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INTRODUCTION

Background

- 13.1 This report assesses the landscape and visual effects arising from the proposed extension of the existing Breedon Materials Ltd. quarry at Rossmore, Carrigtwohill, Co. Cork. The quarry is located 1.5km south of the N25 National Road and the town of Carrigtwohill.
- 13.2 The planning application area, hereafter referred to as 'the application area' or 'the site', comprises five tillage fields to the east of the existing permitted quarry area and the local private road along its eastern boundary. It is proposed to extract rock over an area of 12.5 ha within these fields to a level of -35 m ordnance datum (OD). The proposed extraction area will be linked to the existing quarry via a vehicular tunnel under the local private road. All existing treelines / hedgerows along the outer boundaries of the extension site will be retained, except for at the tunnel location. This area will be replanted with a scrub mix, as soon as the tunnel construction is completed. All internal hedgerows, including several mature trees will have to be removed to facilitate the development. To compensate the loss of this vegetation, a mix of native trees will be planted in several blocks along the northern and southern boundary of the extension site. In order to augment the screening provided by the existing and proposed boundary vegetation, screening berms will be installed along the eastern and western boundaries of the proposed extraction area, using overburden and soil material stripped from the extraction area.
- 13.3 All facilities within the existing quarry development, such as welfare facilities, offices and manufacturing plant will continue to be used and no new such facilities will require construction as part of the proposed development. Upon the cessation of extraction operations, it is proposed to return the worked lands to natural habitat after-uses, including leaving the quarry void to naturally fill with water and leaving any benches above the water level for natural regeneration. The development is proposed to be completed over a period of 35 years with a further 2 years for the final restoration of the site. Further details on the proposed development, including the Landscape and Restoration Plan, are provided in Chapter 2 of this EIAR.
- 13.4 This EIAR chapter should be read in conjunction with the following figures, which have been prepared to inform it:
- **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 / EIA Scoping

- 13.5 The EPA guidelines in relation to the preparation of an EIAR (May 2022) suggest the following typical headings that may be included in respect of the prescribed environmental factor 'The Landscape':
- Landscape Appearance and Character;
 - Landscape Context;
 - Views & Prospects; and

- Historical Landscapes.

- 13.6 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 (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.
- 13.8 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.
- 13.9 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.
- 13.10 GLVIA3 sets out a framework for making judgements about the level of effects that may result from change or development. It describes a step by step approach in which: judgements about the value and susceptibility of the receptor are combined into a judgement about sensitivity; judgements about the size/scale of the effect, its geographical extent and its duration and reversibility are combined into a judgement about the magnitude of the effect; and finally, the judgements about sensitivity of the receptor and the magnitude of the effect are combined to judge the level of the effect. If the assessment forms part of an EIA, a threshold may then be identified to show which effects are considered to be significant and which are not.
- 13.11 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.
- 13.12 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

- 13.13 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. There is no Irish standard/guidance, and in our experience, it is typically considered sufficient to provide two annotated viewpoint photographs (Type 1 photography in Technical Guidance Note 06/19) on one A3-sized sheet, using a range of horizontal angles of view (i.e. 75°-105°) to illustrate the full extent of the development within each photograph presented, as well as the context within which the site is located.
- 13.14 The Landscape Institute – Technical Guidance Note 02/21 – Assessing landscape value outside national designations was taken account of in the preparation of the assessment methodology, as provided in **Appendix 13-A** at the end of this chapter.

- 13.15 The Landscape Institute – Technical Guidance Note LITGN-2024-01 – Notes and Clarifications on aspects of Guidelines for Landscape and Visual Impact Assessment Third edition (GLVIA3) was also taken into account in the preparation of the assessment methodology provided.

Consultations / Consultees

- 13.16 A number of planning applications have been submitted to Cork County Council and determined at the location over the past 5 years. Any feedback received from Cork County Council, as part of these previous applications was considered in the preparation of this EIAR chapter and of the Landscape and Restoration Scheme, which can be found in Chapter 2.
- 13.17 Following a review of published development plans and the site survey, it was considered that there was no requirement for a separate formal consultation to be carried out regarding the landscape and visual effects of the proposed development.

Contributors / Author(s)

- 13.18 The LVIA including site work and completion of drawings was carried out by Anne Merkle, 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 (ILI) since 2005.
- 13.19 Anne further holds a Technician's Certificate in Arboriculture and is a Technician Member of the Arboricultural Association (TechArborA).

Sources of Information

- 13.20 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 and again in March 2025. The desktop study and field work were informed by:
- Cork County Development Plan 2022-2028;
 - Draft Cork County Landscape Strategy (2007)
 - 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

- 13.21 A study area of 3km surrounding the application area and extending up to 5km to the north-west and west was identified. This is based on the ZTV mapping (refer to **Figure 13-2**), SLR's previous experience with mineral extraction sites and previous LVIA's associated with the existing Breedon quarry at Rossmore undertaken by SLR. Ridgelines 4-5 km to the north and 2-3 km to the south of the application area mark the study area boundaries. While the ZTV indicates very limited visibility beyond the site boundary to the north-east and east,

and beyond 2 km to the south, the 3km study area in these directions is maintained for the purposes of providing landscape context.

Field Survey

- 13.22 A detailed field survey was carried out on 12th March 2025, in mostly sunny conditions with some intermittent clouds and with good visibility. Photographs were taken during the field surveys, using a Nikon D610 digital SLR full frame camera, with a fixed 50mm lens, mounted on a tripod with a panoramic head. The individual photos were taken in portrait format.
- 13.23 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

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

Significant Risks

- 13.25 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

- 13.26 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

- 13.27 In 2002, Ireland ratified the European Landscape Convention, which promotes the protection, management and planning of landscapes. The National Landscape Strategy for Ireland 2015-2025 was published “to ensure compliance with the European Landscape Convention and establish principles for protecting and enhancing the landscape while positively managing its change”.
- 13.28 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.
- 13.29 There is no Irish legislation specifically governing the preparation of landscape and visual impact assessments.

Planning Policy and Development Control

- 13.30 The Cork County Development Plan (CDP) 2022-2028 is the statutory plan detailing the development objectives/policies of the authority, covering the application area. Those objectives / policies, with relevance to this assessment, are listed below. The location/extent of relevant designations is shown on **Figure 13-1**, at the end of this chapter.

Mineral Extraction

- 13.31 Section 8.17 of the current Cork CDP, ‘Mineral Extraction’, states that the Council “*aims to protect and safeguard the operations of working quarries and proven aggregate resources from incompatible developments to ensure the continued viability of the extractive industry, whilst also ensuring that environmental, rural, scenic and residential amenities are protected.*”
- 13.32 CDP **Objective EC 8-16:** ‘Safeguarding Mineral resources’ states the following:
“a) Protect and safeguard the county’s natural mineral resources from inappropriate development, by seeking to prevent incompatible land uses that could be located elsewhere, from being located in the vicinity of the resource, since the extraction of minerals and aggregates is resource based. ...”

Green Infrastructure and Development

- 13.33 CDP **Objective GI 14-3:** ‘Green Infrastructure and Development’ states the following:
“a) Require new development and redevelopment proposals, where considered appropriate, to contribute to the protection, management and enhancement of the existing green and blue infrastructure of the local area in terms of the design, layout and landscaping of development proposals.
b) Require all development to submit a green infrastructure statement outlining how the proposal contributes to green and blue infrastructure both within its environs as well as within the wider settlement or rural area. Larger developments (multiple residential

developments including Part 8 applications, retail, industrial, mineral extraction, etc) will be expected to prepare a Landscape/ Green (and Blue) Infrastructure Plan including a Landscape Design Rationale. This Plan should identify environmental assets and include proposals which protect, manage and develop green infrastructure resources in a sustainable manner. ...”

Landscape Character Assessment of County Cork

- 13.34 Section 14.8 of the current Cork CDP summarises the content of the Draft Landscape Strategy, which was prepared for County Cork in 2007. This strategy identifies 16 landscape character types (LCT) and includes “an evaluation of each landscape character type in terms of its Landscape Value, Sensitivity and Importance”. Refer to the Landscape Baseline section below for more detail from the Draft Landscape Strategy relevant to the study area.
- 13.35 Those LCTs of particularly high value, sensitivity and importance were designated as High Value Landscapes (HVL), within which “considerable care will be needed to successfully locate large scale developments without them becoming unduly obtrusive”. The application area is located within one such HVL. This HVL covers the entire coastal area from Cobh up to 4 km north of Carrigtwohill, i.e. all of the study area.
- 13.36 CDP **Objective GI 14-9:** ‘Landscape’ states the following:
- a) *Protect the visual and scenic amenities of County Cork’s built and natural environment.*
 - b) *Landscape issues will be an important factor in all land-use proposals, ensuring that a pro-active view of development is undertaken while protecting the environment and heritage generally in line with the principle of sustainability.*
 - c) *Ensure that new development meets high standards of siting and design.*
 - d) *Protect skylines and ridgelines from development.*
 - e) *Discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.”*
- 13.37 CDP **Objective GI 14-10:** ‘Draft Landscape Strategy’ states the following:
- “Ensure that the management of development throughout the County will have regard for the value of the landscape, its character, distinctiveness and sensitivity as recognised in the Cork County Draft Landscape Strategy and its recommendations, in order to minimize the visual and environmental impact of development, particularly in areas designated as High Value Landscapes where higher development standards (layout, design, landscaping, materials used) will be required.”*

Landscape Views and Prospects

- 13.38 Section 14.9 of the current Cork CDP, ‘Landscape Views and Prospects’ includes objectives with regard to Views and Prospects and Scenic Routes.
- 13.39 CDP **Objective GI 14-12:** ‘General Views and Prospects’ states the following:
- “Preserve the character of all important views and prospects, particularly sea views, river or lake views, views of unspoilt mountains, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty as recognized in the Draft Landscape Strategy.”*
- 13.40 In a number of views from locations on the northern side of Great Island the application area is visible in conjunction with the with the Great Island Channel (refer to Viewpoints C & D on Figure 13-4). These views could be considered as falling under those described in

Objective GI 14-12. The compliance of the proposed development with this Objective in terms of these views will be assessed at the end of this report.

13.41 CDP **Objective GI 14-13:** 'Scenic Routes' states the following:

"Protect the character of those views and prospects obtainable from scenic routes and in particular stretches of scenic routes that have very special views and prospects identified in this Plan. The scenic routes identified in this Plan are shown on the scenic amenity maps in the CDP Map Browser and are listed in Volume 2 Heritage and Amenity Chapter 5 Scenic Routes of this Plan"

13.42 CDP **Objective GI 14-14:** 'Development on Scenic Routes' states the following:

"a) Require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area.

b) Encourage appropriate landscaping and screen planting of developments along scenic routes"

13.1 Four Scenic Routes, listed in Volume 2 / Chapter 5 of the current Cork CDP are located within the study area. The scenic route numbers and their 'Description & General Views Being Protected' are as follows:

- S42: "Local Road at Forest-town, N.W. Carrigtohill and Westwards to Caherlag; Views of the Harbour, open countryside & tree lined hillsides" (note: ca. 2.8km north-west of the application area)
- S51: "R630 Regional Road & Local Road from Ballynacorra via East Ferry to Whitegate and Roche's Point; Views of the Estuary & Harbour, Roche's Point & the rural coastal environment" (note: ca. 3.6 km south-east of the application area)
- S52: "Local Road at N.E. Great Island; Views of Great Island Channel & rural coastal environment" (note: ca. 1.2 km south of the application area)
- S53: "R624 Regional Road, between Cobh and Belvelly; Views of the Upper Harbour and coastal environment" (note: ca. 3.6 km west of the application area)

13.43 Views from these four scenic routes are considered as part of the visual baseline descriptions and, where relevant, as part of the assessment of visual effects.

RECEIVING ENVIRONMENT

Landscape Baseline

Existing Relevant Landscape Character Assessment

13.44 A Draft Landscape Strategy was prepared in 2007 for County Cork. This strategy identifies 76 landscape character areas (LCA), which were "amalgamated into a set of 16 landscape character types based on similarities evident within the various areas. These landscape character types provide a more general categorization of the County's landscape" (refer to section 14.8 of the Cork CDP 2022-2028).

