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INTRODUCTION

Background

13.1 This report assesses the landscape and visual effects arising from the proposed quarry extension development for rock extraction and associated processing over an area of c. 4 hectares within an overall planning application area of c. 4.9 hectares as previously permitted under P. Ref. 12/101 (P. Ref. 17/383) and never commenced. The existing quarry[1], consisting of a flooded quarry void and processing facilities, and the proposed extension area are located in the townland of Mullymagowan, Co. Cavan, approximately 4.5km south of the village of Stradone.

13.2 It is proposed to utilise the existing ancillary buildings and facilities including weighbridge, wheelwash, portacabin office/canteen/toilet, waste water treatment system, processing plant, site entrance and all other associated site works, and ancillary activities as currently permitted by P. Ref. 07/827.

13.3 The planning application area, hereafter referred to as 'the application area' or 'the site', comprises a number of undulating pasture fields, parts of which have become encroached by scrub vegetation, and two woodland areas. Also included within the site is an area which was stripped and has been used for previous stockpiling. The internal and external field boundaries are marked by a mix of scrub, hedgerows and tree lines.

13.4 Overburden and topsoil stripped from the site will be used to construct a landscape screening berm along the western boundary, which will be planted with a native woodland mix. This will provide noise and visual screening from locations to the west of the site, will compensate the loss of some of the scrub/woodland vegetation within the site and provide a valuable habitat for birds and pollinator species. On completion of the extraction works it is proposed to leave the quarry void to naturally flood with ground water, to provide a permanent water-body feature. All existing boundary vegetation will be retained. Further details on the proposed development are provided in **Chapter 2** of this EIAR, **Figure 2-2** Proposed Site Layout and **Figure 2-4** Landscape & Restoration Plan.

13.5 This chapter should be read in conjunction with the following figures, which have been used to inform the EIAR chapter:

- **Figure 13-1:** Landscape Baseline and Viewpoint Locations
- **Figure 13-2:** Zone of Theoretical Visibility (ZTV) Map
- **Figure 13-3:** Viewpoints A & B
- **Figure 13-4:** Viewpoints C & D
- **Figure 13-5:** Viewpoints E & F

[1] The existing quarry development also extends to the townlands of Drummuck and Tirlahode Lower

Scope of Work / Assessment Methodology

13.6 The EPA guidelines in relation to the preparation of an EIAR (May 2022)[2] suggest the following typical headings that may be included in respect of the prescribed environmental factor 'The Landscape':

- Landscape Appearance and Character;
- Landscape Context;
- Views & Prospects; and
- Historical Landscapes.

13.7 These headings are incorporated in the below assessment, as appropriate. However, in the absence of more detailed Irish guidance, the assessment contained within this chapter is based on the Third Edition of the Guidelines for Landscape and Visual Impact Assessment issued by the Landscape Institute and Institute of Environmental Management and Assessment[3] (hereinafter referred to as 'GLVIA3'). These guidelines are widely accepted as best practice for Landscape and Visual Assessment (LVIA) in Ireland.

13.8 GLVIA3 emphasises that landscape and visual effects are related but independent issues; landscape effects are changes in the landscape, its character and quality; while visual effects relate to the appearance of these changes and the resulting effect on visual amenity.

13.9 The assessment of overall landscape and visual effects and their significance is defined in terms of the relationship between the sensitivity of the landscape/visual receptors and the magnitude of the change.

13.10 As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there may be some scope for objective measurement of landscape and visual changes, much of the assessment must rely on qualitative judgements. It is critical that these judgements are based upon a clear and transparent method so that the reasoning can be followed and examined by others.

13.11 GLVIA3 sets out a framework for making judgements about the level of effects that may result from change or development. It describes a step by step approach in which: judgements about the value and susceptibility of the receptor are combined into a judgement about sensitivity; judgements about the size/scale of the effect, its geographical extent and its duration and reversibility are combined into a judgement about the magnitude of the effect; and finally, the judgements about sensitivity of the receptor and the magnitude of the effect are combined to judge the level of the effect. If the assessment forms part of an EIA, a threshold may then be identified to show which effects are considered to be significant and which are not.

13.12 GLVIA3 is not prescriptive about exactly how the various judgments required in this framework should be made. This is a matter for individual practitioners to decide and explain. In this document it has been assessed that Major or Major/Moderate levels of effect are significant.

13.13 The full LVIA methodology is described in **Appendix 13-A**. Please note that much of the terminology used in assessing the landscape and visual effects is in accordance with the above-mentioned EPA Guidelines. However, the terminology used in the LVIA methodology to describe the level of

[2] Environmental Protection Agency (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. Published May 2022. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford

[3] Landscape Institute and Institute of Environmental Management & Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*. Third Edition, Routledge.

effects, which is based on examples provided in GLVIA3, differs slightly from the description of the "significance of effects" in the EPA Guidelines.

Technical Standards

13.14 Photography and visual representations are based on the principles set out in the Landscape Institute – Technical Guidance Note 06/19 – *Visual Representation of Development Proposals*[4]. There is no Irish standard/guidance, and in SLR's experience it is typically considered sufficient to provide two (annotated) viewpoints on one A3-sized sheet, using a range of horizontal angles of view (i.e. 40˚-110˚) to illustrate the full extent of the development within each photograph presented, as well as the context within which the site is located.

13.15 The Landscape Institute – Technical Guidance Note 02/21 – *Assessing landscape value outside national designations*[5] was taken account of in the preparation of the assessment methodology, as provided in **Appendix 13-A** at the end of this chapter.

Consultations / Consultees

13.16 A formal pre-planning consultation was held between planning staff of Cavan County Council and representatives of SLR Consulting Ireland and P&S Civil Works Ltd. on 10 August 2022. No issues with relevance to the assessment of landscape and visual effects were raised during the meeting.

13.17 Following a review of published development plans and the site survey, it was considered that there was no requirement for a separate formal consultation to be carried out regarding the landscape and visual effects of the proposed development.

Contributors / Author(s)

13.18 The LVIA including site work and completion of drawings was carried out by Anne Merkle, an Associate Landscape Architect with SLR Consulting Ireland. Anne graduated from the Nürtingen-Geislingen University (Germany) in Landscape Architecture (Dipl.-Ing. (FH)), in 2002. She has 20 years' experience working for landscape consultancies in Ireland, specialising in Landscape and Visual Impact Assessments for a wide range of projects, including quarries, waste recovery facilities, wind farms, powerlines and mixed developments. In 2017, Anne completed an MSc in Biodiversity and Land Use Planning at NUI Galway. She is a full member of the Irish Landscape Institute (MILI) since 2005.

Sources of Information

13.19 The assessment is based upon a desk top assessment of relevant plans, guidance and landscape character assessments, as well as a thorough site assessment carried out in November 2022. The desktop study and field work were informed by:

- Cavan County Development Plan incorporating a Local Area Plan for Cavan Town 2022-2028[6]
- digital and paper (Ordnance Survey Ireland) mapping at different scales; and

[4] The Landscape Institute (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute.
[5] The Landscape Institute (2021) Technical Guidance Note 02/21: Assessing landscape value outside national designations.
[6] Cavan County Development Plan incorporating a Local Area Plan for Cavan Town 2022-2028: https://www.cavancoco.ie/services/planning-building/forward-planning/cavan-county-development-plan-incorporating-a-local-area-plan-for-cavan-town-2022-2028/

- information available on the internet (such as satellite images and information on recreational facilities and nature conservation sites).

Study Area

13.20 A study area of up to 3km surrounding the application area was identified during the desktop study, based on the Zone of Theoretical Visibility Map (refer to **Figure 13-2**). This indicates that the visibility of the site is much restricted by the undulating topography of the area, with potential visibility only within 0.6km surrounding and up to 2.5km to the north-west of the application area. It was confirmed during the field survey that the actual visibility is even further restricted, due to the presence of tree lines hedgerows in the vicinity of the site. Nevertheless, the 3kms study area is maintained for the purposes of providing landscape context.

Field Survey

13.21 A detailed site survey was carried out on 15th November 2022 in sunny and bright conditions with good visibility. It should however be noted that due to the low elevation of the sun at this time of year, views in a southern direction were slightly affected by glare. Photographs were taken during the site survey, using a Nikon D610 digital SLR full frame camera, with a fixed 50mm lens, mounted on a tripod with a panoramic head. The individual photos were taken in portrait format.

13.22 In accordance with GLVIA3, the field survey and viewpoint photography concentrated on publicly accessible areas, such as the road and public footpath networks, residential and outdoor recreational areas.

Limitations / Difficulties Encountered

13.23 No difficulties were encountered during the desktop study, field survey or in the preparation of this report.

Significant Risks

13.24 There are no known significant risks to human health or environmental effects, which may occur in relation to this landscape and visual impact assessment.

REGULATORY BACKGROUND

13.25 The following paragraphs set out the regulatory background with regard to LVIA in Ireland and the site-specific planning background relevant to the proposed development.

Legislation

13.26 In 2002, Ireland ratified the European Landscape Convention[7], which promotes the protection, management and planning of landscapes. The National Landscape Strategy for Ireland 2015-2025[8] was published *"to ensure compliance with the European Landscape Convention and establish principles for protecting and enhancing the landscape while positively managing its change"*.

13.27 Article 1a of the European Landscape Convention defines landscape as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*.

[7] European Landscape Convention: https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621
[8] National Landscape Strategy for Ireland 2015-2025: https://www.chg.gov.ie/app/uploads/2015/07/N-Landscape-Strategy-english-Web.pdf

This definition has been included in the Planning and Development (Amendment) Act 2010, along with the requirement that objectives relating to landscape shall be included in development plans.

13.28 There is no Irish legislation specifically governing the preparation of landscape and visual impact assessments.

Planning Policy

13.29 The Cavan County Development Plan incorporating a Local Area Plan for Cavan Town 2022-2028 (CCDP) is the statutory plan detailing the development objectives/policies of the authority. Those with relevance to this assessment are listed below.

Woodlands, Trees, Hedgerows and Stonewalls

13.30 Section 10.13 'Woodlands, Trees, Hedgerows and Stonewalls' of the CCDP acknowledges that *"Hedgerows and stone walls are an important amenity, contributing to the historic character of the landscape and as features of traditional farming practices. They act as field boundaries and townland boundaries. In 2006, the Heritage Office commissioned a Hedgerow Survey of County Cavan. Careful management and enhancement of hedgerows and the planting of new ones will have a lasting benefit for everyone in County Cavan."*

13.31 The following Development objectives for Woodlands, Trees, Hedgerows and Stonewalls are of relevance to this assessment:

13.32 ***"WTHS3** Encourage the retention of mature trees and the use of tree surgery rather than felling where possible when undertaking, approving or authorising development.*

13.33 ***WTHS4** Protect Champion and Heritage Trees where identified on the Tree Register of Ireland and Heritage Tree Database, when undertaking, approving, or authorising development.*

13.34 ***WTHS6** Promote and encourage planting of native hedgerow species of local provenance.*

13.35 ***WTHS7** Encourage the retention of hedgerows and stonewalls and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where possible. Where removal of a hedgerow or stone wall is unavoidable, mitigation by provision of the same type of boundary will be required and where removal is proposed which may affect bat species it shall be subject to regime of protection under the EC (Birds and Habitats) Regulations, 2011, as amended."*

Landscape Categorisation

13.36 Section 10.16 'Landscape Categorisation – Analysis of County Cavan' of the CCDP states that a Landscape Character Assessment has not yet been carried out for Co. Cavan. However, it refers to an existing Landscape Categorisation, which is contained in Appendix 14 of the plan. This divides the county into five main Landscape Character Areas (LCA). *"These areas have been chosen mainly due to their physical geological and geomorphological features which make them distinctive in the County."* The application area is located within LCA 4 'Drumlin Belt and Uplands of East Cavan' (refer to the Landscape Baseline section for further information on LCA 4).

