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EIAR Addendum

Further information

PRESENTED TO

Milford Quarries Limited
Proposed Quarry Development

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1 INTRODUCTION

This Environmental Impact Assessment Report (EIAR) Addendum has been prepared by Enviroguide Consulting on behalf of Milford Quarries Limited (the Applicant) in support of a planning application for a quarry submitted to Carlow County Council (planning application reference 23/60042).

On the 19th of May 2023 the Applicant received a Further Information Request for a proposed quarry at Bannagagole, Old Leighlin, Co. Carlow. The planning application was accompanied by an EIAR prepared by Enviroguide (hereafter referred to as the March 2023 EIAR).

1.1 Scope of EIAR Addendum

The EIAR Addendum has been structured in line with the March 2023 EIAR to cover any updates to the following:

- Section 2 - Response to the Further Information Requests
- Section 3 - Project Description and Description of Alternatives;
- Section 5 - Landscape and Visual Assessment; and
- Section 6 - Archaeological Impact Assessment.

The EIAR Addendum will present any material changes to the baseline conditions, impact assessment and conclusions presented in the March 2023 EIAR as a result of the further information provided.

The list of inputs considered in this EIAR Addendum.

- Landscape Plans and Restoration Phase Plans;
- Safety Method Statement (Exsol Ltd);
- Lighting plan (Axiseng);
- Hydro-Environmental Solutions – Response to Request for Information; and
- Construction Environmental Management Plan (Enviroguide).

2 RESPONSE TO THE FURTHER INFORMATION REQUESTS

This section sets out response to the further information requests set out be Carlow County Council relevant to the EIAR.

Further Information Request 2 (i)

The EIAR fails to consider the cumulative impacts arising from all other existing projects and/or proposed projects including the existing operational regard to cumulative impacts arising from traffic, noise, air/dust, structural stability and visual amenity. As a result, the approach to a baseline scenario s inadequate and does not meet the requirements of the EIA Directive.

The consideration of activities at the adjacent quarry, permitted under planning reference 17/64. The extent of the quarry has been established and is so treated as part of the baseline scenario, and not as part of the cumulative effects scenario.

Baseline surveys would have captured any operational vehicle movements associated with the existing quarry adjacent to the site.

Further Information Request 2 (ii)

2) (ii) It is proposed to extract dimensional limestone from the application site to transport it elsewhere for processing. There will be a clear connection between the site(s) where the limestone will be processed. The EIAR fails to address the cumulative impacts arising from this inter-dependency.

In line with established EIA practice and case law, the final destination for processing the limestone has not been assessed at this stage. This is due to the processing of limestone not being part of the project and is out of the control of the applicant. This is insufficient certainty on location or process at this stage to be able to assess the likely impacts caused by processing.

The transport assessment has considered traffic impact caused by vehicles heading to and from the site. This has ensured that traffic impacts resulting from the extraction and removal of limestone from the site has been captured.

Further Information Request 2 (iii)

The description of alternatives examined in the EIAR is considered to be largely generic. No real consideration of reasonable alternatives has been provided contrary to the requirements of the Directive. Reasonable alternatives include location and may relate to matters such as project design, technology, size and scale. More appropriate consideration of alternatives are having regard to the foregoing matters are required.

Further information is provided with regard to the alternative assessment.

Do-Nothing Scenario

The do nothing alternative would see the site remain under agricultural use.

Table 2-1 Comparison of Environmental Effects – Do Nothing Scenario

Benefits	Disbenefits
No loss of habitat No minor air quality, dust and noise impacts No landscape or visual impacts No traffic impacts	No increase in local employment opportunities

Alternative Locations

Two possible alternatives were considered in terms of alternative locations for the Proposed Development

1. Open a new quarry on another greenfield site; and
2. Purchase an existing quarry with current planning permission

Another theoretical greenfield site was developed (on the assumption that such a site was available). It was deemed that an equal impact would be created by the development at a greenfield site. The main requirement to locate the Proposed Development at this site is because of the uniqueness of the type of dimensional stone contained within.

The purchase of an existing quarry with current planning permission was discounted due to the availability of such a site on the market and the levels of capital that would be required to purchase such a site. An existing site containing the special type of stone that is contained in this site is only available within very small areas of the county (primarily County Kilkenny).

Further justification for not considering further locations is that the site is within the land ownership of the Applicant and this planning application is regarding the use of the site. Therefore, alternative locations have been discounted on this principle.

Alternative Design and Layouts

The final design and layout has been driven by optimising the site and resource usage efficiency.

