LVA

Padbury Brook

Landscape and Visual Appraisal

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ADAS ref:	1051765-L-RP-01 (01)
Date:	November 2022

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Quality Assurance

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK ADAS Ltd.

Issue	Date	Amendments
01	23/08/2022	Draft for comment

1. Introduction

1.1. Landscape and Visual Appraisal (LVA) is a tool used to identify and assess the effects of change resulting from development on both the landscape as an environmental resource and on people's views and visual amenity.

1.2. An LVA has been undertaken by ADAS for the proposed solar park development described as 'the proposed development' on land near Stratton Audley, Cherwell District described as 'the site', the location of which is shown in **Figure 1** in **Appendix 1**. Photographs of the landscape around the site can be found in **Appendix 2**. This report has been prepared on behalf of the applicant and forms part of a suite of documents accompanying the planning application for this development proposal.

1.3. This report identifies planning policy relevant to landscape and visual matters, although it is not within the scope of an LVA to describe whether the proposed development is compliant with these planning policies. It is also not within the scope of this report to determine whether the identified effects should be considered acceptable; the latter is a planning balance decision by which the determining planning authority considers all matters relating to the proposed development.

Objectives of the report

1.4. The objectives of this report are to describe the findings of the LVA as follows:

1. To identify the planning policy context relevant to landscape and visual matters on the site.
2. To describe the baseline landscape character of the site and its surroundings and identify landscape elements associated with the site.
3. To evaluate the landscape's value and susceptibility to change arising from this specific development proposal, which together, provide a measure of the sensitivity of the landscape receptors. Then, considering the magnitude of change, assess the effect that the proposal will have on the local landscape character and landscape elements.
4. To identify potential visual receptors (people who would be able to see the development).
5. To evaluate the sensitivity to change of the visual receptors. Then, considering the magnitude of change, assess the effects the proposal will have on visual amenity.
6. Identify mitigation proposals where these can reduce any potential adverse effects of the proposed development.

Structure of the report

1.5. The remainder of this report is structured in the following manner:

- Section 2 **Methodology**. Describes the methodology used to undertake the landscape and visual appraisal.
- Section 3 **Proposed development**. This section describes the proposed development.

- Section 4 **Planning policy context**. This describes the national, county and district level planning policy relevant to landscape and visual matters in relation to the proposed development.
- Section 5 **Landscape baseline**. This describes the landscape baseline information, identifying landscape receptors (landscape character of the site and the study area, along with the landscape elements within the site).
- Section 6 **Landscape appraisal.** This describes the potential effects of the proposed development on the landscape receptors identified in section 5.
- Section 7 **Visual baseline**. This part of the report identifies the visual receptors (people who would be able to see the development).
- Section 8 **Visual appraisal**. This describes the potential effects of the proposed development on the visual receptors identified in section 7.
- Section 9 **Landscape design**. This describes the indicative landscape scheme proposed as part of the development.
- Section 10 **Summary**. This final part of the report summarises the potential effects on the landscape and visual receptors.

Author of the report

1.6. This report was written by a Chartered Member of the Landscape Institute (CMLI), who is trained and experienced in undertaking landscape and visual appraisals. ADAS is a Landscape Institute registered practice and all work is prepared and reviewed internally by senior highly experienced landscape planners.

2. Methodology

Relevant guidance

2.1. For the purposes of this report, the methodology used takes account of and is based upon recommendations given in 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA3) (Third Edition 2013) (**Ref.1**), produced jointly by the Landscape Institute and the Institute of Environmental Management and Assessment. Terminology used within this report can be found in **Appendix 3** and is primarily based upon that found in GLVIA3 but also references other documents.

Landscape and visual appraisal methodology

2.2. The aim of the LVA is to identify, predict and evaluate potential key effects arising from the proposed development.

2.3. Landscape and visual appraisals are separate, though linked procedures. The appraisal of the potential effect on the landscape is carried out as an effect on the environmental resource, i.e. the physical landscape. Visual effects are assessed as an interrelated effect on population.

2.4. Landscape effects relate to changes to the features, character and quality of the landscape resource and how it is experienced. Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, and also consider people's responses to the changes and to the overall effect on visual amenity.

2.5. The process involves identifying landscape or visual receptors, judging their sensitivity and then combining this with judgments on the magnitude of change, to determine the level of effect on that receptor. The definitions of sensitivity, magnitude of change and level of effect are provided in the full methodology in **Appendix 4**. Potential effects arising from the proposed development are appraised at two stages:

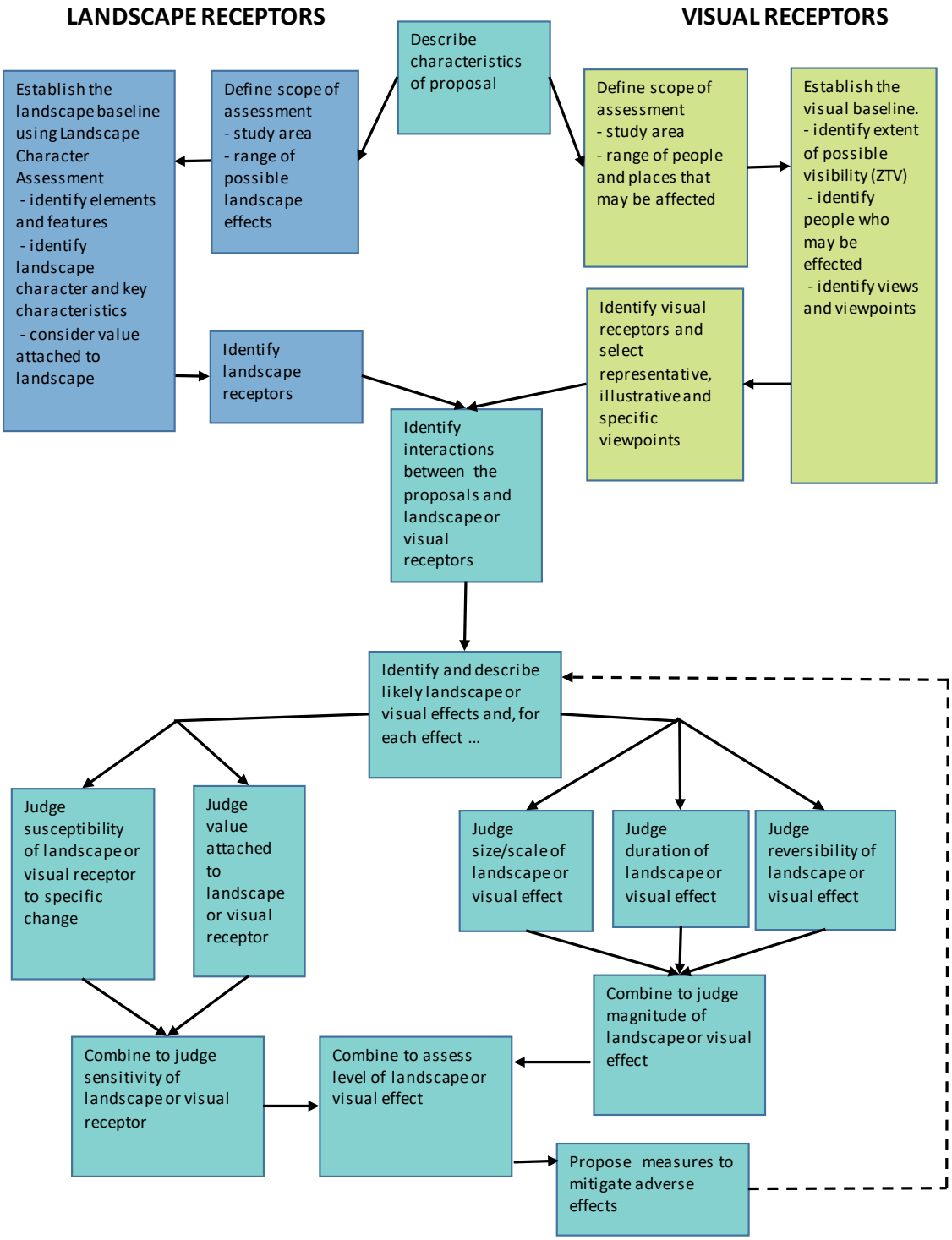
- At 'completion' of the proposed development comparing the existing site and proposed development at year 0 in the winter when any proposed landscape mitigation has little effect.
- At the 'residual' stage comparing the existing site and proposed development at year 15 in the summer when any proposed landscape mitigation has a full effect.

2.6. As this report is not a full Landscape and Visual Impact Assessment (LVIA) construction phase effects are not considered in large amounts of detail as the construction would be completed in a relatively short time span.

2.7. A description of effects determined to be 'moderate' or above is described in detail. Any effects identified below moderate will be briefly described in a table in the land and visual effects sections.

2.8. Figure 2.1 below describes the LVA process. The figure combines Figures 5.1 (Ref.1, page 71) and Figure 6.1 (Ref.1, page 99) found in GLVIA3.

Figure 2.1. Steps in Assessing Landscape and Visual Effects



2.9. Landscape effects are appraised at several scales. Firstly, at a site level including landscape features. Secondly, the area around the site (500m from the site) where effects would be noticeable. Thirdly, at a Landscape Character Area (LCA) level apprising the effects on the key characteristics of the LCA that the site sits within.

Site survey

2.10. The assessment contained in this report is based on field observations undertaken on 28 and 29 June 2022 whilst trees were in leaf. Use has also been made of O.S. Explorer Maps (1:25,000 scale), aerial images, and information obtained from character assessments at national, county and local level (where available).

Spatial scope

2.11. The spatial scope for all the baseline studies including topography, landscape designations and landscape character is a 3km radius from the site described as the 'study area'. Experience on similar projects and initial site appraisal, indicates that noticeable landscape and visual effects were likely to be limited beyond this distance. This is due in part to the scale of the proposed development, the quality and condition of the baseline landscape and also to screening provided from the surrounding landform, built environment and existing mature vegetation.

Mapping visibility

2.12. To establish the potential extent of visibility of the proposed development a Zone of Theoretical Visibility (ZTV) model was produced, based on the height of the proposed solar panels at a height of 2.4m, as illustrated in **Figure 5**. This ZTV was produced based on OS Terrain 50 data creating a Digital Surface Model which includes large blocks of vegetation and gives a representation of where the proposed development could be seen from, given the complex landform of the study area. The areas of woodland as shown in the National Forest Inventory have also been added to the ZTV model to give an understanding of how the woodland influences potential visibility.

2.13. The map indicates theoretical visibility only - that is, the areas within which there may be a line of sight. However, the proposal may exhibit lower visibility due to localised screening which is not represented by the Digital Surface Model. As such a ZTV is a guide only and has been supported by field survey.

2.14. This ZTV conveys how much of the proposed development may be visible from the areas shown. Areas in red would see a greater proportion of the proposed development such as the whole site, whilst areas in yellow might see a small part.

Consultations

2.15. Cherwell District Council (CDC) were consulted on the viewpoint location and methodology for the LVA. It its response it sated that:

> *"… a full Landscape Visual Assessment will be required to fully assess the potential impact of the scheme. The suggested viewpoints do appear to be adequate but the LVA should be conducted in accordance with GLVIA3".*

Visualisations

2.16. The production of photographs used as part of the report is proportionate to the level of appraisal and has been guided by 'Visual Representation of Development Proposals' (2019) (**Ref.2**), produced by the Landscape Institute. The methodology used to produce the viewpoint photographs can be found in **Appendix 5**.

2.17. All the viewpoint photographs are presented as Annotated Viewpoint Photographs (TYPE 1 visualisations) the aim of which is to represent context and extent of development and of key features. Photographs are reproduced at a size which aids clear understanding of the view and context, with annotations of key features that illustrate the extent of the site within the view. The viewpoints can be found in **Appendix 2**.

2.18. Five of the viewpoints have also been represented as Photomontages (TYPE 3 visualisations) the aim of which is to represent appearance, context, form and extent of the proposed development. They provide a reasonable level of locational and photographic accuracy. Type 3 visualisations are not accompanied by verification data, nor is a precise survey of features and camera locations required. These can be found in **Appendix 2**.

Limitations and assumptions

2.19. It has not been possible to enter the curtilage of private dwellings to check views as part of this assessment. In such cases, a reasonable worst-case assumption has been made in dealing with potential views from a publicly accessible point.

2.20. It was not possible to walk all the PRoW and drive all the roads within the study area, but an assessment was made based on views using Google Earth and reverse visibility from the site.

2.21. All visual receptors potentially considered to be most affected by the proposed development were visited.

2.22. A full cumulative impact assessment has not been undertaken as part of this report.

2.23. A night-time assessment has not been undertaken.

3. Proposed development

Description of the scheme

3.1. The Proposal is for the erection of a Solar Photovoltaic (PV) Array, with a total export capacity of up to 44 MW. Other features included as part of the proposed layout include:

- Boundary Fencing
- Inverter Stations
- Spares Containers
- Battery Stations
- DNO Substation
- CCTV Cameras
- Landscaping Works
- Internal Access Tracks
- Communication Mast
- Construction Compound
- Other Associated Infrastructure.

3.2. With regard to the design of the Arrays, a tracker system will be utilised, to orient the panels towards the sun throughout the day. The panels are covered by high transparency solar glass with an anti-reflective coating which minimises glint and glare, whilst also allowing the maximum absorption of the available sunlight. The panels are dark grey/blue in colour.

Access

3.3. Access to the site during both the Operational and Construction Phases will be gained via the existing agricultural access point off the unnamed single-track road, to the southern flank of the site. The access point will be fitted with a gate and a turning area for the benefit of larger construction vehicles entering the site.

4. Planning policy context

National planning policy and guidance

The National Planning Policy Framework (2021)

4.1. The 'National Planning Policy Framework' (NPPF) (2021) (**Ref.3**) aims to provide a planning framework within which the local community and local authorities can produce distinctive local plans which respond to local needs and priorities.

