Premier Foods Bakery, Fish Dam Lane, Carlton

Landscape and Visual Appraisal

Premier Foods plc
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torandco.com

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Contents

Figures

Appendix figures

1.0 Landscape and visual appraisal

Introduction

1.1 Premier Foods plc has commissioned tor&co to undertake a landscape and visual appraisal for a solar farm development at Fish Dam Lane, Carlton, in the northeast of Barnsley. The purpose of this appraisal is to establish the baseline conditions in order to assess the potential effects of the development on the key landscape character and visual amenity of the site and its setting.

References and data sources

1.2 In preparing this report the published documents and plans set out in table 1.1 have been referred to.

Table 1.1: References and data sources
Barnsley Borough Landscape Character Assessment – 2016 Review.
Barnsley Borough Landscape Character Assessment, December 2002 prepared on behalf of Barnsley Metropolitan Borough Council by Land Use Consultants and Environmental Consultancy University of Sheffield
Barnsley Metropolitan Borough Council, Barnsley Local Plan adopted January 2019.
Countryside Agency, 2014, Landscape Character Assessment Guidance for England and Scotland
Guidance for Landscape and Visual Impact Assessment Third Edition, Landscape Institute and Institute of Environmental Management and Assessment, 2013
Landscape Institute Visual Representation of Development Proposals technical guidance note 06/19 17 September 2019
Ministry of Housing, Communities and Local Government, July 2021, The National Planning Policy Framework
Ministry of Housing, Communities and Local Government, National Planning Practice Guidance (NPPG)
Natural England Character Area Profiles, Internet resource, 2020, https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

The site

1.3 The proposed development site is a single agricultural field, approximately 2.88 hectares in size, adjacent to Fish Dam Lane, north east of Barnsley (refer to figure 1). The site lies to the east of Carlton and west of Cudworth, in the county of South Yorkshire. The field is not in cultivation or pasture use and is currently unmanaged grassland.

2.0 Planning policy

Relevant planning policy documents

2.1 The site lies within the administrative area of Barnsley Metropolitan Borough Council. The key planning documents applicable to the study area are, at the national level, the National Planning Policy Framework (NPPF), July 2021 and National Planning Practice Guidance (NPPG), and at a local scale, Barnsley Local Plan, January 2019. An appraisal of these documents has been carried out identifying the key landscape-related planning designations, as well as relevant nature conservation and cultural heritage designations that are also relevant to the preservation and enhancement of the landscape and visual amenity. These are illustrated on figure 3. The most relevant policies are summarised below. A full list of policy can be found in Technical Appendix A part 1.

National Planning Policy Framework (NPPF), July 2021

2.2 The National Planning Policy Framework (NPPF) sets out the government's planning policies for England, the following of which are relevant to the landscape and visual appraisal:

Achieving sustainable development

- Paragraph 8 – achieving sustainable development

Meeting the challenge of climate change, flooding and coastal change

- Paragraph 155 – renewable and low carbon energy and heat
- Paragraph 157 – local requirements for decentralised energy supply
- Paragraph 158 – planning applications for renewable and low carbon development

Conserving and enhancing the natural environment

- Paragraph 174 – list of considerations to which planning policies and decisions should contribute to and enhance the natural and local environment
- Paragraph 175 – allocating land with the least environmental or amenity value
- Paragraph 176 – consideration of applications in or near protected environments

National Planning Practice Guidance (NPPG)

2.3 The National Planning Practice Guidance is a web-based resource that supports the NPPF and contains government guidance, the following of which are relevant to the landscape and visual appraisal:

- Paragraph 013 Ref ID: 5-013-200150327 – Renewable and low carbon energy
- Paragraph 036 Ref ID: 8-036-20190721 – Landscape
- Paragraph 037 Ref ID: 8-037-20190721 – Landscape.

Barnsley Council's Core Strategy

2.4 The Barnsley Local Plan was formally adopted in January 2019. The plan provides overarching planning policy framework for Barnsley for the period up to 2033. The following policies are relevant to the landscape and visual appraisal:

- Policy GD1 General Development
- Policy D1 High Quality Design and Place Making
- Policy GI1 Green Infrastructure
- Policy BIO1 Biodiversity and Geodiversity
- Policy RE1 Low Carbon and Renewable Energy

3.0 Methodology

3.1 The appraisal judges the potential effects of the proposed development on identified landscape and visual receptors. The sensitivity of each landscape and visual receptor and the subsequent magnitude of change resulting from the proposals are assessed and combined to determine potential effects. Further details of the methodology used in the appraisal are set out in full in Technical Appendix A part 2 and in figures A2.1 to A2.4 at the end of this report. Details of the methodology used in the photographic survey and photomontages are set out in Technical Appendix A part 3.

3.2 The baseline study concentrates on the site and the wider area within the surrounding landscape. A distance of approximately 2.5 km from the site boundary was identified as an appropriate distance within which to consider the wider landscape setting of the site. Although the site may be visible from beyond this distance in some seasonal and weather conditions, it was considered to be too distant to result in any discernible change to either the landscape or its visual amenity.

4.0 Landscape baseline

4.1 As part of the desktop appraisal, previous classifications and evaluations of the surrounding landscape within the study area have been examined. The purpose of this is to assess whether the application site shares any of these common landscape characteristics and to assess how typical or unique the application site is within the landscape context. It also helps to understand the landscape characteristics of the study area and how the application site interacts with them.

National landscape character areas (refer to figure 5)

4.2 Natural England's online National Character Area Profiles provide a description of the landscape character of the study area and the site at its broadest level. The site and surrounding 2.5km study area lie in national character area 38 Nottinghamshire, Derbyshire, and Yorkshire Coalfield. The description of the landscape character area has the following key characteristics that are visible within the study area:

- *"A low-lying landscape of rolling ridges with rounded sandstone escarpments and large rivers running through broad valleys, underlain by Pennine Coal Measures*
- *Local variations in landscape character reflecting variations in underlying geology*
- *A mixed pattern of built-up areas, industrial land, pockets of dereliction and farmed open country*
- *Small, fragmented remnants of pre-industrial landscapes and more recent creation of semi-natural vegetation, including woodlands, river valley habitats and subsidence flashes, with field boundaries of clipped hedges or fences*
- *Widespread influence of transport routes, including canals, roads and railways, with ribbon developments emphasising the urban influence in the landscape."*

Local landscape character areas (refer to figure 6)

4.3 The national level character area provides a broad overview of the landscape context and does not necessarily represent the local landscape characteristics of the site and surrounding area. Therefore, it is considered appropriate to refer to the local character assessment as the basis for judging the value of the landscape in which the site and surrounding area lies.

Barnsley Landscape Character Assessment, December 2002

4.4 Within the Barnsley Landscape Character Area Assessment December 2002, there are a total of six landscape character types. These are then sub-divided into 17 discrete geographical landscape character areas. The majority of the study area, inclusive of the application site, lies within the D1: Northeast Barnsley Settled Arable Slopes. The remaining landscape within the study area is categorised as C2: Lower Dearne Lowland river Floor landscape character area.

Baseline landscape character areas (refer to figure 6)

4.5 Using the ZTV (figure 7) and through site investigation, the baseline study has established the landscape character areas and associated landscape resources that may be physically or perceptually affected by the proposals. The character areas that do not lie within the ZTV will not be considered any further, due to the lack of inter-visibility with the proposals. The character areas that will therefore be assessed are:

- The site
- D1: Northeast Barnsley Settled Arable Slopes
- The C2: Lower Dearne Lowland River

4.6 The potential effects of the development on these character areas are assessed within section 7.6. The Barnsley Landscape Character Area Assessment December 2002 and the Barnsley Landscape Character Area Assessment 2016 Review have completed an assessment of landscape sensitivity. Both have made a judgement on the degree to which a landscape character area can

accommodate change without adverse effects on the character. Judgement on sensitivity has been applied to each of the 17 character areas. This judgement may not necessarily represent the local landscape characteristics of the landscape character areas within the study area, as the study area only forms a small part of the wider character areas. A description of the relevant baseline landscape character areas is provided in the following paragraphs.

The site

4.7 The proposed development site is located at Fish Dam Lane, north east of Barnsley. The site lies within the Northeast Barnsley Settled Arable Slopes character area; however, this appraisal established that, at a local scale, the site has its own defining characteristics and landscape resources.

4.8 The site lies to the east of the village of Carlton, approximately 0.4km from the settlement edge along Fish Dam Lane and 0.1km from the nearest property on Highgrove Court. The closest properties are at Highgrove Court, adjacent to the western boundary, as well as six other residential properties on a private track off Shaw Lane to the east of the site. The northern boundary of the site is formed by Shaw Lane. A further agricultural field lies immediately south of the site and is not in cultivation or pasture use.

4.9 The site is a small agricultural field set-aside from the active Carlton Bakery factory immediately to the west and is not currently in cultivation or pasture use. As a result, the field comprises of unmanaged grassland. The topography of the site slopes from 57m above ordnance datum (AOD) in the north west to 50m AOD in the south-eastern corner (as illustrated in figure 2). The landscape in the area is gently undulating towards the south of the site.

4.10 There is a dense, overgrown and largely intact hedgerow of approximately 3m high along the northern boundary with Shaw Lane. The western, eastern, and southern boundaries comprise a line of scattered trees/ overgrown shrubs. The field itself is predominately open as there are no built structures and limited landscape features within the site. The mature boundary vegetation creates a sense of enclosure, particularly to the north of the site.

4.11 The northern area of the site is greatly influenced by noise from heavy vehicular use along Shaw Lane that serves nearby employment areas. Other negative human influences include the line of pylons in the agricultural fields north of the site. The presence of residential development, and factories in active use in close proximity to the site has a strong urbanising influence.

4.12 There is no public access to the site as illustrated in figure 4. The closest public right of way (PRoW) is footpath BL30 located 15m north of the site which follows the disused Barnsley Canal. The next closest PRoW is footpath BL32 located 240m to the south that extends from Fish Dam Lane east towards the Carlton March nature reserve. The Trans Pennine Trail long distance path (approximately 7.2km route within the study area), a short section of 0.06km follows the site's northern boundary along Shaw Lane.

4.13 There are no designated landscapes, heritage assets or ecological designations present within the site.

4.14 The site comprises a very small part of the wider Northeast Barnsley Settled Arable Slopes character area within the study area. Characteristics described

within the Barnsley Landscape Character Area Assessment December 2002 that are relevant to the site include, *"large areas of residential and industrial development creating a strong urban influence"* and *"scrubby margins, unmanaged field boundaries and compartmentalised field units on urban edges give a degraded quality to the landscape."* Further detracting features stated in the character assessment include, *"significant number of primary and secondary vehicular routes gives an active pace to the landscape"* and the assessment further states that *"power lines are visually striking elements across open farmland".*

4.15 The value of the site and the immediate surroundings is assessed as medium-low, given the presence of man-made influences, the close proximity to the urban edge, and the presence of unmanaged rural-urban field margins. Its susceptibility to the proposals is judged as medium to low as the restricted height of the proposals, their reversible nature and the enclosed nature of the field mean that this solar farm can be accommodated with only minor alteration to the condition and quality of its characteristics. The sensitivity of the site is therefore considered to be medium-low.

Northeast Barnsley Settled Arable Slopes D1

4.16 The Northeast Barnsley Settled Arable Slopes character area covers the majority of the study area. The Barnsley Landscape Character Area Assessment December 2002 describes this landscape area as displaying localised variation in character due to the varying views where the changes in aspect of these slopes have created a sense of enclosure. Within the study area the character area is further described as defined by small valleys and ridges, creating a series of undulating topography, in which land elevation ranges from 50m AOD to the east of Carlton up to 100m AOD at Monk Bretton south west of the study area.

4.17 The character of the area is greatly influenced by its land cover and land uses. The complex landscape within the study area is characterised by fragmented areas of large-scale industrial uses, agriculture, sprawling settlements and a disused colliery and railway line. The large areas of residential and industrial development create a strong urban influence. The presence of industrial estates is clustered north of Monk Bretton, however, industrial activity is spread across the wider study area. This has intensified the urban influence of the character area within the study area. The distant views to Barnsley bring an additional urban influence on the character of the study area. The areas of arable farmland comprise an irregular pattern of medium to large fields. Land at the urban edge is characterised by smaller, mixed-use fields. The field boundaries are either degraded or declining and of varied materials. The unmanaged field margins and overall compartmentalised fields on the urban edges degrade the landscape quality.

