

APPENDIX 10.1 - METHODOLOGY

1 METHODOLOGY FOR THE ASSESSMENT OF LANDSCAPE EFFECTS

1.1 Introduction

- 1.1.1 The significance of the landscape effects identified is determined by a consideration of the sensitivity of the landscape receptors and the magnitude of the effects on the landscape.
- 1.1.2 The nature or sensitivity of a landscape receptor combines judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape, as defined in the GLVIA glossary and in paragraph 5.39 of GLVIA 3. Paragraph 5.39 of GLVIA 3 also states that LVIA sensitivity is similar to the concept of landscape sensitivity used in landscape planning, but is not the same as it is specific to the particular project or development proposed and the location in question. Thus, assessment of sensitivity is not strictly part of the initial baseline study of landscape character; it is considered as part of the assessment of impacts of the development.
- 1.1.3 The nature or magnitude of the effects on the landscape receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects.
- 1.1.4 The landscape receptors include the elements that comprise the landscape features present within the site and the surrounding area, the Landscape Character Type (LCT) the site is within, the surrounding LCTs, and the designated landscapes within the 10km study area (including Sensitive Landscape Areas and Gardens and Designed Landscapes).

1.2 Susceptibility to change

- 1.2.1 This is defined as the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or particular aesthetic and perceptual aspects) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies (see paragraph 5.40 of GLVIA 3). As noted above (para. 6.2.11), susceptibility is combined with landscape value (see below) to determine the sensitivity of a receptor landscape to the type of change proposed. Susceptibility and

sensitivity are therefore not the same, in the context of LVIA. Table 1 explains how criteria are applied to arrive at an assessment of susceptibility to change in this LVIA.

Table 1: Criteria for the Assessment of Susceptibility to Change	
Level	Typical Criteria
High	Key characteristics of the landscape are highly vulnerable to change. The nature of the development would result in a significant change in character.
Medium	Some of the key characteristics of the landscape are vulnerable to change. Although the landscape may have some ability to absorb some development, it is likely to cause some change in character.
Low	Few of the key characteristics of the landscape are vulnerable to change. The landscape is likely to be able to accommodate development with only minor change in character.

1.2.2 Factors that influence the susceptibility of the landscape to change of the sort associated with industrial development include:

- Landform: Simple, large scale predominantly flat landforms tend to have a lower susceptibility to change with very complex landforms exhibiting strong topographical variety at the other end of the scale.
- Skylines: A visual component of landscape character but obviously interdependent with topography. Where the development has no relationship to the skyline the susceptibility to change is low. Where there is a strong relationship to prominent, simple and undeveloped skylines, the opposite is the case.
- Land cover: Simple, large-scale patterns (large conifer plantations, arable fields), and/or regularly disturbed, fragmented land covers are less susceptible to change. Intricate, varied patterns, and undisturbed consistent patterns of land cover or land use, and historic field patterns are more susceptible to change.
- Scale: Large scale featureless landscapes have a lower susceptibility to change with, at the opposite end of the scale, very small scale intricate landscapes with human scale indicators
- Enclosure: Enclosed landscapes are considered to have a lower susceptibility to change with open and exposed landscapes at the other end of the scale.
- Intervisibility: As with skylines, this is a visual component of landscape character but obviously interdependent with enclosure. As might be expected, landscapes which are self-contained with restricted intervisibility have a lower susceptibility to change than landscapes which are extensively intervisible and part of a wider landscape.

- **Condition:** Landscapes with a low level of intactness with landscape elements in poor state of repair are considered to have a lower susceptibility to change with, on the other hand, landscapes having a high level of intactness and a very good state of repair having a higher susceptibility to change.
- **Typicality and Rarity:** A lower susceptibility to change is associated with areas which have no rare features or a weak association with the key characteristics of the landscape. Conversely, a higher susceptibility to change is associated with areas which have rare features of regional importance or a very strong correspondence with the key characteristics of the landscape.
- **Views and Landmarks:** As with skylines and intervisibility, this is a visual component of landscape character but has some relationship to typicality and rarity. An area which contains no landmarks and is not a feature in local views is considered to have a lower susceptibility. On the other hand, a landscape which includes important landmarks or is important in views across a wide area has a higher susceptibility.
- **Tranquillity including noise and lighting:** Areas which are not tranquil, having much human activity, noise and light, are considered to have a lower susceptibility to change and vice versa.
- **Remoteness:** Presence or proximity to human activity or modern development or industrial structures e.g. utilities, infrastructure, decreases susceptibility, whereas areas having a strong sense of remoteness; being either physically remote or having a perception of being remote, are considered to have a higher susceptibility to change.
- **Visual Receptors:** As with skylines, intervisibility, and views and landmarks, this is a visual component of landscape character but obviously has a strong converse relationship to remoteness. In other words, locations having a higher visibility from main transport routes and a larger number of properties are considered to have a higher susceptibility to changes whereas areas with a low number of viewers from properties and transport routes would have a lower susceptibility.

