LVA

Landscape and Visual Appraisal

Land at Worldsend Farm, Berkley

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Contents

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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	11/12/2020	Draft for comment
02	07/05/2021	Minor text revisions
03	06/02/2023	Cumulative appraisal added, text revisions, additional viewpoints added.
04	26/06/2023	Text revisions, photomontages and landscape illustrative landscape masterplan revised.

1. Introduction

1.1. A Landscape and Visual Appraisal (LVA) has been undertaken by ADAS for the proposed solar development described as 'the proposed development' at Land to Worldsend Farm, Berkeley, described as 'the site', the location of which is shown in **Figure 1** in **Appendix 1**. Photographs of the site can be found in **Appendix 2**. This report has been prepared in order to support the pre-application on behalf of the applicants.

Objectives of the report

1.2. The main objectives of this LVA are as follows:

1. To identify the planning policy context relevant to landscape and visual matters on the site.
2. Describe the baseline landscape character of the site and its surroundings and identify landscape elements associated with the site.
3. Evaluate its 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 (i.e. people who would be able to see the development),
5. 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 adverse effects of the proposed development.

Structure of the report

1.3. 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 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 effects of the proposed development on the visual receptors identified in section 7.
- Section 9 **Landscape design**. This describes the proposed landscape scheme as part of the proposed development.
- Section 10 **Cumulative appraisal** This describes the effects of the proposed development with other schemes within the study area.
- Section 11 **Summary and Conclusions**. This final part of the report summarises the effects on the landscape and visual receptors.

Author of the report

1.4. This report was undertaken by a Chartered Member of the Landscape Institute (CMLI), who is trained and experienced in undertaking landscape and visual appraisals.

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 landscape and visual appraisal is to identify, predict and evaluate potential key effects arising from the proposed development.

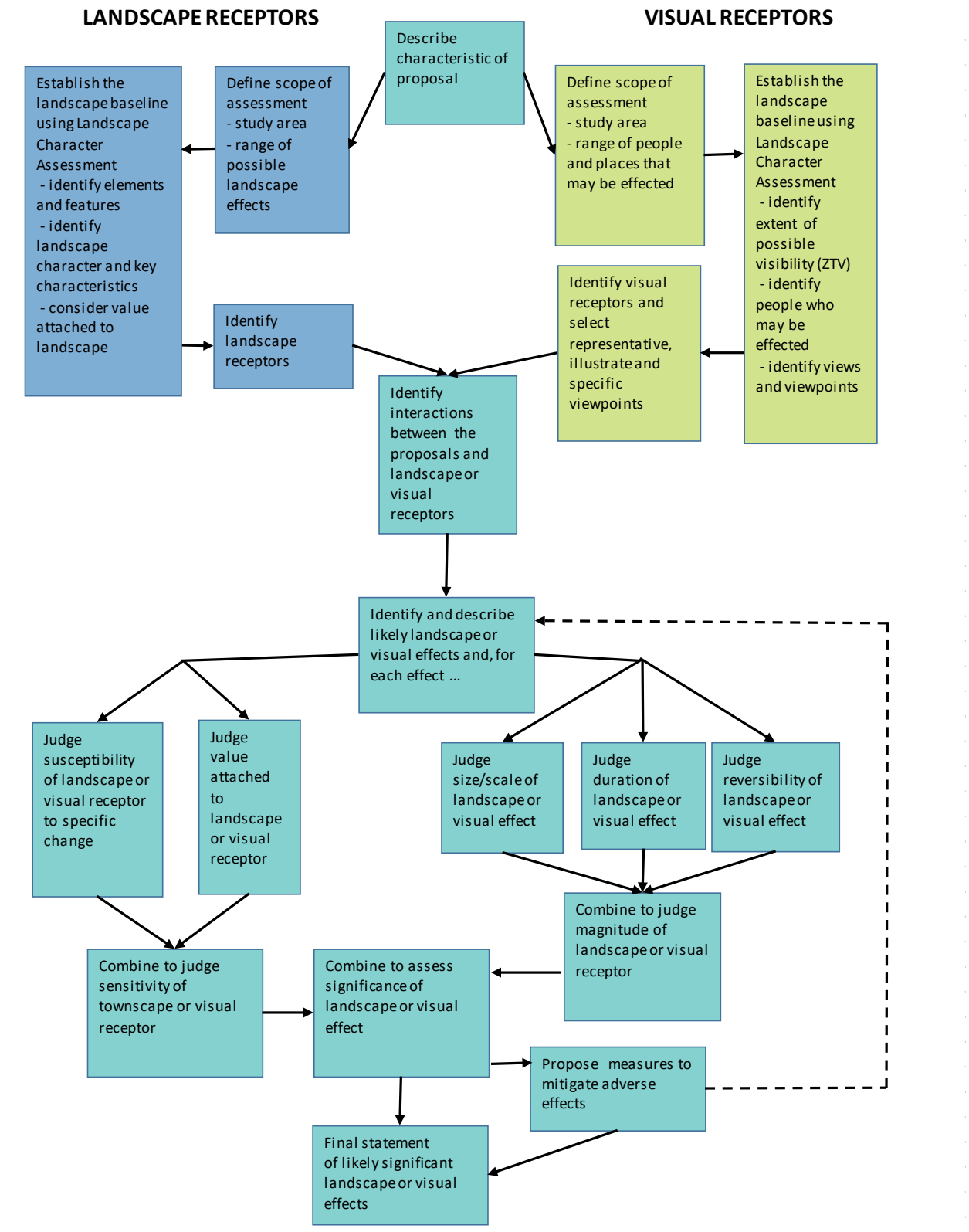
2.3. Landscape and visual appraisals are separate, though linked procedures. The appraisal of the potential effect on the landscape is carried out as an effect on the environmental resource, i.e. the physical landscape. Visual effects are assessed as an interrelated effect on population.

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 methodology in **Appendix 4**. Visual effects are appraised at year 0, completion in winter (worst case) and in the summer at year 15 (best case).

2.6. 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) from GLVIA3.

Figure 2.1. Steps in Assessing Landscape and Visual Effects



Site survey

2.7. The assessment contained in this report is based on field observations undertaken on 21 January, 09 and 23 March 2020. Additional photography was undertaken on 05 December 2022. Use has 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

2.8. The spatial scope for all the baseline studies including topography, landscape designations, landscape character is a 10km radius from the site described as the 'study area'. Experience on similar projects and initial site appraisal, indicates that noticeable landscape and/ or visual effects were likely to be limited beyond this distance due in part to the scale of the proposed development, the quality and condition of the baseline landscape and due to screening provided from the surrounding, landform, built environment and existing mature vegetation.

Mapping visibility

2.9. To establish the potential extent of visibility of the proposed development a Zone of Theoretical Visibility (ZTV) was produced, based on a potential maximum height of the solar panels as shown on the application drawings, as illustrated in **Figure 7**. This ZTV was produced based on a LIDAR Composite Digital Surface Model (DSM) at a 2m spatial resolution. This ZTV takes into account the vegetation and built features and gives a representation of where the proposed development may be seen from given the study areas complex landform.

2.10. The map indicates theoretical visibility only - that is, the areas within which there may be a line of sight. However, the proposal may not actually be visible due to localised screening which is not represented by the Digital Surface Model.

2.11. 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 of a row of panels.

Consultations

2.12. Consultation on the content and scope of this report was sought from Stroud District Council. At a meeting on 03 March 2020 the locations of the viewpoints and photomontages were agreed.

2.13. In December 2021 Stroud District Council provided 'Landscape and visual comments' document undertaken by Hankinson Duckett Associates. This document made comments regarding content of this report. A number of these have been actioned in issue 3 of this report. This included a request for another viewpoint from the cycle route look south towards the DNO compound.

2.14. Historic England provided comments on the application in June 2021. This requested a number of additional viewpoints for heritage assets within the study area. These have been added to this report as part of issue 3.

Visualisations

2.15. The production of photographs used as part the report are proportionate to the level of appraisal and have 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**.

2.16. All the viewpoint photographs are presented as Annotated Viewpoint Photographs (TYPE1 visualisations). The aim of which is represent context and extent of development and of key features. 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. These can be found in **Appendix 2**.

2.17. Six 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**.

2.18. One of the viewpoints have also been represented as Photomontages (TYPE 4 visualisations). Type 4 photomontages require the use of equipment and processes which provide quantifiable verification data, such that they may be checked for accuracy. Precise survey of features and viewpoint / camera locations are included where warranted. Type 4 visualisations represent the highest level of accuracy and verifiability for use in the most demanding of situation. These can be found in **Appendix 2**.

Limitations

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 most likely to be affected by the proposed development were visited.

2.22. The changing nature of the local weather systems around the River Severn meant that for some of viewpoint photographs the site was partially covered with fog.

3. Proposed development

Description of the scheme

3.1. Erection of a 49.99 MW Solar PV Array, comprising ground mounted solar PV panels, vehicular access from Worlds End Lane with internal access tracks, landscaping and associated infrastructure including security fencing, CCTV cameras, and grid connection infrastructure including inverter and substation buildings.

3.2. The development will consist of eight clusters of solar arrays located on field parcels across the site. This proposed layout largely follows the existing field structure of the site, with attempts being made where possible to maintain the existing boundaries between these fields, that include treelines and headlines, existing fence lines, as well as a number of drainage channels that run throughout the site between field boundaries.

3.3. At the proposed access point on the eastern site boundary, key necessary infrastructure such as a private switch for the site, as well as spares/welfare containers, have been located together for ease of access, as well as minimising any impact these structures might have.

3.4. The boundary of the site extends out to the east, covering an area of ground that consists of the ONO substation and access track, which independently connects to World's End Farm. The ONO substation has been placed in this well screened part of the site to minimise any harm to the surrounding area. From this, an independent access track has been included to connect this infrastructure back to World's End Farm.

3.5. The proposed site layout (Planning Layout Drawing Ref. 1650-0201-00) is submitted with this planning application, and shows the proposed layout of the development, including proposed site access and positioning of panels and associated infrastructure including security fencing, CCTV cameras and grid connection infrastructure including transformers and substation compound buildings.

3.6. Each of the individual solar panels will be fixed at a tilt between 20-22 degrees, as shown in the accompanying drawings (Mounting System Detail Drawing Ref. 1650-0201-28). The panels are covered by high transparency solar glass, with an anti-reflective coating used to minimise glare and glint, whilst also maximizing absorption of any available sunlight. The panels are dark grey/blue in colour and are mounted onto a frame of anodized.

3.7. Additional grid infrastructure will include ONO compound configuration, transformers stations and access tracks. Associated security features, such as CCTV being mounted on 6m high poles throughout the site, will also be included.

3.8. The development would have a lifespan of approximately 45 years, with the nature of the development allowing the opportunity for the site to be restored to its current use at the end of this lifespan. At the end of the useful life of the facility, it will be decommissioned, with all associated equipment being removed with minimal ground disturbance.

4. Planning policy context

National planning policy

4.1. The 'National Planning Policy Framework' (NPPF) (2019) (**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 that planning policies and decisions should ensure that developments:

- *are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;* (Ref. 3. Page 38, para. 127 b).
- *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);* (Ref. 3. Page 38, para. 12 c).

4.5. Section 15. Conserving and enhancing the natural environment states that 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);* (Ref. 3. Page 49, para. 170 a).
>
> *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;* (Ref. 3. Page 49, para. 170 b).

4.6. 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 52, para. 180).

Local planning context

4.7. 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 Development Plan. The 'Stroud District Local Plan' (2016) (**Ref.4**) contains policies relevant to development on the site. The tables below contain a list of policies relevant to landscape and visual matters.

Table 4.1: Relevant policies of the Stroud District Local Plan to landscape and visual matters

Stroud District Local Plan	
Delivery Policy ES2 - Renewable or low carbon energy generation	*The Council will support proposals that maximise the generation of energy from renewable or low carbon sources, provided that the installation would not have significant adverse impact (either alone or cumulatively) and includes an impact statement that demonstrates the following factors:* *1. The impact of the scheme, together with any cumulative impact (including associated transmission lines, buildings and access roads), on landscape character, visual amenity, water quality and flood risk, historic features and biodiversity* *2. Evidence that the scheme has been designed and sited to minimise any adverse impact on the surrounding area for its effective operation* *…*
Delivery Policy ES7 - Landscape Character	*Within the Cotswolds Area of Outstanding Natural Beauty (AONB), or on land that may affect its setting, priority will be given to the conservation and enhancement of the natural and scenic beauty of the landscape whilst taking account of the biodiversity interest and the historic and cultural heritage. Major development will not be permitted unless it is demonstrated to be in the national interest and that there is a lack of alternative sustainable development sites.* *In all locations development proposals should conserve or enhance the special features and diversity of the different landscape character types found within the District. Priority will be given to the protection of the quality and diversity of the landscape character. Development will only be permitted if all the following criteria are met:* *1. The location, materials, scale and use are sympathetic and complement the landscape character; and* *2. Natural features including trees, hedgerows and water features that contribute to the landscape character and setting of the development should be both retained and managed*

Stroud District Local Plan	
	appropriately in the future. *Opportunities for appropriate landscaping will be sought alongside all new development, such that landscape type key characteristics are strengthened.* *The Stroud District Landscape Assessment will be used when determining applications for development within rural areas.*
Delivery Policy ES8 - Trees, hedgerows and woodlands	*Development should seek where appropriate to enhance and expand the District's tree and woodland resource.* *Development that would result in the unacceptable loss of, or damage to, or threaten the continued well-being of protected trees, hedgerows, community orchards, veteran trees or woodland (including those that are not protected but are considered to be worthy of protection) will not be permitted.* *Where the loss of trees is considered acceptable, adequate replacement provision will be required that utilise species that are in sympathy with the character of the existing tree species in the locality and the site.*

4.8. As part of the 'Stroud District Renewable Energy Resources Assessment' (2019) (**Ref.5**) the site was identified as "S*uitable land for solar development*" (Ref.5 page 136). The study also described the Landscape Character Area (LCA) the site sits within as having a "*Moderate-High Sensitivity to very large scale solar development"* (Ref.5 page 136). This level of sensitivity is defined as:

> *"Key characteristics and qualities of the landscape are vulnerable to change from wind and solar energy development. There may be some limited opportunity to accommodate wind turbines/ solar panels without significantly changing landscape character. Great care would be needed in siting and design."* (Ref.5 page 119).

5. Landscape baseline

National landscape character

5.1. At the national level, the site and approximately one third of the study area is located within the '106 Severn and Avon Vales National Character Area' (NCA) (2014) (**Ref.6**). The NCA is described as:

> *"The lower valleys of the rivers Severn and Avon dominate this low-lying open agricultural vale landscape made up of distinct and contrasting vales, including Evesham, Berkeley, Gloucester, Leadon, and Avon, with Cotswold outliers like Bredon Hill punctuating the otherwise flat vale landscape. The M5 motorway runs through the centre and the eastern edge of the area."* (Ref. 6. Page 3, para. 1).

5.2. Key characteristics of the NCA exhibited within the study area are:

- *"A diverse range of flat and gently undulating landscapes strongly influenced and united by the Severn and Avon rivers which meet at Tewkesbury.*
- *Prominent oolitic limestone outliers of the Cotswold Hills break up the low-lying landscape in the south-east of the area at Bredon Hill, Robinswood Hill, Churchdown Hill and Dumbleton Hill.*
- *West of the Severn the Mercia Mudstones predominate, producing poorer silty clay soils. Lias clays in the Avon Valley and east of the Severn create heavy but productive soils. River terrace gravels flank the edges of watercourses.*
- *Woodland is sparsely distributed across this landscape but a well wooded impression is provided by frequent hedgerow trees, parkland and surviving traditional orchards. Remnants of formerly extensive Chases and Royal Forests, centred around Malvern, Feckenham and Ombersley still survive.*
- *Small pasture fields and commons are prevalent in the west with a regular pattern of parliamentary enclosure in the east. Fields on the floodplains are divided by ditches (called rhines south of Gloucester) fringed by willow pollards and alders.*
- *Pasture and stock rearing predominate on the floodplain and on steeper slopes, with a mixture of livestock rearing, arable, market gardening and hop growing elsewhere.*
- *Unimproved neutral grassland (lowland meadow priority habitat) survives around Feckenham Forest and Malvern Chase. Along the main rivers, floodplain grazing marsh is prevalent. Fragments of unimproved calcareous grassland and acidic grasslands are also found.*
- *The River Severn flows broadly and deeply between fairly high banks, north to south, while the Warwickshire River Avon meanders over a wide flood plain between Stratford, Evesham and Tewkesbury. The main rivers regularly flood at times of peak rainfall.*
- *A strong historic time line is visible in the landscape, from the Roman influences centred at Gloucester, earthwork remains of medieval settlements and associated field systems through to the strong Shakespearian heritage at Stratford-upon-Avon.*
- *Highly varied use of traditional buildings materials, with black and white timber frame are intermixed with deep-red brick buildings, grey Lias and also Cotswolds stone.*

- *Many ancient market towns and large villages are located along the rivers, their cathedrals and churches standing as prominent features in the relatively flat landscape."* (Ref.6. Page 6).