The final layout of the Proposed Development was determined by the appointed design team based on the Geophysical Surveys that were carried out by Minerex Geophysics Ltd in June/July 2022. 8 no. geophysical surveys were completed by Minerex Geophysics Ltd. The interpretation of the geophysical surveys is consistent with the data obtained from the boreholes. The boreholes carried out at the site generally match the depth to rock interpreted from the geophysical data. Based on the results of these surveys and borehole testing, the final design and layout was determined, with no alternative proposed due to the location of the dimension stone for quarrying activities.

It is considered that any alternative layouts within the site boundary would not have materially different environmental effects due to the scale and nature of the development.

Further Information Request 2 (iv)

The EIAR does not detail the impacts expected during the restoration and post restoration (decommissioning) phases of the proposed development.

The restoration phases have been designed and are included in Appendix A of this EIAR Addendum.

Table 2-2 Environmental Effects during the Restoration Phase

Topic	Commentary
Population and Health	As the site reaches final restoration stage (Year 15), fewer direct economic benefits will occur, compared to the construction and operational

Topic	Commentary
	phases. The visual amenity will improve for the local community.
Biodiversity	As the site reaches final restoration stage (Year 15), biodiversity effects increase over time as vegetation establishes itself.
Land and Soil	No likely significant effects caused by contamination is expected during the restoration phase. Measures to reduce pollution events during the operational phase will reduce the likelihood of contamination effects occurring during the restoration phase.
Hydrology and Hydrogeology	No likely significant effects are anticipated on hydrological and hydrogeological receptors post-operational phase. Surface water protection measures will be in place to reduce the likelihood of pollution effects occurring during the restoration phase.
Air Quality and Climate	As the restoration phase progresses, fewer vehicles will access the site until the site is fully restored. The removal of operational plant and machines No likely significant air quality effects are anticipated.
Noise and Vibration	As the restoration phase progresses until site is fully restored as per the restoration phase plans, the noise and vibration impacts will reduce. There will be no significant sources from the site after completion of the restoration phase.
Landscape and Visual	The landscape and visual assessment has been updated to include the restoration phase effects.
Archaeology and Cultural Heritage	No likely significant effects will occur following the restoration phase.
Material Assets	Transport trips to and from the site will decrease during the restoration phase. Once the site is fully restored, there will be no likely significant material asset effects.
Risk	There will be no likely significant effects associated with risk during the restoration phase.

Further Information 2 (v)

There are inconsistencies in the identification of sensitive receptors in the EIAR which formed the basis for assessment relating to noise, dust, traffic, hydrology and hydrogeology. Contrary

to the details set out in the EIAR there are three sensitive receptors within 100m of the application site, two of which are located 40 and 45m to the northeast of the application site respectively which do not appear to have been fully accounted for in the assessment submitted.

Both the Air Quality and Climate and the Noise and Vibration chapters of the Environmental Impact Assessment (EIAR) have included the three sensitive receptors which are located within 100m of the site boundary. Within both chapters, the distances have been measured from the sensitive receptors to the site operations, as opposed to the site boundary. The two closest sensitive receptors to the proposed development have been considered as one sensitive receptor in both the Air Quality and Climate chapter and the Noise and Vibration chapter, due to the proximity of the sensitive receptors to each other. These sensitive receptors are denoted as 'SR1' and 'NSL15' in the in the Air Quality chapter Noise and Vibration chapter, respectively. The distance between SR1 and NSL15 and the site operations is 70m. The third sensitive receptor which is located within 100m of the site boundary is denoted as SR2 and NSL14 in the Air Quality and Climate chapter and Noise and Vibrations chapter, respectively. This receptor is located 120m from the site operations.

See below Figure 9-2 from the Noise and Vibrations chapter which illustrates the quarry boundary/operational site and the location of the NSL15 (SR1 in the Air Quality and Climate Chapter) and NSL14 (SR2 in the Air Quality and Climate chapter).

