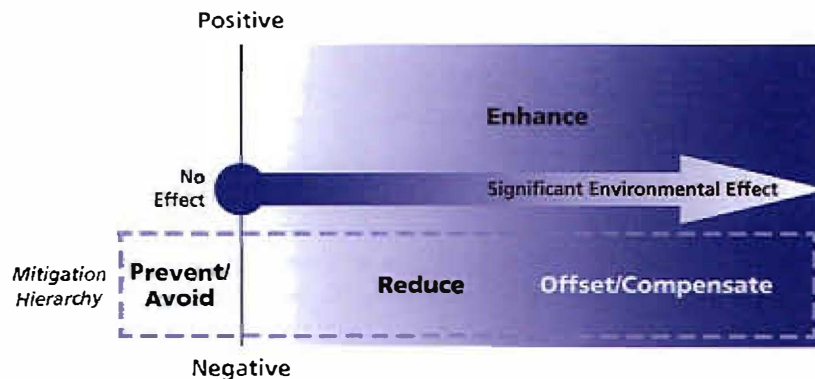


Figure 4.4 The mitigation hierarchy (from IEMA, 2011b)

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 obtusive 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.

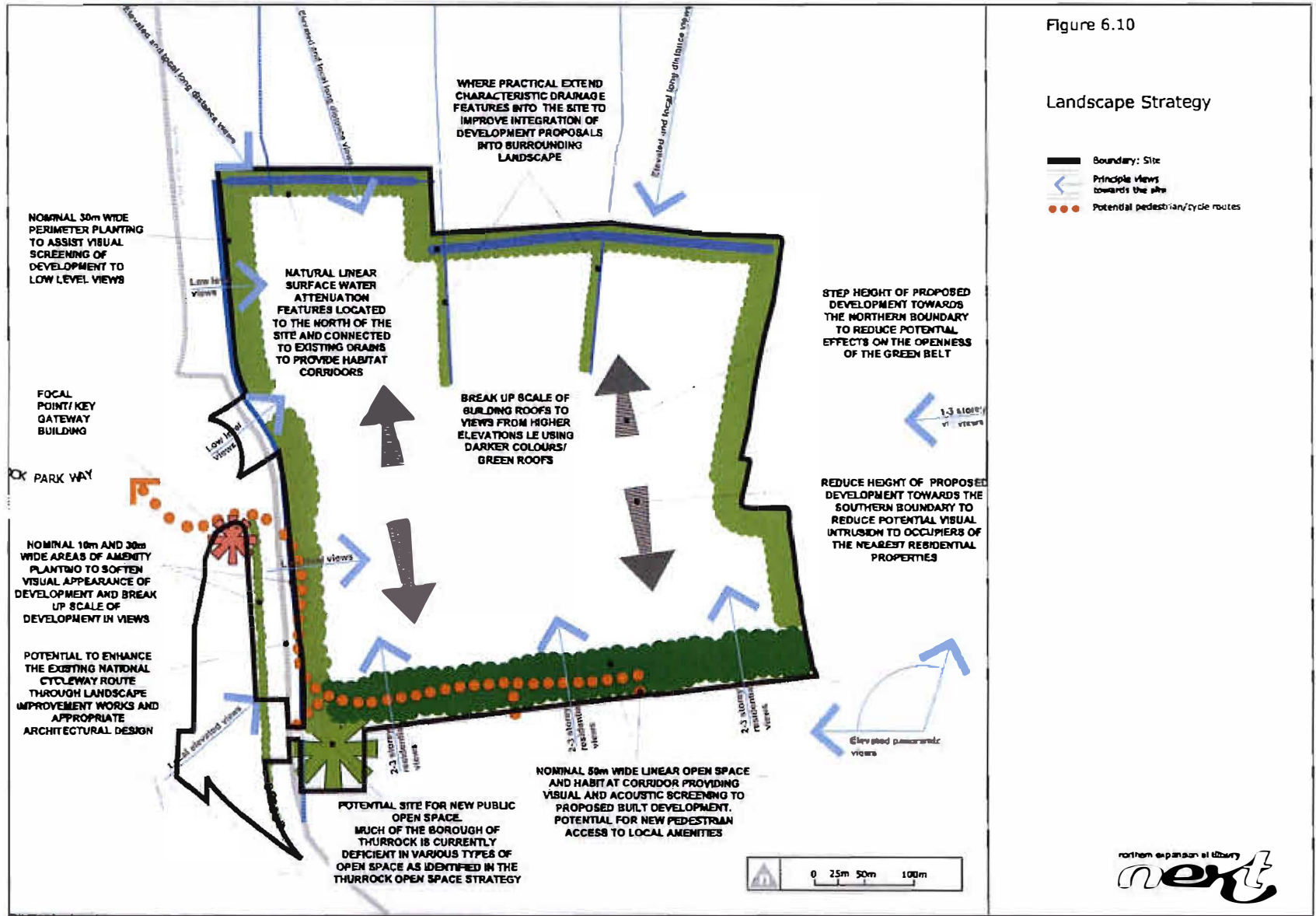


Figure 4.5 Landscape strategy plan incorporating proposed mitigation measures

- 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.

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). 4.34

Enhancement

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. 4.35

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. 4.36

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: 4.37

- 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.