5.3. The NCA includes guidance within the Statements of Opportunity which are relevant to the site:

"SEO 2: Seek to safeguard and enhance this area's distinctive patterns of field boundaries, ancient hedgerows, settlements, orchards, parkland, small woodlands, chases, commons and floodplain management with their strong links to past land use and settlement history, and for the benefits this will bring to soil erosion, soil quality and biodiversity.." (Ref.6. Page 14).

Gloucestershire landscape character

5.4. The 'Gloucestershire Landscape Character Assessment' (2006) (**Ref.7**) defines the landscape character parts of Gloucestershire. As shown on **Figure 3**, the site falls within the Berkeley Pill Riverine Farmland Landscape Character Area (LCA). The LCA is described as:

"The Berkeley Pill Riverine Farmland is located on the southern edge of the Severn Vale and extends from the county boundary in the south to Sharpness in the north. This low lying area is contained to the east by the rising landform of the Low Triassic Ridge and Low Sandstone Hills character types, while to the south a limited area of the Gently Undulating Farmed Lowland extends up to the area south of Berkeley. To the west, the area is bordered by the distinctive open landscape of the Littoral Sands and Rock Outcrops, adjacent to the River Severn. District landscape character." (Ref. 7. Page 35).

5.5. Key characteristics for this LCA relevant to the study area are:

- *"Low lying open flat landscape occurring intermittently along the edge of the Severn with extensive, uninterrupted views over the estuary towards the Forest of Dean;*
- *Large scale geometric arable, pastoral and wet alluvial pastures largely divided by a rectilinear man-made network of drainage ditches and banks; hedgerows and scattered hedgerow trees also define field boundaries;*
- *Exposed and horizontal emphasis across the landscape with expansive skies;*
- *Limited woodland cover confined to isolated small copses; pollarded willows are a feature;*
- *Sea wall and flood embankments frequently demarcate the extent of the agricultural landscape and restrict views of the estuary;*
- *Winding streams, linear drainage ditches, and inundation grasslands provide a network of semi natural wetland habitats;*
- *Access is generally limited, confined to narrow lanes frequently terminating adjacent to the estuary and only occasional footpaths; large areas remain inaccessible;*
- *Very limited settlement, confined to isolated farm holdings and hamlets, and often located at the end of dead end tracks; and*
- *Occasional large scale industrial development is evident, together with pylons which form dominant features within the otherwise flat and open landscape."* (Ref. 7. Page 33).

5.6. As shown on **Figure 3**, the site is close to the Hills Flats / Hock Cliff / Longney LCA, which is described as:

"The section of Littoral Sands and Rock Outcrops from Hill Flats to Hock Cliff and Longney forms the western extent of the Severn Vale study area and adjoins the same landscape type that is present in the neighbouring Forest of Dean District." (Ref. 7. Page 31).

5.7. Key characteristics for this LCA relevant to the study area are:

- *"Broad landscape of open water, sandbanks, mudflats and rock outcrops;*
- *Temporal landscape that shifts and changes throughout the day;*
- *Open and exposed landscape with uninterrupted views over significant distances;*
- *Intermittent industrial sites bordering the river are prominent in views;*
- *Riverine and estuarine habitats rich in wildlife of national and international importance, and noted for their invertebrate, fish and bird populations; and*
- *Breakwaters and rock outcrops evident along the banks of the river."* (Ref. 7. Page 29).

5.8. As shown on **Figure 3**, the site is close to the Bevington and Whitcliff Ridge LCA, which is described as:

"The Low Triassic Ridge landscape type extends from the south western boundary of the county near the village of Bevington northwards to the southern edge of the village of Ham. It comprises a small area of elevated landform that rises above the surrounding lower-lying, flatter landscape of the Severn Vale. Distant views to the Severn Estuary and the Forest of Dean are possible from the higher slopes of the ridge." (Ref. 7. Page 63).

5.9. Key characteristics for this LCA relevant to the study area are:

- *"A low, discrete ridge with steep concave profile slopes rising to approximately to 55m AOD above the surrounding Gently Undulating Farmed Lowland and Drained Riverine Farmland;*
- *Ridge is dissected by a number of small streams that flow eastwards into the Little Avon River and westwards to the River Severn;*
- *Parkland pasture and trees dominate the landcover with distinctive summit copses, clumps of pine and oak; and intermittent parkland trees; elsewhere, rough grazing is located on steeper slopes and arable and improved pasture on gentler lower slopes; these land uses together with the rolling landform and rich red soils combine to create a colourful textured landscape;*
- *Mixed woodland blocks mainly confined to upper slopes and ridge top, generally associated with the parkland landscape;*
- *Large scale fields extend over the ridge slopes emphasising the distinctive landform;*
- *Settlement is limited, confined to the small hamlet of Bevington, and a dispersed pattern of farmsteads;*
- *A generally inaccessible landscape, with minor roads generally restricted to the base of the ridge, with the exception of a single, winding narrow lane providing access to Bevington; and*
- *Expansive panoramic views from the ridge, affords expansive views westwards towards the Severn Estuary and the Forest of Dean and eastwards to the Cotswolds escarpment."* (Ref. 7. Page 63).

Stroud District landscape character

5.10. The 'Stroud District Landscape Character Assessment' (2000) (**Ref.8**) defines the landscape character in Stroud. As shown on **Figure 4**, the site falls within the Severn Vale Grazing Marshland Landscape Character Types (LCT). Key characteristics for this LCT relevant to the study area are:

- *"Occurs intermittently along the edge of Severn Estuary.*
- *Open flat landscape with extensive views across a large scale rectilinear field pattern.*
- *Strong influence of water manifested in numerous drainage ditches, streams, and important wetland habitats.*
- *Vegetation reflects wet soils; pollarded willows are a feature.*
- *Fewer trees than Rolling Agricultural Plain.*
- *Mixture of arable and wet alluvial pastures depending on water management.*
- *Few settlements - generally isolated farmhouses with exception of Upper Framilode.*
- *Flood embankments restrict views of estuary.*
- *Tracks and roads are linear and pylons common.*
- *Ditches and banks are common as field boundaries.*
- *Distinctive colour and texture of wet pastures."* (Ref. 8. Page B46).

5.11. The study lists a number of key priorities for action which include:

- *"Control public access to the area, leaving some areas inaccessible, and retaining the remote unpeopled character.*
- *Restrict new development in the area, and the siting of visually intrusive elements such as masts and increased numbers of pylons.*
- *Restrict new woodland planting to lines of willow and alder and encourage the continued management of pollarded willows, through stewardship and woodland grant schemes."*

5.12. As shown on **Figure 4**, the site falls close to the within the Triassic Ridge LCT. Key characteristics for this LCT relevant to the study area are:

- *"Distinctive ridge rising to approximately 50-55 m AOD*
- *The upper slopes become progressively steeper forming a concave profile.*
- *Mixed woodland blocks occur along the ridge silhouetted against the sky.*
- *Groups of pine and mature oak give a strong sense of parkland.*
- *Relatively inaccessible landscape.*
- *Strong visual unity due to association with Whitcliff Deer Park.*
- *Pasture is dominant with rough grazing and scrub restricted to steeper slopes.*
- *Large scale fields sweep up the valley sides, emphasising landform.*
- *Designated an Historic Landscape Area and Nature Conservation site."* (Ref. 8. Page B56).

South Gloucestershire landscape character

5.13. The 'South Gloucestershire Landscape Character Assessment Supplementary Planning Document' (2014) (**Ref.9**) defines the landscape character in South Gloucestershire. As shown on **Figure 4**, the site sits adjacent to the Oldbury Levels LCA. The LCA is described as:

> *"The Oldbury Levels landscape character area is a largely flat, open to semienclosed agricultural area with rhines, small orchards and relatively little but scattered settlement, strongly influenced by the adjacent Severn Estuary."* (Ref. 9. Page 267).

5.14. Key characteristics for this LCA relevant to the study area are:

- *"Flat landscape of medium to small sized mainly pastoral fields, both regular and irregular in shape occasionally punctuated by isolated knolls and defined to the west by the sea wall. This historic landscape dates back to the Roman period and is underlain by alluvial deposits of high archaeological potential, containing deposits going back to prehistoric times. Some ridge and furrow survives and pasture dominates.*
- *Field pattern is frequently defined by the network of rhines and often associated hedges are a mixture of both closely clipped and overgrown. These provide important habitat and connectivity for wildlife.*
- *Small scattered deciduous woodlands and copses, with often frequent hedgerow trees, occasional pollarded trees, some withy beds and small orchards associated with farms that provide habitat for notable species including European Protected Species. Some areas have very little tree cover.*
- *Pastoral farmland across this character area provides overwintering habitat for birds associated with the adjacent international designated Severn Estuary, and the support a diverse range of flora. Neutral and marshy grassland across this character area support a diverse range of flora.*
- *Intricate network of angular, enclosed lanes, often following the historic drainage pattern, connects a limited but regular distribution of often historic settlement, comprising a small village and hamlets, largely built of stone, with some brick. Much of the Levels are relatively sparsely populated.*
- *Lanes are occasionally flanked by broad grass verge common land and rhines. Unpaved trackways provide wider connections across the Levels.*
- *Open to semi-enclosed rural landscape, with some extensive views of the Severn Ridge and Wye Valley / Forest of Dean ridge, and a strong visual influence of the estuary. The area provides a generally rural setting in views of the Severn Bridge. Localised enclosure is formed by mature trees, hedgerows, orchards and copses.*
- *Oldbury Power Station and radiating powerlines are large scale elements and visually prominent within an otherwise largely rural historic levels landscape that often has a remote and tranquil character."* (Ref. 9. Page 267 and 268).

5.15. The site is also close to Severn Ridges LCA which is described as:

> *"The Severn Ridges landscape character area is an extensive, complex landform of abrupt scarps and gentle ridges, which rises from the lower Levels area."* (Ref. 9. Page 247).

5.16. Key characteristics for this LCA relevant to the study area are:

- *"Distinctive large scale sloping landform rising from the Levels, with sections of steep scarp in the north and south and more gentle slope profiles elsewhere. A large central area of low hills and radiating ridges extends westwards. A narrow linear area of dip slope, lies adjacent to the Bristol urban edge.*
- *Area is greatly influenced by adjacent Levels and Severn Estuary. All combine to form an area of regionally prominent landform, distinct within and beyond South Gloucestershire.*
- *Expansive and readily available views extend over the lowland Levels and Severn Estuary to the west.*
- *Scarp and lower ridges form a prominent backdrop in views from the Levels, South Wales and the Forest of Dean.*
- *Diverse vegetation cover, with:*
- *Visually prominent mature wooded scarps including areas of ancient woodland that make a significant contribution to landscape character and provide habitat for notable species including European Protected Species, occasionally with ornamental species within historic landscape parks.*
- *Clipped and overgrown hedgerows and intermittent trees divide small pasture fields and provide wildlife connectivity including between areas of woodland, with larger arable fields on more gentle slopes.*
- *Extensive distribution of settlements and minor roads, with older villages, hamlets and scattered farms of local stone, with stone boundary walls. All largely nestled within the landform and strong landscape structure. Churches form distinctive landmarks.*
- *Powerlines frequently cross parts of the area, particularly to the north and vary in prominence.*
- *Industrial buildings, distribution sheds, Oldbury Power Station, within the adjacent Levels and Estuary, visually influence this character area.*
- *The Severn Bridges provide national land marks within the wider estuary landscape, and feature in views from the Severn Ridges*." (Ref. 9. Page 247 and 248).

5.17. The site is also close to Severn Shoreline and Estuary LCA which is described as:

> *"The Severn Shoreline and Estuary landscape character area is a flat open exposed linear landscape of warths, tidal wetlands, mudflats and rock. The large expanse of the Estuary and changing tides, is its most dominant feature."* (Ref. 9. Page 295).

5.18. Key characteristics for this LCA relevant to the study area are:

- *"Open and exposed simple landscape of tidal Severn Estuary, with textured intertidal zone of bed rock, shingle and rivuletted mudflats/ sandflats, edged by a low mud cliff, with warths (salt marshes) beyond, contained to the east by a sea wall.*
- *The entire Severn Estuary and shoreline is internationally designated for a range off habitats and species, including significant numbers of over-wintering wildfowl that also roost and forage in the adjacent Oldbury and Pilning Levels character areas.*

- *Aust Cliff, folded bed rock and fossil bed, forms a prominent landform and geological feature that is designated as a SSSI.*
- *Constantly changing characteristics of shoreline, resulting from the high tidal range of the Severn Estuary (second greatest in the world).*
- *Warths are grazed in places. A linear woodland along the low outcrop of Aust Cliff is prominent.*
- *Warths and mudflats are largely untouched by built features. Remnants of putcher ranks are an historical feature.*
- *Only a few buildings sit on the edge of the warths, but there are more landward urbanizing influences towards the south and more tranquil land and seascapes to the north.*
- *Tidal pills meander across the warths to the Estuary from sluice gates set within the sea wall.*
- *A particular lack of formal boat access to the Estuary from the shore, other than via a slipway at Thornbury Sailing Club and at Severn Beach.*
- *Expansive views include the Estuary and Bristol Channel and its' islands, South Wales and the Wye Valley/Forest of Dean Ridges to the west and Severn Ridges to the east. Further to the south west the Exmoor coastline is sometimes evident.*
- *The grade 1 listed original Severn Bridge forms a prominent landmark feature in many views, with the more recent Second Severn Crossing to the southwest.*
- *Oldbury Power Station, lying within this area, the and large scale industry within the southern Levels, are prominent built features."* (Ref.9. Page 295 and 296).

Forest of Dean landscape character

5.19. The 'Forest of Dean District Landscape Character Assessment' (2002) (**Ref.10**) defines the landscape character in the Forest of Dean. As shown on **Figure 4**, the site sits close to the Severn Sands LCA. Key characteristics for this LCA relevant to the study area are:

- *"Broad landscape of open water, sandbanks, mudflats and rock outcrops.*
- *Temporal landscape.*
- *Open landscape.*
- *Industrial sites bordering the river are often prominent in views to the east.*
- *Cliffs and beaches bordering the river along many stretches.*
- *Riverine and estuarine habitats are rich in wildlife.*
- *The river is a potentially rich archaeological resource.*
- *The remains of numerous rusting river craft, wharves and quays line the banks of the river.*
- *Severn Bore is a well known feature of the river."* (Ref.10. Page 113).

Designations

5.20. As shown on **Figures 5** there are a number of landscape, cultural heritage and natural environment designations relevant to landscape and visual matters.

Landscape designations

Areas of Outstanding Natural Beauty (AONB)

5.21. The Wye Valley AONB is located approximately 8.6km to the west of the site on the other side of the River Severn. There is very limited intervisibility between the AONB and the site and it will not be considered any further in this report. The Cotswolds AONB is located approximately 7.2km to the east of the site. There is some intervisibility between the site and this AONB. Impacts on the Cotswold AONB are discussed within the landscape appraisal section of this report.

Registered Parks and Gardens

5.22. Of the four Registered Parks and Gardens in the study area only one has views of the site. The Berkley Castle (Grade II*) located approximately 1.1km to the east of the site. Visual impacts on the users of this Registered Park and Garden are included in the Visual Assessment part of this report.

Cultural heritage designations

Listed Buildings

5.23. There are a very large 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. There are a small number close to the site where the proposed development may be prominent in the view. They include:

- Blisbury Farmhouse (Grade II), located approximately 545m to the east of the site.
- Manor Farmhouse (Grade II), located approximately 904m to the south-east of the site.
- Barns around Hill View Farmhouse (Grade II), located approximately 949m to the south-east of the site.
- Dayhouse Farmhouse (Grade II), located approximately 984m to the south of the site.

5.24. There may be glimpsed views from other Listed Buildings in the study area, however, any such views would not be prominent and Listed Buildings have not been considered further within this report.

Conservation Areas

5.25. Of the nine Conservation Areas within the study area, three have been identified with potential views of the site. They include:

- Aylburton, located approximately 4.4km to the north-west of the site.
- Alvington, located approximately 4.6km to the north-west of the site.

- Hewelsfield, located approximately 8.2km to the north-west of the site.

5.26. Visual impacts on the users of the cultural heritage designations are included in the Visual Assessment part of this report.

Natural environment designations

Ancient woodland

5.27. There are a number of ancient woodlands in the study area all of which are over 1.4km away from the site. As such they would not be affected in landscape terms by any development on the site and they will not be considered any further in this report.

Traditional Orchards

5.28. There are a number of traditional orchard in the study area, all of which are over 855m away from the site. As such they would not be affected in landscape terms by any development on the site and they will not be considered any further in this report.