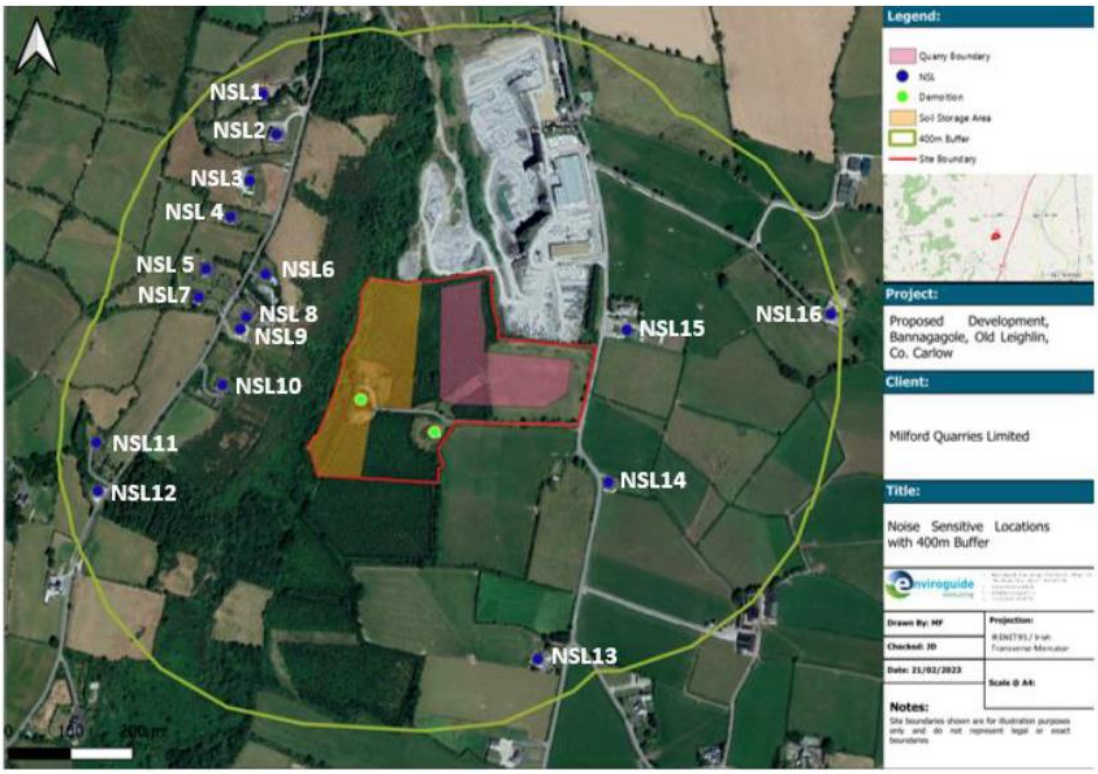


Figure 9-2: Location of Noise Sensitive Locations in relation to Proposed Development

Further Information Request 4 (ii)

Limited information has been provided on the proposed methods to be used in carrying out the stripping of overburden / unusable stone. The estimated quantity of unusable stone shall be outlined. The application refers to the proposed extraction via blasting and hydraulic breaking while other sections refer to breaking only. The applicant is requested to clarify how exactly material will be excavated, and if blasting will be involved, which shall be fully assessed in the EIAR.

In response to the above FI item, the applicants have prepared additional details on the proposed quarrying methods to be used on site as follows:

The Dimension stone quarry process is unique from other types of quarrying in that the aim of the process is to extract large intact portions of the dimension stone using diamond cutting saws. The process of uncovering the dimension stone and removing overburden and unusable stone is therefore relatively slow and methodical when compared to standard aggregate quarrying. Techniques used for extraction purposes are dependent on the ground conditions in any specific location and will be determined to a certain extent while extraction is taking place.

Where ground conditions are suitable, the extraction of overburden and unusable stone is proposed to be carried out via mechanical and hydraulic means using standard excavators. This approach is preferable as it reduces risk of damage to the underlying dimension stone seams. There will be infrequent occasions where specific ground conditions require blasting to be employed. The effects of this have been assessed as *short-term, slight, negative.* The applicants have also secured a safety method statement from Exsol Ltd. who will provide blasting services as needed. The safety method statement is included as Appendix B with this RFI Addendum and details the various measures to be undertaken during the blast sequence. This includes notification of residents in the vicinity of the site as well as the Gardai. It also details the provision of appropriate signage and safety procedures.

The further information requests have resulted in the following updated assessments.

- Landscape and Visual Impact Assessment;
- Archaeological Impact Assessment; and
- Mitigations and Monitoring Chapter EIAR Update.

3 LANDSCAPE AND VISUAL ASSESSMENT

3.1 Introduction

This Landscape and Visual Impact Assessment (LVIA) chapter has been prepared in respect of Proposed Development for a quarry at Bannagagole, Old Leighlin, Co. Carlow.