- 13.45 The application area is fully located within landscape character type (LCT) 1: City Harbour and Estuary. The nearest other LCT, i.e. LCT 10b: Fissured Fertile Middleground, is located approximately 5km to the north of the application area and due to this distance is not considered further in this assessment.
- 13.46 The landscape description for **LCT 1: City Harbour and Estuary**, in the 2007 Draft Landscape Strategy, includes the following:
- 13.47 *"The topography and landscape components in this area, primarily the River Lee as well as the vast open and natural harbour, have provided the opportunity for human settlement and the development of a city.*
- Overall, the landscape of the city and harbour area comprises a mix of rural and intensely urban areas, combined with a large expansive harbour. To the south of the city, the western side of the harbour supports major industrial development, while on higher ground telecommunication masts or water storage towers punctuate the skyline. The harbour includes large islands, which, along with much of the harbour shore, comprises landscape of fertile farmland which slopes gently to the sea. It comprises a mosaic of fertile fields of mixed use on brown podzols.*
- The rural areas around much of the greater harbour area are now characterised by a prevalence of infrastructure such as roads, bridges and electricity power lines and some urban sprawl. The narrow harbour mouth is defined by two hilltops with old military fortifications on their summits."*
- 13.48 LCT 1 was evaluated as being of very high landscape value, i.e. "Scenic landscapes with highest natural and cultural quality, areas with conservation interest and of national importance." LCT 1 has further been evaluated as having very high sensitivity, i.e. "Very high sensitivity landscapes are extra vulnerable landscapes (for example, seascape area with national importance) likely to be fragile and susceptible to change."

Landscape of the Site and its Context

- 13.49 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

- 13.50 The application area is located to the east of the existing permitted Breedon quarry at Rossmore. It comprises five tillage fields, within which the proposed extraction area will be located, and associated tightly cut hedgerows with some mature trees. Three larger rectangular fields are arranged in an L-shape to the north, with two smaller rectangular fields adjoining these to the south. The application area further includes the existing local private road from the existing quarry entrance to the junction with a public local road to the north, a small section of the existing quarry area, where it is proposed to construct a tunnel into the extension site and the existing settlement pond to the south of the extension area and associated scrub / grassland / woodland areas.
- 13.51 The tillage fields within the application area are gently sloping from the north-east to the south-west and south. Levels within this area currently range from a highpoint of 28 m OD

in the north-eastern corner, to 19 m OD along the boundary with the settlement pond. An up to 2m tall, grassed berm marks this boundary. Beyond this berm there is a steep drop to the surface of the settlement pond, which was carved into the formerly more gently sloping ground. The water surface has a level ca. 5 m OD.

- 13.52 To the west the application area is adjoined by the aforementioned existing Breeder quarry, which in turn is adjoined by a third-party quarry to the west. The northernmost of the five tillage fields is adjoined by a small site covered in mostly coniferous trees (within the landholding of the applicant). Beyond this site, as well as to the north-west, north-east and east, the site is adjoined by further agricultural fields, most of which are used for tillage, and some are under pasture. To the south, beyond the settlement pond, the application area is adjoined by a narrow strip of land containing several waterbodies, along the shore of the Great Island Channel. Brick Island, a peninsula, is protruding into the Channel to the south-west of the site.
- 13.53 Agricultural fields are mostly angular in shape, with sizes ranging from small to large. Mature hedgerows typically bound the fields, creating a defined field pattern, but in some locations, hedgerows were replaced by post and wire fencing. Small woodlands and shelterbelts are present throughout the study area, in particular on Great Island and in the valleys between the highpoints to the north. Larger areas of woodland are present on Fota Island, in particular along its shoreline.
- 13.54 Within 1.5km to the west, north and east of the application area the land is gently undulating with levels ranging from 0m OD along the shores of the Great Island Channel to the 28 m OD in the vicinity of the north-eastern corner of the site. The flat surface of the Great Island Channel expands from just south of the settlement pond in a western and eastern direction. Typically, it is around 1km wide, widening and narrowing in places.
- 13.55 On the southern side of the Great Island Channel the land slopes to 70-90m OD within 1km distance (i.e. between 1.5-2.5km to the south of the application area) where it forms a ridgeline parallel to the shoreline. Within 3-4km to the north of the application area the land slopes to levels over 100m OD. A series of local highpoints form an undulating ridgeline, approximately 5km to the north and north-west of the application area.
- 13.56 The main settlement within the study area is the town of Carrigtwohill, approximately 1.5 km to the north of the site. The remainder of the study area is predominantly rural, however, one-off housing and ribbon development along all local roads is abundant. Larger more urban settlements are present just outside the study area, including Cobh, 5 km to the south-west, Midleton, 5 km to the east and Passage West, 6 km to the south-west.
- 13.57 The main roads within the study area are the N25 – Cork to Midleton National Road, just south of Carrigtwohill and the R624 – Carrigtwohill to Cobh Regional Road, just under 2 km to the west of the application area. In addition, there is a dense network of local roads surrounding Carrigtwohill and on Great Island.
- 13.58 Human activity has strongly influenced the land use within the study area, mainly in the form of agriculture. This is emphasised by the many straight, partly tightly cut, partly tree-lined, hedgerows marking field boundaries. Human influences are also visible in the form of residential and farm buildings, roads, stone walls, fencing, high voltage powerlines, telegraph poles and boats, as well as several existing quarries. On the whole, while this is an attractive rural landscape, with occasional views of nearby ridgelines or along the Great Island Channel, there are few locations from where no man-made structures are visible (i.e. mostly roads, buildings or electricity poles).

Aesthetic and Perceptual Aspects

- 13.59 The undulating topography of the area surrounding the site, coupled with the typically mature boundary hedgerows and small woodland areas, results in the local landscape being visually enclosed and therefore small scale. The landscape remains visually enclosed in many location on the sloping ground beyond 1.5 km to the south and 3 km to the north and north-west, where mature roadside vegetation is present. However, where views over or along the Great Island Channel open up, the scale of the landscape increases considerably. Belvelly Castle near the southern end of Belvelly Bridge presents a focal point in the local landscape.
- 13.60 The mix of tillage / pasture fields, bound by hedgerows, small woodlands and shelterbelts, as well as existing quarries and large waterbodies throughout the study area results in colours and textures that are generally simple and repetitive, but with no regular pattern. The colour palette comprises multiple shades of green, interspersed with browns and greys, where tillage fields and quarries are present, as well as dark shades of blue where waterbodies are present.
- 13.61 While the study area has an overall natural appearance, there is little sense of wildness or remoteness, due to the many signs of human activity, such as agricultural land, electricity poles, roads and residential properties. The roads to the north and west of the site are frequently used, due to the presence of many residential properties, Fota Island with its visitor attractions and the R624, which is the only access road into Cobh. Noise from the busy N25 is constantly audible in the vicinity of the application area, as are intermittent noises from the nearby quarry activities. Due to these levels of noise and movement, there is little sense of tranquillity in the local area. This increases slightly along the local roads on the north side of Great Island, which are less frequently used, as this area is less densely populated.

Overall Character

- 13.62 The landscape surrounding the application area forms part of the rural areas described as part of LCT1 in the Cork Draft Landscape Strategy (see above). It contains fertile sloping farmland, as well as the Great Island Channel and its associated shoreline and islands. As mentioned, it does however also include many infrastructural and other manmade elements, such as roads, powerlines, residential and farm buildings and several existing quarries.

Protected Nature Conservation Sites

- 13.63 The National Parks and Wildlife Service (NPWS) website 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.
- 13.64 A number of nature conservation sites are located within the study area, i.e. one Special Area of Conservation (SAC), one Special Protection Area (SPA) and one proposed Natural Heritage Area (pNHA), as detailed below (refer to **Figure 13-1** for the location and extent of these sites).
- Great Island Channel SAC (Site Code: 001058) – Ca. 140m to the south-west of the south-western corner of the application area.
 - Cork Harbour SPA (Site Code: 004030) – Ca. 140m to the south-west.
 - Great Island Channel pNHA (Site Code: 001058) – Ca. 140m to the south-west.

Visual Baseline

Zone of Theoretical Visibility (ZTV)

- 13.65 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 chapter.
- 13.66 The ZTV, which illustrates the subtended vertical angle of visibility, was calculated for the proposed extraction area, as this will be the most visible element associated with the proposed development. It should be noted that the ZTV mapping is based on a bare terrain; that is, the computer model does not include built structures or vegetation. As a result, the extent of visibility, which is illustrated, is regarded as a worst-case scenario, and would be greatly reduced if buildings and vegetation, such as the treeline along the western site boundary and scrub vegetation surrounding the existing quarry, as well as the many existing hedgerows in the wider landscape, were included in the model.
- 13.67 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.
- 13.68 The resulting ZTV is depicted on **Figure 13-2**. It indicates that a higher probability of visibility of the application area is experienced in the immediate vicinity of the proposed extraction area, as well as on the northern slopes of Great Island, within 1-2 km to the south of the site (i.e. the areas of theoretical visibility in yellow, orange and red).
- 13.69 The ZTV further depicts that large areas within 5 km to the north-west, south-west and south-east experience a low probability of visibility, as indicated by the shades of grey. As mentioned above, views from within these areas are likely to be largely screened by existing intervening vegetation, as is present throughout the agricultural landscape within the study area, in the form of hedgerows, as well as intermittent woodlands and shelterbelts, e.g. along the shore of Fota Island.
- 13.70 Also, it should be noted that much of the theoretical visibility areas, including most of the areas with a higher probability of visibility, cover agricultural land or the Great Island Channel, which is not publicly accessible or only difficult to access, in case of the waterbody. While parts of the site may be visible from this land, only few and infrequent visual receptors are present in those areas (e.g. the owners of the land) and these are therefore not assessed in detail.
- 13.71 The ZTV further illustrates that the undulating topography throughout the study area, fully screens views of the application area from many areas. This includes the land to the north-east and east, beyond the highpoint in the vicinity of the north-eastern corner of the site, the land beyond 3 km on Fota Island to the west and the land beyond the ridgeline on Great Island, ca. 2 km to the south of the site. This includes views from most of scenic route S51 (very low probability of visibility) and all views from scenic route S53, which will therefore not be considered further, as part of this assessment.

Outdoor Recreational Facilities within the Study Area

- 13.72 The study area was searched for existing outdoor recreational facilities, as these provide an indication of potential visual receptors within the area, in addition to local residents and road users.
- 13.73 Fota Wildlife Park, Fota House & Gardens, two of the most popular tourist attractions in Co. Cork, as well as Fota Island Resort are all located 2-4km west of the application area. It should be noted that due to the dense woodland vegetation surrounding Fota Island, there are no views towards the application area from any of these facilities.
- 13.74 The roads/tracks along the shores of the Great Island Channel are likely to be used for recreational walking. Due to the low elevation along the shoreline and existing roadside/intervening vegetation, there are few locations from where parts of the application area are visible (refer to Viewpoint C on Figure 13-4).
- 13.75 There are no known formal walking routes or other recreational facilities within the study area.

Actual Visibility

- 13.76 The actual visibility of the application area was assessed during the field survey, concentrating on publicly accessible locations, including any outdoor recreational facilities identified, as appropriate. This survey confirmed that views from locations within the areas of theoretical visibility indicated by the ZTV mapping are greatly restricted by dense roadside, as well as intervening vegetation, in particular in those areas indicated as having a low probability of visibility (i.e. the areas marked in shades of grey).
- 13.77 The topography of the application area (i.e. sloping from north-east to south-west / south, in combination with boundary vegetation result in no visibility in views from locations to the north and east of the site. Further to that there are no views from the gently undulating land within 3 km to the north-west and west, due to the screening from intervening vegetation, in the form of multiple layers of hedgerows and built structures within Carrigtwohill.
- 13.78 It was established that the actual visibility of (parts of) the application area is restricted to:
- partial and intermittent views through gaps in the roadside vegetation of the proposed extraction area, from the local private road along the western site boundary;
 - partial views of the proposed extraction area, from a ca. 1 km section of the local road in the townland of Currabally along the southern shore of the Great Island Channel (part of scenic route S52), within 1.2-1.4 km south of the site, including four adjoining residential properties;
 - partial and intermittent views of the proposed extraction area, from sections of three local roads on the northern slopes of Great Island (ca. 1.2 km in total), within 1.5-2.9 km south-west of the site, including ca. 12 associated residential properties; and
 - partial, intermittent and distant views of the proposed extraction area, from a ca. 1 km long section of the local road in the townland of Killahora, within 4.2-5.2 km north-west of the site, including 20-25 associated residential properties.
- 13.79 Viewpoint photography was taken during the field survey from several locations throughout the study area. Six of these were selected to represent the range of available views, including views that illustrate how the application area is screened by intervening topography and vegetation.
- 13.80 The location of the six viewpoints is illustrated on **Figures 13-1 & 13-2**. For each of the viewpoints, annotated panoramic images showing the existing view are provided (refer to

Viewpoints A-F on Figures 13-3 to 13-5). The panoramas are made up from 5-6 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.