Sites of Special Scientific Interest (SSSI)

5.29. There are a number of SSSI in the study area, the closest of which is The Severn Estuary SSSI which is over 420m away from the site. As such they would not be affected in landscape terms by any development on the site and they will not be considered any further in this report.

Public Rights of Way (PRoW) and public access areas

5.30. There are a number of PRoW that have views of the site. These are shown on **Figures 5, 6 and 7** and are described below. There are three PRoW within the site. There are a number with views within 500m and others in the wider study area.

PRoW within 500m of the site.

- Within the site; OHS/13/1, OHS/15/1 and OHS/16/1.
- To the east of the site; OHS/14/1 and OHS/15/2.
- To the south of the site; OHL/1/10 and OHL/2/30.
- To the west of the site; OHS/54/1 and OHS/1/1

PRoW between 500m and 2km of the site.

- To the east of the site; OHL/6/10, OHL/7/10, OHS/11/1, OHS/12/1, OHS/17/1, OHS/18/1, OHS/19/1, OHS/19/2 and OHS/28/1.
- To the south-east of the site; OHL/7/40, OHL/7/50, OHL/7/60 and OHL/9/10
- To the south of the site; OHL/2/10, OHL/3/10, OHL/4/10, OHL/5/10.
- To the south-west of the site; OHL/20/20, OHL/20/30.
- To the north of the site OHS/1/4.

- To the east of the site, OHS/8/1.
- To the south of the site, OHL/13/10.

PRoW between 2km and 5km of the site.

- To the west of the site; a large number in between the River Severn and the A48 including; FW/111/1.

PRoW between 5km and 10km of the site.

- To the west of the site; a large number to the west of A48 including; TWO/57/4 and FAY/26/2.
- To the south of the site on the higher ground around Thronbury, including OAN/2/10.
- To the east of the site around Drakestone Point several including CST/37/2.

5.31. 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.

National trails and long-distance routes

5.32. There are a number of National Trails and long-distance routes which run through the study area:

- The Cotswold Way National Tail runs along the eastern edge of the study area in a roughly north – south direction.
- The Offa's Dyke Path National Tail runs along the eastern edge of the study area in a roughly north – south direction. (There are no views form this path and it will not be considered any further).
- The Severn Way long distant route runs through the centre of the study area along the western bank of the River Severn.
- The Gloucestershire Way long distance route runs along the high ground roughly parallel to the River Severn to the north-west of the site.
- The Jubilee Way long distance route runs to the south of Thornbury in an east-west direction to the south of the site.
- National Cycle Route 41 runs along the unnamed road to the east of the site.

Topography

5.33. The topography of the study area is shown on **Figure 1**. The topography of the study area is defined by River Severn valley. The site sits on an area of low ground along the valley floor. To the north-east and south-west, the landform remains low lying (between 0 and 10m AOD). To the north-west the land rises to the long distance route that runs along the high ground roughly parallel to the River Severn to the north-west of the site to a high point of around 220m AOD close to Briavels. To the south-east the land rises up to a small ridge around 50m high on which Whitcliff Park sits. The land then descends and then rises to a high point of around 190m AOD around Nibley Knoll.

Vegetation and land use

5.34. As shown in **Figure 7** the site sits to the north of the village of Hill and to the east of the River Severn. The largest settlements in the study area are Thornbury to the south of the site and Lydney on the other side of the River Severn. There are also several hamlets and scattered individual farms and properties throughout the study area. The land within 5km of the site is predominantly used for pastoral and arable farming with some blocks of woodland within the local area. There are both regular and irregular field patterns, bounded predominantly by hedgerows and ditches with some linear tree belts. The M5 motorway runs through the eastern part of the study area in a north-south direction.

Site description

5.35. The site is located to the east of the River Severn. As shown on **viewpoint 1 and 2** the site is currently made up of a mixture of pastoral and arable fields. There are 6 whole fields and the proportions of two others that make up the site. There is some evidence of ridge and furrow over the fields that make up the site. The majority of southern (**viewpoint 3**), western (**viewpoint 4**) and northern (**viewpoint 5**) boundaries are defined by hedgerows. The central section of the eastern boundary is not defined (**viewpoints 1**) with the northern and southern ends are delineated by hedgerows. The majority of the internal field boundaries are defined by hedgerows or ditches.

5.36. The site is predominantly flat and is approximately 6m AOD throughout, except for the drainage ditches. Pasture and arable fields continue past the boundaries in all directions.

5.37. There are two vehicular access tracks from the farm complex to the east to access the site. There are 3 PRoW crossing the site all entering the site through the eastern boundary. One in the northern part which terminates in the site and two the south which form a loop as shown on **figure 6**.

5.38. The site area also includes a new access road joining the site to the road network. This joins Worldsend Lane and runs in a southernly direction to the proposed DNO compound over a ditch.

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 condition of the landscape, scenic quality, rarity, representativeness, conservation interests, recreational value, perceptual aspects and cultural associations.

6.3. Part of the assessment of local landscape value has been based on landscape and cultural heritage designations shown on **Figures 5** and landscape character assessments. The site is not located within any landscape designations. There are two AONBs, several Listed Buildings, Registered Parks and Gardens and Conservation Areas located within the study area.

6.4. The document 'Assessing landscape value outside national designations' (2021) (**Ref.12**), Table 1 (Ref.12, 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 area (within 500 m), Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT are considered to have a medium natural heritage landscape value.
- **Cultural heritage.** There is intervisibility between the site and a number of the cultural heritage designations in the local area (within 500 m). The site and immediate area (within 500 m), Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT are considered to have a medium cultural heritage landscape value.
- **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 and the LCA's as a whole.
- **Associations**. Neither the 'Gloucestershire Landscape Character Assessment' (**Ref.7**) or the 'Stroud District Landscape Character Assessment' (**Ref.8**) 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, and the Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT as a whole.
- **Distinctiveness.** Neither 'Gloucestershire Landscape Character Assessment' (**Ref.7**) or the 'Stroud District Landscape Character Assessment' (**Ref.8**) list any rare landscape elements

within the landscape character area. Any examples of the key characteristics within the site are not considered to be particularly important or rare examples of the key characteristics of the LCT. The landscape of the site and immediate area (within 500 m), Berkeley Pill Riverine Farmland LCA or Severn Vale Grazing Marshland LCT are not considered to be rare and the landscape distinctiveness is considered to be low.

- **Recreational.** There are three PRoW running through the site. There are a number of PRoW within 500m of the site and it is considered to have a high recreational value. The Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT are considered to have a high recreation value as they have a network of PRoW running through them including the Severn Way long distance route.
- **Perceptual (scenic).** No formal assessment of scenic quality of the Berkeley Pill Riverine Farmland LCA or Severn Vale Grazing Marshland LCT has been undertaken, and the key characteristics do not make mention of the scenic quality. The landscape of the site and immediate area (within 500 m), Settled Valley Pastures LCA and the Valley Pastures with Industry LCT are considered to have a medium scenic quality.
- **Perceptual (Wildness and tranquillity**). A formal assessment of tranquillity of The Settled Valley Pastures, Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT has not been undertaken. The 'Stroud District Landscape Character Assessment' (**Ref.8**) states that:

  "A remote and peaceful landscape with an open aspect and strong associations with the estuary and water." (Ref.8. Page B49).

  The site, its immediate context, the Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT are considered to have a high perceptual landscape value.
- **Functional.** The trees, hedgerows and drains that run around the site boundaries play a part in the green infrastructure network of the locality and the LCT. The site, its immediate context, the Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland 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. The site is considered a typical example of the landscape character type that it forms part of, without any particular features or associations that would increase its landscape value above that of the surrounding landscape. Combining the value of the surrounding designations, landscape character studies and other criteria it is assessed that the value of the site, its immediate context, Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT is **medium**.

6.6. The landscape of the site is not valued in terms of the NPPF, paragraph 170, as it is not covered by any statutory designations or identified as having high quality in any of the development plan documents or published evidence landscape character study documents.

Landscape susceptibility

6.7. 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'.

6.8. The site's susceptibility to the type of development proposed, namely a solar PV array, is considered to be **medium**. This is based on the fact that the proposed development would have negligible direct effects on landscape features; the site would be fully restored; and the surrounding landform limits visibility of the proposed development except from areas close to the site and on the higher ground to the east and west.

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 landscape (up to 500m), Berkeley Pill Riverine Farmland LCA and Severn Vale Grazing Marshland LCT is considered to be **medium**.

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 (around 3 to 6 months) and any effects would therefore be temporary and transient.

Effects on landscape features

6.11. The important landscape features on the site are the trees and hedgerows on the site boundaries and throughout the site. There would be a loss of a short section of hedgerow (around 36m) to allow connection to the DNO compound and a short section (around 15m) to allow the access road to the DNO compound and no tree loss as a result of the construction.

6.12. The sensitivity of these landscape features is medium and the magnitude of change on landscape features during construction would be **negligible adverse** and the significance of effects assessed to be **slight.**

Effects on landscape character

6.13. The construction process will introduce temporary and intermittent construction activity, movement of personnel and machinery into the site. However, this will be perceived in the context of the noise and movement associated with the settlement. The sensitivity of the landscape character 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

6.14. The short section of hedgerow loss would be replaced on the eastern boundary of the site. The proposed tree and shrub planting would increase the overall tree cover on site and will have a beneficial effect on landscape features within the site. The sensitivity of the majority of these receptors is medium and the magnitude of change would be **minor beneficial**, and the level of effect is assessed as **slight** at completion and at year 15.

Effects on topography

6.15. There would be small changes to the topography of the site as a result of excavations to accommodate the proposed buildings. 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

6.16. 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

6.17. 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; and
- the degree to which opportunities are taken to enhance character where condition is poor, or preserve character where condition is good.

6.18. 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.

6.19. 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)

6.20. The development proposals will change the site from a pasture field to a solar farm. The change in the character to the site itself will inevitably be high for the duration of the solar farm's lifetime. The arrays, fencing and buildings will result in an alteration to the site. However, all of the field boundaries will remain intact and will be enhanced, and although the solar panels are constructed over the field, all landscape features are retained so that effects are reversible. The change in the character to the site being developed 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 Berkeley Pill Riverine Farmland LCA.

6.21. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.1: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Low lying open flat landscape occurring intermittently along the edge of the Severn with extensive, uninterrupted views over the estuary towards the Forest of Dean.	The proposed development would not block views across the estuary to the forest of Dean from the majority of the PRoW. There are two where they would be reduced.
Large scale geometric arable, pastoral and wet alluvial pastures largely divided by a rectilinear man-made network of drainage ditches and banks; hedgerows and scattered hedgerow trees also define field boundaries.	The field pattern would not be interrupted by the proposed development. It would be enhanced through further hedgerow and tree planting.
Exposed and horizontal emphasis across the landscape with expansive skies.	The proposed development is low lying and would not change the horizontal emphasis of the LCA.
Limited woodland cover confined to isolated small copses; pollarded willows are a feature.	There would be an increase in woodland cover as part of the proposed development.
Sea wall and flood embankments frequently demarcate the extent of the agricultural landscape and restrict views of the estuary.	The flood defences would remain unchanged as part of the proposed development.
Winding streams, linear drainage ditches, and inundation grasslands provide a network of semi natural wetland habitats.	The wetland habitats of the site would be retained as part of the proposed development.
Access is generally limited, confined to narrow lanes frequently terminating adjacent to the estuary and only occasional footpaths; large areas remain inaccessible.	The amount of public access to the LCA would not be increased as part of the proposed development.
Very limited settlement, confined to isolated farm holdings and hamlets, and often located at the end of dead end tracks.	The settlement pattern of the LCA would not be affected as part of the proposed development.

Key characteristics	Effects of the proposed development
Occasional large scale industrial development is evident, together with pylons which form dominant features within the otherwise flat and open landscape.	The proposed development would be low lying and would not be a tall dominant feature in the landscape.

6.22. The sensitivity of this landscape character area is medium. The impact would be limited to a small area around the site. The changes brought about by the proposed development to the landscape character within the study area result in a **minor adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Hills Flats / Hock Cliff / Longney LCA.

6.23. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.2: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Broad landscape of open water, sandbanks, mudflats and rock outcrops.	The broad open landscape of the LCA would not be affected by the proposed development.
Temporal landscape that shifts and changes throughout the day.	The temporal nature of the landscape would not be affected by the proposed development.
Open and exposed landscape with uninterrupted views over significant distances.	The open and exposed landscape along with uninterrupted views of the LCA would not be affected by the proposed development.
Intermittent industrial sites bordering the river are prominent in views.	The industrial sites bordering the river of the LCA would not be affected by the proposed development.
Riverine and estuarine habitats rich in wildlife of national and international importance, and noted for their invertebrate, fish and bird populations.	The Riverine and estuarine habitats of the LCA would not be affected by the proposed development.
Breakwaters and rock outcrops evident along the banks of the river.	The Breakwaters and rock outcrops of the LCA would not be affected by the proposed development.

6.24. The sensitivity of this landscape character type is medium. The proposed development would result in a **no change** magnitude of change in the character area with a level of effect assessed to be **neutral** at completion and at year 15.

Effects on landscape character of the Bevington and Whitcliff LCA.

6.25. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.3: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
A low, discrete ridge with steep concave profile slopes rising to approximately to 55m AOD above the surrounding Gently Undulating Farmed Lowland and Drained Riverine Farmland;	The Topography of the LCA would not be affected by the proposed development.
Ridge is dissected by a number of small streams that flow eastwards into the Little Avon River and westwards to the River Severn;	The watercourses of the LCA would not be affected by the proposed development.
Parkland pasture and trees dominate the landcover with distinctive summit copses, clumps of pine and oak; and intermittent parkland trees; elsewhere, rough grazing is located on steeper slopes and arable and improved pasture on gentler lower slopes; these land uses together with the rolling landform and rich red soils combine to create a colourful textured landscape;	The landcover of the LCA would not be affected by the proposed development.
Mixed woodland blocks mainly confined to upper slopes and ridge top, generally associated with the parkland landscape;	The woodland blocks of the LCA would not be affected by the proposed development.
Large scale fields extend over the ridge slopes emphasising the distinctive landform;	There would be a slight change to the field pattern of the LCA as a result of the proposed development.
Settlement is limited, confined to the small hamlet of Bevington, and a dispersed pattern of farmsteads;	The settlement pattern of the LCA would not be affected by the proposed development.
A generally inaccessible landscape, with minor roads generally restricted to the base of the ridge, with the exception of a single, winding narrow lane providing access to Bevington; and	The accessibility of the LCA would not be affected by the proposed development.
Expansive panoramic views from the ridge, affords expansive views westwards towards the Severn Estuary and the Forest of Dean and eastwards to the Cotswolds escarpment	The proposed development would be visible in the westerly facing panoramic views from this LCA.

6.26. The sensitivity of this landscape character type is medium. The proposed development would result in a **negligible adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Severn Vale Grazing Marshland Landscape LCT.

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

Table 6.4: Relevant key characteristics of the LCT and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Occurs intermittently along the edge of Severn Estuary.	The location of the LCT would not be affected by the proposed development.
Open flat landscape with extensive views across a large scale rectilinear field pattern.	The topography of the LCT would not be affected by the proposed development. There would be a slight change in the field pattern and open views would be reduced from 2 PRoW in the site.
Strong influence of water manifested in numerous drainage ditches, streams, and important wetland habitats.	The watercourses of the LCT would not be affected by the proposed development.
Vegetation reflects wet soils; pollarded willows are a feature.	There would be an increase in tree cover within the LCT as part of the proposed development.
Fewer trees than Rolling Agricultural Plain.	There would be an increase in tree cover within the LCT as part of the proposed development.
Mixture of arable and wet alluvial pastures depending on water management.	There would be a slight reduction in the amount of agricultural land in arable use in the LCT as part of the proposed development
Few settlements - generally isolated farmhouses with exception of Upper Framilode.	The settlement pattern of the LCT would not be affected by the proposed development.
Flood embankments restrict views of estuary.	Views of the flood embankments would not be blocked by the proposed development
Tracks and roads are linear and pylons common.	There would be a small increase in the number of tracks within the LCT.
Ditches and banks are common as field boundaries.	The ditches within the site would be retained as part of the proposed development.
Distinctive colour and texture of wet pastures	There would be an increase in the amount of wet pasture in the LCT.

6.28. The sensitivity of this landscape character type is medium. The impact would be limited to a small area around the site. The proposed development would result in a **minor adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Triassic Ridge LCT.