The following comments regarding the LVIA chapter were made in the Request for Further Information from Carlow County Council:

- *The details provided on the proposed restoration of the site are limited despite these works forming part of the development description set out in the public notices. In addition, the indicative restoration plan submitted is not annotated to include predicted ground levels. Full detailed proposals are required for the restoration and post restoration (decommissioning) of the site, together with confirmation as to whether imported materials will/will not be required to facilitate restoration*.
- *The Planning Authority are concerned that having regard to the nature of the surrounding landscape that views of the site from the wider surrounding area may be extensive as the site faces east into the generally flat low-lying topography of the central lowlands and extending to more upland areas to the east. Five photomontages have been submitted four of which are close range and all within a 3km radius. This is not considered sufficient for a development of this nature within the Killeshin Hills Landscape Character Area.*
- *In addition, it is noted that the soil storage area extends into the higher ground on the western portion of the site. The proposed soil storage area will cover an area of c.3.56 ha and hold a volume of 150,000 m3 of material to an average depth of 4.2m. The photomontages submitted do not seem to account for the full extent of this working area. Accordingly, you are invited to address these concerns and to provide further photomontages from the wider area particularly from the southeast, east and northeast which allow for the full extent of the proposed.*
- *Furthermore, the landscaping and screening proposals submitted with the application do not include a detailed timetable for proposed screen planting, construction of berms and hedgerow underplanting. To enable the Planning Authority to fully a assess the potential visual impact of the proposed development you are requested to submit a timeline for proposed screening and planting and include all proposals for the treatment of existing and proposed new landscaping measures onsite and a detailed timetable for the implementation of same.*
- *The landscaping and screening proposals submitted with the application do not include a detailed timetable for proposed screen planting, construction of berms and hedgerow underplanting. Please submit a timeline for proposed screening and planting and include all proposals for the treatment of existing and proposed new landscaping measures onsite and a detailed timetable for the implementation of same.*

This chapter is updated to assess the changes to the Proposed Development.

3.1.1 Quality Assurance and Competence

This Chapter was prepared by Enviroguide Environmental Consultant Nuno Costa. Nuno has a M.Sc. in Landscape Architecture from University of Porto, a Postgraduate Diploma in Advanced Studies in Territory, Environment and Sustainable Development from Nova University Lisbon, and is a PhD student in Landscape Architecture and Urban Ecology. Nuno has 9 years' experience in teaching Landscape Architecture at Porto's University and, most recently, at University College Dublin. Nuno has 14 years professional experience as a Landscape Architect.

3.2 Methodology

This section sets out the methodology for the Landscape and Visual Assessment (LVA).

3.2.1 Guidelines and other information used in the LVA

The assessment has been undertaken in accordance with best practice, legislation and guidance notes. The methodology used is based on the Environmental Protection Agency *Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Effect Assessment Report (2022*) and subsequent Advice Notes, and their precursor *The Guidelines on the Information to be contained in Environmental Effect Statements (2002)* and *Advice notes on current practise in the preparation of* Environmental Effect Statements (2003). It is also based on the Department of the Environment, Heritage and Local Government's Document; Architectural Heritage Protection, Guidelines for Planning Authorities, 2004 and the Landscape Institute and Institute of Environmental Management & Assessment Document *Guidelines for Landscape and Visual Impact Assessment* (2013).

The aforementioned documents recommend baseline studies to describe, classify and appraise the existing landscape and visual properties, focusing on any sensitive receptors in the area and the ability of the landscape to accommodate the Proposed Development changes that will occur at the site. This is established through a collective process of desktop study and onsite survey work. Once the baseline conditions are established it allows for the identification of effects, and an assessment of their magnitude and significance on the landscape character and visual amenities of the area.

A judgement on the sensitivity of the landscape is made from a combination of the susceptibility of the landscape to development, and therefore change, and the value attached to that landscape. This is determined by way of existing designations, both legislative and non-legislative for scenic beauty, landscape quality, recreational value, significant importance, rarity etc. Visual sensitivity is determined by a combination of judgements about the susceptibility of visual receptors such as dwellings, roads, scenic spots etc. to changes in visual amenity and the value attached to these views. The *Guidelines for Landscape and Visual Impact Assessment* state that the aim is "*to establish the area in which the development will be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points*".

The assessment of the landscape and visual effects for this Proposed Development was informed by the guidance documents indicated in the References.

3.2.2 Desktop Study

The desktop study comprised the following:

- Establishing an appropriate Study Area from which to study the landscape and visual effects of the Proposed Development;
- Review of Viewsheds, which indicates areas from which the Proposed Development is potentially visible in relation to terrain within the Study Area;
- Review of relevant County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations;
- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity.

3.2.3 Fieldwork

Site visits were carried out at various times in order to:

- Select a refined set of VRPs for assessment.
- Record a description of the landscape elements and characteristics within the Study Area generally and also within view from each VRP.
- Capture high quality base photography by *Redline Studios*, from which to prepare Verified View Montages (VVMs) of the proposal.