- 13.81 **Viewpoint A** represents a number of glimpsed views from the local private road along the western site boundary. The treeline and dense hedgerow along the western boundary of the tillage fields associated with the application area generally screen views into the fields and focus the views along the road corridor. However, there are a number of field access points, from where parts of the agricultural fields can be glimpsed. The gently sloping topography and hedgerows to the back of the fields block views into the wider landscape, except for in a southern direction, where the ridgeline at the centre of Great Island can be seen in the background. There are no residential properties located along this road.
- 13.82 **Viewpoint B** illustrates that the existing Breedon quarry (except for a vegetated berm) and the proposed application area are fully screened in views from locations to the north, due to topography and vegetation. Where roadside vegetation is kept low, views over agricultural land open up and in some cases the ridgeline at the centre of Great Island becomes visible in the background. However, the topography of the application area, as well as the dense vegetation to the north of the site result in it being fully screened in views from locations to the north.
- 13.83 **Viewpoint C** represents views from the ca. 1 km long section of the local road along the southern shore of the Great Island Channel in the townland of Currabally. Ca. 4 residential properties nearby experience similar views, where not screened by dense vegetation along the properties' boundaries. Expansive views along the waterbody are available in a western and eastern direction from this section of road. To the north, the partially wooded northern shore is visible, beyond which the ground rises gently. The two eastern tillage fields associated with the application area are partially visible, as a narrow band in the midground of the available views. The ridgeline north of Carrigtwohill is visible in the background of views along the skyline.
- 13.84 **Viewpoint D** represents intermittent views from the elevated local roads on the northern slopes of Great Island. Ca. 12 residential properties nearby experience similar views, where not screened by dense vegetation along the properties' boundaries. Long-distance views across and along the Great Island Channel and towards the ridgeline north and north-east of Carrigtwohill are available in locations where the roadside vegetation is low or where gaps are present. Parts of the existing Breedon quarry, as well as the existing third party quarry to its west, are visible in the midground of the available views, as a narrow band along the northern shore of the waterbody. Undulating agricultural land is visible beyond, interspersed with many built structures, in particular around the town of Carrigtwohill. The tillage fields associated with the application area are obliquely visible, as a narrow band and partially screened by boundary vegetation, above the existing Breedon Quarry.
- 13.85 **Viewpoint E** illustrates that the application area is fully screened in views from the R624 around Fota Island and over Belvelly Bridge, as well as nearby residential properties. Despite the open views across the Great Island Channel, intervening topography and vegetation, screen views of the tillage fields associated with the application area.
- 13.86 **Viewpoint F** represents intermittent views from the ca. 1 km long section of the elevated local in the townland of Killahora. The residential properties along this road, as well as roadside vegetation restrict views in many locations, however, a number of views over Carrigtwohill and towards Great Island open up along this road. Ca. 20-25 of the nearby properties experience similar views, where not screened by dense vegetation along the properties' boundaries. Parts of the existing Breedon Quarry are distantly visible in these views. The tillage fields associated with the application area can also be discerned, although

they are partially screened by boundary vegetation, in the mid to background of view. Both occupy a very small portion of the vastly panoramic views available.

Sensitive Receptors

Landscape Receptors

- 13.87 The landscape receptors potentially affected by the proposed development and therefore considered as part of the assessment of landscape effects, are:
- Individual elements: Five tillage fields and the associated hedgerows / treelines.
 - Overall Character: The rural sections of LCT 1 located within the study area.
- 13.88 No distinctive or highly sensitive aesthetic / perceptual aspects were identified in the immediate vicinity of the application area, such as remoteness, wildness or tranquillity. While there is an increased sense of tranquillity in the southern half of the study area, this is unlikely to be affected by the proposed development, considering the limited visibility and distance to the more remote parts of the study area. Also, while the proposed development will result in a localised contrast to the existing colours/textures, the changes will be similar to the adjoining existing quarry developments, which are established elements of the local landscape. For these reasons no aesthetic and perceptual aspects were identified as sensitive landscape receptors to be brought forward to the assessment of landscape effects

Visual Receptors

- 13.89 The visual receptors, potentially affected by the proposed development and therefore considered as part of the assessment of visual effects, are:
- Residents:
 - o Four residential properties along the southern shore of the Great Island Channel, between 1.2-1.4 km south of site (represented by **Viewpoint C** on **Figure 13-4**);
 - o Up to 12 residential properties between 1.5-2.9 km south-west of the site (represented by **Viewpoint D** on **Figure 13-4**); and
 - o Ca. 20-25 residential properties between 4.2-5.2 km north-west of the site (represented by **Viewpoint F** on **Figure 13-5**).
 - Vehicle users:
 - o Intermittently along the local private road along the western site boundary (used by people accessing the East Cork Civic Amenity Site to the south; represented by **Viewpoint A** on **Figure 13-3**);
 - o Along ca. 1 km of the local road between 1.2-1.4 km south of the site (represented by **Viewpoint C** on **Figure 13-4**);
 - o Intermittently along ca. 1.2 km of the local roads between 1.5-2.9 km south-west of the site (represented by **Viewpoint D** on **Figure 13-4**); and
 - o Intermittently along ca. 1 km of the local road between 4.2-5.2 km north-west of the site (represented by **Viewpoint F** on **Figure 13-5**).
 - o

IMPACT ASSESSMENT

13.90 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 proposed quarry extension, including the phased landscape and restoration activities, as well as during the post-operational stage, when all extraction / restoration works are completed. It is based on the detailed project description and layout drawings contained in Chapter 2 of this EIAR, in particular the proposed Landscape and Restoration Plan (Figures 2-4).

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

Operational Stage

13.91 The operational stage of the proposed development, for the purpose of this assessment, is considered to include the extraction and final restoration works, i.e. a 37-year period. Please note that the proposed development does not comprise a distinct 'construction' stage in landscape and visual terms. This is due to the initial setting up of the access road into the site, i.e. the construction of a tunnel from the existing Breedon Quarry underneath the local access road into the extension land taking a short period only (ca. 10 - 12 weeks) and covering a small section of the application area only. These works comprise the first element of the phased works which will spread out over the entire application area and will therefore be assessed as part of the operational phase.

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

- Construction of the tunnel access into the extension lands and associated removal of scrub vegetation and four mature trees.
- Removal of ca. 800 m of tightly cut hedgerows and associated 32 mature trees.
- Stripping of topsoil and overburden from the proposed extraction area and construction of screening berms along the eastern and western site boundaries using the stripped material, with surplus material placed into an overburden storage area along the northern boundary.
- Planting and subsequent presence of a native shrub mix to replace the vegetation removed to facilitate the tunnel construction.
- Planting and subsequent presence of several blocks of native trees along parts of the northern and southern boundaries to compensate the loss of internal hedgerows and associated mature trees.
- The changes to the landform within the extraction area, including emerging visibility of the upper sections of the northern and eastern quarry faces.
- The restoration of the existing quarry and proposed extension area to a natural habitat. Within the extension area, this entails covering the upper quarry benches with overburden material and leaving them for natural regeneration, as well as leaving the quarry void to naturally fill with water, thereby creating a large water body. Also, all existing external boundary vegetation and native tree and shrub planting blocks will be retained.

13.93 It should be noted that lighting within the application area will be restricted to mobile lighting on the machinery used for the loading of material within the proposed extension area, prior

to be transported to the existing quarry facilities for processing. All lighting would only be in used for wintertime operations, when darkness has fallen, within the proposed site operating hours, i.e. 07.00 hours to 18.00 hours Monday to Friday and 08.00-14.00 hours Saturday (note: these are the same, as the currently permitted working hours in the existing Breedon quarry). There would therefore be a period where such lighting would be required for up to 2 hours in the morning and up to 2h in the evening, during the height of winter. Night-time light pollution caused by the proposed development would therefore be of brief duration during winter months, which is not considered significant.

Post-Operational Stage

13.94 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. The following element of the proposed development, at the post-operational stage, is most likely to result in landscape & visual effects:

- The permanently changed landform and associated visibility of the quarry faces and waterbody (note: in time the upper benches will become colonised by locally occurring grass and scrub species and the quarry faces will weather, with vegetation colonising crevasses within the faces).

Operational Stage Landscape Effects

Landscape Sensitivity

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

13.96 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 the entire study area is covered by a high value landscape designation, as set out in the Cork County Development Plan. This area is therefore afforded local authority value, for the purpose of the sensitivity assessment.

13.97 The individual tillage field and hedgerows landscape receptor is afforded a lower value, i.e. at a community level, due to its lack of natural or cultural heritage value, distinctiveness or strong perceptual values.

13.98 The susceptibility of each of the sensitive landscape receptors is assessed in **Table 13-1**. This is combined with the previously assessed value and a judgement of the overall sensitivity provided.

Table 13-1: Sensitivity of Landscape Receptors

Landscape Receptors	Value	Susceptibility	Overall Sensitivity
Individual Elements			
Tillage fields and hedgerows	COMMUNITY	HIGH The susceptibility of the affected tillage fields and associated hedgerows / trees is high, as they would be removed.	MEDIUM

Landscape Receptors	Value	Susceptibility	Overall Sensitivity
Overall Character			
Rural sections of LCT 1	LOCAL AUTHORITY	MEDIUM LCT 1 has been evaluated in the Draft Landscape Strategy as being part of “<i>extra vulnerable landscapes (for example, seascape area with national importance) likely to be fragile and susceptible to change</i>” However, considering the type of development proposed, i.e. rock extraction within an area with limited visibility and comprising an extension to an established quarry development, it is judged that this landscape receptor has some ability to accommodate this development without transformational change.	MEDIUM

Magnitude of Landscape Change

13.99 **Table 13-2** describes the size & 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 13-2: Magnitude of Landscape Change

Visual Receptors	Factors	Magnitude of Change
Individual Elements		
Tillage fields and hedgerows	Size & Scale: MEDIUM Geographical Extent: SMALL Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The proposed development would result in the loss of five agricultural fields and the associated internal hedgerows, which are not distinctive elements in the surrounding largely agricultural landscape. All existing hedgerows / treelines along the external boundaries will be retained. While the landcover and landform will change and which will become locally more prominent, the overall composition / balance of agricultural fields / hedgerows in the local landscape will not be changed. The changes will be focused on the site and its immediate surrounding, for a long-term duration (37 years) and are theoretically reversible (by backfilling), although this is not anticipated. The site would be restored to a natural habitat, which will be of a greater biodiversity value than the current land use.	MEDIUM
Overall Character		
Rural sections of LCT 1	Size & Scale: SMALL Geographical Extent: SMALL Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The proposed development would not result in the introduction of new elements into the farmland landscape within the	SLIGHT

Visual Receptors	Factors	Magnitude of Change
	study area, considering it will form an extension to an existing quarry. Due to this proximity to the existing quarry and limited visibility of the development, the overall composition / balance of the landscape will not be changed. The changes are mostly focused on the site itself and affect a small proportion of the wider landscape receptor. The changes will be focused on the site and its immediate surrounding, for a long-term duration (37 years) and are theoretically reversible (by backfilling), although this is not anticipated. The site would be restored to a natural habitat (which will be of a greater biodiversity value than the current land use).	

Assessment of Landscape Effects and Significance

13.100 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, is provided in **Table 13-3** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral).

Table 13-3: Assessment of Landscape Effects

Landscape Receptor	Sensitivity	Magnitude	Landscape Effects	Nature of Effect
Individual Elements				
Tillage fields and hedgerows	MEDIUM	MEDIUM	MODERATE	Negative
Overall Character				
Rural sections of LCT 1	MEDIUM	SLIGHT	MODERATE / MINOR	Negative

13.101 **None of these landscape effects, including the moderate effects, are assessed to be significant.**

Post – Operational Stage Landscape Effects

13.102 At the post-operational stage, the site will have been restored to a natural habitat. All existing vegetation will have been retained, the upper quarry benches left for natural regeneration and the quarry void filled with water. As mentioned, over time the upper benches will become colonised by locally occurring grass and scrub species and the quarry faces will weather, with vegetation colonising crevasses within the faces. Therefore, the site will increasingly merge with the surrounding landscape, in particular existing woodland areas / shelterbelts / scrub areas. Subsequently, the landscape effects will reduce, despite the permanent changes to the landform. As a result, the effects on all landscape receptors would reduce to **MINOR** and would move towards becoming neutral.