4.18 The settlements in the study area are largely located on higher ground, this includes Royston, Carlton, Shafton and Cudworth and the small hamlet located in Upper Cudworth. These settlements have a number of listed buildings, and a conservation area is located in Carlton. There are two scheduled monuments within the study area. The closest scheduled monument is Wayside cross known as Kirk Cross approximately 1km north west of the site. The Rabbit Ings Country Park lies within the north east of this study area, at the character area's northern boundary.

4.19 A network of primary and secondary roads pass through the study area and are visually and audibly intrusive in the landscape, these include the A628 and A633. There are a number of PRoW throughout the study area that connect the settlements within the study area. The Trans Pennine Trail long distance path which runs from the south of the study area east of Pontefract Road up towards the north of the study area and Royston. Within the study area this national trail (approximately 7.12km) largely follows the disused Barnsley Canal which runs from the middle of the study area north and passes to the east of Royston.

4.20 A more recent Barnsley Landscape Character Assessment was produced by the Barnsley Borough Council in 2016. The purpose of this assessment was to identify any changes in the landscape from the conclusions made in the 2002 assessment. In relation to the land east of Carlton, between Royston and West Green it states:

"Carlton ALC (Advanced Learning Centres) has been erected and Cudworth & West Green by pass runs east to west. The former Carlton Colliery site is in the process of being remediated and planting associated with reclamation of Wharncliffe Woodmoor Colliery continues to establish. Overall the landscape has therefore seen some improvements but these have been offset by some harm associated with build development. As such, the commentary regarding scope for development in this area remains relevant."

4.21 Taking into account the published character area assessments and the site visit, the landscape value is considered as low-medium. The susceptibility of the character area is considered, on balance as low-medium as this solar farm can be accommodated with only minor alteration to the underlying condition and quality of its characteristics. Taking into account the low to medium for both the value of the landscape and the susceptibility, the overall sensitivity of the character area is therefore considered to be low to medium.

Lower Dearne Lowland River C2

4.22 The Lower Dearne Lowland River character area forms a very small part of the study area and is defined by the extensive flat valley floor that is associated with the River Dearne. The width of the valley floor varies greatly through the study area. The topography is fairly gradual, dropping from 50m AOD at the character area edge north of the study area and south of Rabbit Ings Country Park and sloping down to 15m AOD towards the River Dearne.

4.23 The Barnsley Landscape Character Area Assessment December 2002 describes the character area as having large areas of open water including streams and man-made lakes and one evident within the study area is the Cudworth Dike. The landcover and land uses vary across the study area. The sloping valley sides have scattered vegetation which allow open views within and out of the character area. There is a diverse mix of land use which includes residential, industrial, agriculture, commercial and nature conservation. Settlements located on the ridgelines of the surrounding character area give an urban influence on the landscape. Farmland is fragmented and there are areas of reclaimed industrial land which are characterised by immature scattered tree and scrub planting. There are many areas that remain undeveloped, and the valley floor remains a green corridor, extending up the valley sides.

4.24 There are a number of negative and intrusive urban influences on the landscape within the study area. These include the number of primary and

secondary roads that intersect the character area, and prominent feature such as warehouses, powerlines and localised residential development. There is one listed building and no scheduled monuments within the study area. There are few PRoW that intersect this character area and connect the wider settlements of Cudworth and Shafton to Royston and Carlton. A small section (approximately 1.05km) of Trans Pennine Trail long distance path runs adjacent to the disused railway within the study area.

4.25 The Barnsley Landscape Character Assessment review 2016 states that:

"The character area includes the A6195 and the adjacent former colliery sites that have been developed for logistics and industrial purposes, some of which appear relatively incongruous. In addition 3 x 126.5m wind turbines now stand on the hillside overlooking the river valley. However, the landscape has been positively transformed by virtue of the reclamation of spoil heaps, particularly immediately to the south of Grimethorpe, although this still remains relatively immature. Elsewhere, the Cudworth and West Green by pass crosses the character area at the narrow point between Carlton and Cudworth. As such the strength of character and condition of the area are weaker than they were in 2002 but they are both still deemed moderate."

4.26 Taking into account the published character area assessments and the site visit, the landscape value is assessed as medium. The susceptibility of the character area to the proposals is assessed as medium. Taking into account the medium category for both the value of the landscape and the susceptibility, the overall sensitivity of the character area is therefore considered to be medium.

5.0 Visual baseline

Views of the site

5.1 Inter-visibility with the site is very limited and is generally contained to within 1km to 2km east of the site boundary. The site is situated in a relatively low valley surrounded by higher ground, particularly to the west, where the topography and built-up settlements of Carlton and Monk Bretton limit views of the site in the wider study area. There are no views north of the site from the residential areas along Shaw Lane and Highgrove Court, due to the existing dense site boundary vegetation and garden fencing of properties along these roads. There are no views of the site from Carlton Village to the west due to screening from the Carlton Bakery and intervening mature vegetation. There are very limited, narrow and filtered views from the Trans Pennine Trail that runs for 0.06km along the site's northern boundary. Pockets of visibility are shown from a limited number of PRoWs and transport routes on the higher ground west of Cudworth and Shafton. These are generally confined to medium to long distance views. There are very distant views of a small section of the site from the viewpoint on Rabbit Ings Country Park 1.8km north east from the site.

5.2 A computer-generated model of the zone of theoretical visibility (ZTV) in combination with fieldwork has been used to assess the potential visibility of the proposals from within the study area. The ZTV illustrated in figure 7 has been used to identify the visual receptors that have the potential to be affected by the proposals. It covers a 2.5km radius from the boundary of the site. Those visual

receptors that may be potentially affected by the development proposals are set out in table 1.2.

5.3 A number of representative viewpoints have been selected within the study area to illustrate how the site is experienced by the identified visual receptors. The viewpoints chosen provide a representative selection of views from locations covering a range of receptors from varying directions and distances. The viewpoint locations are illustrated on figure 7 and the photographic viewpoints are illustrated on figures 8 to 13.

Table 1.2 Visual receptors

Visual receptor	Location	Identified viewpoint(s)
Residential streets/ areas	**From residential streets/ residents of properties within Carlton (Shaw Lane and Highgrove Court)** The ZTV indicates potential visibility from small sections of these residential areas/ streets. However, following a site visit it was established that views of the site would not be attainable due to the tall, dense boundary vegetation, intervening topography and built form of the Carlton Bakery that sits immediately west of the site. Therefore, this receptor will not be taken forward to be appraised.	N/A
	From residential streets/ residents of properties within Upper Cudworth (Royston Road) The very large majority of residential streets within Upper Cudworth do not share inter-visibility with the site. This is due to intervening topography, mature vegetation along the disused railway line and the A628. The properties on Royston Road are a mix of one and two storey detached houses. Receptors are expected to be residents and visitors to Upper Cudworth. The value of the visual receptor is medium, and the susceptibility of the visual receptor is high. Therefore, the overall sensitivity is judged to be high/medium.	Viewpoint 1 (figure 8, 8.1 and 8.2)
Transport routes	**Shaw Lane** This is a semi-rural country lane that runs along the northern boundary of the site, with a national speed limit of 60 mph reducing to 30mph as it passes the residential development off Shaw Lane. It connects Fish Dam Lane in Carlton to Weetshaw Lane and Royston Road in Upper Cudworth. Shaw Lane is bounded on both sides by high hedgerows and occasional hedgerow trees. There is a single footpath along part of Shaw Lane from Fish Dam Lane to the northern entrance of PRoW BL(Barnsley Co. Borough)31 and the Trans Pennine Trail. Due to the intervening mature high hedgerow, there are no views of the site for the majority of the length of Shaw Lane. Views of the site are only possible from a small number of locations and through narrow gaps in the hedgerow lining the site's northern boundary. Receptors will be motorists, cyclists and pedestrians. The value of the visual receptor is low, and the susceptibility of the visual receptor is medium. Therefore, the overall sensitivity is judged to be medium/ low.	Viewpoint 2 (figures 9, 9.1 and 9.2)
	Royston Road Royston Road is a 30mph road that runs from the intersection of Shaw Lane and Weetshaw Lane in Upper Cudworth through to Sidcop Road in Cudworth. Royston Road lies on a subtle ridgeline and serves the hamlet along this road in Upper Cudworth south towards the more built-up settlement of Cudworth. Visibility of the site is limited to the highest elevation of Royston Road and where there is no intervening vegetation or built development. This constitutes a short section of the road and only the northernmost elevated section of the site can be partially seen. The	Viewpoint 1 (figure 8, 8.1 and 8.2)

	site is viewed in the wider context of the built-up settlement of Barnsley and its industrial setting, power lines and Royd Moor Wind Farm. Receptors will be motorists, cyclists and pedestrians. The value of the visual receptor is low, and the susceptibility of the visual receptor is low. Therefore, the overall sensitivity is judged to be low.	
	A628 (Cudworth Parkway) The ZTV indicates potential visibility from short sections of this route. Following a site visit it was established that views of the site would not be possible due to mature intervening vegetation, particularly along the disused railway line and Carlton Marsh. Therefore, this receptor will not be taken forward to be appraised.	N/A
Recreational routes	**Public right of way footpath number BL(Barnsley Co. Borough)32** This is a footpath that begins from Fish Dam Lane west of Carlton Bakery and runs east between the bakery's fenced boundary and arable fields. The footpath continues to run along the southern boundary of a small wooded area towards PRoW intersection of BL(Barnsley Co. Borough)32 and 33 in the east. The BL32 footpath is located approximately 237m south of the site's southern boundary. Views of the site are possible from short sections of this footpath where there are gaps in the site's southern boundary vegetation. This includes the elevated ground in the northern area of the site and along part of the eastern boundary. Views of the majority of site are limited by intervening vegetation along its southern boundary. Looking north the view of the site is seen in close context with warehouses of Carlton Bakery and a row of pylons. Receptors are expected to be pedestrians and dog walkers. The value of the visual receptor is medium, and the susceptibility of the visual receptor is medium. Therefore, the overall sensitivity is judged to be medium.	Viewpoint 3 (figure 10)
	Public right of way footpath numbers BL(Cudworth UD)2/ 3 and bridleway numbers BL(Cudworth UD)5/ 72/ 73 These PRoWs are located between Cudworth in the east and the disused railway line in the west. They intersect agricultural land on the start of the western slope of the subtle ridgeline that extends from Shafton south to Cudworth. There are limited medium range views from the majority of PRoWs, with Bridleway BL(Cudworth UD)72 on the highest elevation affording views to only the north-western area of the site. However, the majority of this bridleway runs parallel to the A628. Occasionally this path is on higher ground than the A628 and the experience is heavily influenced by the noise of the fast-paced traffic. Receptors are expected to be horse riders, local pedestrians, dog walkers and residents. The value of the visual receptor is medium, and the susceptibility of the visual receptor is medium. Therefore, the overall sensitivity is judged to be medium.	Viewpoint 4 (figure 11)
	Public right of way footpath numbers BL(Shafton CP)1 and 2 Located to the west of Shafton, PRoW BL(Shafton CP)1 runs from the A268 in the south and joins BL(Shafton CP)2 further north. These PRoWs are located on the ridgeline. A very short section of BL(Shafton CP)1 affords long distance and filtered views of a small area the northern part of site. A slightly longer section of BL(Shafton CP)2 also affords similar long distance and filtered views of the northern part of the site. The filtered views are mostly obstructed by mature vegetation along the disused railway line. From all possible viewpoints, the site is perceived in the context of the built-up settlement of Barnsley and its industrial setting, power lines and wind farms of Royd Moor and Park Springs. The receptors are expected to be pedestrians and dog walkers using this footpath.	Viewpoint 5 (figure 12)