3.2.4 Landscape and Visual Assessment Criteria

The assessment of landscape and visual effects involves a description of the geographic location and landscape context of the Proposed Development as well as a general landscape description concerning essential landscape character and salient features of the wider Study Area. This is discussed with respect to: landform and drainage; vegetation and land use; centres of population and houses; transport routes and public amenities and facilities. Consideration of design guidance, the planning policy context and relevant landscape designations are also considered.

Once the baseline environment was established, an assessment of the likely potential significant effects associated with the Proposed Development was carried out. This included the following:

- Appraisal of salient landscape character.
- Appraisal of predicted landscape effects.
- Appraisal of predicted visual Viewsheds maps as well as Verified View Montages (VVMs) prepared by *Redline Studios* from selected VRP locations.
- Appraisal of predicted cumulative effects using cumulative VVMs.
- Discussion of mitigation measures.
- Assessment of residual effects following mitigation.

3.2.5 Assessment of Effects

The landscape and visual effect assessment seeks to identify, predict and evaluate the significance of potential effects to landscape characteristics and established views. The assessments are based on an evaluation of the sensitivity to change and the magnitude of change for each landscape or visual receptor. The assessment acknowledges that landscape

and visual effects change over time as the existing landscape evolves and proposed planting establishes and matures. The assessment therefore reports on potential effects during both the Construction Phase and the Operational Phase of the Proposed Development. The prominence of the Proposed Development in the landscape or view will vary according to the existing screening effects of local topography, structures and buildings, intervening existing vegetation and type and height of the proposed structures.

3.2.5.1 *Landscape Effects*

Landscape effects describe the effect on the fabric or structure of a landscape or landscape character. The assessment of landscape effects firstly requires the identification of the components of the landscape. The landscape components are also described as landscape receptors and comprise the following: Individual landscape elements or features; Specific aesthetic or perceptual aspects; and landscape character, or the distinct, recognisable and consistent pattern of elements (natural and man-made) in the landscape that makes one landscape different from another. The assessment will identify the interaction between these components and the Proposed Development during Construction and Operational Phases. The condition of the landscape and any evidence of current pressures causing change in the landscape will also be documented and described.

Landscape Value

Landscape value is frequently addressed by reference to international, national, regional and local designations, determined by statutory and planning agencies. However, the absence of such a designation does not necessarily imply a lack of quality or value. Factors such as accessibility and local scarcity can render areas of nationally unremarkable quality, highly valuable as a local resource. The quality and condition are also considered in the determination of the value of a landscape. The evaluation of landscape value is undertaken with reference to the definitions stated in Table 10-1.

Table 3-1: Landscape Sensitivity Criteria

Landscape Value	Classification Criteria
High	Nationally designated or iconic, unspoilt landscape with few, if any, degrading elements.
Medium	Regionally or locally designated landscape, or an undesignated landscape with locally important landmark features and some detracting elements.
Low	Undesignated landscape with few if any distinct features or with several degrading elements.

The landscape of the site of the Proposed Development is considered to have a Medium to Landscape Value as parts of the landscape are not unspoilt.

Landscape Susceptibility

Landscape susceptibility relates to the ability of a particular landscape to accommodate the Proposed Development. Landscape susceptibility is appraised through consideration of the

baseline characteristics of the landscape and in particular the scale or complexity of a given landscape. The evaluation of landscape susceptibility is undertaken with reference to a three-point scale, as outlined in Table 10-2:

Table 3-2: Landscape Susceptibility Criteria

Landscape Susceptibility	Classification Criteria
High	Small scale, intimate or complex landscape considered to be intolerant of even minor change.
Medium	Medium scale, more open or less complex landscape considered tolerant to some degree of change.
Low	Large scale, simple landscape considered tolerant of a large degree of change.

The landscape of the site of the Proposed Development is considered to have a Medium Landscape Susceptibility.

Landscape Sensitivity

Landscape sensitivity to change is determined by employing professional judgment to combine and analyse the identified landscape value, quality and susceptibility and is defined with reference to the scale outlined in Table 10-3:

Table 3-3: Landscape Sensitivity Criteria

Class	Criteria
High	Landscape characteristics or features with little or no capacity to absorb change without fundamentally altering their present character. Landscape designated for its international or national landscape value or with highly valued features. Outstanding example in the area of well cared for landscape or set of features that combine to give a particularly distinctive sense of place. Few detracting or incongruous elements
High-Medium	Landscape characteristics or features with a low capacity to absorb change without fundamentally altering their present character. Landscape designated for regional or county-wide landscape value where the characteristics or qualities that provided the basis for their designation are apparent. A good example is in the area of reasonably well cared for landscape with notable landscape features.
Medium	Landscape characteristics or features with moderate capacity to absorb change without fundamentally altering their present character.