1.3 Landscape value

1.3.1 Assessment of value is concerned with the relative value attached to different landscapes by society. A consideration of value at the baseline stage informs judgements of the significance of effects. Landscapes can be valued by different

people for different reasons connected to a range of factors including landscape quality (condition), scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects and associations (see GLVIA 3 Box 5.1 for definitions). This consensus can be recognised at a local, regional or national or international scale. Table 2 explains how criteria are applied to arrive at an assessment of landscape value in this LVIA. It is derived from GLVIA 3.

Table 2: Criteria for the assessment of landscape value			
Value	Typical criteria	Typical scale	Typical examples
High	<ul style="list-style-type: none"> • Excellent condition, high importance, scenic quality, rarity • No or limited potential for substitution 	International, National, regional	<ul style="list-style-type: none"> • World Heritage Site, National Park, National Scenic Areas (NSAs), Gardens and Designed Landscapes
Medium	<ul style="list-style-type: none"> • Good condition, medium importance, scenic quality, rarity • Some potential for substitution 	Regional, local authority, local community	<ul style="list-style-type: none"> • Local landscape designations • Undesignated but value expressed for instance in demonstrable use
Low	<ul style="list-style-type: none"> • Poor condition, low importance, scenic quality, rarity 	Local community	<ul style="list-style-type: none"> • Areas identified as having some redeeming feature or features and possibly identified for improvement • Areas identified for recovery

1.3.2 The EIA Regulations do not require study of whether a development complies with planning policy. Planning policy is, however, important and relevant to LVIA when it is a recognition or reflection of the value placed upon a particular landscape or its attributes by society. Thus, designations like National Parks and NSAs have relevance since they identify a consensus about this aforesaid value. Reference to planning policy can therefore assist the assessor in identifying sensitive receptors.

1.4 Sensitivity of the landscape receptors to the development

1.4.1 As described above, sensitivity combines judgements on the susceptibility of landscape receptors to change of the type proposed, with the value attached to the landscape. Generally, a higher sensitivity will be ascribed to landscapes which have a high value, and which are highly susceptible to change, and vice versa.

1.4.2 For the purposes of this LVIA, sensitivity is defined through application of the typical criteria described in Table 3 below:

Level	Typical criteria
High	Most of the key characteristics and qualities of the landscape are susceptible to change from the type of development being assessed and/or the value ascribed to the landscape is high.
Medium	Some of the key characteristics and qualities of the landscape are susceptible to change from the type of development being assessed and/or the value ascribed to the landscape is medium
Low	The key characteristics and qualities of the landscape are robust and are less likely to be adversely affected by the type of development being assessed and/or the value ascribed to the landscape is low.

1.5 Magnitude of landscape impacts

1.5.1 Table 2 explains how criteria are applied to arrive at an assessment of magnitude and is derived from GLVIA 3.

Level	Typical Criteria (not all of which need be applicable)
High	<ul style="list-style-type: none"> • Total loss of or major alteration to key features or perceptual aspects of the baseline and/or the addition of new features considered to be totally uncharacteristic when set within the attributes of the receiving landscape • The effects would be perceived over a large area influencing several landscape character types/areas • The effects would be long term (e.g. over 10 years) and/or irreversible
Medium	<ul style="list-style-type: none"> • Partial loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may be prominent but may not be considered substantially uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the scale of the landscape character type/area within which the proposal lies • The effects would be medium term (e.g. 5 to 10 years) and/or partially reversible
Low	<ul style="list-style-type: none"> • Minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may not be considered uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the level of the immediate setting of the site • The effects would be short term (e.g. 0 to 5 years) and/or reversible
Negligible	<ul style="list-style-type: none"> • Very minor or no loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that are not uncharacteristic with the surrounding landscape - approximating the 'no change' situation • The effects would be at the site level, within the development site itself • The effects would be very short term (e.g. less than 1 year) and/or reversible