4.2. The NPPF promotes a presumption in favour of sustainable development, defined as:

> *"…meeting the needs of the present without compromising the ability of future generations to meet their own needs." (Ref. 3. Page 5, para. 7).*

4.3. The NPPF then identifies a number of aspects which should be considered in developing local plans and reviewing planning applications. Those of relevance to the landscape and visual considerations of the site and proposed development are listed below:

4.4. Section 12. Achieving well-designed places states:

> *"Planning policies and decisions should ensure that developments:*
>
> *a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;*
>
> *b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;*
>
> *c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);*
>
> *d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;" (Ref. 3. Page 39, para. 130).*

4.5. Section 15. Conserving and enhancing the natural environment states:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
>
> *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
>
> *c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;" (Ref. 3. Page 50, para. 174).*

4.6. Section 15 also notes at paragraphs 175 and 176 that:

> *Plans should: distinguish between the hierarchy of international, national and locally designated sites. (Ref. 3. Page 50, para. 175).*
>
> *Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues." (Ref. 3. Page 50, para. 176).*
>
> *"The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas." (Ref. 3. Page 50, para. 176).*

4.7. Section 15 also states that:

> *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
>
> *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
>
> *c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation." (Ref. 3. Page 53, para. 185).*

Renewable and Low Carbon Energy (June 2015)

4.8. In relation to the consideration of solar farms, this guidance notes that key considerations include the need for solar farms to be of adequate size and receive enough sun for efficient energy generation; and the need to consider the potential impacts on designated landscapes and local amenity. The guidance specifically notes that.

> *"The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively.*
>
> *Solar farms are normally temporary structures and planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use." (013 Reference ID: 5-013-20150327)*

4.9. In terms of design, decision makers are guided to consider the colour and appearance of the panels, the potential for glint and glare (and the potential effect of that on neighbours); the potential need for security measures such as fencing and lighting and:

> *"…the potential to mitigate landscape and visual impacts through, for example, screening with native hedges." (013 Reference ID: 5-013-20150327)*

4.10. The guidance notes the need for cumulative impacts to be considered, whilst also stating:

"…in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography the area of a zone of visual influence could be zero." (013 Reference ID: 5-013-20150327)

Local planning context

4.11. Local Authorities are responsible for the protection of the landscape within the planning system and the formulation of policies to support this obligation. Treatment of the landscape within the planning process relevant to the current proposed development is covered by policies contained within the 'The Cherwell Local Plan 2011 – 2031' (2015) (**Ref.4**). The tables below contain a list of policies relevant to landscape matters.

Table 4.1: Relevant policies of The Cherwell Local Plan 2011 – 2031 (2015).

The Cherwell Local Plan 2011 – 2031	
Policy ESD5: Renewable Energy	*The Council supports renewable and low carbon energy provision wherever any adverse impacts can be addressed satisfactorily. The potential local environmental, economic and community benefits of renewable energy schemes will be a material consideration in determining planning applications.* *Planning applications involving renewable energy development will be encouraged provided that there is no unacceptable adverse impact, including cumulative impact, on the following issues, which are considered to be of particular local significance in Cherwell:* • *Landscape and biodiversity including designations, protected habitats and species, and Conservation Target Areas* • *Visual impacts on local landscapes* *…*
Policy ESD 13: Local Landscape Protection and Enhancement	*Opportunities will be sought to secure the enhancement of the character and appearance of the landscape, particularly in urban fringe locations, through the restoration, management or enhancement of existing landscapes, features or habitats and where appropriate the creation of new ones, including the planting of woodlands, trees and hedgerows.* *Development will be expected to respect and enhance local landscape character, securing appropriate mitigation where damage to local landscape character cannot be avoided. Proposals will not be permitted if they would:* • *Cause undue visual intrusion into the open countryside* • *Cause undue harm to important natural landscape features and topography* • *Be inconsistent with local character* • *Impact on areas judged to have a high level of tranquillity* • *Harm the setting of settlements, buildings, structures or other landmark features, or* • *Harm the historic value of the landscape.*

The Cherwell Local Plan 2011 – 2031	
	Development proposals should have regard to the information and advice contained in the Council's Countryside Design Summary Supplementary Planning Guidance, and the Oxfordshire Wildlife and Landscape Study (OWLS), and be accompanied by a landscape assessment where appropriate.
Policy ESD 15: The Character of the Built and Historic Environment	*Successful design is founded upon an understanding and respect for an area's unique built, natural and cultural context. New development will be expected to complement and enhance the character of its context through sensitive siting, layout and high quality design. All new development will be required to meet high design standards. Where development is in the vicinity of any of the District's distinctive natural or historic assets, delivering high quality design that complements the asset will be essential.* *New development proposals should:* *…* • *Contribute positively to an area's character and identity by creating or reinforcing local distinctiveness and respecting local topography and landscape features, including skylines, valley floors, significant trees, historic boundaries, landmarks, features or views, in particular within designated landscapes, within the Cherwell Valley and within conservation areas and their setting* *…*

4.12. Some of the saved polices from the 'Adopted Cherwell Local Plan 1996' (1996) (**Ref.5**). The tables below contain a list of policies relevant to landscape matters.

Table 4.1: Relevant policies of Adopted Cherwell Local Plan 1996.

Adopted Cherwell Local Plan 1996	
C7 Landscape conservation	*DEVELOPMENT WILL NOT NORMALLY BE PERMITTED IF IT WOULD CAUSE DEMONSTRABLE HARM TO THE TOPOGRAPHY AND CHARACTER OF THE LANDSCAPE.*
C8 Sporadic development in the open countryside	*SPORADIC DEVELOPMENT IN THE OPEN COUNTRYSIDE INCLUDING DEVELOPMENTS IN THE VICINITY OF MOTORWAY OR MAJOR ROAD JUNCTIONS WILL GENERALLY BE RESISTED*
C9 Scale of development compatible with a rural location	*BEYOND THE EXISTING AND PLANNED LIMITS OF THE TOWNS OF BANBURY AND BICESTER DEVELOPMENT OF A TYPE, SIZE OR SCALE THAT IS INCOMPATIBLE WITH A RURAL LOCATION WILL NORMALLY BE RESISTED*
C28 Layout, design and external appearance of new development	*CONTROL WILL BE EXERCISED OVER ALL NEW DEVELOPMENT, INCLUDING CONVERSIONS AND EXTENSIONS, TO ENSURE THAT THE STANDARDS OF LAYOUT, DESIGN AND EXTERNAL APPEARANCE, INCLUDING THE CHOICE OF EXTERNAL-FINISH MATERIALS, ARE SYMPATHETIC TO THE CHARACTER OF THE URBAN OR RURAL CONTEXT OF THAT DEVELOPMENT. IN SENSITIVE AREAS SUCH AS CONSERVATION AREAS, THE AREA OF OUTSTANDING NATURAL BEAUTY AND AREAS OF HIGH LANDSCAPE VALUE, DEVELOPMENT WILL BE REQUIRED TO BE OF A HIGH STANDARD AND THE USE OF*

Adopted Cherwell Local Plan 1996	
	TRADITIONAL LOCAL BUILDING MATERIALS WILL NORMALLY BE REQUIRED.

5. Landscape baseline

National landscape character

5.1. At the national level, the site and the majority of the study area is located within the '108 Upper Thames Clay Vales National character Area' (NCA) (2014) (**Ref.6**). The NCA profile for this area describes its characteristics as follows:

> *"The Upper Thames Clay Vales National Character Area (NCA) is a broad belt of open, gently undulating lowland farmland on predominantly Jurassic and Cretaceous clays. Blenheim Palace World Heritage Site falls within the NCA, along with around 5,000 ha of the North Wessex Downs Area of Outstanding Natural Beauty (AONB) and smaller areas of the Chilterns AONB and the Cotswolds AONB. Two of its Special Areas of Conservation (SAC) are designated for their lowland meadow vegetation communities, while Little Wittenham SAC has one of the most studied great crested newt populations in the UK. There are contrasting landscapes, including enclosed pastures of the claylands with wet valleys, mixed farming, hedges, hedge trees and field trees and more settled, open, arable lands. Mature field oaks give a parkland feel in many places." (Ref. 6. Page 3, para. 1).*

5.2. Given the size and nature of the proposed development there would be no discernible changes to the key characteristics of the NCA and it will not be considered any further in this report.

County landscape character

5.3. The website 'Oxfordshire Wildlife & Landscape Study' (2004) (**Ref. 7**) defines the Landscape Character Types (LCT) within Oxfordshire. The majority (northern and central sections) of the site sits within the Rolling Farmland LCT, described as:

> *"This rolling farmland landscape is dominated by large-scale arable farming, but still supports a relatively wide range of locally important and priority habitats."* (Ref. 7).

5.4. The site sits specially within the Godington Hall (BC/2) Local Character Area. This is described as:

> *"Medium-sized arable fields dominate the landscape and there is some semi-improved grassland. Fields are enclosed by low, well-managed hawthorn and blackthorn hedges. There are scattered oak, ash and willow trees and small copses surrounding farmhouses. There are also a number of scattered small deciduous woodlands dominated by oak and ash, as well as some mixed plantations and a medium-sized block of ancient woodland." (Ref. 7).*

5.5. The landscape strategy for the Rolling Farmland LCT is as follows:

> *"Conserve and enhance the surviving pattern of woodlands, hedgerows, hedgerow trees and tree-lined watercourses. Minimise the impact of built development through appropriate location, choice of building materials, and the use of locally characteristic tree and shrub species." (Ref. 7).*

5.6. The southern part of the site sits within the Estate Farmlands LCT, described as:

> *"This is a rolling agricultural landscape characterised by parklands and a well-ordered pattern of fields and estate plantations."* (Ref. 7).

5.7. The site sits partially within the Fringford (BC/1) Local Character Area. This is described as:

> *"There are small copses and mixed and deciduous plantations scattered throughout the area and some of these, along with mature hedgerow oaks, are associated with Stratton Audley Park. Elsewhere, medium-sized fields with mixed land uses are enclosed by well-maintained hawthorn, blackthorn and elm hedges." (Ref. 7).*

5.8. The landscape strategy for the Estate Farmlands LCT is as follows:

> *"Conserve the planned estate character of this landscape type through maintenance and enhancement of the parklands, woodlands and field boundaries." (Ref. 7).*

5.9. The key characteristics of both the Rolling Farmland LCT and the Estate Farmlands LCT exhibited within the study area and how they would be affected by the proposed development, are listed in the landscape appraisal section of this report. The guidelines for the landscape strategy and how they have been followed within the proposed development are listed in landscape design section of this report.

5.10. There are other LCT within the study area. The field study found there was limited intervisibility between these and the site and as such any landscape effects on them would be limited. They will not be considered within this report.

Designations and Policies

5.11. There are no national or local landscape designations coincident with the site or the study area. However, as shown on **Figure 2** there are a number of cultural heritage and natural environment designations relevant to landscape and visual matters.

Cultural heritage designations relevant to character

Listed Buildings

5.12. There are a number of Listed Buildings identified within the study area. The majority of these are located within the settlements, with others scattered within the surrounding rural areas. All of the Listed Buildings are outside the ZTV presented on **Figure 5**. There may be heavily filtered glimpsed views of the site from those Listed Buildings in the study area and ZTV, however, any such views would not be prominent and Listed Buildings have not been considered further within this report. The cable route would pass a number of the Listed Buildings, however, it will run through the highway and any construction works would only have a temporary effect and will not be considered within this report.

Conservation Areas

5.13. There are two Conservation Areas identified within the study area. There is little or no intervisibility between the Conservation Areas and the site, as illustrated by the ZTV, and they are not considered any further in this report. The cable routes passes through both Conservation Areas, however, it

will run through the highway and any construction works would only have a temporary effect and will not be considered within this report.

Natural environment designations relevant to character

Ancient Woodlands

5.14. There are a number of Ancient Woodlands in the study area, one of which Oldfields Copse is located adjacent to the northern boundary. The proposed development is offset from the Ancient Woodland. As such they would not be affected in landscape terms by any development on the site and they are not considered further in this report.

Traditional Orchards

5.15. There are a number of Traditional Orchards in the study area, the closest of which is over 387m away from the site. As such they would not be affected in landscape terms by any development on the site and they are not considered further in this report.

Sites of Special Scientific Interest (SSSI)

5.16. There are a number of SSSI identified within the study area, the closest of which is 2.2km away. There is no intervisibility between the SSSI and the site and they are not considered any further in this report. The cable routes runs adjacent to the Stratton Audley Quarries however, however, it will run through the highway and any construction works would only have a temporary effect and will not be considered within this report.

Topography

5.17. The topography of the study area is shown on **Figure 3**. The topography of the study area is characterised by its rolling landform. The site is tucked into an area of lower ground between two undulations of higher ground to the east and west. The landform of the study area also gently rises from south to north. From a low point of around 70m AOD on the edge of Bicester to 110m AOD around Newton Purcell.

Vegetation and land use

5.18. As shown on **Figure 4** the site and its immediate vicinity is in an area of agricultural land. As shown on **Figure 1** there are a number of small settlements including Stratton Audley, Fringeford, Godington and Poundon within 3km of the site. The larger settlement of Bicester is just outside the study area to the south. The land within the study area outside of the built area is predominantly arable farming. There are both regular and irregular field shapes and patterns, mostly large, bounded predominantly by hedgerows with occasional trees. There are a large number of woodland blocks within the study area.

5.19. The HS2 railway corridor runs through the study area, passing 1.5km to the north of the site in an east-west direction. The main road in the study is the A4421 running north to south through the western part of the study area, passing 1.3km west of the site.

Site description

5.20. As shown in **Figure 4** the site is made up of four arable fields. The majority of the western, eastern and southern boundaries are lined with intact hedgerows (around 2-3m high) with occasional mature trees (predominantly oak). There is a small insert along the eastern boundary of the site that does not follow the existing field boundaries. These have occasional gaps to allow access to other fields. The northern boundary is shared with Oldfields Copse. There is another smaller block of woodland adjacent to the western boundary of the site. An unnamed road runs along the southern boundary of the site. The internal field boundaries are also bound with hedgerows between 2 and 3 m high with occasional mature trees.

5.21. The northern and central section of the site is predominantly flat throughout sitting between 92 and 95m AOD. The land rises from the central area to a high point of 105m AOD to the southern area of the site.

5.22. Vehicular access to the site is currently gained via the field access from the road adjoining the southern boundary of the site.

6. Landscape appraisal

Landscape sensitivity

6.1. The sensitivity of landscape receptors is evaluated based on combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape.