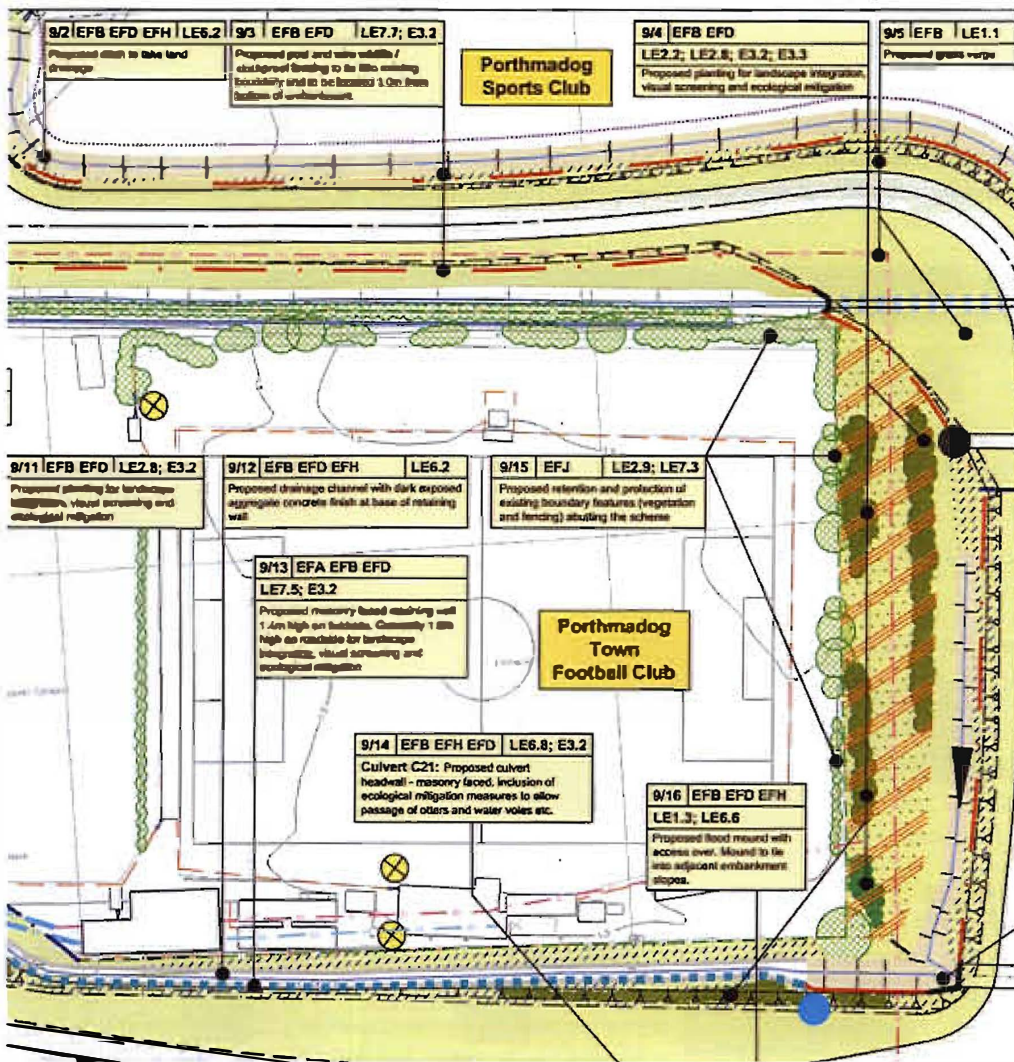


Figure 4.6 Extract from an example of an Environmental Master Plan gathering together all the environmental commitments including landscape and other mitigation measures, and forming part of an Environmental Management Plan

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.