1.6 Significance of the landscape effects

1.6.1 Consideration of the sensitivity of the landscape receptors to the development and the magnitude of the change resulting from the development, determines the level of

the predicted effect, and its significance. The relationship between sensitivity and magnitude to reach the level of effect is sometimes presented in the form of a matrix. However, such a matrix may lead to the same weighting of each criteria, which might not always be appropriate and may lead to a formulaic approach. Various different scenarios of susceptibility to change, landscape value, the size or scale, geographical extent and/or duration and reversibility of effects could apply to result in significant effects, therefore descriptions of how the level of effect has been determined are provided (see paragraphs 3.34 and 3.35 of GLVIA 3).

1.6.2 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account mitigation measures, and different stages of the project lifecycle. Table 5 assigns typical criteria to each level, as applied in this assessment. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

Level		Typical criteria
Significant	Severe	The proposals are wholly out of character with the existing situation, both locally and on the wider scale, and/or the landscape receptors are of high sensitivity
	Substantial	The proposals have a large effect within the context of the wider area, and/or the landscape receptors are of high sensitivity
Not Significant	Moderate	The proposals have a noticeable effect within the context of the wider area, and/or the landscape receptors are of medium sensitivity
	Slight	The proposals have some, but only a limited effect within the mainly local context, and/or the landscape receptors are of low sensitivity
	Imperceptible	The degree of change is so small as to have little or no effect, and/or the landscape receptors are of low sensitivity

1.6.3 Effects that are ‘moderate to substantial’ or greater are considered to result in significant effects upon a receptor. Where significant effects are predicted, these are highlighted in bold text. Effects may be locally significant or may extend over a wide area. Whilst significant adverse effects may be identified in connection with a proposed development, this does not imply necessarily that the development taken as a whole would be unacceptable in environmental terms.

2 METHODOLOGY FOR THE ASSESSMENT OF VISUAL EFFECTS

2.1 Introduction

2.1.1 As with landscape effects, a consideration of the sensitivity of visual receptors (people) and the magnitude of the change determines the level of significance of the predicted effect on views and visual amenity.

2.1.2 The nature or sensitivity of visual receptor considers their susceptibility to the type of change or development proposed and the value people attach to the affected views (GLVIA 3, paragraph 6.31).

2.1.3 The nature or magnitude of the effects on visual receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects. In visual assessment the magnitude is also determined by the distance from the viewer, the extent of change in the field of vision, the proportion or number of viewers affected and the duration of activity apparent from each viewpoint, or a sequence of points that may have transient views, for instance along a road.

2.2 Sensitivity of visual receptors

2.2.1 Visual receptors include the public or community at large, residents, visitors, workers and people travelling through the landscape. The types of viewers, the numbers, the duration of the view and the importance of the view or views of and from valued areas define the sensitivity of a visual receptor.

2.2.2 In the context of this development, the scale of the sensitivity of the visual receptors is as outlined in Table 1 and is derived from GLVIA 3.

Table 1: Criteria for the Assessment of Sensitivity of Visual Receptors	
Level	Typical criteria
High	<ul style="list-style-type: none"> • Public views within areas of protected landscapes such as National Park and AONB • Users of outdoor recreational facilities including public rights of way, or visitors to heritage assets or other attractions whose attention or interest is focused on the landscape and where tolerance to change is likely to be low • Communities where the development results in changes in the landscape setting or valued views enjoyed by the community • Occupiers of residential properties with views affected by the development • Tourists travelling through or past the affected landscape in cars, on trains or other transport routes whose attention or interest is focused on the landscape and where tolerance to change is likely to be low

Table 1: Criteria for the Assessment of Sensitivity of Visual Receptors	
Level	Typical criteria
Medium	<ul style="list-style-type: none"> • People, such as commuters and hauliers (not tourists) travelling through or past the affected landscape in cars, on trains or other transport routes • Users of outdoor recreation facilities where nature of view is only partially relevant to the activity being undertaken
Low	<ul style="list-style-type: none"> • People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape • People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity, not their surroundings, and where setting is not important to the quality of working life • Views from urban roads, footways, railways and industrial areas whose attention may be focused away from the landscape and where tolerance to change is likely to be high