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

Table 6.5: Relevant key characteristics of the LCT and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Distinctive ridge rising to approximately 50-55 m AOD	The topography of the LCT would not be affected by the proposed development.
The upper slopes become progressively steeper forming a concave profile.	The topography of the LCT would not be affected by the proposed development.
Mixed woodland blocks occur along the ridge silhouetted against the sky.	The woodland cover of the LCT would not be affected by the proposed development.
Groups of pine and mature oak give a strong sense of parkland.	The woodland cover of the LCT would not be affected by the proposed development.
Relatively inaccessible landscape.	The access of the LCT would not be affected by the proposed development.
Strong visual unity due to association with Whitcliff Deer Park.	The visual unity within the LCT would not be affected by the proposed development. There would be views of the proposed development from small parts of the deer park.
Pasture is dominant with rough grazing and scrub restricted to steeper slopes.	The land use of the LCT would not be affected by the proposed development.
Large scale fields sweep up the valley sides, emphasising landform.	The field pattern of the LCT would not be affected by the proposed development.
Designated an Historic Landscape Area and Nature Conservation site	The designated areas within the LCT would not be affected in landscape terms by the proposed development. There would be views of the proposed development from some parts of the designated sites.

6.30. The sensitivity of this landscape character type is medium. The proposed development would result in a **negligible adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Oldbury Levels LCA.

6.31. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.6: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Flat landscape of medium to small sized mainly pastoral fields, both regular and irregular in shape occasionally punctuated by isolated knolls and defined to the west by the sea wall. This historic landscape dates back to the Roman period and is underlain by alluvial deposits of high archaeological potential, containing deposits going back to prehistoric times. Some ridge and furrow survives and pasture dominates.	The field pattern of the LCA would not be affected by the proposed development.
Field pattern is frequently defined by the network of rhines and often associated hedges are a mixture of both closely clipped and overgrown. These provide important habitat and connectivity for wildlife.	The field pattern of the LCA would not be affected by the proposed development.
Small scattered deciduous woodlands and copses, with often frequent hedgerow trees, occasional pollarded trees, some withy beds and small orchards associated with farms that provide habitat for notable species including European Protected Species. Some areas have very little tree cover.	The woodland cover of the LCA would not be affected by the proposed development.
Pastoral farmland across this character area provides overwintering habitat for birds associated with the adjacent international designated Severn Estuary, and the support a diverse range of flora. Neutral and marshy grassland across this character area support a diverse range of flora.	The pastoral farmland of the LCA would not be affected by the proposed development.
Intricate network of angular, enclosed lanes, often following the historic drainage pattern, connects a limited but regular distribution of often historic settlement, comprising a small village and hamlets, largely built of stone, with some brick. Much of the Levels are relatively sparsely populated.	The lanes and settlement pattern of the LCA would not be affected by the proposed development.
Lanes are occasionally flanked by broad grass verge common land and rhines. Unpaved trackways provide wider connections across the Levels.	The lanes of the LCA would not be affected by the proposed development.
Open to semi-enclosed rural landscape, with some extensive views of the Severn Ridge and Wye Valley / Forest of Dean ridge, and a strong visual influence of the estuary. The area provides a generally rural setting in views of the Severn Bridge. Localised enclosure is formed by mature trees, hedgerows, orchards and copses.	There would be views of the proposed development from some parts of the LCA.

Key characteristics	Effects of the proposed development
Oldbury Power Station and radiating powerlines are large scale elements and visually prominent within an otherwise largely rural historic levels landscape that often has a remote and tranquil character	The proposed development would not be visually prominent from the LCA.

6.32. The sensitivity of this landscape character type is medium. The impact would be limited to a small area around the site. The proposed development would result in a **negligible adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Severn Ridges LCA.

6.33. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.7: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Distinctive large scale sloping landform rising from the Levels, with sections of steep scarp in the north and south and more gentle slope profiles elsewhere. A large central area of low hills and radiating ridges extends westwards. A narrow linear area of dip slope, lies adjacent to the Bristol urban edge.	The topography of the LCA would not be affected by the proposed development.
Area is greatly influenced by adjacent Levels and Severn Estuary. All combine to form an area of regionally prominent landform, distinct within and beyond South Gloucestershire.	The lanes of the LCA would not be affected by the proposed development.
Expansive and readily available views extend over the lowland Levels and Severn Estuary to the west.	The proposed development would be visible in the westerly facing views form some areas of the LCA.
Scarp and lower ridges form a prominent backdrop in views from the Levels, South Wales and the Forest of Dean.	The ridges of the LCA would still be visible form the surrounding LCAs.
Visually prominent mature wooded scarps including areas of ancient woodland that make a significant contribution to landscape character and provide habitat for notable species including European Protected Species, occasionally with ornamental species within historic landscape parks.	The ancient woodland of the LCA would not be affected by the proposed development.

Key characteristics	Effects of the proposed development
Clipped and overgrown hedgerows and intermittent trees divide small pasture fields and provide wildlife connectivity including between areas of woodland, with larger arable fields on more gentle slopes.	The field pattern of the LCA would not be affected by the proposed development.
Extensive distribution of settlements and minor roads, with older villages, hamlets and scattered farms of local stone, with stone boundary walls. All largely nestled within the landform and strong landscape structure. Churches form distinctive landmarks.	The settlement pattern and landmarks of the LCA would not be affected by the proposed development.
Powerlines frequently cross parts of the area, particularly to the north and vary in prominence.	There may be some changes to the powerlines within the LCA to allow grid connection as part of the proposed development.
Industrial buildings, distribution sheds, Oldbury Power Station, within the adjacent Levels and Estuary, visually influence this character area.	Views of the power station would not be reduced from the LCA as part of the proposed development.

6.34. The sensitivity of this landscape character type is medium. The proposed development would result in a **negligible adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15.

Effects on landscape character of the Severn Shoreline and Estuary LCA.

6.35. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.8: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Open and exposed simple landscape of tidal Severn Estuary, with textured intertidal zone of bed rock, shingle and rivuletted mudflats/ sandflats, edged by a low mud cliff, with warths (salt marshes) beyond, contained to the east by a sea wall.	The intertidal zone of the LCA would not be affected by the proposed development.
The entire Severn Estuary and shoreline is internationally designated for a range off habitats and species, including significant numbers of over-wintering wildfowl that also roost and forage in the adjacent Oldbury and Pilning Levels character areas.	The shoreline of the LCA would not be affected by the proposed development.
Constantly changing characteristics of shoreline, resulting from the high tidal range of the Severn Estuary (second greatest in the world).	The intertidal zone of the LCA would not be affected by the proposed development.

Key characteristics	Effects of the proposed development
Warths and mudflats are largely untouched by built features. Remnants of putcher ranks are an historical feature.	The warths and mudflats of the LCA would not be affected by the proposed development.
Only a few buildings sit on the edge of the warths, but there are more landward urbanizing influences towards the south and more tranquil land and seascapes to the north.	The built form of the LCA would not be affected by the proposed development.
Tidal pills meander across the warths to the Estuary from sluice gates set within the sea wall.	The tidal pills of the LCA would not be affected by the proposed development.
A particular lack of formal boat access to the Estuary from the shore, other than via a slipway at Thornbury Sailing Club and at Severn Beach.	The boat access of the LCA would not be affected by the proposed development.
Expansive views include the Estuary and Bristol Channel and its' islands, South Wales and the Wye Valley/Forest of Dean Ridges to the west and Severn Ridges to the east. Further to the south west the Exmoor coastline is sometimes evident.	The expansive views of the LCA would not be affected by the proposed development.
The grade 1 listed original Severn Bridge forms a prominent landmark feature in many views, with the more recent Second Severn Crossing to the southwest.	Views of the Severn Bridge from the LCA would not be affected by the proposed development.
Oldbury Power Station, lying within this area, the and large scale industry within the southern Levels, are prominent built features	Views of the Oldbury Power Station from the LCA would not be affected by the proposed development.

6.36. The sensitivity of this landscape character type is medium. The proposed development would result in a **no change** magnitude of change in the character area with a level of effect assessed to be **neutral** at completion and at year 15.

Effects on landscape character of the Severn Sands LCA.

6.37. The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development.

Table 6.9: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Broad landscape of open water, sandbanks, mudflats and rock outcrops.	The broad landscape of the LCA would not be affected by the proposed development.
Temporal landscape.	The temporal landscape of the LCA would not be affected by the proposed development.
Open landscape.	The open landscape of the LCA would not be affected by the proposed development.

Key characteristics	Effects of the proposed development
Industrial sites bordering the river are often prominent in views to the east.	The open landscape of the LCA would not be affected by the proposed development.
Cliffs and beaches bordering the river along many stretches.	The cliffs and beaches of the LCA would not be affected by the proposed development.
Riverine and estuarine habitats are rich in wildlife.	The watercourses of the LCA would not be affected by the proposed development.
The river is a potentially rich archaeological resource.	The archaeological resource of the LCA would not be affected by the proposed development.

6.38. The sensitivity of this landscape character type is medium. The proposed development would result in a **no change** magnitude of change in the character area with a level of effect assessed to be **neutral** at completion and at year 15.

Effects on Cotswolds AONB.

6.39. The 'Cotswolds Area of Outstanding Natural Beauty Management Plan 2018-2023' (2018) (**Ref.11**) describes the special qualities of the AONB. These qualities are listed in the table below with an explanation of how they could be affected by the proposed development on the site.

Table 6.10: Relevant special qualities and how they are affected in landscape terms by the proposed development.

Special qualities	Effects of the proposed development
The unifying character of the limestone geology – its visible presence in the landscape and use as a building material;	The limestone geology of the AONB would not be affected by the proposed development.
The Cotswold escarpment, including views from and to the AONB;	The proposed development would be visible from the Cotswold escarpment in the distance.
The high wolds – a large open, elevated predominately arable landscape with commons, 'big' skies and long-distance views;	The high wold would not be affected by the proposed development.
River valleys, the majority forming the headwaters of the Thames, with high-quality water;	The river valleys of the AONB would not be affected by the proposed development.
Distinctive dry stone walls;	The dry stone walls of the AONB would not be affected by the proposed development.
Internationally important flower-rich grasslands, particularly limestone grasslands;	The grasslands of the AONB would not be affected by the proposed development.
Internationally important ancient broadleaved woodland, particularly along the crest of the escarpment;	The woodland of the AONB would not be affected by the proposed development.
Variations in the colour of the stone from one part of the AONB to another which add a vital element of local distinctiveness;	The local distinctiveness of the AONB would not be affected by the proposed development.

Special qualities	Effects of the proposed development
The tranquillity of the area, away from major sources of inappropriate noise, development, visual clutter and pollution;	The tranquillity of the AONB would not be affected by the proposed development.
Extensive dark sky areas;	The dark skies of the AONB would not be affected by the proposed development.
Distinctive settlements, developed in the Cotswold vernacular, high architectural quality and integrity;	The settlement pattern of the AONB would not be affected by the proposed development.
An accessible landscape for quiet recreation for both rural and urban users, with numerous walking and riding routes, including the Cotswolds Way National Trail;	The accessible land of the AONB would not be affected by the proposed development.
Significant archaeological, prehistoric and historic associations dating back 6,000 years, including Neolithic stone monuments, ancient drove roads, Iron Age forts, Roman villas, ridge and furrow fields, medieval wool churches and country estates and parks;	The archaeology of the AONB would not be affected by the proposed development.
A vibrant heritage of cultural associations, including the Arts and Crafts movement of the 19th and 20th centuries, famous composers and authors and traditional events such as the Cotswolds Olympicks, cheese rolling and woolsack races.	The cultural associations of the AONB would not be affected by the proposed development.

6.40. The sensitivity of this Cotswolds AONB is high. The development would result in a **negligible adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at 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 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 local residential properties around the site.
- Users of the road network near to the site.
- The users of the PRoW network close to the site.
- The users of the PRoW on the higher ground to the east and west

7.3. Sensitivity of receptors will be dependent on their activity and whether their attention is focused on the landscape. 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 in **Figure 4**.

Representative viewpoints

7.5. Representative viewpoints form the basis of the assessment of the potential effects of the proposed development on views and visual amenity, in line with the GLVIA3. A wide range of potential viewpoints were investigated in the desk study using Google Earth. Twenty viewpoints were selected including four close range (under 500m) and eight medium range (500m to 3km) and eight long range (beyond 3km) with representative views of the site shown on **Figure 7 and 8**. 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 OHS/13/1.

7.6. This viewpoint is to the east of the site looking west and represents users of that PRoW. There are open views of the central fields of the site in the foreground of the view. Views of the wider landscape are blocked by the intervening vegetation except for the high ground open within the Forest of Dean.

Viewpoint 2. PRoW OHS/15/1.

7.7. This viewpoint is to the east of the site looking west and represents users of that PRoW. There are partial views of the central fields of the site in the middle ground of the view. Views of the wider

landscape are blocked by the intervening vegetation except for the high ground within the Forest of Dean.

Viewpoint 3. PRoW OHL/1/10.

7.8. This viewpoint is to the south of the site looking north and represents users of the surrounding PRoW in that area. Views of the site are blocked by the southern boundary hedgerows. Views of the wider landscape are blocked by the intervening vegetation.

Viewpoint 4. PRoW OHS/54/1 (also the Severn Way).

7.9. This viewpoint is to the west of the site looking east and represents users of the PRoW. There are glimpsed views of the central fields of the site seen over the western boundary hedgerows. There are views of Triassic ridge to the east of the site.

Viewpoint 5. Severn Lane.

7.10. This viewpoint is to the north of the site looking east and represents users of the road and properties close to it. There are no views of the site as they are blocked by the intervening vegetation. There are views of Triassic ridge to the east of the site.

Viewpoint 6. PRoW OHL/20/30 (also the Severn Way).

7.11. This viewpoint is to the south-west of the site looking north-east and represents users of PRoW and surrounding properties. There are no views of the site as they are blocked by the intervening vegetation. There are views of Cotswolds Escarpment to the east of the site.

Viewpoint 7. PRoW HL/5/10.

7.12. This viewpoint is to the south of the site looking north-east and represents users of PRoW and surrounding properties. There are no views of the site as they are blocked by the intervening vegetation. There are views of high ground within the Forest of Dean.

Viewpoint 8. PRoW OHL/13/10.

7.13. This viewpoint is to the south of the site looking north and represents users of PRoW and surrounding properties within Hill. There are no views of the site as they are blocked by the intervening vegetation. There are views of high ground within the Forest of Dean.

Viewpoint 9. PRoW OHL/9/10.

7.14. This viewpoint is to the south-east of the site looking north-west and represents users of PRoW and surrounding properties on the southern part of the Triassic Ridge. There are no views of the site as they are blocked by the intervening vegetation. There are views of high ground within the Forest of Dean.

Viewpoint 10. PRoW OHS/19/1.

7.15. This viewpoint is to the south-east of the site looking north-west and represents users of PRoW and surrounding properties on the central part of the Triassic Ridge. There are partial views of the fields within the southern part of the site. There are views of high ground within the Forest of Dean.

Viewpoint 11. PRoW OHS/8/1.

7.16. This viewpoint is to the east of the site looking west and represents users of PRoW within the Whitcliff Park. There are partial views of the fields within the central and northern parts of the site. There are views of high ground within the Forest of Dean in the distance beyond the site.

Viewpoint 12. PRoW OHS/9A/1.

7.17. This viewpoint is to the south-east of the site looking north-west and represents users of PRoW and surrounding properties on the central part of the Triassic Ridge. There are partial views of the fields within the central and northern parts of the site. There are views of high ground within the Forest of Dean in the distance beyond the site.

Viewpoint 13. PRoW OAN/2/10 (also Jubilee Way).

7.18. This viewpoint is to the south of the site looking north and represents users of PRoW, roads and surrounding properties on the higher ground to the south of Thornbury. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation. There are views of high ground within the Forest of Dean and the Triassic Ridge.

Viewpoint 14. Tyndale Monument (also Cotswolds Way).

7.19. This viewpoint is to the east of the site looking west and represents users of monument and PRoW. Views of the site are blocked by the Triassic Ridge. There are views of high ground within the Forest of Dean and the Triassic Ridge.

Viewpoint 15. Drakestone Point (also Cotswolds Way).

7.20. This viewpoint is to the east of the site looking west and represents users of viewpoint, surrounding PRoW roads and properties. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation and landform. There are views of high ground within the Forest of Dean and the Triassic Ridge.

Viewpoint 16. Lydney Harbour.

7.21. This viewpoint is to the north of the site looking south and represents users of harbour, surrounding PRoW roads and properties. Views of the site are blocked by the intervening vegetation. There are views of Triassic Ridge to the east of the site.

Viewpoint 17. PRoW FAY/26/2.

7.22. This viewpoint is to the north-west of the site looking south-east on the rising ground to the west of the A48 and represents users of PRoW roads and properties on the rising ground. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation. There are views of Triassic Ridge to the east of the site and the Cotswolds Escarpment beyond.

Viewpoint 18. Church Lane.

