Appendix 1 - LVIA Methodology

The methodology used in the preparation of landscape and visual impact assessment (LVIA) is contained within *Guidelines for Landscape and Visual Impact Assessment (3rd. Ed. 2013)* published by the Landscape Institute and the Institute for Environmental Management and Assessment. The methodology and terminology used in this assessment is also consistent with the *Landscape Character Assessment Guidance for England and Scotland (*Countryside Agency and Scottish Natural Heritage 2002*)* and *An Approach to Landscape Character Assessment* (Natural England 2014).

In line with the accepted methodologies above, the LVIA process comprises four key elements:

- establishment of the baseline conditions,
- assessment of the potential impacts of the proposed development,
- assessment of the significance of impacts, and finally,
- proposals for mitigating impacts.

It should be noted that landscape impacts and visual impacts are treated separately. Landscape impacts derive from changes in the physical landscape resulting from the proposed development, which may give rise to changes in landscape character. Visual impacts relate to the changes that arise in the composition of available views as a result of the proposed development, and to the overall effects with respect to visual amenity.

Stage 1: Establishing the Baseline- Sensitivity to Changes in Landscape Character

The baseline survey establishes the existing landscape and visual situation, prior to development. The sensitivity of the receiving landscape is determined by its quality, value and its susceptibility to the type of change that is being envisaged.

Landscape quality (or condition) is based on judgements about the physical state of the landscape, and about its intactness, from visual, functional and ecological perspectives. It also reflects the state of repair of individual features and elements that make up the character in any one place.

Table 1 Criteria for Assessing Landscape Quality

Landscape Quality (or Condition)	Typical Indicators
High	All landscape elements remain intact and in good repair. Buildings are in local vernacular and materials. No detracting elements are evident
Medium – High	Most landscape elements remain intact and in good repair. Most buildings are in local vernacular and materials. Few detracting elements are evident
Medium	Some landscape elements remain intact and in good repair. Some buildings are in local vernacular and materials and some detracting elements are evident
Medium - Low	Few landscape elements remain intact and in good repair. Few buildings are in local vernacular and materials. Many detracting or incongruous elements are evident
Low	No landscape elements remain intact and in good repair. Buildings are not in local vernacular and materials. Detracting or incongruous elements are much in evidence

Landscape value is concerned with the relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly-valued landscapes is through the application of a local or

national landscape designation. Yet a landscape may also be valued by different communities of interest for many different reasons without any formal designation, recognising, for example, perceptual aspects such as scenic beauty, tranquillity or wildness; special cultural associations; the influence or presence of other conservation interests; or the existence of a consensus about importance, either nationally or locally.

The definition of tranquillity used in this assessment is based on Table 3 of Natural England's "Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England" (NE 2011):

- Contributors to Tranquillity – Presence and/or perceptions of natural landscape, birdsong, peace and quiet, natural looking woodland, stars at night, stream, sea, natural sounds and similar influences
- Detractors from Tranquillity – Presence and/or perceptions of traffic noise, large numbers of people, urban development, overhead light pollution, low flying aircraft, power lines and similar influences

The criteria set out in **Table 2** have been used as guidance in reaching an assessment of value.

Table 2: Criteria for the assessment of landscape value

Value	Typical Criteria	Typical Scale		Example
High	Exceptional	High importance and rarity. No or very limited potential for substitution	International, National	World Heritage Site, National Park, AONB
	High	High importance and rarity. Limited potential for substitution	National, Regional and Local	National Park, AONB, AHLV / AGLV (If reviewed and updated)
Medium	Medium	Medium importance and rarity Limited potential for substitution	Regional, Local	AHLV / AGLV (If reviewed and updated)
	Medium / Low	Medium importance and rarity Some or good potential for substitution	Regional, Local	Undesignated, but value expressed for instance in demonstrable use
Low	Low	Low importance and rarity	Local	Areas identified as having some redeeming feature or features and possibly identified for improvement
	Very low	Low importance and rarity	Local	Areas identified for recovery

'Landscape susceptibility' describes the ability of a landscape receptor to accommodate change without undue consequences for the maintenance of the baseline situation and / or the achievement of landscape planning policies or strategies. Assessment takes into account into account judgements about the scale of the landscape, how robust the particular quality of that landscape is, the pattern of the landscape and the pressures upon it.

