



15. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

15.1 Introduction

This Landscape and Visual Impact Assessment (LVIA) has been prepared to accompany an application to extend an existing quarry located in the townland of Clogrennan, Co. Carlow.

This LVIA describes the landscape context of the proposed development and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

- Landscape Impact Assessment (LIA) relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. Visual impacts may occur from; Visual Obstruction (blocking of a view, be it full, partial or intermittent) or; Visual Intrusion (interruption of a view without blocking).

15.1.1 Statement of Authority

This LVIA was prepared by Richard Barker, Divisional Director (Landscape Architect) of Macro Works Ltd of Cherrywood Business Park, Loughlinstown, Dublin 18; a consultancy firm specialising in Landscape and Visual Assessment and associated maps and graphics. Richards' relevant experience includes 20 years of LVIA for a broad range of infrastructural, renewable energy, industrial and commercial projects since 1999, including numerous urban, residential, and mixed-use development projects. He has also assessed numerous quarry projects.

15.1.2 Description of the Subject Site and Existing Quarry

The proposed development will comprise of the following components:

- The site consists of an area of c. 41.86 ha within a total landholding of 45.68 ha, c. 8.66 ha is currently subject to an application for substitute consent under Section 177E of the planning and Development Act 2000 to regularise previous unauthorised development.
- The proposed development will consist of further quarry extraction over an area of 16.17 ha to include pre-existing quarry and additional agricultural lands with a projected lifespan of c. 20 years.
- The proposed development will involve blasting, extraction and processing of rock using mobile primary crushing/ screening and associated plant on the proposed quarry floor.



- The proposed quarry will be extracted over no.4 phases to a depth of 2 no. benches of c. 10m each to quarry depth of c. 300m AOD with a proposed rate of extraction of c. 200k tonnes per annum.
- Permission will include for construction of earthen screening berms, soil storage areas and will utilise existing quarry entrance from the northern boundary linking to the L7130 local road to the east. Existing and proposed access tracks and existing settlement ponds will be utilised as part of the proposed development.
- The proposed development will be accompanied by a phased restoration plan

15.2 Methodology

This LVIA adopts an approach that is founded in the following best practice guidance documents:

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.

This document uses methodology as prescribed in the previously mentioned GLVIA3, which follows the European Landscape Convention (ELC) definition of landscape:

'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). Thus, GLVIA-2013 covers all landscapes from "high mountains and wild countryside to urban and fringe farmland (rural landscapes), marine and coastal landscapes (seascapes) and the landscapes of villages towns and cities (townscapes)" - whether protected or degraded.'

15.2.1 Scope of the Assessment

GLVIA3 establishes guidelines and not a specific methodology. The preface recognises that:

'This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand.'

The methodology for this assessment has therefore been developed specifically for this assessment to ensure that it is appropriate and fit for purpose. The LVIA Methodology can be summarised as undertaking the following key tasks:

- Desk study and site visits in June 2025;
- Defining the Baseline Landscape setting and conditions;
- Identification and Evaluation of key components of the proposed development;
- Consideration of Mitigation Measures;
- Assessment of Landscape Effects;
- Assessment of Visual Effects; and
- Summary Statement of Significance.

15.2.2 Study Area

From similar studies, it is anticipated that the proposed development is likely to be difficult to discern beyond approximately 2km and is not likely to give rise to significant landscape or visual impacts beyond approximately 1km. In the interests of a comprehensive appraisal, a 3km radius study area is used in this instance. However, there will be a particular focus on receptors contained within 2km, except where iconic or designated scenic viewpoints exist at greater distances out to 3km (refer to Figure 15.1).

