

Appendix 8.1: Landscape and Visual Impact Assessment Methodology

8.1 Introduction

The Landscape Institute and the Institute of Environmental Management & Assessment's Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA 3), 2013, notes in Chapter 1 that Landscape and Visual Impact Assessment (LVIA) relates to:

"...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 methodology employed in carrying out the LVIA has been drawn from guidelines set out in GLVIA 3 and Natural England landscape character guidance. The guidelines are not intended as a prescriptive set of rules, and the approach has been adapted to the specific project.

LVIA's are undertaken by professionals who are also typically involved in the design of the landscape and the preparation of subsequent management proposals. This can allow the assessment to proceed as an integral part of the overall scheme design. Judgements are based on training and experience and supported by clear evidence and reasoned argument.

The purpose of LVIA's are to identify the potential for and assess the likely effects of change resulting from development. Landscape and visual assessments are separate, although linked, procedures. A distinction is made between:

- landscape - landscape character and the elements and features that contribute to it (landscape receptors); and
- visual - people who experience views within the landscape (visual receptors).

An LVIA is typically accompanied by illustrative material, including baseline mapping and photographs of the Site itself and from the wider context.

There are typically four key stages to LVIA, as follows:

- Baseline Studies;
- Design;
- Assessment of Landscape and Visual Effects; and
- Cumulative Assessment (should this be required).

8.1.1 Baseline Studies

The purpose of baseline studies is to record the existing landscape features, characteristics, the way the landscape is experienced and potential visual receptors. The following are typically undertaken as part of the baseline studies:

- Identification of the extents of the study area. This is based on professional judgement and may vary depending on the type of development proposed and the landscape context.
- A desktop study of patterns and scale of landform, land use and built development, relevant current planning policy (including landscape designations) and landscape character publications. Further localised character assessments may also be undertaken to supplement published assessments.
- Where such additional assessments are undertaken, these are based on principles set out in published guidance, including the Natural England 2014 publication: An Approach to Landscape Character Assessment. Factors typically considered may include the following, as relevant:
 - Landform and hydrology;
 - Land use and settlement;
 - Pattern/texture/line;
 - Scale;
 - Historical development/time depth;
 - Activity/cultural association;
 - Spatial structure and built form;
 - Infrastructure;
 - Movement and connectivity;
 - Green Infrastructure;
 - Enclosure/views; and
 - Tranquillity.
 - Zone of Theoretical Visibility (ZTV) modelling, used to assist in identifying potential viewpoints, should this be deemed necessary, dependent on professional judgement of the visual envelope of the Site/Proposed Development.
 - Identification of potential representative viewpoints within the study area.
 - Site context Landscape and Visual Appraisal (LVA) visit

Where relevant, the future baseline of the Site and its context is also considered, in order to account for ongoing change in the landscape, for example developments that are under construction and which will have altered the landscape context to the Site by the time the Proposed Development would be likely to be initiated.

8.1.2 Design and Mitigation

LVIAs are undertaken by professionals who are also often involved in the design of the landscape, site design, and the preparation of subsequent management proposals. The design and assessment stages are iterative, with stages overlapping in part.

Mitigation measures are embedded within the design of the Proposed Development (for an outline application this comprises the development parameters) as a result of the desk-based study and LVA field work. These measures, such as the building layout, massing and height; and arrangement of open spaces and new structural planting, are termed 'Primary Mitigation'. Effective Primary Mitigation strategies avoid or reduce adverse effects by ensuring the key

principles of the design of the development, as noted above, are sympathetic with the existing baseline.

Additional recommended measures to reduce adverse effects are termed 'Secondary Mitigation.' These may be illustrated in material accompanying the proposal, including a Design and Access Statement.

Typical Secondary Mitigation strategies can include:

- Additional design detail including building materials or landscape design approaches, including indicative species;
- A Landscape and Biodiversity Management Strategy to secure ongoing enhancement of landscape features;
- A Construction Environmental Management Plan to minimise effects arising during the construction process, typically including tree protection; and
- A programme of appropriate monitoring, agreed with the regulatory authority, so that compliance and effectiveness can be readily monitored and evaluated.

These secondary measures contribute to the assessment of residual effects.

The contribution made by areas of planting introduced as part of the Proposed Development is also considered in terms of the effects at year 1 and the residual effects (allowing for growth of planting over time), and the height of this planting for assessment purposes is assumed to be as follows (based on an average growth rate of 1m in 3 years – the specific rate of growth varies according to species, conditions and management):

- Planting at Year 1: typically 0.7-4.5 metres; and
- Planting at Year 15: typically 5.5-9.5 metres.