Operational Stage Visual Effects

Visual Receptor Sensitivity

13.103 The value placed on each of the types of visual receptors identified above is described in **Table 13-4** 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 13-4: Sensitivity of Visual Receptors

Visual Receptors	Value	Susceptibility	Overall Sensitivity
Residents			
Residential receptors along the southern shore of the Great Island Channel and in the townland of Killahora, represented by Viewpoints C & F	MEDIUM (Views locally designated as part of Scenic Routes S42 & S52)	HIGH (Susceptible to changes in views, particularly from gardens and living rooms)	HIGH
All other residential receptors identified, represented by Viewpoints D	LOW (No designated or locally promoted views)	HIGH (Susceptible to changes in views, particularly from gardens and living rooms)	MEDIUM
Vehicle Users			
Sections of the local roads along the southern shore of the Great Island Channel and in the townland of Killahora, represented by Viewpoints C & F	MEDIUM (Views locally designated as part of Scenic Routes S42 & S52)	MEDIUM (While not locally promoted, travellers along these roads are likely to have some focus on views)	MEDIUM
All other sections of road identified, represented by Viewpoints A & D	LOW (No designated or locally promoted views)	LOW (Unlikely to be focused on views)	LOW

Magnitude of Visual Change

13.104 **Table 13-5** describes the size & 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 13-5: Magnitude of Visual Change

Visual Receptors	Factors	Magnitude of Change
Vehicle Users only		
Local private road along the western site boundary (Viewpoint A)	Size & Scale: SMALL Geographical Extent: NEGLIGIBLE Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The initial stripping of soil and overburden will be temporarily visible through gaps in the roadside vegetations. These activities will have a similar appearance to the agricultural works regularly carried out within the fields. The material will then be used to construct a screening berm along the western boundary of the extraction area, which will screen any further extraction activities. While the screening berm itself will become visible beyond the roadside vegetation and block views into the neighbouring fields, this will be a small change, due to the already limited visibility into the field and since the berm will have a linear appearance similar to the linear road corridor and roadside vegetation visible in these views. Overall, the changes to the views will be perceptible, but only partially alter the composition of views. The views would be experienced intermittently from a very limited section of this local private road, which is only accessed by people working in the existing quarry, people using the East Cork Civic Amenity Site and a limited amount of people living / working on Brick Island. The changes within the site would be visible for the duration of the operational stage.	SLIGHT
Residents and Vehicle Users		
Four properties and 1 km along the local road along the southern shore of the Great Island Channel (Viewpoint C)	Size & Scale: SMALL Geographical Extent: SMALL Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The initial stripping of soil and overburden and associated removal of internal hedgerows / trees will be temporarily visible within a narrow band in the midground of views. These activities will have a similar appearance to the agricultural works regularly carried out within the fields. Much of the tree removal will be difficult to discern, due to the partial backdrop of other trees, which will be retained. The soil stripping will be followed by the initial stages of the rock extraction activities, prior to these being taken to a lower level, where any further works will be fully screened by topography. A narrow section of the northern / eastern upper quarry face will be revealed within the narrow strip visible of the site. Overall, the changes to the views will be perceptible, but only partially alter the composition of views. The views would be experienced by a small number of residential receptors and from a limited section of this local road, which is infrequently used, due to its remote location. While the active stripping and extraction works will be visible for a limited time only, the narrow quarry face would remain visible for the duration of the operational stage.	SLIGHT (note: the long-term duration has very limited influence on the small scale)

Visual Receptors	Factors	Magnitude of Change
Up to 12 properties and ca. 1.2 km along three local roads on the northern slopes of Great Island (Viewpoint D)	Size & Scale: SMALL Geographical Extent: SMALL Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The initial stripping of soil and overburden and associated removal of internal hedgerows / trees will be temporarily visible within a narrow band in the midground of views, above and through gaps in the treeline along the western boundary, which will be retained. These activities will have a similar appearance to the agricultural works regularly carried out within the fields. Some of the material will be used to construct a screening berm along the western site boundary, which will provide some additional screening. The soil stripping will be followed by the initial stages of the rock extraction activities, prior to these being taken to a lower level, where any further works will be fully screened by topography. A narrow section of the northern / eastern upper quarry face will be revealed within the narrow strip visible of the site. This will form an extension to the existing quarry visible to the front of the extension site and will slightly increase the overall height of quarry faces visible in these views, which will however remain narrow, in the context of the wide panoramic views. Overall, the changes to the views will be perceptible, but only partially alter the composition of views. The views would be experienced by a small number of residential receptors and from limited sections of three local road, which are likely to be used by the local residents only. While the active stripping and extraction works will be visible for a limited time only, the narrow quarry face would remain visible for the duration of the operational stage.	SLIGHT (note: the long-term duration has very limited influence on the small scale)
Ca. 20-25 properties and ca. 1 km section of local road, 4.2-5.2 km north-west of site (Viewpoint F)	Size & Scale: NEGLIGIBLE Geographical Extent: MEDIUM Duration / Reversibility: LONG-TERM – REVERSIBLE Notes: The initial stripping of soil and overburden and subsequent rock extraction activities will be barely perceptible in the views from this area, due to the distance and partial screening of the application area from boundary vegetation. Also considering the minute portion of the panoramic views occupied by the application area, the composition of these views will be barely altered. The views would be experienced by a medium number of residential receptors and from a limited section of a local road, which are likely to be used by the many local residents. The changes will be visible for the duration of the operational stage.	SLIGHT / NEGLIGIBLE (note the medium geographic extent and long-term duration have limited influence on the negligible scale)

Assessment of Visual Effects and Significance

- 13.105 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 13-6** below. The assessment also includes a judgment of the nature of the effect (i.e. negative/positive/neutral).

Table 13-6: Assessment of Visual Effects

Visual Receptor	Sensitivity	Magnitude	Visual Effects	Nature of Effect
Residents				
Four properties along southern shore of the Great Island Channel (Viewpoint C)	HIGH	SLIGHT	MODERATE	Negative
Up to 12 properties on the northern slopes of Great Island (Viewpoint D)	MEDIUM	SLIGHT	MODERATE / MINOR	Negative
Ca. 20-25 properties 4.2-5.2 km north-west of site (Viewpoint F)	HIGH	SLIGHT / NEGLIGIBLE	MODERATE	Negative
Vehicle Users				
Local private road along the western site boundary (Viewpoint A)	LOW	SLIGHT	MINOR	Negative
1 km along the local road along the southern shore of the Great Island Channel (Viewpoint C)	MEDIUM	SLIGHT	MODERATE / MINOR	Negative
Ca. 1.2 km along three local roads on the northern slopes of Great Island (Viewpoint D)	LOW	SLIGHT	MINOR	Negative
Ca. 20-25 properties 4.2-5.2 km north-west of site (Viewpoint F)	MEDIUM	SLIGHT / NEGLIGIBLE	MINOR	Negative

13.106 None of these visual effects, including the moderate effects, are assessed to be significant.

Post-Operational Stage Visual Effects

13.107 At the post-operational stage, the site will have been restored to a natural habitat. All existing vegetation will have been retained, the upper quarry benches left for natural regeneration and the quarry void filled with water. As mentioned, over time the upper benches will become colonised by locally occurring grass and scrub species and the quarry faces will weather, with vegetation colonising crevasses within the faces. Therefore, the site will increasingly integrate into the available views. Subsequently, the visual effects will reduce for all visual receptors to **MINOR / NEGLIGIBLE** and would move towards becoming neutral.

Direct/Indirect Effects

13.108 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 landscape surrounding the application area.

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Compliance with relevant Planning Policies

Mineral Extraction

- 13.109 The above impact assessment demonstrates that the landscape and visual effects, due to the proposed development would range from moderate to minor for the landscape and visual receptors that were identified. This is due to the fact that the proposed development will form an extension to the existing Breedon quarry at Rossmore, will be largely screened by intervening vegetation and topography and only visible as a small element in the limited views of the site that are available.
- 13.110 It is therefore considered that the rural, scenic and residential amenities of the local area are protected, as proposed in section 8.17 of the current Cork CDP.

Green Infrastructure and Development

- 13.111 A Landscape and Restoration Plan was prepared for the proposed development and can be found in Chapter 2 of this EIAR (refer to Figure 2-4). This contains information on the existing vegetation/habitats to be retained and the proposed restoration of the site to a natural habitat. It further contains information on proposed native tree and shrub planting in a number of locations along the site boundaries. This would compensate the removal of internal hedgerows and associated trees, which will be required to facilitate the development. This planting will also increase the biodiversity levels on site and provide additional habitat linkage.
- 13.112 It is considered that the Landscape and Restoration Plan meets the requirements of and therefore would be in compliance with Objective GI 14-3 contained in the current Cork CDP.

Landscape Character Assessment of County Cork

- 13.113 The above landscape and visual impact assessment had regard to the Cork County Draft Landscape Strategy and has concluded that the landscape and visual effects, due to the proposed development on the whole would be moderate or less. No skylines or ridgelines would be affected by the proposed development. While some hedgerows and associated trees will need to be removed to facilitate the proposed extraction area, the external hedgerows / treelines will be retained. Also, the loss would be compensated by the planting of several blocks of native trees and an area of native shrubs, both made up from a diverse mix of species.
- 13.114 In light of the above, it is considered that the proposed development is in compliance with Objective GI 14-9 and Objective GI 14-10 contained in the current Cork CDP.

Landscape Views and Prospects

- 13.115 As illustrated by **Viewpoints C & D** on **Figure 13-4**, there will be small changes to a limited number of views of the Great Island Channel, due to the proposed development. This includes views from a short section of Scenic Route S52. Overall, the character of these views will be preserved.
- 13.116 **Viewpoint F** on **Figure 13-5** illustrates that the changes in views from a short section of Scenic Route S42 will be barely noticeable, preserving the character of the views from this scenic route.

- 13.117 It is considered that the proposed development is therefore in compliance with Objective GI 14-12, Objective GI 14-13 and Objective GI 14-14 contained in the current Cork CDP.

Unplanned Events (i.e. Accidents)

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

Cumulative / Synergistic Impacts

- 13.119 The proposed development was assessed in the context of the existing quarry developments in the local area, which have become established elements in the local area. The cumulative landscape and visual effects of the existing and proposed quarry development are not considered significant. No other existing / permitted developments, or developments currently in the planning process were identified, that would have the potential for significant cumulative landscape or visual impacts.

Transboundary Impacts

- 13.120 The proposed application area is not located in the vicinity of a national boundary. Therefore, transboundary landscape or visual impacts would not arise.

Interaction with Other Impacts

- 13.121 There are no anticipated interactions with other environmental effects.

‘Do-nothing Scenario’

- 13.122 If no extraction works within the proposed extraction area were to take place, the agricultural fields would continue to be used for such purposes for the foreseeable future, resulting in no landscape or visual effects and the mineral resource remaining in-situ.

MITIGATION MEASURES

Operational Stage

- 13.123 The substantial screening provided by topography and from vegetation along the site boundaries and in the wider landscape, as well as the proximity to the existing quarry development, are the main mitigating factors minimising the landscape and visual impacts associated with the proposed development.
- 13.124 This combined with the landscape and restoration proposals, including native tree and shrub planting along parts of the site boundaries, as well as the restoration of the extraction area to a natural habitat will help the integration of the site into the local landscape and further reduce its visibility. No additional landscape or visual mitigation measures are therefore considered necessary during the operational stage. Please refer to **Figure 2-4**, the Landscape and Restoration Plan, provided in Chapter 2 of this EIAR, for the landscape/restoration proposals, and planning application drawing PL07 for planting schedule.

Post-Operational Stage

- 13.125 During the post-operational stage, the external boundary vegetation, and native tree planting areas, which will be retained, will continue to provide screening. Also, the upper quarry benches and crevasses in the quarry faces would become colonised by locally occurring grass and scrub, increasingly integrating the site into the surrounding landscape. Additional landscape or visual mitigation measures at the post-operational stage are therefore not considered necessary.