13.37 The following Development objectives for Landscape Character Areas are of relevance to this assessment:

13.38 ***"LC1** Ensure the preservation of the unique landscape character type by having regard to the character, value and sensitivity of a landscape when determining a planning application.*

13.39 ***LC2** Ensure development reflects and reinforces the distinctiveness and sense of place of the landscape character areas. This should include the retention of important features or characteristics*

which contribute to their distinctiveness such as geology and landform, habitats, settlement patterns, historic and vernacular heritage.

13.40 ***LC3** Resist development such as houses, forestry, masts, extractive operations, landfills, caravan parks and large agricultural /horticulture units which would interfere with the character of highly sensitive areas or with a view or prospect of special amenity value.*

13.41 ***LC4** Ensure that new development does not impinge in any significant way on the character, integrity and distinctiveness of highly sensitive areas and does not detract from the scenic value of the area such as visual harm, not in keeping elements of the landscape, causes loss or disturbance of the landscape elements contributing to the local distinctiveness, historic elements that contribute to landscape character and quality, vegetation which is characteristic of a particular landscape and visual conditions of a landscape.*

13.42 ***LC5** Ensure new development meets high standards of siting and design.*

13.43 ***LC6** Protect skylines and ridgelines from development*

13.44 ***LC7** Ensure necessary assessments including visual impact assessments are prepared prior to approving development in highly sensitive areas."*

Areas of High Landscape Value or Special Landscape Interest

13.45 Section 10.18.1 'Areas of High Landscape Value or Special Landscape Interest' states that *"The scenery and landscape of the County are of enormous amenity value to residents and visitors to the County. The protection of this asset is vitally important when considering the development of the county."*

13.46 Section 10.18.1 includes the following Development objective for Areas of High Landscape Value or Special Landscape Interest:

13.47 ***"SLPA1** Maintain the scenic and recreation value of these areas by restricting all adverse uses and negative visual impacts."*

13.48 None of the Areas of High Landscape Value or Special Landscape Interest are located within the study area. The closest such area is a scenic viewing point, i.e. SV10 – Lisnananagh, nearly 5km to the north-west, overlooking the lake of the same name. The application area is not visible in views from this viewpoint.

13.49 In summary, no Areas of High Landscape Value or Special Landscape Interest would be affected by the proposed development and therefore need not be considered, as part of this assessment.

Quarrying

13.50 Section 12.12 'Quarrying' of the CCDP states that *"Mineral extraction, such as working with stone, sand and gravel, can generate environmental capacity problems for the surrounding areas. As such, applications for mineral extraction must account for issues including noise, dust, vibration, visual intrusion, water pollution, traffic generation and rehabilitation proposals for the site."*

13.51 The following Quarrying Development Objectives are of relevance to this assessment:

13.52 ***"Q 02** Promote development involving the extraction of mineral reserves and their associated processes, where Cavan County Council is satisfied that any such development will be carried out in a sustainable manner, that does not adversely impact on the environment or on other land uses. Consideration in this regard shall be given to the impact of the development on the local economy.*

13.53 ***Q 03*** *Facilitate adequate supplies of aggregate resources to meet the future growth needs of the County and the wider region while addressing key environmental, traffic and social impacts and details of rehabilitation.*

13.54 ***Q 05*** *Facilitate the exploitation of the County's natural resources and to exercise appropriate control over the types of development, including rural housing, taking place in areas containing proven deposits, whilst also ensuring that such developments are carried out in a manner which would not unduly impinge on the visual amenity or environmental quality of the area.*

13.55 ***Q 06*** *Support the extractive industry where it would not compromise the environmental quality of the County and where detailed rehabilitation proposals are provided.*

13.56 ***Q 07*** *Seek to ensure that the extraction of minerals and aggregates minimise the detraction from visual quality of the landscape and does not adversely affect the environment or adjoining land uses.*

13.57 ***Q 08*** *Ensure that development for aggregates/mineral extraction, processing and associated processes does not significantly impact on the following*

- … Sensitive landscapes
- Public Rights of Way, Walking/Cycling Routes …

13.58 ***Q 10*** *To encourage the rehabilitation of disused quarries and extractive sites to possible uses including habitat restoration, agriculture, recreation/amenities, commercial, industrial, and residential or a combination of same, subject to normal planning and environmental considerations."*

RECEIVING ENVIRONMENT

Landscape Baseline

Existing Relevant Landscape Character Assessments

13.59 The application site is fully located within LCA 4 'Drumlin Belt and Uplands of East Cavan', as set out in the County Cavan Landscape Characterisation (Appendix 14 of the current CCDP). The general description of this LCA states that *"this area is typical of the Drumlin landscape with many inter-drumlin lakes distributed throughout the region."*

13.60 The Topography and Vegetation/Habitat within LCA4 are described as follows, respectively.

- "Drumlins and lakes, there are high lands located in the east of this region, with an elevation ranging from 51m to 350m above sea level. This area is predominantly drumlins, though there are high areas such as the Mountainlodge area, Shantemon, Slieve Glah, Ardkill More and Ardkill Beg."
- "There are a variety of vegetation and habitats in this region, though mainly dry grassland and pastures intermingled with wet grassland signified by drumlins and inter-drumlin lakes. There are areas of forest and scrub located mainly north of Cootehill."

13.61 The Cavan Landscape Characterisation does not contain information on the Value or Sensitivity of LCA 4. None of the designated sites, scenic routes/viewing points, walking routes or lakeside amenity areas listed for LCA 4 are located within the study area.

Landscape of the Site and its Context

13.62 GLVIA3 recommends that a landscape character assessment should be carried out as part of the baseline study (paragraph 5.4). This should consider:

- The elements that make up the landscape (physical, land cover and the influence of human activity);
- Aesthetic and perceptual aspects; and
- The overall character of the area.

Landscape Elements

13.63 The application area is located 4.5km south of the village of Stradone and 10km south-east of Cavan Town. It is irregularly shaped with a number of undulating pasture fields and woodland areas, covering approximately the north-western two thirds of the site. The remaining third comprises a previously stripped elongated area, along the south-eastern site boundary. The pasture fields are small in size with scrub encroaching parts of them. Internal and external field boundaries are made up from a mix of scrub, hedgerows and treelines, which in some locations form the edge of the two woodland areas contained within the site.

13.64 The existing water filled quarry void is located to the south-east of the application area, separated from it by two fields. The existing main aggregate processing area is located to the east, also separated by two fields. All three areas are connected by a small triangular area containing the existing aggregate washing plant.

13.65 Levels within the application area range from 175m above Ordnance Survey (AOD) near the southern corner to 170m AOD in the eastern, 164m AOD in the western and 146m AOD in the northern corner. The water level in the flooded quarry void is at ca. 163m AOD, with the highest point of the existing (southern) quarry face at ca. 205m AOD. The majority of the existing processing area is at a level of ca. 164m AOD, with the ground rising towards the east to a level of 172m AOD at the site entrance along the local road to the east of the processing area.

13.66 The drumlin landscape surrounding the site is strongly undulating, which levels typically rising/falling by 40-50m over a distance of 400-500m. Overall, the land falls slightly from the south to north, with the highest elevations of just over 200m AOD within 0.5-2km south-east of the application area and the lowest of just under 100m AOD at the northern edge of the study area.

13.67 Numerous small streams flow along the valleys between the drumlins and there are a number of small lakes within the study area, i.e. Corfad Lough, just withing 1km to the north-west of the site, Beaghy Lough 2km to the north-west and Clifferna Lough 2km to the north-east.

13.68 The landscape surrounding the site is dominated by fields under pasture, which mostly have straight boundaries but are often irregularly shaped, as boundaries don't meet at right angles. Most are small to medium in size, with some larger fields, typically where the topography locally levels out. Field boundaries are marked by hedgerows, many of which contain mature trees. In locations where the ground slopes steeply or is wet at low elevations, there are often patches of scrub present. There are some small deciduous woodlands or shelterbelts often associated with farmsteads throughout the study area, as well as some small areas of conifer plantations. Due to the undulating topography in combination with small field sizes and associated many layers of hedgerow, patches of woodland and scrub, the landscape has a well wooded appearance.

13.69 The N3 National Road is the main transport corridor through the study area, passing the site ca. 1.3km to the west. The R165 Regional Road passes ca. 750m to the east. The two roads meet at the north-western edge of the study area. A dense network of local roads, mostly following the

lower elevations in between drumlins, connects the area between and surrounding the two higher class roads. There are no villages or larger settlements within the study area. However, one-off housing is frequently present along all roads.

13.70 Roads and residential / farm buildings, as well as the pasture fields with associated straight boundary hedgerows are frequent signs of human activity in this landscape, as is the existing quarry development.

Aesthetic and Perceptual Aspects

13.71 The application area is complex, due to the combination of the undulating topography and different types / density of vegetation (i.e. pasture fields, individual trees, treelines, hedgerows, woodland areas and areas of scrub), as well as the area of bare ground along the south-eastern boundary. At the same time the colour palette is quite simple, consisting of different shades of green and the grey of the bare ground. There is a high level of enclosure from the vegetation throughout the site, except for the elevated section of bare ground, which is more open.

13.72 The wider landscape is similarly complex with a simple colour palette. The scale of the publicly accessible parts of the study area, i.e. along the roads, is generally small, due enclosure from topography and vegetation. In elevated locations and where there are gaps in the roadside hedgerows, the scale can increase quite dramatically, as long-distance views over the drumlin landscape open up. The same applies to the tops of the drumlins within the study area, however, these are not typically publicly accessible.

13.73 Along the local roads, there is a sense of tranquillity, with occasional disturbance from passing vehicles or nearby farm machinery. In the vicinity of the site, the machinery used within the quarry is audible during the day, locally reducing the sense of tranquillity. Similarly, the closer one gets to the R165 or N3, the more frequent disturbances from vehicle noises get.

13.74 There are some pockets where the landscape has a natural appearance, due to the undulating topography, many mature trees in hedgerows and areas of scrub. Yet, there is little sense of wildness or remoteness, owing to the frequent presence of manmade elements.

Overall Character

13.75 The site assessment supports the inclusion of the Site and its immediate context within the Cavan LCA 4 'Drumlin Belt and Uplands of East Cavan'. Its main characteristics are:

- strongly undulating topography;
- dominated by pasture fields;
- many tree-lined boundary hedgerows; and
- areas of scrub on steep slopes and in wet hollows.

Protected Nature Conservation Sites

13.76 The National Parks and Wildlife Service (NPWS) website[9] was reviewed for protected nature conservation sites in proximity to the application area, as these provide an indication of the natural heritage value placed on the local landscape. No such nature conservation areas are located within or in the vicinity of the study area.

[9] National Parks and Wildlife Service: https://www.npws.ie/

Visual Baseline

Zone of Theoretical Visibility (ZTV)

13.77 The visibility of the application area was initially assessed by a desktop study of OSI Discovery Maps (1:50,000) and available aerial photography. This was followed by 3D computer modelling and calculation of the zone of theoretical visibility (ZTV), using LSS (McCarthy Taylor) software, in accordance with the methodology provided in **Appendix 13-B** at the end of this section.

13.78 The ZTV was calculated for the proposed extraction extension area, including all quarry faces. It should be noted that the ZTV mapping is based on a bare terrain; that is, the computer model does not include built structures or vegetation. As a result, the extent of visibility, which is illustrated, is regarded as a worst-case scenario, and would be greatly reduced if buildings and vegetation, such as the tree-lined hedgerows, woodland and scrub areas surrounding the site, were included in the model.