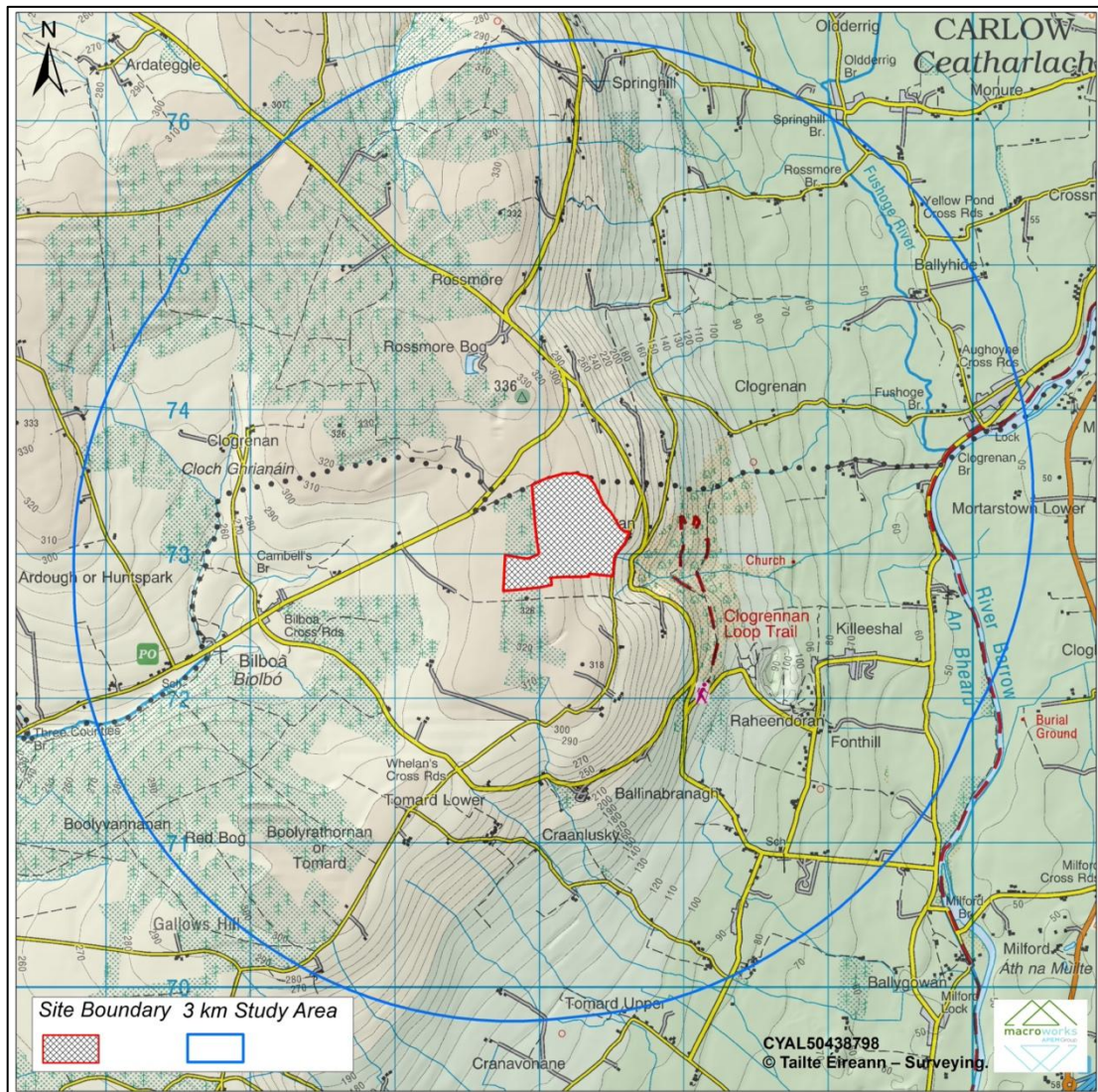


Figure 15.1: 3km Extent of the Study Area

15.3 Assessment Criteria

15.3.1 Landscape Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect the physical features and fabric of the landscape, and then how the proposals influence landscape character with reference to published descriptions of character and an understanding of the contemporary character of the landscape as informed through desktop and site studies.



When assessing the potential landscape effects of the development, the value and sensitivity of the landscape receptor is weighed against the magnitude of impact to determine the significance of the landscape effect. Criteria outlined below are used to guide these judgements.

Landscape Sensitivity

The sensitivity of the landscape to change is the degree to which a particular setting can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. In accordance with GLVIA3, the sensitivity of a landscape receptor (Landscape Character Area or feature) is derived from combining judgements in relation to its susceptibility to change and its value. The judgement reflects such factors as its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted. Landscape Sensitivity is classified using the following criteria set out in Table 15.1.

Sensitivity	Description
Very High	Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value landscapes, protected at an international or national level (World Heritage Site/National Park), where the principal management objectives are likely to be protection of the existing character.
High	Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national or regional level (Area of Outstanding Natural Beauty), where the principal management objectives are likely to be considered conservation of the existing character.
Medium	Areas where the landscape character exhibits some capacity and scope for development. Examples of which are landscapes, which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use.
Low	Areas where the landscape character exhibits a higher capacity for change from development. Typically, this would include lower value, non-designated landscapes that may also have some elements or features of recognisable quality, where landscape management objectives include, enhancement, repair and restoration.
Negligible	Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value.

Table 15.1: Landscape Value and Sensitivity

Magnitude of change – Landscape

The magnitude of change is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed development and to a lesser extent the duration and reversibility of that effect. The magnitude takes into account whether there is a direct



physical impact resulting from the loss of landscape components and/or a change that extends beyond the immediate setting that may have an effect on the landscape character. Table 1.2 outlines criteria used to inform this judgement.

Criteria	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an extensive change of the landscape in terms of character, value and quality.
High	Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to a considerable change of the landscape in terms of character, value and quality.
Medium	Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to noticeable changes in landscape character, and quality.
Low	Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements that would lead to discernible changes in landscape character, and quality.
Negligible	Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable leading to no material change to landscape character, and quality.

Table 15.2: Magnitude of Change – Landscape

15.3.2 Visual Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect views within the landscape. It therefore needs to consider:

- Direct impacts of the proposed development upon views through intrusion or obstruction;
- The reaction of viewers who may be affected, e.g. residents, walkers, road users; and
- The overall impact on visual amenity.

It has been deemed appropriate to structure the assessment around a series of representative viewpoint locations. All viewpoints are located within the public domain and are representative of views available from main thoroughfares and pedestrian areas within the vicinity of the proposed development. The selected viewpoints are considered to be comprehensive in communicating the variable nature of the visual effects.

When assessing the potential visual effects of the development, the sensitivity of the visual receptor is weighed against the magnitude of the visual impact to determine the significance of the visual effect. Criteria outlined below are used to guide these judgements.

Sensitivity of Visual Receptors



As with landscape sensitivity, the sensitivity of a visual receptor is categorised as Very High, High, Medium, Low, and Negligible. Unlike landscape sensitivity however, the sensitivity of visual receptors has an anthropocentric (human) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity the viewer is engaged in and whether this heightens their awareness of the surrounding environment.

A list of the factors considered by the assessor in estimating the level of sensitivity for a particular visual receptor is outlined below to establish visual receptor sensitivity at each viewpoint location.

Sensitivity of Visual Receptors to Change

In accordance with GLVIA3, visual receptors most susceptible to changes in views and visual amenity are:

- *“Residents at home;*
- *People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;*
- *Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;*
- *Communities where views contribute to the landscape setting enjoyed by residents in the area;*
- *Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened”.*
- *Visual receptors that are less susceptible to changes in views and visual amenity include;*
- *“People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape;*
- *People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life”.*

Values attached to Views

The value attached to a view is determined by considering the following:

- *Recognised scenic value of the view (Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Development Plans, for example, a public consultation process is required;*
- *Views from within highly sensitive landscape areas. These are likely to be in the form of Architectural Conservation Areas, which are incorporated within the Development Plan and therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;*
- *Primary views from residential receptors. Even within a dynamic city context, views from residential properties are an important consideration in respect of residential amenity;*



- *Intensity of use, popularity.* This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at a national or regional scale;
- *Provision of vast, elevated panoramic views.* This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;
- *Sense of remoteness and/or tranquillity.* Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of a busy street scene, for example;
- *Degree of perceived naturalness.* Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features;
- *Presence of striking or noteworthy features.* A view might be strongly valued because it contains a distinctive and memorable landscape / townscape feature such as a cathedral or castle;
- *Historical, cultural and / or spiritual significance.* Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;
- *Rarity or uniqueness of the view.* This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country;
- *Integrity of the landscape character.* This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;
- *Sense of place.* This considers whether there is special sense of wholeness and harmony at the viewing location;
- *Sense of awe.* This considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity, and no relative importance is inferred by the order of listing.

It is recognised that a viewer's interpretation and experience of the landscape can have preferential and subjective components. Where relevant, judgements are made on those elements of the landscape that are considered to contribute more prominently and positively to the visual landscape resource as well as those elements that contribute negatively. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular.