RESIDUAL IMPACT ASSESSMENT

Operational Stage

- 13.126 As no additional mitigation measures are required during the operational stage, the residual levels of landscape and visual effects would be as per the assessment above. In summary, the assessment has found that the proposed development would have moderate and moderate/minor effects on the sensitive landscape receptors identified, during the operational stage (i.e. levels of impact not considered to be significant).
- 13.127 The visual effects on views would range from none for the vast majority of locations within the study area, to moderate or less for the residential receptors identified and moderate / minor or less for the vehicle users with views towards the application area (i.e. impacts not considered to be significant).

Post-Operational Stage

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

MONITORING

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

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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

The Landscape Institute (2024) Technical Guidance Note LITGN-2024-01 Published August 2024: Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVLIA3)

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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:
1. Extract from Ordnance Survey 1:50,000 Discovery Series Mapping - Map No. 80, 81 & 87

Legend:

Land ownership boundary

Application area

Viewpoint locations

Distance from proposed extraction area

Landscape baseline

Scenic routes
(Cork County Development Plan 2022-2028)

Special Protection Areas
(SPA)

Special Area of Conservation
(SAC)

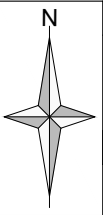
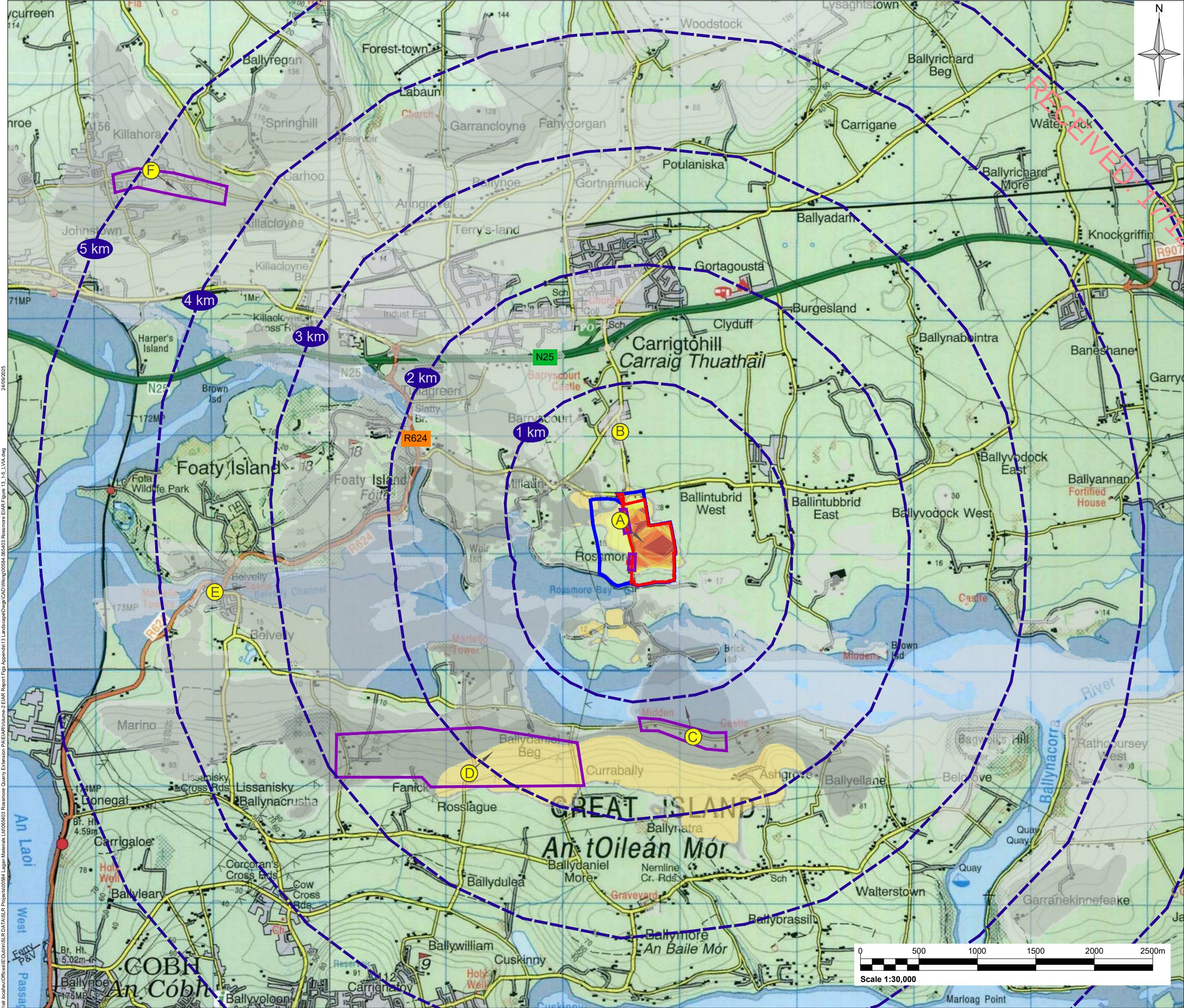
Proposed Natural Heritage Areas
(pNHA)

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 SLR Consulting Ireland 7 Dundrum Business Park, Windy Arbour, Dublin, Ireland, D14 N2Y7					
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Client Breedon Materials Ltd					
Project Rossmore Quarry, Co. Cork Extension of Existing Quarry					
Figure Title Landscape Baseline and Viewpoint Locations					
Scale 1:25,000 @ A3		SLR Project No. 00584.065403			
Designed CN	Drawn CN	Checked AM	Authorised AM		
Date 09/25	Date 09/25	Date 09/25	Date 09/25		
Figure Number Figure 13-1					Rev. 0

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Scale 1:25,000

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24/09/2025



Notes:

1. Extract from Ordnance Survey 1:50,000 Discovery Series Mapping - Map No. 80, 81 & 87

Legend:

Applicants land interest area

Planning application area**Vertical subtended angles visible (of the proposed extension extraction area)**

Note: Vegetation cover and built structures were not taken into account, as part of the calculation of this ZTV, which therefore represents the worst-case-scenario. In SLR's experience, views from areas in grey (i.e. less than 0.4 degrees) tend to be screened by hedgerows and other intervening vegetation, if locally present. Please refer to Appendix 13-B of the EIAR for the ZTV methodology.

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Scale 1:30,000 @ A3		SLR Project No. 00584.065403			
Designed SH	Drawn SH	Checked AM	Authorised AM		
Date 09/25	Date 09/25	Date 09/25	Date 09/25		
Figure Number Figure 13-2					Rev. 0



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VIEWPOINT A: Local road in the townland of Rossmore along the western boundary of the application area.

Grid Reference (ITM): **582504:571272**

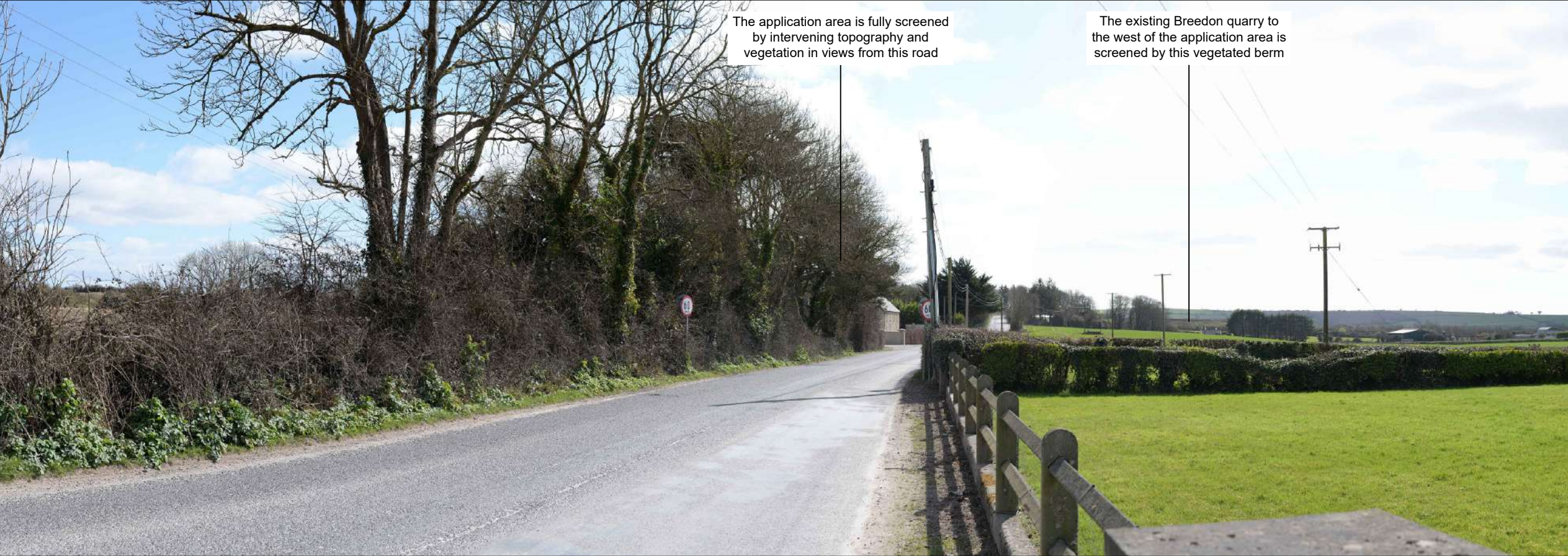
Approximate Elevation: **20m AOD**

Distance from application area boundary: **5m**

Direction of View: **South-east**

Date and Time of Photography: **12/03/2025 at 13:00**

Description: This viewpoint represents some glimpsed views into the proposed extension site from the local road along its western boundary. The treeline and dense understorey along this road blocks views from most locations, in particular during the summer months, when trees are in leaf. However there are a numbe of access points into the neighbouring fields, where views of parts of the site are available. The initial stripping of soil and overburden will be visible in those views. The material will be used to construct screening berms along the western boundary (to the back of the treeline), which will screen views of any further extraction activities. Some of the trees visible to the back of the field will have to be removed to facilitate the development. There are no residetal properties along this road.



VIEWPOINT B: Local Road in the townland of Barryscourt, approximately 460m north of the application area.

Grid Reference (ITM): **582449:572023**

Approximate Elevation: **20m AOD**

Distance from application area boundary: **460m**

Direction of View: **South**

Date and Time of Photography: **12/03/2025 at 13:15**

Description: Neither the existing Breedon Quarry, nor the proposed extension site are visible from this road or in views from locations to the north in general, due to intervening vegetation and topography.

Notes:

- Extract From Ordnance Survey 1:50,000 Discovery Series Mapping - Map No. 80, 81 & 87

Legend:

- Land ownership boundary
- Application area
- Viewpoint locations
- Distance from proposed extraction area

Viewpoint location map (1:50,000 @ A3)



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Client
Breedon Materials Ltd

Project
**Rossmore Quarry, Co. Cork
Extension of Existing Quarry**

Figure Title
Viewpoints A & B

Scale N/A @ A3	SLR Project No. 00584.065403
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Date 09/25	Date 09/25	Date 09/25	Date 09/25
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Figure Number Figure 13-3	Rev. 0
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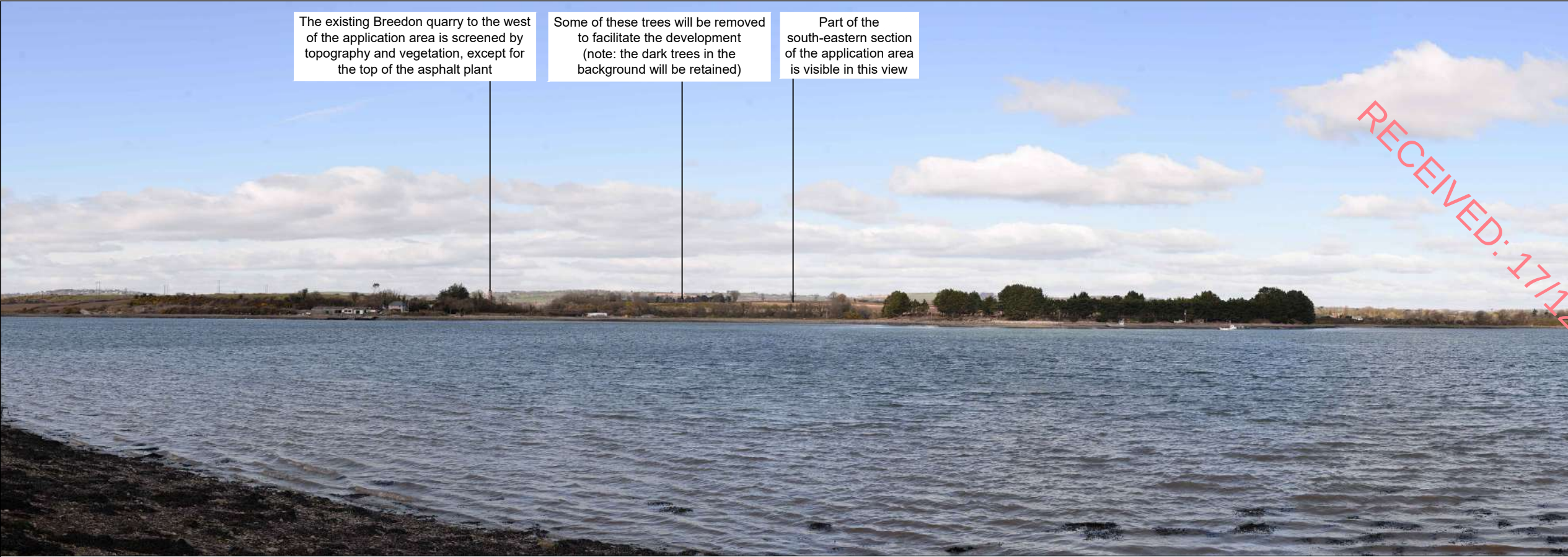
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The existing Breedon quarry to the west of the application area is screened by topography and vegetation, except for the top of the asphalt plant

Some of these trees will be removed to facilitate the development (note: the dark trees in the background will be retained)

Part of the south-eastern section of the application area is visible in this view



VIEWPOINT C: Local road in the townland of Currabally, on the northern shore of Great Island, along Scenic Route 52.