13.79 In SLR's experience, views from within areas with a visibility of a subtended vertical angle of up to 0.4 degrees tend to be screened by hedgerows and other vegetation (if present) and/or built structures in an urban environment. These areas are, therefore, coloured in shades of grey on the ZTV mapping. This differentiates them from the other areas of more probable visibility, which are marked in shades of yellow, orange and red.

13.80 The resulting ZTV is depicted on **Figure 13-2.** It indicates that the highest likelihood of visibility of the proposed development would be within a 600m radius of the application area and extending up to 2.5km to the north-west (i.e. the areas of theoretical visibility in yellow, orange and red).

13.81 While there are large areas between 2-7km to the north and north-west of the application area indicated as having theoretical visibility, all of these areas have a lower probability of visibility, indicated by the shades of grey. Views from within these areas are typically screened by existing intervening vegetation.

13.82 It should be noted that the majority of all theoretical visibility areas are located on areas of agricultural land, which is not publicly accessible, and therefore only few visual receptors are present in those areas (i.e. the owners of the land).

13.83 The ZTV further illustrates that there would be no visibility of the proposed development from any locations beyond 600m to the west and south, due to screening topography. To the east there are some small areas of potential low visibility, but again views from these areas are likely to be screened by vegetation and they are covering agricultural land. Other than that, there would be no visibility of the proposed development from anywhere beyond 600m to the east, due to screening topography.

Outdoor Recreational Facilities within the Study Area

13.84 Outdoor recreational facilities within the study area, such as walking trails or public gardens, were considered, as these provide an indication of potential visual receptors. No such facilities were identified within the study area.

Actual Visibility

13.85 The actual visibility of the application area from the (publicly accessible) areas of visibility indicated by the ZTV mapping (**Figure 13-2**) were assessed during the field survey. This confirmed that existing roadside and intervening vegetation blocks views towards the application area from the vast majority of locations within these areas.

13.86 There are only a small number of locations in close proximity to the site and/or where gaps in the roadside vegetation allow views towards the application area.

13.87 Viewpoint photography was taken during the field survey from several locations throughout the study area and six of these were selected to represent the range of available views. The location of the six viewpoints is illustrated on **Figures 13-1** & **13-2**. For each of the viewpoints, annotated photographs of the existing views are provided (refer to **Viewpoints A-F** on **Figures 13-3** to **13-5**). These photographs are made up from 4-6 individual photographic frames, which were merged together using Adobe Photoshop software. It should be noted that photography is a tool to assist in the visualisation process and cannot be expected to replicate the actual view that would be attained on the ground.

13.88 **Viewpoint A** represents views from the local road to the immediate east of the existing processing facility and the western end of the link road onto the R165 (which is not open to public traffic). There are no residential properties along these sections of road. Parts of the more elevated southern section of the application area, including the previously stripped area, can be glimpsed as a narrow band in the midground of views, through gaps in the boundary and intervening hedgerow and behind the existing processing facilities. The northern part of the site is screened by topography. The site is enclosed by existing trees and scrub vegetation. The nearest pasture covered drumlin ridgelines are visible in the background, below the skyline.

13.89 **Viewpoint B** represents views from a short section of the local road to the east of the site, approximately 500m south of Viewpoint A. One residential property (currently under construction) is located along this section of road. Topography and vegetation block views towards the site from most of this road, including all locations beyond ca. 50m further south from this viewpoint. However, in the vicinity of Viewpoint B the roadside vegetation is kept low or there are gaps in the hedgerow. Combined with the high elevation of the road in this area, panoramic long-distance views over the drumlin landscape to the north and west open up. As with Viewpoint A, parts of the elevated southern section of the application area, including the previously stripped area, can be glimpsed as a narrow band in the midground of views amongst the trees and scrub vegetation surrounding it. The northern part of the site is screened by topography. Small parts of the existing processing area are visible to the front of the applications area.

13.90 **Viewpoints C** represents views from the section of the local road along the western boundary of the application area. Parts of the south-western section of the site, including the previously stripped area, are visible in the fields beside the road, with existing boundary vegetation providing some screening. As the ground within the site falls away from this viewpoint / the western boundary, the majority of the application area is screened by topography. The site is visible below the skyline in most views from this section of road. In some views, from locations a little further north of Viewpoint C, the wider drumlin landscape to the north / north-east becomes visible in the background.

13.91 **Viewpoint D** illustrates how intervening vegetation fully screens the application area in views from the local road north of the north-western corner of the site, even though the ZTV predicts visibility from this area. This is the case for most locations along the roads within the study area for which visibility is predicted.

13.92 **Viewpoint E** represents intermittent views from a short section of the local road to the east of the site, approximately 500m north of Viewpoint A. Up to 4 residential properties in the vicinity may experience similar views. Through gaps in the roadside hedgerow or where it is maintained low, views in a southern direction across the valley between two drumlins are possible. Many tree-lined hedgerows and woodland vegetation are visible on the far side of the valley. Some of this woodland

vegetation is located within the application area and visible as a small area in the background of views.

13.93 **Viewpoint F** represents intermittent views from a section of the R165 in the townland of Kilnacreevy, as well as up to 9 residential properties in its vicinity. There is no roadside vegetation along this section of the R165 and the adjoining ground is locally flattened out. This allows views over a distance of almost 2km, over a well wooded drumlin landscape with some pockets of pasture visible and towards the ridge below which the existing quarry is visible. The upper section of the existing southern quarry face is distantly visible. However, since this is north facing, it is in the shade for most of the day and blends in with the existing trees along the ridgeline and other vegetation surrounding it. Parts of the application area, or rather some of the woodland vegetation within it, is visible to the right of the existing face, at a lower elevation, covering a small area and amongst other vegetation.

Sensitive Receptors

Landscape Receptors

13.94 The landscape receptors potentially affected by the proposed development and therefore considered as part of the assessment of landscape effects, are:

- Individual elements:
  - Tall vegetation, including scrub, hedgerows, treelines and woodland areas;
  - Undulating pasture fields.
- Aesthetic and perceptual aspects:
  - Complex shapes/textures with simple colour palette within the site and the wider landscape; and
  - High level of enclosure of most of the site, and of much of the wider landscape.
- Overall Character:
  - Cavan LCA 4 'Drumlin Belt and Uplands of East Cavan'.

Visual Receptors

13.95 The visual receptors potentially affected by the proposed development and therefore considered as part of the assessment of visual effects, are:

- Residents:
  - One property, approximately 500m south-east of the application area (represented by **Viewpoint B** on **Figures 13-3**);
  - Up to four properties, between 400-500m north of the application area (represented by **Viewpoint E** on **Figures 13-5**); and
  - Up to nine properties, between 1,200-1,750m north of the application area (represented by **Viewpoint F** on **Figures 13-5**).
- Vehicle users:
  - Intermittent views along three short sections of the local road to the east of the application area, within 550m to the north and south-east of the site (represented by **Viewpoints A, B** and **E** on **Figures 13-3** and **13-5**);

- 150m along the local road along the western boundary of the application area (represented by **Viewpoint C** on **Figure 13-4**); and
- Intermittent views along a 200m section of the R165 in the townland of Kilnacreevy (represented by **Viewpoint F** on **Figure 13-5**).

IMPACT ASSESSMENT

13.96 This section sets out the effects that the proposed development would have on both landscape and visual receptors (as identified in the previous section), during the operational stage of the quarry extraction works and including the restoration activities, as well as during the post-operational stage, when all works, including restoration, are complete. It is based on the detailed project description and layout drawings contained in **chapter 2** of this EIAR.

Aspects of the Development which Have the Potential to Cause Landscape and Visual Effects

Operational Stage

13.97 The operational stage of the proposed development, for the purpose of this assessment, is considered to include the site set-up works, the extraction activities and the final restoration of the site, i.e. a 17 year period.

13.98 The following elements of the proposed development, at the operational stage, are those which would most likely result in landscape & visual effects:

- Removal of existing vegetation from the proposed extraction area;
- Stripping of soil and overburden from the extraction area and associated construction of a screening berm along the western boundary;
- Planting and establishment of native woodland planting on top of the screening berm;
- Changes to the landform, due to the proposed extraction works, resulting in a quarry face 10-30m taller along the south-eastern/western boundary of the site, compared with the north-western/eastern boundary; and
- The restoration of the site to a natural habitat, including leaving the quarry void to naturally fill with water and leaving those benches which would remain above the water level to natural regeneration.

13.99 It should be noted that since this application is for the extension of an existing quarry, all existing lighting within the existing processing area would continue to be used, as it is currently established. Within the extension area only mobile lighting attached to the machinery used to work the site would be used. All lighting would continue to only be in use for wintertime operations, when darkness has fallen, within the previously permitted site operating hours, which are sought for this quarry extension as well. The site would operate from 07.00 hours until 18.00 hours Monday to Friday and 14.00 hours on Saturdays. There would therefore be a period where such lighting would be required for up to 1.5 hours in the morning and up to 2.5h in the evening, during the height of winter. Night-time light pollution caused by the proposed development would therefore continue to be of brief duration during winter months, similar to what is already taking place on site, and is not considered significant.

Post-Operational Stage

13.100 The post-operational stage of the proposed development, for the purpose of this assessment, is considered to be the period when all extraction and restoration works are completed, which would be permanent.

13.101 The following elements of the proposed development, at the post-operational stage, are those which are most likely to result in landscape & visual effects:

- The water-filled quarry void and the associated quarry faces, above the water level, in particular the slightly taller south-eastern/western quarry face (compared with the north-western/eastern face).

Operational Stage Landscape Effects

Landscape Sensitivity

13.102 In accordance with GLVIA3, the sensitivity of landscape receptors is determined by combining their value with their susceptibility to the type of development proposed.

13.103 In determining the value of landscapes, GLVIA3 recommends that the starting point should be to consider landscape-related designations. In this context it is important to note that no part of the application area or its immediate context is included within a statutory landscape designation.

13.104 GLVIA3 states that the value of undesignated sites should also be considered. Table 1 of Landscape Institute Technical Guidance Note 2/21 supersedes Box 5.1 of GLVIA3 and provides a helpful guide for assessing these sites. A full assessment against a list of factors set out in the Technical Guidance Note is included in **Table 13-1**, below.

Table 13-1
Evaluation of the Value of the Site and its Immediate Context

Factor	Assessment	Notes
Natural Heritage	COMMUNITY	The site is not designated for ecological reasons but contains and is surrounded by a mix of hedgerows, treelines, scrub and woodland areas which are of some local habitat value.
Cultural Heritage	LOW	The site does not contain designated heritage assets. Four ringforts / raths and associated souterrains are located within an 800m radius of the site, with the closest (CV026-033001- & CV026-033002-) approximately 500m north-east. Aside from the minimum 500m buffer, topography and existing intervening vegetation provide visual separation.
Landscape condition	COMMUNITY	The site contains a variety of vegetation cover, including areas of wet grassland and ground encroached by scrub, i.e. areas which are not actively managed (apart from some grazing by cattle). Similarly, the hedgerows, treelines and woodland areas within the site to not appear to be managed. While mostly unmanaged, each of the different habitats are in a generally good condition in their own right. There are similar areas of scrub, wet grassland, hedgerows/treelines and small woodlands in the surrounding landscape. Therefore, none of the elements within the site are incongruous with the surrounding landscape.
Associations	LOW	No known associations with art, literature or events.
Distinctiveness	LOW	The site and its immediate context do not contain any distinctive or rare / unusual features.