	The value of the visual receptor is medium, and the susceptibility of the visual receptor is medium. Therefore, the overall sensitivity is judged to be medium.	
	Trans Pennine Trail Long Distance Path A short section of this path (0.06km) shares the footpath on Shaw Lane along part of the site's northern boundary. There is limited intervisibility with the site and only where there is a narrow, filtered gap in boundary vegetation along the site's northern boundary. The ZTV indicates potential visibility with the site from this trail adjacent to the disused railway. However, the site visit established that views would not be attainable due to the topography, tall mesh security fence and establishing vegetation on the former Carlton Colliery site. Receptors are expected to be pedestrians and dog walkers. The value of the visual receptor is medium, and the susceptibility of the visual receptor is high. Therefore, the overall sensitivity is judged to be high/medium.	Viewpoint 2 (figures 9, 9.1 and 9.2)
Tourist/ Recreational destinations	**Rabbit Ings Country Park** Rabbit Ings Country Park is a 64-hectare site and is located on a former colliery yard and spoil heap of the Monkton Colliery. The park provides access via footpaths and cycle tracks to an elevated level of 97m AOD. On the slopes and foot of the hill the extensive tree and shrub planting provides enclosure. There are a few PRoW that connect to the tracks of the park. At a specific viewpoint located at the top of Rabbit Ings Country Park only a glimpsed and filtered view of a small part of the site is visible due to intervening vegetation. This would be seen in the wider view of the built-up settlements of Shafton and Barnsley and its industrial setting, rows of power lines and wind farms of Royd Moor and Park Springs. The receptors are expected to be pedestrians and cyclists visiting locally and regionally using this country park. The value of the visual receptor is high, and the susceptibility of the visual receptor is high. Therefore, the overall sensitivity is judged to be high.	Viewpoint 6 (figure 13)

6.0 Proposals

The engineering proposals

6.1 The detailed landscape proposals including the site layout are illustrated in figure 14. The proposals comprise a solar farm of up to 2MW capacity. The proposed solar farm will comprise of landscape module solar panels. The module solar panels will be 2.5m high and will be fixed. The solar panels will be designed to benefit from maximum sun hours. The surfaces of the solar panels would be treated to reduce the potential for reflective solar glint / glare. The solar panels will be arranged in rows, where the distance between rows will vary slightly depending on the topography but will be approximately 3.5m apart for the landscape modules. The panels will be mounted on a simple metal framework that will be driven into the soil, removing the need for deep foundations or piling.

6.2 The arrays will be connected to a singular sub-station located at the south-west corner of the site. The sub-station consists of a single transformer 2.99m in height that will sit on a shallow concrete pad foundation enclosed by the 2.4m high moss green steel mesh fence. All cables would be underground.

6.3 Fencing around the site will consist of a 2.4m high moss green steel mesh fence. To minimise the impact of the development there will be no lighting. A total of six closed circuit television cameras mounted on single posts, up to 6m in height, will be located along the internal fence at each corner of the site and two in the centre for security. Access to the site will be from the Premier Foods bakery by the existing access road from Fish Dam Lane as well as the existing internal highway.

Primary mitigation

6.4 The potential impacts on landscape and visual resources were a primary consideration from the outset and directly informed the site layout, solar panel heights and landscape proposals. The need to retain and accommodate key landscape elements, and the likely effect on receptors both within and beyond the development boundaries, influenced and guided the proposals. As a result, the scheme has been developed to best protect the landscape resources of the site and its landscape setting.

6.5 The landscape strategy has guided a set of principles that will have a significant effect in removing, reducing or mitigating the limited landscape and visual effects. The proposals also seek to maximise the ecological and landscape value of the site's landscape resources. Landscape structure planting will be retained following decommissioning, ensuring the value of these features will be realised during and post operation. The planting proposals are designed to fit into and complement the local landscape and seek to enhance the habitat structure and biodiversity of the local area and have been informed by the ecological report produced by Wharton.

6.6 Key primary mitigation measures incorporated into the detailed site layout in figure 14 and illustrated on the planting plan, drawing 277101-TOR-XX-XX-P-L-001 aim to minimise the initial predicted impacts of the proposed development and include the following:

- **Retention and management of existing boundary hedges and trees.** The existing retained hedgerows and trees, including areas of adjacent vegetation where their root protection areas extend into the site, will be protected during construction to prevent damage to stems, canopy or compaction of soil. One mature Ash (category B) tree has been identified to be retained. This tree will have a 6 metre ecological buffer that will exclude development proposals.

- **10m wide buffer from eastern boundary and 5 metre strip along the remaining boundaries.** This will comprise of existing retained scrub and tree planting with the addition of native scrub and trees to infill gaps along these boundaries and proposed tussocky grassland margins. The scrub will be managed to grow to a height to filter views of the solar arrays and associated infrastructure.

- **Introduction of native scrub (including infill areas) and native trees.** The gaps within the northern boundary will be planted with native scrub mix and trees to supplement the existing. This will help screen the fence as well as the solar panels along Shaw Lane. New native scrub and trees will be planted where there are also gaps in the western, eastern, and southern boundary, leaving a sufficient access gap in the south-western corner where there is an existing track. The native scrub mix

species will be hawthorn, blackthorn, hazel, field maple, spindle, honeysuckle, hornbeam, privet, wild cherry, dog rose, elder and wych elm. There will be some standard trees planted at regular spacing along the extent of the northern and eastern site boundaries. These will be hawthorn, wild cherry, and silver birch to reflect the local landscape setting and enhance biodiversity.

- **Species rich wildflower grassland.** The entire operational area will be managed as a species rich wildflower grassland providing a rich habitat for insects, mammals and nesting birds. This will be cut in a staggered manner creating a mosaic of structural variance. The intended result is to create a site that has significant ecological value for the operational life of the development and post decommissioning.

- **Tussocky grassland.** Tussocky grassland will be created around the site margins. Subsequent management once established will be a low intensity mowing regime.

7.0 Predicted sources of landscape and visual effects

7.1 The principal sources of change to landscape resources and visual amenity arise from the introduction of new built forms and landscape elements. The changes that could occur to the landscape can be separated into temporary (that occur during construction) and permanent changes that occur at completion (post construction). For solar farms, the effects are reversible where once the solar farm is removed the site will revert to its original use/function. This makes qualitative evaluation more complex to determine.

7.2 In terms of the changes, some may be beneficial, resulting in an improvement in quality or landscape resources, while others may be adverse. Some changes may initially be adverse, but on establishment and maturity may result in a gradual improvement as new landscape resources replace old or supplement the existing. Experience indicates that the latter is frequently the case, as landscape perception inevitably determines assessment. Sudden change in a known landscape is almost always initially prominent, but its perceived significance soon fades with acceptance. The elements that will give rise to landscape and visual effects are summarised in the following paragraphs.

Elements giving rise to predicted temporary effects during construction

7.3 The following activities will cause temporary changes to landscape and visual receptors during all phases of the construction period:

- Site compounds and contractors' car parking
- Introduction of machinery and their associated movement, both to and from the site and around the site.
- Storage of materials
- The erection of temporary protective and security fencing
- Site compounds and contractors' car parking
- Construction related noise affecting local levels

Elements giving rise to predicted permanent effects at completion (post-construction)

7.4 The following elements will cause permanent changes to landscape and visual receptors:

- One 2.88ha field solar scheme/ 2MW
- Minor loss of scrub vegetation and trees
- New areas of planting including new native trees and scrub planting and new areas of wildflower meadow and tussocky grassland, all enhancing the existing (grassland) field land use

Predicted potential landscape and visual effects

7.5 The following section predicts the potential effects on the landscape resources and visual amenity receptors within the site and in the areas surrounding the site identified in the baseline section. In each case, the predicted degree of the effect is described in relation to the construction period, completion of the final phase of the proposed development (i.e at completion), and at years 5 and 10.

Predicted effects on landscape character

7.6 The effects on the landscape resources identified in the baseline are set out below for each identified landscape character areas within the ZTV.

Predicted effects on the landscape character of the site

7.7 As described in the baseline section of this report, the landscape character of the site comprises a single, small grassland field with mature, dense hedgerows along its northern boundary and partly on the eastern boundary. Scattered trees and scrub form the remaining boundaries. Vehicular access to the site is currently gained from existing track from the Carlton Bakery at the south-western corner of the site. There are no ecological or cultural heritage designations within the site and the site contains few landscape resources which are largely limited to the boundaries.

7.8 The proposals are to integrate 21st century renewable energy technology adjacent to an industrial building. The development will not involve significant physical alteration of the key characteristic components of the receiving landscape, and so represents a highly reversible change that retains the underlying baseline landscape. The proposed development will retain the majority of the existing vegetation, and this will be enhanced with additional hedgerow and tree planting. This will enhance and restore the site's landscape structure and provide a long-term benefit. The underlying grassland will also be retained and enhanced to improve habitat and biodiversity.

7.9 The Guidelines for Landscape and Visual Impact Assessment require a judgment on the reversibility of the site and its characteristics to the original baseline condition (GLVIA; paragraph 5.52). In this respect, when removed, the original landscape character could very rapidly be restored and its condition enhanced. The effects on landscape character are experienced only for the duration of the operational period (40 years) and a key element of the landscape strategy is to limit the extent and duration of effect on landscape character.

7.10 All development causes an effect on the landscape character of the site itself, however, unlike housing where the effect is permanent, the landscape effects of the solar farm will be reversible (GLVIA; paragraph 5.52). While there will be some perceptual aspects of the landscape that will alter, with the introduction of the low-level solar panels, the limited and very localised effects on the physical resources within the site itself would be reversible at the end of the life of the development, causing no long-term harm to the underlying landscape character.

7.11 In assessing the magnitude of change the reversible nature of the development is taken into account. The site is defined by the extent of the solar farm and its access and as such, the proposals will change the field from being a wholly un-used and unmanaged grassland to an array of solar panels. Taking these factors into account, the magnitude of change as a result of the development will be medium adverse.

Predicted effects on landscape character area Northeast Barnsley Settled Arable Slopes D1

7.12 As described in the baseline section of this report, the site lies wholly within the Northeast Barnsley Settled Arable Slopes D1, and only comprises one small field within this large character area. The Northeast Barnsley Settled Arable Slopes D1 character area has a mixture of detracting and positive landscape features, but overall, the landscape is largely fragmented, with a mixture of large-scale industrial use, sprawling settlements and unmanaged arable field boundaries. Open undulating agricultural land has a degree of value locally, but the landscape's degraded field boundaries and the number of prominent negative human elements diminish an otherwise wider scope of appreciation. There are no national landscape designations covering any part of the landscape. Note that the area of the LCA comprising the site is not included in the assessment of the character area as it is assessed separately in the assessment of the site.

7.13 It is acknowledged that the introduction of solar panels undersown with meadows and the removal of a small field does represent a change to the perceptual characteristics of the landscape in the character area and this is taken account of in assessing the effects on the site itself. In considering the susceptibility of the remaining area of the character area to the proposals, the great majority of that remaining area has a mixed landscape of industrial buildings, settlements and field units near the urban fringe with unmanaged field boundaries. This in conjunction with the local topography mean that the proposals are not a prominent feature in all but the very closest views. Potential inter-visibility with the site is restricted to areas within 2km of the site. The high degree of reversibility of the solar farm, which would leave the underlying field unit largely unaffected is also an important factor.

7.14 Taking into consideration these reasons and those outlined in the baseline section, the overall sensitivity of the character area is therefore considered to be low to medium.

7.15 In considering the magnitude of change the reversible nature of the development is taken into account. The very large majority of the character area will be unaffected by the proposals due to the intervening vegetation, built form and topography. For the limited areas that will be affected by the appearance of the solar farm, the effects will be greatest during the construction period,

including a slight and temporary increase in the number of vehicles to the Carlton Bakery.

7.16 Post construction and at Year 0, the augmented boundary vegetation will provide limited additional screening. However, due to the low scale of the development and degree of existing site containment, the effects on the landscape will be limited to areas in the immediate area surrounding the site. By year 5, the proposed infill hedgerow planting, additional growth of existing hedgerows and growth of new scrub and tree planting will filter views and by year 10 will provide effective screening. This would further reduce the effects of the proposals on key perceptual characteristics including improving the condition of the landscape resource (unmanaged field to managed). Taking into account the limited proportion of character area affected and the limited effects within those affected parts, the magnitude of change is considered to be small.