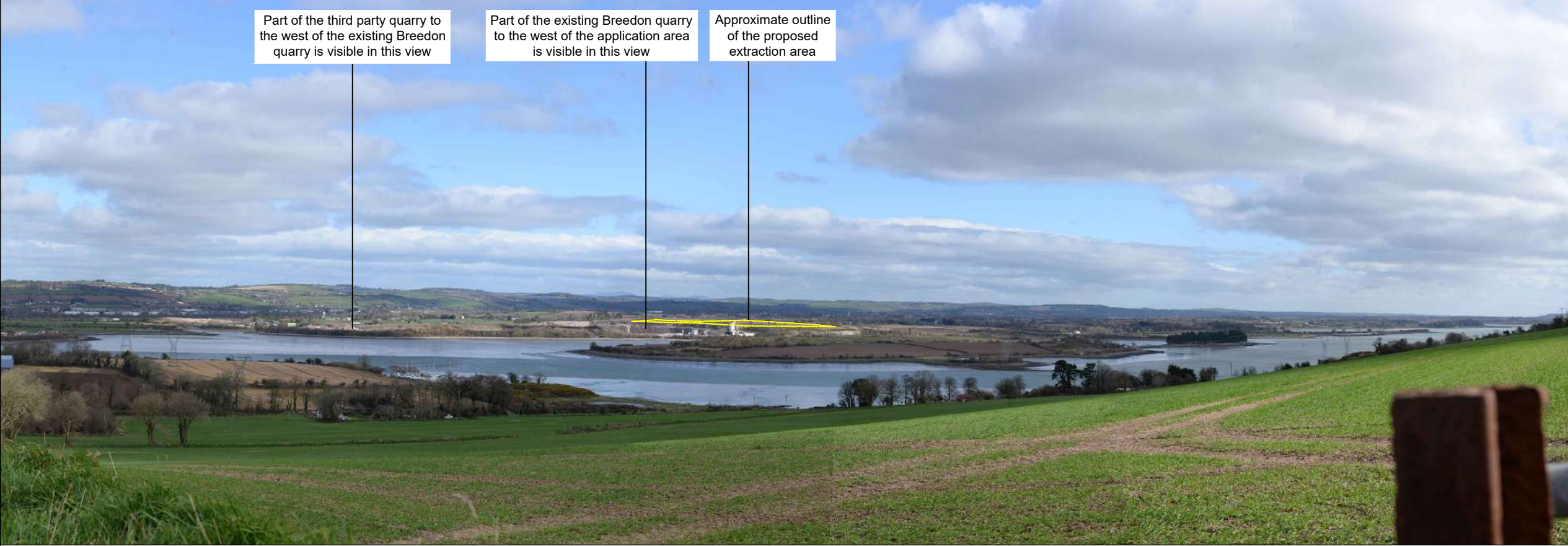
Grid Reference (ITM): **583034:569549** Approximate Elevation: **5m AOD** Distance from application area boundary: **1,250m** Direction of View: **North** Date and Time of Photography: **12/03/2025 at 13:35**

Description: This viewpoint represents views from an approximately 1 km long section of the local road along the northern shore of Great Island, as well as four adjoining residential properties. In this area the south-eastern, slightly sloping, section of the application area is visible as a narrow band in the midground of the available views. The south-western and northern sections of the site are not visible, as these have a more level topography. The initial stripping of topsoil, overburden and the associated removal of internal hedgerows and trees will be intermittently visible in these views This will be followed by the initial stages of the extraction activities, prior to these being taken to a lower level, where any further works will be screened by topography. A narrow section of the back face will be revealed, but this will be difficult to discern, owing to its narrowness. None of the residential properties on the peninsula south of Rossmore Bay (one of which is visible facing this view) will experience views of the proposed development.

Part of the third party quarry to the west of the existing Breedon quarry is visible in this view

Part of the existing Breedon quarry to the west of the application area is visible in this view

Approximate outline of the proposed extraction area



VIEWPOINT D: Local road in the townland of Rosslague, close to the highest point along this road.

Grid Reference (ITM): **581206:569223** Approximate Elevation: **60m AOD** Distance from application area boundary: **2,100m** Direction of View: **North-east** Date and Time of Photography: **12/03/2025 at 10:40**

Description: This viewpoint represents intermittent views from short sections of three local roads on the northern slopes of Great Island (ca. 1.2 km in total), as well as ca. 12 residential properties along the two western roads. The existing Breedon quarry at Rossmore is partially visible in the midground of these views. The proposed extension site is partially visible to its back, as a narrow band. The treeline along the western boundary of the application area provides partial screening, more so during the summer months, when trees are in leaf. Similar to Viewpoint C, the initial stripping of topsoil, overburden and the associated removal of internal hedgerows and trees will be intermittently visible in these views This will be followed by the initial stages of the extraction activities, prior to these being taken to a lower level, where any further works will be screened by topography. A narrow section of the back face will be revealed, but this will be difficult to discern, owing to its narrowness. A proposed screening berm along the western boundary of the extraction area and native tree planting along the southern and at the northern end of the western boundary will provide some additional screening, when in place / maturing.

Notes:

- Extract From Ordnance Survey 1:50,000 Discovery Series Mapping - Map No. 80, 81 & 87

Legend:

Land ownership boundary

Application area

A

Viewpoint locations

2 km

Distance from proposed extraction area

Viewpoint location map (1:50,000 @ A3)

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Project Rossmore Quarry, Co. Cork Extension of Existing Quarry					
Figure Title Viewpoints C & D					
Scale N/A @ A3		SLR Project No. 00584.065403			
Designed CN	Drawn CN	Checked AM	Authorised AM		
Date 09/25	Date 09/25	Date 09/25	Date 09/25		
Figure Number Figure 13-4					Rev. 0

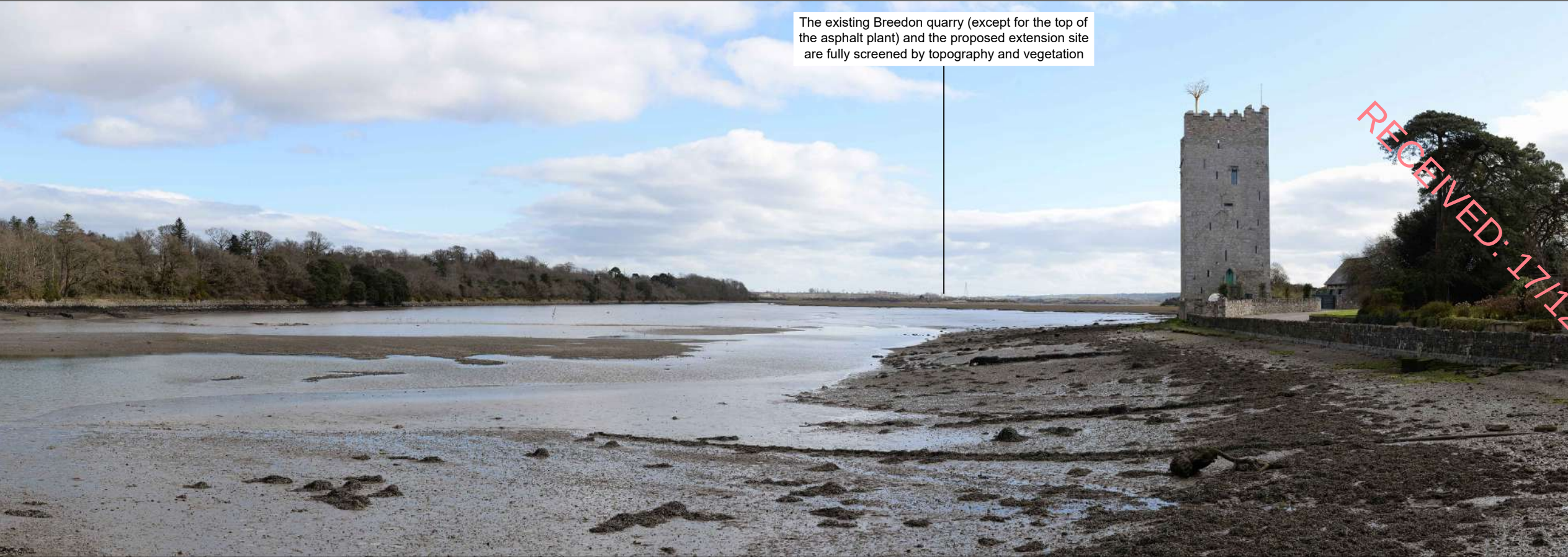
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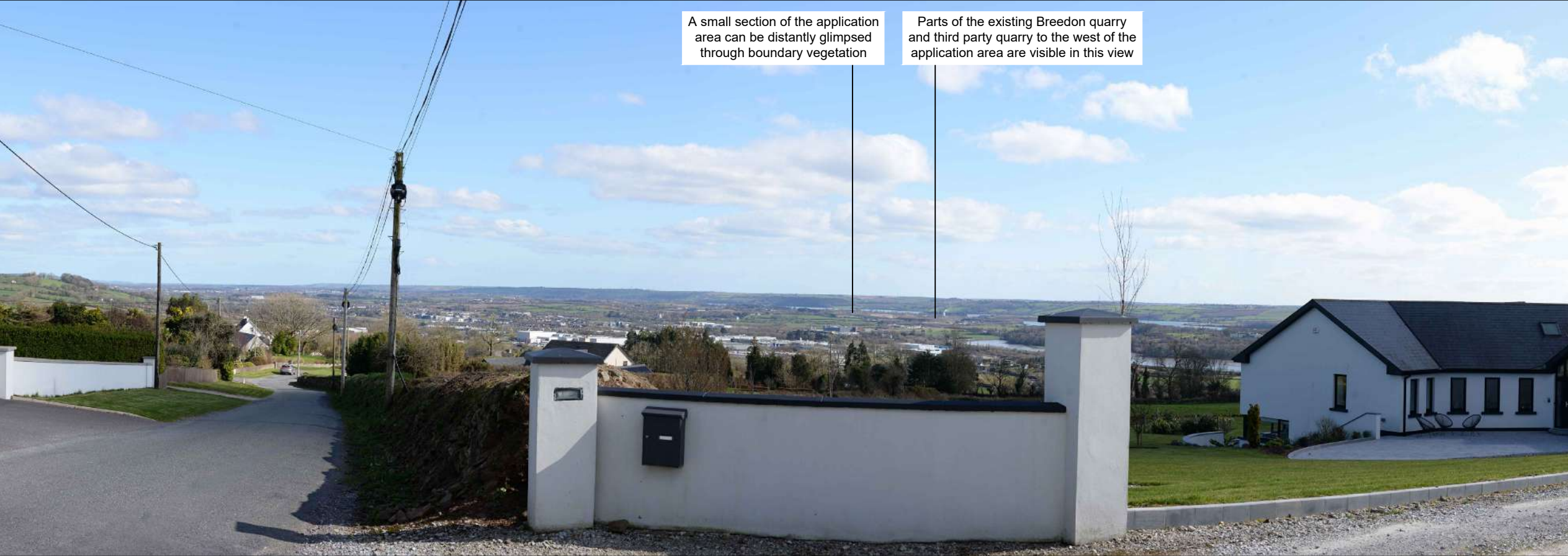


The existing Breedon quarry (except for the top of the asphalt plant) and the proposed extension site are fully screened by topography and vegetation

Viewpoint E: R624 - Regional Road, at the southern end of Belvelly Bridge

Grid Reference (ITM): **579048:570737** Approximate Elevation: **5m AOD** Distance from application area boundary: **3,500m** Direction of View: **East** Date and Time of Photography: **12/03/2025 at 10:55**

Description: This viewpoint represents views from the section of the R624 around Fota Island and over Belvelly Bridge, as well as the local road to the east of the southern end of the bridge. While the top of the asphalt plant within the existing Breedon quarry at Rossmore is visible in some views from these sections of road, the remainder of the existing quarry and the proposed application area are fully screened by topography and vegetation. None of the proposed development will become visible.