7.23. This viewpoint is to the north-west of the site looking south-east on the lower ground to the east of the A48 and represents users of PRoW roads and properties on this lower ground. Views of the site are blocked by the intervening vegetation. There are views of Triassic Ridge to the east of the site and the Cotswolds Escarpment beyond.

Viewpoint 19. PRoW FWO/111/1.

7.24. This viewpoint is to the north-west of the site on the lower ground looking south-east to the east of the A48 and represents users of PRoW, roads and properties. Views of the site are blocked by the intervening vegetation. There are views of Triassic Ridge to the east of the site and the Cotswolds Escarpment beyond.

Viewpoint 20. PRoW FWO/57/4.

7.25. This viewpoint is to the north-west of the site looking south-east on the higher ground to the west of the A48 and represents users of PRoW, roads and properties. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation. There are views of Triassic Ridge to the east of the site and the Cotswolds Escarpment beyond.

Viewpoint 21. Cycle route.

7.26. This viewpoint is to the east of the site looking south and represents users of that cycle route. Views of the site are blocked by the intervening hedgerows. Views of the wider landscape are blocked by the intervening vegetation except for the high ground of the Triassic Ridge. This viewpoint has been added at the request of the local planning authority.

Viewpoint 22. 'Moated site in Whitcliff Deer Park' Scheduled Monument (private land).

7.27. This viewpoint is to the east of the site looking west and represents users of the Scheduled Monument on the Triassic Ridge. There are no views of the site as they are blocked by the intervening vegetation. There are views of high ground within the Forest of Dean. This viewpoint has been added at the request of Historic England.

Viewpoint 22. 'Park House' Listed Building (private land).

7.28. This viewpoint is to the east of the site looking west and represents users of the Park House on the Triassic Ridge. There was no access to the building itself and this viewpoint has been taken from the ground close to the house. There are no views of the site as they are blocked by the intervening landform. This viewpoint has been added at the request of Historic England.

Viewpoint 23. PRoW OHS/8/1

7.29. This viewpoint is to the east of the site looking north and represents users of the PRoW on the Triassic Ridge. There are no views of the site as they are blocked by the intervening vegetation. There are views of high ground within the Forest of Dean. This viewpoint has been added at the request of Historic England to understand the relationship between Berkley and the site.

Viewpoint 24. Berkeley Castle

7.30. This viewpoint is to the east of the site looking west and represents users of the western part of Berkely Castle. There are no views of the site as they are blocked by the intervening vegetation. This viewpoint has been added at the request of Historic England.

8. Visual appraisal

Extent of visibility

8.1. The site visit and ZTV (**Figure 7**) established the potential extent of visibility of the proposed development within the landscape. Views of the site are generally restricted within 2km and areas of high ground to the west and east with the local landform and vegetation blocking any other views.

Construction phase visual effects

8.2. For the purposes of this assessment construction effects are not considered in detail as these would be completed in a relatively short time span (estimated to be 3 to 6 months) and, as a result, any effects would be temporary and transient. These effects would include the use of machinery on site and deliveries of materials.

Operational phase visual effects

Visual effects on Public Rights of Way

OHS/13/1

8.3. This PRoW runs east to west through the northern part of the site where it terminates. Views from these PRoW are represented by **viewpoint 1**. There would be glimpsed and partial views of the site form the eastern part of the PRoW through the intervening vegetation, where it runs in between Blisbury Farm and Worldsend Farm. The western part of the path would have open views of the site in the foreground beyond Worldsend Farm.

8.4. At completion in the winter there would be open views of eastern elevations of the solar panels in foreground of the view, that may break the skyline. The DNO compound would be seen over the intervening hedgerow. The sensitivity of these receptors is medium, and the magnitude of change would be **major adverse**, therefore the level of effect is considered to be **large.**

8.5. The proposed mitigation planting would block all views of the proposed development from the western part of the PRoW at year 15 in the summer. There may still be glimpsed views of the proposed development from the eastern part of the path, but they would be seen through intervening vegetation. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHS/16/1

8.6. This PRoW runs to the south eastern boundary of the site where it joins with PRoW OHS/15/1. This PRoW runs through a lane with tall hedgerows either side and views of the site are limited to glimpses through gaps in the vegetation.

8.7. At completion in the winter there would be glimpsed views of southern elevations of the solar panels and DNO compound in foreground of the view, that may break the skyline for the central and eastern section of this PRoW. From the western section there would be open views of eastern elevations of the solar panels in foreground of the view, that may break the skyline. The DNO compound would be seen. The sensitivity of these receptors is medium, and the magnitude of change would be **major adverse**, therefore the level of effect is considered to be **large.**

8.8. The proposed mitigation planting would block all views of the proposed development from the western part of the PRoW at year 15 in the summer. There may still be glimpsed views of the DNO compound from the eastern part of the path. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHS/15/1, OHS/15/2 and OHS/14/1

8.9. These PRoW run to the east of the site. OHS/15/1 runs through the southern part of the site and joins with PRoW OHS/16/1. Views from these PRoW are represented by **viewpoint 2**. There would be glimpsed and partial views of the site form the eastern part OHS/15/1, and from the length of OHS/15/2 and OHS/14/1 through the intervening vegetation, where it runs close to Blisbury Farm. The western part of OHS/15/1 would have open views of the site in the foreground of the view.

8.10. At completion in the winter there would be open views of southern elevations of the solar panels and DNO compound in foreground of the view, as shown in the photomontage. There would also be views of the DNO compound to the north. The sensitivity of these receptors is medium, and the magnitude of change would be **major adverse**, therefore the level of effect is considered to be **large.**

8.11. The proposed mitigation planting would block all views of the proposed development from the western part of OHS/15/1 at year 15 in the summer as shown in the photomontage. There may still be glimpsed views of the proposed development from the eastern part of the path and OHS/15/2 and OHS/14/1, but they would be seen through intervening vegetation. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHL/1/10 and OHL/2/30

8.12. These PRoW run to the south of the site with views represented by **viewpoint 3**. There are no views of the site as they are blocked by the intervening vegetation from the eastern part of the PRoW and from the western part by the southern boundary hedgerow in the middle ground.

8.13. At completion in the winter there would be partial views of southern elevations of the solar panels in middle ground of the view from the western part of the PRoW, that may break the skyline. The sensitivity of these receptors is medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.14. The southern boundary hedgerow will be allowed to grow to a height of 4m, which would block all views of the proposed development at year 15 in the summer from these PRoW. There may be the occasional glimpsed view. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHS/54/1 and OHS/1/1 (also the Severn Way)

8.15. These PRoW run to the west of the site with views represented by **viewpoint 4**. There are partial and glimpsed views of the central fields of the site in the middle ground over the intervening vegetation and the western boundary hedgerow of the site. The levels of visibility are highest closest to the site, decreasing to the north and south as the level of intervening vegetation increases.

8.16. At completion in the winter there would be partial views of western elevations of the solar panels in middle ground of the view from these PRoW that would not break the skyline. There may be glimpsed views of the DNO compound in the distance. The sensitivity of these receptors is high as this route is a National Trail, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **moderate.**

8.17. The western, northern and southern boundary hedgerows will be allowed to grow to a height of 4m, which would block all but glimpsed views of the proposed development at year 15 in the summer from these PRoW. Oak trees planted along the western boundary would further filter views. The residual magnitude of change after mitigation planting has established would be **negligible adverse**, therefore the level of effect is assessed to be **slight.**

OHL/6/10, OHL/7/10, OHS/9/1, OHS/9A/1, OHS/11/1, OHS/12/1, OHS/17/1, OHS/18/1, OHS/19/1, OHS/19/2 and OHS/28/1.

8.18. These PRoW runs to the east of the site on the rising ground of the Triassic Ridge with views represented by **viewpoints 10 and 12**. There are partial and glimpsed views of the southern fields of the site in the middle ground. Views are blocked by the intervening vegetation and landform from some sections of each PRoW. The levels of visibility are highest on the higher ground where the elevated landforms give a clearer view over the site although it is more distant.

8.19. At completion in the winter there would be partial views of western and southern elevations of the solar panels and the DNO compound in the middle ground of view that would not break the skyline.

The sensitivity of these receptors is medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.20. The proposed mitigation planting along the eastern boundary of the site would partially block most views at year 15 in the summer from these PRoW. There would be still be some views over the proposed development over the proposed planting. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHL/7/40, and OHL/7/50, OHL/7/60. OHL/9/10.

8.21. These PRoW run to the south-east of the site on the rising ground of the Triassic Ridge with views represented by **viewpoint 9**. There are glimpsed views of the southern fields of the site in the distance from short sections of these paths, particularly on the higher ground where the elevated landforms give a clearer view over the site.

8.22. At completion in the winter there would be glimpsed views of southern elevations of the solar panels and DNO compound in distance from these PRoW that would not break the skyline. The sensitivity of these receptors is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.23. The proposed mitigation planting along the eastern boundary of the site would partially block most views of the proposed development. The southern boundary hedgerows would be allowed to grow to approximately 4m tall which would further screen views of the proposed development at year 15 in the summer. There would be still be some views of the proposed development over the proposed planting. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHL/2/10, OHL/3/10, OHL/4/10, OHL/5/10.

8.24. These PRoW run to the south of the site on the lower ground of the valley floor with views represented by **viewpoint 7**. There are no views of the site as they are blocked by the either the intervening vegetation or by the southern boundary hedgerow in the middle ground.

8.25. At completion in the winter there may be glimpsed views of southern elevations of the solar panels in distance through the intervening vegetation form short sections of these paths, where gaps arise. The sensitivity of these receptors is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.26. The southern boundary hedgerow will be allowed to grow to a height of 4m, which would block all views of the proposed development at year 15 in the summer from these PRoW, albeit there may

be the occasional glimpsed view. The residual magnitude of change after mitigation planting has established would be **negligible adverse**, therefore the level of effect is assessed to be **slight.**

OHL/20/20, OHL/20/30.

8.27. These PRoW run to the south-west of the site on the flood defences that run along the banks of the River Severn. Views from these PRoW are represented by **viewpoint 6**. There are no views of the site as they are blocked by the intervening vegetation.

8.28. At completion in the winter there may be glimpsed views of southern elevations of the solar panels in the distance from short sections of these paths through gaps in the intervening vegetation. The sensitivity of these receptors is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.29. The southern boundary hedgerow will be allowed to grow to a height of 4m, which would block all views of the proposed development at year 15 in the summer from these PRoW, albeit there may be the occasional glimpsed view. The residual magnitude of change after mitigation planting has established would be **negligible adverse**, therefore the level of effect is assessed to be **slight.**

OHS/1/4 (also the Severn Way)

8.30. These PRoW run to the north of the site on the flood defences that run along the banks of the River Severn. There are no views of the site as they are blocked by the intervening vegetation.

8.31. At completion in the winter there may be glimpsed views of northern elevations of the solar panels in the distance from short sections of these paths through gaps in the intervening vegetation. The sensitivity of these receptors is high as it is a National Trail, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.32. The northern boundary hedgerow will be allowed to grow to a height of 4m, which would block all views of the proposed development at year 15 in the summer from these PRoW, albeit there may be the occasional glimpsed view. The residual magnitude of change after mitigation planting has established would be **negligible adverse**, therefore the level of effect is assessed to be **slight.**

OHS/8/1.

8.33. This PRoW runs to the east of the site, along the top of Triassic Ridge through Whitcliff Park with views represented by **viewpoint 11**. There are partial views of the central and northern fields of the site in the distance. Views form this path are blocked by the intervening vegetation and landform for the majority of the PRoW. There is one short section around the viewpoint where views of the site are possible.

8.34. At completion in the winter there would be partial views of eastern and southern elevations of the solar panels in distance of the view from these PRoW, that would not break the skyline. The sensitivity of these receptors is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.35. The proposed mitigation planting along the eastern boundary of the site would partially block views of the proposed development at year 15 in the summer but it would still be visible. The residual magnitude of change after mitigation planting has established would remain **minor adverse**, therefore the level of effect is assessed to be **slight.**

OHL/13/10

8.36. This PRoW runs to the south of the site, on an area of high ground to the north of Hill, views from this PRoW are represented by **viewpoint 8**. There are glimpsed views of the central and northern fields of the site in the distance. View of the site are restricted to the section of the path on the higher ground. On the lower parts of the PRoW, views are blocked by the intervening landform and vegetation.

8.37. At completion in the winter there would be glimpsed views of southern elevations of the solar panels in the middle ground through the intervening vegetation, that would not break the skyline. The sensitivity of these receptors is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.38. As the hedgerow along the southern boundary is left to grow to a height of 4m it would partially block views of the proposed development at year 15 in the summer, but it would still be visible. The residual magnitude of change after mitigation planting has established would remain **minor adverse**, therefore the level of effect is assessed to be **slight.**

PRoW in-between the River Severn and the A48 including FW/111/1 and Lydney Harbour.

8.39. There are a large number of PRoW to the west of the site on the valley floor on the opposite side of the River Severn. Views from these PRoW are represented by **viewpoint 16, 18 and 19**. There are no views of the site as they are blocked by the intervening vegetation on either shore of the river.

8.40. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation form short sections of these paths; however, it would be very difficult to perceive. The sensitivity of these receptors is medium, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.41. The western boundary hedgerow grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of

change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

PRoW to the west of the A48 including TWO/57/4 and FAY/26/2 (including the Gloucestershire Way).

8.42. There are a large number of PRoW to the west of the site on the rising ground from the valley floor on the opposite site of the River Severn. Views from these PRoW are represented by **viewpoint 17 and 20**. There are glimpsed distance views of the small parts of the site but the majority of it is blocked by the intervening vegetation.

8.43. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation form short sections of these paths. However, it would be very difficult to perceive. The sensitivity of these receptors is high as some are National Trails, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.44. The eastern boundary hedgerow would be grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

PRoW to south of the site on the higher ground around Thornbury, including OAN/2/10 (also the Jubilee Way).

8.45. There are several PRoW to the south of the site on the rising ground around Thornbury. Views from these PRoW are represented by **viewpoint 13**. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation.

8.46. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation form short sections of these paths; however, it would be very difficult to perceive. The sensitivity of these receptors is high, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.47. At year 15 in the summer, the mitigation planting would not be particularly visible at this distance and the residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

PRoW to the east of the site around Drakestone Point including CST/37/2.

8.48. There are several PRoW to the east of the site on the rising ground of the Cotswolds Escarpment with views represented by **viewpoint 15**. There are glimpsed distance views of the northern and central parts of the site.

8.49. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation form short sections of these paths. However, it would be very difficult to perceive. The sensitivity of these receptors is high, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.50. The eastern boundary hedgerow would be grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

8.51. View of the proposed development would be seen in combination with a solar farm in between the M5 motorway and the Triassic Ridge. These would not be seen as one solar development and would not noticeably change the balance of solar farms in the existing few.

PRoW to the east of the site around Tyndale Monument.

8.52. There are several PRoW to the east of the site on the rising ground of the Cotswolds Escarpment. Views from these PRoW are represented by **viewpoint 14**. There are no views of the site as they are blocked by the intervening landform of the Triassic Ridge.

8.53. At completion in the winter there would be no views of the proposed development as they would be blocked by the intervening landform of the Triassic Ridge. The sensitivity of these receptors is medium, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.54. At year 15 in the summer there would be no views of the proposed development as they would be blocked by the intervening landform of the Triassic Ridge. The sensitivity of these receptors is medium, and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral**.

Other PRoW within the study area

8.55. There is a network of PRoW within the study area, as shown on **Figure 6 and 7**. 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. The sensitivity of these receptors is medium and magnitude of change would be **negligible adverse** and the level of effect is considered to be at most **slight** at both completion and year 15**.**

Visual effects on residential properties and settlements

Worldsend Farm

8.56. This is a complex of buildings to the east of the site. It includes one residential dwelling which is located at its closest, approximately 350m from the eastern boundary of the site and 66m from the access road. It is orientated in a north-easterly direction, with the front aspect and principal rooms facing away from the site. The only views of the site would be from the small number of south-westerly and north-westerly facing windows. These views would be open of the central and northern parts of the site.

8.57. At completion in the winter there would be open views from these south-westerly and north-westerly facing windows of the eastern elevation of the solar panels and the DNO compound. The extent and scale of the changes in the views would be small. There would be no views of the proposed development form the principal room along the property's frontage. The sensitivity of users of the non-principal rooms would be medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.58. The proposed mitigation planting would block views from the ground floor, but the upper floors would still have views of the proposed development. The mitigation planting would partially block views but not completely form the upper floors, at year 15 in the summer. The residual magnitude of change would remain **moderate adverse**; therefore, the level of effect is assessed to be **moderate.** It should be noted that this property is within the ownership of the proposed development site landowner and occupants are unlikely to be in opposition to the scheme.