Landscape value

6.2. The value of the landscape receptors will to some degree reflect landscape designations and the level of importance which they signify, although there should not be over-reliance on designations as the sole indicator of value. Other considerations include the natural and cultural heritage, landscape condition, associations, distinctiveness, recreational value, perceptual aspects and functionality.

6.3. Part of the assessment of local landscape value has been based on landscape and cultural heritage designations shown on **Figure 2** and landscape character assessments. The site is not located within any landscape designations. There are several Listed Buildings, Conservation Areas and a Registered Park and Garden located within the study area.

6.4. The document 'Assessing landscape value outside national designations' (2021) (**Ref.8**), Table 1 (Ref.8, page 7) provides guidelines for assessing landscape value by a consideration of the following factors:

- **Natural heritage**. There is some potential for protected species to be present within the hedgerows on the site. The site and immediate context (within 500m), Rolling Farmland LCT and the Estate Farmlands LCT are therefore considered to have a medium natural habitat landscape value.
- **Cultural heritage**. There is little or no intervisibility between the site or the immediate context and any of the cultural heritage designations within the study area. The site and the immediate context are therefore considered to have a low cultural heritage landscape value. The Rolling Farmland LCT and the Estate Farmlands LCT are considered to have a medium cultural heritage landscape value as they contain a number of designated heritage assets.
- **Landscape condition**. The landscape elements within and surrounding the site appear to be in fair condition as they are neither declining nor particularly well managed. The landscape condition is considered to be fair for the site, its immediate context, Rolling Farmland LCT and the Estate Farmlands LCT.
- **Associations**. The 'Oxfordshire Wildlife & Landscape Study' (**Ref.7**) does not list the site as having any particular cultural associations and the cultural landscape value is considered to be low for the site, its immediate context, Rolling Farmland LCT and the Estate Farmlands LCT.
- **Distinctiveness**. The 'Oxfordshire Wildlife & Landscape Study' (**Ref.7**) does not list any rare landscape elements within the landscape character types within the study area. The landscape characteristics of the site and local landscape are typical of the LCT, however, they are not

considered to be particularly important or rare examples of the key characteristics of the LCT. The landscape of the site, its immediate context, Rolling Farmland LCT and the Estate Farmlands LCT are not considered to be a rare or particularly important example and the 'distinctiveness' landscape value is consequently considered to be low.

- **Recreational**. There are two PRoW along the northern (just within the site) and southern part of the eastern boundaries of the site. There are others within 500m of the site. The site and its immediate context are therefore considered to have a medium recreational landscape value. The Rolling Farmland LCT and the Estate Farmlands LCT are considered to have a medium recreational landscape value as they have a good network of PRoW running through them.
- **Perceptual (scenic)**. No formal assessment of the scenic quality of the Rolling Farmland LCT and the Estate Farmlands LCT has been undertaken. The 'Oxfordshire Wildlife & Landscape Study' (**Ref.7**) makes no refence to the Estate Farmlands LCT having any distinctive features or strong aesthetic qualities. It notes that a characteristic of the Rolling Farmland LCT is "*distant views from hillsides across the surrounding low-lying vale"*. The landscape of the site and immediate context and the Rolling Farmland LCT and the Estate Farmlands LCT are therefore considered to have a medium scenic quality.
- **Perceptual (Wildness and tranquillity)**. A formal assessment of the tranquillity of the Rolling Farmland LCT and the Estate Farmlands LCT has been undertaken. The 'Oxfordshire Wildlife & Landscape Study' (**Ref.7**) makes no refence to the Rolling Farmland LCT and the Estate Farmlands LCT having any sense of tranquillity or wildness. The landscape of the site and immediate context and the Rolling Farmland LCT and the Estate Farmlands LCT T is considered to have a medium perceptual landscape value as a rural LCT with small settlements and a road network running through them.
- **Functional**. The trees and hedgerows that run around the site boundaries play a part in the green infrastructure network of the locality and the LCT. The site and immediate context and the Rolling Farmland LCT and the Estate Farmlands LCT are considered to have a medium natural functional landscape value as they are part of a relatively commonplace albeit locally important rural green infrastructure network.

6.5. Combining the value of the surrounding designations, landscape character studies and other criteria it is assessed that the value of the site and immediate area (within 500m), Rolling Farmland LCT and the Estate Farmlands LCT overall is **medium**.

6.6. The landscape of the site is not valued in terms of the NPPF, paragraph 174, as it is not covered by any statutory designations or identified as having high quality in any of the development plan documents or published landscape character study documents.

Landscape susceptibility

6.7. GLVIA3 (**Ref.1**) states that susceptibility means "*the ability of the landscape to accommodate the proposed Development without undue consequences for maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies*". Judgements on landscape susceptibility (high, medium, low) include references to both the physical and aesthetic characteristics and the potential scope for mitigation.

6.8. The site's susceptibility to the type of development proposed, namely a solar PV array, is considered to be **medium**. Although there would be a clearly perceived change to land use on the site, the proposed development would have negligible direct effects on landscape features and the site would be fully restored on decommissioning. In addition, the surrounding landform and vegetation limits visibility of the proposed development except from areas close to the site and on the higher ground.

Overall sensitivity

6.9. Combining landscape value and susceptibility to change provides a guide as to how sensitive a landscape is. The sensitivity of the site, local context (up to 500m), Rolling Farmland LCT and the Estate Farmlands LCT is considered to be **medium**, taking into account the judgements recorded for value and susceptibility above.

Construction phase landscape effects

6.10. For the purposes of this assessment construction effects are not considered in detail as the construction would be completed in a relatively short time span (estimated to be around 6 months) and any effects would therefore be temporary and transient.

Effects on landscape features

6.11. There are few landscape features on the site, the most important being the hedgerows and associated trees around its boundaries and running within it.

6.12. No trees would require removal in order to facilitate the proposed development. The hedgerows around and within the site would be retained and protected as part of the proposed development.

6.13. The sensitivity of these trees is medium and the magnitude of change to landscape features during construction would be **negligible adverse** and the level of effects assessed to be **slight** due to the localised, albeit permanent nature of effects.

Effects on landscape character

6.14. The construction process will introduce temporary and intermittent construction activity, such as movement of personnel and machinery into the site. This would happen for a relatively short time span (estimated to be around 6 months) and any effects would therefore be temporary and transient. The sensitivity of the site, local landscape (up to 500m), Rolling Farmland LCT and the Estate Farmlands LCT is medium. The magnitude of change during construction on landscape character will be temporary and **minor adverse** and the level of effect is assessed as **slight**.

Operational phase landscape effects

Effects on landscape features

Effects on trees / scrub / hedgerows

6.15. The existing vegetation on the site would be actively managed and incorporated into the proposed landscape areas as part of the proposed development. The setting of the existing trees and hedgerows would change from agriculture to that of energy development. There would large amounts of tree planting and some additional hedgerow creation The sensitivity of the trees and hedgerows is medium. The magnitude of change would be **moderate beneficial,** and the level of effect therefore is assessed to be **moderate** at completion and at year 15.

Effects on topography

6.16. There would be small changes to the topography of the site as a result of excavations to accommodate the proposed equipment associated with the solar farm. The sensitivity of the topography is medium, the magnitude of change during operation would be **negligible adverse** and the level of effect is assessed as **neutral** at completion and at year 15.

Effects on Land Use

6.17. The proposal is temporary and reversible in nature and will allow for a return to agricultural use without any harm to the soil structure at the end of the operational period. During the temporary life of the development, it is proposed to use this land for pasture which will enhance and protect the soil structure for a return to commercial arable purposes thereafter. The proposed development will allow the continued agricultural use of the site. The sensitivity of the land use is medium, the magnitude of change during operation would be **no change** and the level of effect is assessed as **neutral** at completion and at year 15.

Effects on landscape character

6.18. Particular considerations that arise in respect of landscape character are:

- the physical changes to the fabric or structure of the landscape.
- integration of the development with the surrounding landscape patterns and structure.
- the degree to which opportunities are taken to enhance character where condition is poor, or preserve character where condition is good.

6.19. This section examines the potential impacts of the development proposals on the intrinsic character and quality of the landscape, as described in the baseline section. The scale of these impacts is likely to be greatest at the point at which direct changes in the landscape fabric occur, i.e. at the site level, with the effects diminishing with increasing distance from the site.

6.20. This section therefore examines the potential impacts on landscape character and resources from the site level outwards. The effects on landscape character are described below.

Effects on landscape character of the site and its surrounding area (within 500m)

6.21. The development proposals will change the site from a number of arable fields to a solar farm with consequent loss of openness. The change in the character to the site itself will inevitably be high for the duration of the solar farm's lifetime due to the development of the solar arrays, fencing and ancillary structures and equipment. However, all of the field boundaries will remain intact and although the solar panels are constructed over the field, all landscape features are retained so that effects are reversible. The change in character and loss of openness as a result of the site being developed and the effect on the site and its immediate context will inevitably be **major adverse**. The level of effect is assessed to be **large** at completion and at year 15.

Effects on landscape character of the Rolling Farmland LCT.

6.22. The following relevant key characteristics identified for the LCT are listed below with an assessment of how they would potentially be affected by the proposed development.

Table 6.1: Relevant key characteristics of the Rolling Farmland LCT and how they would potentially be affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Prominent rolling landform.	The rolling landform of LCT would not be affected by the proposed development.
Large, geometric arable fields enclosed by a weak hedgerow pattern.	The field pattern of LCT would be reinforced by additional planting as part of the proposed development.
Thinly distributed hedgerow trees.	The number of hedgerow trees would be increased as part of the proposed development.
Locally prominent blocks of ancient woodland.	The Ancient Woodland of LCT would not be affected by the proposed development.
Small to medium-sized villages.	The settlements of LCT would not be affected by the proposed development.

6.23. The proposed development would positively affect two of the relevant key characteristics of the LCT. The impact would be immediately around the site. The sensitivity of this LCT is medium. The proposed development would result in a **negligible adverse** magnitude of change in the LCT, of localised geographic extent, with a level of effect assessed to be **slight** at completion and year 15.

Effects on landscape character of the Estate Farmlands LCT.

6.24. The following relevant key characteristics identified for the LCT are listed below with an assessment of how they would potentially be affected by the proposed development.

Table 6.2: Relevant key characteristics of the Estate Farmlands LCT and how they would potentially be affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Medium to large, regularly shaped, hedged fields.	The field pattern of LCT would be reinforced by additional planting as part of the proposed development.
Small, geometric plantations and belts of trees.	The belts of trees of LCT would not be affected by the proposed development.
Large country houses set in ornamental parklands.	The large country houses of LCT would not be affected by the proposed development.
Small estate villages and dispersed farmsteads.	The settlements of LCT would not be affected by the proposed development.

6.25. The proposed development would affect one of the relevant key characteristics of the LCT. The impact would be immediately around the access road. The sensitivity of this LCT is medium. The proposed development would result in a **negligible adverse** magnitude of change in the LCT, of localised geographic extent in the LCT, with a level of effect assessed to be **slight** at completion and year 15.

7. Visual baseline

7.1. This section provides an understanding of the nature and extent of the existing views towards the site and the surrounding area. An integral part of establishing the visual baseline is the identification of the key visual receptors (people) within the study area.

Key visual receptors

7.2. Visual receptors include the public or community at large, including residents, visitors and travellers through the landscape. The key visual receptors around the proposed development include:

- The users of the PRoW network close to the site.
- The local residential properties around the site.
- Users of the road network near to the site.

7.3. Sensitivity of receptors will be dependent on their activity and whether their attention is focused on their surroundings. Visual receptors of high sensitivity will generally include residents, recreational users of long-distance routes and visitors to cultural and historic sites, as described in more detail in the Methodology in **Appendix 4**.

7.4. Key visual receptors close to the site are shown on **Figure 4** and the extent of theoretical visibility is shown on **Figure 5.**

Public Rights of Way (PRoW)

7.5. There are a number of PRoW that have views of the site. These are shown on **Figures 4 and 5** and are described below. There are a number of PRoW with views towards the site within 500m and others in the wider study area.

PRoW within 500m of the site.

- To the north of the site, 371/8a/10 and 371/8b/10.
- To the east of the site, 225/1/20 and 225/6/10.
- To the south of the site, 371/3/10.

PRoW between 500m and 2km from the site.

- To the south of the site, 371/9/20.
- To the north of the site, CHW/26/1.

7.6. There may be views from other PRoW, but they would be glimpsed in nature and are not considered in any further detail in this report.

Representative viewpoints

7.7. Representative viewpoints form the basis of the assessment of the potential effects of the proposed development on views and visual amenity, in line with GLVIA3. A wide range of potential viewpoints were investigated in the desk study using Google Earth. Fifteen viewpoints were selected including six close range (under 500m) and nine medium range (500m to 2km) viewpoints, with representative viewpoint locations shown on **Figure 5**. The photographs are illustrated in the photograph panels in **Appendix 2**. The representative viewpoints chosen for the assessment of effects are described below.

Viewpoint 1. PRoW 371/8a/10.

7.8. This viewpoint is to the north of the site and represents users of the road and PRoW. Views of the site are blocked by the intervening vegetation boundary in the middle ground of the view. Views of the wider landscape are blocked by the intervening landform and vegetation.

Viewpoint 2. PRoW 371/8b/10.

7.9. This viewpoint is in the north-eastern corner of the site and represents users of the PRoW. There are open views of the northern part of the site in the foreground. Views of the central and southern parts of the site are blocked by the intervening vegetation. Views of the wider landscape are blocked by the intervening vegetation.

Viewpoint 3. PRoW 371/8b/10.

7.10. This viewpoint is to the east of the site and represents users of the PRoW. There are partial views of the northern and central parts of the site in the middle ground of the view, over the intervening vegetation. Visibility of the remainder of the site is blocked by the intervening vegetation. Views of the wider landscape are glimpsed over the intervening vegetation.

Viewpoint 4. PRoW 225/1/20.

7.11. This viewpoint is to the east of the site and represents users of the PRoW on the higher ground. There are glimpsed views of the northern and central parts of the site in the middle ground of the view, over the intervening vegetation. Visibility of the remainder of the site is blocked by the intervening vegetation. Views of the wider landscape are glimpsed over the intervening vegetation.

Viewpoint 5. PRoW 225/6/10.