Class	Criteria
	Landscape designated for its local landscape value or a regional designated landscape where the characteristics and qualities that led to the designation of the area are less apparent or are partially eroded or an undesignated landscape which may be valued locally – for example an important open space. An example is a landscape or a set of features which is neutral or mixed character.
Medium – Low	Landscape characteristics or features which are reasonably tolerant of change without detriment to their present character. No landscape designation present or of medium to low local value, or an example of a common or un-stimulating landscape or set of features and conditions.
Low	Landscape characteristics or features which are tolerant of change without detriment to their present character. No designation present or of low local value. An example of monotonous unattractive visually conflicting or degraded landscape or set of features.

The landscape of the site of the Proposed Development is considered to have a Medium Landscape Sensitivity.

Magnitude of Landscape Change

Magnitude of landscape change is an expression of the size or scale of change in the landscape, the geographical extent of the area influenced and the duration and reversibility of the resultant effect. The variables involved are described below:

- The extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- The extent to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones;
- Whether the effect changes the key characteristics of the landscape, which are integral to its distinctive character;
- The geographic area over which the landscape effects will be felt (within the Proposed Development Site itself; the immediate setting of the Proposed Development Site; at the scale of the landscape type or character area; on a larger scale influencing several landscape types or character areas); and
- The duration of the effects (short term, medium term or long term) and the reversibility of the effect (whether it is permanent, temporary or partially reversible).

Changes to landscape characteristics can be both direct and indirect. Direct change occurs where the Proposed Development will result in a physical change to the landscape within or adjacent to the Proposed Development site. Indirect changes are a consequence of the direct changes resulting from the Proposed Development. They can often occur away from the Proposed Development site (for example, off-site construction staff parking) and may be a result of a sequence of interrelationships or a complex pathway (for example, a new road or

footpath construction may increase public access and associated problems e.g., littering). They may be separated by distance or in time from the source of the effects.

The magnitude of change affecting the baseline landscape resource is based on an interpretation of a combination of the criteria set out in Table 10-4.

Table 3-4: Magnitude of Landscape Change Criteria

Magnitude Landscape Change	Classification Criteria
None	Landscape characteristics or features with little or no capacity to absorb change without fundamentally altering their present character. Landscape designated for its international or national landscape value or with highly valued features. Outstanding example in the area of well cared for landscape or set of features that combine to give a particularly distinctive sense of place. Few detracting or incongruous elements
Negligible	Landscape characteristics or features with a low capacity to absorb change without fundamentally altering their present character. Landscape designated for regional or county-wide landscape value where the characteristics or qualities that provided the basis for their designation are apparent or a landscape with highly valued features locally. Good example in the area of a well-cared for landscape or set of features that combine to give a clearly defined sense of place.
Low	Landscape characteristics or features which are reasonably tolerant of change without determent to their present character. No designation present or of little local value. An example of an un-stimulating landscape or set of features; with some areas lacking a sense of place and identity.
Medium	Noticeable change, affecting some key characteristics and the experience of the landscape; and Introduction of some uncharacteristic elements
High	Noticeable change, affecting many key characteristics and the experience of the landscape; and Introduction of many incongruous developments
Very High	Highly noticeable change, affecting most key characteristics and dominating the experience of the landscape; and Introduction of highly incongruous development

It's considered that the Proposed Development changes to landscape characteristics are Medium to High.

3.2.5.2 ***Visual Effects***

Visual effects are determined by the extent of visibility and the nature of the visibility (i.e., how a development is seen within the landscape); for example, whether it appears integrated and

balanced within the visual composition of a view or whether it creates a focal point. Adverse visual effects may occur through the intrusion of new elements into established views, which are out of keeping with the existing structure, scale and composition of the view. Visual effects may also be beneficial, where an attractive focus is created in a previously unremarkable view, or the influence of previously detracting features is reduced. The significance of effects will vary, depending on the nature and degree of change experienced and the perceived value and composition of the existing view.

Receptors

For there to be a visual effect, there is the need for a viewer. Views experienced from locations such as settlements, recognised routes and popular vantage points used by the public have been included in the assessment. Receptors are the viewers at these locations. The degree to which receptors, i.e., people, will be affected by changes as a result of the Proposed Development depends on a number of factors.

