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INTRODUCTION

Background

13.1 This chapter of the EIAR assesses the landscape and visual impacts arising from the proposed development at Rathcore Quarry, Enfield, Co. Meath. The planning application area, hereafter referred to as the application area or the site, is located ca. 1km southwest of the crossroads in the village of Rathcore, approximately 3km northwest of Enfield and 3km north of the M4 motorway. The existing quarry development consists of a large extraction area, as well as a number of associated processing facilities, office buildings, stores and an overburden storage area.

13.2 This planning application concerns the continuation of use of the existing previously permitted quarry development, including all processing and ancillary facilities and the deepening of and a small lateral extension to the existing extraction area. It is further proposed to install a rock milling plant at the northern end of the existing quarry floor. Also included as part of the proposed development is some barrier hedge planting to secure the site and provide biodiversity benefits, as well as the restoration of the quarry to an ecological after-use, including the retention of all existing vegetation, natural regeneration areas and a waterbody, i.e. the quarry void, which will naturally fill with water.

13.3 The overall planning application area measures ca. 31.1ha, with an extraction footprint of 10.6ha. The proposed operational period is for 20 years plus 2 years to complete restoration (total duration sought 22 years). Further details on the proposed development are provided in **Chapter 2** of this EIAR.

13.4 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.

Scope of Work / Assessment Methodology

13.5 The EPA guidelines in relation to the preparation of an EIAR (May 2022)[1] 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.

[1] 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

13.6 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[2] (hereinafter referred to as 'GLVIA3'). These guidelines are widely accepted as best practice for Landscape and Visual Assessment (LVIA) in Ireland.

13.7 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. 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.

13.8 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.

13.9 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. 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.

13.10 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 this LVIA to describe the level of effects (= "significance of effects" in the EPA Guidelines) differs slightly from said EPA Guidelines, based on examples provided in GLVIA3.

Technical Standards

13.11 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*[3]. There is no Irish standard/guidance, and in our 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.

[2] Landscape Institute and Institute of Environmental Management & Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*. Third Edition, Routledge.
[3] The Landscape Institute (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute.

13.12 The Landscape Institute – Technical Guidance Note 02/21 – *Assessing landscape value outside national designations*[4] 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

13.13 A formal pre-planning consultation (ref. P.P. 8123) was held via Teams between planning, environment and transport staff of Meath County Council and representatives of Kilsaran, SLR Consulting and Hydro Environmental on 15 September 2023.

13.14 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)

13.15 The LVIA including site work and completion of drawings was carried out by Anne Merkle, a Principal 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

13.16 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 February 2020. The desktop study and field work were informed by:

- Meath County Development Plan 2021-2027;
- digital and paper (Ordnance Survey Ireland) mapping at different scales; and
- information available on the internet (such as satellite images and information on recreational facilities and nature conservation sites).

Study Area

13.17 A study area of 2km surrounding the application area and extending up to 4km to the west was identified during the desktop study, based on the Zone of Theoretical Visibility Map (refer to **Figure 13-2** and **Appendix 13-B**). This map indicates that the visibility of the site is much reduced by local highpoints/ridgelines to the north, east and south, with the largest potential visibility within 3km to the north-west and south-west of the site. It was confirmed during the field survey that the actual visibility is even further restricted, due to the presence of many treelined hedgerows in the vicinity of the site. Nevertheless, the 2-4km study area is maintained for the purposes of providing landscape context.

[4] The Landscape Institute (2021) Technical Guidance Note 02/21: Assessing landscape value outside national designations.

Field Survey

13.18 A detailed site survey was carried out on 4th February 2020 in partially overcast conditions, but with overall good visibility. Photographs were taken during the site survey, using a Nikon D610 digital SLR full frame camera, with a fixed 50mm lens. 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

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

Significant Risks

13.20 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

13.21 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

13.22 In 2002, Ireland ratified the European Landscape Convention[5], which promotes the protection, management and planning of landscapes. The National Landscape Strategy for Ireland 2015-2025[6] was published *"to ensure compliance with the European Landscape Convention and establish principles for protecting and enhancing the landscape while positively managing its change"*.

13.23 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"*. 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.

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

Planning Policy

13.25 The Meath County Development Plan 2021-2027[7] (MCDP) is the statutory plan detailing development objectives/policies of the authority. Those with relevance to this assessment are listed below.

[5] European Landscape Convention: https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621
[6] National Landscape Strategy for Ireland 2015-2025: https://www.chg.gov.ie/app/uploads/2015/07/N-Landscape-Strategy-english-Web.pdf
[7] Meath County Development Plan 2021-2027: https://consult.meath.ie/en/consultation/meath-adopted-county-development-plan/chapter/volume-1-written-statement

Woodlands, Hedgerows and Trees

13.26 Section 8.9.7 of the current Meath CDP lists the following policies and objectives with regard to Woodlands, Hedgerows and Trees, which are of relevance to this assessment:

HER POL 37: *"To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required."*

HER POL 38: *"To promote and encourage planting of native hedgerow species in new developments…."*

Landscape

13.27 Section 8.17 of the current Meath CDP lists the following policies and objectives with regard to the landscape of County Meath, which are of relevance to this assessment:

HER POL 52: *"To protect and enhance the quality, character, and distinctiveness of the landscapes of the County in accordance with national policy and guidelines and the recommendations of the Meath Landscape Character Assessment (2007) in Appendix 5, to ensure that new development meets high standards of siting and design."*

HER POL 53: *"To discourage proposals necessitating the removal of extensive amount of trees, hedgerows and historic walls or other distinctive boundary treatments."*

HER OBJ 49: *"To ensure that the management of development will have regard to the value of the landscape, its character, importance, sensitivity and capacity to absorb change as outlined in Appendix 5 Meath Landscape Character Assessment and its recommendations."*

HER OBJ 50: *"To require landscape and visual impact assessments prepared by suitably qualified professionals be submitted with planning applications for development which may have significant impact on landscape character areas of medium or high sensitivity."*

Views and Prospects

13.28 Section 8.18 of the current Meath CDP places protection on several views and prospects. **HER OBJ 56** states that it is an objective *"To preserve the views and prospects listed in Appendix 10, in Volume 2 and on Map 8.6 and to protect these views from inappropriate development which would interfere unduly with the character and visual amenity of the landscape."*

13.29 One such view, i.e., Viewpoint No. 57, is located within the study area, along the local road along the western boundary of the application area (refer to **Figure 13-1**). It should however be noted that, as per the description in Appendix 10 of the Meath CDP, the protected view is directed away from the application area. The viewpoint description is as follows: *"County road between Rathcore and Clonguiffin: Views to west/northwest like this available from this location where there are gaps in the hedge. Expansive views available to very distant horizons across mixed farmland working landscape with relatively low levels of development"*.

Extractive Industry and Building Materials Production

13.30 Section 9.11 of the current Meath CDP lists a number of policies with regard to the Extractive Industry and Building Materials Production. Those policies with relevance to the landscape and visual impact chapter are listed below.

Policy RD POL 22: *"To facilitate the exploitation of the county's natural resources and to exercise appropriate control over the types of development 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 in the area."*

Policy RD POL 23: *"To support the extractive industry where it would not unduly compromise the environmental quality of the county and where detailed rehabilitation proposals are provided."*

Policy RD POL 24: *"To seek to ensure that the extraction of minerals and aggregates minimise the detraction from the visual quality of the landscape and do not adversely affect the environment or adjoining existing land uses."*

Policy RD POL 26: *"To ensure that all existing workings shall be rehabilitated to suitable land uses and that all future extraction activities will allow for the rehabilitation of pits and proper land use management. The biodiversity value of the site should be considered in the first instance when preparing restoration plans. …"*

Policy RD POL 27: *"To ensure that development for aggregates / mineral extraction, processing and associated processes does not significantly impact in the following areas: … vi. In the vicinity of a recorded monument, and; Sensitive landscapes. ..."* (note: the site is located within a Landscape Character Area, which is classed as being of medium sensitivity, see summary of Meath Landscape Character Assessment below).

RECEIVING ENVIRONMENT

Landscape Baseline

Existing Relevant Landscape Character Assessments

13.31 The Meath Landscape Character Assessment is presented in Appendix 05 of the current Meath CDP. It divides the county into 4 Landscape Character Types (LCT's), i.e. *"generic areas of distinctive character"* and further into 20 *"more geographically specific"* Landscape Character Areas (LCA's).

13.32 The application area at Rathcore is located within LCT 2 - 'Lowland Landscapes' and just inside the boundary of LCA 6 - 'Central Lowlands'. The boundary with LCA 13 – 'Rathmoylan Lowlands' is located immediately to the east of the application area. The closest other LCA is LCA 14 – 'Royal Canal', just over 2km to the south of the site.

13.33 LCA 6 and 13 are both classed as being of 'High Landscape Value', i.e. *"Areas which are considered to be of value by virtue of their positive characteristics, sense of place or local associations. These areas may be of regional or local importance"*. LCA 6 has been afforded 'Regional' and LCA 13 'National' Landscape Importance.