A small section of the application area can be distantly glimpsed through boundary vegetation

Parts of the existing Breedon quarry and third party quarry to the west of the application area are visible in this view

Viewpoint F: Local road in the townland of Killahora, along Scenic Route 42.

Grid Reference (ITM): **578467:574275** Approximate Elevation: **125m AOD** Distance from application area boundary: **4,800m** Direction of View: **South-east** Date and Time of Photography: **12/03/2025 at 14:05**

Description: This viewpoint represents intermittent views from a ca. 1 km long stretch of the local road to the east of the crossroads in the townland of Killahora, as well as 20-25 residential properties along this section of road, with south-east facing views. The existing Breedon quarry at Rossmore is distantly and partially visible in views from this area. A small section of the application area is visible to its back, although difficult to discern at this distance, even more so when the trees along its western boundary are in leaf. Some of the soil stripping and initial extraction activities will be visible in these views. However, these will also be very difficult to discern due to the distance and considering the minute portion of the generally panoramic views they occupy.

Notes:
1. Extract From Ordnance Survey 1:50,000 Discovery Series Mapping - Map No. 80, 81 & 87

Legend:

Land ownership boundary

Application area

A

Viewpoint locations

2 km

Distance from proposed extraction area

Viewpoint location map (1:75,000 @ A3)

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Figure Title Viewpoints E & F					
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Designed CN	Drawn CN	Checked AM	Authorised AM		
Date 09/25	Date 09/25	Date 09/25	Date 09/25		
Figure Number Figure 13-5					Rev. 0

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APPENDICES

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). GLVIA3¹ (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 considers 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.

“*Notes and Clarifications on aspects of GLVIA3*” (Landscape Institute Technical Guidance Note 2024/01, published August 2024) makes it clear at section 2.0 that Townscape and Seascape assessments should follow the same process as LVIA, and therefore also follow the guidance in GLVIA3.

As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there is 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. LI TGN 2024/01 notes at section 3(7) that the assessment of the level of effect and the nature of effect should be independent of each other.

Landscape and visual effects can result directly from the development itself (direct effects), or may be indirect changes (which are not a direct result of the development but occur as a result of a more complex pathway, such as changes to drainage patterns or perceptual changes further from the proposed development).

¹ Landscape Institute and Institute of Environmental Management and Assessment ‘Guidelines for Landscape and Visual Impact Assessment’ (Third Edition, April 2013)

Landscape and visual effects can also be cumulative, which are the additional changes caused by a proposed development in conjunction with other developments, particularly those which are recently consented or which have been applied for.

In LVIA's which form part of an EIA, it is necessary to identify significant and non-significant effects. In non-EIA LVIA's, 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).

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 characteristics (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 or remove 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 in the case of National Parks the opportunities they offer for outdoor recreation). Consideration should be given to their settings ² 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.	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.

² LI TGN 2024/01 states at section 5(13) that the setting of protected landscapes is “generally created in policy and is not a designation (or a receptor) in its own right (unlike the settings of heritage assets). The extent of the setting of a designated landscape for LVIA purposes is not geographically defined and will vary with the nature of the development proposed. In LVIA, the question would remain whether the changes in the setting (i.e the landscape nearby but outside the designated area) would affect the designated landscape in terms of effects on its special qualities and, if so, to what degree”.

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.

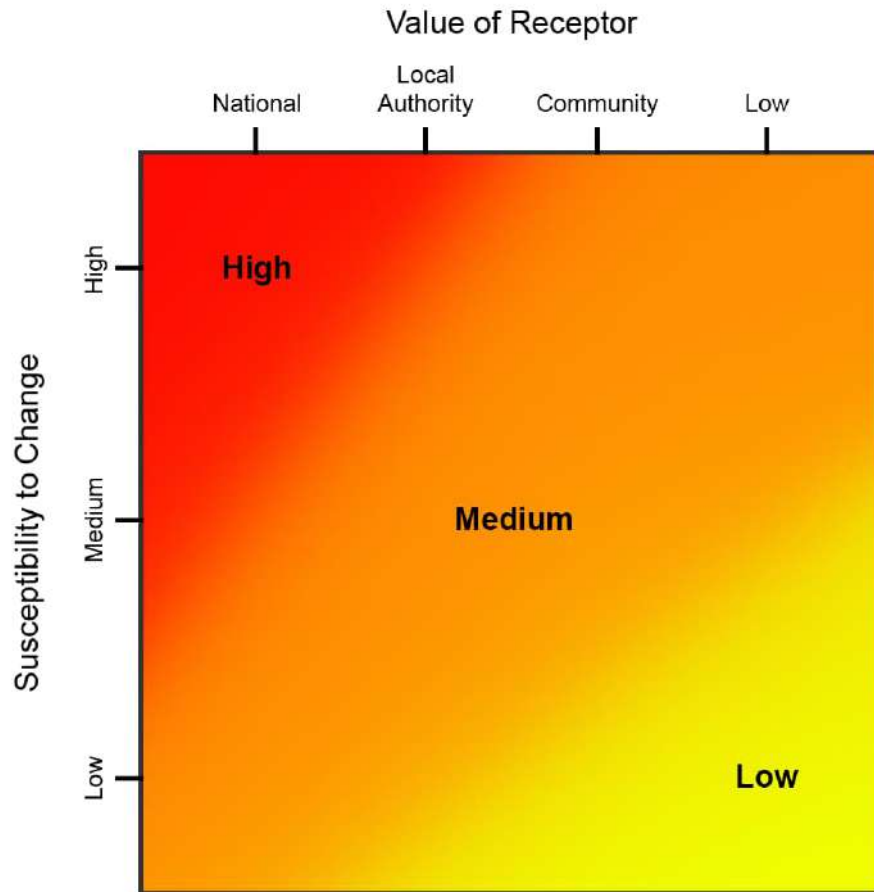
Defining Sensitivity

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: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors



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

Susceptibility	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.
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. LI TGN 2024/01 states at section 3(3) that *"it is likely that size/scale of effect will be the most important factor, with geographical extent and duration/reversibility considered as 'modifiers'"*.

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.
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, or affects a large proportion of the landscape receptor.
Medium extent of landscape change	Landscape change extends beyond the site boundaries or affects a medium proportion of the landscape receptor.
Small extent of landscape change	Change affecting a localised area, often focused on the site itself, or affects a small proportion of the landscape receptor.
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).

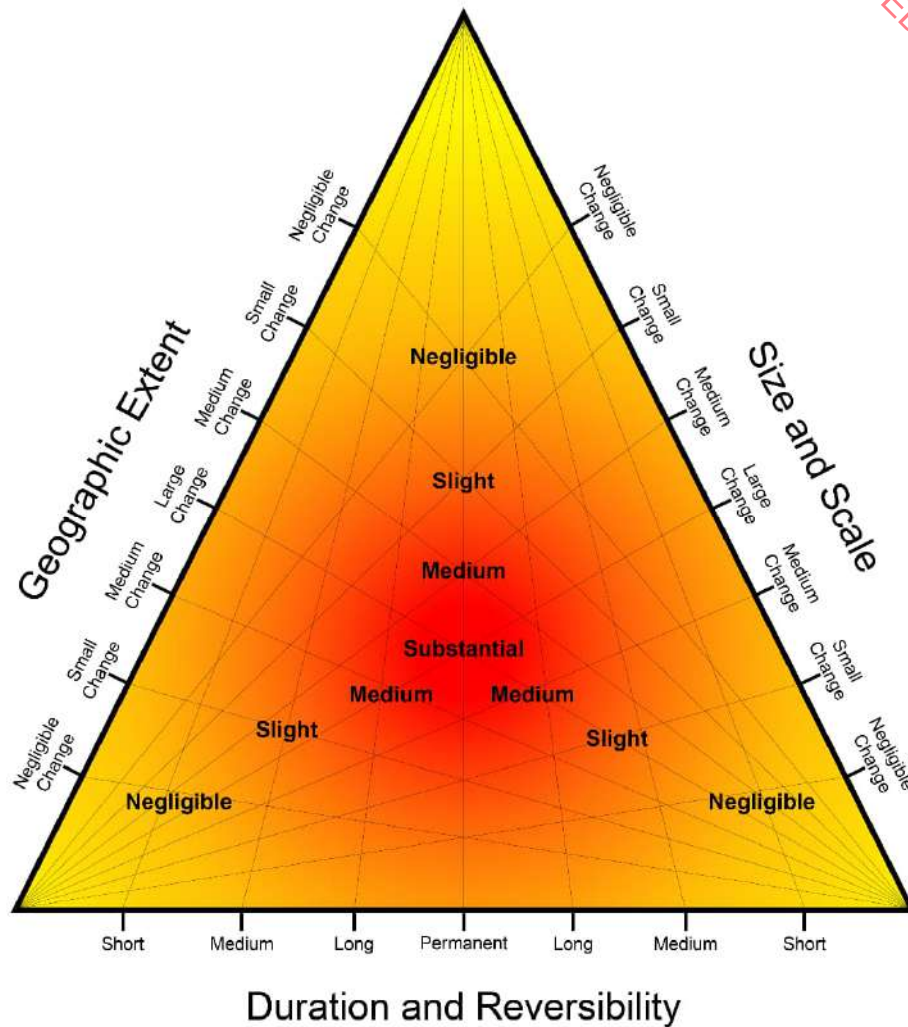
Table 13A-7: Magnitude of Landscape Change: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Effects that will last for over 60 years and is deemed irreversible.
Long-term reversible	Effects that will last between 15 and 60 years and are theoretically reversible.
Medium-term reversible	Effects that will last between 7 and 15 years and are wholly or partially reversible.
Temporary/ Short-term reversible	Effects that will last from 0 to 7 years and is reversible likely to include 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

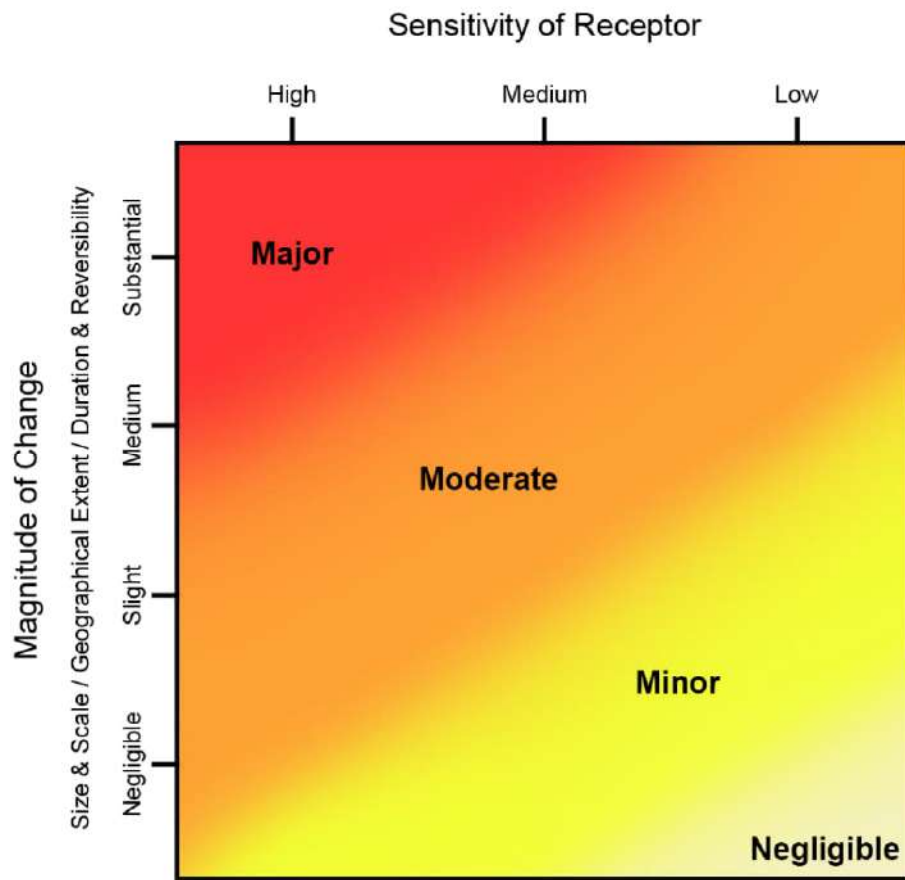


Assessment of Landscape Effects

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.