Value of the View

Value of the view is an appraisal of the value attached to views and is often informed by the appearance on Ordnance Survey of tourist maps and in guidebooks, literature or art. Value can also be indicated by the provision of parking or services and signage and interpretation. The nature and composition of the view is also an indicator. The value of the view is determined with reference to the definitions outlined in Table 10-5.

Table 3-5: Value of the View

Value	Classification Criteria
High	Nationally recognised view of the landscape, with no detracting elements.
Medium	Regionally or locally recognised view, or unrecognised but pleasing and well composed view, with few detracting elements.
Low	Typical or poorly composed view often with numerous detracting elements.

Visual Susceptibility

The Landscape Institute, '*Guidelines for Landscape and Visual Effect Assessment'*, (3rd Edition. 2013) identify that the susceptibility of visual receptors to changes in views and visual amenity is a function of:

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

For example, residents in their home, walkers whose interest is likely to be focused on the landscape or a particular view, or visitors at an attraction where views are an important part of the experience often indicate a higher level of susceptibility. Whereas receptors occupied in outdoor sport, where views are not important, or at their place of work, are often considered

less susceptible to change. Visual susceptibility is determined with reference to the three-point scale and criteria outlined in Table 10-6.

Table 3-6: Visual Susceptibility

Susceptibility	Classification Criteria
High	Receptors for which the view is of primary importance and are likely to notice even minor change.
Medium	Receptors for which the view is important but not the primary focus and are tolerant of some change.
Low	Receptors for which the view is incidental or unimportant and is tolerant of a high degree of change.

Visual Sensitivity

Sensitivity to change considers the nature of the receptor; for example, a person occupying a residential dwelling is generally more sensitive to change than someone working in a factory unit. The importance of the view experienced by the receptor also contributes to an understanding of the susceptibility of the visual receptor to change as well as the value attached to the view. A judgement is also made on the value attached to the views experienced. This takes account of:

- Recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations;
- Indicators of the value attached to views by visitors, for example through appearance in guidebooks or on tourist maps, provision of facilities for their enjoyment (sign boards, interpretive material) and references to them in literature or art; and
- Possible local value: it is important to note that the absence of view recognition does not preclude local value, as a view may be important as a resource in the local or immediate environment due to its relative rarity or local importance.

The visual sensitivity to change is based on interpretation of a combination of all or some of the criteria outlined in Table 10- 7:

Table 3-7 Visual Sensitivity

Visual Sensitivity	Criteria
High	Users of outdoor recreational facilities, on recognised national cycling or walking routes or in national designated landscapes. Dwellings with views orientated towards the Proposed Development.
High – Medium	Users of outdoor recreational facilities, in locally designated landscapes or on local recreational routes that are well publicised in guidebooks.

Visual Sensitivity	Criteria
	Road and rail users in nationally designated landscapes or on recognised scenic routes, likely to be travelling to enjoy the view.
Medium	Users of primary transport road network, orientated towards the Development, likely to be travelling for other purposes than just the view. Dwellings with oblique views of the Proposed Development.
Medium – Low	People engaged in active outdoor sports or recreation and less likely to focus on the view. E.g. outdoor workers – agriculture, horticulture Primary transport road network and rail users likely to be travelling to work with oblique views of the Development or users of minor road network.
Low	People engaged in work activities indoors, with limited opportunity for views of the Development.

Magnitude of Visual Change

Visual effects are direct effects as the magnitude of change within an existing view will be determined by the extent of visibility of the Proposed Development. The magnitude of the visual effect resulting from the Proposed Development at any particular viewpoint or receptor is based on the size or scale of change in the view, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Proposed Development;
- The degree of contrast or integration of any new features or changes in the landscape form, scale, mass, line, height, sky lining, back-grounding, visual clues, focal points, colour and texture;
- The nature of the view of the Proposed Development, in relation to the amount of time over which it will be experienced and whether views will be full, partial or glimpses;
- The angle of view in relation to the main activity of the receptor, distance of the viewpoint from the Proposed Development and the extent of the area over which the changes will be visible; and
- The duration of the effects (short term, medium term or long term) and the reversibility of the effect (whether it is permanent, temporary or partially reversible).

The magnitude of visual effect resulting from the Proposed Development at any particular viewpoint or receptor is based on the interpretation of the above range of factors and is set out in Table 10- 8.

Table 3-8 Magnitude of Visual Change (Visual effects)

Magnitude	Criteria
Very High	The Proposed Development will cause significant changes in the existing view over a wide area or a change which will dominate over a limited area.
High	The Proposed Development will cause a considerable change in the existing view over a wide area or a significant change over a limited area.
Medium	The Proposed Development will cause modest changes to the existing view over a wide area or noticeable change over a limited area.
Low	The Proposed Development will cause very minor changes to the view over a wide area or minor changes over a limited area.
Negligible	The Proposed Development will cause a barely discernible change in the existing view.
None	No change in the existing view.