Predicted effects on landscape character area Lower Dearne Lowland River C2

7.17 As described in the baseline section of this report, the study area forms a small part of the LCA, with the site's eastern boundary abutting the boundary of the LCA. Lower Dearne Lowland River character area comprises of a diverse range of landcover and land uses. This includes large areas of agriculture and nature conservation, localised areas of industrial, commercial, and limited areas of residential. There are vast areas without built development and few areas of tree cover contributing to the openness of this LCA. The landscape is characterised by immature landscapes of newly established tree and scrub planting associated with reclaimed and abandoned land, railways and watercourses. The landform is characterised by a flat valley floor and sloping valley sides where residential development on the higher ground on the edges of the LCA has an urban influence. There are localised areas of negative human influence on the landscape including pylons, the A628/ A6195 roads and industrial warehouse buildings.

7.18 Potential inter-visibility with the site is restricted immediately adjacent to the site to the east and within the reclaimed land of a colliery. No inter-visibility is possible with any designated areas within this LCA. The proposals are unlikely to be sufficiently perceptible to impact on landscape character due to the screening of the combined vegetation, landform and disused railway line. There will be a slight but temporary increase in vehicles to the site over the construction period which will detract from the largely rural character. However, traffic using the A628/ A6195 is an existing detracting feature within this character area.

7.19 Taking into consideration these reasons and those outlined in the baseline section, the overall sensitivity of the character area is therefore considered to be medium.

7.20 The ZTV illustrates that the solar farm will only be visible from the reclaimed colliery immediately east of the site within this LCA, this forms a relatively small component in the setting. The reclaimed colliery itself forms a physical barrier to any further views of the site east within the LCA in the study area. No alterations to the physical characteristics of this landscape will occur within the LCA as a result of this development. The existing eastern boundary hedge will have additional hedgerow planting and any inter-visibility with the site will be partially screened within 5 years and effectively fully screened within 10 years.

Taking into account the very limited proportion of character area affected and the limited effects within those affected parts, the magnitude of change is assessed as negligible.

Predicted effects on visual amenity

7.21 The effects on visual amenity to specific receptors are assessed below. To illustrate the visual effects, a number of representative viewpoints have been used.

7.22 Figure 7 shows the ZTV of the proposed development. To produce the ZTV of the proposed development, the proposed layout (figure 14) was imported into the digital surface model. Selected points were added with varying height values to accord with the predicted proposed solar panel heights. The height from which the proposed development would be visible was set at 1.6m. For full details of the heights and methodology used, refer to technical appendix A part 2.

7.23 The ZTV is mainly contained within a 2km radius from the site boundary. The ZTV illustrates that the potential visibility of any part of the proposed development (which could be the very tops of the solar panels) is limited largely to agricultural fields west of the villages of Cudworth, and Shafton. A small, elevated area of Rabbit Ings Country Park 1.8km north east of the site's most northern boundary also shares limited inter-visibility with the site.

Views from residential streets/ residents of properties within Upper Cudworth (Royston Road)(refer to figures 8, 8.1 and 8.2)

7.24 The receptors will be residents and visitors to the hamlet in Upper Cudworth. Receptors are assessed to be of high/medium sensitivity. There are filtered views of a small section of the site, along the western boundary towards the elevated northern area. The majority of the site is screened by intervening mature vegetation along the railway line and within Carlton Marsh. Views from Royston Road are further screened by boundary treatments and vegetation to the rear of the properties along the road. The proposals of the solar farm include leaving a 5m enhancement buffer around the northern, western and southern boundaries and 10m of the site's eastern boundary. As a result, there will be barely discernible views of the solar farm development itself, as illustrated in figures 8.1 and 8.2. The proposals will be seen within the wider context of the settlement of Barnsley and areas of large -scale industrial buildings. Therefore, the very limited urbanising effect of the solar farm will not be uncharacteristic of the already urban industrial setting in the view. Therefore, the magnitude of visual change is predicted to be small/ negligible adverse as there may be localised visibility where there will be a minor alteration to the composition of the view.

Views from Shaw Lane (refer to figures 9, 9.1 and 9.2)

7.25 The receptors are expected to be motorists, cyclists and pedestrians using this semi-rural road and will be transitory in nature and are assessed to be of medium/ low sensitivity. This is a semi-rural country lane, approximately 1.65km in length that connects Carlton with Upper Cudworth. The lane has a national speed limit of 60mph reducing to 30mph as it passes through the villages. The majority of Shaw Lane is bounded on both sides by high native hedgerows and mature hedgerow trees. The proposals will only be perceived as localised

glimpsed views where there are gaps in this existing vegetation, immediately north of the site.

7.26 Properties off Shaw Lane, combined with mature roadside hedgerows and built form of the Carlton Bakery, restrict views of the site approaching from Carlton in the west. Approaching the site from the east, mature roadside hedgerows and properties on a private track off Shaw Lane further limit views of the site. During construction and years 0-2, existing vegetation, maintained at a height of 3m, will screen the very large majority of the proposals, as illustrated in figure 9.1. During this early establishment period, the magnitude of visual change is predicted to be small adverse as the experience of the road users will vary very little along the extent of the road within the study area. This will further reduce over time to a negligible magnitude of visual change as primary mitigation in the form of trees and infill hedgerow planting (identified on the landscape plan figure 14) will mature and screen views completely by year 10 of the proposals from this road, as illustrated in figure 9.2.

Views from Royston Road (refer to figures 8, 8.1 and 8.2)

7.27 Receptors are expected to be motorists, cyclists and pedestrians that use Royston Road and therefore will be transitory in nature. The receptors are therefore assessed to be of low sensitivity. This is a 30mph road and is located on a subtle ridgeline in Upper Cudworth for a distance of approximately 1.3km. Only a limited section (0.3km) of the road allows intervisibility with a very small section of the northernmost elevated part of the site along its western boundary. The majority of views of the site are filtered by existing mature vegetation that lines the railway line and within Carlton Marsh. The proposals will be viewed in the wider context of the built-up settlement of Barnsley and its large-scale industrial areas, power lines and Royd Moor Wind Farm. Therefore, the very limited urbanising effect of the solar farm will not be uncharacteristic of the already urban industrial setting in view. Therefore, the magnitude of visual change is predicted to be negligible adverse as the experience of the road users will vary very little along the extent of the road within the study area and the proposals will be barely visible, as demonstrated in figures 8.1 and 8.2.

Views from public right of way footpath number BL(Barnsley Co. Borough)32 (refer to figure 10)

7.28 This footpath runs from Fish Dam Lane in the west and connects to the intersection of footpaths (Barnsley Co. Borough)32 and 33 in the east near the disused railway line. Receptors will be walkers who are likely to be local to the area and are therefore assessed to be of medium sensitivity. For the majority of the length of this footpath, views of the site are obstructed by the Carlton Bakery building or intervening mature vegetation to the west of the bakery and a small woodland south of the colliery.

7.29 Small areas of the site are visible at only isolated locations where gaps in vegetation along the site's southern boundary allow. Where views are possible, the proposals are perceived in the context of prominent and degrading features in the landscape including Carlton Bakery buildings, associated 2m security mesh fence and a row of pylons.

7.30 New infill scrub planting will supplement the existing vegetation along the southern boundary. During the construction period and years 0-2, existing vegetation will provide sufficient screening for the majority of the proposals.

Existing vegetation and growth of new planting to augment the existing will filter views of the proposals by year 5. By year 10 the vegetation along this boundary will be maintained at 3m. The magnitude of visual change is predicted to be small adverse during the construction period and years 0-2 and reduce to negligible by year 10 once planting has matured, as there may be localised visibility where there will be a very minor alteration to the composition of the view.

Views from public right of way footpath numbers BL (Cudworth UD)2/ 3 and bridleway numbers BL (Cudworth UD)5/ 72/ 73 (refer to figure 11)

7.31 This cluster of PRoWs are located along the subtle ridgeline between Cudworth in the east and the disused railway line in the west. Receptors will be walkers, horse riders and cyclists using the footpaths and bridleways who are likely to be local to the area and are therefore assessed to be of medium sensitivity. The proposals will not be visible from the large majority of the length of these PRoWs. From a small number of locations, including a continuous but short section of BL (Cudworth UD)72, at its highest elevation, a small area of the north-western boundary is visible in the middle distance. The majority of this bridleway runs parallel to the A628 which visually and audibly influences users. The proposals will be viewed in the wider context of the built-up settlement of Barnsley and its large-scale industrial areas, power lines and Royd Moor Wind Farm. The very limited urbanising effect of the solar farm will not be uncharacteristic of the already urban industrial setting in view. Therefore, the magnitude of visual change is predicted to be negligible as there may be localised visibility where there will be a very minor alteration to the composition of the view.

Views from public right of way footpath numbers BL (Shafton CP)1 and 2 (refer to figure 12)

7.32 These footpaths are located on the western slope of a subtle ridgeline at Shafton. PRoW BL (Shafton CP)1 runs from the A268 in the south and joins BL (Shafton CP)2 further north. Receptors will be walkers who are likely to be local to the area and are therefore assessed to be of medium sensitivity. A short section of BL (Shafton CP)1 where it joins footpath BL (Shafton CP)2 affords long distance and filtered views of a small area the northern part of site.

7.33 Footpath BL (Shafton CP)2 is bounded by a 1.5 metre high hedgerow lining the southern extent of this path. Long distance filtered views of the site can be seen from short sections of this footpath where there are gaps present in this hedgerow. Only a small area of the western edge of the site and the most northern elevated area are visible from this footpath. This view is obstructed by mature vegetation along the disused railway line and within Carlton Marsh. The site is seen in the wider context of the built-up settlement of Barnsley and its industrial setting, power lines and wind farms of Royd Moor and Park Springs. The very limited urbanising effect of the solar farm will not be uncharacteristic of this already urban industrial setting in view. Therefore, the magnitude of visual change is predicted to be negligible as there may be localised visibility where there will be a very minor alteration to the composition of the view.

Views from Trans Pennine Trail Long Distance Path (refer to figures 9, 9.1 and 9.2)

7.34 This receptor group is assessed as medium/ high sensitivity as it is a national long-distance route, however, the vast majority of the length of this route in the wider study area will be unaffected by the proposals. The majority of the 0.06km trail that's adjacent to the site's northern boundary is screened by the tall, dense boundary vegetation and mesh security fencing. Views of the northern area of the site are generally limited to where there is a narrow gap in the site's northern boundary vegetation.

7.35 The proposed solar farm would include the retention of this long-distance trail. During construction and years 0-2, existing vegetation will screen the very large majority of the proposals along this trail, as illustrated in figure 9.1. During this early establishment period, the magnitude of visual change is predicted to be small adverse. By year 10 supplementary planting to the northern boundary to augment the existing and growth of this planting will screen the proposals of the solar farm, as illustrated in figure 9.2. As a result, the magnitude of visual effect will reduce to negligible as there may be limited visibility where there will be a minor alteration to the composition of the view.

Views from Rabbit Ings Country Park (refer to figure 13)

7.36 Rabbit Ings Country Park is a 64-hectare site and is located on a former colliery yard and spoil heap of the Monkton Colliery. The park provides access via footpaths and cycle tracks to an elevated level of 97m AOD. The highest elevation is where a marked viewpoint (stone marker) is located. Several PRoW connect to the paths of the country park. Receptors are expected to be walkers and cyclists who are likely local or regional visitors to the country park and are therefore assessed to be of high sensitivity.

7.37 The marked viewpoint is approximately 1.8km north east of the site's closest boundary. Therefore, this view of the northern area of the site is seen from a long distance range and mostly filtered by mature vegetation along the disused railway line, within Carlton Marsh and the high hedgerow that lines Shaw Lane. The small part of the site that is visible from a localised area within Rabbits Ings Country Park would be seen in the wider view of the built-up settlements of Shafton and Barnsley and its industrial setting, rows of power lines and wind farms of Royd Moor and Park Springs. Therefore, the magnitude of visual change is predicted to be negligible as there may be limited visibility where there will be a very minor alteration to the composition of the view.