Judgements about the level of the susceptibility of the receptor to the type of change proposed take into account the following criteria:

Table 3: Criteria for Assessment of Landscape Susceptibility to Change

Susceptibility to Change	Definition
High	• The landscape is of a very large scale and / or there is a negligible level of containment, resulting in a significant degree of interaction between landform, topography, vegetation cover, field pattern and built form. • There is no existing reference or context within the receptor to the type of development proposed. • The majority of existing element(s) would not be easy to replace (e.g. ancient woodland, mature trees, traditional orchards etc.). • Detracting features and / or major infrastructure are not present in the area. • All of the key characteristics and qualities of the landscape are highly sensitive to change from the type of development being assessed • The receptor has a very low level of ability to accept the type of development proposed and there are very limited opportunities for mitigation.
Medium - High	• The landscape is of a large scale and / or there is a low level of containment, resulting in a high degree of interaction between landform, topography, vegetation cover, field pattern and built form. • There is little or no existing reference or context within the receptor to the type of development proposed. • The majority of existing element(s) would not be easy to replace (e.g. ancient woodland, mature trees, traditional orchards etc.). • Detracting features and / or major infrastructure are not present in the area or, where present, these have little influence on the character or experience of the landscape. • Many of the key characteristics and qualities of the landscape are highly sensitive to change from the type of development being assessed • The receptor has a low level of ability to accept the type of development proposed and there are limited opportunities for mitigation.
Medium	• The landscape is of a medium scale and / or there is a moderate level of containment, resulting in a moderate degree of interaction between landform, topography, vegetation cover, field pattern and built form. • There is some existing reference or context within the receptor to the type of development proposed. • There are opportunities for replacement of existing elements. • Detracting features and / or major infrastructure are present in the area and these have a noticeable influence on the character or experience of the landscape. • Some of the key characteristics and qualities of the landscape are highly sensitive to change from the type of development being assessed • The receptor has a medium level of ability to accept the type of development proposed and there are good opportunities for mitigation.
Low-Medium	• The landscape is of small scale and / or has a high level of containment, resulting in only a slight degree of interaction between landform, topography, vegetation cover, field pattern and built form. • There are many existing references within the receptor to the type of development proposed. • Few / no existing landscape elements are present or, where these are present, these can easily be replaced. • Some existing features are detracting and / or major infrastructure is present which has an obvious influence on the character or experience of the landscape. • Few of the key characteristics and qualities of the landscape are highly sensitive to change from the type of development being assessed

	• The receptor has a high level of ability to accept the type of development proposed and there are very good opportunities for mitigation and enhancement.
Low	• Due to the scale of enclosure, the receptor has no interaction with the surrounding landscape. • The proposed development would be in keeping with the land use of the site and the surrounding landscape. • All landscape elements are easily replaceable. • Existing features are detracting and / or major infrastructure is present which heavily influences the character or experience of the landscape. • Key characteristics and qualities of the landscape are robust and less likely to be adversely affected by the type of development being assessed. • The receptor has a very high level of ability to accept the type of development proposed and there are very good opportunities for mitigation and enhancement.

The sensitivity of the landscape is then assessed, taking into account judgements about quality, value and susceptibility to change. Landscape sensitivity is the degree to which a particular landscape character area can accommodate change without unacceptable detrimental effects on its character.

Stage 1: Establishing the Baseline – Sensitivity to Visual Change

An assessment is made of the area from which the site is theoretically visible is prepared. In the case of this development, a zone of theoretical visibility map has been prepared. The map shows theoretical visibility based on topography, but does not take account of the screening effects of buildings and vegetation.

Once the visual envelope had been established, potential receptors within it were identified. These include people living or working in settlements and residential properties; users of roads and footpaths; visitors to viewpoints etc.

Depending on the activity in which they are engaged and where they are, people will be more or less susceptible to changes in their visual outlook. In assessing the sensitivity that people will have, the criteria list below in **Table 4** have been used as guidance.

Table 4: Criteria for visual receptor susceptibility to change (sensitivity)

Sensitivity	Typical Criteria
High	• Public views within areas of protected landscapes such as national Parks, AONB's • Users of outdoor recreational facilities including public rights of way, whose attention or interest is focussed on the landscape and where tolerance to change is likely to be low. • Communities where the development results in changes to the landscape setting or valued views enjoyed by the community. • Occupiers of residential properties with views affected by the development
Medium	• People travelling through the or past the affected landscape in cars, on trains or other transport routes whose attention or interest is focussed on the landscape and where tolerance to change is likely to be low.
Low	• People engaged in out door sport or recreation whose attention may be focussed away from the landscape and where tolerance to change may be high • People at their place of work, or engaged in similar activities, whose attention may be focussed away from the change in view and where tolerance to change may be high • People using urban roads, footways, railways and industrial areas whose attention may be focussed away from the landscape and where tolerance to change may be high.