15.3.3 Magnitude of Change – Visual

The magnitude of change is again a product of the scale, extent, or degree of change that is likely to be experienced as a result of the proposed development. This is directly influenced by its 'visual presence / prominence', as experienced by visual receptors in the landscape. These terms are somewhat quantitative in nature, and essentially relate to how noticeable or 'dominant' the proposal is within a particular view. Aside from the obvious influence of scale



and distance, a development's visual presence is influenced by the extent and complexity of the view, contextual movement in the landscape, the nature of its backdrop, and its relationship with other focal points or prominent features within the view. It is often, though not always, expressed using one of the following terms: Minimal; Sub-dominant; Co-dominant; Dominant; Highly dominant. Criteria used to inform judgements are provided in Table 15.3.

Criteria	Description
Very High	Complete or very substantial change in view, dominant, involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g., through removal of key elements.
High	A major change in the view that is highly prominent and has a strong influence on the overall view. This may involve the substantial obstruction of existing views or a complete change in character and composition of baseline, e.g. through removal of key elements or the introduction of new features that would heavily influence key elements.
Medium	Moderate change in view: which may involve partial obstruction of existing view or partial change in character and composition of baseline, i.e., pre-development view through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant.
Low	Minor change in baseline, i.e. pre-development view - change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances.
Negligible	Very slight change in baseline, i.e. pre-development view - change would be barely discernible. Composition and character of view substantially unaltered.

Table 15.3: Magnitude of Change – Visual

15.3.4 Significance of Effect

The significance of a landscape or visual effect is based on a balance between the sensitivity of the receptor and the magnitude of change, and is categorised as Profound, Substantial, Moderate, Slight, or Imperceptible. Intermediate judgements are also provided to enable an effect to be more accurately described where relevant. 'No Effect' may also be recorded as appropriate where the effect is so negligible it is not noteworthy.

The significance category judgement is arrived at using the Significance Matrix at Table 15.4 as a guide. This applies the principle of significance being a function of magnitude weighed against sensitivity, but employs slightly different terminology that avoids the potentially confusing use of the term 'significant' (as recommended by GLVIA3 Statement of Clarification 1/13 (Landscape institute, 10th June 2013)).

Indicative criteria descriptions used in relation to the significance of effect category are presented at Table 15.5.

	Sensitivity of Receptor				
Magnitude	Very High	High	Medium	Low	Negligible



Very High	Profound	Profound-substantial	Substantial	Moderate	Slight
High	Profound-substantial	Substantial	Substantial-moderate	Moderate-slight	Slight-imperceptible
Medium	Substantial	Substantial-moderate	Moderate	Slight	Imperceptible
Low	Moderate	Moderate-slight	Slight	Slight-imperceptible	Imperceptible
Negligible	Slight	Slight-imperceptible	Imperceptible	Imperceptible	Imperceptible

Table 15.4: Significance Matrix

	Landscape	Visual
Very High	There are notable changes in landscape characteristics over an extensive area or a very intensive change over a more limited area.	The view is entirely altered, obscured or affected.
High	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the landscape. There are notable changes in landscape characteristics over a substantial area or an intensive change over a more limited area.	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the visual environment. The proposal affects a large proportion of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Medium	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. There are minor changes over some of the area or moderate changes in a localised area.	An effect that alters the character of the visual environment in a manner that is consistent with existing and emerging trends. The proposal affects an appreciable segment of the overall visual composition, or there is an intrusion in the foreground of a view.
Low	An effect which causes noticeable changes in the character of the landscape without affecting its sensitivities. There are minor changes over a small proportion of the area or moderate changes in a localised area or changes that are reparable over time.	An effect which causes noticeable changes in the character of the visual environment without affecting its sensitivities. The affected view forms only a small element in the overall visual composition or changes the view in a marginal manner.
Negligible	An effect capable of measurement but without noticeable consequences. There are no noticeable changes to landscape context, character or features.	An effect capable of measurement but without noticeable consequences. Although the development may be visible, it would be difficult to discern resulting in minimal change to views.

Table 15.5: Indicative significance of effect criteria descriptions

It is important that the likely effects of the proposals are transparently assessed and understood in order that the determining authority can bring a balanced, well-informed judgement to bear when making a planning decision.



As such, whilst the significance matrix and criteria provide a useful guide, the significance of an effect is ultimately determined by the landscape specialist using professional judgement, and also in the context of occasionally using hybrid judgements to account for nuance.

Effects assessed as 'Substantial' or greater (shaded cells) are considered to be the most notable in landscape and visual terms, and may be regarded as 'Significant', albeit it is important to note that this is not a reflection on their acceptability in planning terms.

15.3.5 Quality of Effects

In addition to assessing the significance of landscape and visual effects, the quality of the effects is also determined. Within this LVIA, effects are described as negative/adverse, neutral, or positive/beneficial, and the following criteria has been used to guide these judgements.

- Positive/beneficial - A change which improves the quality of the environment, enhancing the existing view/landscape;
- Neutral - No effects or effects that are imperceptible, within normal bounds of variation e.g. will neither detract from nor enhance the existing view/landscape;
- Negative/adverse - A change which reduces the quality of the environment, detracting from the existing view/landscape.

In the case of new extractive developments within rural and semi-rural settings, the landscape and visual change brought about by an increased scale and extent is seldom considered to be positive / beneficial. Effects in these contexts are generally considered to be adverse in nature, or neutral, where the effect has little influence on the landscape/views

15.3.6 Landscape and Visual Policy Context and Designations

Carlow County Development Plan 2022-2028

The proposed development is located on the border of County Carlow and County Laois, just inside the former. A Landscape Character Assessment was carried out by Carlow County Council and has been incorporated into the current County Development Plan. This divides the landscape of County Carlow into four Landscape Character Areas:

- Blackstairs and Mount Leinster Uplands
- Central Lowlands
- River Slaney/East Rolling Farmland
- Killeshin Hills

The Proposed Development is located within the Killeshin Hills character area, which has been identifies as being of local importance. The area:

- *"Lies on the western side of the County on the border with Counties Kilkenny and Laois and a short segment of County Kildare. The area is bounded to the east by the river Barrow Valley with the R448 skirting along the east side of the valley. The lands adjoining the river valley are gently undulating hills which*



ascend steeply to the uplands adjoining County Kilkenny: The Castlecomer Plateau. There are extensive panoramic views of the entire County to be had from the eastern slopes.