Worldsend cottage

8.59. This is a residential dwelling which is located at its closest, approximately 390m from the eastern boundary of the site and 36m form the access road. It is orientated in a northerly direction, with the front aspect and principal rooms facing away from the site. The only views of the site would be from the two small westerly facing windows. These views would be partial of the central and northern parts of the site.

8.60. At completion in the winter there would be partial views from these westerly and north facing windows of the eastern elevation of the solar panels. The extent and scale of the changes in the views would be small. There would be no views of the proposed development form the principal room along the property's frontage. The sensitivity of users of the non-principal rooms would be medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.61. The proposed mitigation planting would block views from the ground floor but the upper floors would still have views of the proposed development. The mitigation planting would partially block views but not completely form the upper floors, at year 15 in the summer. The residual magnitude of change would remain **minor adverse**; therefore, the level of effect is assessed to be **slight.**

Severn House Farm

8.62. This is a complex of buildings to the north of the site. It includes one residential dwelling which is located at its closest, approximately 430m from the northern boundary of the site. It is orientated in a westerly direction, with the front aspect and principal rooms away from the site. The only views towards the site would be from the small number of south facing windows. These views would be glimpsed through the intervening vegetation.

8.63. At completion in the winter there would be glimpsed views from these southerly facing windows of the northern elevation of the solar panels through the intervening vegetation. The extent and scale of the changes in the views would be small. There would be no views of the proposed development form the principal room along the property's frontage. The sensitivity of users of the non-principal rooms would be medium, and the magnitude of change would be **negligible adverse**, therefore the level of effect is considered to be **slight.**

8.64. The northern boundary hedgerow would be allowed to grow to a height of 4m further blocking any views form the upper floors views at year 15 in the summer. The residual magnitude of change would remain **negligible adverse**; therefore, the level of effect is considered to be **slight.**

Blisbury Farm (also a Listed Building)

8.65. This is a complex of buildings to the east of the site. It includes one residential dwelling which is located at its closest, approximately 785m from the eastern boundary of the site and 544 from the DNo compound. It is orientated in a northerly direction, with the front aspect and principal rooms facing away from the site. The only views of the site would be from the small number of westerly facing upper floor windows. These would be open views of the central and southern parts of the site.

8.66. At completion in the winter there would be open views from these westerly facing upper floor windows of the eastern elevation of the solar panels and DNO compound. The extent and scale of the changes in the views would be small. There would be no views of the proposed development from the principal room along the property's frontage. The sensitivity of users of the non-principal rooms would be medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.67. The proposed mitigation planting would partially blocked views from the upper floors, but they would still have views of the proposed development at year 15 in the summer. The residual magnitude of change would remain **moderate adverse**; therefore, the level of effect is assessed to be **moderate.**

Properties around Clapton Farm, Willis Elm Farm, Severn House and New Elm.

8.68. This group of properties is located to the east of the site, at their closest approximately 1km from the northern boundary and 878m from the access road. The only views of the site would be from south-westerly and westerly facing upper floor windows. These views would be partial views of the central and northern parts of the site.

8.69. At completion in the winter there would be partial views from these upper floor windows of the easterly elevations of the solar panels. The extent and scale of the changes in the views would be small. The sensitivity of users of these non-principal rooms would be medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.70. At year 15 in the summer the proposed mitigation planting would partly block views of the proposed development form these upper floor windows although parts of it would still be visible. The residual magnitude of change would reduce **minor adverse**, therefore the level of effect is assessed to be **slight.**

Properties around Pottinger's Farm and Windrush.

8.71. This group of properties is located the east of the site, at their closest approximately 810m from the eastern boundary. The only views of the site would be from westerly facing upper floor windows. These views would be partial views of the central and southern parts of the site.

8.72. At completion in the winter there would be partial views from these upper floor windows of the easterly elevations of the solar panels and DNO compound. The extent and scale of the changes in the views would be small. The sensitivity of users of these non-principal rooms would be medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.73. At year 15 in the summer the proposed mitigation planting would partly block views of the proposed development form these upper floor windows although parts of it would still be visible. The residual magnitude of change would reduce **minor adverse**, therefore the level of effect is assessed to be **slight.**

Properties around Manor Cottages (also Listed Building).

8.74. This group of properties is located the south-east of the site, at their closest approximately 1km from the eastern boundary and 518m form the DNO compound. The only views of the site would be from westerly facing upper floor windows. These views would be partial views of the central and southern parts of the site.

8.75. At completion in the winter there would be partial views from these upper floor windows of the easterly elevations of the solar panels and DNO compound. The extent and scale of the changes in the views would be small. The sensitivity of users of these non-principal rooms would be medium, and the magnitude of change would be **moderate adverse**, therefore the level of effect is considered to be **moderate.**

8.76. At year 15 in the summer the proposed mitigation planting would partly block views of the proposed development form these upper floor windows although parts of it would still be visible. The residual magnitude of change would reduce **minor adverse**, therefore the level of effect is assessed to be **slight.**

Dayhouse Farm and Tranton Cottage.

8.77. These properties are located to the south of the site, at their closest approximately 950km from the southern boundary. The only views of the site would be from northerly facing upper floor windows. There would be glimpsed views of the southern parts of the site, seen through the intervening vegetation.

8.78. At completion in the winter there would be glimpsed views from these upper floor windows of the southerly elevations of the solar panels. The extent and scale of the changes in the views would be small. The sensitivity of users of these non-principal rooms would be medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **slight.**

8.79. At year 15 in the summer the proposed mitigation planting would further block views of the proposed development form these upper floor windows. The residual magnitude of change would reduce **minor adverse**; therefore, the level of effect is assessed to be **slight.**

Thornbury.

8.80. There may be properties within and around Thornbury to the south of the site on the higher ground that have views towards the site. These are represented by **viewpoint 13**. These views would be from northerly facing upper and ground floor windows. Views of the site are difficult to perceive given the distance and partially blocked by the intervening vegetation.

8.81. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation from properties within this settlement. However, it would be very difficult to perceive. The sensitivity of these receptors is high (worst case from the ground floor rooms), and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.82. At year 15 in the summer, the mitigation planting would not be particularly visible at that distance and the residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

Stinchcombe.

8.83. There may be properties within and around Stinchcombe on the higher ground, to the east of the site that have views towards the site; these would be glimpsed distant views of the northern and central parts of the site as represented by **viewpoint 15**. These views would be from westerly facing upper and ground floor windows.

8.84. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation from some properties within this settlement. However, it would be very difficult to perceive. The sensitivity of these receptors is high (worst case from the ground floor rooms), and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.85. The eastern boundary hedgerow would be grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

Lydney, Aylburton, Alvington, Plusterwine and other settlements on the northern banks of the River Severn (including Conservation Areas).

8.86. There are numerous properties within the settlements that run along the northern banks of the River Severn that have views towards the site. These are represented by **viewpoint 16, 18 and 19**. There are glimpsed distant views of small parts of the site, but the majority of it is blocked by intervening vegetation.

8.87. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation from some properties within these settlements. However, it would be very difficult to perceive. The sensitivity of these receptors is high (worst case from the ground floor rooms), and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.88. The eastern boundary hedgerow would be grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

Hewelsfield and other settlements on the higher ground to the west of the A48

8.89. There are a number properties within these settlements on the higher ground to the west of the River Severn, that have views towards the site represented by **viewpoint 17 and 20**. There are glimpsed distance views of the small parts of the site, but the majority of it is blocked by the intervening vegetation.

8.90. At completion in the winter there may be distant glimpsed views of the proposed development through the intervening vegetation from some properties within these settlements. However, it would be very difficult to perceive. The sensitivity of these receptors is high (worst case from the ground floor rooms), and the magnitude of change would be **no change**, therefore the level of effect is considered to be **neutral.**

8.91. The eastern boundary hedgerow would be grown to a height of approximately 4 meters and additional tree planting would further block any views of the proposed development. The residual magnitude of change after mitigation planting has established would remain **no change**, therefore the level of effect is assessed to be **neutral.**

Visual effects on roads

Severn Lane

8.92. This road runs to the north of the northern boundary of the site. Views from the road are represented by **viewpoints 5**. Much of the road is lined with hedgerow which blocks most views. Where available, they are glimpsed views of the northern part of the site through the intervening vegetation.

8.93. At completion in the winter there would be glimpsed views of the northern elevation of the solar panels through the intervening vegetation. The sensitivity of users of the road is medium, and the magnitude of change would be **negligible adverse**, therefore the level of effect is considered to be **slight.**

8.94. The northern boundary hedgerow would be allowed to grow to a height of 4m further blocking any views from this road, views at year 15 in the summer. The residual magnitude of change would remain **negligible adverse**; therefore, the level of effect is considered to be **slight.**

Worldsend Lane

8.95. This road runs to the east of the site. Much of the road is lined with hedgerow which blocks most views of the site. Where available, they are glimpsed views of the northern part of the site through the intervening vegetation. At the western end of the lane as it turns to the south towards Worldsend Farm there are more open views of the central part of the site.

8.96. At completion in the winter there would be open views of eastern elevations of the solar panels in foreground of the view, that may break the skyline from the western end of the road. For the rest of the road views would be blocked by the intervening vegetation. The sensitivity of this receptor is medium, and the magnitude of change would be **major adverse**, therefore the level of effect is considered to be **large.**

8.97. The proposed mitigation planting would block all views of the proposed development from the western part of the lane at year 15 in the summer. The residual magnitude of change after mitigation planting has established would be **minor adverse**, therefore the level of effect is assessed to be **slight.**

Unnamed road to the east of the site.

8.98. This road runs to the east of the site. Much of the road is lined with hedgerow which blocks most views of the site. Where views are available, they are glimpsed through gaps in the hedgerows. These views would be of the central and southerly parts of the site.

8.99. At completion in the winter there would be glimpsed views of eastern elevations of the solar panels and DNO compound in middle distance of the view, through the gaps in the hedgerows. For the rest of the road views would be blocked by the intervening vegetation. The sensitivity of this receptor is medium, and the magnitude of change would be **minor adverse**, therefore the level of effect is considered to be **large.**

8.100. The proposed mitigation planting would block the majority of views of the proposed development through the gaps in the vegetation at year 15 in the summer. The residual magnitude of change after mitigation planting has established would be **negligible adverse**, therefore the level of effect is assessed to be **slight.**

Other roads and lanes within the study area

8.101. 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. Most views of the site were blocked by the intervening landform and vegetation. The sensitivity of these receptors is medium, the magnitude of change on other roads and lanes within the study area would be **negligible adverse** and the level of effect is considered to be **neutral** at completion and year 15.

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 landscape strategy plan **Figure 9.** 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 as possible and include an appropriate landscape scheme. A landscape strategy would be developed for the site with the following broad aims:

- to create an attractive setting for the proposed development;
- to assimilate built elements into the surrounding landscape;
- to minimise adverse effects on visual amenity; and
- 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 strategies and recommendation in relevant landscape character studies are shown on **Figure 8** and are as follows:

1. Retention of the existing trees and hedgerows within the site and along the boundaries.
2. Retention of all ditches throughout the site.
3. Creation of a linear tree and shrub planting area along the eastern boundary.
4. Creation of a section of hedgerow along the eastern boundary.
5. Creation of tree and shrub planting areas around the DNO compound.
6. Additional individual tree planting along the western boundary.

9.4. The landscape proposals have been guided by local landscape character guidance.

Indicative planting palette

9.5. The palette of indicative species takes into consideration the native species present in the vicinity of the site. Planting stock used in the landscape proposals should be native and, wherever feasible, locally sourced to increase resilience to climate change and issues of biosecurity.

9.6. Tree and hedgerow species to be used in the proposed development should include Willow, Alder, Oak, Hawthorn, Blackthorn, Hazel, Elder, Dogwood, Dog Rose and Guelder Rose, reflecting locally distinctive vegetation in the landscape.

Response to landscape character assessment guidance

9.7. 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 NCA landscape guidance.

106. Severn and Avon Vales NCA	
Guidance	**Response**
SEO 2: Seek to safeguard and enhance this area's distinctive patterns of field boundaries, ancient hedgerows, settlements, orchards, parkland, small woodlands, chases, commons and floodplain management with their strong links to past land use and settlement history, and for the benefits this will bring to soil erosion, soil quality and biodiversity.	The field pattern of the site will be preserved with all the field boundaries retained and, in some cases, enhanced. The proposed development also includes the creation of new boundaries.

Table 9.2: Response to relevant district landscape guidance.

Severn Vale Grazing Marshland LCA	
Guidance	**Response**
Control public access to the area, leaving some areas inaccessible, and retaining the remote unpeopled character.	There will be no additional public access to the LCT as part of the proposed development.
Restrict new development in the area, and the siting of visually intrusive elements such as masts and increased numbers of pylons.	The proposed solar farm is lowing lying and will not be a tall intrusive element in the landscape.
Restrict new woodland planting to lines of willow and alder and encourage the continued management of pollarded willows, through stewardship and woodland grant schemes	New tree planting has been restricted to new linear belts and small copses, which will include will and alder.

10. Cumulative landscape and visual appraisal (CLVA)

Scope

10.1. Cumulative landscape and visual effects are defined by GLVIA3 (**Ref.1**) as:

> *result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.* (Ref. 1. Page 120. Para.7.2).

10.2. This CLVA considers the potential cumulative impact of the proposed development and the other renewable energy projects within the study area, the locations of which are shown on **Figure 10.** Cumulative projects considered are listed in the table below:

Table 10.1: cumulative projects considered in appraisal.

Project number	Panning status	Planning refence number
1	In planning	P22/05462/F
2	In planning	S.22/1955/FUL
3	Screening	2013/1555/EIAS
4	Screening	2014/1186/EIAS
5	Screening	2014/1156/EIAS
6	Screening	2014/0770/EIAS
7	Screening	2015/0035/EIAS
8	Approved	S.15/1523/FUL
9	Screening	2015/0598/EIAS
10	Approved	S.14/2460/FUL
11	Approved	S.14/0929/FUL
12	Screening	P22/018/SCR
13	Approved	PT14/2810/F
14	Screening	PT14/018/SCR
15	Screening	P1554/22/EIA

10.3. All the approved projects have been considered in the baseline and appraisal sections of this report and will not be considered further this CLVA. All the projects in screening are noted but not taken any further as there is no certainty that these proposals will progress to planning. Most are dated between 2013 and 2015.

10.4. Cumulative development taken forward for consideration in the CLVA are 'Project 1', Land At Hill Court Farm and 'Project 2', Land At Woodlands Farm. Collectively they referred to 'cumulative projects'. As these are considered the only two that would generate any cumulative landscape and visual effects. Effects are considered as a worst-case scenario with the proposed development and Projects 1 and 2 all approved and built out. Given the limited scale of the landscape cumulative developments and the large scale of the NCA, potential effects on the NCAs will not be considered.

10.5. Receptors judged to receive negligible or minor magnitude of change are not considered for cumulative effects on the basis that any effects arising would primarily be caused by the cumulative developments and would be unlikely to be contributed to by the proposed development. These include areas on the valley floor further away from the site or receptors on the opposite of the River Severn to the site.

Cumulative Landscape Assessment

10.6. The cumulative landscape assessment is undertaken at an District LCA and LCT level on the LCAs and LCTs that both the site and the cumulative projects being considered fall within. In some cases, there would not be direct physical cumulative effects on the LCA that the proposed development falls within. Other non-direct effects may instead potentially be on those perceptual and aesthetic aspects of landscape character as identified in the published landscape character assessments.

Effects on landscape character of the Severn Vale Grazing Marshland Landscape LCT.

10.7. The following key characteristics identified for the LCT are listed below with an assessment of how they would be affected by the proposed development cumulatively with Projects 1 and 2.

Table 10.2: Relevant key characteristics of the LCT and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Occurs intermittently along the edge of Severn Estuary.	The location of the LCT would not be affected by the proposed development with Projects 1 and 2.
Open flat landscape with extensive views across a large scale rectilinear field pattern.	The topography of the LCT would not be affected by the proposed development with Projects 1 and 2. There would be a slight change in the field pattern and open views would be reduced from 2 PRoW in the proposed development. There would be no loss of views as a result of Project 2 within the LCT.
Strong influence of water manifested in numerous drainage ditches, streams, and important wetland habitats.	The watercourses of the LCT would not be affected by the proposed development with Projects 1 and 2.
Vegetation reflects wet soils; pollarded willows are a feature.	There would be an increase in tree cover within the LCT as part of the proposed development with Projects 1 and 2.
Fewer trees than Rolling Agricultural Plain.	There would be an increase in tree cover within the LCT as part of the proposed development with Projects 1 and 2.
Mixture of arable and wet alluvial pastures depending on water management.	There would be a slight reduction in the amount of agricultural land in arable use in the LCT as part of the proposed development with Projects 1 and 2.