In addition, measures may be taken to offset or compensate for adverse effects, if these are not already built into the design proposals. Typical compensation measures are the replacement of felled trees with new trees or off-site provision of public amenity or access where this may be lost within the Site.

Enhancement

Whilst distinct from mitigation of adverse effects, enhancement may be achieved through the Proposed Development (e.g. the creation of a new landscape or public amenity/access; enhancement in character or view; or improved management of existing landscape features secured through the Proposed Development). The beneficial changes resulting from these measures are incorporated into assessment of landscape and visual effects.

8.1.3 Assessment of Landscape Effects

GLVIA 3 Paragraph 5.1 states that:

“An assessment of landscape effects deals with the effects of change and development on landscape as a resource.”

The significance of landscape effects is derived from a combination of assessments of the **sensitivity** of the landscape receptor and the **magnitude** of effect (change) experienced as a result of the Proposed Development.

Sensitivity of Landscape Receptors

The sensitivity of a landscape receptor is a combination of the **value** of the landscape receptor and the **susceptibility** (in other words 'vulnerability') of the landscape receptor to the type of change proposed, using professional judgement.

Where different types of receptors are represented by these views, the higher levels of sensitivity of these receptors to the type of development proposed have been used. For example, where motorists and pedestrians are potential receptors, the effect on pedestrians has been assessed. Motorists will typically experience less significant effects owing to the more fleeting nature of views and the fact that the attention of motorists is not typically focussed on appreciation of the landscape.

8.1.4 Landscape Value

- The assessment of value is based on a combination of the importance of landscape - related planning designations and the following attributes (reflecting those set out in GLVIA 3, Box 5.1):
- Landscape quality (condition): the measure of the physical state of the landscape. It may include the extent to which typical landscape character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
- Scenic quality: the extent that the landscape receptor appeals to the visual senses;
- Perceptual aspects: the extent that the landscape receptor is recognised for its perceptual qualities (e.g. remoteness or tranquillity);
- Rarity: the presence of unusual elements or features;
- Representativeness: the presence of particularly characteristic features;
- Recreation: the extent that recreational activities contribute to the landscape receptor; and
- Association: the extent that cultural or historical associations contribute to the landscape receptor.

Landscapes, including their character and features, may be designated for their landscape and visual qualities at a range of levels (national, county and local level).

The overall value for each landscape receptor is categorised as either High, Medium, Low or Negligible as shown in *Table 8.1*.

Table 8.1 Landscape Value	
Value	Criteria
High	Landscape area of distinctive components and characteristics that may also be nationally designated for scenic beauty. A landscape feature that makes a strong positive contribution to landscape character e.g. a mature tree or woodland.
Medium	Landscape area of common components and characteristics that may be designated at county or borough level for its landscape and visual qualities. A landscape feature that makes some positive contribution to landscape.
Low	Landscape area/feature of inconsequential components and characteristics, undesignated and with little or no wider recognition of value, although potentially of importance to the local community.
Negligible	Landscape area or feature that is undesignated and providing no positive contribution to the landscape.

8.1.5 Landscape Susceptibility

The susceptibility of the landscape is a measure of its vulnerability to the type of development proposed, without undue consequences for the maintenance of the baseline situation. Landscape character/features of low susceptibility would have a high capacity to accommodate change, and landscape character/features of high susceptibility would have a low capacity to accommodate change. The following criteria are taken into consideration in the assessment of the susceptibility of landscape character, although not all criteria are equally applicable or important within a given landscape /type of development proposed:

- Landform;
- Pattern/Complexity;
- Composition;
- Landcover;
- Relationship of a given landscape area to existing settlements or developments; and
- Potential for appropriate mitigation within the context of existing character and guidelines.

With regard to landscape features, susceptibility relates to the potential for loss/retention of the relevant features in relation to the type of development proposed (for example trees within a Site are potentially highly susceptible to construction of an industrial shed, where they might not be to construction of residential units, as the latter provides more scope to mitigate by design); and the ease with which such elements may be replaced, where appropriate.

Susceptibility of landscape character/features is categorised as High, Medium or Low, as set out in *Table 8.2*.

Table 8.2 Landscape Susceptibility	
Susceptibility	Criteria
High	The receptor is likely to have little scope to accommodate the type of development proposed without undue consequences upon its overall integrity.
Medium	The receptor is likely to have some scope to accommodate the type of development proposed without undue consequences upon its overall integrity.
Low	The receptor is likely to be able to accommodate the type of development proposed with little or no consequences upon its overall integrity.

Based on the combination of value and susceptibility, an assessment of landscape sensitivity is reached, defined as High, Medium or Low. Typically a high value and high susceptibility receptor would result in a receptor of high sensitivity; and a low value and low susceptibility receptor would result in a receptor of low sensitivity.