LCA 6 – Central Lowlands

13.34 LCA 6 is further classed as being of a 'Medium' Landscape Sensitivity, i.e. *"A landscape that can accommodate a certain amount of change without affecting the overall character. There are unlikely to be large numbers of people using or viewing this landscape."*

13.35 The landscape description of LCA 6 states the following: *"Large lowland landscape area composed of rolling drumlins interspersed with numerous large estates and associated parkland. Thick wooded hedgerows, with some conifer plantations, and shelterbelts of ash and larch, separate medium to large fields. Deep roadside drainage ditches and banked hedgerows are a common feature of the landscape in the enclosed rural road corridors. …*

13.36 *The landscape character around settlements tends to be a well-managed patchwork of small pastoral fields, dense hedgerows and small areas of broadleaved woodland particularly in the Kildalkey environs where there are estate landscapes with large mature parkland trees. The landscape is predominantly rolling pastureland, although the landscape surrounding Castlerickard has greater diversity than elsewhere in the lowlands with estate landscape, large conifer plantations, and birch woodland around the Boyne river corridor. …*

13.37 *Views within this area are generally limited by the complex topography and mature vegetation except at the tops of drumlins where panoramic views are available particularly of the Hill of Tara uplands and Skryne Church. …".*

13.38 The recommendations for LCA 6 include the following (no. 5): *"Maintain the visual quality of the landscape by avoiding development that would adversely affect short range views between drumlins."*

LCA 13 – Rathmoylan Lowlands

13.39 LCA 13 is classed as being of a 'High Landscape Sensitivity, i.e. "*A vulnerable landscape likely to be fragile and susceptible to change. Frequency and sensitivity of users is likely to be high. The introduction of change is likely to significantly alter the character to the extent that it would be difficult or impossible to restore*."

13.40 The landscape description of LCA 13 includes the following: *"… The landscape is predominantly rolling hills and lowland with a mix of pastoral and arable farms. … Built development is concentrated around Rathmoylan and Summerhill with detached dwellings scattered throughout the rural hinterland*.

13.41 *Pasture is predominant in the north due to the rolling drumlin topography. There are less estate landscapes further south with the enclosed wooded character giving way to large arable fields that are distinguishable by their poor condition and loss of hedgerows. The main visual detractor is the sand & gravel quarry to the south of Rathmoylan and although it is not situated in an upland area, the nature of the works adds a degraded quality to the landscape. Appropriate siting of further such development will be important."*

Landscape of the Site and its Context

13.42 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 (e.g., physical, land cover and the influence of human activity);
- Aesthetic and perceptual aspects (e.g., scale, complexity, openness, tranquillity or wildness); and
- The overall character of the area.

Landscape Elements

13.43 The application area consists of the existing Rathcore Quarry, which is made up of a quarry void, covering the central and southern part of the site and occupying approximately half of the overall application area. A processing and stockpile area and the site facilities are located along the north-western boundary and an overburden storage area along the northern and north-eastern boundaries. The site entrance is located along the local road, which runs along the western boundary of the quarry.

13.44 The south-eastern and most of the western boundary of the application area are marked by mature tree lined hedgerows. The northern and north-eastern boundaries are defined by the grassed slopes of the overburden storage mounds and low, gappy hedgerows. To the southwest the application area is adjoined by an agricultural field in the ownership of the applicants. The boundary between the existing extraction area and the field is not marked by a hedgerow, but the southern and western boundary of the field are. The quarry development is adjoined by agricultural fields on all sides, both under pasture and arable.

13.45 Levels within the application area range from the highest points around 122m OD (Ordnance Datum) on the top of the overburden storage mounds along the northern and north-eastern boundary to 75m OD, the lowest point on the quarry floor. Along the site boundaries levels range from the aforementioned 122m OD, to 100m OD along the southwestern boundary and to 84m at the site entrance.

13.46 The topography surrounding the application site is gently rolling with elevations generally ranging from 70 to 100m OD. The highest elevation in the vicinity of, but outside the application area is a local highpoint of 117m OD immediately to the north-east of the application area.

13.47 The wider landscape is dominated by a mixture of pasture and arable fields, bound by mostly dense tree lined hedgerows. Field sizes range from small to large, with the smaller fields typically being under pasture and the larger ones used for growing crops. Most fields and hedgerows are well-tended and therefore, the landscape is overall in a good condition.

13.48 Apart from a number of small blocks of woodland, there are no wooded areas within the study area. However, the presence of many mature hedgerows, gives an impression of a much more wooded landscape than it actually is.

13.49 Other elements in the landscape include a network of local and regional roads, with associated dispersed residential development, as well as scattered farmsteads. The main transport routes through the study area are the R148, just under 2km to the south and the R159, just over 2km to the southeast of the application area. The M4 motorway is located 3km to the south. There is further a comprehensive network of local roads interconnecting the regional and national roads.

13.50 As indicated above, there is extensive dispersed residential development along all roads surrounding the application site. Enfield, approximately 3km to the southeast is the largest settlement within the study area.

13.51 Human activity has strongly influenced the land use within the study area, in the form of agriculture. On a smaller scale, human influences are visible in the form of roads, buildings and wooden electricity poles, as well as the existing quarry. On the whole, while this is an attractive rural landscape, due to the abundance of tree-lined hedgerows, there are few locations from where no man-made structures are visible (i.e. mostly roads, buildings or electricity poles).

Aesthetic and Perceptual Aspects

13.52 Due to the gently rolling topography, as well as the mature hedgerows throughout the study area, the landscape is somewhat enclosed, resulting in an overall medium scale. There are some slightly elevated locations or stretches of low roadside hedgerows, where more distant views open up and the scale of the landscape increases. However, there are no views towards prominent mountain ranges or other distinct local features.

13.53 Due to the dominance of agricultural fields, bound by hedgerows, the colours and textures throughout the study area are simple and repetitive, but with no regular pattern. The colour palette is restricted to shades of green and the textures to the smooth areas of grass and crops, interspersed with the soft, more irregular, crowns of shrubs / trees. As the few scattered woodland

blocks contain similar trees / shrubs as those within the hedgerows, they provide similar colours and textures.

13.54 The colour and textures of the existing quarry are in contrast with the surrounding landscape, due to the grey colours and hard texture associated with the rock being extracted. However, these colours and textures are similar in simplicity to those in the wider landscape. Also, the visibility of the quarry is largely restricted by topography and hedgerows in the vicinity of the quarry, ensuring that this contrast is barely noticeable from a wider area.

13.55 While the study area has an overall natural appearance, there is little sense of wildness or remoteness, due to the signs of human activity, such as improved grassland and maintained hedgerows. There is tranquillity in some parts of the study area, due to a relative lack of noise and movement, particularly along the network of local roads. This is reduced in the vicinity of the existing quarry, due to the sound of the existing processing machinery, and in the vicinity of the higher-class roads, where the traffic/noise volumes increase.

Overall Character

13.56 The site assessment supports the inclusion of the Site and its immediate context within the **lowland landscape character type**, as set out in the Meath Landscape Character Assessment.

Protected Nature Conservation Sites

13.57 The National Parks and Wildlife Service (NPWS) website[8] 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. One proposed Natural Heritage Area (pNHA) was identified, as listed in **Table 13-1** and illustrated on **Figure 13-1**.

Table 13-1
Nature Conservation Sites

Type	Site Code	Site Name	Distance and Direction from Application Area
pNHA	002103	Royal Canal	2.6km to the south

Visual Baseline

Zone of Theoretical Visibility (ZTV)

13.58 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.

13.59 The ZTV, which illustrates the subtended vertical angle of visibility (refer to **Appendix 13-B**), was calculated for the proposed, slightly extended, extraction area. 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 hedgerows and trees along the site boundaries, were included in the model.

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

13.60 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 coloured in shades of grey on the ZTV mapping, in order to differentiate them from the areas with a higher probability of visibility, which are marked in shades of yellow, orange and red.

13.61 The resulting ZTV is depicted on **Figure 13-2**. The mapping indicates that the highest levels of visibility (i.e. areas in shades of oranges and red) will be within a 4km radius to the north-west and a 3km to the south-west of the site. While there are large areas of potential visibility up to and over 4km to the northwest, west and south of the site, most of these fall within the grey shaded category and are therefore unlikely to experience any actual visibility.

13.62 Also, it should be noted that the majority of the theoretical visibility areas cover 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).

13.63 The ZTV mapping further illustrates that the quarry development is fully screened by topography (including boundary screening berms), from all locations to the northeast, east and southeast of the application area.

Actual Visibility

13.64 The actual visibility of the application area, from the areas of visibility indicated by the ZTV mapping (**Figure 13-2**), was assessed during the field survey, concentrating on publicly accessible locations.

13.65 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 images showing the existing view are provided (refer to **Viewpoints A-F** on **Figures 13-3** to **13-5**). These images 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.

13.66 The field survey confirmed that the application area is fully screened in the vast majority of views within the study area by roadside and intervening vegetation, as well as topography. Screening berms along the northern and north-eastern boundary, as well as elevated ground along the south-western and south-eastern boundary ensure that the existing extraction area within Rathcore Quarry is screened in most views from the surrounding area (refer to Viewpoints A, C & D on **Figures 13-3** and **13-4**). In addition, views towards the quarry development are screened by roadside and intervening vegetation in many locations (refer to Viewpoints C & F on **Figures 13-4** and **13-5**). It should be noted that intervening vegetation also screens views towards the application area from the areas of potentially higher visibility, between 2-3km to the north-west of the site (i.e. areas marked in yellow on **Figure 13-2**).

13.67 A small number of views of parts of the existing Rathcore Quarry (e.g. site entrance, processing area, office buildings and south-eastern quarry face) are available from locations along the western site boundary and within 2km to the north, west and south-west of the site (refer to Viewpoints B, D & E on **Figures 13-3**, **13-4** and **13-5**). These views are available through gaps in the generally dense roadside vegetation and from within large fields on private land only. Also visible in these views is a small area of elevated ground in the western corner of the application area (approximately 2,000m^2) and an associated tree line, which are located within the boundaries of the proposed lateral extension of the extraction area

Outdoor Recreational Facilities within the Study Area

13.68 The study area was searched for available outdoor recreational facilities, such as walking and cycling routes, as these provide an indication of potential visual receptors. The Royal Canal Way was identified as one such facility. It is located just over 2.5km south of the application area. The Rathcore Golf and Country Club is another, approximately 1km northeast of the site. There are no known views of the application area from these two or any other outdoor recreational facilities within the study area.