- *The area is almost entirely a rural agricultural landscape with moderate level of sensitivity and moderate potential capacity to absorb different types of development. Due to its upland character and relative exposure, it has a low potential capacity to absorb rural housing or industrial development.*
- *The Killeslin Hills contain the following Landscape Types: uplands, farmed ridges, farmed lowlands and broad river valley."*

A more detailed analysis was then carried out in recognition of more specific landscape features. It is these specific areas that contain more significant and sensitive landscapes. These areas are defined as Landscape Type and are seven in total and included below

- Broad River Valley
- Narrow River Valley
- Built Up Areas
- Farmed Lowland
- Farmed Ridges
- Rolling Rough Grazing
- Uplands

The Landscape Character Assessment is addressed in the below Policy Objectives:

- *Protect and maintain the overall integrity of the County's landscape, by recognising its capacity to sustainably integrate and absorb appropriate development, and by ensuring that development protects, retains and, where necessary, enhances the appearance and character of the landscape, and does not unduly damage or detract from those features which contribute to its value, character, distinctiveness and sensitivity e.g landform, habitats, scenic quality, settlement pattern, historic heritage, amenity, land use and tranquillity.*
- *Ensure that development will not have a disproportionate landscape or visual impact in sensitive upland areas of the County (due to siting, layout, design or excessive scale, height and bulk) and will not significantly interfere with or detract from scenic upland vistas, when viewed from the surrounding environment, including nearby areas, scenic views and routes, and from settlements.*
- *Protect and maintain the landscape quality and visual integrity of river valleys and river corridors, and to ensure development in these sensitive landscape areas does not adversely affect or detract from scenic views, including views from bridges, or from distinct linear sections such as open floodplains.*
- *Require all developments, having regard to their landscape setting, to be appropriate in siting, layout, design and scale, in order to ensure any potential adverse or landscape and visual impacts are minimised and/or removed where necessary, and that natural site features and characteristics are retained and maintained.*
- *Require, where appropriate, Landscape/Visual Impact Assessments to be prepared by suitably qualified professionals, for development proposals which may have significant landscape or visual impacts, and/or which are located within or adjacent to sensitive landscapes.*



- *Ensure that features which contribute to local landscape character, including historic features and buildings, trees, hedgerows, shelter belts and stone wall, are retained, protected, and enhanced where appropriate, so as to preserve the appearance and local landscape character of the areas, whilst supporting sustainable landscape changes and development. Development proposals necessitating the removal of such features will be discouraged.*
- *Protect and preserve the established appearance and aesthetic attributes of views and prospects that contribute to the inherent quality of the County's landscape, including views, prospects and scenic routes and particularly views to and from the mountains, hills, river valleys and river corridors, and views of historical or cultural value (including buildings and townscapes) and views of natural beauty.*

Laois County Development Plan 2021-2027

A Landscape Character Assessment was carried out by Laois County Council and has been incorporated into the current County Development Plan. This divides the landscape of County Laois into seven Landscape Character Areas:

- Hills and Uplands
- Lowland Agricultural Areas
- River Corridors and Lakes
- Mountain areas
- Peatland Areas
- Urban Fringes
- Rolling Hills

The proposed development study area is located in the Hills and uplands area and is described as an area with the capacity to accommodate a range of uses without significant adverse effects on the appearance or character of the landscape having regards to the localised sensitivity factors.

The Landscape Character Assessment objectives are outlined in the policy below:

- *Protect and enhance the county's landscape by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape and conserve valuable habitat including any European and National Designations.*
- *Seek to ensure that local landscape features, including historic features and buildings, hedgerows, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area, whilst providing for future development.*
- *Ensure that development will not have a disproportionate visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere with or detract from scenic upland vistas, when viewed from areas nearby, scenic routes, viewpoints and settlements.*

Views of Recognised Scenic Value – Carlow County Development Plan 2022-2028 & Laois County Development Plan 2021-2027



Views of recognised scenic value are primarily indicated within County Development Plans in the context of scenic views/ routes designations, but they might also be indicated on touring maps, guide books, websites, road side rest stops or on post cards that represent the area. All scenic designations within the study area that are relevant to the proposed development (i.e. have views oriented to the proposed development and are within the Zone of Theoretical Visibility Pattern) have been visited during fieldwork investigations. Where there is potential for visibility of the proposed development, a representative view has been included within the visual appraisal.

According to the maps available in the Laois and Carlow County Development Plans there are two scenic views that fall within the study area. In both County Development Plans a description of the scenic view and what it is protecting is provided, they are as follows:

Carlow CDP

- *SV33- View from Milford on local road L3039, protecting views north and east of the River Barrow.*

Laois CDP

- *SV21- View from Killeslin, Rossmore on local road L3896, protecting views towards lowlands of Graiguecullen/Carlow.*

The Carlow scenic designation (SV33) is just at edge of the study area and oriented in the opposite direction to the proposed development. The Laois designation (SV21) is oriented away from the proposed development and also falls outside of the Zone of Theoretical Visibility (ZTV – See section 12.4.2) indicating no potential for visibility. Therefore, neither of the scenic designations are considered relevant to the visual impact assessment.

15.4 Existing Environment

The existing environment is described below in terms of both the landscape as a resource in its own right and then in terms of views and visual receptors.

15.4.1 Landscape Baseline

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the proposed development will be assessed. A description of the landscape context of the proposed application site and wider study area is provided below under the headings of landform and drainage, vegetation and land use, centres of population and houses, transport routes and public amenities and facilities. Although this description forms part of the landscape baseline, many of the landscape elements identified also relate to visual receptors i.e. places and transport routes from which viewers can potentially see the proposed development. The visual resource will be described in greater detail in Section Error! Reference source not found..

Landform and Drainage

The 5km study area is located on the western border of County Laois bordered by Counties Laois and Kilkenny. The proposed development is located in an upland area ranging between 310m AOD and 330m AOD. The proposed site is located on relatively flat to gently undulating land at the eastern edge of the Castlecomer Plateau. The plateau stretches to the west, while the landform immediately to the east of the site falls rapidly as an escarpment towards the flat landscape of the Barrow River valley.



In terms of watercourses, the River Barrow is the most prominent within the study area, running north-south through the study area and approximately 2km to the east of the proposed development at its nearest point.

Vegetation and Land Use

The site itself is occupied by the existing quarry and a mixture of scrubland and rough grazing within its western sections with improved grassland and hedgerows occupying the eastern side which begin to slope towards the Barrow valley.