The sensitivity of landscape receptors are described in the following terms:

- High
- Medium
- Low
- Negligible

8.1.6 Landscape Magnitude of Effect (Change)

The landscape magnitude of change is informed by judgements about the precise nature of the change brought about by the Proposed Development both in terms of the existing landscape character and landscape elements/features and the addition of new landscape elements/features, and its duration and reversibility, as set out in *Table 8.3*.

Table 8.3 Landscape Magnitude of Effect (Change)	
Magnitude	Criteria
High	Pronounced change to the existing landscape receptor that may affect an extensive area. The change may be long-term or may be irreversible.
Medium	Partial change to the existing landscape receptor that may affect a relatively extensive area. The change may be medium-term or may be irreversible.
Low	Limited change to the existing landscape receptor that may affect a relatively limited area. The change may be short-term or reversible.
Negligible	Very slight change to the existing landscape receptor that may affect a limited area. The alteration may be short-term or reversible.
None	No change to the existing landscape receptor.

8.2 Assessment of Visual Effects

GLVIA 3 Paragraph 6.1 states that:

“An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity.”

The significance of visual effects is derived from a combination of assessments of the sensitivity of the visual receptor and the magnitude of effect (change) experienced as a result of the Proposed Development.

8.2.1 Viewpoint Selection

In order to assess the effects on visual receptors, a selection of publicly accessible viewpoints is made. This could include representative viewpoints (e.g. representing views of users of a particular footpath) and specific viewpoints (e.g. a key view from a specific visitor attraction).

Views may be categorised as either near distance, medium distance or long distance with the relevant distances dependant on the size and nature of the development, based on professional judgement.

The type of view is typically described as transient (i.e. experienced when moving) or fixed (i.e. from a static location). It is also described in terms of the degree of screening or openness (e.g. open or uninterrupted; filtered (including where partially screened) by vegetation or other structures; or curtailed by intervening land form, built form or vegetation) and the angle of view (e.g. frontal or oblique).

8.2.2 Sensitivity of Visual Receptors

The sensitivity of a visual receptor is a consideration of the **value** of the view and the **susceptibility** of the visual receptor, the latter being primarily based on consideration of the extent to which a visual receptor is focused on appreciation of the landscape. Professional judgement is used to determine these factors, based on considerations set out in Tables 8.4 and 8.5.

8.2.3 Value of Views

Table 8.4 Value of Views	
Value	Criteria
High	View of/from a location that is likely to be of national importance, either designated or with national cultural associations.
Medium	View of/from a location that is likely to be of local importance, either designated or with local cultural associations.
Low	View of/from a location that is not designated, with minimal or no cultural associations.

8.2.4 Susceptibility of Visual Receptors

Table 8.5 Susceptibility of Visual Receptor	
Susceptibility	Criteria
High	<ul style="list-style-type: none"> • People at their place of residence; • People engaged in outdoor recreation, including users of Public Rights of Way (PRoW), whose attention is likely to be focused on the landscape; and • People travelling along recognised scenic routes or where their appreciation of the view contributes to the amenity experience of their journey.
Medium	<ul style="list-style-type: none"> • People engaged in outdoor sport and recreation, where their appreciation of their surroundings is incidental to their enjoyment; and • People travelling on secondary roads or country lanes, rail or other transport routes.
Low	<ul style="list-style-type: none"> • People travelling on major roads; and • People at their place of work.

The sensitivity of a visual receptor results from the combination of value and susceptibility and is rated as high, medium or low. Typically, a high value and high susceptibility would result in a high sensitivity; and a low value and low susceptibility would result in low sensitivity.

The sensitivity of visual receptors are described in the following terms:

- High
- Medium
- Low
- Negligible

8.2.5 Visual Magnitude of Effect (Change)

In the evaluation of the effects on views and the visual amenity of the identified receptors, the magnitude of visual effect is typically described with reference to:

- The scale of change in the view with respect to the loss or addition of features in the view and changes in its composition. Factors contributing to this include:
 - The angle of view in relation to the main activity of the receptor;
 - The distance of the viewer from the Proposed Development; and
 - The extent of the area over which the changes would be visible.
- Whether or not the view is experienced in fixed or transient views and, in the latter, whether it is intermittent/glimpsed or continuous; and
- The duration of the change, whether temporary or permanent.