Sensitive Receptors

Landscape Receptors

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

- Individual elements:
  - a short, elevated tree line within the application area.
- Overall Character:
  - Rolling agricultural landscape character, with dense often tree lined hedgerows (part of LCA6 & LCA13).

13.70 No distinctive or sensitive aesthetic / perceptual aspects, such as wildness or tranquillity, were identified within the study area, which is already influenced by the presence of the existing quarry. The proposed development will be a continuation of the existing quarry workings. Therefore, no aesthetic and perceptual aspects landscape receptors will be brought forward to the assessment of landscape effects.

Visual Receptors

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

- Residents:
  - Ca. four residential properties in the vicinity of the local road to the south of the site entrance and a 500m stretch along the local road in the town land of Ballynakill (represented by Viewpoint B on **Figures 13-3**);
  - Ca. 17 residential properties along the local roads within 2km north of the application area (represented by Viewpoints D on **Figure 13-4**); and
  - Two residential properties along the local road ca. 1.6km northwest of the site (represented by Viewpoint E on **Figure 13-5**).
- Vehicle users:
  - Open views along a 200m stretch of the local road to the north and south of the site entrance and intermittent views along a 500m stretch along the local road in the town land of Ballynakill (represented by Viewpoint B on **Figures 13-3**);
  - Intermittent views along two stretches of local roads (650m + 150m) within 2km to the north of the application site (represented by Viewpoint D on **Figure 13-4**);

- Intermittent views along a 200m long stretch of the local road approx. 1.6km to northwest of application site (represented by Viewpoint E on **Figure 13-5**);

IMPACT ASSESSMENT

13.72 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 works, including restoration activities, as well as during the post-operational, 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

13.73 The operational stage of the proposed development, for the purpose of this assessment, is considered to include the proposed extraction period, as well as the proposed final restoration period, i.e. 22 years.

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

- Changes to the landform within the extraction area and overburden storage area;
- The removal of a small area of slightly elevated ground and the associated tree line, as well as the removal of other small patches of grass and scrub vegetation within the extraction extension area;
- Proposed new hedgerows along the south-western boundary to fill gaps in the existing vegetation;
- The presence of the new rock milling plant; and
- HGVs visible along local roads.

13.75 It should be noted that since this application is for the continuance of existing extraction activities, including a small lateral extension of the extraction area, all existing lighting within the site would continue to be used, as it is currently established. This includes fixed downlights outside the existing offices and processing plant and mobile lighting on the machinery used within the quarry void. Some additional lighting would be installed at the proposed new rock milling plant at the load-in hopper and at ground level within the quarry where the trucks are to be loaded out under the silos. As the proposed new plant will be located within the quarry void, this additional lighting will not be noticeable from outside the application site. All lighting would continue to only be in use for wintertime operations, when darkness has fallen, within the previously permitted site operating hours. The same hours are applied for under the current application, i.e. 07.00 hours until 18.00 hours Monday to Friday and until 14.00 hours on Saturdays. There will therefore be a period where such lighting will be required for up to 1 hour in the morning and up to 2.5hours in the evening, during the height of winter. Night-time light pollution caused by the proposed development will 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

13.76 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.

13.77 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 surrounding areas, left for natural vegetation, which will take a number of years to be completely covered with vegetation.

Operational Stage Landscape Effects

Landscape Sensitivity

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

13.79 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.

13.80 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 13-2**, below.

Table 13-2
Evaluation of the Value of the Site and its Immediate Context

Factor	Assessment	Notes
Natural Heritage	LOW	The site is not designated for ecological reasons. The majority of the site consists of bare ground or hard standing areas, due to the presence of the existing quarry. There are some areas of scrub habitat within the site boundaries and many treelined hedgerows in the wider landscape, which are of some local habitat value.
Cultural Heritage	LOW	There are no designated heritage assets within or in the immediate vicinity of the site.
Landscape condition	LOW	The existing quarry constitutes an uncommon element in the otherwise typical Irish agricultural landscape. However, it is not experienced as a detracting or incongruous feature, as it is largely screened by existing boundary vegetation and vegetated screening berms.
Associations	LOW	No known associations with art, literature or events.
Distinctiveness	LOW	The gently rolling agricultural landscape does not contain any distinctive features which confer a sense of place.
Recreational	LOW	The site is not publicly accessible and there is no formal recreational access to the land immediately surrounding it.
Perceptual (Scenic)	LOW	The scrub covered berms surrounding the site, and commonplace agricultural landcover of the immediately surrounding land does not have strong aesthetic qualities.

Factor	Assessment	Notes
Perceptual (Wilderness and tranquillity)	LOW	The site and immediate surrounding area have no strong perceptual value, such as remoteness or wildness. While there is a sense of tranquillity in some parts of the study area, this is diminished within the site and its immediate vicinity, due to the sound from the existing processing plant, as well as cars on the local roads.
Functional	COMMUNITY	The hedgerows / scrub areas along the site boundaries, including a small number of tall trees, have a function as a carbon sink (on a local scale).

13.81 Using the factors set out in **Table 13-2**, it has been concluded that the site and its immediate context is of low value, except for the existing vegetation within the site, which has some community value.

13.82 The susceptibility of each of the landscape receptors is assessed in **Table 13-3**. This is combined with the previously assessed value and a judgement of the overall sensitivity provided as well.

Table 13-3
Sensitivity of Landscape Receptors

Landscape Receptors	Value	Susceptibility	Overall Sensitivity
Individual Elements			
Short elevated treeline	**COMMUNITY**	**HIGH** The susceptibility of the treeline to the proposed extraction works is high, moderated somewhat by the retention of some trees outside the extraction footprint.	**MEDIUM**
Overall Character			
Rolling agricultural landscape	**LOW**	**LOW** LCA 6 within which most of the site is located is classed as having 'Medium' Landscape Sensitivity, i.e. "A landscape that can accommodate a certain amount of change without affecting the overall character." The existing quarry has been accommodated in the local landscape without transformational adverse effects to the wider landscape character and the proposed development will be a continuation of this existing quarry, with little changes to its footprint. Therefore, the susceptibility of the local landscape to the specific development is judged to be low.	**LOW**

Magnitude of Landscape Change

13.83 **Table 13-4** 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 13-4
Magnitude of Landscape Change

Landscape Receptors	Factors	Magnitude of Change
Individual Elements		
Short elevated treeline	Size & Scale: **SMALL** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** The proposed development would result in the loss of an approximately 50m long tree line, as well as a number of small patches of grass/scrub vegetation. This would be a small proportion of similar elements in the surrounding landscape, which are abundant (i.e. tree-lined hedgerows). Therefore, the composition / balance of the local agricultural landscape would not significantly change. The changes would influence the landscape at the local level only, mainly focused on the site. To compensate the loss of the treeline, as well as provide additional site security and biodiversity value, ca. 330m of a new hedgerow will be planted along the south-western boundary	**SLIGHT/ MEDIUM**
Overall Character		
Rolling agricultural landscape	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **LONG-TERM REVERSIBLE** **Notes:** Considering the large area covered by this landscape character type (part of LCA 6 and & LCA 13), the proposed development would be a small element. Also, considering the presence of the existing quarry development, the proposed development would not result in new elements being placed into the local landscape. The changes to the landform would be contained within the existing quarry footprint, except for the small lateral extension, and to the existing overburden storage area. Overall, the level of change in local landscape character would be negligible. While the changes to the landform will remain, the land use will be restored to a wetland/wildlife habitat, including areas for natural regeneration and the water-filled quarry void. The proposed hedgerows will further contribute to these habitats of potentially high biodiversity value and it could therefore be argued that the landscape effects will be reversed.	**SLIGHT**

Assessment of Landscape Effects and Significance

13.84 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 13-5** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral).

Table 13-5
Assessment of Landscape Effects

Landscape Receptors	Sensitivity	Magnitude	Landscape Effects	Nature of Effect
Individual Elements				
Short elevated treeline	MEDIUM	SLIGHT / MEDIUM	**MODERATE / MINOR**	Negative
Overall Character				
Rolling agricultural landscape	LOW	SLIGHT	**MINOR**	Negative

13.85 None of these landscape effects are assessed to be significant.

Post – Operational Stage Landscape Effects

13.86 At the post-operational stage, the landform within the application area will remain permanently changed, with levels within the quarry void dropped and the grassed / scrub covered overburden berms retained. However, all stockpiles, plant, machinery and built structures will have been removed and the processing/storage area will have been left for natural regeneration. As grass and scrub vegetation becomes established within this area, the hedgerow along the south-western boundary matures and the quarry void fills with water, the site will more and more merge with the surrounding landscape. The application area will become a biodiversity rich landscape element, that will be slightly different to the mostly agricultural landscape surrounding the site, but have a similar green, lush appearance. As a result, the effects on all landscape receptors would reduce to **MINOR-NEGLIGIBLE** over time and become neutral.