Major and Major/Moderate effects are regarded as important planning considerations in landscape and visual appraisals (or significant effects in landscape and visual impact assessments). Moderate effects are not generally considered to be important planning considerations/significant effects, although the assessor may conclude that some moderate effects could constitute significant effects in certain circumstances: for example, there may be a concentration of several moderate effects in one location, or a moderate effect may occur for a particularly sensitive receptor or be of a particularly high magnitude.

Figure 13A-3: Assessment of Landscape Effects



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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;
- 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.

LI TGN 2024/01 states at section 6(1) that visual assessment should focus on the way that communities experience views from public locations. It notes that *“views from houses and individual properties are a matter of private amenity, noting that it is an established planning principle that there is no right to a view”*

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.

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	Description
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.

As LI TGN 2024/01 states at section 6(2), “visual susceptibility is not influenced by the development type, which would be assessed as part of the magnitude of effect”.

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	Description
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.

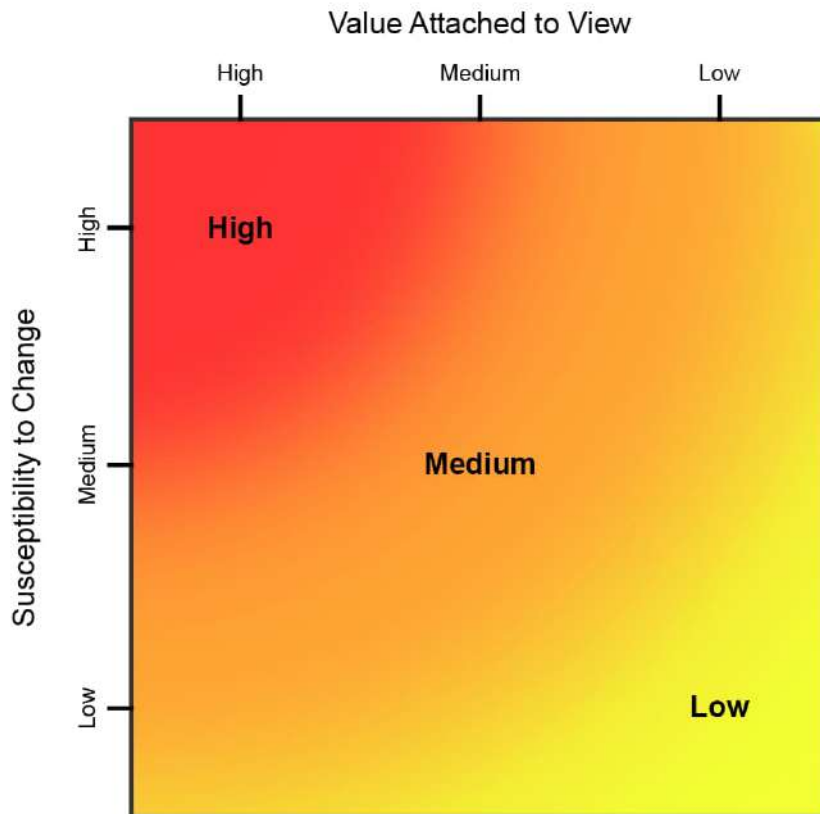
Defining Sensitivity

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.

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. OR The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the medium level.
Medium	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.

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



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

Sensitivity	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.

LI TGN 2024/01 states at section 6(8) that geographic extent should primarily refer to the extent of the viewing area that is affected (for example the length of a footpath or the proportion of a community).

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.

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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

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

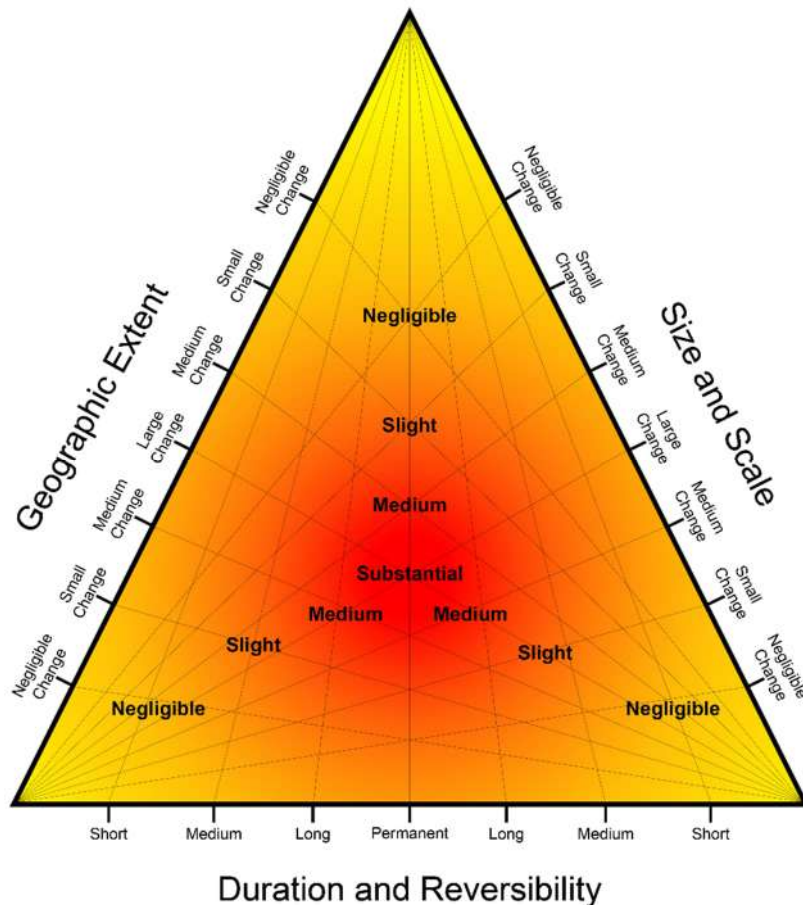
Category	Description
Permanent/ Irreversible	Effects that will last for over 60 years and is deemed irreversible.
Long-term reversible	Effects that will last between 15 and 60 years and are theoretically reversible.
Medium-term reversible	Effects that will last between 7 and 15 years and are wholly or partially reversible.
Temporary / Short-term reversible	Effects that will last from 0 to 7 years and is reversible - likely to include 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.

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



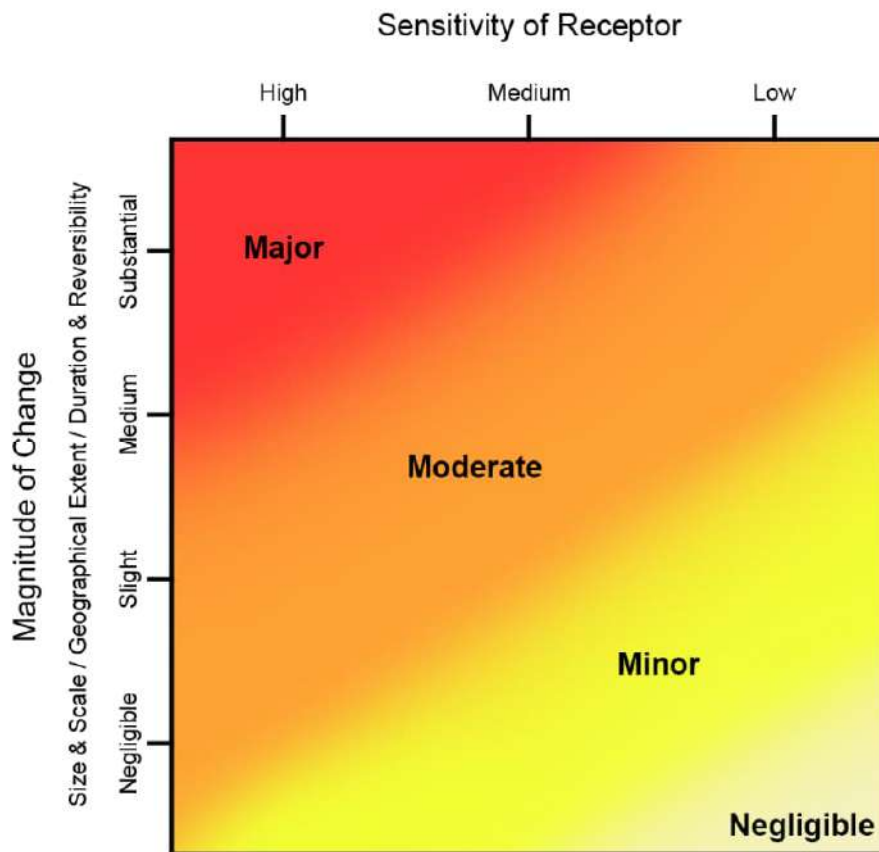
Assessment of Visual Effects and Significance

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.

Major and Major/Moderate effects are regarded as important planning considerations in landscape and visual appraisals (or significant effects in landscape and visual impact assessments). Moderate effects are not generally considered to be important planning considerations/significant effects, although the assessor may conclude that some moderate effects could constitute significant effects in certain circumstances: for example, there may be a concentration of several moderate effects in one location, or a moderate effect may occur for a particularly sensitive receptor or be of a particularly high magnitude.

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Figure 13A-6: Assessment of Visual Effects and Overall Significance

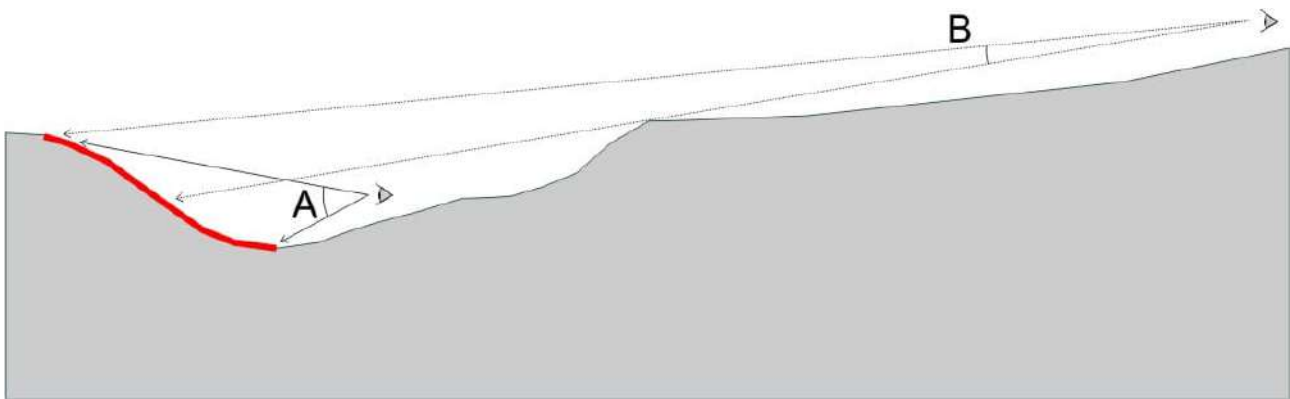


Appendix 13-B – Zone of Theoretical Visibility (ZTV) Methodology

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

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

Figure A:



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

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

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

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

However, the computer generated ZTV study is undertaken using a mostly 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. Some of the existing vegetation along the site boundaries was included in the calculation of the ZTV for the proposed development, reducing the projected theoretical visibility somewhat. However, vegetation in the wider landscape was not included and therefore, it is necessary to carry out fieldwork to validate the results of the ZTV.