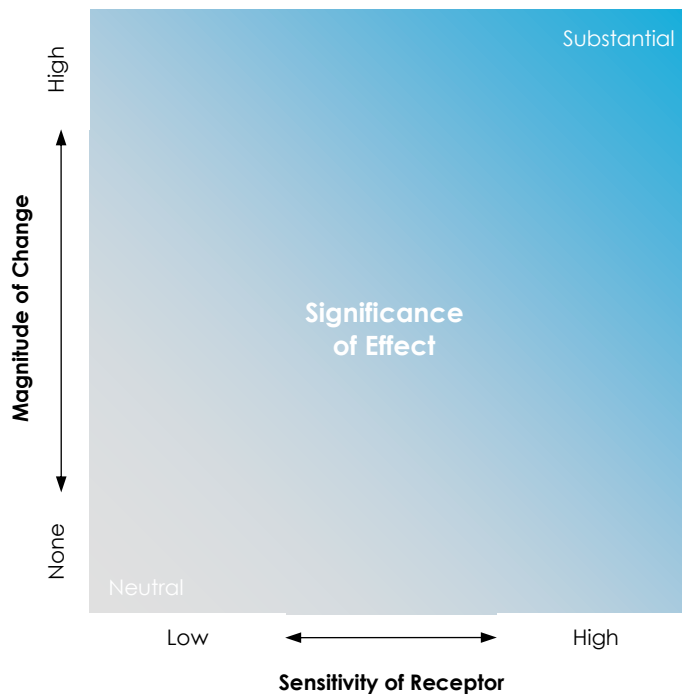
The criteria for the magnitude of visual effects is set out in Table 8.6.

Table 8.6 Visual Magnitude of Effect (Change)	
Magnitude	Criteria
High	The proposals will cause a pronounced change to the existing view, resulting in the loss or addition of features that will substantially alter the composition of the view. The change may be long-term or may be irreversible.
Medium	The proposals will cause a noticeable change in the view, resulting from the loss or addition of features in the view and will noticeably alter the composition of the view. The change may be medium-term or may be irreversible.
Low	The proposals will cause a limited change in the view, which would not materially alter the composition of the view. The change may be short-term or reversible.
Negligible	The proposals will cause a barely perceptible change in the view. The change may be short-term or reversible.
None	No change discernible in the view.

8.2.6 Significance of Effects

In order to draw conclusions about the significance of landscape or visual effects, the combination of the sensitivity of the receptors and the magnitude of effect are considered for the Proposed Development at Year 1 of the operational phase (once the Proposed Development has been completed); and, depending on the assessment, also at a point where planting associated with the Proposed Development will be establishing e.g. Year 15. In certain circumstances, it may also be appropriate to consider effects at construction and on decommissioning of the Proposed Development.

The significance of effects are rated on a scale of Neutral to Substantial. The assessment of significance of effects is subject to professional judgement but in broad terms, where a receptor of High sensitivity experiences a High magnitude of change as a result of the Proposed Development, the significance of effect is likely to be Substantial. Conversely, where a receptor of Low sensitivity experiences a Very Low magnitude of change as a result of the Proposed Development, the significance of effect is likely to be Negligible.



Where it is considered that there is potential for both beneficial and adverse changes, these magnitudes of effect (change) are noted and the balance of these considerations used to inform conclusions on significance of effect.

The assessment of residual effects refers to the likely effects of the Proposed Development that will remain once Secondary Mitigation measures are applied and also considers the growth of planting introduced within the Proposed Development (including where this is part of Primary or Secondary Mitigation).

For schemes subject to Environmental Impact Assessment, as governed by the Environmental Impact Assessment Directive (2011/92/EU), an assessment of whether or not the effect is considered 'significant' is required. This is relative to each scheme. In this EIA any effect (adverse/beneficial) above 'negligible' is deemed 'significant'.

Table 8.8 Significance of Landscape Effects – Criteria	
Significance	Criteria
Substantial Beneficial	Alterations that would be substantially characteristic and result in a pronounced improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced as part of the Proposed Development.
Moderate Beneficial	Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be partially restored or reintroduced.
Minor Beneficial	Alterations that result in a limited improvement of the existing landscape resource. Characteristic features would be restored to a limited degree.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.
Neutral	Neither beneficial nor adverse effects on the existing landscape resource.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.
Minor Adverse	Alterations that result in a limited deterioration of the existing landscape resource. Characteristic features would be lost to a limited degree.
Moderate Adverse	Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be partially lost.
Substantial Adverse	Alterations that would be substantially uncharacteristic and result in a pronounced deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.

Table 8.9 Significance of Visual Effects – Criteria	
Significance	Criteria
Substantial Beneficial	Alterations that typically result in a pronounced improvement in the existing view.
Moderate Beneficial	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that typically result in a barely perceptible improvement in the existing view.
Neutral	Neither beneficial nor adverse effects on the existing view.

Negligible Adverse	Alterations that typically result in a barely perceptible deterioration in the existing view.
Minor Adverse	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that typically result in a noticeable deterioration in the existing view.
Substantial Adverse	Alterations that typically result in a pronounced deterioration in the existing view.