7.12. This viewpoint represents users of the PRoW and unnamed road on the high ground to the east of the site. There are open views of the majority of the site in the middle ground of the view. Views of the wider landscape are possible towards the west.

Viewpoint 6. PRoW 225/6/10.

7.13. This viewpoint represents users of the PRoW on the lower ground to the east of the site. There are open views of the southern and central parts site in the middle ground of the view. Views of the wider landscape are blocked by the intervening landform and vegetation.

Viewpoint 7. Unnamed Road.

7.14. This viewpoint represents users of the road along the southern boundary of the site. All views of the site are blocked by the intervening vegetation in the foreground of the view. Views of the wider landscape are blocked by the intervening vegetation.

Viewpoint 8. Unnamed Road.

7.15. This viewpoint represents users of the road parallel to the western boundary of the site. Views of the site are blocked by the intervening vegetation in the foreground except where the gap allows a view towards the site. View of the site itself are blocked by the hedgerow along the western boundary. Views of the wider landscape visible beyond the site to the east.

Viewpoint 9. Mill Lane.

7.16. This viewpoint is to the west of the site and represents users of the road and properties along it. There are partial views of the southern and central parts of the site in the middle ground of the view. The remainder of the site is blocked by the intervening vegetation. Views of the site are blocked by the intervening vegetation in the foreground except where the gap allows a view towards the site. Views of the wider landscape are visible beyond the site to the east.

Viewpoint 10. PRoW 371/3/10.

7.17. This viewpoint is to the south of the site and represents users of the PRoW and properties along the northern edge of Stratton Audley. All views of the site are blocked by the intervening vegetation in the middle ground of the view. Views of the wider landscape are visible to the north.

Viewpoint 11. PRoW 225/11/20.

7.18. This viewpoint is to the east of the site and represents users of the PRoW and roads in that direction. All views of the site are blocked by the intervening landform and vegetation in the middle ground of the view. Views of the wider landscape are blocked by the intervening vegetation and landform.

Viewpoint 12. POD/5/10.

7.19. This viewpoint is to the east of the site and represents users of the PRoW and roads and properties on the western edge of Poundon. All views of the site are blocked by the intervening landform and vegetation in the middle ground of the view. Views of the wider landscape are visible to the west.

Viewpoint 13. PRoW PBI/9/2.

7.20. This viewpoint is to the north-east of the site and represents users of the PRoW, roads and properties in the northern part of the study area. All views of the site are blocked by the intervening landform and vegetation in the middle ground of the view. Views of the wider landscape are visible to the south.

Viewpoint 14. PRoW CHW/26/1 (also the Bernwood Jubilee Way).

7.21. This viewpoint is to the north of the site and represents users of the PRoW. There are glimpsed views of the site although they are difficult to perceive through the intervening vegetation. Views of the wider landscape are visible to the south.

Viewpoint 15. PRoW PBI/9/2.

7.22. This viewpoint is to the north-east of the site and represents users of the PRoW, roads and properties in the northern part of the study area. All views of the site are blocked by the intervening vegetation in the middle ground and foreground of the view. Views of the wider landscape are visible to the south.

Viewpoint 16. PRoW 308/2/10.

7.23. This viewpoint is to the north-east of the site and represents users of the PRoW, roads and properties in the northern part of the study area. All views of the site are blocked by the intervening vegetation in the middle ground of the view. Views of the wider landscape are visible to the south.

8. Visual appraisal

Extent of visibility

8.1. The site visit and Zone of Theoretical Visibility (ZTV) analysis (**Figure 5**) established the potential extent of visibility of the proposed development within the landscape. Views of the site are generally restricted to within 500m of the site. Beyond that in all directions views are filtered or blocked by the intervening vegetation (particularly in the summer months) and landform.

Construction phase visual effects

8.2. For the purposes of this assessment construction effects are not considered, as construction would be completed in a relatively short time span and, as a result, any effects would be temporary and transient and would be similar to those of completion although with more movement on the site.

Operational phase visual effects

8.3. Any visual effects considered to be 'moderate adverse' or above are discussed in detail in this section. All other effects are presented in tables 8.1 to 8.3 below.

Visual effects on Public Rights of Way

PRoW 371/8b/10

8.4. This PRoW runs just inside the northern boundary of the site and to the west through Oldfields Copse and to the east the small block of woodland across fields to a junction with another PRoW. Views from this PRoW are represented by **viewpoints 2 and 3**.

8.5. At completion in the winter, open views of the proposed development would be experienced along the section of PRoW that runs just inside the site's northern boundary, as shown by the photomontage of **viewpoint 2**. Views beyond this section would be blocked by the intervening vegetation to the west. To the east there would be partial views of the proposed development from the section of the PRoW that runs through the fields, as shown by the photomontage of **viewpoint 3**. The proposed development would become the focal point of the view from the section of PRoW that runs through the site. The sensitivity of PRoW is high, and the magnitude of change for the section of the PRoW running through the site would be **major adverse**, therefore the level of effect is considered to be **large.** The sensitivity of PRoW is high, and the magnitude of change for section of the PRoW running to the east of the site would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.6. The proposed tree and hedgerow planting between the PRoW and the proposed development would block views of the proposed development at year 15 in the summer form the section of PRoW that runs through the site, as shown by the photomontage of **viewpoint 2**. From the eastern

section of the PRoW the proposed development would be glimpsed over the intervening vegetation, as shown by the photomontage of **viewpoint 3**. The magnitude of change would reduce to **minor adverse**, and the residual level of effect is assessed to be **slight** for this section of the PRoW.

PRoW 225/6/10

8.7. This PRoW runs to east of the site from the higher ground down the hill to the eastern boundary of the site. Views from this PRoW are represented by **viewpoint 5** on the high ground and **viewpoint 6** on the lower ground closer to the site.

8.8. At completion in the winter, open views of the proposed development would be experienced along the PRoW with more of the site visible from the higher ground and less on the lower ground. The sensitivity of PRoW is high, and the magnitude of change for the section of the PRoW running on the high ground (approx. 150m) would be **major adverse**, therefore the level of effect is considered to be **large.** The sensitivity of PRoW is high, and the magnitude of change for section of the PRoW closer to the site on the lower ground of the site would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.9. The proposed tree and hedgerow planting between the PRoW and the proposed development would soften views of the proposed development at year 15 in the summer form the section of PRoW that runs on the higher ground, as shown by the photomontage of **viewpoint 5**. The magnitude of change for the section of the PRoW running on the high ground (approx. 150m) would remain **major adverse**, therefore the level of effect is considered to be **large.** From the section of the PRoW on the lower ground closer to the site the proposed development would be glimpsed over the intervening vegetation, as shown by the photomontage of **viewpoint 6**. The magnitude of change would reduce to **minor adverse**, and the residual level of effect is assessed to be **slight** for this section of the PRoW.

Table 8.1: Summary of visual effects on remaining Public Rights of Way.

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
371/8a/10	This PRoW runs to the north of the site on the western side of Oldfields Copse beyond the northern boundary. Views of the site are represented by **viewpoint 1**. The intervening vegetation and landform blocks views of the site. At completion and year 15 there may be glimpsed views of the proposed development, in the southern part of the site, seen through the intervening vegetation.	Sensitivity: **high** Magnitude of effect: **negligible adverse**	Sensitivity: **high** Magnitude of effect: **negligible adverse**

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
		Level of effect: **slight**	Level of effect: **slight**
225/1/20	This PRoW runs to the east of the site on the rising ground. Views of the site are represented by **viewpoint 4**. The intervening vegetation and landform blocks most views of the site with only glimpses in the northern part of the site. At completion and year 15 there may be glimpsed views of the proposed development, in the northern part of the site, seen through the intervening vegetation.	Sensitivity: **high** Magnitude of effect: **minor adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **minor adverse** Level of effect: **slight**
371/3/10 and 371/9/20	These PRoW run to the south of site beyond the unnamed road that runs along the southern boundary. Views of the site are represented by **viewpoints 10**. The intervening vegetation blocks views of the site. At completion and year 15 views of the site would be blocked by the intervening vegetation.	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**
CHW/26/1 (also the Bernwood Jubaliee Way)	This PRoW runs along higher ground to the north of the site. Views of the site are represented by **viewpoint 14**. There are glimpsed views of the site although they are difficult to perceive through the intervening vegetation. At completion and year 15 there may be glimpsed views of the proposed development although they are difficult to perceive through the intervening vegetation.	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Other PRoW within the study area	There is a network of PRoW within the study area, as shown on **Figures 4 and 5**. **Viewpoints 11, 12, 13, 15 and 16** represent views form these paths. Although the ZTV indicated that views may be possible the field survey showed that visibility of the site is limited to the footpaths described above. It was not possible to walk all the PRoW within the study area, but an assessment was made based on views from lanes, using Google Earth and reverse visibility from the site. Views appear blocked, or greatly limited by intervening vegetation, built form and landform.	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**

Visual effects on residential properties

Table 8.2: Summary of visual effects on residential properties and settlements.

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
Pool Farm	This farm complex is to the west of the site on Mill Lane approximately 200m from the site. The intervening vegetation would block ground floor views. Views of the site would be limited to those from upper floor southerly facing windows and would be glimpsed of the central part of the site in distant views over the intervening vegetation. At completion and year 15 there may be there are glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation. The proposed hedgerow and tree planting would further filter views of the proposed development	Sensitivity: **medium** (upper floors) Magnitude of effect: **minor adverse** Level of effect: **slight**	Sensitivity: **medium** Magnitude of effect: **minor adverse** Level of effect: **slight**
Mill Lane cottages	These cottages are to the west of the site on Mill Lane approximately 240m from the site. The intervening woodland vegetation would block ground floor views. Views of the site would be limited to those from upper floor easterly facing windows and would be glimpsed of the central part of the site in the middle ground of the view, over the intervening vegetation. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation, although they would be difficult to perceive.	Sensitivity: **medium** (upper floors) Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **medium** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Home Farm Complex	This complex of buildings is approximately 760m to the west of the site. The intervening vegetation would block ground floor views. Views of the site would be limited to those from upper floor east facing windows and the eastern part of the grounds. There would be glimpses of the central part of the site in the middle ground of the view, over the intervening vegetation. Views from the complex are represented by **viewpoint 10**. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation.	Sensitivity: **high** (views from the grounds) Magnitude of effect: **minor adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **minor adverse** Level of effect: **slight**
Park Cottages	These cottages are approximately 740m to the west of the site. The intervening vegetation would block ground floor views. Views of the site	Sensitivity: **high** (views	Sensitivity: **high**

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
	would be limited to those from upper floor east facing windows and the eastern part of the gardens. There would be glimpses of the central part of the site in the middle ground of the view, over the intervening vegetation. Views from the complex are represented by **viewpoint 10**. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation.	from the grounds) Magnitude of effect: **minor adverse** Level of effect: **slight**	Magnitude of effect: **minor adverse** Level of effect: **slight**
Properties along unnamed Road to the east of the site.	There are a number of houses along the road on the higher ground to the east of the site. These are all either set back from the road (such as Godington Hall) or have tall vegetation between them and the site. At completion and year 15 the views of the site would be blocked by the intervening vegetation	Sensitivity: **high** (ground floor) Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Properties in the northern part of Stratton Audley	There are a number of properties on the northern edge that would have views towards the settlement. These views are represented by **viewpoint 10**. At completion and year 15 the views of the site would be blocked by the intervening vegetation	Sensitivity: **high** (ground floor) Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **high** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Other properties in the study area	There are a small number of farmsteads and single dwellings located throughout the study area. It was not possible to confirm views from these properties, but an assessment was made based on views from PRoW, lanes and roads, using Google Earth and reverse visibility from the site. Intervening vegetation and topography would block views of the proposed development from surrounding properties.	Sensitivity: **high** Magnitude of effect: **no change** Level of effect: **neutral**	Sensitivity: **high** Magnitude of effect: **no change** Level of effect: **neutral**

Visual effects on roads

Table 8.3: Summary of visual effects on roads.

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
Mill Lane	This road runs in a north to south direction to the west of the site. It is lined with hedgerows for the most part with only short gate openings that have views towards the site as represented by **viewpoint 8**. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation. These views would be through the gaps along the vegetation along the lane.	Sensitivity: **medium** Magnitude of effect: **negligible adverse** Level of effect: **slight**	Sensitivity: **medium** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Unnamed Road (south of the site)	This road runs in an east to west direction to the south of the of the site. Views from the road are represented by **viewpoint 7, 9 and 11**. It is lined with hedgerows for the most part with only short gate openings that have views towards the site. At the western end that are glimpsed views of the site as represented by **viewpoint 7**. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation. These views would be through the gaps in the vegetation along the lane. As the proposed tree planting grows these views would be reduced.	Sensitivity: **medium** Magnitude of effect: **minor adverse** Level of effect: **slight**	Sensitivity: **medium** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Unnamed Road (east of the site)	This road runs in a north to south direction to the east of the site. It is lined with hedgerows for the most part with only short sections of hedgerow and gate openings that have views towards the site. At completion and year 15 there may be glimpsed views of the tops of the solar panels in the central part of the site in the middle ground of the view, over the intervening vegetation. These views would be through the gaps in the vegetation along the lane. As the proposed tree planting grows these views would be reduced.	Sensitivity: **medium** Magnitude of effect: **minor adverse** Level of effect: **slight**	Sensitivity: **medium** Magnitude of effect: **negligible adverse** Level of effect: **slight**
Other roads and lanes within the study area	It was not possible to drive all the roads within the study area, but an assessment was made based on views from lanes, using Google Earth and reverse visibility from the site. Views appear blocked, or greatly limited by intervening vegetation, built form and landform.	Sensitivity: **medium** Magnitude of effect:	Sensitivity: **medium** Magnitude of effect:

Receptor	Summary of effects	Assessment (Year 0)	Assessment (Year 15)
		negligible adverse Level of effect: **negligible**	**negligible adverse** Level of effect: **negligible**

9. Landscape design

Landscape strategy

9.1. The proposed development affords opportunities to provide biodiversity benefits through the landscape proposals and management of the site during its operational phase. The proposed landscape, biodiversity enhancements and mitigation have not been developed in detail, but indicative proposals can be found on the Layout Plan that accompanies the application**.** These mitigation measures form part of the landscape design and overall proposed development and have been considered in the assessment of effects.