The principal land use within the study area is that of rural agricultural farmland comprising of small to medium sized fields bound by a network of mixed hedgerow vegetation. There are also multiple dense areas of commercial conifer forestry surrounding the proposed development. Large areas of forest are located to the north-west and south-west of the site and Clogrennane Woods is located approximately 130m from the proposed site boundary at its nearest point. Other notable anthropogenic land uses include the Clogrennane Lime Works Quarry located to the south east of the proposed site adjacent to Clogrennane Woods.

Centres of Population and Housing

The study area encompasses a modest and dispersed rural population residing in farmsteads and clusters of rural dwellings, noting that the more notable settlement of Carlow lies just beyond the study area to the northeast. The closest local receptors to the proposed development are situated approximately 50m from the proposed development to the east of the red line boundary. The village of Ballinabrannagh is the largest settlement contained within the study area and is situated approximately 2km southeast of the site boundary at its nearest point and the smaller village of Bilboa is also located 1.6km west of the site.

Transport Routes

Much of the immediate surrounds of the site is made up of a network of local roads connecting the central study area. The R448 is a regional route that connects Carlow to the M9 and passes just beyond the study area to the east. There are no other major routes within the study area.

Tourism, Heritage and Public Amenities

The most prominent tourism and heritage feature within the study area is the River Barrow which runs in a southward direction some 2km to the east of the proposed development site and attracts water based recreationalists. The Barrow Way is a walking and biking route that runs along the River Barrow corridor attracting tourists and recreationalists to the area. Other notable amenities within the area include Clogrennane Woods, owned by Coillte, which offers hiking and walking routes. In terms of heritage areas, the Milford Mill, which is an historical landmark, sits to the south-east of the proposed development along the banks of the River Barrow.

15.4.2 Visual Baseline

Analysis of ZTV (Zone of Theoretic Visibility) Mapping

Only those parts of the receiving environment that potentially afford views of the proposed development are of concern to this section of the assessment. A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate where the proposed development is potentially visible from. The ZTV map is based solely on terrain data (bare ground visibility), and ignores features such as trees, hedges or buildings, which may screen views. Given the complex vegetation patterns within this landscape, the main value of this

form of ZTV mapping is to determine those parts of the landscape from which the proposed development will definitely not be visible, due to terrain screening within the 3km study area.

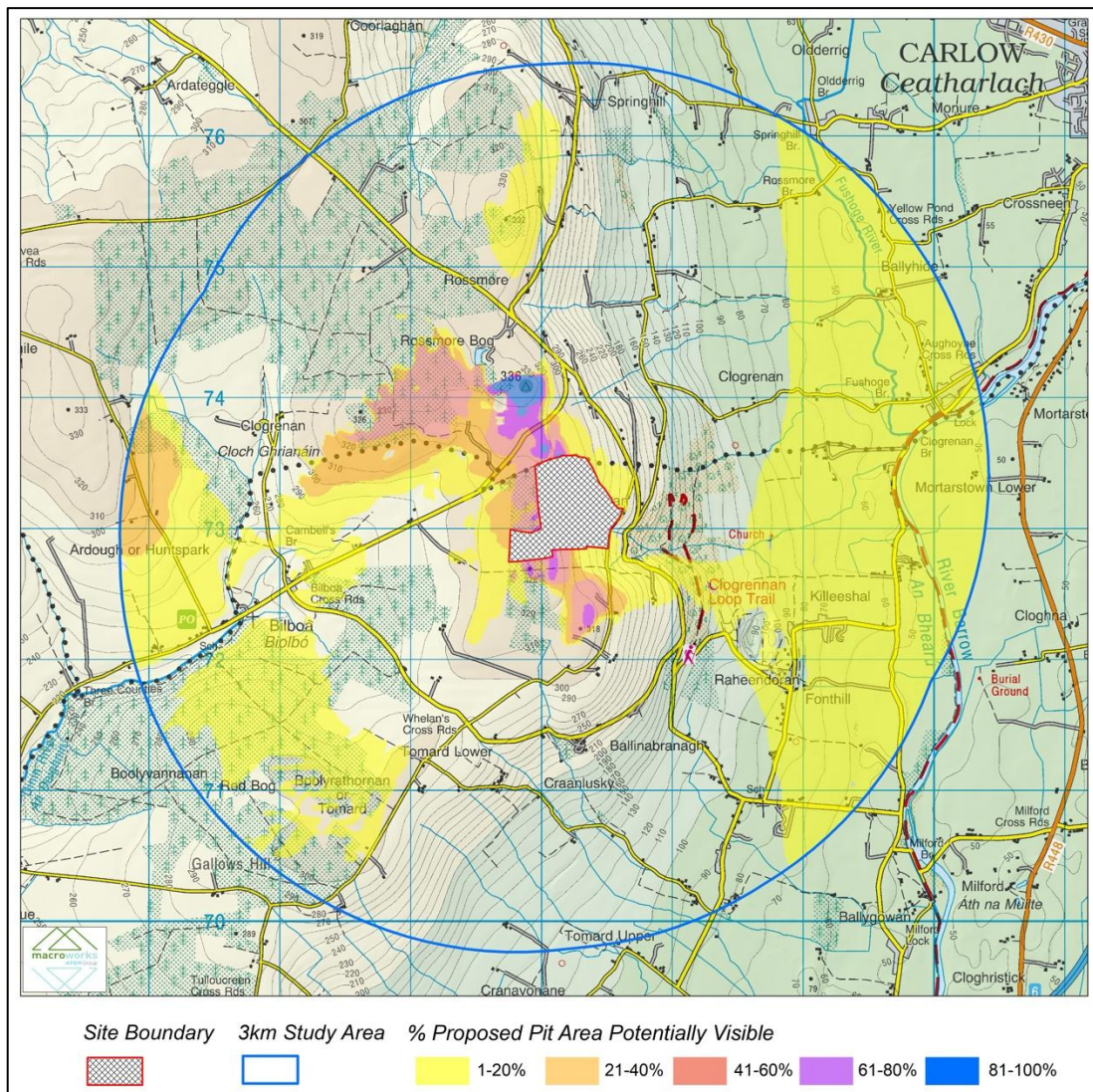


Figure 15.2 Standard (bare-ground) ZTV map

The following key points are illustrated by the 'bare-ground' ZTV map (see Figure 15.2 above):

- Potential visibility of the proposed development is generally restricted and sporadic within the study area, with large sections of no visibility in the north and south of the study area.
- Areas with the greatest potential for visibility of the site are generally contained within the immediate surrounds of the site to the northwest and the south. These areas are largely contained in private farmland and forestry with only small sections of local roads and associated dwellings afforded any potential for even partial visibility.
- There is potential for theoretical visibility of the site from the River Barrow and the surrounding lowland landscape and this partial visibility is likely to relate to the easternmost portion of the site which occupies land that tops the slope of the escarpment that leads up to the Castlecomer Plateau.
- Higher ground contained in forestry and farmland in the outer western sections of the study area also show some potential for visibility of the proposed development.