Operational Stage Visual Effects

Visual Receptor Sensitivity

13.87 The value placed on each of the types of visual receptors identified above is described in **Table 13-6** 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 13-6
Sensitivity of Visual Receptors

Visual Receptors	Value	Susceptibility	Overall Sensitivity
Residents			
All residential receptors identified, represented by **Viewpoints B, D** & **E**	**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 B, D** & **E**	**LOW** (Protected view along local road to north of quarry entrance, however focused away from the quarry, no designated or locally promoted views)	**LOW** (Views unlikely to be focused on landscape)	**LOW**

Magnitude of Visual Change

13.88 **Table 13-7** 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 13-7
Magnitude of Visual Change

Visual Receptors	Factors	Magnitude of Change
Residents and Vehicle users		
Ca. 4 properties and 700m along local roads within 1km to the south-west **(Viewpoint B)**	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **TEMPORARY/ SHORT-TERM REVERSIBLE** **Notes:** The main visual change for these visual receptors will be the removal of the elevated section of ground and associated tree line. Once this is removed, none of the proposed extraction activities will be visible. The HGVs accessing the quarry will be visible along the road in the vicinity of the site entrance, with no change to the existing traffic volumes. Despite the close distance in some of the views (i.e. near the site entrance), the elements to be removed only take up small sections of the available views. The visual changes will be experienced at distances of 0-750m in the middle or background of views. As there won't be a conspicuous gap in vegetation or a dip along the ridgeline, the changes to the skyline will be minimal. The composition of the overall views will be barely altered. There will be no changes to the colour and texture of the visible elements and the overall composition of the views will be barely altered. Views are glimpsed along the roads and from properties, due to vegetation on property boundaries. The views are intermittently available from short sections of two linear routes, i.e. 700m in total, and will be experienced by a small number of viewers, i.e. the users of the local roads, which is mainly used by local residents who tend to focus on the road and the residents of four properties. The main visual effect (i.e. the removal of the elevated land and associated hedgerow) will take place early on, as part of the proposed development, i.e. within the first 5-7 years. After that, there will be no further obvious visual effects. Considering the proposed hedgerow along the south-western boundary and the proposed restoration of the processing area to a natural habitat, it could be argued that all existing/proposed visual effects will be reversed on completion of the development.	**SLIGHT / NEGLIGIBLE**
Ca. 17 properties and 800m along local roads within 2km to the north **(Viewpoint D)**	Size & Scale: **NEGLIGIBLE** Geographical Extent: **SMALL** Duration / Reversibility: **TEMPORARY/ SHORT-TERM REVERSIBLE** **Notes:** The main visual change for these visual receptors will be the removal of the elevated section of ground and associated tree line. Once this is removed, none of the proposed extraction activities will be visible. The changes will be seen in the background at distances of 700-1,700m and will only take up a minute section of the available views. As there won't be a conspicuous gap in vegetation or a dip along the ridgeline, the changes to	**SLIGHT / NEGLIGIBLE**

Visual Receptors	Factors	Magnitude of Change
	the skyline will be minimal. The composition of the overall views will be barely altered. There will be no changes to the colour and texture of the visible elements and the overall composition of the views will be barely altered. Views are glimpsed along the road and from properties, due to vegetation on property boundaries. The views are intermittently available from short sections of two linear routes, i.e. 800m in total, and will be experienced by a small number of viewers, i.e. the users of the local roads, which is only used by local residents who typically focus on the road and the residents of up to 17 properties. The main visual effect (i.e. the removal of the elevated land and associated hedgerow) will take place early on, as part of the proposed development, i.e. within the first 5-7 years. After that, there will be no further obvious visual effects. The proposed restoration works, will not be seen by these visual receptors.	
2 properties and 200m along local road 1.6km to the north-west **(Viewpoint E)**	Size & Scale: **NEGLIGIBLE** Geographical Extent: **NEGLIGIBLE** Duration / Reversibility: **TEMPORARY/ SHORT-TERM REVERSIBLE** **Notes:** The main visual change in views for these visual receptors will be the removal of the elevated section of ground and associated tree line. Some of the changes to the uppermost section of the south-eastern quarry face will also be distantly visible but difficult to distinguish. Once the outline of the extended extraction areas is set, none of the further extraction activities will be visible. The changes will be seen in the background at distances of 1,500-1,700m and will only take up a minute section of the available views. As there won't be a conspicuous gap in vegetation or a dip along the ridgeline, the changes to the skyline will be minimal. The composition of the overall views will be barely altered. There will be no changes to the colour and texture of the visible elements and the overall composition of the views will be barely altered. Views are glimpsed along the road and from properties, due to vegetation on property boundaries. The views are available from a limited number of locations along a very short section of a linear route, i.e. 200m, and will be experienced by a very small number of viewers, i.e. the users of the local roads, which is only used by local residents who typically focus on the road and the residents of 2 properties. The main visual effect (i.e. the removal of the elevated land and associated hedgerow) will take place early on, as part of the proposed development, i.e. within the first 5-7 years. After that, there will be no further obvious visual effects. The proposed restoration works, will not be seen by these visual receptors.	**NEGLIGIBLE**

Assessment of Visual Effects and Significance

13.89 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 13-8** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral).

Table 13-8
Assessment of Visual Effects

Visual Receptor	Sensitivity	Magnitude	Visual Effects	Nature of Effect
Residents				
Ca. 4 properties within 1km to the south-west **(Viewpoint B)**	MEDIUM	SLIGHT / NEGLIGIBLE	MINOR	Negative
Ca. 17 properties within 2km to the north **(Viewpoint D)**	MEDIUM	SLIGHT / NEGLIGIBLE	MINOR	Negative
2 properties 1.6km to the north-west **(Viewpoint E)**	MEDIUM	NEGLIGIBLE	MINOR / NEGLIGIBLE	Negative
Vehicle Users				
700m along local roads within 1km to the south-west **(Viewpoint B)**	LOW	SLIGHT / NEGLIGIBLE	NEGLIGIBLE	Negative
800m along local roads within 2km to the north **(Viewpoint D)**	LOW	SLIGHT / NEGLIGIBLE	NEGLIGIBLE	Negative
200m along local road 1.6km to the north-west **(Viewpoint E)**	LOW	NEGLIGIBLE	NEGLIGIBLE	Negative

13.90 None of these visual effects are assessed to be significant.

Post – Operational Stage Visual Effects

13.91 Visual receptors in the vicinity of the site entrance will be the only ones who will see some of the results of the restoration works, which will have taken place at the end of the operational stage. The former processing area will start to be colonised by grass and scrub species, helping the site to visually merge with the surrounding agricultural land. There will be no visual effects for any of the remaining visual receptors. Therefore, the visual effects will reduce to **NEGLIGIBLE-NONE** for all visual receptors, at the post-operational stage.

Direct/Indirect Effects

13.92 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

Woodlands, Hedgerows and Trees

13.93 A short treeline, which is not part of a boundary, will be removed to facilitate the development. This will be compensated by the planting of a much longer section of hedgerow, made up from native species. All existing hedgerows along the site boundaries will be retained. It is therefore considered that the proposed development is in compliance with **HER POL 37** and **HER POL 38** contained in the current Meath CDP

Landscape

13.94 A landscape and visual impact assessment is provided in this section of the EIAR, which has regard to the current Meath Landscape Character Assessment. The assessment has concluded that the landscape effects will be moderate-minor or less during the operational stage of the development, reducing to minor-negligible during the post-operational stage. Also considering that the proposed development will be wholly contained within the existing quarry development, it can be argued that the character and distinctiveness of the local landscape is preserved. As mentioned above only a short section of a treeline will be removed, while all existing boundary vegetation will be retained.

13.95 It is therefore considered that the proposed development is in compliance with **HER POL 52, HER POL 53, HER OBJ 49** and **HER OBJ 50** contained in the current Meath CDP.

Views and Prospects

13.96 As the protected view to the immediate north-west of the application area, i.e. Viewpoint No. 57, is directed away from the site, it will not be affected by the proposed development. It is therefore considered that the proposed development is in compliance with **HER OBJ 56** contained in the current Meath CDP.

Extractive Industry and Building Materials Production

13.97 The above assessment has concluded that the visual effects on a small number of available views will be minor or less during the operational stage of the development, reducing to negligible-none during the post-operational stage. It can therefore be argued that the proposed development will not unduly impinge on the visual amenity of the local area or in other words that the detraction from the visual quality of the landscape is minimised. As mentioned above the assessment further concluded that the landscape effects will be moderate-minor or less during the operational stage of the development, reducing to minor-negligible during the post-operational stage. The proposed development therefore does not significantly impact a sensitive area. A detailed restoration plan, which proposes to restore the site to a suitable wildlife habitat with the potential of having great biodiversity value, accompanies this EIAR.

13.98 In light of the above, it is considered that the proposed development is in compliance with **Policy RD POL 22**, **Policy RD POL 23**, **Policy RD POL 24**, **Policy RD POL 26** and Policy **RD POL 27** contained in the current Meath CDP.

Unplanned Events (i.e. Accidents)

13.99 It is highly unlikely that any unplanned events within the application area would result in noticeable / significant landscape or visual effects.

Cumulative / Synergistic Impacts

13.100 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

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

Interaction with Other Impacts

13.102 There are no known interactions with other impacts.

'Do-nothing Scenario'

13.103 If the proposed development is not carried out, the extraction and processing activities will continue within the existing permitted area, until the site is fully worked out. This would be followed by the restoration of the worked-out quarry and processing area to a wildlife habitat, similar to what is proposed, as part of this application and therefore resulting in similar landscape and visual changes as the proposed development, albeit at an earlier stage.

MITIGATION MEASURES

Operational Stage

13.104 The existing quarry development is screened in the vast majority of views from the surrounding area, which vastly reduces the potential for visual effects. Further to that, the proposed development will be contained within the existing development boundaries, thereby utilising the existing screening berms and vegetation. A small area of elevated ground and associated tree line will be removed; however, this will not open up views of the remainder of the development. In order to provide additional screening along the western boundary and increase the site security, hedge planting is proposed in gaps of the existing vegetation along the south-western boundary. This planting will also compensate the loss of the tree line, provide habitat linkage and help increase the biodiversity of the site. On completion of all extraction works, the site will be restored to a beneficial wildlife habitat land use. Please refer to Chapter 2 of this EIAR and **Figure 2-4** – Restoration Plan for a detailed description of the proposed planting/restoration activities.