9.2. The development would seek to retain as many of the important landscape features on site as possible and include an appropriate landscape scheme. A landscape strategy would be developed for the site with the following broad aims:

- To assimilate built elements into the surrounding landscape.
- To minimise adverse effects on visual amenity.
- To enhance and reinforce the existing landscape framework and to improve the quality and character of the local landscape.

9.3. The landscape mitigation and enhancement proposals that have responded to the findings of the LVA and the strategies and recommendations in relevant landscape character studies, are as follows:

1. Retention of all existing hedgerow and trees along the boundaries.
2. Allow existing hedgerows to grow to a height of 3 to 4 m to help in blocking views of the site.
3. Creation of new tree-lined hedgerow just inside northern boundary to block views from PRoW PRoW 371/8b/10.
4. Extensive tree planting along all site boundaries to filter views of the site.
5. Creation of hedgerow along section of western boundary closest to Pool Farm to further filter views of the site from the grounds.
6. Species rich grassland within the site compound fenced area, beneath the solar panels.

9.4. The landscape proposals have been guided by landscape character guidance, where appropriate.

Assumptions of the Growth of Mitigation Planting

9.5. For the purposes of this assessment the proposed standard trees are 4 m tall at year one and 11 m (0.5 m growth per year for 14 years) at year 15.

Response to landscape character assessment guidance

9.6. The landscape character assessments discussed in the Landscape Context section of this report include guidance and opportunities for any work being undertaken within the landscape character areas.

Table 9.1: Response to relevant LCT landscape guidance.

Rolling Farmland	
Guidance	**Response**
Strengthen the field pattern by planting up gappy hedges using locally characteristic species such as hawthorn, and hedgerow trees such as oak and ash.	Large numbers of trees would be planted as part of the proposed development along with new hedgerows
Promote environmentally-sensitive maintenance of hedgerows, including coppicing and layering when necessary, to maintain a height and width appropriate to the landscape type.	All hedgerows within and on its boundaries would be managed in accordance with the Landscape and Ecological Management Plan (LEMP).
Enhance and strengthen the character of tree-lined watercourses by planting willows and ash and where appropriate, pollarding willows.	There are no watercourses within the site.
Promote the sustainable management of existing ancient semi-natural woodland to safeguard its long-term survival.	Development is setback form the boundaries of the ancient semi-natural woodland areas and would, therefore, not be affected. .
Promote small-scale planting of deciduous woodland blocks using locally characteristic species such as oak and ash.	No woodland planting is proposed.
Conserve the surviving areas of permanent pasture and promote arable reversion to grassland, particularly on land adjacent to watercourses.	As part of the proposed development the solar farm area would be converted to pasture.
Minimise the visual impact of intrusive land uses with the judicious planting of tree and shrub species characteristic of the area. This will help to screen the development and integrate it more successfully with its surrounding countryside.	The proposed hedgerow and trees planting would screen views of the proposed development form local visual receptors.
Maintain the nucleated pattern of settlements and promote the use of building materials and a scale of development and that is appropriate to this landscape type. This includes limestone or limestone and bricks and clay roof tiles in the Midvale Ridge, and red bricks and clay tiles in the Vale of White Horse and North Wessex Downs.	The settlement pattern of the LCT would not be affected in landscape terms as part of the proposed development.

Table 9.2: Response to relevant LCT landscape guidance.

Estate Farmlands	
Guidance	**Response**
Conserve and restore the pastoral character of existing parklands and promote the replacement of veteran and mature trees where appropriate.	As part of the proposed development the solar farm area would be converted to pasture.
Promote the sustainable management of existing woods and plantations, and the establishment of new tree belts and plantations with a significant proportion of deciduous tree and shrub species characteristic of this area.	The proposed woodlands around the site would be affected in landscape terms by the proposed development and no new woodlands would be created as part of the proposed development.
Strengthen the field pattern by planting up new or gappy hedges using locally characteristic species such as hawthorn.	Large numbers of trees would be planted as part of the proposed development along with new hedgerows
Promote environmentally-sensitive maintenance of hedgerows, including coppicing and layering where necessary, to maintain a height and width appropriate to the landscape type.	All hedgerows within and on its boundaries would be managed in accordance with the Landscape and Ecological Management Plan (LEMP).
Priority should be given to safeguarding and maintaining existing species-rich hedges through coppicing, layering and replanting where necessary with shrub species such as blackthorn, field maple, dogwood and spindle.	All hedgerows within and on its boundaries would be managed in accordance with the Landscape and Ecological Management Plan (LEMP).
Protect stone walls from deterioration.	The stone walls of the LCT would not be affected in landscape terms as part of the proposed development.
Conserve surviving areas of permanent pasture.	As part of the proposed development the solar farm area would be converted to pasture.
Protect the sparsely settled character of the landscape and the integrity and vernacular character of the estate villages.	The settled charcater of the LCT would not be affected in landscape terms as part of the proposed development.
Minimise the potential visual impact of intrusive land uses at the fringes of towns and villages with the judicious planting of tree and shrub species characteristic of the area. This will help to screen the development and integrate it more successfully with its surrounding countryside.	The proposed hedgerow and trees planting would screen views of the proposed development form local visual receptors.

Estate Farmlands	
Guidance	**Response**
Where appropriate, mitigate the potential visual impact of mineral extraction and landfill sites with the judicious planting of tree and shrub species characteristic of the area. This will help to screen the development and integrate it more successfully with its surrounding countryside.	The proposed development is not mineral extraction and landfill.

10. Summary

10.1. An LVA has been undertaken by ADAS for the proposed solar park development on land near Stratton Audley, Cherwell District.

10.2. The primary policies relevant to the site are from the ‘‘The Cherwell Local Plan 2011 – 2031’ (**Ref.4**); ESD5: Renewable Energy, Policy ESD 13: Local Landscape Protection and Enhancement, Policy ESD 15: The Character of the Built and Historic Environment. Saved polices from the ‘Adopted Cherwell Local Plan 1996’ (**Ref.5**) are also relevant including C7 Landscape conservation, C8 Sporadic development in the open countryside, C9 Scale of development compatible with a rural location, C28 Layout, design and external appearance of new development.

10.3. As shown in **Figure 4** the site is made up of four arable fields. The majority of the western, eastern and southern boundaries are lined with intact hedgerows (around 2-3m high) with occasional mature trees (predominantly oak). There is a small insert along the eastern boundary of the site that does not follow the existing field boundaries. These have occasional gaps to allow access to other fields. The northern boundary is shared with a block of woodland Oldfields Copse. There is another smaller block of woodland adjacent to the western boundary of the site. An unnamed road runs along the southern boundary of the site. The internal field boundaries are also hedgerows between 2 and 3 m high with occasional mature trees.

10.4. In summary there would be a **slight** effect on the Rolling Farmland LCT and the Estate Farmlands LCT and at most a **large** residual effect (at year 15) to the landscape character of the site and its surrounding area (within 500m of the site), predominantly due to the change in use and associated loss of openness.

10.5. Views of the site are generally restricted to within 500m of the site. Beyond that in all directions views are filtered or blocked by the intervening landform and vegetation (particularly in the summer months). All visual receptors would experience at most a **slight** residual level of effect as a result of the development with the exception of users of the short section of PRoW 225/6/10 on the high ground to the east of the site which would remain **large.**

10.6. Proposed mitigation measures include the retention of existing landscape features, creation of new hedgerow and tree planting and the creation of species rich grassland. All of these measures will assist in maintaining visual screening of the development for the users of the local roads, PRoW and inhabitants of residential properties, and assist in increasing the biodiversity value of the site. The landscape proposals have considered the relevant guidelines set out in the LCA

11. References

Ref.1 Landscape Institute and the Institute of Environmental Management and Assessment (2013), Guidelines for Landscape and Visual Impact Assessment (Third Edition).

Ref.2 Landscape Institute (2019), TGN 06/19 Visual Representation of development proposals.

Ref.3 Ministry of Housing, Communities and Local Government (2021), The National Planning Policy Framework.

Ref.4 Cherwell District Council (2015), The Cherwell Local Plan 2011 – 2031.

Ref.5 Cherwell District Council (1996), Adopted Cherwell Local Plan 1996.

Ref.6 Natural England (2014), NCA Profile:108 Upper Thames Clay Vales (NE570)

Ref.7 Oxfordshire County Council. (2004), Oxfordshire Wildlife & Landscape Study

Ref.8 Landscape Institute (2021), Assessing landscape value outside national designations

Appendix 1: Figures

Appendix 2: Viewpoints and Photomontages

Appendix 3: Glossary

Cumulative effects. Impacts resulting from incremental changes caused by other present or reasonably foreseeable actions likely to occur together with the project. (Ref.1 page 6)

Direct effect. An effect that is directly attributable to the proposed development. (Ref.2 page 155)

Domestic curtilage. The domestic gardens and access drives / roads immediately surrounding a residential property including patios, terraces, courtyards and forecourts. The domestic curtilage does not extend to surrounding paddocks and other peripheral land / outbuildings within the property ownership, or to public or private approach roads. (Ref.4. page 17)

Indirect effects. Effects that result indirectly from the proposed project as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects. (Ref.2 page 156)

Key characteristics. Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place. (Ref.2 pages 156 and 157)

Landscape capacity refers to the amount of specified development or change which a particular landscape and the associated visual resource is able to accommodate without undue negative effects on its character and qualities. (Ref.3 page 25)

Landscape character. A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. (Ref.2 page 157)

Landscape character area (LCA). These are single unique areas which are the discrete geographical areas of a particular landscape type. (Ref.2 page 157)

Landscape character type (LCT). These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern, and perceptual and aesthetic attributes. (Ref.2 page 157)

Landscape effects. Effects on the landscape as a resource in its own right. (Ref.2 page 157)

Landscape quality (or condition). A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements. (Ref.2 page 157)

Landscape receptors. Defined aspects of the landscape resource that have the potential to be affected by a proposal. (Ref.2 page 157)

Landscape value. The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. (Ref.2 page 157)

Magnitude (of effect). A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration. (Ref.2 page 158)

Mitigation. Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible remedy identified effects), including landscape and visual effects. (Ref.2 page 41, para.3.37)

Principal room. The principal room(s) of a residential property is a living room, or one fulfilling the same primary use role. In some properties this room may not be located on the ground floor, but on an upper storey. A conservatory may also fulfil a living room / primary use role depending on the circumstances and the internal arrangement of the residence. (Ref.4. page16)

Sensitivity. A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor. (Ref.2 page 158)

Townscape. The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces. (Ref.2 page 158)

Visual amenity. The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area. (Ref.2 page 158)

Visual effect. Effects on specific views and on the general visual amenity experienced by people. (Ref.2 page 158)

Visual envelope. An area from which the scheme can be visible. (Ref.1 page 10)

Visual receptors. Individuals and/or defined groups of people who have the potential to be affected by a proposal. (Ref.2 page 158)

Zone of theoretical visibility (ZTV). A map, usually digitally produced, showing areas of land within which a development is theoretically visible. (Ref.2 page 159)

Zone of visual influence. Area within which a proposed development can have an influence or effect on visual amenity. NOTE: This is different from the visual envelope. (Ref.1 page 10)

Ref.1 Highways England, LA 107 Landscape and visual effects, 2020.

Ref.2 Landscape Institute and Institute of Environmental Assessment, *Guidelines for Landscape and Visual Effect Assessment, 3rd edition*, 2013.

Ref.3 Natural England, An approach to landscape sensitivity assessment – to inform spatial planning and land management, 2019.

Ref.4 Landscape Institute, Residential Visual Amenity Assessment (RVAA), Technical Guidance Note 2/19, 2019

Appendix 4: Appraisal guidance and methodology

A4.1 The following section outlines the methodology and approach to the appraisal of landscape and visual effects. The methodology sets out the criteria and definitions used for the appraisal of sensitivity, magnitude of change and level of effects.

Relevant Guidance

A4.2 The landscape and visual effect appraisal has been based on guidelines provided in the following publications:

- Landscape Institute and Institute of Environmental Assessment (2013), Guidelines for Landscape and Visual Effect Assessment, 3rd edition. (**Ref.1**)
- Highways England (2020), LA 107 Landscape and visual effects. (**Ref.2**)
- Highways England (2019), LA 104 Environmental assessment and monitoring. (**Ref.3**)
- Scottish Natural Heritage and the former Countryside Agency (2002), Landscape Character Assessment: Guidance for England and Scotland. (**Ref.4**)
- Natural England (2014), An Approach to Landscape Character Assessment (**Ref.5**)
- Landscape Institute (2016), Townscape Character Assessment, 2018. (**Ref.6**).
- Landscape Institute, Technical Guidance Note | 02/21 Assessing landscape value outside national designations, 2021. (**Ref.8**).
- Natural England, An approach to landscape sensitivity assessment – to inform spatial planning and land management, 2019. (**Ref.9**).

A5.1 The methodology on the production of photography that accompanies this report can be found in **Appendix 5** and is based up on Landscape Institute (2019), Technical Guidance Note 06/19 Visual Representation of Development Proposals (**Ref.10**).

Scope of Appraisal

A4.3 To provide an appropriate context, the appraisal includes a comprehensive description of the baseline position for landscape and visual amenity, including reference to landscape and townscape character assessments from national to local scale and a range of visual receptors.

A4.4 The appraisal encompasses desk studies, collection of baseline data and site surveys on the context, character and quality of the Study Area, an evaluation of the landscape and an appraisal of properties and local views potentially affected by the proposed development. The appraisal also recommends mitigation measures to reduce potential adverse effects.

A4.5 Consideration has been given to the construction stage of the scheme, however, the appraisal focuses on the operational period of the proposed development.

A4.6 Heritage assets such as Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens all contribute to the overall landscape character, context and setting of the area. Visual and Landscape effects on the setting of Listed Buildings and Scheduled Monuments are not included in the scope of this appraisal.

Impact assessment or appraisal

A4.7 GLVIA 3 and the Statement of Clarification 1/13 (**Ref.7**), makes clear that for non EIA developments the landscape and visual appraisal should consider all types of effects: adverse, beneficial and neutral, direct and indirect, and long and short term, as well as cumulative effects. However, none of these effects should be given a judgement involving the terms 'significant' or 'significance'. GLVIA 3 also stresses that the approach to the assessment needs to be proportionate to the scale of the project being assessed and the nature of the likely effects.

