

APPENDIX 6.1

ECOLOGICAL IMPACT ASSESSMENT

A.1 LVIA METHODOLOGY

Introduction

A.1.1 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"

A.1.2 The methodology employed in carrying out the LVIA for the Proposed Development has been drawn from the guidance set out in the GLVIA 3.

A.1.3 LVIAs 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.

A.1.4 The purpose of LVIAs is 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).

A.1.5 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).

Baseline Studies

A.1.6 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. The extent of this is based on professional judgement and may vary depending on the type of development proposed and its specific location;
- 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; and
- Site/context landscape and visual appraisal visit.

Design and Mitigation

A.1.7 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.

A.1.8 Mitigation measures are embedded within the design of the Proposed Development as a result of the desk based study and field work. These measures, such as new planting (assumed 1m growth every 3 years) and the siting of specific built elements, 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.

A.1.9 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.

A.1.10 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.

Assessment of Landscape Effects

A.1.11 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."

A.1.12 The significance of landscape effects is derived from a combination of assessments of the **sensitivity** of the landscape receptor and the **magnitude** of effect experienced as a result of the Proposed Development.

Sensitivity of Landscape Receptors

A.1.13 The sensitivity of a landscape receptor is a combination of the **value** of the landscape receptor and the **susceptibility** of the landscape receptor to the type of change proposed, using professional judgement.

Landscape Value

A.1.14 The assessment of value is based on a combination of the importance of landscape-related planning designations and the following attributes:

- 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.

A.1.15 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).

A.1.16 The overall value for each landscape receptor is categorised as either High, Medium or Low.

Table 1.1: Landscape Value

Level	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 character.
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.

Landscape Susceptibility

A.1.17 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.

A.1.18 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; and the ease with which such elements may be replaced, where appropriate.

A.1.19 Susceptibility of landscape character/ features is categorised as High, Medium or Low, as set out in Table 1.2.

Table 1.2: 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.

A.1.20 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.

Landscape Magnitude of Effect

A.1.21 The landscape magnitude of effect 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 1.3.

Table 1.3: Landscape Magnitude of Effect

Magnitude	Criteria
Large	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.
Small	Limited change to the existing landscape receptor that may affect a relatively limited area. The change may be short-term or reversible.
Very Small	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.

Assessment of Visual Effects

A.1.22 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."

A.1.23 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.

Viewpoint Selection

A.1.24 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 cool dsad

A.1.25 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.

A.1.26 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).

Sensitivity of Visual Receptors

A.1.27 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 Table 1.4 and Table 1.5.

Table 1.4: 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.

Table 1.5: Susceptibility of Visual Receptor

Susceptibility	Criteria
High	• 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	• 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	• People travelling on major roads; and • People at their place of work.

A.1.28 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 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.

Visual Magnitude of Effect

A.1.29 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.

A.1.30 The criteria for the magnitude of visual effects is set out in Table 1.6.

Table 1.6: Visual Magnitude of Effect

Magnitude	Criteria
Large	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.
Small	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.
Very Small	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.

Significance of Effects

- A.1.31 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 at Year 15.
- A.1.32 The significance of effects are rated on a scale of Neutral to Major. The assessment of significance of effects is subject to professional judgement but in broad terms, where a receptor of High sensitivity experiences a Large magnitude of effect as a result of the Proposed Development, the significance of effect is likely to be Major. Conversely, where a receptor of Low sensitivity experiences a Very Small magnitude of effect as a result of the Proposed Development, the significance of effect is likely to be Negligible.

Figure 1.1: Significance of Effects

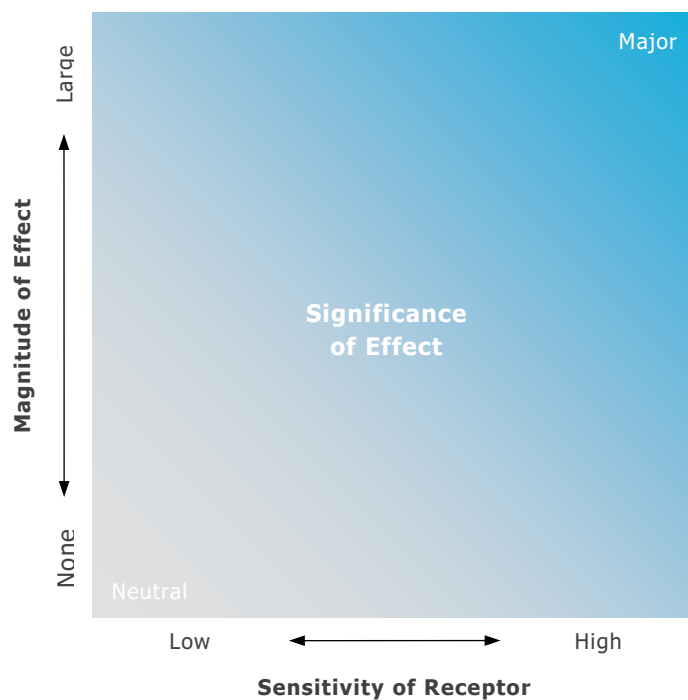


Table 1.7: Significance of Landscape Effects – Criteria

Significance of Landscape Effect	Criteria
Major Beneficial	Alterations that 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.
Major Adverse	Alterations that result in a pronounced deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.

Table 1.8: Significance of Visual Effects – Criteria

Significance of Visual Effect	Criteria
Major 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.
Major Adverse	Alterations that typically result in a pronounced deterioration in the existing view.