Factor	Assessment	Notes
Recreational	LOW	The site is not publicly accessible and there is no formal recreational access to the land immediately surrounding it.
Perceptual (Scenic)	LOW	There are no distinctive features / views or strong aesthetic qualities associated with the site or its immediate context.
Perceptual (Wilderness and tranquillity)	LOW	The site and immediate surrounding area have no strong perceptual value, such as remoteness or wildness. Also, the noise from the existing processing plant reduces the tranquillity within the site and in its vicinity.
Functional	COMMUNITY	The trees / woodland areas within the site have a function as a carbon sink (on a local scale).

13.105 Using the factors set out in **Table 13-1**, it has been concluded that the site and its immediate context has some value at the community level, in particular regarding the existing tall vegetation contained within the site.

13.106 The susceptibility of each of the landscape receptors is assessed in **Table 13-2.** This is combined with the previously assessed value and a judgement of the overall sensitivity provided as well.

Table 13-2
Sensitivity of Landscape Receptors

Landscape Receptors	Value	Susceptibility	Overall Sensitivity
Individual Elements			
Tall vegetation	**COMMUNITY**	**HIGH** The susceptibility of the tall vegetation within the site to the proposed extraction works is high, moderated somewhat by the retention of the external boundary vegetation.	**MEDIUM**
Pasture fields	**COMMUNITY**	**HIGH** The susceptibility of the existing pasture fields within the site to the proposed extraction works is high, as they would be largely removed.	**MEDIUM**
Aesthetic and Perceptual Aspects			
Complex form of site and wider area with simple colour palette	**COMMUNITY**	**MEDIUM** Due to its complexity, the site and surrounding landscape are able to accommodate some change without transformational adverse effects, in particular low-rise development proposed with a simple colour palette, as is proposed.	**LOW/ MEDIUM**
Mostly high level of enclosure of site and wider area	**COMMUNITY**	**MEDIUM** While much of the site and wider area have a high level of enclosure, this reduces in some locations, i.e. there is already some variability. The area can therefore accommodate some change to the level of enclosure without transformational adverse effects.	**LOW/ MEDIUM**
Overall Character			
Drumlin Belt (Cavan LCA 4)	**COMMUNITY**	**LOW** Due to the undulating topography of this LCA, combined with the presence of many treelined hedgerows and small woodland areas, it would be able to accommodate the proposed development without transformational adverse effects to the wider landscape character.	**LOW**

Magnitude of Landscape Change

13.107 **Table 13-3** describes the size and scale, geographical extent and duration/reversibility of the landscape effects for each landscape receptor, all of which contribute to the assessment of the magnitude of these effects.

Table 13-3
Magnitude of Landscape Change

Landscape Receptors	Factors	Magnitude of Change
Individual Elements		
Tall vegetation	Size & Scale: **SMALL** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The proposed development would result in the loss of two small woodland areas, some internal treelines and hedgerows and some areas of scrub. This would be a small proportion of similar elements in the surrounding landscape, which are abundant, and would therefore not significantly change the composition/balance of tall vegetation in the local landscape. Also, none of the tall vegetation within the site is prominent in the wider landscape. Considering the visual enclosure by the surrounding vegetation, as well as topography, the changes would be focused on the site itself. To compensate some of the loss of vegetation (i.e. a partial reversal), native woodland planting would be carried out on the proposed screening berm along the south-western boundary, as part of the site set-up works.	**SLIGHT/ MEDIUM**
Pasture fields	Size & Scale: **SMALL** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The proposed development would result in the loss of a number of small undulating pasture fields, none of which are prominent in the wider landscape and there are countless similar such fields surrounding the site. The composition/balance of pasture fields in the local landscape would therefore not significantly change. Considering the visual enclosure of the site, the changes would be focused on the site itself.	**SLIGHT/ MEDIUM**
Aesthetic and Perceptual Aspects		
Complex form of site and wider area with simple colour palette	Size & Scale: **SMALL** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The proposed development would result in fewer different textures within the site. However, the topography would remain complex, with an undulating quarry rim and steep rock faces. While the colour palette would become slightly darker, it would still be simple. The composition/balance of complex features and the colour palette in the local landscape would therefore not significantly change. Considering the visual enclosure of the site, the changes would be focused on the site itself.	**SLIGHT/ MEDIUM**

Landscape Receptors	Factors	Magnitude of Change
Mostly high level of enclosure of site and wider area	Size & Scale: **SMALL** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** While the internal tall vegetation would be removed, opening up the centre of the site further, there would still be some enclosure from the external boundary vegetation. Also, another type of enclosure would be created by the quarry faces surrounding the void, as well as the screening berm and associated woodland planting along the south-western boundary. The composition/balance of the level of enclosure in the local landscape would not significantly change. Considering the visual enclosure of the site, the changes would be focused on the site itself.	**SLIGHT/ MEDIUM**
Overall Character		
Drumlin Belt (Cavan LCA 4)	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** Considering the large area covered by the drumlin belt landscape character, the proposed quarry would be a small element, and the landscape changes would be focused on the site itself. Also, considering the presence of the existing quarry development and the partially stripped area of the site, the proposed development would not result in new elements being placed into the local landscape.	**SLIGHT**

Assessment of Landscape Effects and Significance

13.108 An assessment of the landscape effects during the operational phase, based on the sensitivity of each of the landscape receptors combined with the magnitude of change experienced by each of them, are provided in **Table 13-4** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral):

Table 13-4
Assessment of Landscape Effects

Landscape Receptors	Sensitivity	Magnitude	Landscape Effects	Nature of Effect
Individual Elements				
Tall vegetation	MEDIUM	SLIGHT/MEDIUM	**MODERATE/MINOR**	Negative
Pasture fields	MEDIUM	SLIGHT/MEDIUM	**MODERATE/MINOR**	Negative
Aesthetic and Perceptual Aspects				
Complex form of site and wider area with simple colour palette	LOW/MEDIUM	SLIGHT/MEDIUM	**MINOR**	Negative
Mostly high level of enclosure of site and wider area	LOW/MEDIUM	SLIGHT/MEDIUM	**MINOR**	Negative
Overall Character				
Drumlin Belt (Cavan LCA 4)	LOW	SLIGHT	**MINOR/NEGLIGIBLE**	Negative

13.109 None of these landscape effects are assessed to result in significant impact.

Post – Operational Stage Landscape Effects

13.110 At the post-operational stage, the quarry site would integrate more and more with the surrounding landscape, despite the land-use change, as:

- the site would continue to be enclosed by the existing boundary vegetation;
- the woodland planting along the south-western site boundary would continue to mature and become one of the many 'tall vegetation landscape elements' within the local area,
- locally occurring grass and scrub species would colonise the quarry benches and fissures in the quarry faces, and
- as the rock faces weather, softening their appearance.

13.111 As a result, the effects on all landscape receptors would reduce to MINOR / NEGLIGIBLE (negative, becoming neutral over time).

Operational Stage Visual Effects

Visual Receptor Sensitivity

13.112 The value placed on each of the types of visual receptors identified above is described in **Table 13-5** below. Also, the susceptibility to change of each of the receptor types (as per the LVIA Methodology in **Appendix 13-A**) is described and a judgement of the overall sensitivity made.

Table 13-5
Sensitivity of Visual Receptors

Visual Receptors	Value	Susceptibility	Overall Sensitivity
Residents			
All residential receptors identified, represented by **Viewpoints B, E** & **F**	**LOW** (No designated or locally promoted views)	**HIGH** (Particularly in views from gardens and living rooms)	**MEDIUM**
Vehicle Users			
All sections of road identified, represented by **Viewpoints A, B, C, E** & **F**	**LOW** (No designated or locally promoted views)	**LOW** (Unlikely to be focused on views)	**LOW**

Magnitude of Visual Change

13.113 **Table 13-6** describes the size and scale, geographical extent and duration/reversibility of the visual effects for each visual receptor, all of which contribute to the assessment of the magnitude of these effects.

Table 13-6
Magnitude of Visual Change

Visual Receptors	Factors	Magnitude of Change
Residents		
One property, ca. 500m south-east **(Viewpoint B)**	Size & Scale: **SMALL** Geographical Extent: **NEGLIGIBLE** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The changes within the application area would be perceptible within a narrow band in the midground of views from the property. The vegetation within the site would be removed, but this would be partially screened by vegetation in the foreground and would reveal other vegetation in the background. A small section of the south-western quarry face may become visible at the western end of the visible section of the application area. Some of the proposed woodland planting may become visible above this face. The majority of the quarry void and therefore the majority of the extraction activities would be screened by the higher ground along the south-eastern boundary of the site. Due to the small proportion of the view occupied, the screening from topography/vegetation and the presence of the existing quarry in views, the changes to the composition of the overall panoramic view would be limited. This view would only be experienced by the residents of one property, which is currently under construction, despite the presence of the existing quarry in views and the previous permission of extraction within the application area. The initial site stripping and extraction works would be visible for a short period, with the activities below approximately the first bench screened by topography. A small section of the quarry face would become and remain visible for the duration of the operational stage.	**SLIGHT / NEGLIGIBLE**
Up to 13 properties between 400-1,750m to the north **(Viewpoints E & F)**	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The changes within the application area would be barely perceptible within a small area in the background of views from the relevant properties. Intervening vegetation partially screens views towards the site, which is typically in the shade, as it is on a slope which is north facing. Therefore, the changes within the site, i.e. the south-western face replacing some of the vegetation, would be difficult to discern. Overall, the composition of the views would be barely altered. The views would be experienced by the residents of a limited number of properties. Parts of the works within the site, as well as the emerging quarry would be visible for the duration of the operational stage.	**SLIGHT / NEGLIGIBLE**

Visual Receptors	Factors	Magnitude of Change
Vehicle Users		
250m in two sections, along road within 550m to the east/south-east **(Viewpoints A & B)**	Size & Scale: **SMALL** Geographical Extent: **NEGLIGIBLE** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The changes within the application area would be perceptible within a narrow band in the midground of views from the two sections of road. The vegetation within the site would be removed, but this would be partially screened by vegetation in the foreground and would reveal other vegetation in the background. A section of the south-western quarry face may become visible at the western end of the visible section of the application area. Some of the proposed woodland planting may become visible above this face. The majority of the quarry void and therefore the majority of the extraction activities would be screened by the higher ground along the south-eastern boundary of the site. Due to the small proportion of the view occupied, the screening from topography/vegetation and the presence of the existing quarry in views, the changes to the composition of the overall panoramic view would be limited. This view would be experienced from two limited sections of road, by a very small number of viewers, as this road is not frequently used (as experienced during the field survey on a weekday morning). The initial site stripping and extraction works would be visible for a short period, with the activities below approximately the first bench screened by topography. A small section of the quarry face would become and remain visible for the duration of the operational stage.	**SLIGHT / NEGLIGIBLE**
150m along south-western boundary **(Viewpoint C)**	Size & Scale: **SMALL** Geographical Extent: **NEGLIGIBLE** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** Some of the changes within the application area would be perceptible in the fields beside this road. In views near the southern tip of the site (Viewpoint C) the currently visible stockpiles would be removed from the view, revealing more of the sky. While the extraction machinery would be initially visible, all activities would soon disappear from view. A little further north from Viewpoint C, the proposed screening berm and associated woodland planting would become visible along the road, behind the existing boundary vegetation, screening all views into the site and therefore of any activities, beyond the installation of the berm. The presence of the berm would partially alter the composition of views. However, considering views from this section of road into the site are already restricted by topography, this is not a significant change. This view would be experienced by a very small number of receptors, as there are very few properties along the northern end of this road, and which are therefore more likely to be accessed from the north (as experienced during the field survey on a weekday morning). The changes along the road, in particular the screening berm, would be visible for the duration of the operational stage.	**SLIGHT / NEGLIGIBLE**