Summary of landscape and visual impacts

7.38 The local plan core policy *'RE1 - low carbon and renewable energy'* para 20.6 states that *"we will support proposals for renewable energy unless there are significant harmful effects which cannot be prevented or mitigated".* The site offers substantial existing boundary vegetation in the form of mature high hedgerows and trees creating a very contained site. This provides a considerable amount of existing screening of the proposals. Hence, there is very limited intervisibility of the proposals in the wider study area. The magnitude of visual effect is negligible adverse for the majority of identified visual receptors. This includes users of Royston Road, public rights of way BL (Cudworth UD)2/ 3, bridleway numbers BL (Cudworth UD)5/ 72/ 73 and BL (Shafton CP)1/ 2. The proposals of the solar farm will be viewed in a wider

urbanised setting consisting of the built form of Barnsley and its associated large scale industrial areas. The residential area of Upper Cudworth will have a small adverse magnitude of visual effect, as there may be localised visibility where there will be a minor alteration to the composition of the view. The limited views from the Trans Pennine Trail, the local road Shaw Lane and public right of way BL (Barnsley Co. Borough)32 will initially have a small magnitude of change, and this will reduce to negligible over time as existing and new hedgerows and scrub mature. Due to the long-range distance and wider context in which the proposals will be viewed, Rabbit Ings Country Park, with the highest sensitivity, will have a negligible magnitude of visual change. Over time the new infill hedgerow and scrub planting around the site boundary will be allowed to grow to augment the existing and this will further reduce the visual effects. All the visual effects will be reversible and temporary.

7.39 The appraisal has concluded that only the site itself would have medium adverse magnitude of landscape effect. The site forms a very small amount (2.88ha) of the wider study area. Very limited amounts of vegetation within the site will be removed. Proposed new hedgerows and scrub planting will enhance the landscape features of the site and provide a long-term benefit. The underlying grassland will be enhanced to improve habitat and biodiversity with wildflower meadow and tussocky grassland created. While some perceptual aspects of the landscape will alter with the introduction of the low-level solar panels, the partial effects on the character within the site itself will be reversible at the end of the life of the development, causing no long-term harm to the underlying character.

7.40 The effects on the landscape of the wider character of the local area Northeast Barnsley Settled Arable Slopes character area D1 will be limited. The combination of undulating topography, existing high field boundary vegetation, and the built form of the surrounding settlements and large-scale industrial areas restricts the visibility to a small area mainly within 2km east of the site. Consequently, any change in land use will have localised effects on the perceptual aspects of the landscape character. Therefore, the proposals will have a small adverse magnitude of landscape effect. The ZTV highlighted very limited potential visibility within character area Lower Dearne Lowland River C2. The proposals are unlikely to be sufficiently perceptible to impact on landscape character due to the screening of the combined vegetation, landform, and disused railway line, therefore, will have a negligible adverse magnitude of landscape effect. These limited effects on the surrounding landscape character comply with core policy RE1 supporting the development of schemes for the generation of renewable energy resources.

7.41 A summary of the landscape and visual effects with primary mitigation is set out below:

Topic	Receptor	Receptor sensitivity	Magnitude of change including primary mitigation on the landscape plan	Magnitude of change including primary mitigation after 5 years	Magnitude of change including primary mitigation after 10 years
Landscape and visual effects	The character of the site	Medium/ Low	Medium adverse and reversible	Medium adverse and reversible	Medium adverse and reversible
	Northeast Barnsley Settled Arable Slopes character area D1	Medium/ Low	Small adverse and reversible	Small adverse and reversible	Small adverse and reversible

	Lower Dearne Lowland River character area C2	Medium	Negligible adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from Upper Cudworth	High/ Medium	Small adverse and reversible	Small/ negligible adverse and reversible	Small/ negligible adverse and reversible
	Views from Shaw Lane	Medium	Small adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from Royston Road	Medium	Negligible adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from public right of way footpath number BL(Barnsley Co. Borough)32	Medium	Small adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from public right of way footpath numbers BL (Cudworth UD)2/ 3 and bridleway numbers BL (Cudworth UD)5/ 72/ 73	Medium	Negligible adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from public right of way footpath numbers BL (Shafton CP)1 and 2	Medium	Negligible adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Trans Pennine Trail Long Distance Path	High/ Medium	Small adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible
	Views from Rabbit Ings Country Park	High	Negligible adverse and reversible	Negligible adverse and reversible	Negligible adverse and reversible

Appendix A part 1: Planning policy

National planning policy

A1.1 The National Planning Policy Framework (NPPF) published by the Ministry of Housing, Communities and Local Government was last updated in July 2021. It sets out the government's planning policies for England and how these are expected to be applied. The NPPF provides a framework within which councils can produce their own local and neighbourhood plans. The relevant guidance on landscape and visual issues is stated below:

Achieving sustainable development

A1.2 The purpose of the planning system is to contribute to the achievement of sustainable development. Paragraph 8 sets out three key objectives of the NPPF which are achieved through the application of planning policies, a number of which are relevant to this application. The third objective is environmental which states that:

"an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimizing waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

Meeting the challenge of climate change, flooding and coastal change

A1.3 Paragraph 155 states that:

"To help increase the use and supply of renewable and low carbon energy and heat, plans should:

a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);

b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and

c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers."

A1.4 Paragraph 157 states that:

"In determining planning applications, local planning authorities should expect new development to:

a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and

b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."

A1.5 Paragraph 158 states that:

> *"When determining planning applications for renewable and low carbon development, local planning authorities should:*
>
> *a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
>
> *b) approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas."*

Conserving and enhancing the natural environment

A1.6 Paragraph 174 establishes that the planning system should contribute to and enhance the natural and local environment by:

- *"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);*
- *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;*
- *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

A1.7 Paragraph 175 states that:

> *"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries."*

A1.8 Paragraph 176 states that:

"Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

A1.9 Paragraph 177 states that:

When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;

b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and

c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."

National Planning Practice Guidance

A1.10 The National Planning Practice Guidance contains government guidance, the following of which is relevant to this appraisal.

Renewable and low carbon energy

A1.11 Paragraph 013 Ref ID: 5-013-200150327, states that:

Particular factors a local planning authority will need to consider include:

encouraging the effective use of land by focussing large scale solar farms on previously developed and non agricultural land, provided that it is not of high environmental value;

where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays. See also a speech by the Minister for Energy and Climate Change, the Rt Hon Gregory Barker MP, to the solar PV industry on 25 April 2013 and written ministerial statement on solar energy: protecting the local and global environment made on 25 March 2015.

that solar farms are normally temporary structures and planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use;

the proposal's visual impact, the effect on landscape of glint and glare (see guidance on landscape assessment) and on neighbouring uses and aircraft safety;

the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun;

the need for, and impact of, security measures such as lights and fencing;

great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large scale solar farms on such assets. Depending on their scale, design and prominence, a large scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset;

the potential to mitigate landscape and visual impacts through, for example, screening with native hedges;

the energy generating potential, which can vary for a number of reasons including, latitude and aspect.

The approach to assessing cumulative landscape and visual impact of large scale solar farms is likely to be the same as assessing the impact of wind turbines. However, in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography the area of a zone of visual influence could be zero."

A1.12 Paragraph: 036 Reference ID: 8-036-2019072, revision date 21st July 2019 states that:

"The National Planning Policy Framework is clear that plans should recognise the intrinsic character and beauty of the countryside, and that strategic policies should provide for the conservation and enhancement of landscapes. This can include nationally and locally-designated landscapes but also the wider countryside.

Where landscapes have a particular local value, it is important for policies to identify their special characteristics and be supported by proportionate evidence. Policies may set out criteria against which proposals for development affecting these areas will be assessed. Plans can also include policies to avoid adverse impacts on landscapes and to set out necessary mitigation measures, such as appropriate design principles and visual screening, where necessary. The cumulative impacts of development on the landscape need to be considered carefully."

A1.13 Paragraph: 037 Reference ID: 8-037-20190721, revision date 21st July 2019 states that:

"For a designated landscape, the relevant management plan will contain further information on the area's particular character and beauty.

Where appropriate, landscape character assessments can be prepared to complement Natural England's National Character Area profiles. Natural England provides guidance on undertaking these assessments.

To help assess the type and scale of development that might be able to be accommodated without comprising landscape character, a Landscape Sensitivity and Capacity Assessment can be completed.

To demonstrate the likely effects of a proposed development on the landscape, a Landscape and Visual Impact Assessment can be used."

Local planning policies

Local policies

A1.14 The Barnsley Local Plan was formally adopted in January 2019. The plan provides a positive and flexible overarching planning policy framework for Barnsley for the period up to 2033. The following policies are relevant to the landscape and visual appraisal:

- Policy GD1 General Development
- Policy D1 High Quality Design and Place Making
- Policy GI1 Green Infrastructure
- Policy BIO1 Biodiversity and Geodiversity
- Policy RE1 Low Carbon and Renewable Energy

A1.15 Policy GD1 General Development states that:

"Proposals for development will be approved if:

There will be no significant adverse effect on the living conditions and residential amenity of existing and future residents;

They are compatible with neighbouring land and will not significantly prejudice the current or future use of the neighbouring land;

They will not adversely affect the potential development of a wider area of land which could otherwise be available for development and safeguards access to adjacent land;

They include landscaping to provide a high quality setting for buildings, incorporating existing landscape features and ensuring that plant species and the way they are planted, hard surfaces, boundary treatments and other features appropriately reflect, protect and improve the character of the local landscape;

Any adverse impact on the environment, natural resources, waste and pollution is minimised and mitigated;

Adequate access and internal road layouts are provided to allow the complete development of the entire site for residential purposes, and to provide appropriate vehicular and pedestrian links throughout the site and into adjacent areas;

Any drains, culverts and other surface water bodies that may cross the site are considered;

Appropriate landscaped boundaries are provided where sites are adjacent to open countryside;

Any pylons are considered in the layout; and

Existing trees that are to remain on site are considered in the layout in order to avoid overshadowing.

Landscaping and Boundary Treatments

Landscaping should be encouraged in all schemes as it has other benefits including biodiversity provision, climate change resilience and carbon absorption. Any new planting should use a variety of native species which are of local provenance where possible as plants from local sources are better adapted to local conditions and using local sources reduces the risk of introducing diseases and pests. Nectar-rich plants and berry producing shrubs incorporated into planting schemes will be encouraged as they will provide valuable food sources for wildlife, and development of other habitats such as wildflower grassland and wetlands should also be considered.

Planting should, where possible, be designed to link habitats to form corridors for wildlife with existing hedgerows included within developments. Where they have become patchy or overgrown, existing hedgerows should be restored as part of new developments wherever possible. Green walls within developments will be encouraged."

A1.16 Policy D1 High Quality Design and Place Making states that:

"Development is expected to be of high quality design and will be expected to respect, take advantage of and reinforce the distinctive, local character and features of Barnsley, including:

Landscape character, topography, green infrastructure assets, important habitats, woodlands and other natural features;

Views and vistas to key buildings, landmarks, skylines and gateways; and

Heritage and townscape character including the scale, layout, building styles and materials of the built form in the locality.

Through its layout and design development should:

Contribute to place making and be of high quality, that contributes to a healthy, safe and sustainable environment;

Complement and enhance the character and setting of distinctive places, including Barnsley Town Centre, Penistone, rural villages and Conservation Areas;

Help to transform the character of physical environments that have become run down and are lacking in distinctiveness;

Provide an accessible and inclusive environment for the users of individual buildings and surrounding spaces;

Provide clear and obvious connections to the surrounding street and pedestrian network;

Ensure ease of movement and legibility for all users, ensure overlooking of streets, spaces and pedestrian routes through the arrangement and orientation of buildings and the location of entrances;

Promote safe, secure environments and access routes with priority for pedestrians and cyclists;

Create clear distinctions between public and private spaces;

Display architectural quality and express proposed uses through its composition, scale, form, proportions and arrangement of materials, colours and details;

Make the best use of high quality materials;

Include a comprehensive and high quality scheme for hard and soft landscaping; and

Provide high quality public realm.