A4.8 This LVA is not part of an Environmental Impact Assessment. As such, discussions on whether effects are significant or not in is not covered in this assessment. Only a Landscape and Visual Impact Assessment (LVIA) as part of an Environmental Impact Assessment would do this.

Landscape Appraisal Methodology

Landscape Baseline

A4.9 Landscape character assessments at a variety of strategic scales provide an understanding of the landscape at a wider level and allows the identification of elements that may be present at a number of different scales (national, regional, local and site specific). This hierarchical assessment will establish the baseline conditions and enable an assessment of the sensitivity of the landscape resource to potential changes as a result of a proposed development. Landscape receptors would be identified at the baseline stage and should include:

- Landscape elements (e.g. existing tree cover, hedgerows, etc).
- Landscape character areas (local or national).
- Designated landscape resources (e.g. Registered Parks and Gardens).

Landscape Sensitivity

A4.10 Landscape sensitivity is based on the combination of value (including condition) and the susceptibility of the landscape to the type of development proposed. This is determined by professional judgement.

Landscape Value

A4.11 Landscape value relates to the importance attached to a landscape, often as a basis for designation or recognition which expresses national or regional consensus, because of its distinctive landscape pattern, cultural associations, scenic or aesthetic qualities. It should be noted that, in virtually all

circumstances, landscapes are valued (frequently highly valued) in the local context by various if not all sectors of the community. The value of the landscape also takes account of factors listed in Table 1 of Assessing landscape value outside National Designations (**Ref.8 page 7**) which include Natural Heritage, Cultural Heritage, Landscape condition, Associations, Distinctiveness, Recreational, Perceptual (Scenic), Perceptual (Wilderness and tranquillity), and Functional. Table A4.1 givens an indication of how landscape condition is assessed.

A4.12 Landscape condition describes the state of repair or condition of elements of a particular landscape, its integrity and intactness and the extent to which its distinctive character is apparent.

Table A4.1. Landscape Condition

Condition	Description
Good	Living landscape features are likely to have a diversity of age range and species, with little or no evidence of dead or diseased individuals. There would be evidence of recent appropriate management. E.g. Hedgerows or trees in good condition with signs of appropriate management with no damage. Well managed grassland, not over grazed or overgrown with a good species diversity.
Fair	Living landscape features are likely to have some diversity of age range and species, with some evidence of dead or diseased individuals. There would be evidence of some appropriate management. E.g. Hedgerows or trees in fair condition with some signs of appropriate management with limited damage. Grassland with some areas of encroachment, some areas of overgrazing and erosion with some species diversity.
Poor	Living landscape features would have dominance of one age and species, with substantial amount of dead or diseased individuals. There would be no evidence of management or inappropriate management. E.g. Singles species hedgerows or trees in poor condition with no management and large gaps and large numbers of dead or diseased individuals. Overgrazed grassland with erosion or large areas of encroachment.

A4.13 The value or importance of landscape elements is also considered. The degree of landscape value or importance is therefore a matter for reasoned professional judgement. Where relevant to the appraisal, the value or importance of landscape elements, character areas or designated resources is categorised as either:

- **High** - which may refer to: an internationally designated landscape (rare cases only) – e.g. World Heritage Site; or a nationally designated site, e.g. National Park, AONB, Registered Historic Park or Garden;

- **Medium** - which may refer to a locally designated landscape, i.e. it has been identified by local planning authorities with a local plan policy or landscape character assessment as demonstrating a particular value e.g. Special Landscape Area; or
- **Low** - which may refer to a landscape which is valued at a local scale by local communities but has no documented evidence of value (i.e. in a policy, designation or character assessment).

Landscape Susceptibility

A4.14 The sensitivity to change of the key landscape characteristics and the ability of a particular type of landscape to accommodate change without material effects upon its integrity, reflects key aspects of landscape character including scale and complexity of the landscape and degree of 'wildness' or 'remoteness'.

A4.15 Table A4.2 provides a list of key characteristics and attributes that have been used in this appraisal as indicators of levels of susceptibility. The table is indicative rather than prescriptive and the susceptibility of the landscape is categorised as High, Medium or Low using professional judgement. Typically a landscape receptor with a High susceptibility to a proposed change would have a lesser ability to accommodate that change without undue consequences; a landscape receptor with a Low susceptibility to a proposed change would have a greater ability to accommodate that change.

Table A4.2: Susceptibility of Landscape Character to Change

Key characteristics	Attributes indicating higher susceptibility to change		Attributes indicating lower susceptibility to change
Scale	Small-scale landform/ landcover; fine grained; enclosed; sheltered	↔	Large-scale landform/land cover; coarse grained
Enclosure	Open	↔	Enclosed
Landform	An undulating landscape	↔	A flat, uniform landscape
Landcover and Pattern	Complex, irregular or intimate landscape patterns; diverse land cover	↔	Simple, regular landscape patterns; uncluttered, sweeping lines; consistent land cover
Engineered / Built Influences	General absence of strongly engineered, built or manmade influences such as: electrical infrastructure, roads, a geometric field pattern or man-made watercourses. Predominance of traditional or historic settlements, buildings and structures	↔	Engineered forms/land use pattern; frequent presence of man-made elements, brownfield or industrial landscapes; railways; embankments; wind farms; major road networks; presence of contemporary built structures; electrical infrastructure; man-made watercourses; and commercial forestry

Key characteristics	Attributes indicating higher susceptibility to change		Attributes indicating lower susceptibility to change
Naturalness and Tranquillity	Landscape with predominance of perceived natural features and forms. Sense of peace and isolation; remote and empty; little or no built development	⟷	Non-natural landscape; busy and noisy; human activity and development; prominent movement

Overall Landscape Sensitivity

A4.16 Sensitivity is defined as very high, high, medium, low or negligible and descriptions for each category are given in Table A4.3 below.

Table A4.3: Landscape Sensitivity

Sensitivity	Description
Very high	Landscapes of very high international/national importance and rarity or value with no or very limited ability to accommodate change without substantial loss/gain (i.e. national parks, internationally acclaimed landscapes - UNESCO World Heritage Sites).
High	Landscapes of high national importance containing distinctive features/elements with limited ability to accommodate change without incurring substantial loss/gain (i.e. designated areas such as Areas of Outstanding Natural Beauty, areas of strong sense of place - registered parks and gardens, country parks).
Medium	Landscapes of local or regional recognition or importance able to accommodate some change (i.e. areas recognised in local plan documents such as 'Special Landscape Areas' features worthy of conservation, some sense of place or value through use/perception).
Low	Local landscape areas or receptors of low to medium importance with ability to accommodate change (i.e. non-designated or designated areas of local recognition or areas of little sense of place).
Negligible	Landscapes of very low importance and rarity able to accommodate change.

Based on LA 107 Landscape and visual effects, Table 3.22 (Ref.2 page 20)

Magnitude of Change

A4.17 The magnitude of change arising from the proposed development at any particular location is described as major, moderate, minor, negligible or no change based on the interpretation of a combination of largely quantifiable parameters as discussed below.

A4.18 Each effect on the landscape receptors needs to be assessed in terms of its **size or scale**, the **geographical extent** of the area influenced, and its **duration** and **reversibility**. (Ref.1 page 90 para. 5.48)

Size and Scale

A4.19 The size and scale of the development taking into consideration; the extent of existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape; the degree to which aesthetic or perceptual aspects of the landscape are altered either by the removal of existing components of the landscape, or, the addition of new features; whether the effect changes key characteristics of the landscape which are critical to its distinctive character.

Geographical Extent

A4.20 Consideration of the extent of landscape effect can either relate to the quantification of an effect on existing landscape elements (e.g. an area of tree cover to be removed) or to the extent of the geographical area over which a change in landscape character might be experienced.

A4.21 The extent of landscape change likely to arise as a result of the proposed development upon either landscape elements or within different landscape areas is categorised as **extensive, limited or localised**. It is not possible to provide consistent criteria for these descriptive terms that apply in every instance (i.e. to different types of landscape receptors).

Duration of Landscape Effect

A4.22 The duration of the landscape effect likely to arise as a result of the proposed development on landscape elements or within different landscape character areas or types, long term, medium term or short term. This is used to qualify and contextualise the appraisal of degree of landscape change.

A4.23 For this appraisal the following categories of duration of landscape effect have been adopted:

- **Long term** – an effect likely to persist for more than ten years;
- **Medium term** – an effect likely to persist for between five and ten years; and
- **Short term** – an effect likely to last up to five years.

Reversibility of Landscape Effect

A4.24 Whatever the expected duration of a landscape effect, consideration of reversibility relates to whether a landscape effect could be reversed rather than will be reversed. This enables a distinction to be made between a new element which is expected to be permanent but could nevertheless be removed without residual effect should it become unexpectedly obsolete, and a landscape or visual change that is practicably irreversible. The following criteria have been adopted within this appraisal:

- **Irreversible** - Major changes in landform or the removal of landscape elements, such as veteran trees, that could not be replicated within ten years.

- **Partially reversible** - Changes that could be partially reversed within ten years (e.g. recreation of mature hedgerows of similar but not identical species mix and character).
- **Reversible** - Changes that could be totally reversed within ten years (e.g. removal of introduced features or recreation of juvenile woodland).

A4.25 In order to differentiate between different levels of magnitude the following definitions are provided:

Table A4.4: Landscape Magnitude of Change Definitions

Magnetite of Change	Typical Description
Major Adverse	Total loss or large scale damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, conspicuous features or elements.
Moderate Adverse	Partial loss or noticeable damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, noticeable features or elements.
Minor Adverse	Slight loss or damage to existing landscape character of one (maybe more) key features and elements; and/or addition of new uncharacteristic features and elements.
Negligible Adverse	Very minor loss, damage or alteration to existing landscape character of one or more features and elements.
No Change	No noticeable alteration or improvement, temporary or permanent, of landscape character of existing features and elements.
Negligible Beneficial	Very minor noticeable improvement of character by the restoration of one or more existing features and elements.
Minor Beneficial	Slight improvement of landscape character by the restoration of one (maybe more) key existing features and elements; and/or the addition of new characteristic features.
Moderate Beneficial	Partial or noticeable improvement of landscape character by restoration of existing features or elements; or addition of new characteristic features or elements or removal of noticeable features or elements.
Major Beneficial	Large scale improvement of landscape character to features and elements; and/or addition of new distinctive features or elements, or removal of conspicuous elements.

Based on LA 107 Landscape and visual effects, Table 3.24 (Ref.2 page 22)

Level of Effect

A4.26 The level of landscape effect is categorised using a five point scale: Very Large, Large, Moderate, Slight and Neutral. The level of effect is assessed by combining all of the considerations and criteria set out above. This is described by GLVIA3 as an 'overall profile' approach to combining judgements and requires that all the judgements against each of the identified criteria (susceptibility; value; degree; extent; duration; and reversibility) are used within an informed professional appraisal of the overall level of landscape effect.

A4.27 The relative weight attributed to each of the six considerations is a matter for experienced professional judgement and will vary depending on the specific visual receptor or effect being assessed. In relation to landscape appraisal, susceptibility is more relevant to landscape character than to the removal of landscape elements such as tree cover and short term reversible effects on the landscape.

A4.28 The level of the effect on the landscape resource may be determined by correlating the magnitude of change with the sensitivity of the landscape resource. Table A4.5 below sets out the main correlation between magnitude and sensitivity. Where an option between, for example, 'slight' and 'moderate' level of effect is indicated in the table, the choice will depend on the specifics of the effect and may be qualified by professional judgement.

Table A4.5: Landscape Effects Matrix

		MAGNITUDE OF CHANGE				
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
LANDSCAPE SENSITIVITY	**Very High**	*Neutral*	*Slight*	*Moderate or Large*	*Large or Very Large*	*Very Large*
	High	*Neutral*	*Slight*	*Slight or Moderate*	*Moderate or Large*	*Large or Very Large*
	Medium	*Neutral*	*Neutral or Slight*	*Slight*	*Moderate*	*Moderate or Large*
	Low	*Neutral*	*Neutral or Slight*	*Neutral or Slight*	*Slight*	*Slight or Moderate*
	Negligible	*Neutral*	*Neutral*	*Neutral or Slight*	*Neutral or Slight*	*Slight*

Based on LA 104 Environmental assessment and monitoring, Table 3.8.1 (Ref.3 page 15)

A4.29 Level of effects and typical descriptions are provided below:

- **Very large** - Effects at this level are material in the decision-making process.
- **Large** - Effects at this level are likely to be material in the decision-making process.
- **Moderate** - Effects at this level can be considered to be material decision-making factors.
- **Slight** - Effects at this level are not material in the decision-making process.
- **Neutral** - No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Based on LA 104 Environmental assessment and monitoring, Table 3.7 (Ref.3 page 14)

Visual Appraisal Methodology

Extent of Visibility

A4.30 The visibility of a proposed development is influenced by landform, vegetation, built development and existing infrastructure. It is important to determine the extent to which the project would influence the existing views and identify the likely receptors. This is normally established using a ZTV or by field study and the method used in this LVA is described in the body of the report. Potential receptors would include:

- Residents, in individual residential properties and settlements.
- Users of Public Rights of Way.
- Road users.
- People located in other key recreational or visitor locations.

A4.31 The extent of visibility of the site or proposed development from each visual receptor is described below:

- **Open view** – A clear view of a large proportion of the site within the wider landscape.
- **Partial view** – A view of part of the site or a distant view in which the site forms a proportion of the wider view.
- **Glimpsed view** - a very brief, passing view of the site or a distant view in which the site forms a small proportion of the view in the wider view.
- **No view** – Views towards the site are blocked by visual barriers or a view of the site is difficult to discern.

A4.32 For the purposes of this appraisal, close range views are less than 500m from the site. Medium range views are between 500m and 2km from the site. Long range views are more than 2km.

A4.33 It has not been possible to enter the curtilage of private dwellings to check views as part of this appraisal. In such cases, a reasonable worst-case assumption has been made in dealing with potential views from a publicly accessible point.

Sensitivity of Visual Receptors

A4.34 Assessing the overall effect on visual amenity is achieved by relating the sensitivity of the visual receptors or features, to the potential magnitude of change to a particular view. General assumptions have been made in accordance with current guidance in relation to the sensitivity of visual receptors.