Key characteristics	Effects of the proposed development
Few settlements - generally isolated farmhouses with exception of Upper Framilode.	The settlement pattern of the LCT would not be affected by the proposed development with Projects 1 and 2.
Flood embankments restrict views of estuary.	Views of the flood embankments would not be blocked by the proposed development with Projects 1 and 2.
Tracks and roads are linear and pylons common.	There would be a small increase in the number of tracks within the LCT with Projects 1 and 2.
Ditches and banks are common as field boundaries.	The ditches within the site would be retained as part of the proposed development with Projects 1 and 2.
Distinctive colour and texture of wet pastures	There would be an increase in the amount of wet pasture in the LCT with Projects 1 and 2.

10.8. The sensitivity of this landscape character type is medium. The proposed development and cumulative projects would result in a **minor adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15 when considering the proposed development with Projects 1 and 2. This does not increase the level of effect beyond that already assessed.

Effects on landscape character of the Oldbury Levels LCA.

10.9. The proposed development and cumulative projects sit within The following key characteristics identified for the LCA are listed below with an assessment of how they would be affected by the proposed development with Projects 1 and 2.

Table 10.3: Relevant key characteristics of the LCA and how they are affected in landscape terms by the proposed development.

Key characteristics	Effects of the proposed development
Flat landscape of medium to small sized mainly pastoral fields, both regular and irregular in shape occasionally punctuated by isolated knolls and defined to the west by the sea wall. This historic landscape dates back to the Roman period and is underlain by alluvial deposits of high archaeological potential, containing deposits going back to prehistoric times. Some ridge and furrow survives and pasture dominates.	The field pattern of the LCA would not be affected by the proposed development with Projects 1 and 2.
Field pattern is frequently defined by the network of rhines and often associated hedges are a mixture of both closely clipped and overgrown. These provide important habitat and connectivity for wildlife.	The field pattern of the LCA would not be affected by the proposed development with Projects 1 and 2.

Key characteristics	Effects of the proposed development
Small scattered deciduous woodlands and copses, with often frequent hedgerow trees, occasional pollarded trees, some withy beds and small orchards associated with farms that provide habitat for notable species including European Protected Species. Some areas have very little tree cover.	The woodland cover of the LCA would not be affected by the proposed development with Projects 1 and 2.
Pastoral farmland across this character area provides overwintering habitat for birds associated with the adjacent international designated Severn Estuary, and the support a diverse range of flora. Neutral and marshy grassland across this character area support a diverse range of flora.	The pastoral farmland of the LCA would not be affected by the proposed development with Projects 1 and 2.
Intricate network of angular, enclosed lanes, often following the historic drainage pattern, connects a limited but regular distribution of often historic settlement, comprising a small village and hamlets, largely built of stone, with some brick. Much of the Levels are relatively sparsely populated.	The lanes and settlement pattern of the LCA would not be affected by the proposed development with Projects 1 and 2.
Lanes are occasionally flanked by broad grass verge common land and rhines. Unpaved trackways provide wider connections across the Levels.	The lanes of the LCA would not be affected by the proposed development with Projects 1 and 2.
Open to semi-enclosed rural landscape, with some extensive views of the Severn Ridge and Wye Valley / Forest of Dean ridge, and a strong visual influence of the estuary. The area provides a generally rural setting in views of the Severn Bridge. Localised enclosure is formed by mature trees, hedgerows, orchards and copses.	There would be views of the proposed development from some parts of the LCA. These views would also be affected by Project 1.
Oldbury Power Station and radiating powerlines are large scale elements and visually prominent within an otherwise largely rural historic levels landscape that often has a remote and tranquil character	The proposed development and project 2 would not be visually prominent from the LCA. There would be an increase in energy infrastructure as a result of Project 1.

10.10. The sensitivity of this landscape character type is medium. The proposed development and cumulative projects would result in a **minor adverse** magnitude of change in the character area with a level of effect assessed to be **slight** at completion and at year 15. This does not increase the level of effect beyond that already assessed.

Cumulative Visual Assessment

10.11. The proposed development and other developments would be visible from a number of different directions. The cumulative views are described in the table below. Effects are either combined

(occurs where the observer is able to see two or more developments from one viewpoint) or sequential (occurs when the observer has to move to another viewpoint to see the same or different developments).

Table 10.4: cumulative projects considered in appraisal.

Visual receptor	Description
OHS/13/1, OHS/14/1, OHS/15/1, and OHS/15/2	These PRoW run to through and to the east of the site on the lower ground of the valley floor. For the sections of those PRoW outside of the site proposed development and Project 1 would be seen **in succession.** As only the tops of the panels of Project 1 would be seen over the intervening vegetation it would not increase the level of effect beyond that already assessed.
OHL/1/10 and OHL/2/30	These PRoW run to the south of the site with views represented by **viewpoint 3**. There are no views of the site as they are blocked by the intervening vegetation from the eastern part of the PRoW and from the western part by the southern boundary hedgerow in the middle ground. The proposed solar panels of Project 2 would block views of the proposed development and they would not be seen together. As such the proposed development would not be seen form this PRoW. Project 2 on its own would increase level of effect beyond that already assessed. However, the two projects together would not increase the level of effect beyond that already assessed.
OHL/6/10, OHL/7/10, OHS/9/1, OHS/9A/1, OHS/11/1, OHS/12/1, OHS/17/1, OHS/18/1, OHS/19/1, OHS/19/2 and OHS/28/1	These PRoW run to the east of the site on the rising ground of the Triassic Ridge with views represented by **viewpoints 10 and 12**. Views are blocked by the intervening vegetation and landform from some sections of each PRoW. The levels of visibility are highest on the higher ground where the elevated landforms give a clearer view over the site although it is more distant. There are partial and glimpsed views of the southern fields of the site in the middle ground. There would be **combined views** with Project 1 for the paths to the north and south of this group. The valley landform would block views of the proposed development and Project 1 in the central part of this area. For a very short section of PRoW OHS/9A/1 on the high ground and some of the PRoW around Bevington Farm that the proposed development and Project 2 would be seen **in succession.** Although the proposed development and cumulative projects would be seen together it would not increase the level of effect beyond that already assessed. As Project 1 in linear in nature and would be seen beyond the site and not largely change the sense of the depth of solar panels.
OHS/8/1	This PRoW runs to the east of the site, along the top of Triassic Ridge through Whitcliff Park with views represented by **viewpoint 11**. There are partial views of the central and northern fields of the site in the distance. Views form this path are blocked by the intervening vegetation and landform for the majority of the PRoW. There is one short section around the viewpoint where views of the site are possible. From this section there would be **combined views** with Projects 1 and 2. Given the distance from the receptor seeing them it would not increase the level of effect beyond that already assessed.

Visual receptor	Description
OHS/54/1 and OHS/1/1 (also the Severn Way)	These PRoW run to the west of the site with views represented by **viewpoint 4**. There are partial and glimpsed views of the central fields of the site in the middle ground over the intervening vegetation and the western boundary hedgerow of the site. The levels of visibility are highest closest to the site, decreasing to the north and south as the level of intervening vegetation increases. The proposed development and Project 1 and 2 would be seen in **sequential views** along these PRoW. There may be **combined views** of the proposed development and Project 2 as users of the PRoW come closer to the site. Given the short lengths of PRoW that these are visible from and the level of vegetation between the proposed development and cumulative projects it would not increase the level of effect beyond that already assessed.
Unnamed road to the east of the site.	This road runs to the east of the site. Much of the road is lined with hedgerow which blocks most views of the site. Where views are available, they are glimpsed through gaps in the hedgerows. These views would be of the central and southerly parts of the site. The proposed development and Project 1 and 2 would be seen in **sequential views** along this road. There may be **combined views** of the proposed development and Project 2 as users of the road come closer to the site. Given the short lengths of road that these are visible from and the level of vegetation between the proposed development and cumulative projects it would not increase the level of effect beyond that already assessed.

10.12. Cumulative landscape effects are limited to the LCT and LCA that the proposed development and cumulative projects sit within. Although there would be cumulative effects, they would not increase the level of effect beyond that already assessed. The level of effect has been appraised a slight which should not be material in the decision-making process.

10.13. Cumulative visual effects are on the whole limited to combined and sequential views from the visual receptors directly around the site and from the rising ground of the Triassic Ridge to the east. They would not increase the level of visual effect beyond that already assessed. The level of effect from these visual receptors has been appraised a slight which should not be material in the decision-making process.

11. Summary and Conclusions

Summary

11.1. A Landscape and Visual Appraisal (LVA) has been undertaken by ADAS for the proposed solar development at the land at Worldsend Farm, Berkeley

11.2. The primary policies relevant to the site are from the 'Stroud District Local Plan' (**Ref.4**) Delivery Policy ES2 - Renewable or low carbon energy generation, Delivery Policy ES7 -Landscape Character and Delivery Policy ES8 - Trees, hedgerows and woodlands.

11.3. The site is located to the east of the River Severn and is currently made up of a mixture of pastoral and arable fields. There are 6 whole fields and the proportions of two others that make up the site. The majority of southern, western, and northern boundaries are defined by hedgerows. The central section of the eastern boundary is not defined, whilst the northern and southern ends are delineated by hedgerows. The majority of the internal field boundaries are defined by hedgerows or ditches.

11.4. A table of the landscape and visual effects of the proposed development can be found in **Appendix 6.** In summary, there would a **slight** level of effect on the Berkeley Pill Riverine Farmland LCA, Severn Vale Grazing Marshland LCT that the site sits within. There would be a **slight** or **neutral** level of effect on all other LCAs and LCTs that surround the site. The **large** residual level would be limited to the landscape character of the site and local landscape character (within 500m of the site).

11.5. The proposed development would be well screened from the wider landscape by existing landform from much of the study area. The visual assessment concludes that visibility of the proposals would be limited to local visual receptors and those on higher ground to the east and west. The receptors most affected by the development would be the users of the PRoW, and a small number of properties closest to the site at completion. Only two PRoW would have **large** level of effects at year 0. The effects are reduced from the PRoW once the proposed planting has established. At most, the residual effects would be **moderate** for the properties close to the site including Worldsend Farm and Blisbury Farm close to the site, with most other receptors having a **slight** or **neutral** residual level effect of as a result of the development.

11.6. Proposed mitigation measures include strengthening the boundary vegetation which will assist in reinforcing visual screening of the development from the users of the local roads, PRoW and residential properties. The landscape proposals are in accordance with relevant opportunities and guidelines set out in the NCA and district landscape character management recommendations.

11.7. The cumulative landscape and visual effects of the proposed development and the cumulative projects described in the CLVA, would not increase the level of effect beyond that already assessed within the LVA.

Conclusion

11.8. The assessment of landscape and visual effects of the proposed development demonstrates that the site is enclosed by the valley landform which blocks views of the site from much of wider landscape. The proposed hedgerow planting would integrate with the existing landscape character once it establishes and reduce the visual effects of the proposed development.

11.9. Once decommissioned, there would be no residual adverse landscape or visual effects. The scheme would, through the new and strengthened hedgerow and tree planting, leave an enhanced landscape.

11.10. There would be some adverse landscape and visual effects. The landscape effects would be localised to immediately around the site. Given the inherent low lying nature of the proposed solar panels, the visual effects again would be localised except for the views form the east and west from the high ground.

12. 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 (2019), The National Planning Policy Framework.

Ref.4 Stroud District Council (2016), Stroud District Local Plan

Ref.5 Centre for Sustainable Energy and Land Use Consultants (2019), Stroud District Renewable Energy Resources Assessment

Ref.6 Natural England (2014), NCA Profile: 106 Severn and Avon Vales National Character Area

Ref.7 LDA Design (2006), Gloucestershire Landscape Character Assessment

Ref.8 Landscape Design Associates (2000), Stroud District Landscape Character Assessment

Ref.9 South Gloucestershire Council (2014), South Gloucestershire Landscape Character Assessment Supplementary Planning Document

Ref.10 Landscape Design Associates (2002), Forest of Dean District Landscape Character Assessment

Ref.11 The Cotswolds Conservation Board (2018), Cotswolds Area of Outstanding Natural Beauty Management Plan 2018-2023

Appendix 1: Figures

Appendix 2: Viewpoints and Visualisations

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 and significant adverse effects (or to avoid, reduce and if possible remedy identified effects), including landscape and visual effects. (Ref.2 page 41, para.3.36)

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 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**).

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 rage 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 impact assessment 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 LVIA as part of 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 sold 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 Box 5.1 of GLVIA 3 (**Ref.1 page 84**) which include Landscape quality (condition), Scenic quality, Rarity, Representativeness, Conservation interests, Recreational value, Perceptual aspects and Associations. Table A4.1 givens and 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 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 with no management and large gaps and large numbers of dead or diseased individual. 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	A flat, uniform landscape	↔	An undulating 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
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 of 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 or 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 road infrastructure 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 described 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 for this report is described in the body of the report. These 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.
- **Glimpse 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 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 publically 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 from and of major tourist attractions; 2) Views 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.
High sensitivity	1) Views by users of nationally important PRoW / recreational trails (e.g. national trails, long distance footpaths); 2) Views 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).
Medium sensitivity	1) Static views from less populated residential areas, schools and other institutional buildings and their outdoor areas; 2) Views 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 by users of normal PRoW
Low sensitivity	1) Views by users of main roads or passengers in public transport on main arterial routes; 2) Views by indoor workers; 3) Views by users of recreational/formal sports facilities where the landscape is secondary to enjoyment of the sport; 4) Views 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 area, 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 effect 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)*

1.41. 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 as a result of the proposed development on the duration of the visual effect likely to arise on different visual receptors 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 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 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 or 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.

Table A4.7: Visual Magnitude of Change Definitions

Magnitude of change	Typical Criteria
Major	The project, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The project, 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 project 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 project work or activity would be discernible.

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

1.48. 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).

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 described 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)

Cumulative Landscape and Visual Appraisal (CLVA)

A4.53 The aim of this Cumulative Landscape and Visual Impact Assessment (CLVA) is to describe and assess the ways in which the proposed development would have additional effects when considered together with other existing, consented or proposed developments, especially those of a similar type. The assessment follows guidance provided in GLVIA3.

A4.54 This CLVA is based on a site visit undertaken as part of the LVIA and review of the LVIA produced for the proposed development.

A4.55 No cumulative photomontages have been produced.

A4.56 The following types of projects are considered within the CLVA

- Operational developments are included in the baseline, approved development which are expected to be constructed, form part of the future baseline and will be included as such.
- Proposals in planning considered where there is good reason to assume that the timing of decisions may be similar and significant cumulative effects are likely. The assessment of effects is considered within the cumulative assessment.
- Proposals in screening are noted but not considered within the cumulative assessment, as there is no certainty that these proposals will progress to planning submissions and the nature of the proposed schemes may be subject to change.

Cumulative Landscape Effects

A4.57 Cumulative landscape effects are likely to include impacts on:

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

A4.58 The cumulative landscape effects will be considered particularly in terms of consequences for key characteristics of the landscape. Judgements will be made about the compatibility of the proposals considered with the existing characteristic of the landscape, for example its scale and pattern, and whether or not the character of the landscape is changed to such an extent that it becomes a new landscape type or sub-type.

A4.59 The cumulative landscape assessment will consider:

- the susceptibility of the landscape receptor to the type of change under consideration;
- the value attached to the receptor under consideration, reflecting in particular its designation status, including internationally recognised and national designated landscapes, locally designated landscapes and other valued components of the landscape;
- the size and scale of the cumulative landscape impacts identified;
- the extent of the geographical area covered by the cumulative landscape impacts identified; and
- the duration of the cumulative landscape impacts, including the timescales relating to both the project being assessed and the other projects being considered, and the extent to which the cumulative impacts may be considered reversible.

Cumulative Visual Effects

A4.60 Cumulative visual effects are the impacts on views and visual amenity enjoyed by people, which may result either from adding the effects of the project being assessed to the effects of the other projects on the baseline conditions or from their combined effect. This may result from changes in the content and character of the views experienced in particular places due to introduction of new elements or removal of or damage to existing ones.

A4.61 The first step is to define the study area. In this case the study area is the combined study area defined in the LVIAs for each scheme, the area within approximately 5 km of the sites.

A4.62 The baseline for the cumulative visual effects is likely to be the same as for the visual effects assessment of the main project being considered. Assuming that relevant visual receptors and viewpoints have been identified and used in defining the study area, the baseline should consider:

- the people likely to be affected at each location, the activity they are involved in (and therefore their susceptibility to changes in views and visual amenity) and the number affected; and
- the extent, nature and characteristics of the views and visual amenity enjoyed by those people at those viewpoints.

A4.63 As a number of separate developments must be considered, there is interest in the way in which they may be experienced. At one viewpoint someone looking at the view in one direction may see all the projects at the same time, or someone turning through 360° may see different developments

in different directions and sectors of the view in succession. Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially see the different developments revealed in succession as a series of sequential views. The types of cumulative visual effects are described in table below.