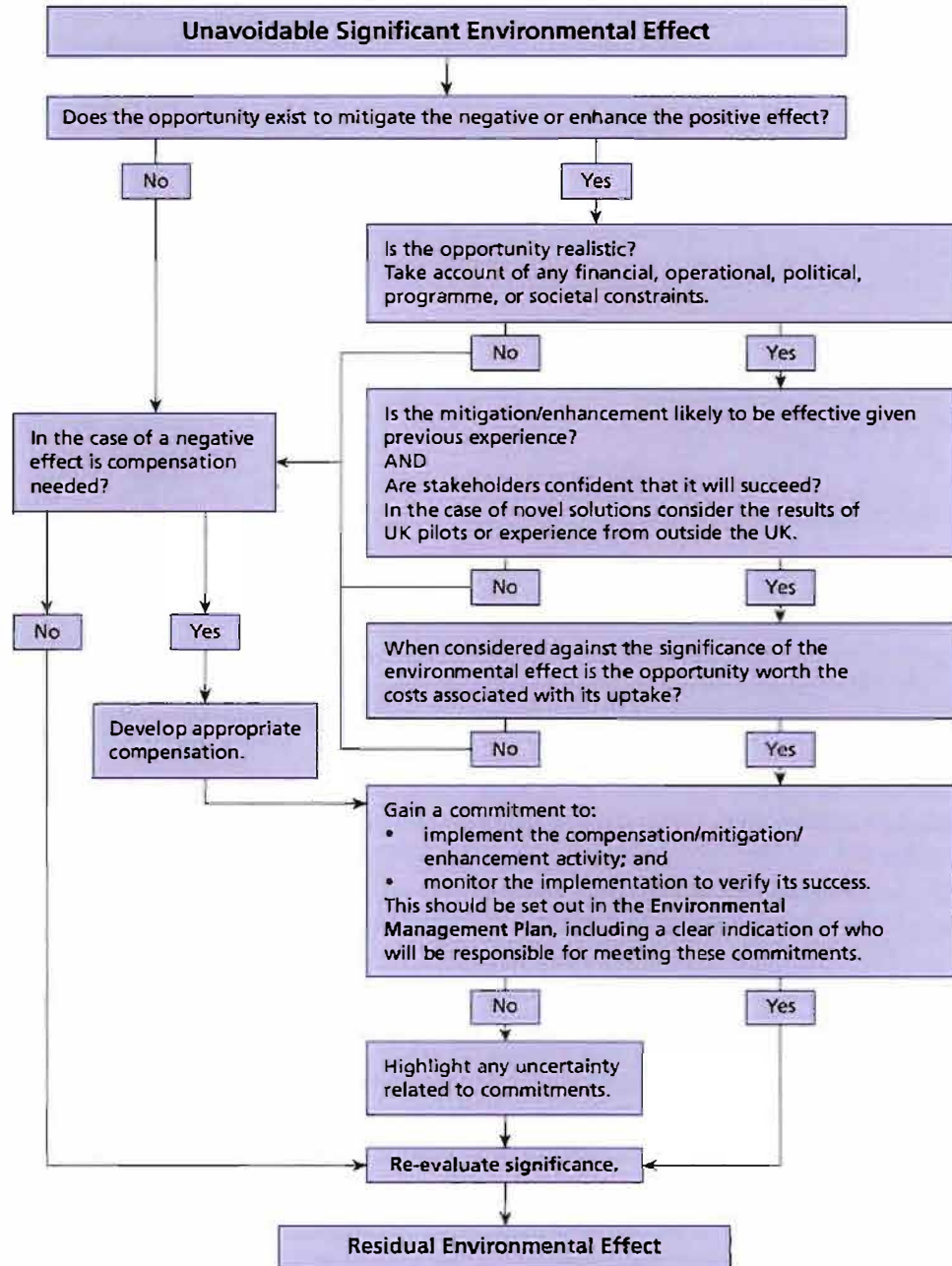


Figure 4.7 Mitigation/enhancement decision tree (from IEMA/Land Use Consultants, 2008)

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.

Chapter 5

Assessment of landscape effects



Chapter overview

- Scope
- Establishing the landscape baseline
- Predicting and describing landscape effects
- Assessing the significance of landscape effects
- Judging the overall significance of landscape effects

Scope

- 5.1 An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern here is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. Scoping should try to identify the full range of possible effects. But discussion with the consenting authority and stakeholders during the scoping process may conclude that some effects are unlikely to be significant and therefore do not need to be considered further. All other possible effects must be considered in detail in the assessment process.
- 5.2 Scoping should also identify the area of landscape that needs to be covered in assessing landscape effects. This should be agreed with the competent authority, but it should also be recognised that it may change as the work progresses, for example as a result of fieldwork, or changes to the proposal. The study area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner. This will usually be based on the extent of Landscape Character Areas likely to be significantly affected either directly or indirectly. However, it may also be based on the extent of the area from which the development is potentially visible, defined as the Zone of Theoretical Visibility, or a combination of the two.

See Chapter 6 for discussion of Zones of Theoretical Visibility.

Establishing the landscape baseline

- 5.3 Baseline studies for assessing landscape effects require a mix of desk study and fieldwork to identify and record the character of the landscape and the elements, features and aesthetic and perceptual factors which contribute to it. They should also deal with the value attached to the landscape (see Paragraph 5.19). The methods used should be appropriate to the context into which the development proposal will be introduced and in line with current guidance and terminology.