2.3 Magnitude of visual impacts

2.3.1 Table 2 explains how criteria are applied to arrive at an assessment of magnitude and is derived from GLVIA 3.

Table 2: Criteria for the Assessment of Magnitude of Visual Impacts	
Level	Typical criteria (not all of which need be applicable)
High	<ul style="list-style-type: none"> • Total loss of or major alteration to views and/or the addition of new features that would be very prominent, and/or would greatly contrast with the existing view • Full, open views, experienced for the majority of a journey or full duration of an activity • The views would be close, direct and/or totally occupied by the proposed development • The effects would be long term (e.g. over 10 years) and/or irreversible
Medium	<ul style="list-style-type: none"> • Partial loss of or alteration to views and/or the addition of new features that would be prominent, and/or would contrast with the existing view • Partial views, experienced for part of a journey or activity • The views would be middle distance, partially oblique and/or partially occupied by the proposed development • The effects would be medium term (e.g. 5 to 10 years) and/or partially reversible
Low	<ul style="list-style-type: none"> • Minor loss of or alteration to views and/or the addition of new features that would not be prominent, and/or would not contrast with the existing view • Glimpsed views, experienced for a small part of a journey or activity • The views would be distant, oblique and/or only a small part of the view would be occupied by the proposed development • The effects would be short term (e.g. 0 to 5 years) and/or reversible
Negligible	<ul style="list-style-type: none"> • Very minor or no loss of or alteration to views and/or the addition of new features that would be almost imperceptible or imperceptible - approximating the 'no change' situation • Very brief glimpsed views • The views would be very distant, very oblique and/or only a tiny part of the view would be occupied by the proposed development • The effects would be very short term (e.g. less than 1 year) and/or reversible

2.4 Significance of the visual effects

- 2.4.1 As with landscape effects, consideration of the sensitivity of the visual receptors to the development and the magnitude of the change resulting from the development, determines the level of the predicted effect, and its significance. Again, a matrix is not used, descriptions of how the levels of impact have been determined are provided.
- 2.4.2 Table 3 assigns typical criteria to each level for visual effects, as applied in this assessment; however, it should be noted that various different scenarios of susceptibility to change, the value of views, the size or scale, geographical extent and/or duration and reversibility of effects could apply to result in the overall level of effects as described in the assessment (see paragraphs 3.34 and 3.35 of GLVIA 3).
- 2.4.3 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account mitigation measures, and different stages of the project lifecycle. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

Table 3: Criteria for determining the overall level of visual effects		
	Level	Typical criteria
Significant	Severe	The proposals would dominate views and would be wholly out of character with the existing situation, the changes would be experienced by a very large number of people, and/or the visual receptors would be of high sensitivity to the changes.
	Substantial	The proposals would be prominent and contrasting with the existing views, the changes would be experienced by a large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Not significant	Moderate	The proposals would be noticeable in views but not dominating, the changes would be experienced by a medium number of people, and/or the visual receptors would be of medium sensitivity to the changes.
	Slight	The proposals would result in small changes to the views, the changes would be experienced by a small number of people, and/or the visual receptors would be of low sensitivity to the changes.
	Imperceptible	The proposals would be imperceptible in views, the changes would be experienced by a very small number of people, and/or the visual receptors would be of low sensitivity to the changes.

- 2.4.4 Effects that are ‘moderate to substantial’ or greater are considered to result in significant effects upon a receptor. Where significant effects are predicted, these are highlighted in bold text. Again, whilst significant adverse effects may be identified in

connection with a proposed development, this does not imply necessarily that the development taken as a whole would be unacceptable in environmental terms.

3 METHODOLOGY FOR THE ASSESSMENT OF CUMULATIVE EFFECTS

3.1 Introduction

3.1.1 Cumulative effects are defined as the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together.

3.2 Cumulative Landscape Effects

3.2.1 Cumulative landscape effects are likely to include effects:

- on the fabric of the landscape as a result of removal of changes in individual elements or features of the landscape and/or the introduction of new elements or features;
- on the aesthetic aspects of the landscape – for example its scale, sense of enclosure, diversity, pattern and colour, and/or on its perceptual or experiential attributes, such as a sense of naturalness, remoteness or tranquillity;
- on the overall character of the landscape as a result of changes in the landscape fabric and/or in aesthetic or perceptual aspects, leading to the modification of key characteristics and possible creation of new landscape character if the changes are substantial enough.