A4.64 The Types of Cumulative Visual Effects

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

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 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

Appendix 5: Photograph methodology

A5.1 The following section outlines the methodology and approach to the site photography and photomontages.

Relevant Guidance

A5.2 Theses photographs and photomontages 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), Visual Representation of Development Proposals. (**Ref.2**)

Scope of Photography and Photomontages

A5.3 The type of photographs and photomontages 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)*

A5.4 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

A5.5 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
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)

1.65. 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

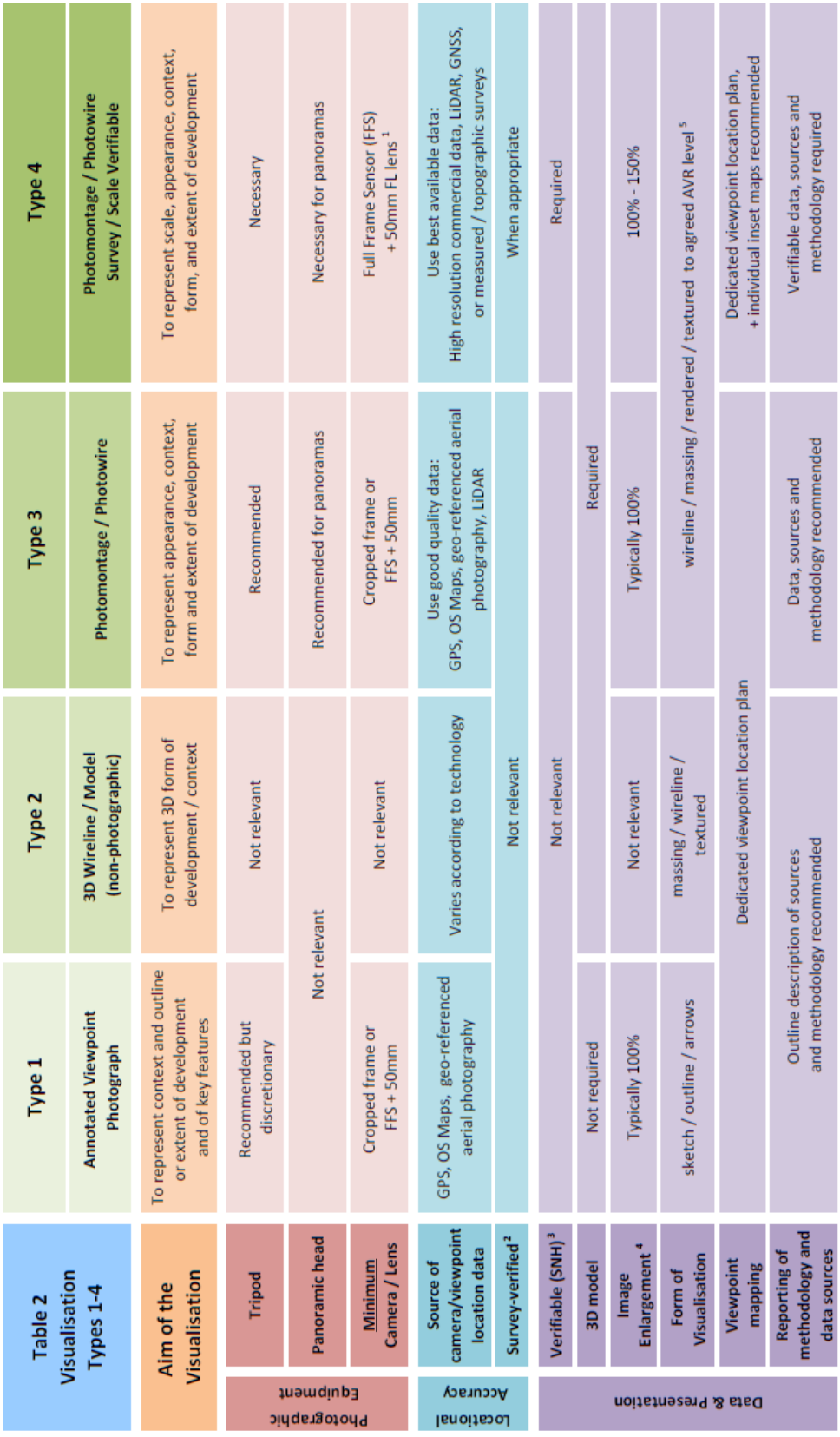


Table 2 Visualisation Types 1-4	Type 1	Type 2	Type 3	Type 4
	Annotated Viewpoint Photograph	3D Wireline / Model (non-photographic)	Photomontage / Photowire	Photomontage / Photowire Survey / Scale Verifiable
Aim of the Visualisation	To represent context and outline or extent of development and of key 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		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	Not relevant	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

Based on Visual Representation of Development Proposals (Ref.2, Table 2, page 11)

Type 1 - Annotated Viewpoint Photograph

Field Survey and Photography

A5.6 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 f/1.8 II). As standard all photographs were taken using a Manfrotto, tripod, 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

A5.7 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°.

A5.8 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

A5.9 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.

A5.10 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

A5.11 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 f/1.8 II). As standard all photographs were taken using a Manfrotto, tripod, panoramic head and leveller except where stated. The camera location was recorded using a Trimble Catalyst GPS unit set to 1cm accuracy.

Digital production of photomontages

Digital Image Preparation

A5.12 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

A5.13 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.

A5.14 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.

A5.15 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

A5.16 Irrespective of whether the final photomontage is output as a single or composite panoramic image, each photomontage is based upon a single photograph.

A5.17 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.

A5.18 The background plate photograph is imported into 3D Studio Max, to verify the accuracy of the match.

A5.19 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.

A5.20 The rendered views were based on single photographs to match the corresponding section of the panorama.

A5.21 A wireframe model of the existing and proposed model is then rendered, overlaid onto the photograph and issued for approval.

A5.22 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

A5.23 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.

A5.24 Rendering is the term used to describe the process of generating a two-dimensional rendered bitmap image from the 3D model.

A5.25 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.

A5.26 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.

A5.27 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

A5.28 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".

A5.29 Finally, proposed vegetation can be introduced along with the removal of any existing details on site that would be removed during the development process.

A5.30 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

A5.31 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°.

A5.32 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

A5.33 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.

A5.34 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 4 - Photomontage / PhotowireType

Field Survey and Photography

A5.35 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 f/1.8 II). As standard all photographs were taken using a Manfrotto, tripod, panoramic head and leveller except where stated. The camera location was recorded using a Trimble Catalyst GPS unit set to 1cm accuracy.

Digital production of photomontages

Digital Image Preparation

A5.36 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

A5.37 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.

A5.38 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.

A5.39 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

A5.40 Irrespective of whether the final photomontage is output as a single or composite panoramic image, each photomontage is based upon a single photograph.

A5.41 A minimum of the 3d visually verifiable locations (markers) are used from the model 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.

A5.42 The background plate photograph is imported into 3D Studio Max, to verify the accuracy of the match.

A5.43 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.

A5.44 The rendered views were based on single photographs to match the corresponding section of the panorama.

A5.45 A wireframe model of the existing and proposed model is then rendered, overlaid onto the photograph and issued for approval.

A5.46 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

A5.47 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.

A5.48 Rendering is the term used to describe the process of generating a two-dimensional rendered bitmap image from the 3D model.

A5.49 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.

A5.50 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.

A5.51 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

A5.52 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".

A5.53 Finally, proposed vegetation can be introduced along with the removal of any existing details on site that would be removed during the development process.

A5.54 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

A5.55 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°.

A5.56 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

A5.57 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.

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), Visual Representation of Development Proposals.

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

Appendix 6: Landscape and visual effects summary

Receptor	Sensitivity	Magnitude of change	Level of effect
LANDSCAPE			
Landscape features – trees / scrub / hedgerows (construction)	medium	negligible adverse	slight
Landscape character – all levels (construction)	medium	minor adverse	slight
Landscape features – trees / scrub / hedgerows (year 0)	medium	minor beneficial	slight
Landscape features – trees / scrub / hedgerows (year 15)	medium	minor beneficial	slight
Landscape features – topography (year 0)	medium	negligible adverse	slight
Landscape features – topography (year 15)	medium	negligible adverse	slight
Landscape features – land use (year 0)	medium	no change	neutral
Landscape features – land use (year 15)	medium	no change	neutral
Landscape character and surrounding local area – site (year 0)	medium	major adverse	large
Landscape character and surrounding local area – site (year 15)	medium	major adverse	large
Landscape character - Berkeley Pill Riverine Farmland LCA (year 0)	medium	minor adverse	slight
Landscape character - Berkeley Pill Riverine Farmland LCA (year 15)	medium	minor adverse	slight
Landscape character - Hills Flats / Hock Cliff / Longney LCA (year 0)	medium	no change	neutral
Landscape character - Hills Flats / Hock Cliff / Longney LCA (year 15)	medium	no change	neutral
Landscape character - Bevington and Whitcliff LCA (year 0)	medium	negligible adverse	slight
Landscape character - Bevington and Whitcliff LCA (year 15)	medium	negligible adverse	slight
Landscape character - Severn Vale Grazing Marshland Landscape LCT (year 0)	medium	minor adverse	slight
Landscape character - Severn Vale Grazing Marshland Landscape LCT (year 15)	medium	minor adverse	slight
Landscape character - Triassic Ridge LCT (year 0)	medium	negligible adverse	slight
Landscape character - Triassic Ridge LCT (year 15)	medium	negligible adverse	slight
Landscape character - Oldbury Levels LCA (year 0)	medium	negligible adverse	slight

Receptor	Sensitivity	Magnitude of change	Level of effect
Landscape character - Oldbury Levels LCA (year 15)	medium	negligible adverse	slight
Landscape character - Severn Ridges LCA (year 0)	medium	negligible adverse	slight
Landscape character - Severn Ridges LCA (year 15)	medium	negligible adverse	slight
Landscape character - Shoreline and Estuary LCA (year 0)	medium	no change	neutral
Landscape character - Shoreline and Estuary LCA (year 15)	medium	no change	neutral
Landscape character - Severn Sands LCA (year 0)	medium	no change	neutral
Landscape character - Severn Sands LCA (year 15)	medium	no change	neutral
Effects on the special qualities of the Cotswolds AONB (year 0)	high	negligible adverse	slight
Effects on the special qualities of the Cotswolds AONB (year 15)	high	negligible adverse	slight

Receptor	Sensitivity	Magnitude of change	Level of effect
VISUAL			
OHS/13/1 (year 0)	medium	major adverse	large
OHS/13/1 (year 15)	medium	minor adverse	slight
OHS/16/1 (year 0)	medium	minor adverse	slight
OHS/16/1 (year 15)	medium	minor adverse	slight
OHS/15/1, OHS/15/2 and OHS/14/1 (year 0)	medium	major adverse	large
OHS/15/1, OHS/15/2 and OHS/14/1 (year 15)	medium	minor adverse	slight
OHL/1/10 and OHL/2/30 (year 0)	medium	moderate adverse	moderate
OHL/1/10 and OHL/2/30 (year 15)	medium	minor adverse	slight
OHS/54/1 and OHS/1/1 (also the Severn Way) (year 0)	high	minor adverse	moderate
OHS/54/1 and OHS/1/1 (also the Severn Way) (year 15)	high	negligible adverse	slight

Receptor	Sensitivity	Magnitude of change	Level of effect
OHL/6/10, OHL/7/10, OHS/9/1, OHS/9A/1, OHS/11/1, OHS/12/1, OHS/17/1, OHS/18/1, OHS/19/1, OHS/19/2 and OHS/28/1. (year 0)	medium	moderate adverse	moderate
OHL/6/10, OHL/7/10, OHS/9/1, OHS/9A/1, OHS/11/1, OHS/12/1, OHS/17/1, OHS/18/1, OHS/19/1, OHS/19/2 and OHS/28/1. (year 15)	medium	minor adverse	slight
OHL/7/40, and OHL/7/50, OHL/7/60. OHL/9/10. (year 0)	medium	minor adverse	slight
OHL/7/40, and OHL/7/50, OHL/7/60. OHL/9/10. (year 15)	medium	minor adverse	slight
OHL/2/10, OHL/3/10, OHL/4/10, OHL/5/10. (year 0)	medium	minor adverse	slight
OHL/2/10, OHL/3/10, OHL/4/10, OHL/5/10. (year 15)	medium	minor adverse	slight
OHL/20/20, OHL/20/30. (year 0)	medium	minor adverse	slight
OHL/20/20, OHL/20/30. (year 15)	medium	negligible adverse	slight
OHS/1/4 (year 0)	medium	minor adverse	slight
OHS/1/4 (year 15)	medium	negligible adverse	slight
OHS/8/1. (year 0)	medium	minor adverse	slight
OHS/8/1. (year 15)	medium	minor adverse	slight
OHL/13/10 (year 0)	medium	minor adverse	slight
OHL/13/10 (year 15)	medium	minor adverse	slight
PRoW in-between the River Severn and the A48 including FW/111/1 and Lydney Harbour. (year 0)	medium	no change	neutral
PRoW in-between the River Severn and the A48 including FW/111/1 and Lydney Harbour. (year 15)	medium	no change	neutral
PRoW to the west of the A48 including TWO/57/4 and FAY/26/2 (including the Gloucestershire Way). (year 0)	high	no change	neutral
PRoW to the west of the A48 including TWO/57/4 and FAY/26/2 (including the Gloucestershire Way). (year 15)	high	no change	neutral
PRoW to south of the site on the higher ground around Thornbury, including OAN/2/10 (also the Jubilee Way). (year 0)	high	no change	neutral

Receptor	Sensitivity	Magnitude of change	Level of effect
PRoW to south of the site on the higher ground around Thornbury, including OAN/2/10 (also the Jubilee Way). (year 15)	high	no change	neutral
PRoW to the east of the site around Drakestone Point including CST/37/2. (year 0)	high	no change	neutral
PRoW to the east of the site around Drakestone Point including CST/37/2. (year 15)	high	no change	neutral
PRoW to the east of the site around Tyndale Monument. (year 0)	high	no change	neutral
PRoW to the east of the site around Tyndale Monument. (year 15)	high	no change	neutral
Other PRoW within the study area (year 0)	medium	negligible adverse	slight
Other PRoW within the study area (year 15)	medium	negligible adverse	slight
Worldsend Farm (year 0)	medium	moderate adverse	moderate
Worldsend Farm (year 15)	medium	moderate adverse	moderate
Worldsend cottage (year 0)	medium	minor adverse	slight
Worldsend cottage (year 15)	medium	minor adverse	slight
Severn House Farm (year 0)	medium	negligible adverse	slight
Severn House Farm (year 15)	medium	negligible adverse	slight
Blisbury Farm (year 0)	medium	moderate adverse	moderate
Blisbury Farm (year 15)	medium	moderate adverse	moderate
Properties around Clapton Farm, Willis Elm Farm, Severn House and New Elm. (year 0)	medium	moderate adverse	moderate
Properties around Clapton Farm, Willis Elm Farm, Severn House and New Elm. (year 15)	medium	minor adverse	slight
Properties around Pottinger's Farm and Windrush. (year 0)	medium	moderate adverse	moderate
Properties around Pottinger's Farm and Windrush. (year 15)	medium	minor adverse	slight
Properties around Manor Cottages. (year 0)	medium	moderate adverse	moderate
Properties around Manor Cottages. (year 15)	medium	minor adverse	slight
Dayhouse Farm and Tranton Cottage (year 0)	medium	minor adverse	slight

Receptor	Sensitivity	Magnitude of change	Level of effect
Dayhouse Farm and Tranton Cottage (year 15)	medium	minor adverse	slight
Thornbury (year 0)	high	no change	neutral
Thornbury (year 15)	high	no change	neutral
Stinchcombe (year 0)	high	no change	neutral
Stinchcombe (year 15)	high	no change	neutral
Lydney, Aylburton, Alvington, Plusterwine and other settlements on the northern banks of the River Severn (including Conservation Areas). (year 0)	high	no change	neutral
Lydney, Aylburton, Alvington, Plusterwine and other settlements on the northern banks of the River Severn (including Conservation Areas). (year 15)	high	no change	neutral
Hewelsfield and other settlements on the higher ground to the west of the A48 (year 0)	high	no change	neutral
Hewelsfield and other settlements on the higher ground to the west of the A48 (year 15)	high	no change	neutral
Severn Lane (year 0)	medium	negligible adverse	slight
Severn Lane (year 15)	medium	negligible adverse	slight
Worldsend Lane (year 0)	medium	major adverse	large
Worldsend Lane (year 15)	medium	minor adverse	slight
Unnamed road to the east of the site (year 0)	medium	minor adverse	slight
Unnamed road to the east of the site (year 15)	medium	negligible adverse	slight
Other roads and lanes within the study area (year 0)	medium	negligible adverse	slight
Other roads and lanes within the study area (year 15)	medium	negligible adverse	slight