In terms of place making development should make a positive contribution to achieving qualities of a successful place such as character, legibility, permeability and vitality."

A1.17 Policy GI1 Green Infrastructure states that:

"We will protect, maintain, enhance and create an integrated network of connected and multi functional Green Infrastructure assets that:

Provides attractive environments where people want to live, work, learn, play, visit and invest;

Meets the environmental, social and economic needs of communities across the borough and the wider City Regions;

Enhances the quality of life for present and future residents and visitors;

Helps to meet the challenge of climate change;

Enhances biodiversity and landscape character;

Improves opportunities for recreation and tourism;

Respects local distinctiveness and historical and cultural heritage;

Maximises potential economic and social benefits; and

Secures and improves linkages between green and blue spaces;

At a strategic level Barnsley's Green Infrastructure network includes the following corridors which are shown on the Green Infrastructure Diagram:

River Dearne Valley Corridor. River Dove Valley Corridor.

River Don Valley Corridor.

Dearne Valley Green Heart Corridor. Historic Landscape Corridor

The network of Green Infrastructure will be secured by protecting open space, creating new open spaces as part of new development, and by using developer contributions to create and improve Green Infrastructure.

We have produced a Green Infrastructure Strategy for Barnsley which is informed by the Leeds City Region and South Yorkshire Green Infrastructure Strategies."

A1.18 Policy BIO1 Biodiversity and Geodiversity states:

"Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.

Maximising biodiversity and geodiversity opportunities in and around new developments.

Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.

Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.

Protecting ancient and veteran trees where identified.

Encouraging provision of biodiversity enhancements.

Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI)."

A1.19 Policy RE1 Low Carbon and Renewable Energy states that:

"All developments will be expected to seek to incorporate initially appropriate design measures, and thereafter decentralised, renewable or low carbon energy sources in order to reduce carbon dioxide emissions and should at least achieve the appropriate carbon compliance targets as defined in the Building Regulations.

We will allow development that produces renewable energy as long as there is no material harm upon:

The character of the landscape and appearance of the area; Living conditions;

Biodiversity, Geodiversity and water quality;

Heritage assets, their settings and cultural features and areas; Key views of, from or to scenic landmarks or landscape features; Highway safety, or

Infrastructure including radar.

In assessing effect, we will consider appropriate mitigation which could reduce harm to an acceptable level.

Proposals will be expected to include information regarding their efficiency.

Proposals must be accompanied by information that shows how the local environment will be protected, and that the site will be restored when production ends."

Appendix A part 2: Appraisal methodology

To be read with reference to figures A2.1 to A2.4.

Introduction

A2.1 The following paragraphs set out the methodology that has been followed in the baseline study of the existing landscape and visual amenity and the subsequent appraisal of the effects of the proposals.

LVIA Guidelines

A2.2 The landscape appraisal has been carried out in accordance with the following best practice guidelines:

- The Guidelines for Landscape and Visual Impact Assessment, (GLVIA) 3rd Edition, Landscape Institute (LI) and Institute for Environmental Management and Assessment (IEMA) (2013)
- An Approach to Landscape Character Assessment, Natural England (October 2014)
- Landscape Institute technical guidance note 06/19, Visual representation of development proposals.

Role of the LVIA

A2.3 Paragraph 2.21 of the GLVIA states that there are two distinct components of the LVIA:

"Assessment of landscape effects: assessing effects on the landscape as a resource in its own right;

Assessment of visual effects: assessing the effects on specific views and on the general visual amenity experienced by people."

Definition of landscape

A2.4 In describing landscape, paragraph 2.19 of the GLVIA states:

"Landscape results from the interplay of the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create the distinctive character of landscapes in different places, allowing different landscapes to be mapped, analysed and described. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of the landscape that make different places distinctive."

Definition of visual amenity

A2.5 The GVLIA glossary defines the meaning of visual amenity as:

"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."

A2.6 The methodology for assessing both the landscape and visual effects are outlined in paragraphs A2.32 to A2.61.

Appraisal process

A2.7 The process of landscape and visual appraisal includes the following stages:

- Project description – Describes the proposed development, identifying the main features of the proposal, and establishes parameters such as maximum extents of the development or sizes of the elements.
- Baseline studies – Establishes the existing nature of the landscape and visual environment in the study area, including any relevant changes likely to occur independently of the development proposal. Includes information on the value attached to the different environmental resources.
- Identification and description of effects – Systematically identifies and describes the effects that are likely to occur, including whether they are adverse or beneficial.
- Mitigation – Identifies proposals for measures designed to avoid / prevent, reduce or offset (or compensate for) any significant negative (adverse) effects.

Professional judgement

A2.8 Professional judgement is an important consideration in the determination of the overall landscape and visual effects and even with qualified and experienced professionals there can be differences in the judgements made.

A2.9 Paragraph 2.23 of the GLVIA states that:

"While there is some scope for quantitative measurement of some relatively objective matters, for example the number of trees lost to construction of a new mine, much of the assessment must rely on qualitative judgements, for example about what effect the introduction of a new development or land use change may have on visual amenity or about the significance of change in the character of the landscape and whether it is positive or negative."

A2.10 Paragraph 2.24 of the GLVIA states that:

"In all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others."

Baseline

A2.11 The landscape and visual baseline conditions were established by:

Landscape	Visual
Identify elements and features Identify landscape character and key characteristics Consider value attached to landscape Identify landscape receptors	Identify extent of possible visibility (ZTV) Identify visual receptors (people) who may be affected Identify and select representative, illustrative and specific viewpoints

Site familiarisation

A2.12 The site and surrounding area were visited in April 2023 to obtain familiarity with the landscape. Field studies and desk studies of photographs, aerial photographs, map information, landscape character assessments and statutory and emerging planning policy documents have enabled the recording of landscape elements such as topography, drainage, land use, development, vegetation and other features.

Defining the study area

A2.13 The study area defines the scope of the appraisal. The study area includes the site itself and the wider area around it, within which the proposed development may have a significant influence. The extent of the study area has been established using a zone of theoretical visibility (ZTV) of the proposed development in combination with observations made on site. During the appraisal process the study area may change as a result of fieldwork studies or changes to the proposals.

A2.14 A 2.5km study area was chosen, as the visibility beyond this distance will become limited and the proposed development is unlikely to have any major effects.

Identifying landscape character, elements and features

A2.15 Published and adopted landscape character assessments (LCA) prepared by relevant authorities at varying levels, from national through to local assessments, have been referred to in order to identify the baseline landscape character, resources and associated value. These established assessments have been reviewed in terms of their status, scale and level of detail provided and therefore suitability for use within the appraisal. This review also took account of the date in which the assessments were carried out and how relevant the content is in relation to the current landscape characteristics.

A2.16 National and county level LCA generally give a broad scale assessment which often provides an overview of the landscape context and setting but does not necessarily represent the local landscape characteristic of the site and surrounding area. Local LCA provide more detail on the types of landscape that occur in the study area. They are therefore considered appropriate as a basis for describing the key characteristics and are used to inform the description of the landscapes that may be affected by the proposals.

A2.17 Detailed fieldwork carried out within the site and immediate surroundings is used to check the applicability of the landscape character assessments throughout the study area, and where variations in the landscape are identified since the LCA was adopted, modifications or supplementary information are provided in the baseline.

A2.18 ZTV analysis and field studies have been carried out to determine which landscape character areas will be physically or perceptually affected by the proposals.

Identifying possible extent of visibility (ZTV)

A2.19 Computer generated mapping has been used in combination with fieldwork, to assess the potential visibility of the proposals. The extent of visibility over which the proposed development may theoretically be seen, Zone of Theoretical Visibility (ZTV), is provided in figure 7.

A2.20 The ZTV has been derived from a Digital Surface Model (DSM). The DSM used was based on a 1 m grid provided by Lidar. This uses first return derived information during winter that provides a highly detailed three-dimensional model of the landscape and townscape. Topographic features including landform, woodland, settlements, individual buildings, isolated trees, copses, hedgerows, embankments and other minor topographic features, out to a distance of 2.5km from the application boundary, are all modelled. The accuracy of the DSM falls within acceptable limits; however, there are potential discrepancies between the DSM and the actual landform where there are minor topographic features that are too small to be picked up. The Lidar data can pick up the majority of the woodland and buildings, although areas can be missed between the 1 m grid.

A2.21 For this project, the ZTV has been generated using the DSM and the following proposed solar panel and infrastructure heights:

- Landscape solar panels 2.5m

A2.22 The height from which the proposed development would be seen was set at 1.6m (mid-way between the average heights for men and women given in the GLVIA). A professional judgement has been made for this appraisal that approximately 2.5km is the distance beyond which proposals of this scale, nature and context would not have a significant effect on either landscape character or views. The resulting ZTV, figure 7, illustrates the extent to which any part of the proposals (large or small i.e. it could just be the very top of the panels) is potentially visible from the surrounding area.

A2.23 During fieldwork, any significant discrepancies in the ZTV are recorded and later amended. Fieldwork was confined to accessible parts of the site, public rights of way, transport routes and other publicly accessible areas.

Identifying visual receptors

A2.24 The baseline study will have determined the individuals and/or defined groups of people who have the potential to be affected by the proposals. These are referred to as visual receptors.

A2.25 Paragraph 6.13 of the GVLIA states that visual receptors may include:

"…people living in the area, people who work there, people passing through the landscape on road, rail or other forms of transport, people visiting promoted landscapes or attractions, and people engaged in recreation of different types".

Identifying viewpoints

A2.26 Following analysis of the ZTV and fieldwork, a series of viewpoints from which the proposals will be seen by the individual or groups of visual receptors were identified. To illustrate all potential viewpoints from which the proposals will be seen by the different visual receptors within the study area is not practical and is unnecessary. Therefore, viewpoints selected for inclusion in the appraisal broadly fall into three groups:

- Representative viewpoints (represent the experience of different types of visual receptors). For example, certain points may be chosen to represent the views of users from a particular public right of way.
- Specific viewpoints (a particular view from a key or promoted viewpoint). For example, viewpoints with a particular cultural landscape association.
- Illustrative viewpoints to demonstrate a particular effect/issue. For example, the restricted visibility at a certain location.

A2.27 Generally, viewpoints are selected from publicly accessible land and/or the transport routes. Representative or specific viewpoints from these areas can take into consideration that similar views may be afforded from receptors of residential properties.

Description of proposals

A2.28 This report summarises the elements that are likely to give rise to landscape or visual effects. The effects on landform and on existing landscape features such as vegetation are also described. Proposals for landscape measures such as new planting are set out.

Mitigation measures

A2.29 The GLVIA describes three forms of mitigation measures. These are:

- *"Primary measures, developed through the iterative design process, which have become integrated or embedded into the project design;*
- *Standard construction and operational management practices for avoiding and reducing environmental effects;*
- *Secondary measures, designed to address any residual adverse effects remaining after primary measures and standard construction practices have been incorporated into the scheme."*

A2.30 The first two forms are referred to as primary mitigation, while the last is referred to as secondary mitigation. At this stage of the design the purpose has been to prevent/avoid, reduce and where possible offset or remedy potential adverse effects by including primary mitigation measures. The plan illustrated in figure 14, incorporates the primary measures considered necessary and are used to assess predicted potential effects.

A2.31 Secondary mitigation measures will not be considered for this application as the application is detailed and the mitigation measures have been designed into the proposals.

Landscape appraisal

A2.32 The landscape appraisal judges the potential effects of the proposal on the landscape receptors that have been identified. The potential landscape effects are determined by consideration of the sensitivity of the landscape receptors and the magnitude of the landscape effect as a result of the proposals. These are defined in the following paragraphs.

Criteria for assessing potential landscape effects

Sensitivity of landscape receptor

A2.33 The sensitivity of the landscape is assessed by combining the considerations of two factors:

- Value
- Susceptibility to specific change.