Visual Receptors	Factors	Magnitude of Change
300m in two sections, along local road within 550m to the north-east and R165 at Kilnacreevy **(Viewpoints E & F)**	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The changes within the application area would be barely perceptible within a small area in the background of views from the relevant sections of road. Intervening vegetation partially screens views towards the site, which is typically in the shade, as it is on a slope which is north facing. Therefore, the changes within the site, i.e. the south-western face replacing some of the vegetation, would be difficult to discern. Overall, the composition of the views would be barely altered. The views would be experienced from two limited sections of road by a small number of viewers. Parts of the works within the site, as well as the emerging quarry would be visible for the duration of the operational stage.	**SLIGHT / NEGLIGIBLE**

Assessment of Visual Effects and Significance

13.114 An assessment of the visual effects during the operational phase, based on the sensitivity of each of the visual receptors combined with the magnitude of change experienced by each of them, are provided in **Table 13-7** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral):

Table 13-7
Assessment of Visual Effects

Visual Receptor	Sensitivity	Magnitude	Visual Effects	Nature of Effect
Residents				
One property, ca. 500m south-east **(Viewpoint B)**	MEDIUM	SLIGHT / NEGLIGIBLE	**MINOR**	Negative
Up to 13 properties between 400-1,750m to the north **(Viewpoints E & F)**	MEDIUM	SLIGHT / NEGLIGIBLE	**MINOR**	Negative
Vehicle Users				
250m in two sections, along road within 550m to the east/south-east **(Viewpoints A & B)**	LOW	SLIGHT / NEGLIGIBLE	**NEGLIGIBLE**	Negative
150m along south-western boundary **(Viewpoint C)**	LOW	SLIGHT / NEGLIGIBLE	**NEGLIGIBLE**	Negative
300m in two sections, along local road within 550m to the north-east and R165 at Kilnacreevy **(Viewpoints E & F)**	LOW	SLIGHT / NEGLIGIBLE	**NEGLIGIBLE**	Negative

13.115 None of these visual effects are assessed to result in significant impact.

Post – Operational Stage Visual Effects

13.116 At the post-operational stage, the proposed development would continue to be screened in views from most locations within the study area. In the available views the quarry development would become more and more imperceptible, as

- the existing vegetation along the site boundaries, including the woodland planting along the south-western boundary would continue grow and provide ample screening,
- locally occurring grass and scrub species would colonise the quarry benches and fissures in the quarry faces and thereby merge the colouring of the site with the surrounding area, and
- as the rock faces weather, softening their appearance.

13.117 As a result, the effects on all visual receptors would reduce to NEGLIGIBLE (negative, becoming neutral over time).

Direct/Indirect Effects

13.118 All landscape and visual effects described above are direct effects. The proposed development is not considered to have indirect effects in landscape and visual terms, i.e. the proposed development is unlikely to cause consequential changes to the surrounding landscape character areas or to existing views of the areas surrounding the application site.

Compliance with relevant Planning Policies

Woodland, Trees, Hedgerows and Stonewalls

13.119 The proposed development would result in the loss of two small woodland areas, some internal treelines and hedgerows and some areas of scrub. This is unavoidable as part of a mineral extraction development. However, all boundary vegetation would be retained and would continue to link up with other hedgerows / treelines surrounding the site. Also, a band of woodland planting is proposed along the south-western boundary of the application area, in order to compensate some of the loss of existing vegetation and provide additional habitat, in particular for local pollinator and bird species. The proposed mix is made up from native species only.

13.120 No champion or heritage trees as listed on the Tree Register of Ireland and Heritage Tree Database were identified within the application area.

13.121 Considering all of the above it is considered that the proposed development is in compliance with the development objectives ***WTHS3, WTHS4, WTHS6*** & ***WTHS7*** contained in the current CCDP.

Landscape Categorisation

13.122 A landscape and visual impact assessment of the proposed development was carried out in accordance with current best practice guidelines and taking account of the existing County Cavan Landscape Categorisation. The assessment considered the sensitivity and value of the existing landscape. Neither highly sensitive areas, nor views or prospects of amenity value, nor impacts on skylines or ridgelines were identified within the study area. Overall, the levels of landscape and visual effects were assessed as moderate/minor or less and not significant.

13.123 Considering all of the above it is considered that the proposed development is in compliance with the development objectives ***LC 1-7*** contained in the current CCDP.

Areas of High Landscape Value or Special Landscape Interest

13.124 None of the Areas of High Landscape Value or Special Landscape Interest are located within the study area and the proposed development is therefore considered to be in compliance with the development objectives ***SLPA1*** contained in the current CCDP.

Quarrying

13.125 As mentioned previously a landscape and visual impact assessment of the proposed development was carried out in accordance with current best practice guidelines. Overall, the levels of landscape and visual effects were assessed as moderate/minor or less and not significant. Also, no sensitive landscapes, Public Rights of Way or Walking/Cycling Routes would be affected by the proposed development. A Restoration Plan (refer to **Figure 2-4**) accompanies this EIAR, which proposes the restoration of the quarry site to a natural habitat

13.126 Considering all of the above it is considered that the proposed development is in compliance with the development objectives ***Q2, Q3, Q5-8*** *&* ***Q10*** contained in the current CCDP.

Unplanned Events (i.e. Accidents)

13.127 It is highly unlikely that any unplanned events within the application area would result in noticeable landscape or visual impact.

Cumulative / Synergistic Impacts

13.128 There are no known other existing developments or developments currently in the planning process, which would result in significant cumulative landscape or visual impacts in combination with the proposed development.

Transboundary Impacts

13.129 The proposed development is not located in the vicinity of a national boundary. Therefore, transboundary landscape or visual impacts would not arise.

Interaction with Other Impacts

13.130 There are no known interactions with other impacts.

'Do-nothing Scenario'

13.131 If the proposed development were not to take place, the northern part of the application area would be likely to remain under agricultural use for the foreseeable future, resulting in no landscape or visual effects. The southern section of the site would likely become overgrown with locally occurring grass and scrub species, and in time merge with the surrounding fields / scrub / woodland area, reducing any existing landscape and visual effects.

MITIGATION MEASURES

Operational Stage

13.132 The main mitigating factor, reducing the landscape and visual effects associated with the proposed development, is the low visibility of the application area, due to the undulating topography combined with many treelines, hedgerows, small woodlands and scrub areas. The retention of all existing boundary vegetation, as well as the proposed woodland planting along the south-western boundary, also contribute to the low levels of landscape and visual effects.

13.133 The restoration of the proposed quarry area to a natural habitat, including leaving the quarry void to fill with water and surrounding areas to natural regeneration, would further help the integration of the site into the surrounding landscape/views.

13.134 No further landscape or visual mitigation measures are considered necessary during the operational stage. Please refer to the Landscape and Restoration Plan, provided in **Chapter 2** of this EIAR, for the landscape and restoration proposals.

Post – Operational Stage

13.135 During the post-operational stage, the vegetation surrounding the quarry void would continue to mature and locally occurring grass and scrub species would colonise the quarry benches and fissures in the quarry faces. Also, the rock faces would weather, softening their appearance. As a result, the site would more and more integrate into the surrounding landscape and views. Additional landscape or visual mitigation measures at the post-operational stage are therefore not found necessary.

RESIDUAL IMPACT ASSESSMENT

Operational Stage

13.136 As no additional landscape/visual mitigation measures are required during the operational stage, the residual levels of landscape and visual effects would be as per the assessment above. In summary, the assessment has found that the proposed development would have moderate/minor or less landscape effects during the operational stage (i.e. levels of impact not considered to be significant).

13.137 The visual effects on views ranges from none for the vast majority of locations within the study area, to minor or less for a small number of locations within 550m surrounding the site and up to 1,750m to the north (i.e. impacts not regarded as significant).

Post – Operational Stage

13.138 As no additional mitigation measures are required during the post-operational stage, the residual landscape and visual effects would be as per the assessment above. In summary, on completion of all restoration works all predicted landscape effects would reduce to minor/negligible and visual effects to negligible.

MONITORING

13.139 There are no monitoring requirements, arising from this landscape and visual assessment.

REFERENCES

Environmental Protection Agency (May 2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports, EPA Ireland

The Landscape Institute with the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition, Routledge

The Landscape Institute (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute

The Landscape Institute (2021) Technical Guidance Note 02/21: Assessing landscape value outside national designations, Landscape Institute

APPENDICES

Appendix 13-A – Method used in Assessing Landscape and Visual Impact Effects

Introduction

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify the effects of development on *"landscape as an environmental resource in its own right and on people's views and visual amenity"* (GLVIA3, paragraph 1.1). GLVIA3[10] (paragraph 2.22) states that these two elements, although inter-related, should be assessed separately. GLVIA3 is the main source of guidance on LVIA.

Landscape is a definable set of characteristics resulting from the interaction of natural, physical and human factors: it is a resource in its own right. Its assessment is distinct from visual assessment, which deals specifically with effects on the views and visual amenity of different groups of people at particular locations. Clear separation of these two topics is recommended in GLVIA3.

As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there may be some scope for objective measurement of landscape and visual changes, much of the assessment must rely on qualitative judgements. It is critical that these judgements are based upon a clear and transparent method so that the reasoning can be followed and examined by others.

Impacts can be defined as the action being taken, whereas effects are the changes result from that action. This method of assessment assesses landscape and visual effects.

Landscape and visual effects can be positive, negative or neutral in nature. Positive effects are those which enhance and/or reinforce the characteristics which are valued. Negative effects are those which remove and/or undermine the characteristics which are valued. Neutral effects are changes which are consistent with the characteristics of the landscape or view.

In LVIAs which form part of an EIA, it is necessary to identify significant and non-significant effects. In non-EIA LVIAs, also known as appraisals, the same principles and process as LVIA may be applied but, in so doing, it is not required to establish whether the effects arising are or are not significant given that the exercise is not being undertaken for EIA purposes (see GLVIA3 statement of clarification 1/13 10-06-13, Landscape Institute).

[10] Landscape Institute and Institute of Environmental Management and Assessment 'Guidelines for Landscape and Visual Impact Assessment' (Third Edition, April 2013)

Landscape Effects

Landscape, as defined in the European Landscape Convention, is "*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*", (Council of Europe, 2000). Landscape does not apply only to special or designated places, nor is it limited to countryside.

GLVIA3 (paragraph 5.34) recommends that the effect of the development on landscape receptors is assessed. Landscape receptors are the components of the landscape that are likely to be affected by the proposed development, and can include individual elements (such as hedges or buildings), aesthetic and perceptual aspects (for example sense of naturalness, tranquillity or openness), or, at a larger scale, the character of a defined character area or landscape type. Designated landscapes, such as National Parks or Areas of Outstanding Natural Beauty (AONBs), may also be treated as landscape receptors, in which case attention is also given to effects on their special qualities.

This assessment is being undertaken because the proposed development has the potential to remove or add elements to the landscape, to alter aesthetic or perceptual aspects, and to add, remove or alter characteristics and thus potentially change overall character.

Judging landscape effects requires a methodical assessment of the sensitivity of the landscape receptors to the proposed development and the magnitude of effect which would be experienced by each receptor. The criteria and definitions used in making these judgements are set out below.

Landscape Sensitivity

The sensitivity of landscape receptors is assessed by combining assessments of the value attached to each receptor and the susceptibility of each receptor to the type of change which is proposed. (GLVIA3, paragraph 5.39).

Value Attached to Landscape Receptors

Landscape receptors may be valued at community, local, national or international level. Existing landscape designations provide the starting point for this assessment, as set out in **Table 13A-1** below.