13.105 All these measure will help keep the landscape and visual effects to a minimum, at all times during the operational stage of the development and therefore no additional mitigation measures are considered necessary.

Post – Operational Stage

13.106 All restoration works will be completed during the operational stage of the development and the site therefore will have been set up for the development of a diverse wildlife habitat at the post operational stage. The natural regeneration of the processing area will take a number of years to develop and mature, but no further landscape and visual mitigation measures are considered necessary at the post-operational stage of the proposed development.

RESIDUAL IMPACT ASSESSMENT

Operational Stage

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

13.108 There will be no visual impact on views from the vast majority of locations within the study area. The visual effects on views from a small number of locations within 2km to the north and north-west and 1km to the south-west of the application area will range from minor to negligible.

Post – Operational Stage

13.109 As no additional mitigation measures are proposed during the post-operational stage, the residual landscape and visual effects will be as per the assessment above. In summary, on completion of all restoration activities, and as the vegetation within the application area matures, the predicted landscape effects will reduce to minor-negligible and the visual effects will reduce to negligible-none.

MONITORING

13.110 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

Meath CDP (2021) Meath County Council, County Development Plan 2021-2027

APPENDICES

Appendix 13-A
Criteria and Definitions used in Assessing Landscape and Visual Effects

Appendix 13-B
Zone of Theoretical Visibility (ZTV) Methodology

Appendix 13-A

Criteria and Definitions used in Assessing Landscape and Visual 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[9] (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 for 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).

[9] 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 defined as "*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 areas (such as National Parks or Areas of Outstanding Natural Beauty (AONBs)) are also landscape receptors.

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.

Landscape Sensitivity

Sensitivity of landscape receptors is assessed by combining an assessment of the susceptibility of landscape receptors to the type of change which is proposed with the value attached to the landscape. (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 be different to that suggested by the 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 for their natural beauty and the opportunities they offer for outdoor recreation. 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 Outstanding Natural Beauty or Areas of High Amenity) included in local planning documents; or other landscapes of identified value.	Areas of landscape identified as having importance at the local authority level.	Local Authority
Undesignated landscapes of community value	Landscapes which do not have any formal designation but which are assessed as having value to local communities, perhaps on the basis of demonstrable physical attributes which elevate it above ordinary countryside.	Local Authority/Community
Landscapes of low value	Landscapes in poor condition or fundamentally altered by presence of intrusive man-made structures. Landscapes with no demonstrable physical attributes which elevate it above ordinary countryside.	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

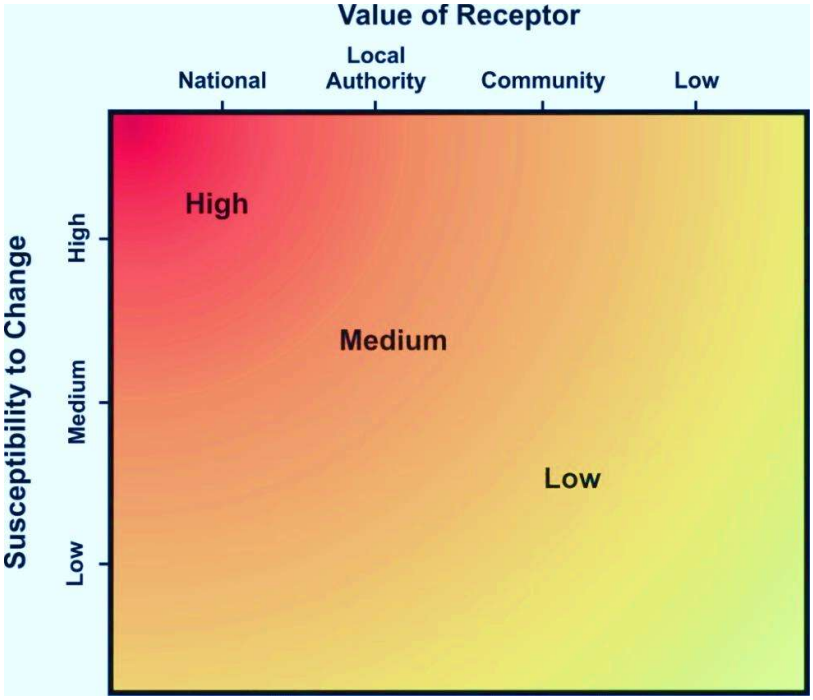


Table 13A-4: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

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 visual connections to other landscape types may be interrupted intermittently by the proposed development, but these connections 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 level of landscape change/ No 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, far from the site itself.
Medium extent of landscape change	Landscape change extends beyond the site boundaries.
Small extent of landscape change	Change affecting a localised area, often focused on the site itself.
Negligible extent of landscape change	The change will affect only a negligible extent of the landscape receptor under consideration.

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 (2022).

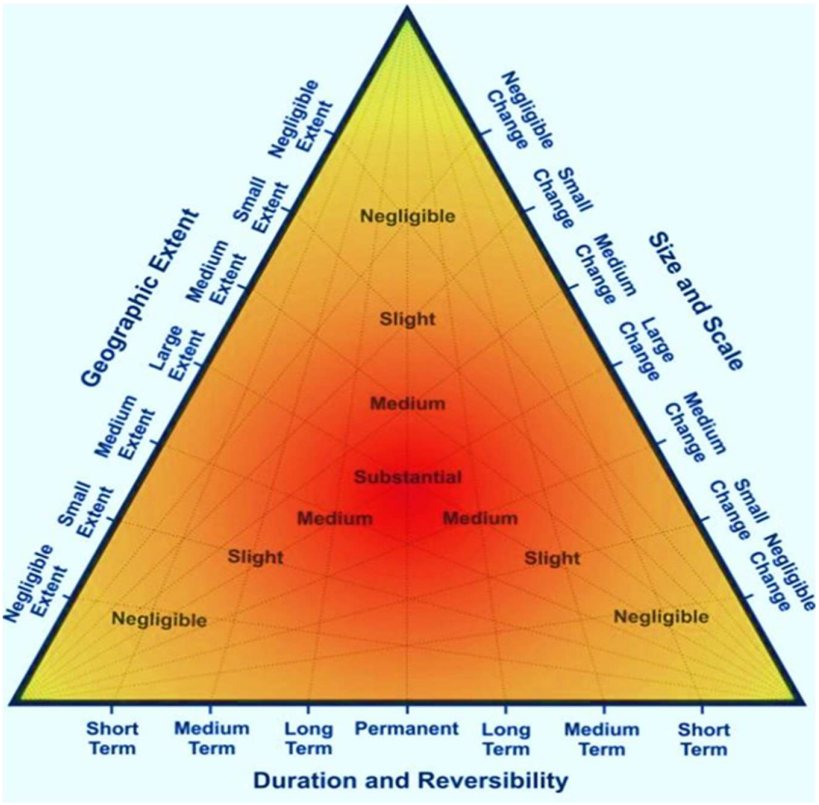
Table 13A-7: Magnitude of Landscape Change: Duration and Reversibility

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.

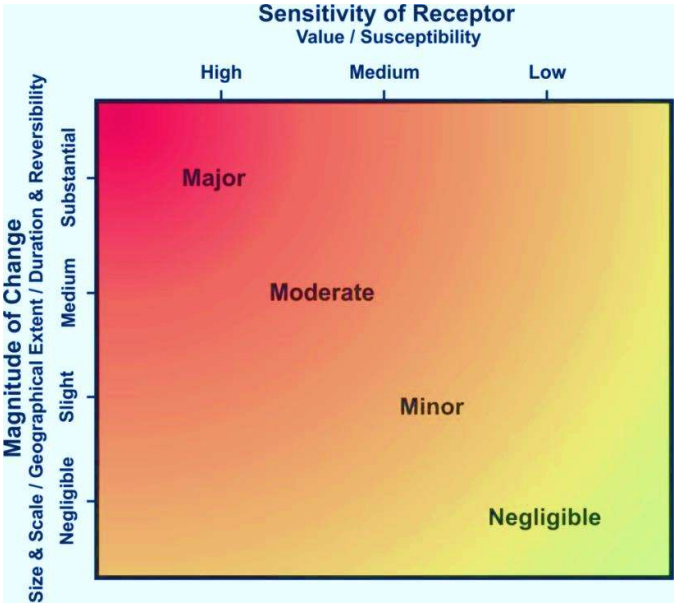
Figure 13A-2: Determining the Magnitude of Landscape Change



Assessment of Landscape Effects

The assessment of overall 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 walking trails 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:

- 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 (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 although they may also include specific promoted or otherwise important viewpoints.

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; where the setting is not important to quality of working life; 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

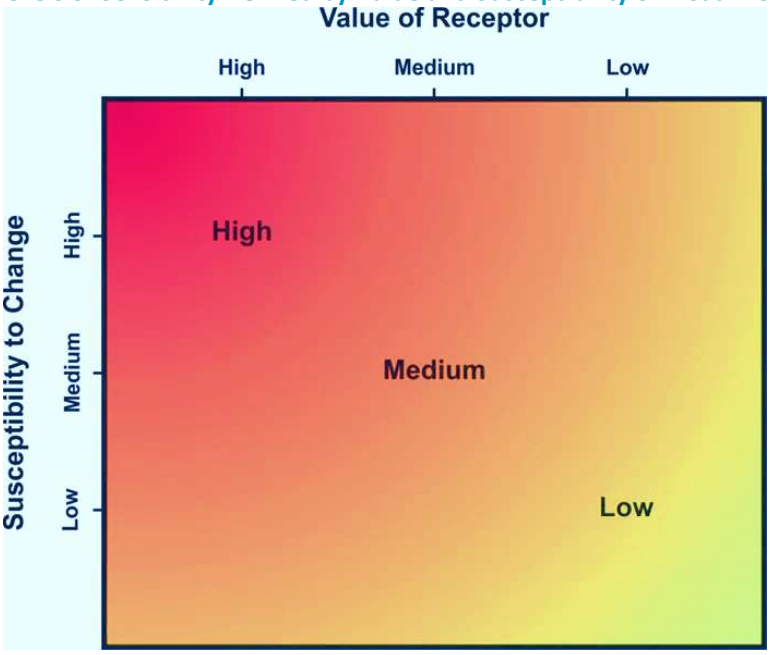


Table 13A-10: Example Levels of Sensitivity defined by Value and Susceptibility of Visual Receptors

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.
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:

- 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.