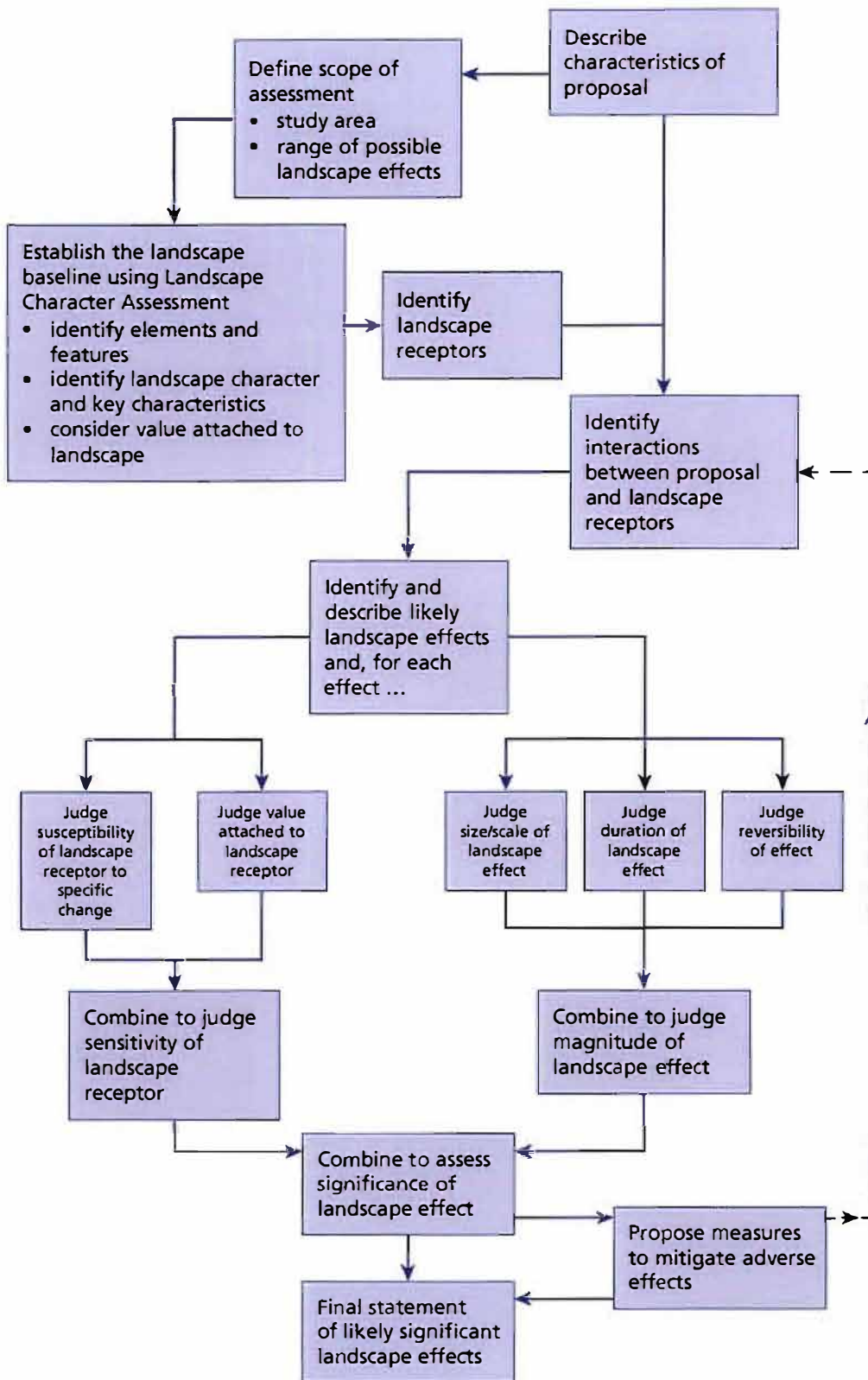


Figure 5.1 Steps in assessing landscape effects

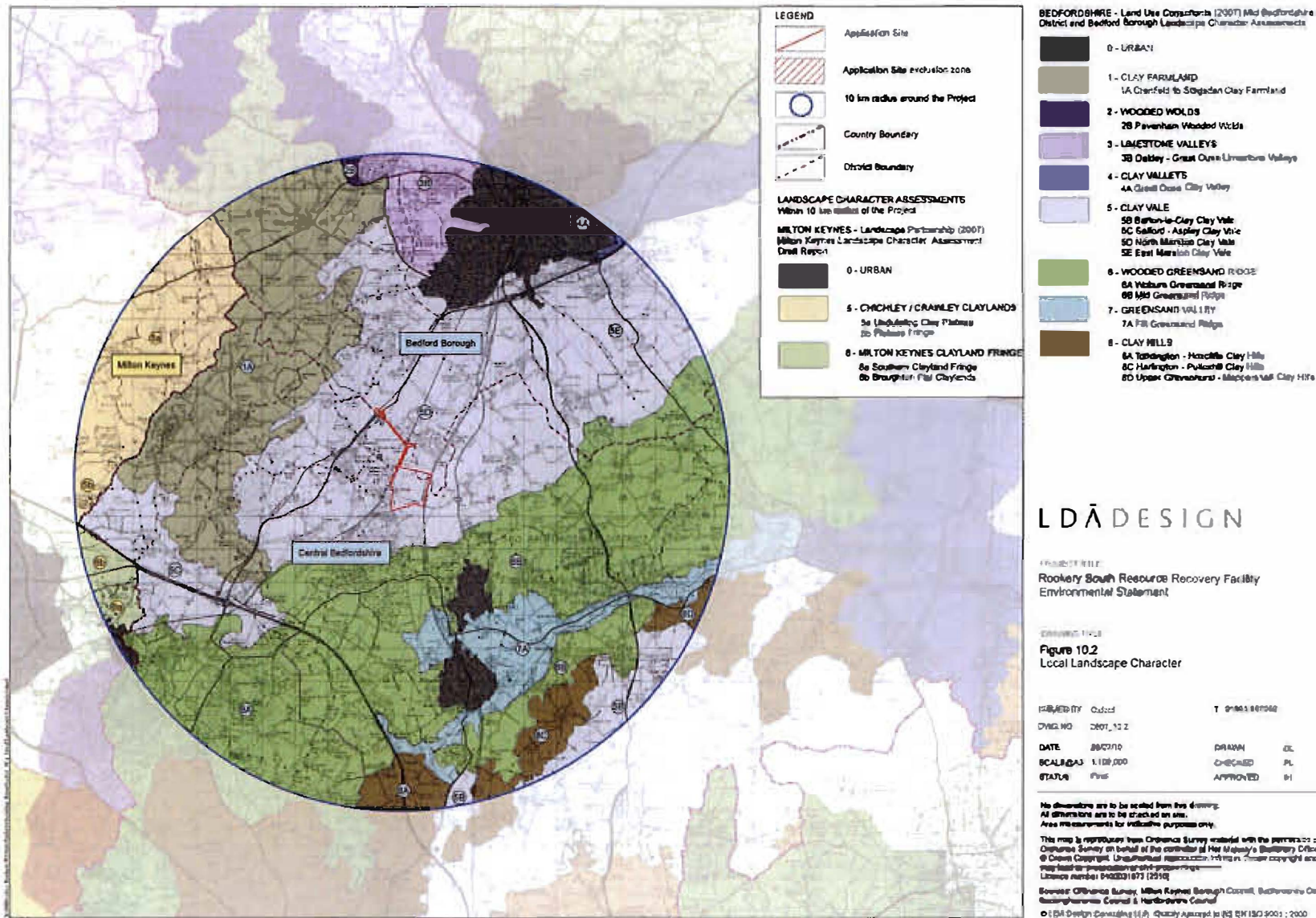


Figure 5.2A Use of landscape character information as a baseline for assessing the landscape effects of a Resource Recovery Facility