A4.35 Those living within view of the proposed development are usually regarded as the highest sensitivity group as well as those engaged in outdoor pursuits for whom landscape experience is the primary objective. The sensitivity of the potential visual receptors will vary depending on the location and context of the view, the activity of the receptor and importance of the view.

Value Attached to Views

A4.36 An appraisal of visual amenity value or importance refers to the judgement of whether any particular value or importance is likely to be attributed by people to their available views. For example, views experienced by travellers on a highway may be considered to be more highly valued due to the scenic context or views experienced by residents of a particular property may be considered to be less valued or important due to a degraded visual setting. The degree of value or importance is therefore a matter for reasoned professional judgement. Where relevant to the appraisal, the value or importance of visual amenity is categorised as **High, Medium,** or **Low**.

Susceptibility of Visual Receptors to Change

A4.37 Considerations of visual susceptibility and value overlap, which is in contrast to the equivalent landscape considerations which are more distinct. This is because indicators of landscape value are more readily available, for example documentary evidence of a designation. In the case of visual value, documentary evidence relating to views which are particularly valued exists, however value is more likely to relate to a reasoned judgement, as set out in the previous paragraph. Therefore the judgement as to whether a view is categorised as having high, medium or low value will be applied as a modifier to the judgement of susceptibility to give a combined sensitivity of high, medium or low. For example, a visual receptor may be judged as being of low susceptibility and high value. In this instance it may be appropriate to conclude that this receptor is of medium susceptibility, with the consideration of value being used to modify the original appraisal of susceptibility.

Overall Visual Sensitivity

A4.38 Visual receptor sensitivity is defined as high, medium or low in accordance with the criteria in Table A4.6.

Table A4.6: Visual Receptor Sensitivity Criteria

Sensitivity	Typical Criteria
Very high sensitivity	1) Static views experienced from and of major tourist attractions; 2) Views experienced from and of very important national/international landscapes, cultural/historical sites (e.g. National Parks, UNESCO World Heritage sites); 3) Receptors engaged in specific activities for enjoyment of dark skies.

Sensitivity	Typical Criteria
High sensitivity	1) Views experienced by users of nationally important PRoW / recreational trails (e.g. national trails, long distance footpaths); 2) Views experienced by users of public open spaces for enjoyment of the countryside (e.g. country parks); 3) Static views from dense residential areas, longer transient views from designated public open space, recreational areas; 4) Views from and of rare designated landscapes of national importance (AONBs). 5) Views experienced by users of normal PRoW whose attention or interest is likely to be focused on the landscape.
Medium sensitivity	1) Static views from less populated residential areas, schools and other institutional buildings and their outdoor areas; 2) Views experienced by outdoor workers; 3) Transient views from local/regional areas such as public open space, scenic roads, railways or waterways, users of local/regional designated tourist routes of moderate importance; 4) Views from and of landscapes of regional importance. 5) Views experienced by users of normal PRoW whose attention or interest is likely not to be focused on the landscape.
Low sensitivity	1) Views experienced by users of main roads or passengers in public transport on main arterial routes; 2) Views experienced by indoor workers; 3) Views experienced by users of recreational/formal sports facilities where the landscape is secondary to enjoyment of the sport; 4) Views experienced by users of local public open spaces of limited importance with limited variety or distinctiveness.
Negligible	1) Quick transient views such as from fast moving vehicles; 1) Views from industrial areas, land awaiting re-development; 2) Views from landscapes of no importance with no variety or distinctiveness.

Based on LA 107 Landscape and visual effects, Table 3.41 (Ref.2 page 28)

Magnitude of Change

A4.39 The magnitude of a visual change is about understanding the scale, nature, extent and duration of visual change a new development will have on a view.

A4.40 The magnitude of change arising from the proposed development at any particular location is described as major, moderate, minor, negligible or no change based on the interpretation of a combination of largely quantifiable parameters as discussed below.

*Each of the visual effects identified needs to be evaluated in terms of its **size or scale**, the **geographical extent** of the area influenced, and its **duration** and **reversibility**. (Ref.1 page 115 para. 6.39)*

A4.41 Other parameters included in the appraisal would include; distance of the viewpoint from the development; angle of view in relation to main receptor activity; proportion of the field of view occupied by the development; background to the development; and the extent of other built development visible, particularly vertical elements.

Size and Scale

A4.42 The size and scale of visual change that takes place taking account of: the loss or addition of features; changes in composition including the proportion of the view occupied by the proposed development; the degree of contrast or integration of new features with existing landscape elements and characteristics in terms of form, scale, mass, line, height, colour, texture; the nature of the view of the proposed development in terms of the relative amount of time over which it would be experienced, and, whether views would be full, partial or glimpses.

Geographical Extent

A4.43 Consideration of the extent of visual effects relates to the geographic area over which changes in visual amenity may arise (i.e. it does not relate to the how much of a specific view is altered as this is included in the appraisal of the degree of visual change). The extent of visual effect is not therefore relevant to the appraisal of visual effects at specific viewpoints or upon specific visual receptors in fixed locations. Its relevance as a consideration in determining level of effect is instead limited to the extent of a route which might be affected by visual change (i.e. sequential visual effects) or to a summary appraisal of the overall effect of the proposed development on general visual amenity.

A4.44 Where relevant, the extent of visual change likely to arise as a result of the proposed development is categorised as extensive, limited or localised. It is not possible to provide consistent criteria for these descriptive terms that apply in every instance. Instead, the terms are used in the appraisal of visual effects as qualifiers that contextualise the appraisal of individual viewpoints and receptors.

Duration of Visual Effect

A4.45 The duration of the visual effect likely to arise on different visual receptors as a result of the proposed development is categorised as, long term, medium term or short term. This is used to qualify and contextualise the appraisal of degree of landscape or visual change. For this appraisal the following categories of duration of visual effect have been adopted:

- **Long term** – an effect likely to persist for more than ten years;

- **Medium term** – an effect likely to persist for between five and ten years; and
- **Short term** – an effect likely to last up to five years.

Reversibility of Visual Effect

A4.46 Whatever the expected duration of a visual effect, consideration of reversibility relates to whether a visual effect could be reversed rather than will be reversed. This enables a distinction to be made between a new element which is expected to be permanent but could nevertheless be removed without residual effect should it become unexpectedly obsolete, and a visual change that is practicably irreversible. The following criteria have been adopted within this appraisal:

- **Irreversible** - Major changes in landform or the removal of landscape elements, such as veteran trees, that could not be replicated within ten years.
- **Partially reversible** - Changes that could be partially reversed within ten years (e.g. recreation of mature hedgerows of similar but not identical species mix and character).
- **Reversible** - Changes that could be totally reversed within ten years (e.g. removal of introduced features or recreation of juvenile woodland).

A4.47 Table A4.7 below provides definitions for the different levels of magnitude of change.

A4.48 Where possible to do so with a reasonable level of professional objectivity, the effects of the proposed development on the landscape are identified as likely to be generally considered positive (beneficial), neutral or negative (adverse).

Table A4.7: Visual Magnitude of Change Definitions

Magnitude of change	Typical Criteria
Major	The proposed development, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The proposed development, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The proposed development, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the proposed development work or activity would be discernible, or being at such a distance it would form a barely noticeable feature or element of the view.
No change	No part of the proposed development or activity would be discernible.

Based on LA 107 Landscape and visual effects, Table 3.43 (Ref.2 page 31)

Level of Effect

A4.49 The level of visual effect is categorised using a five point scale: Very Large, Large, Moderate, Slight and Neutral. The level of effect is assessed by combining all of the considerations and criteria set out above. This is described by GLVIA3 as an 'overall profile' approach to combining judgements

and requires that all the judgements against each of the identified criteria (susceptibility; value; degree; extent; duration; and reversibility) are used within an informed professional appraisal of the overall level of visual effect.

A4.50 The relative weight attributed to each of the six considerations is a matter for experienced professional judgement and will vary depending on the specific visual receptor or effect being assessed. In relation to visual appraisal the geographical extent of visual change is more relevant to an area or route than to a fixed viewpoint and short term reversible visual effects.

A4.51 The level of the effect on the visual receptors may be determined by correlating the magnitude of change with the sensitivity of the visual receptor. Table A4.8 below sets out the main correlation between magnitude and sensitivity. Where an option between, for example, 'slight' and 'moderate' level of effect is indicated in the table, the choice will depend on the specifics of the effect and may be qualified by professional judgement.

Table A4.8: Visual Effects Matrix

		MAGNITUDE OF CHANGE				
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
VISUAL SENSITIVITY	**Very High**	*Neutral*	*Slight*	*Moderate or Large*	*Large or Very Large*	*Very Large*
	High	*Neutral*	*Slight*	*Slight or Moderate*	*Moderate or Large*	*Large or Very Large*
	Medium	*Neutral*	*Neutral or Slight*	*Slight*	*Moderate*	*Moderate or Large*
	Low	*Neutral*	*Neutral or Slight*	*Neutral or Slight*	*Slight*	*Slight or Moderate*
	Negligible	*Neutral*	*Neutral*	*Neutral or Slight*	*Neutral or Slight*	*Slight*

Based on LA 104 Environmental assessment and monitoring, Table 3.8.1 (Ref.3 page 15)

A4.52 Level of effects and typical descriptions are provided below:

- **Very large** - Effects at this level are material in the decision-making process.
- **Large** - Effects at this level are likely to be material in the decision-making process.
- **Moderate** - Effects at this level can be considered to be material decision-making factors.
- **Slight** - Effects at this level are not material in the decision-making process.

- **Neutral** - No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

  Based on LA 104 Environmental assessment and monitoring, Table 3.7 (Ref.3 page 14)

References for Methodology

Ref.1 Landscape Institute and Institute of Environmental Assessment, *Guidelines for Landscape and Visual Effect Assessment, 3rd edition*, 2013.

Ref.2 Highways England, LA 107 Landscape and visual effects, 2019.

Ref.3 Highways England, LA 104 Environmental assessment and monitoring, 2019.

Ref.4 Scottish Natural Heritage and the former Countryside Agency, Landscape Character Assessment: Guidance for England and Scotland, 2002.

Ref.5 Natural England, An Approach to Landscape Character Assessment, 2014.

Ref.6 Landscape Institute, Townscape Character Assessment, 2018.

Ref.7 Landscape Institute, GLVIA3 Statement of Clarification 1/13, issued 10/06/2013

Ref.8 Landscape Institute, Technical Guidance Note | 02/21 Assessing landscape value outside national designations, 2021

Ref.9 Natural England, An approach to landscape sensitivity assessment – to inform spatial planning and land management, 2019.

Ref.10 Landscape Institute (2019), Technical Guidance Note 06/19 Visual Representation of Development Proposals.

Appendix 5: Photograph methodology

A5.2 The following section outlines the methodology and approach to the site photography for this LVA.

Relevant Guidance

A5.3 The photographs provided as part of this LVA have been based on guidelines provided in the following publications:

- Landscape Institute and Institute of Environmental Assessment (2013), Guidelines for Landscape and Visual Effect Assessment, 3rd edition. (**Ref.1**)
- Landscape Institute (2019), Technical Guidance Note 06/19 Visual Representation of Development Proposals. (**Ref.2**)

Scope of Photography and Photomontages

A5.4 The type of photographs used as part of this report are proportionate to the level of appraisal and have been guided by Visual Representation of Development Proposals (**Ref.2**) which states:

> *To maintain a proportionate approach, different types of visualisation may be required, depending on:*
>
> - *the type and scale of project;*
> - *the aim (Purpose) and likely audience (Users) of the visualisation in the decision-making process; and*
> - *the Sensitivity of the receptors and Magnitude of potential landscape and visual change.*
>
> *The time, effort, technical expertise and cost involved in producing visualisations should be proportionate to these factors. (Ref.2 page 3 para. 1.3.1 and 1.3.2)*

A5.5 The types of visualisations produced for this report have been guided by the contents of Table A5.1 below extracted from Visual Representation of Development Proposals (**Ref.2**).

Table A5.1: Relationships between Purpose, User and Visualisation Types

Category	Purpose and Users	Appropriate Visualisation Types
A	Evidence submitted to Public Inquiry, most planning applications accompanied by LVIA (as part of formal EIA), some non-EIA (LVA) development which is contrary to policy or likely to be contentious. Visualisations in public domain.	2 - 4
B	Planning applications for most non-EIA development accompanied by LVA, where there are concerns about landscape and visual effects and effective mitigation is required. Some LVIAs for EIA development. Visualisations in public domain.	1 - 4

Category	Purpose and Users	Appropriate Visualisation Types
C	Planning applications where the character and appearance of the development is a material consideration. LVIA / LVA is not required but supporting statements (such as Planning Statements and Design and Access Statements) describe how the proposal responds to landscape context and policies. Visualisations in public domain	1 - 3
D	To inform the iterative process of assessment and design with client, and / or pre-application consultations with the competent authority. Visualisations mainly confidential.	1 - 2

Based on Visual Representation of Development Proposals, Table 1 (Ref.2 page 9)

Types of visualisation

A5.6 The types of visualisation are listed in the table below:

Table A5.2: Visualisation Types

Type of visualisation	Description
Type 1	Annotated Viewpoint Photograph: Reproduced at a size which aids clear understanding of the view and context, these simply show the extent of the site within the view, and annotate any key features within the view. Type 1 is the most basic form of visual representation with a focus on the baseline information
Type 2	3D Wireline / Model: This covers a range of computer-generated visualisation, generally without a photographic context. Wirelines and other 3D models are particularly suited to graphically describing the development itself. Type 2 visualisations use basic graphic information to assist in describing a proposed development and its context.
Type 3	Photomontage / Photowire: This Type encompasses photomontages and photowires which will commonly be produced to accompany planning applications, LVAs and LVIAs. They provide a reasonable level of locational and photographic accuracy, but are not suitable for the most demanding and sensitive of contexts. Type 3 visualisations do not need to be accompanied by verification data, nor is a precise survey of features and camera locations required. Although minimum standards are set for image presentation, the visualisations do not need to be reproduced with scale representation. Type 3 visualisations offer an appropriate level of detail and accuracy for a range of EIA and non-EIA projects.