The most important point to make in respect of this ‘bare-ground’ ZTV map is that it is theoretical. The development is predominantly in-ground and will therefore be considerably screened by surrounding and intervening hedgerow vegetation, trees and numerous buildings, walls etc. throughout the study area, resulting in a much lesser degree of actual visibility.

15.4.3 Identification of Viewshed Reference Points as a Basis for Assessment

Viewshed Reference Points (VRP's) are the locations used to study the visual impacts of a proposed development in detail. It is not warranted to include each and every location that provides a view of a development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the proposed development. Instead, the selected viewpoints are intended to reflect a range of different receptor types, distances and angles. The visual impact of a proposed development is assessed by Macro Works using up to 6 no. categories of receptor type as listed below:

- Key Views (from features of national or international importance) (KV);
- Designated Scenic Routes and Views (SR/SV);
- Local Community views (LCV);
- Centres of Population (CP);
- Major Routes (MR);
- Amenity and heritage features (AH).

VRP's might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. The receptors that are intended to be represented by a particular VRP are listed at the beginning of each viewpoint appraisal. The Viewshed Reference Points selected in this instance are set out in the Table 1.6 and Figure 1.3 below.

Table 15.6 Outline Description of Selected Viewshed Reference Points (VRPs)

VRP No.	Location	Representative of	Direction of view
VP1	L3896 at Clogrenan	LCV	SW
VP2	L38966 at Clogrenan	LCV	SE
VP3	L7129 at Bilboa	LCV	SE
VP4	L3039 at Cloydagha	LCV	NW
VP5	L7130 at Clogrenan	CP/LCV	NW
VP6	L3041 junction at L7130	LCV	NE
VP7	L3041 at Ballinabrannagh	LCV	NW

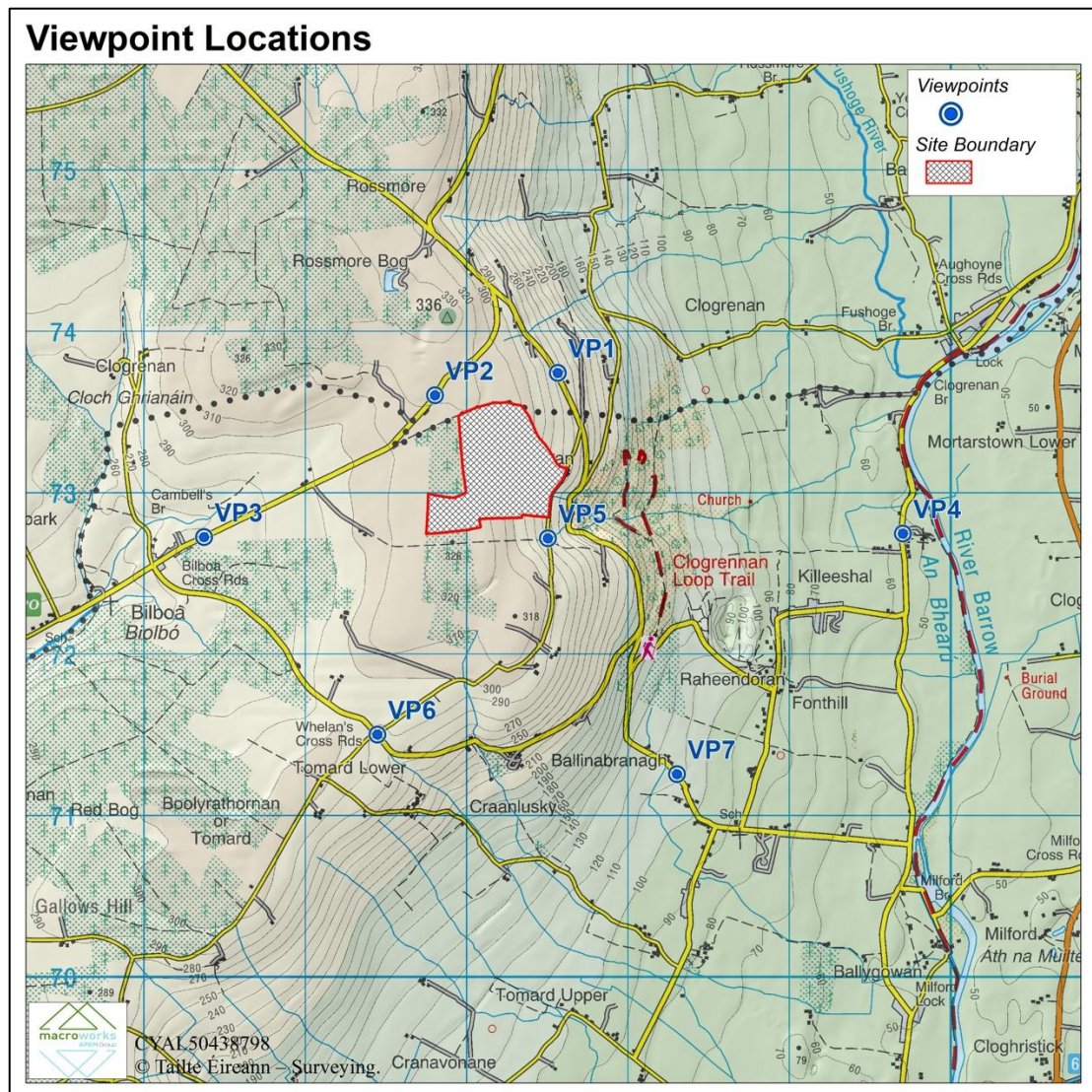


Figure 15.3 Viewpoint location map (showing viewing extents and direction of view)

15.5 Mitigation and Restoration Measures

The main mitigation by avoidance measure employed in this instance is the siting of the proposed development adjacent and contiguous with the existing quarry, which is a long established land use in the area. Additionally, the proposed development is situated in a contained landscape context that avails of a high degree of existing screening in the form of existing vegetated berms and surrounding mature vegetation. The proposed development is also contained in a landscape context already influenced by the extractive industry within the study area, which limits its potential to present as a new or incongruous development type.