The table sets out the interpretation of landscape designations in terms of the value attached to different landscape receptors. As GLVIA3 (paragraph 5.24) notes, at the local scale of an LVIA study area it may be found that the landscape value of a specific area may sometimes be different to that suggested by the presence or absence of a formal designation.

Table 13A-1: Interpretation of Landscape Designations

Designation	Description	Value
World Heritage Sites, candidate World Heritage Site	Unique sites, features or areas identified as being of international importance according to UNESCO criteria. Consideration should be given to their settings especially where these contribute to the attributes of outstanding universal value for which such an area of landscape is valued.	International
National Parks	Areas of landscape identified as being of national importance. Consideration should be given to their settings especially where these contribute to the special qualities for which the landscape is valued.	National
Local Landscape Designations (such as Areas of High Amenity) included in local planning documents; or other landscapes of identified value	Areas of landscape identified as having value, which are either recognised at the local authority level by a local designation or other equivalent recognition of value OR are landscapes considered to have elevated value, having regard to the criteria in Table 2 below and/or by virtue of demonstrable physical attributes.	Local Authority
Undesignated landscapes	Landscapes which do not have any formal designation, and which are not considered to have demonstrable physical attributes that elevate their value, but which may be valued by local communities.	Community
Undesignated landscapes with negative attributes	Landscapes with no designations or demonstrable physical attributes that elevate their value, which are in poor condition or are degraded or fundamentally altered by presence of man-made structures judged to be intrusive.	Low

Where landscapes are not designated and where no other local authority guidance on value is available, an assessment is made by reference to criteria in the **Table 13A-2** below. This is based on Table 1 of Landscape Institute Technical Guidance Note 2/21. These factors are not fixed and should be reviewed on a case-by-case basis. When assessing landscape value of a site it is important to consider not only the site itself but also its context.

Landscapes may be judged to be of local authority or community value on the basis of one or more of these factors. There may also be occasional circumstances where an undesignated landscape may be judged to be of national value, for example where it has a clear connection with a nationally designated landscape or is otherwise considered to be of equivalent value to a national designation. Similarly, on occasions there may be areas within designated landscapes that do not meet the designation criteria or demonstrate the key characteristics/special qualities in a way that is consistent with the rest of the designated area.

An overall assessment is made for each landscape receptor, based on an overview of the above criteria, to determine its value - whether for example it is comparable to a local authority landscape designation or similar, or whether it is of value to local people and communities. For example, an intact landscape in good condition, where scenic quality, tranquillity, and/or conservation interests make a particular contribution to the landscape, or where there are important cultural or historical associations, might be of equivalent value to a local landscape designation. Conversely, a degraded landscape in poor condition, with no particular scenic qualities or natural or cultural heritage interest is likely to be considered of limited landscape value.

Table 13A-2: Factors Considered in Assessing the Value of Non-Designated Landscapes

Factor	Criteria
Natural Heritage	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest. Presence of wildlife and habitats that contribute to the sense of place. Landscape which contains valued natural capital assets that contribute to ecosystem services.
Cultural Heritage	Landscape with clear evidence of archaeological, historical or cultural interest. Landscape which contributes to the significance of heritage assets. Landscape which offers a dimension of time depth.
Landscape Condition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure. Absence of detracting/incongruous features.
Associations	Landscape which is connected with notable people, events and the arts.
Distinctiveness	Landscape that has a strong sense of identity or place. Presence of distinctive features that are characteristic of a place, or presence of rare/unusual features that confer a strong sense of place. Includes landscape that makes an important contribution to the character or identity of a settlement.
Recreational	Landscape offering recreational opportunities where experience of landscape is important. Includes open access areas, common land and rights of way where appreciation of the landscape is an important element of the experience. Landscape that forms part of a view that that is important to the enjoyment of a recreational activity.
Perceptual (Scenic)	Landscape that appeals to the senses, primarily the visual sense. Distinctive features, or distinctive combinations of features. Strong aesthetic qualities. Visual diversity or contrasts. Memorable/distinctive views or landmarks, or landscape that contributes to these.
Perceptual (Wildness and Tranquillity)	Landscape with a strong perceptual value notably remoteness, wildness, tranquillity and/or dark skies.
Functional	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape. Natural hydrological systems, important parts of the green infrastructure network, pollinator rich habitats. Landscapes that have strong physical or functional links with an adjacent national landscape designation or are important to the appreciation of the designated landscape and its special qualities.

Susceptibility of Landscape Receptors to Change

As set out in GLVIA3, susceptibility refers to the ability of the landscape receptor to *"accommodate the proposed development without undue adverse consequences for the baseline situation and/or the achievement of landscape planning policies and strategies"*. Judgement of susceptibility is particular to the specific characteristics of the proposed development and the ability of a particular landscape or feature to accommodate the type of change proposed and makes reference to the criteria set out in **Table 13A-3** below. Aspects of the character of the landscape that may be affected by a particular type of development include landform, skylines, land cover, enclosure, human influences including settlement pattern and aesthetic and perceptual aspects such as the scale of the landscape, its form, line, texture, pattern and grain, complexity, and its sense of movement, remoteness, wildness or tranquillity.

For example, an urban landscape which contains a number of industrial buildings may have a low susceptibility to buildings of a similar scale and character. Conversely a rural landscape containing only remote farmsteads is likely to have a high susceptibility to large scale built development.

Table 13A-3: Landscape Receptor Susceptibility to Change

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the proposed development because the key characteristics of the landscape have no or very limited ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Medium	The landscape receptor is moderately susceptible to the proposed development because the relevant characteristics of the landscape have some ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the proposed development because the relevant characteristics of the landscape are generally able to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.

Defining Sensitivity

As has been noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to change as indicated in **Figure 13A-1** below. This summarises the general nature of the relationship, but it is not formulaic and only indicates general categories of sensitivity. Professional judgement is applied on a case-by-case basis in determining sensitivity of individual receptors with the diagram only serving as a guide.

Table 13A-4 below summarises the nature of the relationship, but it is not formulaic and only indicates general categories of sensitivity. Judgements are made about each landscape receptor, with the table serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the landscape receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low is adopted. In a few limited cases a category of less than low (very low) may be used where the landscape is of low value and susceptibility is particularly low.

Figure 13A-1: Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

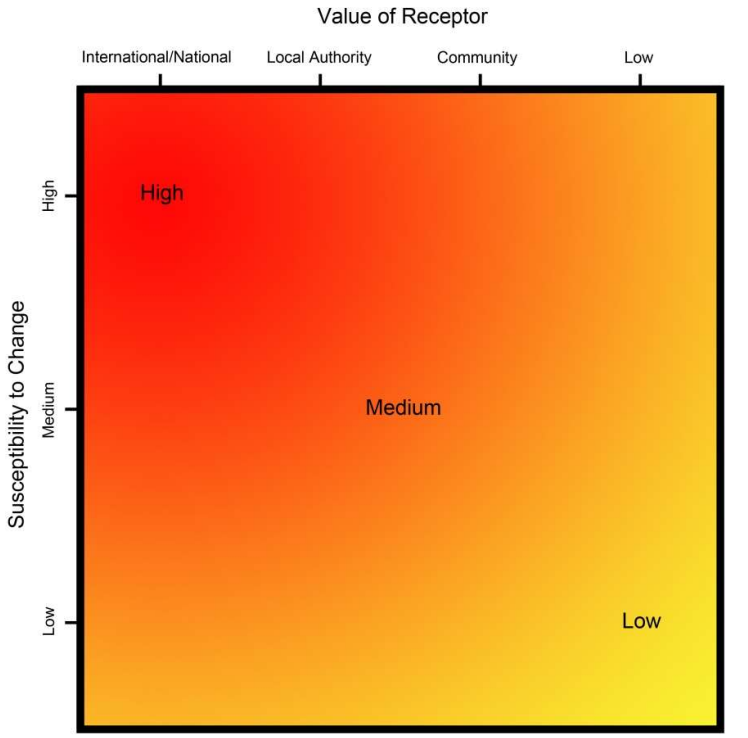


Table 13A-4: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

Sensitivity	Criteria
High	The landscape receptor is of international or national value and is considered to have high susceptibility to the effects of the proposed development OR The landscape receptor is of national value and is considered to have medium susceptibility to the effects of the proposed development
Medium	The landscape receptor is of international or national value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have high susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have high susceptibility to the effects of the proposed development

Sensitivity	Criteria
Low	The landscape receptor is of local authority value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have low susceptibility to the effects of the proposed development

Magnitude of Landscape Change

The magnitude of landscape change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change.

Size and Scale of Change

The size and/or scale of change in the landscape takes into consideration the following factors:

- the extent/proportion of landscape elements lost or added; and/or
- the degree to which aesthetic/perceptual aspects are altered; and
- whether this is likely to change the key characteristics of the landscape.

The criteria used to assess the size and scale of landscape change are based upon the amount of change that will occur as a result of the proposed development, as described in **Table 13A-5** below.

Table 13A-5: Magnitude of Landscape Change - Size/Scale of Change

Category	Description
Large level of landscape change	There would be a large level of change in landscape character, and especially to the key characteristics if, for example, the proposed development: • becomes a dominant feature in the landscape, changing the balance of landscape characteristics; and/or • would dominate important visual connections with other landscape types, where this is a key characteristic of the area.
Medium level of landscape change	There would be a medium level of change in landscape character, and especially to the key characteristics if, for example: • the proposed development would be more prominent but would not change the overall balance or composition of the landscape; and/or • key views to other landscape types may be interrupted intermittently by the proposed development, but these views would not be dominated by them.

Category	Description
Small level of landscape change	There would be a small level of change in landscape character, and especially to the key characteristics if, for example: • there would be no introduction of new elements into the landscape and the proposed development would not significantly change the composition/balance of the landscape.
Negligible/no level of landscape change	There would be a negligible or no level of change in landscape character, and especially to the key characteristics if, for example, the proposed development would be a small element and/or would be a considerable distance from the receptor.

Geographical Extent of Change

The geographical extent of landscape change is assessed by determining the area over which the changes will influence the landscape, as set out in **Table 13A-6**. For example, this could be at the site level, in the immediate setting of the site, or over some or all of the landscape character types, or areas affected.

Table 13A-6: Magnitude of Landscape Change - Geographical Extent

Category	Description
Large extent of landscape change	Affects a wider area further from the site itself.
Medium extent of landscape change	Landscape change extends beyond the site boundaries.
Small extent of landscape change	The change will affect a small geographical area. A localised change, often focused on the site itself.
Negligible extent of landscape change	Change affects only a very small geographical area.

Duration and Reversibility of Change

The duration of the landscape change is categorised in **Table 13A-7** below, which considers whether the change will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (May 2022).