The above criteria are summarised in the **Table 13A-11** below:

Table 13A-11: Magnitude of Visual Change: 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 Access Land may be widely visible from much or all of the 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: Magnitude of Visual Change: 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 a very small number of viewers; 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 EIA Reports (2022).

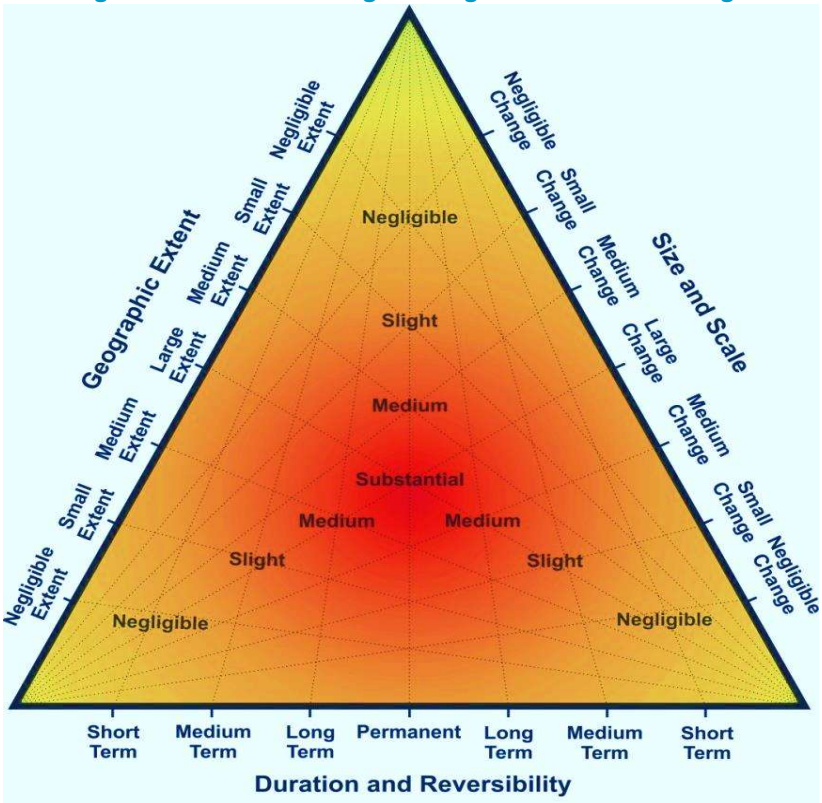
Table 13A-13: Magnitude of Visual Change: Duration and Reversibility

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 made using professional judgement rather than by formulaic application of the relationships in the diagram.

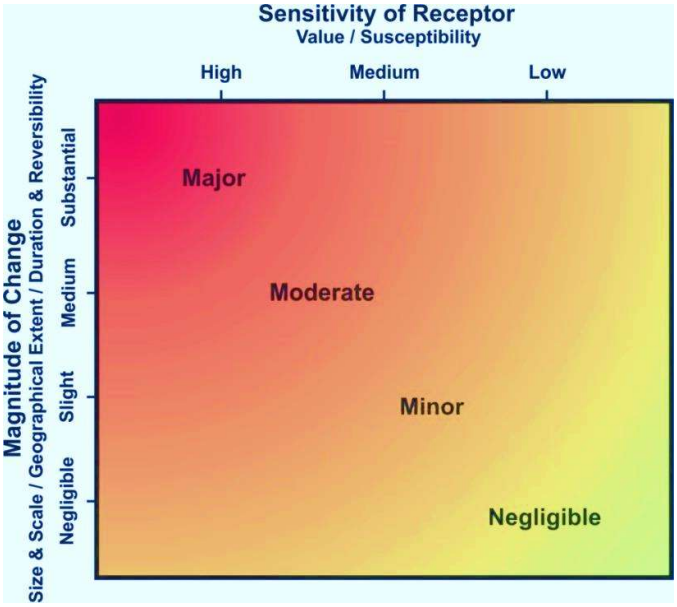
Figure 13A-5: Determining the Magnitude of Visual Change



Assessment of Visual Effects and Significance

The assessment of visual effects is defined in terms of the relationship between the sensitivity of the visual receptors (value and susceptibility) 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 and Overall Significance



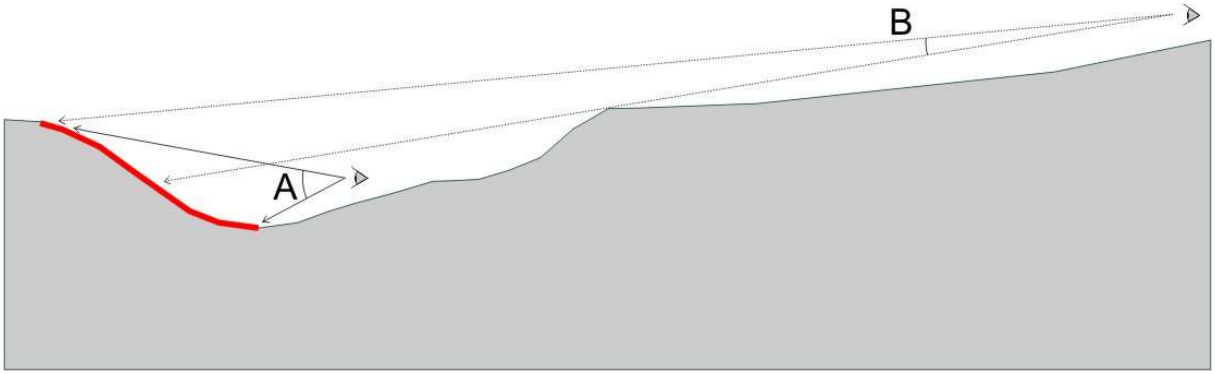
Appendix 13-B

Zone of Theoretical Visibility (ZTV) Methodology

A Zone of Theoretical Visibility (ZTV) Study was conducted for the proposed development (i.e. the entire proposed extraction area, including all quarry faces) 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

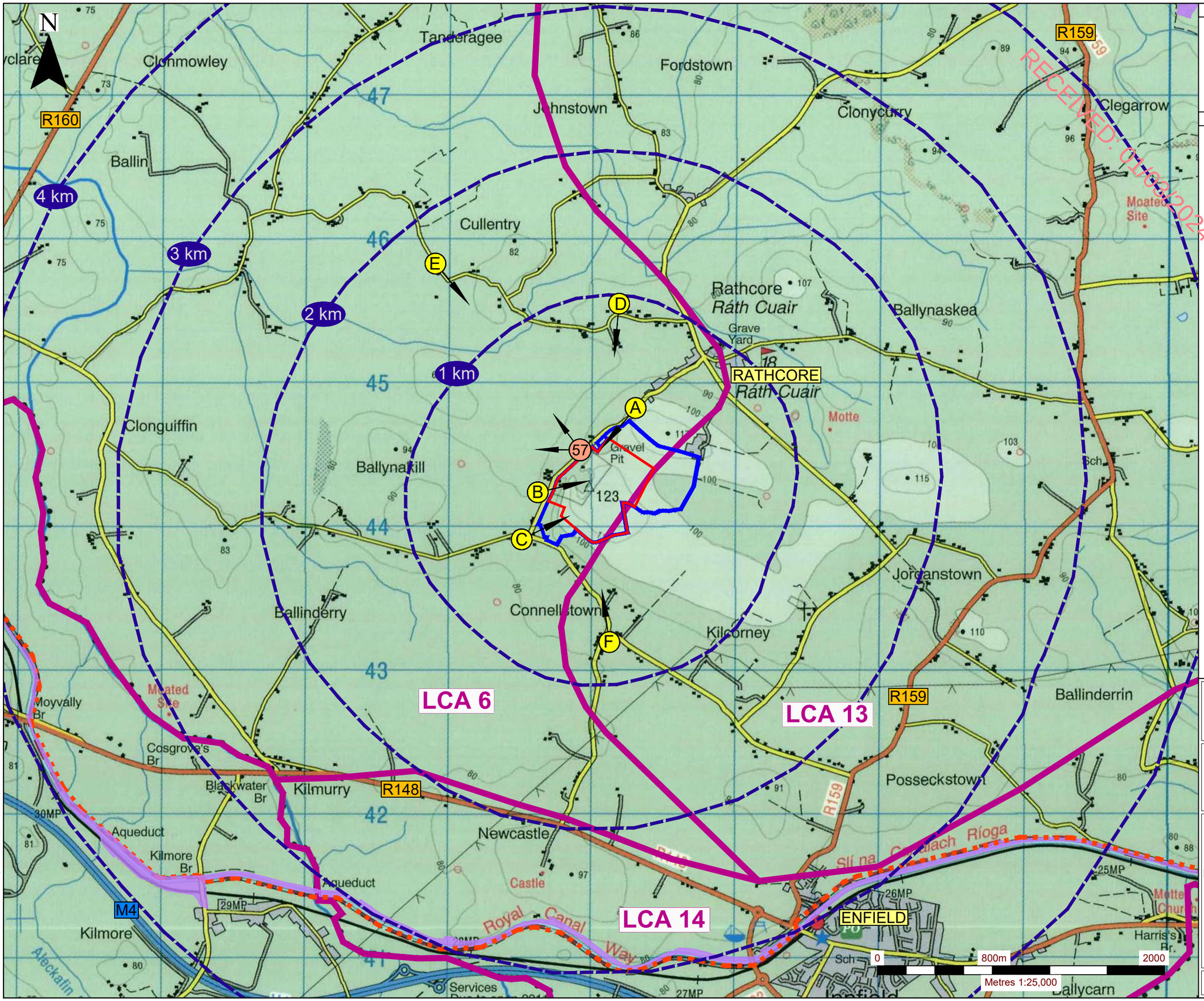
Figure 13-1
Landscape Baseline and Viewpoint Locations