Type of visualisation	Description
Type 4	Photomontage / Photowire (survey / scale verifiable): Type 4 photomontages and / or photowires require the use of equipment and processes which provide quantifiable verification data, such that they may be checked for accuracy (as per industry-standard 'AVRs' or 'Verified Views'). Precise survey of features and viewpoint / camera locations may be included where warranted. Type 4 visualisations are generally reproduced with scale representation. Type 4 visualisations represent the highest level of accuracy and verifiability for use in the most demanding of situations.

Based on Visual Representation of Development Proposals (Ref.2 page 16)

A5.7 A summary table below extracted from Visual Representation of Development Proposals (**Ref.2**) describes the information required for each visualisation type:

Table A5.3: Visualisation Type Specifications

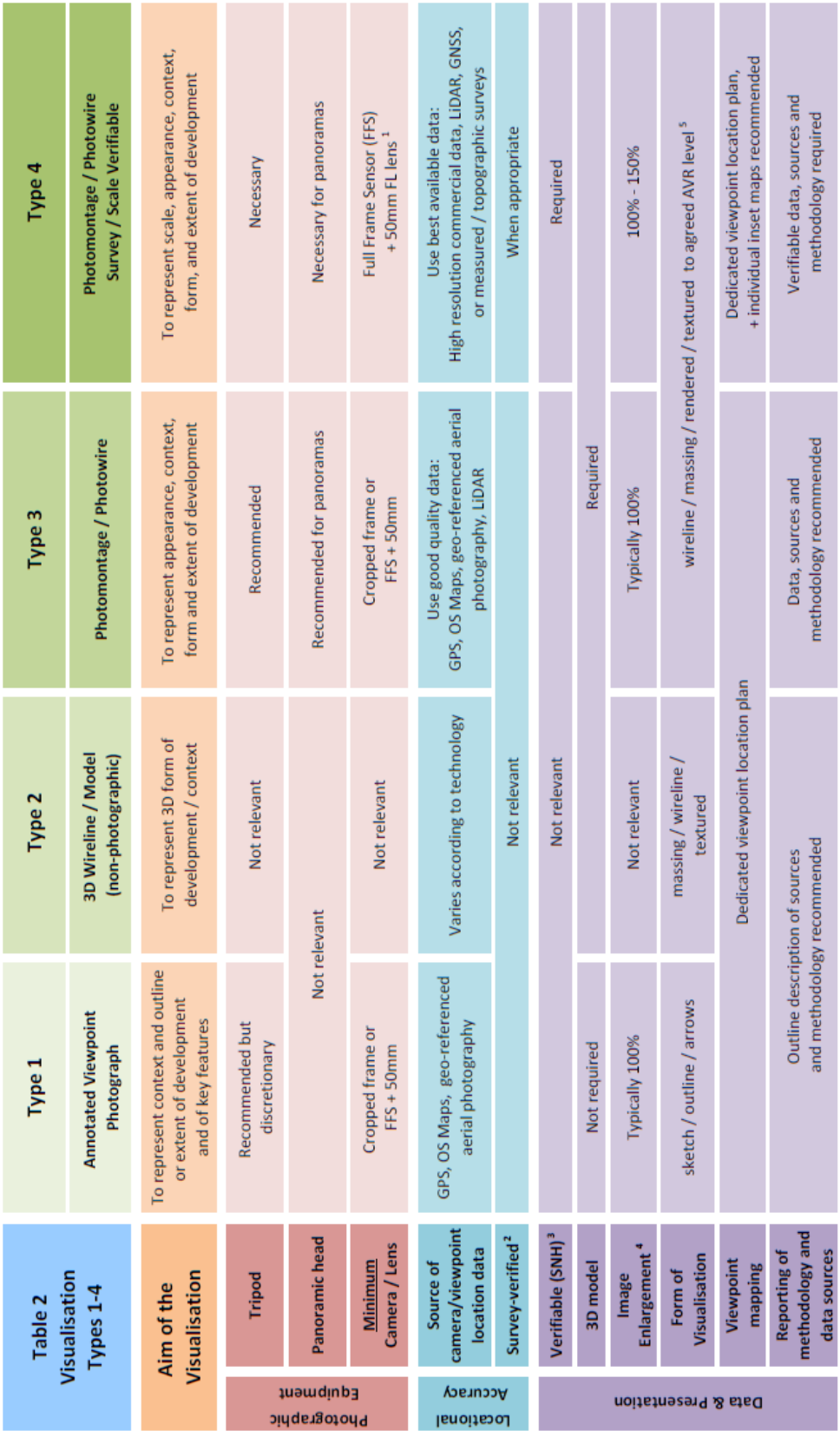


Table 2 Visualisation Types 1-4	Type 1	Type 2	Type 3	Type 4
	Annotated Viewpoint Photograph	3D Wireline / Model (non-photographic)	Photomontage / Photowire	Photomontage / Photowire Survey / Scale Verifiable
Aim of the Visualisation	To represent context and outline or extent of development and of key features	To represent 3D form of development / context	To represent appearance, context, form and extent of development	To represent scale, appearance, context, form, and extent of development
Photographic Equipment – Tripod	Recommended but discretionary	Not relevant	Recommended	Necessary
Photographic Equipment – Panoramic head	Not relevant	Not relevant	Recommended for panoramas	Necessary for panoramas
Photographic Equipment – Minimum Camera / Lens	Cropped frame or FFS + 50mm	Not relevant	Cropped frame or FFS + 50mm	Full Frame Sensor (FFS) + 50mm FL lens [1]
Locational Accuracy – Source of camera/viewpoint location data	GPS, OS Maps, geo-referenced aerial photography	Varies according to technology	Use good quality data: GPS, OS Maps, geo-referenced aerial photography, LiDAR	Use best available data: High resolution commercial data, LiDAR, GNSS, or measured / topographic surveys
Locational Accuracy – Survey-verified [2]	Not relevant			When appropriate
Data & Presentation – Verifiable (SNH) [3]	Not relevant			Required
Data & Presentation – 3D model	Not required	Required		
Data & Presentation – Image Enlargement [4]	Typically 100%	Not relevant	Typically 100%	100% - 150%
Data & Presentation – Form of Visualisation	sketch / outline / arrows	massing / wireline / textured	wireline / massing / rendered / textured to agreed AVR level [5]	
Data & Presentation – Viewpoint mapping	Dedicated viewpoint location plan			Dedicated viewpoint location plan, + individual inset maps recommended
Data & Presentation – Reporting of methodology and data sources	Outline description of sources and methodology recommended		Data, sources and methodology recommended	Verifiable data, sources and methodology required

Source: Visual Representation of Development Proposals (Ref.2, Table 2, page 11)

Type 1 - Annotated Viewpoint Photograph

Field Survey and Photography

A5.8 The camera used for the photography in this LVA was a Canon 6D DSLR (full frame sensor) which can be used to produce photographs equivalent to those from a standard 35mm SLR camera. All photographs were taken with a fixed 50mm focal length lens (Canon EF 50 mm f/1.8 II). As standard all photographs were taken using a Manfrotto tripod with panoramic head and leveller except where stated. The camera location was recorded using a Trimble Catalyst GPS unit set to 1cm accuracy.

Presentation of images

A5.9 All photographs are presented as follows:

- Single image - A3 paper size. Images are presented at a size of 390 x 260mm. Enlargement at 100% and a horizontal field of view of 39.6°; or
- Panoramic image - A1 paper size. Images are presented at a size of 820 x 250mm. Enlargement at 96% and a horizontal field of view of 90°.

A5.10 The following information is presented with each photograph.

- Grid reference (easting and northing);
- Altitude of ground level (using OS open terrain data);
- Camera height above ground level;
- Distance from site boundary (to nearest boundary edge);
- Weather conditions when the photograph was taken (based on Met Office descriptions);
- Date and time the photograph was taken;
- Camera, lens and equipment used to capture the photograph;
- Horizontal field of view;
- Paper and image size;
- Projection;
- Enlargement factor; and
- Map illustrating the site and viewpoint location.

Viewing procedure

A5.11 When viewing the represented views, the viewer must keep their head motionless and fix their eyes on the centre of the view. When comparing the view in the field, the viewer must also keep the head motionless. This ensures that the represented view falls within the human field of view.

A5.12 It must be borne in mind that photographs and photomontages are not intended to replace the real-time visual experience and that a consensus can only be made by comparing the printed images in the field from the viewpoint whilst observing the correct viewing procedure.

Type 3 - Photomontage / PhotowireType

Field Survey and Photography

A5.13 The camera used for the photography was a Canon 6D DSLR (full frame sensor) which can be used to produce photographs equivalent to those from a standard 35mm SLR camera. All photographs were taken with a fixed 50mm focal length lens (Canon EF 50 mm). As standard all photographs were taken using a tripod, panoramic head and leveller except where stated. The camera location was recorded using a GPS unit set to 1cm accuracy.

Digital production of photomontages

Digital Image Preparation

A5.14 The original Canon image files were processed in Adobe Photoshop to adjust White Balance, colour accuracy and sharpness. The images underwent further correction procedure to ensure the horizon is precisely horizontal and any barrel distortion is compensated for. The panoramic views were stitched using Adobe Photoshop. The corrected baseline image, which is known as the background plate, is then ready for the visualisation work to begin. All final images are output as uncompressed JPEG or TIFF files. The photographs are all equally sized according to the preferred reproduction size or desired viewing distance.

Model Position and Height Check

A5.15 AutoCAD is predominantly used for the first stage of the model construction process prior to constructing an existing base model using 3D Studio Max Design. The base model is used to generate a model of all the existing elements required to map the photographic viewpoints to the verified view. The building finished floor levels and ridge heights were provided by the client.

A5.16 All elements of the scheme are combined with the site survey and mapping data, so that they correspond with each other. Any additional data can then be applied to the 3D model at this stage to create a basic skeleton for the final solid rendered model. The co-ordinate system is used when doing this, so that information regarding viewpoints can be accurately located such as the viewpoint markers.

A5.17 The heights and levels of the key features of the proposed scheme are then cross checked against the design drawings and sections to check they correspond.

Camera Matching Process

A5.18 Irrespective of whether the final photomontage is output as a single or composite panoramic image, each photomontage is based upon a single photograph.

A5.19 The viewpoint markers are used to tie the photograph to the CAD Camera view. These are usually surveyed items such as lamp posts, walls, field boundaries and buildings; in essence, anything that has a known location. At least four points are required to enable a high degree of accuracy with some at least at a height above ground level i.e. tops of lampposts and buildings.

A5.20 The background plate photograph is imported into 3D Studio Max, to verify the accuracy of the match.

A5.21 The location and angle of view can also be checked by triangulating the position. This is a reliable method successfully used for location finding in the field.

A5.22 The rendered views were based on single photographs to match the corresponding section of the panorama.

A5.23 A wireframe model of the existing and proposed model is then rendered, overlaid onto the photograph and issued for approval.

A5.24 At this stage the model may be sent to the client and design team can confirm that they are satisfied with the camera matching and mass and scale of the scheme before proceeding to the next stage.

Texturing and Rendering

A5.25 3D Studio Max Design is then used for applying the photorealistic surfaces and materials to the 3D model. Once this is complete, the lighting can be added to create a realistic scene. The exact reactions to sunlight can be calculated by using the software's ability to place it in the direction according to the time of day/month etc. Additional transparent lighting effects are also added to add the final touches.

A5.26 Rendering is the term used to describe the process of generating a two-dimensional rendered bitmap image from the 3D model.

A5.27 Texturing is the application of photorealistic surfaces to the 3D model to reflect what the proposed scheme would look like once constructed. Using information provided by the designers and manufacturers plus samples (e.g. types of glass metal, brickworks etc) we produce the qualities and appearance which most closely represents the real-world materials.

A5.28 Lighting and sun direction is an important factor in representing the scheme proposals as they would appear in the photograph. From the photograph META data and observations in the field; the sunlight and daylight system in 3D Studio Max is used to accurately simulate the real-world

lighting as it was when the photograph was taken. The Sunlight and Daylight System calculates the movement of the sun over the earth at a given location. In addition, the software reproduces the ambient lighting, shadows and reflections.

A5.29 The exact resolution of the photograph is noted and used as the size for the final rendered output of the 3D Model view so that the two overlay each other precisely

Post Production

A5.30 Adobe Photoshop is used to blend the modelled information with the existing base line / base plate photograph. Various masks are created to position the development behind any existing details. Colour correction is then applied if necessary to give it that "lived in look".

A5.31 Finally, proposed vegetation can be introduced along with the removal of any existing details on site that would be removed during the development process.

A5.32 The blending of any additional imagery and rendered models to provide context and realism is undertaken before the final image is completed, to allow an accurate "before & after" comparison.

Presentation of images

A5.33 All photographs are presented as follows:

- Single image - A3 paper size. Images are presented at a size of 390 x 260mm. enlargement at 100% and a horizontal field of view of 39.6° ; or
- Panoramic image - A1 paper size. Images are presented at a size of 820 x 250mm. enlargement at 96% a horizontal field of view of 90°.

A5.34 The following information is presented which each photograph.

- Grid reference (easting and northing)
- Attitude of ground level (using OS open terrain data)
- Camera height above ground level
- Distance from site boundary (to nearest boundary edge)
- Weather conditions when the photograph was taken (based on Met Office descriptions)
- Date and time the photograph was taken
- Camera, lens and equipment used to capture the photograph.
- Horizontal field of view
- Paper and image size
- Projection
- Enlargement factor
- Map illustrating the site and viewpoint location

Viewing procedure

A5.35 When viewing the represented views and Photomontages, the viewer must keep their head motionless and fix their eyes on the centre of the view. When comparing the view in the field, the viewer must also keep the head motionless. This ensures that the represented view falls within the human field of view.

A5.36 It must be borne in mind that photographs and photomontages are not intended to replace the real-time visual experience and that a consensus can only be made by comparing the printed images in the field from the viewpoint whilst observing the correct viewing procedure.

References for Methodology

Ref.1 Landscape Institute and Institute of Environmental Assessment (2013), Guidelines for Landscape and Visual Effect Assessment, 3rd edition.

Ref.2 Landscape Institute (2019), Technical Guidance Note 06/19 Visual Representation of Development Proposals.

Ref.3 Mayor of London (2012), The London View Management Framework