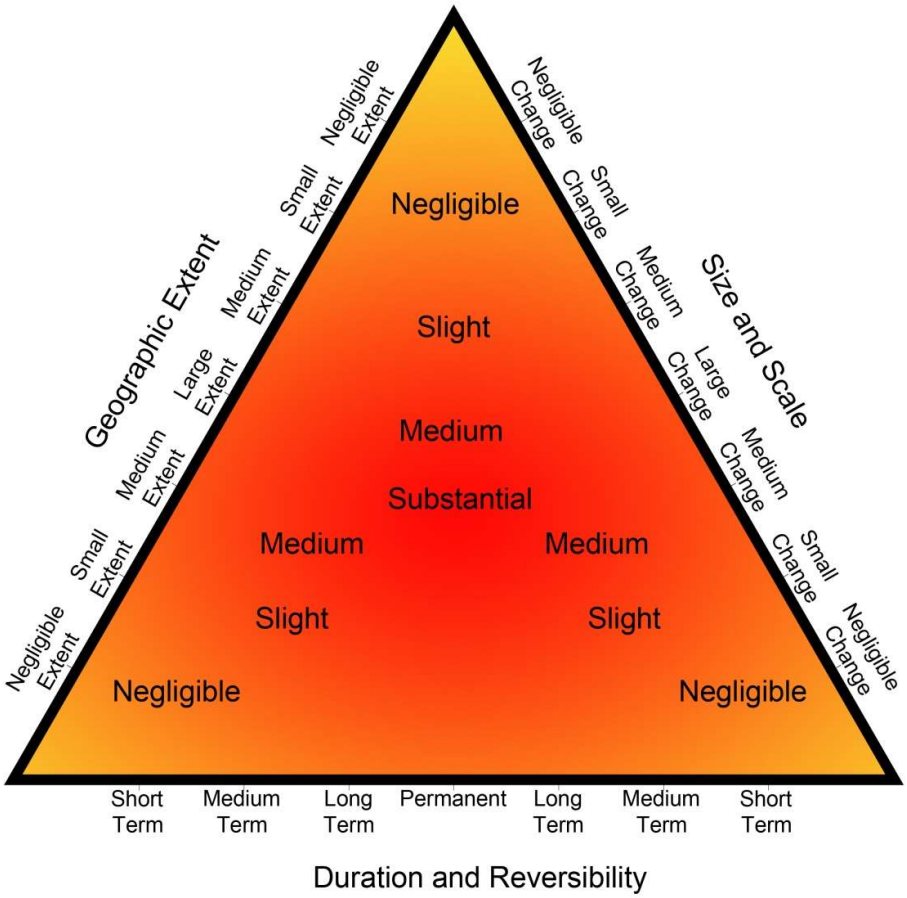
Table 13A-7: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Deciding on Overall Magnitude of Landscape Change

The relationships between the three factors that contribute to assessment of the magnitude of landscape effects are illustrated graphically, as a guide, in **Figure 13A-2** below. Various combinations are possible, and the overall magnitude of each effect is determined using professional judgement rather than by formulaic application of the relationships in the diagram.

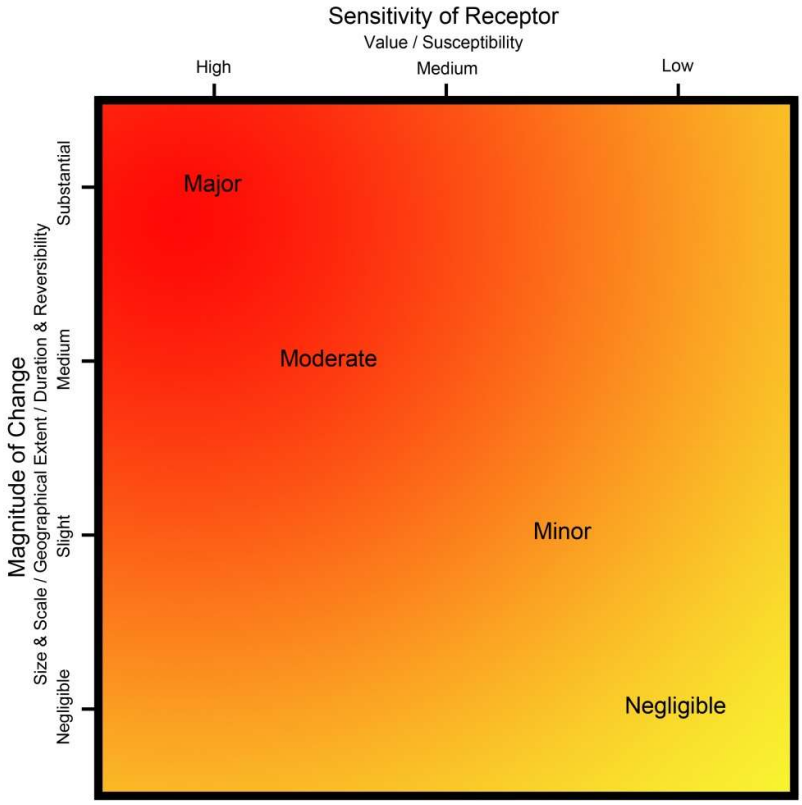
Figure 13A-2: Determining the Magnitude of Landscape Change



Assessment of Landscape Effects

The assessment of landscape effects is defined in terms of the relationship between the sensitivity of the landscape receptors and the magnitude of the change. The diagram below (**Figure 13A-3**) summarises the nature of the relationship, but it is not formulaic. Judgements are made about each landscape effect using this diagram as a guide.

Figure 13A-3: Assessment of Landscape Effects



Visual Effects

Visual effects are the effects of change and development on the views available to people and their visual amenity. Visual receptors are the people whose views may be affected by the proposed development. They generally include users of public rights of way or other recreational facilities or attractions; travellers who may pass through the study area because they are visiting, living or working there; residents living in the study area, either as individuals or, more often, as a community; and people at their place of work. They may include:

- Communities within settlements (i.e. towns and villages);
- Residents of individual properties and clusters of properties outside settlements;
- People using nationally designated or regionally promoted footpaths and cycle routes;
- Visitors at publicly accessible sites including, for example, gardens and designed landscapes, historic sites, and other visitor attractions or outdoor recreational facilities where the landscape or seascape is an important part of the experience;
- Users of outdoor sport and recreation facilities;
- Visitors staying at caravan parks or camp sites;
- Road users on recognised scenic or promoted tourist routes;
- Users of other roads;
- Rail passengers;
- People at their place of work.

Judging visual effects requires a methodical assessment of the sensitivity of the visual receptors to the proposed development and the magnitude of effect which would be experienced by each receptor.

Viewpoints are chosen, ideally in discussion with the competent authority and other stakeholders and interested parties, for a variety of reasons but most commonly because they represent views experienced by relevant groups of people.

Visual Sensitivity

Sensitivity of visual receptors is assessed by combining an assessment of the susceptibility of visual receptors to the type of change which is proposed with the value attached to the views (GLVIA3, paragraph 6.30).

Value Attached to Views

Different levels of value are attached to the views experienced by particular groups of people at particular viewpoints. Assessment of value takes account of a number of factors, including:

- Recognition of the view through some form of planning designation or by its association with particular heritage assets; and
- The popularity of the viewpoint, in part denoted by its appearance in guidebooks, literature or art, or on tourist maps, by information from stakeholders and by the evidence of use including facilities provided for its enjoyment (seating, signage, parking places, etc.); and

- Other evidence of the value attached to views by people including consultation with local planning authorities, some of whom have carried out assessments of valued views, and professional assessment of the quality of views.

The assessment of the value of views is summarised in **Table 13A-8** below. These criteria are provided for guidance only.

Table 13A-8: Examples of Factors Considered in assessing the Value Attached to Views

Value	Criteria
High	Views from nationally (and in some cases internationally) known viewpoints, which: • have some form of planning designation; or • are associated with internationally or nationally designated landscapes or important heritage assets; or • are promoted in sources such as maps and tourist literature; or • are linked with important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important cultural associations. Also, may include views judged by assessors to be of high value.
Medium	Views from viewpoints of some importance at regional or local levels, which: • have some form of local planning designation associated with locally designated landscapes or areas of equivalent landscape quality; or • are promoted in local sources; or • are linked with locally important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important local cultural associations. Also, may include views judged by the assessors to be of medium value.
Low	Views from viewpoints which, although they may have value to local people: • have no formal planning status; or • are not associated with designated or otherwise high-quality landscapes; or • are not linked with popular visitor attractions; or • have no known cultural associations. Also, may include views judged by the assessors to be of low value.

Susceptibility of Visual Receptors to Change

The susceptibility of different types of people to changes in views is mainly a function of:

- The occupation or activity of the viewer at a given viewpoint; and
- The extent to which the viewer's attention or interest be focussed on a particular view and the visual amenity experienced at a given view.

The susceptibility of different groups of viewers is assessed with reference to the guidance in **Table 13A-9** below. However, as noted in GLVIA3 "*this division is not black and white and, in reality, there will be a gradation in susceptibility to change*". Therefore, the susceptibility of each group of people affected is considered for each project and assessments are included in the relevant text in the report.

Table 13A-9: Visual Receptor Susceptibility to Change

Susceptibility	Criteria
High	Residents; People engaged in outdoor recreation where their attention is likely to be focused on the landscape and on particular views; Visitors to heritage assets or other attractions where views of the surroundings are an important part of the experience; Communities where views contribute to the landscape setting enjoyed by the residents.
Medium	Travellers on scenic routes where the attention of drivers and passengers is likely to be focused on the landscape and on particular views. People engaged in outdoor sport or recreation, which may involve appreciation of views e.g. users of golf courses.
Low	People engaged in outdoor sport or recreation, which does not involve appreciation of views; People at their place of work whose attention is focused on their work; Travellers, where the view is incidental to the journey.

Defining Sensitivity

The sensitivity of visual receptors is defined in terms of the relationship between the value of views and the susceptibility of the different receptors to the proposed change. **Figure 13A-4** below summarises the nature of the relationship; it is not formulaic and only indicates general categories of sensitivity. Judgements are made on merit about each visual receptor, with the table below only serving as a guide. **Table 13A-10** sets down the main categories that may occur but again it is not comprehensive and other combinations may occur.

Figure 13A-4: Levels of Sensitivity Defined by Value and Susceptibility of Visual Receptor Groups

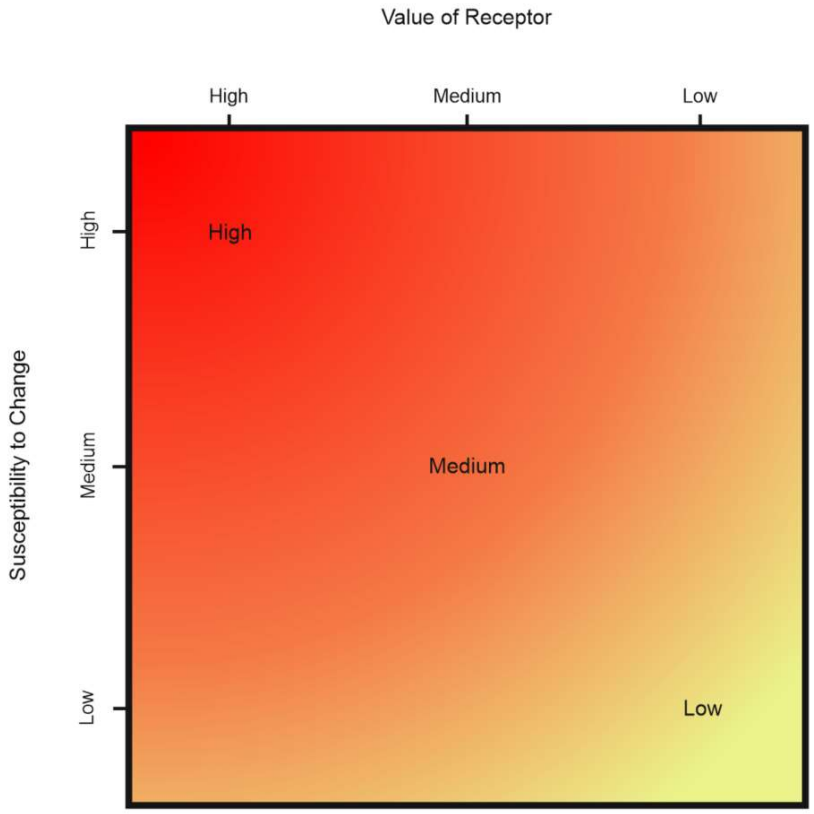


Table 13A-10: Example Levels of Sensitivity defined by Value and Susceptibility of Visual Receptors

Sensitivity	Criteria
High	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of high value OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of high value
Medium	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the medium level. OR The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the high level.