The value of a particular view is then assessed. This takes into account factors such as: importance of the view (whether it is noted in guide books, identified as a viewpoint on maps, has particular cultural or heritage associations); the number of people who are likely to see the view; the rarity or otherwise of the type of view; other sensory qualities.

A number of viewpoints were selected from within the visual envelope representing a range of views, distances and receptor types as well as to represent qualities and characteristics of the surrounding landscape. The locations of viewpoints were identified in the field, and were chosen to illustrate a 'worst case scenario'. For example, where the site cannot be seen from a lane because of a high hedgebank, but there is one gateway in it with a view towards the site, then this gateway is used as a viewpoint.

Photographs are used to record the views from each representative viewpoint using an equivalent 50mm lens and a full frame Nikon digital camera, and presented as part of the assessment.

Stage 2: Assessment of Predicted Magnitude of Effect: Landscape and Visual.

A combination of fieldwork and photographs were used to assess the **scale** of effect on landscape qualities / characteristics and views resulting from the proposed development. The **duration** of any change and the reversibility of the proposed development and the **extent** of effect were also considered to assess the nature, or **magnitude**, of the effect on landscape qualities, characteristics and designations.

Scale of effect is assessed for all landscape and visual receptors and identifies the degree of change which would arise from the development. It is rated on the following scale:

Table 5: Scale of Effect

Scale	Typical criteria
Large	Total or major alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be fundamentally changed.
Medium	Partial alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be noticeably changed.
Small	Minor alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be largely unchanged despite discernible differences.
Negligible	Very minor alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be fundamentally unchanged with barely perceptible differences

Duration of effect is assessed for all landscape and visual receptors and identifies the time period over which the change to the receptor as a result of the development would arise. It is rated on the following scale:

Table 6: Duration of Effect

Level	Typical criteria
Permanent	The change is expected to be permanent and there is no intention for it to be reversed.
Long term	The change is expected to be in place for 10-25 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe

Medium term	The change is expected to be in place for 2-10 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe
Short term	The change is expected to be in place for 0-2 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.

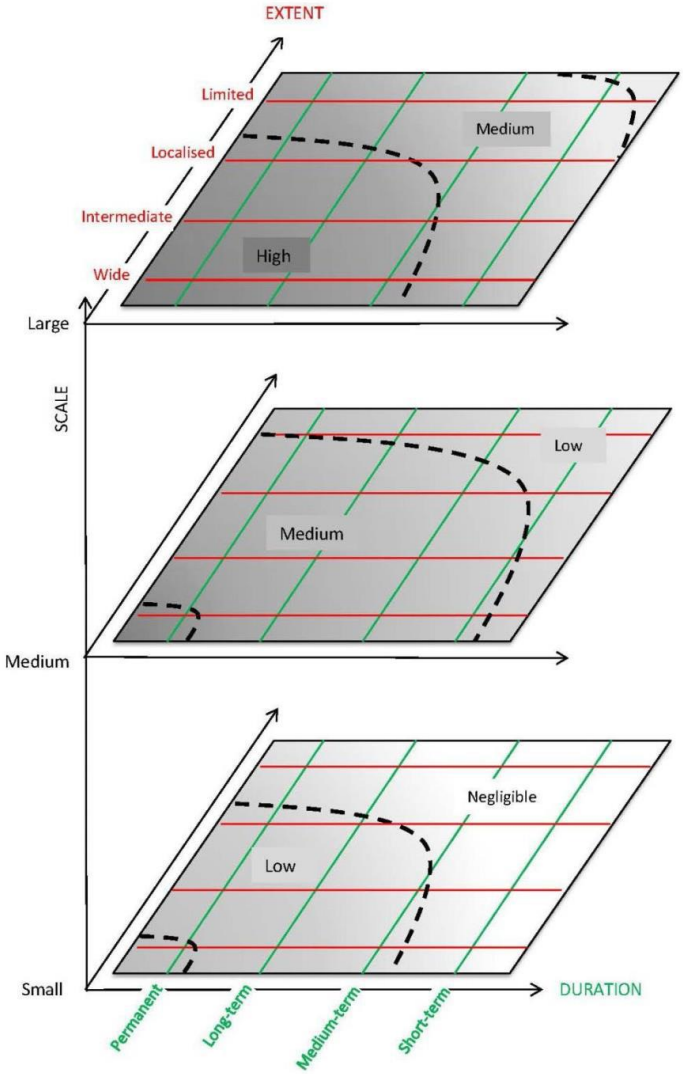
The **Extent** of effect is assessed for all receptors and indicates the geographic area over which the effect will be felt. This is rated as follows:

Table7: Extent of Effect

Level	**Typical criteria**
Limited	Site, or part of Site, or small part of a receptor area (< approx. 10%)
Localised	Site and surroundings up to 2km, or part of receptor area (up to approx. 25%)
Intermediate	Up to approx. 2-4km, or around half of receptor area
Wide	Beyond 4km, or more than half of receptor.