A2.34 The **value** of the landscape receptor is defined in the GLVIA (paragraph 5.19) as:

> *"The relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons."*

A2.35 The value of the landscape receptor is established at the baseline stage and considers two key categories as highlighted in paragraph 5.44 of the GLVIA:

- *"The value of the landscape character types or areas based on review of any designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value;*
- *The value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particular landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of the contributors."*

A2.36 Landscape designations should not be over relied upon to signify the value of the landscape receptors. It is also important to remember that the fact that an area of landscape is not designated either nationally or locally does not mean that it does not have any value.

A2.37 In attributing value to a landscape, the factors that can help in the identification of valued landscapes provided in GLVIA, Box 5.1 and Table 1 of the Assessing landscape value outside national designations, Landscape Institute Technical Guidance Note, 02/21 include::

- Natural heritage – Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape

- Cultural heritage - Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape
- Landscape condition – Landscape which is in a good physical state both with regard to individual elements and overall landscape structure
- Associations – Landscape which is connected with notable people, events and the arts
- Distinctiveness – Landscape that has a strong sense of identity
- Recreational – Landscape offering recreational opportunities where experience of landscape is important
- Perceptual (Scenic) – Landscape that appeals to the senses, primarily the visual sense
- Perceptual (Wildness and tranquillity) - Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies
- Functional – Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape.

A2.38 In the absence of a formal landscape designation or landscape character area, judgement on the value of a landscape is based on the criteria set out in paragraph A2.37.

A2.39 The landscape receptors **susceptibility** to specific change is defined in the GLVIA (paragraph 5.40) as follows:

"The ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and /or achievement of landscape planning policy and strategies."

A2.40 Paragraph 5.42 of the GLVIA also states that:

"Since landscape effects in LVIA are particular to both the specific landscape in question and the specific nature of the proposed development, the assessment of susceptibility must be tailored to the project."

A2.41 Factors for judging susceptibility to change include:

- Vulnerability or robustness of elements of the landscape
- The tolerance, i.e. the extent to which elements of the landscape can be replaced, restored or may be altered
- The level or role elements of the landscape have in defining the character of the landscape
- The landscape sensitivity to the specific type of development proposed.

A2.42 The guidance set out in figure A2.1 has been used in this appraisal to arrive at an overall evaluation of landscape sensitivity. Both susceptibility to change and value are judged as high, medium, low or negligible based on the criteria shown. There may be circumstances where the weighting given to some criteria may be greater than others. The combination of susceptibility and value produces an overall evaluation of landscape sensitivity, which is ultimately a matter of professional judgement, and is defined in this report as high, medium, low or negligible.

Magnitude of landscape effect

A2.43 The magnitude of effect is assessed in terms of:

- Size/scale
- Geographical extent
- Duration
- Reversibility.

A2.44 The **size or scale** of an effect is assessed by determining the degree of change that would arise from the proposals. The effect of both loss and addition of new features is judged as major, partial, minor or very minor based on the criteria set out in figure A2.2. The judgements may take into account:

- The extent of existing landscape elements that will be lost (this may be quantified)
- The degree to which aesthetic or perceptual aspects of the landscape are altered through the loss of or addition of landscape resources / elements. For example, removal of hedges may change a small-scale intimate landscape into a large scale, open one.
- Whether the effect changes any of the key characteristics which are distinctive to the landscape character.

A2.45 The **geographical extent** of effects is assessed by determining the area over which the landscape effects will be felt. The effect is considered across varying scales of wide, intermediate, localised or limited based on the criteria set out in figure A2.2. In general, the effects will vary according to the nature of the project and may not be relevant on every occasion.

A2.46 The **duration** of effects is assessed by the period of time over which the degree of change to the landscape would arise from the development. Duration is judged as long term, medium term or short term based on the criteria set out in figure A2.2.

A2.47 The **reversibility** of an effect assesses the prospects or practicality of the effect being reversed. The effect is judged as reversible, partially reversible or permanent as set out in figure A2.2.

A2.48 Duration and reversibility can be considered together so that a temporary or partially reversible effect is linked to definition of how long that effect may last.

A2.49 The guidance notes and criteria set out in figure A2.2 have been used to make a judgement of the magnitude of landscape effect for this appraisal. The magnitude of landscape effect is determined by combining the judgements of the four individual factors of size/scale, geographical extent, duration and reversibility. There may be circumstances where the weighting given to some criteria may be greater than others. The combination of all four factors produces an overall evaluation of magnitude of landscape effect, which is ultimately a matter of professional judgement, and is defined in this appraisal as large, medium, small or negligible.

Visual appraisal

A2.50 The visual appraisal judges the potential effects of the proposals on the visual receptors that have been identified. The potential visual effects are determined by consideration of the sensitivity of the visual receptors and the magnitude of the visual effect as a result of the proposals. These are defined in the following paragraphs.

Criteria for assessing potential visual effects

Sensitivity of visual receptors

A2.51 A visual receptor is a particular person or group of people who would be experiencing the view or are likely to be affected at a specific viewpoint.

A2.52 The sensitivity of the visual receptor is assessed by combining the judgements of two factors:

- Value attached to views
- Susceptibility of visual receptors to change

A2.53 The GLVIA suggests that when judging the **value** attached to the views experienced (paragraph 6.37), account should be taken of:

- *"recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations;*
- *indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature or art"*

A2.54 The value attached to the views experienced is established at the baseline stage and considers these two key categories:

- The quality of the view/visual experience i.e. attractive unspoilt landscape
- The associations which contribute to the visual experience i.e. cultural/historical/ecological interests and planning designations

A2.55 The visual receptors' **susceptibility** to change is defined in the GLVIA (paragraph 6.32) as follows:

- *"the occupation or activity of people experiencing the view at particular locations; and*
- *the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations."*

A2.56 The guidance set out in figure A2.3 has been used in this appraisal to arrive at an overall evaluation of the sensitivity of the visual receptors. Both susceptibility to change and value are judged as high, medium, low or negligible based on the criteria shown. There may be circumstances where the weighting given to some criteria may be greater than others. The combination of susceptibility and value produces an overall evaluation of visual receptor sensitivity, which is ultimately a matter of professional judgement, and is defined in this report as high, medium, low or negligible.

Magnitude of visual effect

A2.57 The magnitude of visual effect is assessed in terms of:

- Size/scale
- Geographical extent
- Duration
- Reversibility.

A2.58 The **size or scale** of a visual effect is assessed by determining the degree of change that would arise from the proposals. The effect of loss, addition or change to the composition of the view through the introduction of development is judged as major, partial, minor or very minor based on the criteria set out in figure A2.4. The GLVIA (paragraph 6.39) suggests that when judging visual effects the following be taken account of:

- *"the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;*
- *the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture;*
- *the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses."*

A2.59 The **geographical extent** of visual effects is assessed by determining the area over which the visual effects will be seen. The visual effect is considered across varying scales of wide, intermediate, localised or limited based on the criteria set out in figure A2.4. The GLVIA (paragraph 6.40) suggests that extent is likely to reflect:

- *"the angle of view in relation to the main activity of the receptor;*
- *the distance of the viewpoint from the proposed development;*
- *the extent of the area over which the changes would be visible."*

A2.60 The **duration** of effects is assessed by the period of time over which the degree of change to the visual receptor would arise from the development. Duration is judged as long term, medium term or short term based on the criteria set out in figure A2.4.

A2.61 The **reversibility** of an effect assesses the prospects and the practicality of the effect being reversed. The effect is judged as reversible, partially reversible or permanent as set out in figure A2.4.

A2.62 The guidance notes and criteria set out in figure A2.4 have been used to make a judgement on the magnitude of visual effect for this appraisal. The magnitude of visual effect is determined by combining the judgements of the four individual factors of size/scale, geographical extent, duration and reversibility. There may be circumstances where the weighting given to some criteria may be greater than others. The combination of all four factors produces an overall evaluation of

magnitude of visual effect, which is ultimately a matter of professional judgement, and is defined in this appraisal as large, medium, small or negligible.

Taking account of effects throughout the life of the project

A2.63 The degree of landscape and visual effects can vary considerably during the life cycle of the project. Within the appraisal a description of the development is provided at each stage in the life cycle of the project to assist in understanding the scheme and the predicted landscape and visual effects of the development. The description of effects considers the following project stages:

- At completion (post construction - year 0)
- Year 5 post construction
- Year 10 post construction.

Appendix A part 3: Photographic images methodology

Photographic survey

A3.1 For this appraisal, a Canon EOS 6D camera was used in conjunction with a 50mm prime lens. The EOS 6D employs a sensor of similar size to a traditional SLR therefore the 50mm lens used results in a focal length of 50mm as no modification factor is applied. This methodology is in accordance with the *Landscape Institute Visual Representation of Development Proposals technical guidance note 06/19 17 September 2019.*

A3.2 In this appraisal, the photographs are taken at approximately 1.5 m above ground level using a tripod with a Pano head which provides a 15 degree angle between adjacent shots.

A3.3 GPS in built in the camera is used to provide a six-figure National Grid reference for the viewpoints. The accuracy of this device can vary (depending on factors such as satellite coverage, proximity of buildings, tree coverage etc.) so these figures are then checked on detailed OS survey plans to give a more accurate reference.

Baseline photographs

A3.4 The baseline panorama shows the existing view and captures the overall landscape and visual context. Images are captured in landscape format shooting from left to right covering at least 180 degrees where applicable. The camera may be mounted in portrait orientation to capture a greater vertical field of view where required. For panoramic photographs, individual shots are stitched together seamlessly using Photoshop.

A3.5 All photographic representations are type 1 and are to be viewed at a comfortable arm's length. The images are provided in cylindrical projection and should be viewed curved.

Photomontages

Baseline panorama

A3.6 All photographic representations are to be viewed at a comfortable arm's length. The baseline panorama shows the existing view and captures the overall landscape and visual context. The images are provided in cylindrical projection and should be viewed curved at a comfortable arm's length.

Proposed visualisations

A3.7 Photomontages are used to illustrate the likely view of a proposed development, as it would be seen in a photograph. It is important to note, as stated in the Landscape Institute technical guidance note 06/19 Visual Representation of Development Proposals paragraph 1.2.13 that *"Two-dimensional visualisations, however detailed and sophisticated, can never fully substitute what people would see in reality. They should, therefore, be considered an approximation of the three-dimensional visual experiences that an observer might receive in the field."*

A3.8 The photomontages contained in this study comply with the latest best practice guidelines and represent a type 3 photomontage at year 0 at completion of

construction and 10 years after completion. This type of visualisation has been used based on a category B user i.e. *"planning applications for most non-EIA development accompanied by LVA, where there are concerns about landscape and visual effects and effective mitigation is required."*

A3.9 Each solar panel, fencing and CCTV has been modelled and incorporated into a 3D block model of the detailed site layout (figure 14).

A3.10 This has been used to generate a geometrically accurate photomontage illustrating the scale, mass and arrangement of the proposals based on the detailed proposals. The extent of the proposed hedgerows and tree planting illustrated on the detailed landscape plan (figure 14) has also been modelled at year 0 at completion of construction and at year 10.

A3.11 The size and spread of all new planting is shown in winter at years 0 (at completion) and 10. This has been based on average anticipated growth rates for native stock in the south of England (source: CBA Ltd Approximate Tree Growth Rates). The extension growth pattern is based on growth rates of 0 mm at year 0 to 1, and 300 mm from years 2 to 10. The planting initial sizes are based on the planting schedules on figure 14.

A3.12 All the photomontages are to be viewed at a comfortable arm's length. The images are provided in cylindrical projection at 100% and should be viewed curved.