A restoration plan is also proposed as part of the application, which outlines the proposed restoration of the site once it is decommissioned. This will involve the pulling back of steep slopes for both safety and native vegetation establishment in a naturalistic mosaic pattern that maximises potential for biodiversity.



Retention of existing vegetated berms around the site will retain visual screening of the quarry from visual receptors in the surrounding area. The implementation of additional restoration planting will ensure dense and consistent screening of the quarry in perpetuity.

15.6 Impact Assessment

15.6.1 Do-nothing scenario

The '*do-nothing*' impact refers to the non-implementation of the proposed development. The primary effect of this would be that the impacts and effects identified would not directly occur. The extension site, which is currently contained in scrubland / rough grazing and some pastoral farmland, would likely be managed as it is.

15.6.2 Assessment of Receptor Sensitivity – Landscape

Landscape value and sensitivity are considered in relation to a number of factors highlighted in the Guidelines for Landscape and Visual Impact Assessment 2013, which are set out below and discussed relative to the proposed development site and wider study area.

This is a robust rural setting of reasonably high integrity located south-west of Carlow town. The study area consists primarily of agricultural grassland and forestry along with a reasonable scattering of rural dwellings. It is a diverse and productive rural landscape where values principally relate to sustaining the local rural economy. There is an existing quarry a short distance to the southeast, which along with the existing quarry within the proposed development site, establishes the extractive industry as part of the baseline landscape setting.

Much of the study area presents has a traditional pastoral aesthetic afforded by a patchwork of small to medium sized agricultural fields within the Barrow Valley and on the Castlecomer Plateau. There are also small sections of riparian vegetation concentrated along the River Barrow as it flows south through the study area providing some localised sense of the naturalistic. Otherwise the vegetation tends to align to the road network and fields within the study area.

On balance of these factors outlined above and in accordance with the criteria set out in Error! Reference source not found., the landscape sensitivity is deemed to be **Medium-low**, with localised areas of higher and lower sensitivity throughout the study area.

15.6.3 Assessment of Receptor Sensitivity – Visual

Scenic value tends to occur in two ways within this study area and this is also reflected in the two scenic view designations albeit these have been already been determined as not relevant to the proposed development. Scenic amenity generally relates to broad and elevated panoramic views, which are likely to be afforded out from the eastern edge of the Castlecomer Plateau, or lowland views across the River Barrow. There are no views of this nature that are likely to be impacted by the proposed development, hence the sensitivity of visual receptors sensitivity tends to be a balance of pleasant, but typical and productive rural views with local value afforded to those that live in the vicinity of the site. Medium-low visual receptor sensitivity has been applied across all of the representative viewpoints used for the visual impact assessment herein.



Views of the working agricultural landscape are generally pleasant in terms of its rolling pastoral aesthetic and 'green', settled working character. The network of hedgerows and riparian vegetation contribute to some sense of naturalness and, combined with its undulating topography, generates a sense of containment in many locations. However, whilst a pleasant pastoral aesthetic is noted throughout some parts of the study area, the receiving landscape is also influenced by an array of anthropogenic features such as transport routes, commercial forestry and quarries.

Key differentials in terms of visual receptor sensitivity relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors are considered generally more susceptible to changes in views over those where views are experienced transiently by those travelling through the landscape, particularly on major transport routes where road infrastructure and traffic volume draw from visual amenity. Likewise, receptors located in closer proximity to the site are considered more susceptible to changes in views over those where views are experienced at a distance.

On the basis of the site-specific factors outlined above and in accordance with the general visual receptor sensitivity considerations contained in the methodology Section 15.3.1, visual receptor sensitivity judgements are provided for each representative viewpoint in the table below in section 15.6.6 below.

15.6.4 Magnitude of Landscape and Visual Effects – Construction Stage

The only element of a quarry extension project that could be classed as construction is the initial stripping of topsoil and overburden and forming of perimeter berms and soil storage areas. This work is temporary in duration and has similar landscape and visual characteristics to the quarrying activity of the operational phase aggregate extraction which will follow seamlessly on. Thus, it is not considered necessary to differentiate between construction phase and operational phase effects and the appropriate focus of the assessment will be the long term operational phase of the quarry extension.

15.6.5 Magnitude of Landscape Effects – Operational Stage

In terms of landscape effects, the proposed development involves an extension over an area of 16.17 ha to include pre-existing quarry and additional agricultural lands with a projected lifespan of c. 20 years with an estimated extraction rate of 200k tonnes per annum. The proposed development includes an overall extraction area of 16.17 ha, encompassing the pre-existing extraction area. The extended extraction zones will encompass the agricultural land to the west and southwest of the existing quarry. Topsoil and overburden stripped from the existing fields ahead of productive extraction will be formed into a series of perimeter berms and stockpiles that will serve to soften and screen the quarrying activity taking place within the quarry pit. The berms will typically be 3m high with 2:1 slopes on the outward facing sides that will reduce the severity and engineered appearance, especially as grass and scrub develops on them.

This is a productive rural landscape containing the operational Red Rock Quarry, with intensive arable agricultural, other quarrying and transport infrastructure present throughout the wider landscape context. The proposed development represents an intensification and extension of an established feature of the local area rather than the introduction of a new and unfamiliar one. It will replace some of the existing field pattern within the site, but generally low



productivity areas of scrub and rough grazing in the southwestern corner, as opposed to the better quality agricultural fields and hedgerows that occur within the eastern portions of the site.

In terms of quarrying related activities, such as the movement of heavy vehicles within, as well as to and from Red Rock Quarry are already commonplace in the immediate context of the application site. The proposed extraction area is within the immediate context of an already active quarry and uses the established entrance, thus will only involve an increase to the duration of the current quarrying activity and without a notable change in the nature or frequency of this traffic. Therefore, it is not considered that the proposed quarry extension will noticeably detract from the integrity of landscape patterns or the productive landscape character that prevails in the area.

On the basis of the factors discussed above it is considered that the magnitude of landscape impact is High-medium within the site and its immediate surrounds (c. <500m from site boundaries). The magnitude of impact will reduce beyond the immediate context of the site as the proposed quarry extension becomes a smaller component of the overall landscape fabric and is read in conjunction with the existing quarry activity.