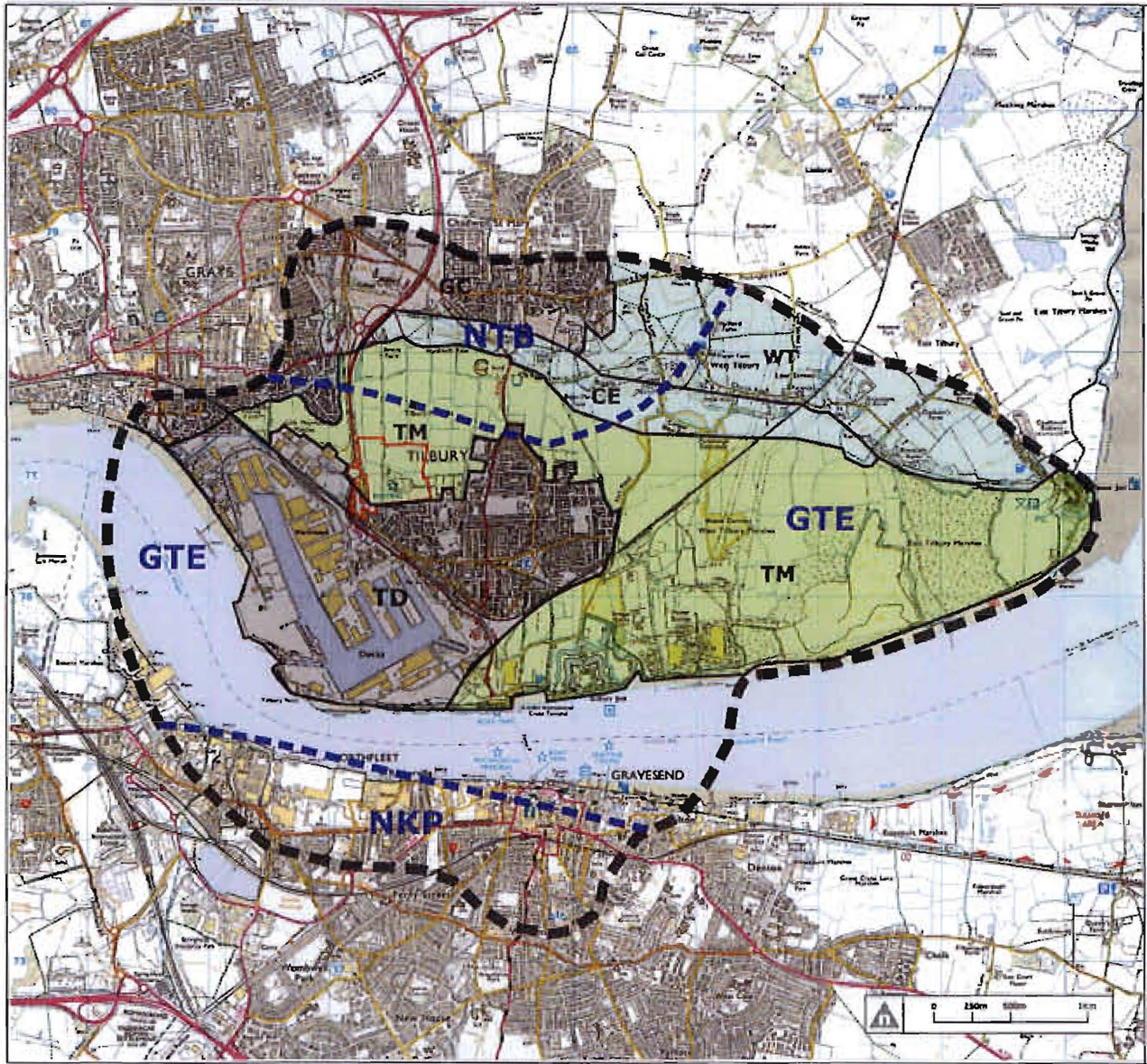


Figure 6.3

Landscape Context

- Boundary: Site
- Boundary: Study Area
- National Character Area**
From Countryside Agency (1996) Revised Edition: Character Character: Volume 11: East of England 1996
- Boundary: National Character Area
- NTB** Character Area 111 - Northern Thames Basin
- GTE** Character Area 81 - Greater Thames Estuary
- NKP** Character Area 113 - North Kent Plain
- District Character Types**
Through Borough Council - 'Thames Landscape' (2004) Study 2004
- Marsh Landscape
- Urban Landscape
- Urban Fringe Landscape
- District Character Types - Local Character Areas**
Through Borough Council - 'Thames Landscape' (2004) Study 2004
- TM** Tilbury Marshes
- CE** Chadwell Escarpment Urban Fringe
- WT** West Tilbury Urban Fringe
- GC** Grays/ Chadwell St Mary Urban Area
- TD** Tilbury and Docks Urban Area



Figure 5.2B Baseline information on landscape character at both national and local scales in an LVIA study area