1.1.1 Any cumulative landscape effects would be likely to be greatest in areas that are of greater susceptibility to change and of higher value, all other factors being equal. Other factors that would determine the level of cumulative effects include the size or scale of the cumulative effects, the extent of the geographical area influenced by the cumulative effects, and the duration of the cumulative effects. Areas where there are concentrations of people and where the landscape character is an accepted backdrop to settlements could also be particularly sensitive to cumulative landscape effects.

1.1.2 Significant levels of adverse cumulative landscape impacts are more likely to occur where similar development schemes would be close to the proposed development and the ZTVs overlap, resulting in energy developments becoming a greater characteristic of the landscape, changing the landscape character.

3.3 Cumulative Visual Effects

3.3.1 The study of cumulative visual effects concerns the effects on views and visual amenity enjoyed by people, which may result either from adding the effects of the development to other developments, or their combined effect. This study has considered the potential for the effects given in Table 9 (taken from GLVIA 3, Table 7.1):

Table 9: Types of Cumulative Visual Effects		
Generic	Specific	Characteristics
Combined		
Occurs where the observer is able to see two or more developments from one viewpoint	In combination	Where two or more developments are or would be within the observer's arc of vision at the same time without moving her/his head
	In succession	Where the observer has to turn her/his head to see the various developments – actual and visualised
Sequential		
Occurs when the observer has to move to another viewpoint to see the same or different developments. Sequential effects may be assessed for travel along regularly used routes such as major roads or popular paths	Frequently sequential	Where the features appear regularly and with short time lapses between instances depending on speed of travel and distance between the viewpoints
	Occasionally sequential	Where longer time lapses between appearances would occur because the observer is moving very slowly and/or there are larger distances between the viewpoints

3.3.2 Cumulative visual effects are considered in terms of:

- the susceptibility of the visual receptors that have been assessed, to changes in views and visual amenity;
- the value attached to the views they experience;
- the size or scale of the cumulative visual effects identified;
- the geographical extent of the cumulative visual effects identified;
- the duration of the cumulative visual effects, including the timescales relating to both the project being assessed and the other projects being considered, and the extent to which the cumulative effects may be considered reversible.

3.3.3 In addition to above, for sequential visibility, potential cumulative visual effects are considered in terms of:

- the frequency and duration of the sequential effects (frequent or occasional, glimpsed or prolonged);
- the scale and nature of the views (near or distant views, oblique or direct views, filtered or open views);
- the speed of travel and distance and time between views; and
- the contexts of the sequential views.

3.3.1 An effect may exist but may not be important. Significant adverse cumulative visual effects are anticipated to be more likely in areas where more than one development is visible at the same time and in the same field of view as the proposed development, and/or particularly where the development(s) are within close distance to the viewer and there are open views.

4 METHODOLOGY FOR THE PRODUCTION OF THE ZONES OF THEORETICAL VISIBILITY (ZTVS)

4.1.1 Zones of Theoretical Visibility (ZTVs) are also referred to as Zones of Visual Influence diagrams (ZVIs) or Visual Envelope Maps (VEMs); however, ZTV is the preferred term as it emphasises the key factors of the plans – that they are theoretical and that they indicate potential visibility by coloured shading overlain on an Ordnance Survey background, from the areas in the surrounding landscape in which the Development is theoretically visible.

4.1.2 ZTVs are a desk-based technique and provide a framework and structure for the subsequent fieldwork. They do not convey the nature or significance of effects.

4.1.3 For this project the theoretical visibility is based on the bare ground topography, the Digital Terrain Model (DTM), which was obtained from the Ordnance Survey Terrain 50 data and is thus the worst case scenario.

4.1.4 The location and height data for the proposed and previously approved structures within the site was then added to the DTM. QGIS software was used to compute theoretical inter-visibility, which takes into account the curvature of the Earth.

4.1.5 The ZTVs are indicative of general areas from which the whole or part of the Development could be potentially visible, within the limits of accuracy of the data used. The

ZTV analysis does not indicate magnitude of impact, merely the presence of a theoretical line of sight. They also do not address the effects of distance.

4.1.6 The results of the analysis are mapped by colour shading to indicate if any of the development is theoretically visible. This information is then overlaid onto the OS map of the Site and surrounding area so that the information may be properly understood and analysed.

4.1.7 The ZTV analysis uses a test height from the normal eye level of a standing person (at approximately 2m above ground level). Theoretical visibility from cars and upper storeys of buildings may vary somewhat.