With reference to the significance matrix (Error! Reference source not found.) above, the **Medium-low** landscape sensitivity judgement attributed to the study area, coupled with a **High-medium** magnitude of landscape impact in the immediate vicinity (<500m) of the proposed development is considered to result in an overall significance of no greater than **Moderate**, with the remainder of the 5km radius study area likely to experience **Slight** or **Imperceptible** landscape impacts.

15.6.6 Magnitude of Visual Effects – Operational Stage

The assessment of visual impacts at each of the selected viewpoints is aided by photomontages of the proposed development. Photomontages are a ‘photo-real’ depiction of the scheme within the view utilising a rendered three-dimensional model of the development, which has been geo-referenced to allow accurate placement and scale. For each viewpoint, the following images have been produced:

- Existing view;
- Outline view (yellow outline showing the extent of the proposed quarry extension including all associated overground works overlaid on the photograph);
- Montage view
- Montage view with mitigation established.



VP NO.	EXISTING VIEW	VP SENSITIVITY	MAGNITUDE OF VISUAL EFFECT (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF EFFECT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF EFFECT
VP1	L3896 at Clogrenan: This is a view from the local road L3896, located to the northeast of the site. This view is contained by the dense hedgerow vegetation that dominates the foreground of the view. There is a dwelling visible beyond which is another dense treeline. No elements of the existing extraction facility are visible from this location as a result of the vegetation within the intervening landscape.	Medium-low	No views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible / Neutral / Long-term	Imperceptible / Neutral / Long-term
VP2	L38966 at Clogrenan: This view is from the local road L38966 at Clogrenan located to the northwest of the site. The view is oriented southeast and has clear views toward the proposed development over the roadside hedgerow into grassy open midground. The eastern edge of the view is contained by dense vegetation that stretches to the background of the view. There is a small section of quarry face visible rising with elevated ground just beyond the intervening vegetation in the middle distance.	Medium-low	No views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible/ Neutral/Long-term	Imperceptible / Neutral / Long-term
VP3	L7129 at Bilboa: This view is located on local road L7129 representative of the local community views. This view is located southwest of the site. The view is contained by dense hedgerow vegetation that dominate the foreground running in a linear	Medium-low	No views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible / Neutral/ Long-term	Imperceptible / Neutral / Long-term



	swathe along the roadside. The background of the view is further contained by dense vegetation bordering the agricultural farmland this view affords beyond the roadside hedgerow. To the east of the view there is a conifer plantation providing further screening.				
VP4	L3039 at Cloydagh: This view is afforded from the town of Cloydagh located to the southeast of the site. This view is oriented west and predominantly contained by the stone wall which does not afford clear view over the landscape towards the proposed development site. There are partial views of the landscape to the west of the site.	Medium-low	As no views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible / Neutral / Long-term	Imperceptible / Neutral / Long-term
VP5	L7130 at Clogrenan: This is the nearest viewpoint to the site located c.130m southeast. This view is afforded from the side of the local road L7130 representative of the residential receptors in this area. The location affords a channeled view through a gap in dense hedgerow vegetation looking towards the elevated land to the northwest towards the site. The view is contained by the vegetation to the east and west not affording an open view of the landscape beyond. The background is dominated by a mature tree line and as a result of this no elements of the existing quarry visible from this viewpoint.	Medium-low	As no views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible / Neutral / Long-term	Imperceptible / Neutral / Long-term
VP6	L3041 junction at L7130: This view is afforded from the junction of two local roads, located to the southwest of the site.	Medium-low	As no views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening	Imperceptible / Neutral / Long-term	Imperceptible / Neutral / Long-term



	This view has a relatively clear foreground overlooking low lying hedgerow vegetation to the east and clear views through the gateway into the agricultural land beyond it. The background of the view is predominantly contained by a mature tree line with a dense conifer plantation beyond the tree line to the east. There are no elements of the existing quarry visible from this viewpoint location due to the vegetation within the intervening landscape.		by landform and vegetation, the magnitude of visual impact is Negligible by default.		
VP7	L3041 at Ballinabrannagh: This viewpoint location is situated along the local road L3041 to the southeast of the site. The view affords relatively broad views over the elevated land to the northwest of the site. The immediate foreground is dominated by a dense hedgerow containing the view. The elevated land to the north is defined by agricultural land with dense tree line and hedgerows and results in no elements of the existing quarry being visible from this location.	Medium-low	As no views, partial or otherwise, of the proposed development are afforded from this viewpoint location, due to intervening screening by landform and vegetation, the magnitude of visual impact is Negligible by default.	Imperceptible / Neutral / Long-term	Imperceptible / Neutral / Long-term

15.7 Residual Impacts

As mitigation measures are largely embedded in the siting and design of the proposed quarry extension there is no material differentiation between pre-mitigation and post-mitigation effects in this instance. Therefore, the effects assessed in Section 12.6 can also be considered the residual effects of the proposed development.

15.8 Decommissioning Phase Effects

Decommissioning of the worked-out quarry will involve the pulling back and terracing of steep / severe slopes for safety purposes and this will also provide improved opportunity for vegetation establishment. The perimeter berms with established vegetation will be left in place in perpetuity. The main form of revegetation within the site will be in residual peripheral areas that have been managed for temporary stockpiling of material. These will be planted in a mosaic of woodland patches within intervening native grassland and scrub. The primary purpose of these mosaic planting areas will be to improve biodiversity withing the site, but they will also serve to soften and screen the disused quarry pit when viewed from the surrounding area.

The decommissioning ground works will be similar in scale and duration to initial stripping works – but in reverse and ultimately the decommissioning phase will result in an improved landscape and visual outcome relative to the end of the operational phase. Thus, it will be a positive quality of effect in those relative terms, albeit not against the current baseline condition. Decommissioning Phase effect will not be significant.

15.9 Cumulative Impacts

Not including the existing Red Rock Quarry and the Clogrennane Lime Works Quarry located to the south east that both form part of the baseline against which this extension development has been assessed, there are no other extractive developments currently permitted within the study area. While other forms of built development may be permitted within the study area they will not be perceptually associated with the proposed quarry extension. Furthermore, the Imperceptible visual impacts associated with the proposed extension will result in almost no potential for intervisibility with other developments.

Overall, there is very little potential for material cumulative effects to occur. Consequently, cumulative landscape and visual impacts arising from the proposed development are considered to be not significant.

15.10 References

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);

- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.
- Carlow County Council 'County Development Plan' 2022
- Laois County Council 'County Development Plan 2021