The **Magnitude** of effect is rated within the range of High-Medium-Low-Negligible and is informed by combining the scale, duration and extent of effect. Where applicable, an assessment is made at Year 1 and Year 15 – allowing for any mitigating planting to have taken effect. The diagram below illustrates the judgement process:

Fig 1: Magnitude of Effect



Stage 3: Determination of Significance

In EIA, the main purpose of the Landscape and Visual Impact Assessment is to assess whether the proposed development would have **significant** effects and what the nature of those effects would be. Judgements of significance are made by combining assessment of sensitivity of receptors and magnitude of the effect. The descriptors used are illustrated by the diagram below: (based on EIA significance evaluation matrix, IEMA Special report 2011). Judgements are made in accordance with the guidelines set out at paras 5.56 and 6.44 of GLVIA3: In broad terms, large scale effects on highly sensitive receptors are more likely to be significant than small changes to less sensitive landscapes or visual receptors.

For the purpose of this report, significance has been assessed by the Overall Profile method (GLVIA3 para 3.30). Judgements against individual criteria have been combined to reach an overall conclusion on significance.

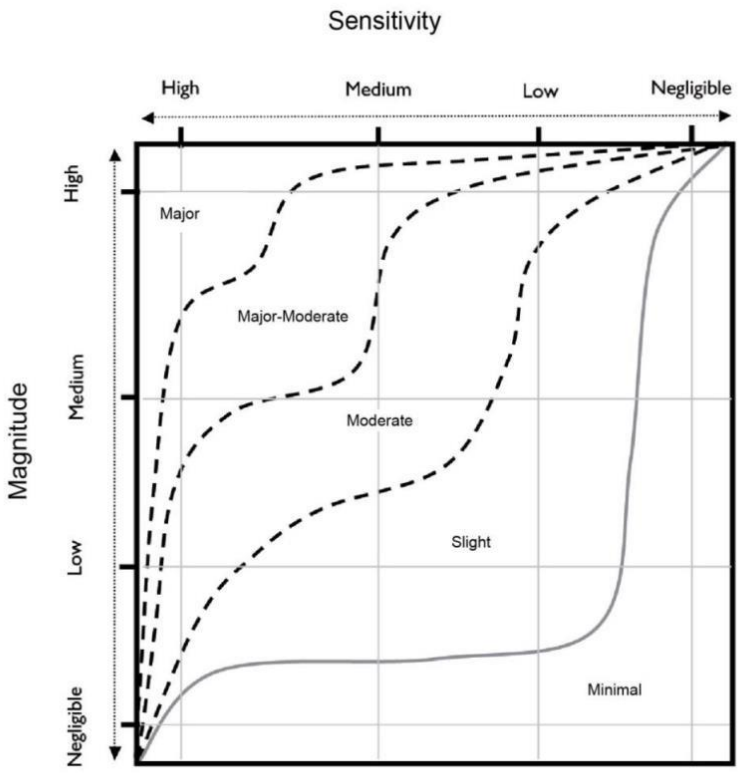
Adverse effects are those that result in the loss or dilution of baseline characteristics or qualities. The effects will work against landscape strategy guidelines or policies.

Beneficial effects will strengthen or protect positive baseline characteristics and qualities. They will tend to contribute to landscape strategies / policies.

Neutral effects have neither positive nor negative effects on baseline characteristics or qualities. They have no impact on landscape strategies or policies.

Where intermediate ratings are given, e.g. “Moderate to Minor”, this indicates an effect that is both less than Moderate and more than Minor, rather than one which varies across the range.

Figure 2: Significance of Effect



Stage 4 - Mitigation Proposals

The LVIA process has been integrated with and informed the design process. Assessments have been made as to how potential effects can be mitigated, through siting or design and the significance with mitigation in place is reassessed, thereby incorporating the effects of mitigation in the assessment.

This is a process that involves all members of the project team and several iterations of the scheme design. The result is to arrive at a scheme that is considered to meet the clients brief and to have the lowest residual significant impacts.

Conclusions

The conclusion summarises the Landscape and Visual Impact Assessment and sets out the overall outcome of the assessment, considering potential changes to the site’s context or mitigation.