Sensitivity	Criteria
Low	The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level.

Magnitude of Visual Change

The magnitude of visual change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change.

Size and Scale of Change

The criteria used to assess the size/scale of visual change are as follows and as summarised in the **Table 13A-11** below:

- the scale of the change in the view with respect to the loss or addition of features in the view, changes in its composition, including the proportion of the view occupied by the proposed development and distance of view;
- 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 factors such as form, scale and mass, line, height, colour and texture; and
- the nature of the view of the proposed development, for example whether views will be full, partial or glimpses or sequential views while passing through the landscape.

Table 13A-11: Size/Scale of Change

Category	Criteria
Large visual change	The proposed development will cause a complete or large change in the view, resulting from the loss of important features in or the addition of important new ones, to the extent that this will substantially alter the composition of the view and the visual amenity it offers.
Medium visual change	The proposed development will cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small visual change	The proposed development will cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible visual change	The proposed development will cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposed development will cause no change to the view.

Geographical Extent of Change

The geographical extent of the visual change identified at representative viewpoints is assessed by reference to a combination of the Zone of Theoretical Visibility (ZTV), where this has been prepared, and field work, and consideration of the criteria in **Table 13A-12** below. Representative viewpoints are used as 'sample' points to assess the typical change experienced by different groups of visual receptors at different distances and directions from the proposed development. The geographical extent of the visual change is judged for each group of receptors: for example, people using a particular route or public amenity, drawing on the viewpoint assessments, plus information about the distribution of that particular group of people in the Study Area.

The following factors are considered for each representative viewpoint:

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

Thus, low levels of change identified at representative viewpoints may be extensive or limited in terms of the geographical area they are apparent from: for example, a view of the proposed development from elevated land may be widely visible from much or all of an accessible area or may be confined to a small proportion of the area. Similarly, a view from a public footpath may be visible from a single isolated viewpoint, or over a prolonged stretch of the route. Community views may be experienced from a small number of dwellings or affect numerous residential properties.

Table 13A-12: Geographical Extent of Change

Category	Description
Large extent of visual change	The proposed development is seen by the group of receptors in many locations across the Study Area or from the majority of a linear route and/or by large numbers of viewers; or the effect on the specific view(s) is extensive.
Medium extent of visual change	The proposed development is seen by the group of receptors from a medium number of locations across the Study Area or from a medium part of a linear route and/or by a medium number of viewers; or the effect on the specific view is moderately extensive.
Small extent of visual change	The proposed development is seen by the group of receptors at a small number of locations across the Study Area or from only limited sections of a linear route and/or by a small number of viewers; or the effect on a specific view is small.
Negligible extent of visual change	The proposed development is either not visible in the Study Area or is seen by the receptor group at only one or two locations or from a very limited section of a linear route and/or by only a very small number of receptors; or the effect on the specific view is barely discernible.

Duration and Reversibility of Change

The duration of the visual change at viewpoints is categorised in **Table 13A-13** below, which considers whether views will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (May 2022).

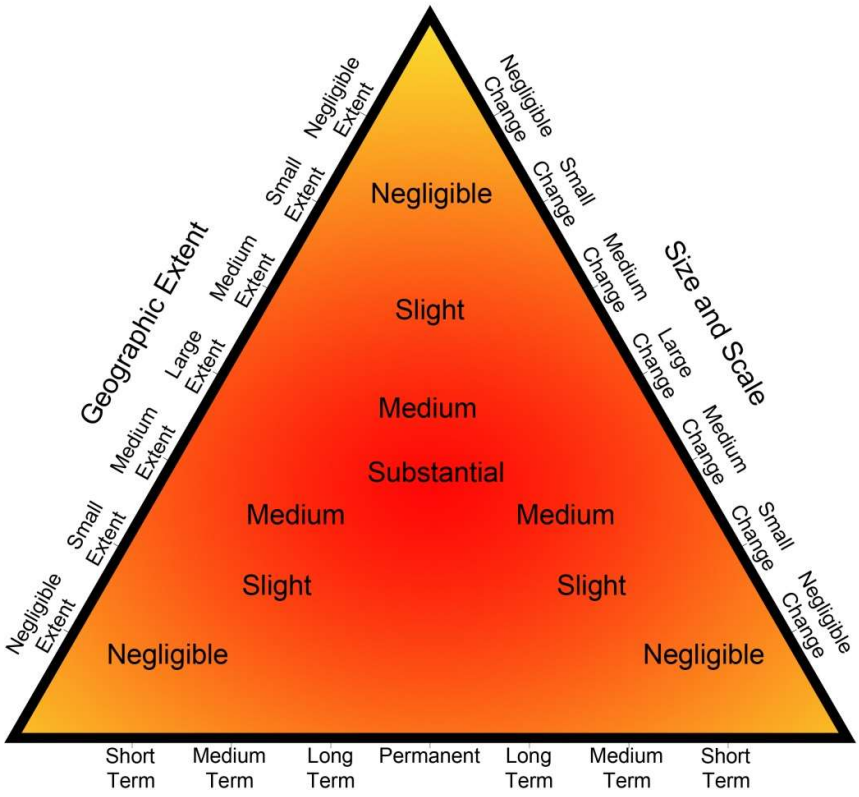
Table 13A-13: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Deciding on Overall Magnitude of Visual Change

The relationships between the three factors that contribute to assessment of the magnitude of visual effects are illustrated graphically, as a guide, in **Figure 13A-5** below. Various combinations are possible, and the overall magnitude of each effect is judged on merit rather than by formulaic application of the relationships in the diagram.

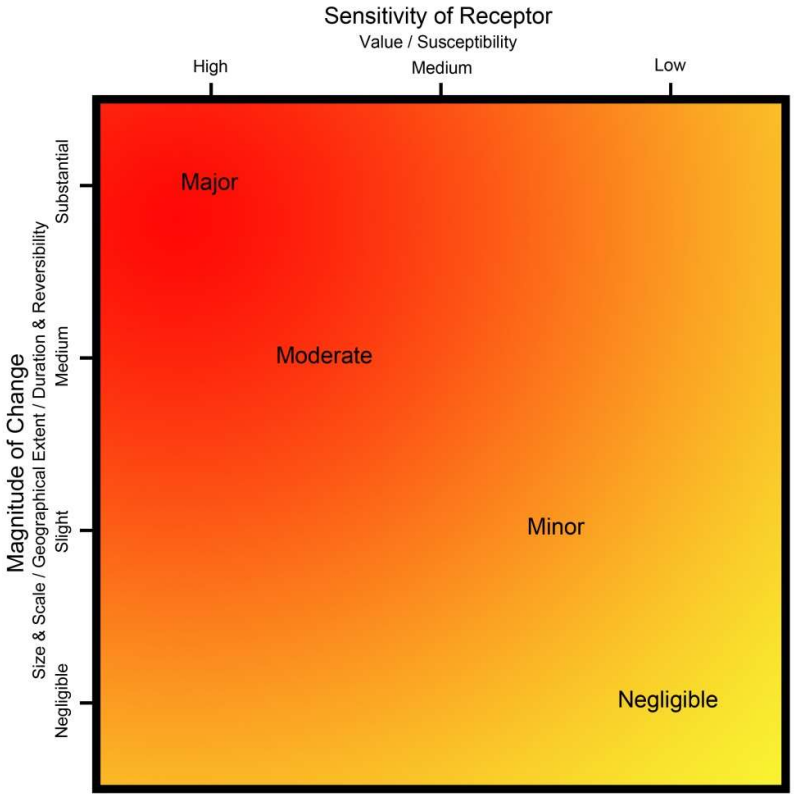
Figure 13A-5: Determining the Magnitude of Visual Change


Geographic Extent
Negligible Extent
Small Extent
Medium Extent
Large Extent
Medium Extent
Small Extent
Negligible Extent
Size and Scale
Negligible Change
Small Change
Medium Change
Large Change
Medium Change
Small Change
Negligible Change
Negligible
Slight
Medium
Substantial
Medium
Medium
Slight
Slight
Negligible
Negligible
Short Term
Medium Term
Long Term
Permanent
Long Term
Medium Term
Short Term
Duration and Reversibility

Assessment of Visual Effects

The assessment of visual effects is defined in terms of the relationship between the sensitivity of the visual receptors and the magnitude of the change. The diagram below (**Figure 13A-6**) summarises the nature of the relationship, but it is not formulaic and only indicates broad levels of effect. Judgements are made about each visual effect using this diagram as a guide.

Figure 13A-6: Assessment of Visual Effects

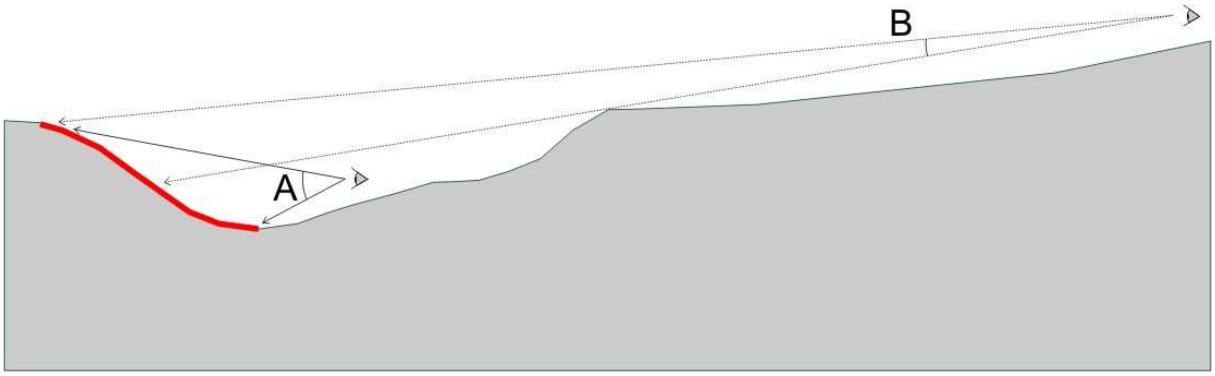


Appendix 13-A – Zone of Theoretical Visibility (ZTV) Methodology

A Zone of Theoretical Visibility (ZTV) Study was conducted for the proposed development (i.e. the proposed extraction area) to help identify areas sensitive to visual impacts. This study used the measurement of the vertical subtended angle for its methodology. This method is explained below and illustrated by **Figure A**, below.

When a Target Area (red) is observed from a Viewpoint (A or B) its apparent height can be measured in the form of degrees, to give a Subtended Vertical Angle.

Figure A:



The use of the Subtended Vertical Angle in formulating a ZTV has the benefit of automatically reducing values to reflect the distance from the Target Area, and partial screening by intervening landforms. Generally, the further the viewpoint is from the Target Area the smaller the Subtended Vertical Angle, reflecting the effect of distance on visual impacts.

Thus, in the example section above Viewpoint A experiences a higher subtended angle due to proximity to the red target area. Viewpoint B has a lower subtended angle due to greater distance from the target area and partial screening by intervening landform.

If the Subtended Vertical Angle is measured from a series of grid points for a particular Target Area, the resultant data can then be used to generate contours. Each contour level representing a certain vertical angle, and thus potential level of visibility.

The subtended vertical angle method of calculating ZTVs using LSS digital terrain modelling software has been proven by field investigation on numerous sites to be an accurate method of predicting areas of potential visibility for on-site investigation.

However, the computer generated ZTV study is undertaken using a bare earth landform to give the worst case scenario. In reality any built structures (settlements, walls etc) or areas of vegetation (woodlands, scrub and hedgerows) will reduce the actual visibility of the target area. Therefore it is necessary to carry out fieldwork to validate the results of the ZTV.

FIGURES