5 VIEWPOINT SELECTION

5.1.1 Viewpoints are chosen to illustrate the potential visual effects of a scheme. The principal criterion is that they must be representative of the range of views and viewer types likely to experience the development (paragraphs 6.19 and 6.20 of GLVIA 3). Specific points may also be chosen because they are important existing viewpoints in the landscape.

5.1.2 View types can include:

- areas of high value such as designated landscapes, long distance footpaths and cycle routes, etc.;
- illustrations of different LCTs, rather than specific receptors;
- viewpoints that may have wide panoramic views or, by contrast, focused views;
- viewpoints at different distances from the site;
- viewpoints at different elevations; and
- viewpoints from different aspects.

5.1.3 Viewer types can include:

- views from residences, roads or recreational points where visitors may experience the landscape; and
- viewpoints where viewers would be likely to be stationary, as well as those where they would be moving through the landscape.

5.1.4 A series of photographs were taken during a site visit in March 2021 from the representative viewpoints. The photographs were taken with a full frame digital SLR camera with a 50mm fixed length, mounted on a stable, levelled tripod with a professional panoramic

head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software.

6 METHODOLOGY FOR THE PRODUCTION OF THE PHOTOMONTAGES AND WIREFRAMES

6.1.1 The photographs, photomontages and wireframes produced for this LVIA are in accordance with Landscape Institute Technical Guidance Note 06/19¹ on visual representation of development proposals.

6.2 Use of Photomontages

6.2.1 Photomontages are intended to provide an indication of how a photograph from a chosen viewpoint would look if the development were already operational. Therefore, they must be constructed accurately in order that they can be demonstrated to be a fair representation.

6.3 Wireframes

6.3.1 Wireframes simply overlay the outline of the development on the photographs to illustrate how much of the development it likely to be visible.

6.4 Photography

6.4.1 The photographs were taken with a full frame digital SLR camera (Nikon D800) with a fixed 50mm lens, mounted on a stable, levelled tripod with a professional panoramic head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software. The position of the viewpoint location was recorded using a highly accurate GPS receiver.

6.4.2 Appropriate control points within the photo are surveyed to a high level of accuracy to allow the development to be accurately correlated to the photo. This enables Type 4 visualisations to be produced.

6.5 Wireframe production

6.5.1 Computer-generated wireframes of the panorama of the view were constructed using computer software. The wireframes show a DTM for a defined viewpoint, direction and field of view. A correctly dimensioned 3D wireframe model of the development was generated by

¹ Visual representation of development proposals, Landscape Institute Technical Guidance Note 06/19 (17 September 2019)

the computer software. These were placed onto the DTM to scale, and in the correct position along with the control points surveyed when the photography was taken.

6.5.2 The wireframe is then matched to the photograph by adjusting view direction and other parameters until all major topographic features are consistent between photograph and wireframe.

6.6 Photomontage

6.6.1 For each photomontage viewpoint, the detailed model was rendered to a digital image using a lighting model in the computer software consistent with conditions within the photograph of that viewpoint. The rendered image used the same viewpoint, bearing and field of view parameters as the previously matched wireframes.

6.6.2 The photomontages were produced by overlaying the rendered image on the photograph. Final adjustments were then made to brightness and contrast of the rendered image to match it to the photograph. Any rendered items that would be obscured by foreground detail within the photograph were then digitally removed using Photoshop. The resulting photomontage was then saved as high-resolution full-colour digital image.

6.6.3 For this LVIA, the photomontages and wireframes have been presented with a horizontal field of view of 90 degrees to illustrate the full extent of the Development in the context of the surrounding landscape.

6.7 Interpretation

6.7.1 When printed at the correct size, the photographs, wireframes and photomontages should be viewed at a comfortable arms length.

6.7.2 Where photomontages have been produced, there is an inevitable element of judgement inherent in the representation of the changes shown in the finished image. The process relies upon the judgement of an experienced professional.

6.7.3 Because a photomontage is based upon an actual photograph, it represents the lighting conditions at the time that it was taken. This obviously changes with weather, time of day and season. Therefore, the perceptibility of the changes represented and the visual character of the development could vary from the image created. However, if carefully constructed, the photomontages can provide a very good guide of the position in the view and likely appearance.

6.7.4 Like a photograph, a photomontage is, at best, a representation of a view and, as such, cannot reproduce the actual experience of being at the location depicted.