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



NOTES

EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 49
CYAL 50381397
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RECEIVED: 01/02/2024

LEGEND

- LAND HOLDING BOUNDARY
- PLANNING APPLICATION AREA
- VIEWPOINT LOCATIONS
- DISTANCE FROM APPLICATION AREA BOUNDARY

LANDSCAPE DESIGNATIONS:

- LANDSCAPE CHARACTER AREA (MEATH LANDSCAPE CHARACTER ASSESSMENT 2007)
- PROTECTED VIEWS & PROSPECTS (MEATH COUNTY DEVELOPMENT PLAN 2021-27)
- PROPOSED NATURAL HERITAGE AREAS (pNHA)
- ROYAL CANAL WAY

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

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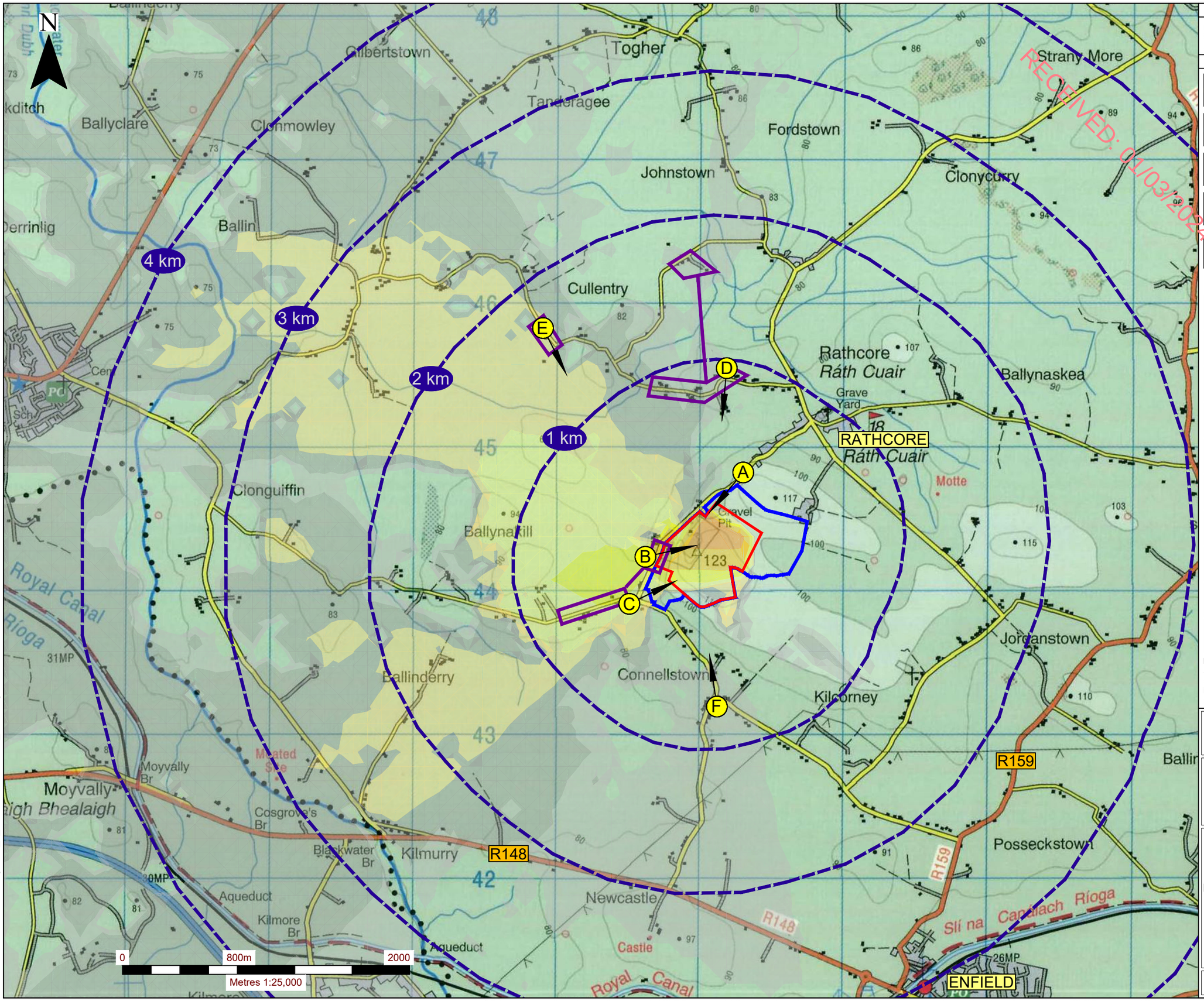
RATHCORE/CONNELLSTOWN TOWNLANDS
ENFIELD, CO. MEATH

LANDSCAPE BASELINE AND VIEWPOINT LOCATIONS

FIGURE 13-1

Scale	Date
1:25,000 @ A3	FEBRUARY 2024

00036.064960.Rathcore.Fig 13-1_2_Landscape Baseline_ZTV.dwg



NOTES

EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 49
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LEGEND

- LAND HOLDING BOUNDARY
- PLANNING APPLICATION AREA
- VIEWPOINT LOCATIONS (A)
- DISTANCE FROM APPLICATION AREA BOUNDARY (2 km)
- AREAS / SECTIONS OF ROAD WITH SIMILAR VIEWS OF THE APPLICATION AREA (REFER TO SAMPLE VIEWPOINT WITHIN AREA)

VERTICAL SUBTENDED ANGLES VISIBLE:

- SUBTENDED VERTICAL ANGLE GREATER THAN **25.6** DEGREES
- SUBTENDED VERTICAL ANGLE **12.8** TO **25.6** DEGREES
- SUBTENDED VERTICAL ANGLE **6.4** TO **12.8** DEGREES
- SUBTENDED VERTICAL ANGLE **3.2** TO **6.4** DEGREES
- SUBTENDED VERTICAL ANGLE **1.6** TO **3.2** DEGREES
- SUBTENDED VERTICAL ANGLE **0.8** TO **1.6** DEGREES
- SUBTENDED VERTICAL ANGLE **0.4** TO **0.8** DEGREES
- SUBTENDED VERTICAL ANGLE **0.2** TO **0.4** DEGREES
- SUBTENDED VERTICAL ANGLE **0.1** TO **0.2** DEGREES
- SUBTENDED VERTICAL ANGLE LESS THAN **0.1** DEGREES (NO THEORETICAL VISIBILITY)

NOTE: Vegetation cover and built structures are not taken into account as part of the ZTV calculation process.
Areas in grey (i.e. less than 0.4 degrees) tend to be screened by hedgerows and vegetation, if present. Please refer to Appendix 13-2 of the EIAR for the ZTV methodology.

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ideas taking shape

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

RATHCORE QUARRY
RATHCORE/CONNELLSTOWN TOWNLANDS
ENFIELD, CO. MEATH

ZONE OF THEORETICAL VISIBILITY (ZTV) MAP

FIGURE 13-2

Scale	Date
1:25,000 @ A3	FEBRUARY 2024

00036.064960.Rathcore.Fig 13-1_2_Landscape Baseline_ZTV.dwg

Viewpoint A: Local road, approximately 700m northeast of the entrance to Rathcore Quarry (note: Protected Views & Prospects No. 57 of the Meath County Development Plan 2013-2019 is located along this stretch of road).

Grid Reference (ITM): **676180:744770** Elevation: **105m AOD** Distance from application area boundary: **200m** Direction of View: **South-west** Date/time of photograph: **04/02/2020 @ 14:17**

Description: This viewpoint represents views from the local road to the northeast of the entrance to Rathcore Quarry. Views in a western direction from this road (i.e. to the right in the above view and therefore away from the quarry) are protected in the current Meath County Development Plan). A grassed overburden berm along the northern / northeastern boundary of the existing quarry development screens any views of the extraction and processing activities in views from this stretch of the road. It will also fully screen views of the proposed Rock Milling Plant. The berm, as well as intervening vegetation and topography, generally screens views of the quarry from locations to the northeast of the application area, including Rathcore village and one-off housing in this area.

Viewpoint B: Local road at the entrance to Rathcore Quarry.

Grid Reference (ITM): **675620:744225** Elevation: **85m AOD** Distance from application area boundary: **10m** Direction of View: **North-east** Date/time of photograph: **04/02/2020 @ 14:22**

Description: This viewpoint represents views from the local road passing the site entrance of Rathcore Quarry. The office and workshop near the site entrance are visible in this view, however the existing extraction area and majority of the processing area are fully screened by intervening topography and vegetation. Apart from a small section of elevated land and associated vegetation, which will be removed as part of the proposed extension of the extraction area, none of the proposed development will be visible in views from this stretch of the road or views from a western direction in general. This includes the proposed Rock Milling Plant, views of which will be screened, due to its location on a lower level within the quarry.