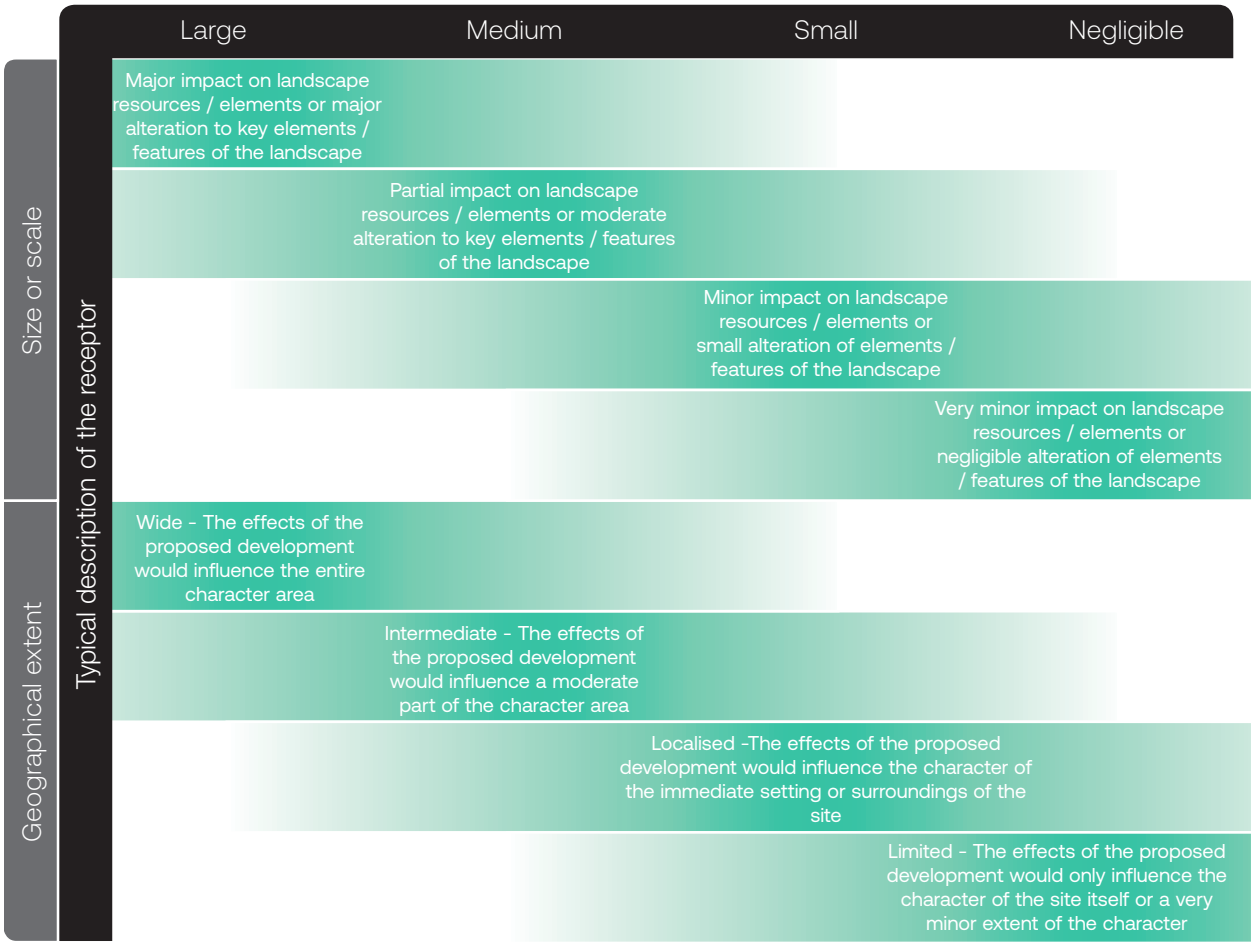
Sensitivity of the receptor - Landscape

	Value	Susceptibility
High	Internationally/nationally designated landscape / townscape e.g world heritage sites, areas of outstanding natural beauty and national parks / national scenic areas (Scotland). A very distinctive landscape / townscape with strong, widespread and defining characteristics. High quality with no detracting features. Contains features that could be described as unique or are nationally scarce. Considerable conservation and / or recreational / heritage interest. Very strong sense of place.	Landscape / Townscape can accommodate a very limited change related to the proposed development without undue consequences arising on the condition or quality of its defining characteristics.
Medium	Locally designated e.g public open space Reasonably distinctive landscape / townscape or with some strong contributing characteristics. Average quality with features that are locally commonplace which may exhibit some detracting features. Intermediate conservation and/or recreationl / heritage interest. A strong sense of place.	Landscape / Townscape is able to accommodate a small change related to the proposed development without undue consequences arising on the condition or quality of its defining characteristics.
Low	Undesignated landscape Relatively bland or commonplace landscape / townscape or with limited positive characteristics. Features that make little contribution to local distinctiveness. Some detracting features. Limited conservation and/or recreational / heritage interest. Poor sense of place.	Landscape / Townscape is able to accommodate a medium change related to the proposed development without undue consequences arising on the condition or quality of its defining characteristics.
Negligible	Undesignated landscape A degraded or featureless landscape with little or no charateristics of quality or interest. No sense of place.	Landscape is able to accommodate a large change related to the proposed development without undue consequences arising on the condition or quality of its defining characteristics.

Value \ Susceptibility	High	Medium	Low	Negligible
High	High	High / Medium	Medium	Medium / Low
Medium	High / Medium	Medium	Medium / Low	Low
Low	Medium	Medium / Low	Low	Low / Negligible
Negligible	Medium / Low	Low	Low / Negligible	Negligible

Figure A2.1. Landscape - Sensitivity table

Magnitude of effects - Landscape



Magnitude of landscape effects

The magnitude of effects is assessed by combining the judgments on the size or scale and the geographical extent of the landscape effect resulting from the proposals. The table provides an overall profile of these criteria for each factor. In determining the magnitude of effects during the construction phase and at completion, further consideration is also given to the duration and reversibility of the landscape effect.

Duration

Duration is a material consideration when determining the magnitude of effect and, where relevant, will be qualified in the data sheets contained within this report.

Duration is judged as short (less than 5 years), medium (5-10 years) or long (10-25 years) term.

Reversibility

The reversibility of an effect defines the prospects or practicality of the effect being reversed. Reversibility is judged as fully, partially or unable to reinstate/restore the original baseline situation

Figure A2.2. Landscape - Magnitude of effects

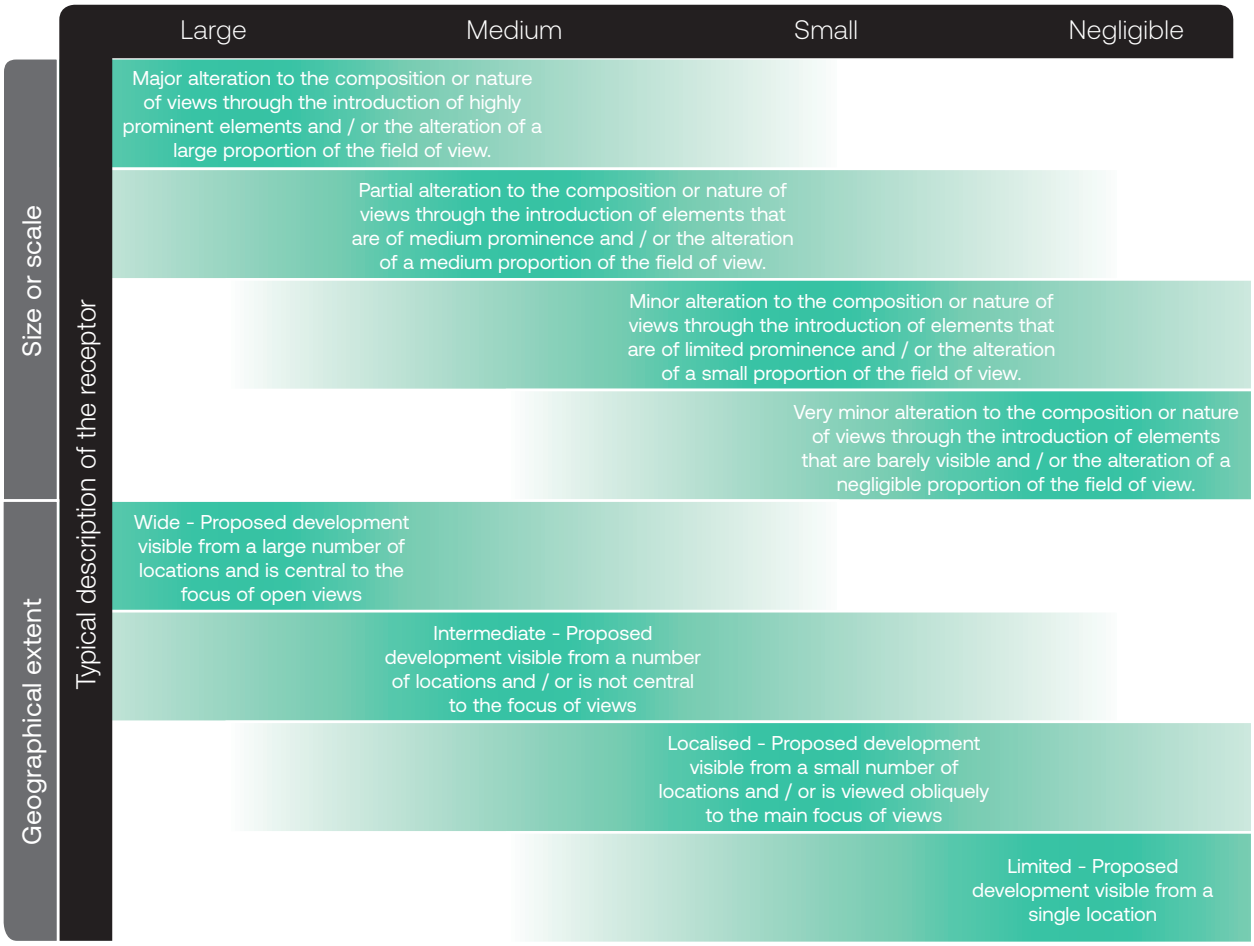
Sensitivity of the receptor - Visual

	Value	Susceptibility
High	Views from internationally / nationally designated landscapes / townscapes or landscapes recognised nationally as the best in the UK e.g areas of outstanding natural beauty, national parks/ national scenic areas (Scotland) national trails, registered parks and gardens or world heritage sites. Internationally / Nationally recognised views with a strong cultural association or well known references or promoted views in literature / art / guide books / viewpoints marked on OS maps.	Users of residential street / areas or users of long distance recreation routes / National Trail whose primary focus is on the landscape / townscape. Visitors to heritage assets or other attractions where the landscape setting is an important contributor to the experience.
Medium	Views from local planning designations e.g country parks, Local Nature Reserves and conservation areas. Views from landscapes and townscapes well used by local residents who have a strong proprietary interest in the view or from landscapes with recognisable features that promote a strong sense of place	Views from public rights of way, rural roads, tourist routes or railway users with secondary focus on the landscape / townscape.
Low	Views from undesignated landscapes or townscapes. Views from commonplace landscapes / townscapes with a weak sense of place, limited cultural associations and / or where receptors have limited proprietary interest in the view.	Users of urban roads, railways and footways whose attention is unlikely to be on the landscape / townscape. People engaged in outdoor sporting activities which does not depend upon appreciation of views.
Negligible	Views from degraded landscapes or townscapes with very limited value to local residents or from landscapes / townscapes that require significant restoration.	People at places of work, educational or social venues who have very limited focus on the landscape / townscape. People driving along motorways.

Value \ Susceptibility	High	Medium	Low	Negligible
High	High	High / Medium	Medium	Medium / Low
Medium	High / Medium	Medium	Medium / Low	Low
Low	Medium	Medium / Low	Low	Low / Negligible
Negligible	Medium / Low	Low	Low / Negligible	Negligible

Figure A2.3. Visual - Sensitivity table

Magnitude of effects – Visual



Magnitude of visual effects

The magnitude of effects is assessed by combining the judgments on the size or scale and the geographical extent of the visual effect resulting from the proposals. The table provides an overall profile of these criteria for each factor. In determining the magnitude of effects during the construction phase and at completion, further consideration is also given to the duration and reversibility of the visual effect.

Duration

Duration is a material consideration when determining the magnitude of effect and, where relevant, will be qualified in the data sheets contained within this report.

Duration is judged as short (less than 5 years), medium (5-10 years) or long (10-25 years) term.

Reversibility

The reversibility of an effect defines the prospects or practicality of the effect being reversed. Reversibility is judged as fully, partially or unable to reinstate/restore the original baseline situation.

Figure A2.4. Visual - Magnitude of effects