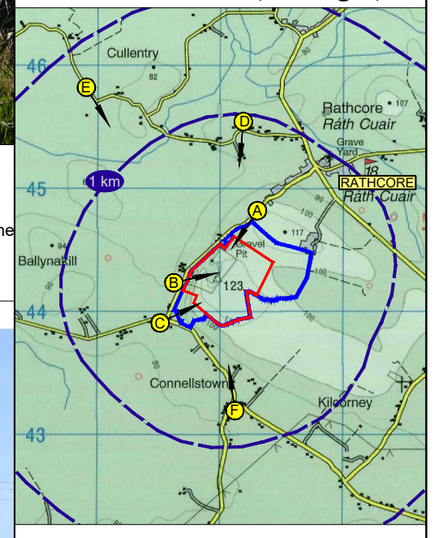
NOTES

EXTRACT FROM 1:50,000 OS DISCOVERY SERIES MAP NO. 49.
CYAL 50381397

LEGEND

- LAND INTEREST BOUNDARY
- APPLICATION AREA
- VIEWPOINT LOCATIONS (B)
- APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY (2 km)

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS A & B

FIGURE 13-3

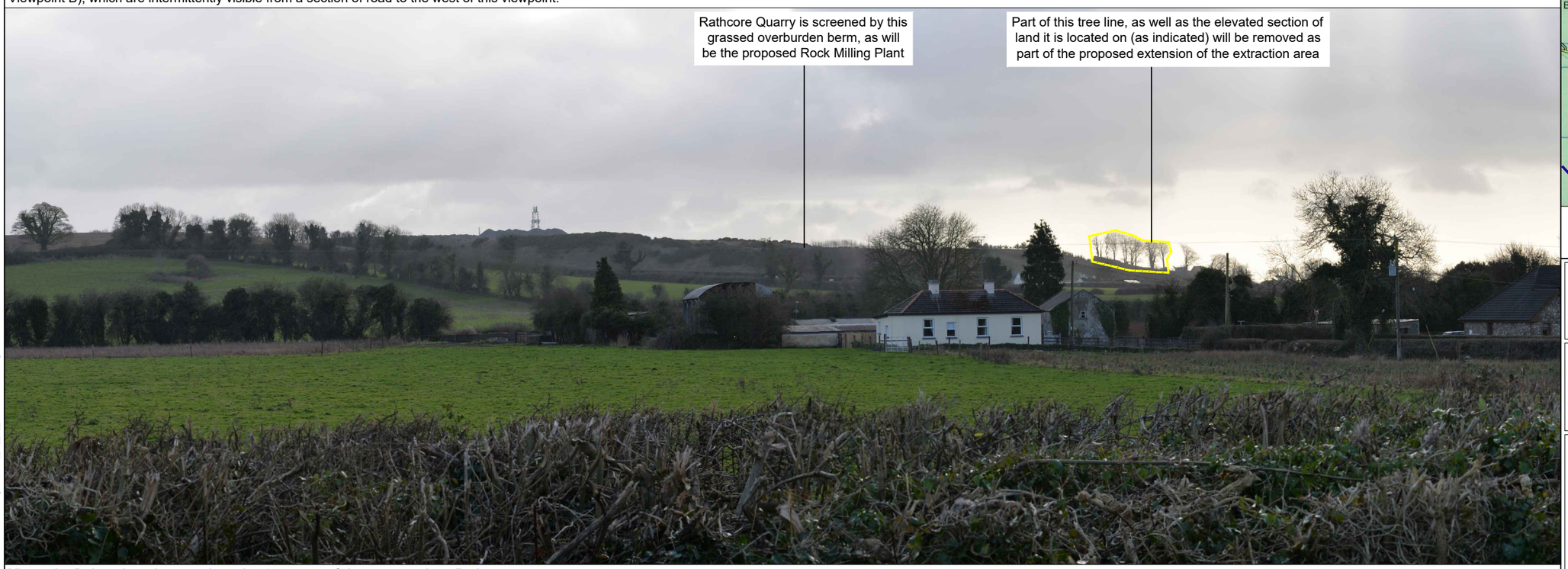
Scale: NTS
Date: FEBRUARY 2024

00036.064960.Rathcore.Fig 13-3_4_5_VP A-F.dwg

Viewpoint C: Junction of local roads, approximately 370m southwest of the entrance to Rathcore Quarry.

Grid Reference (ITM): **675495:743960** Elevation: **80m AOD** Distance from application area boundary: **250m** Direction of View: **Northeast** Date/time of photograph: **04/02/2020 @ 14:27**

Description: This viewpoint represents views from the local roads to the southwest of Rathcore Quarry, as well as a number of residential properties in this area. Intervening topography, as well as dense vegetation along these roads and along field boundaries typically screen views of the existing quarry / proposed development (including the proposed Rock Milling Plant) from locations to the southwest of the application area. This is with the exception of the small elevated section of land and associated trees to be removed (refer to Viewpoint B), which are intermittently visible from a section of road to the west of this viewpoint.



Viewpoint D: Local road, approximately 700m west of the crossroads at Rathcore.

Grid Reference (ITM): **676140:745490** Elevation: **80m AOD** Distance from application area boundary: **870m** Direction of View: **South** Date/time of photograph: **04/02/2020 @ 14:11**

Description: This viewpoint represents a small number of views towards Rathcore Quarry available from the local roads and residential properties to the west and northwest of Rathcore village. It should be noted that intervening vegetation and topography screens views of the quarry in the majority of locations from this area. In the available views, such as the above, a small section of elevated land and associated vegetation, which will be removed as part of the proposed extension of the extraction area, are visible. No other elements of the proposed development will become visible in these views, including the proposed Rock Milling Plant.

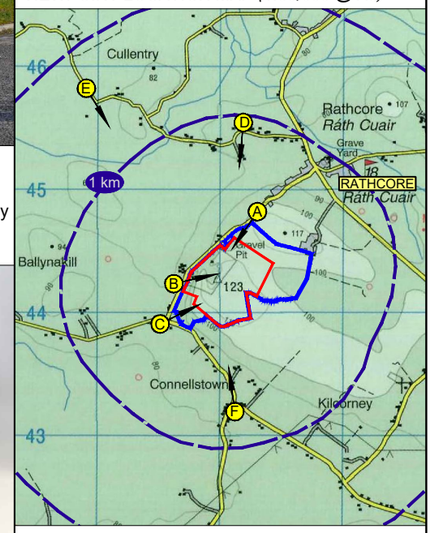
NOTES

EXTRACT FROM 1:50,000 OS DISCOVERY SERIES MAP NO. 49.
CYAL 50381397

LEGEND

- LAND INTEREST BOUNDARY
- APPLICATION AREA
- VIEWPOINT LOCATIONS
- APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS C & D

FIGURE 13-4

Scale: NTS
Date: FEBRUARY 2024

00036.064960.Rathcore.Fig 13-3_4_5_VP A-F.dwg

Viewpoint E: Local road in the townland of Cullentry, approximately 1.8km west of the crossroads at Rathcore.

Grid Reference (ITM): **674865:745805** Elevation: **75m AOD** Distance from application area boundary: **1,550m** Direction of View: **Southeast** Date/time of photograph: **04/02/2020 @ 14:02**

Description: This viewpoint represents a very small number of views towards Rathcore Quarry along a short stretch of this road and from two nearby residential properties. Further north and west, intervening vegetation screens views of the quarry. In the above view the small section of elevated land and associated vegetation, which will be removed as part of the proposed extension of the extraction area, are visible. Also the top of the existing southeastern quarry face is visible as a very narrow band along the skyline. The proposed extraction works in the southeastern corner of the application site will be temporarily visible, as the extraction footprint is established (i.e. the visible face will be slightly pushed back further). The remainder of the extraction works, as well as the proposed Rock Milling Plant, will be fully screened by intervening topography.

Viewpoint F: Junction of local roads at Connellstown.

Grid Reference (ITM): **676060:743310** Elevation: **80m AOD** Distance from application area boundary: **630m** Direction of View: **North** Date/time of photograph: **04/02/2020 @ 14:32**

Description: This viewpoint represents views from locations to the south and east of Rathcore Quarry. Dense vegetation along most roads and field boundaries, as well as topography screen views of Rathcore Quarry in views from a southern/eastern direction. The proposed development will also be fully screened.

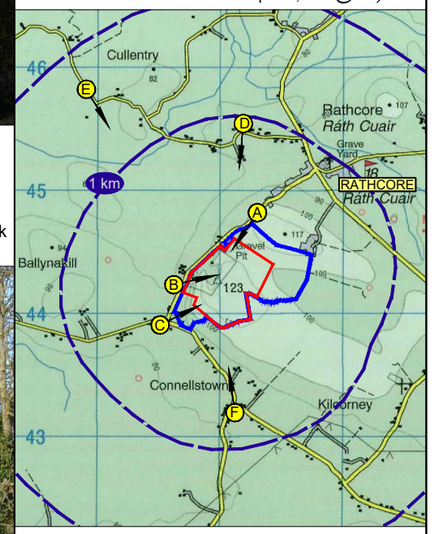
NOTES

EXTRACT FROM 1:50,000 OS DISCOVERY SERIES MAP NO. 49.
CYAL 50381397

LEGEND

- LAND INTEREST BOUNDARY
- APPLICATION AREA
- VIEWPOINT LOCATIONS (B)
- APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY (2 km)

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS E & F

FIGURE 13-5

Scale: NTS
Date: FEBRUARY 2024

00036.064960.Rathcore.Fig 13-3_4_5_VP A-F.dwg