3.2.6 **Duration and Quality of Effects**

Table 10-9 provides the definition of the duration of landscape and visual effects:

Table 3-9 Definition of the duration of landscape and visual effects

Duration	Description
Temporary	Effects lasting one year or less
Short-term	Effects lasting one to seven years
Medium-term	Effects lasting seven to twenty years
Long-term	Effects lasting twenty to fifty years
Permanent	Effects lasting over fifty years

The quality of both landscape and visual effects can be Beneficial (Positive), Adverse (Adverse) or Neutral according to the definitions set out in Table 10-10:

Table 3-10 Definition of Quality of Effects

Class	Criteria
Beneficial:	A beneficial effect which will improve or enhance the landscape character or viewpoint.
Neutral	A neutral effect which will neither enhance nor detract from the landscape character or viewpoint.

Class	Criteria
Adverse	An adverse effect which will detract from the existing landscape character or viewpoint.

3.2.7 Significance Criteria

The objective of the assessment process is to identify and evaluate the potentially significant effects arising from the Proposed Development. The assessment will identify the residual effects likely to arise from the finalised design taking into account mitigation measures and the change over time. The significance of effects is assessed by considering the sensitivity of the receptor and the predicted magnitude of effect in relation to the baseline conditions. In order to provide a level of consistency and transparency to the assessment and allow comparisons to be made between the various landscape and visual receptors subject to assessment, the assessment of significance is informed by pre-defined criteria as outlined in the Table 10-11. When assessing significance, individual effects may fall across several different categories of significance and professional judgement is therefore used to determine which category of significance best fits the overall effect on a landscape or visual receptor. The significance of the effects can be adverse (adverse) or beneficial (positive) according to the definitions set out in Table 10- 11.

Table 3-11 Categories of Significance of Landscape and Visual Effects

Effect Magnitude	Definition
Imperceptible Effect:	An effect capable of measurement but without noticeable consequences
Minor Effect:	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Moderate Effect:	An effect that alters the character of the environment in a manner that is consistent with the existing and emerging trends
Significant Effect:	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Profound Effect:	An effect which obliterates sensitive characteristics

3.2.8 Viewsheds

Viewsheds were defined in 3 different points of the site of the Proposed Development (V1-V3), as illustrated in Figures 10-1 to 10-3.

These Viewsheds were processed using *Google Earth Pro* software, that adjusted the view of the observer 2.00 meters above the ground.

In these Figures, the visibility from the placemark defined in the Site is represented in green. Existing vegetation barriers are not considered.

Figure 3-1: Zone of Theoretical Visibility

Figure 3-2: Zone of Theoretical Visibility

Figure 3-3: Zone of Theoretical Visibility

3.2.9 **Study Area**

The viewshed analysis identified a wide geographical area from where the Proposed Development had visibility. The study area was then adjusted by field study, desk studio and using standardised viewpoint distances from the source of effect.

Due to the scale and nature of the Proposed Development within this receiving landscape setting, it is anticipated that the Proposed Development is not likely to give rise to significant landscape or visual effects beyond approx. 1km. However, a precautionary 3.0km-radius study area is used in this instance.

As one moves away from any type of development in the landscape, it will become less perceptible with distance. It is common practice to consider the viewpoint distance as laid out in Table 10–12 Viewpoint Distance, below.

Table 10-12 identifies and describes the effect of a viewpoint and the distances associated with these visual effects.

Table 3-12 Viewpoint Distance

Viewpoint Distance	Description
0-2km	It is generally accepted that a development located approximately 2km or less from a viewer would be close enough to allow identification of significant detail. Any positions within this range with open uninterrupted views of a development would generally receive the greatest visual effects.
2-5km	At this distance, visibility of a development site becomes more general, with viewers in open uninterrupted positions able to identify general form, colour/tone and textural contrast, but losing the more focused detail achievable from closer positions. Effects at this distance are generally less than those found between 0-2km.
5-10km	Beyond 5km visual prominence quickly diminishes. Certain circumstances/light conditions etc. have potential to allow certain types of development and material finishes to be perceived. The development increasingly becomes part of the general background/distance views. Upwards of 15km distance, developments quickly become minor features within the landscape and considered imperceptible to the average human eye. The effect of the development diminishes as the developments becomes part of the general background/distance views.

3.2.10 **Potential Visual Receptors**

Effects on potential receptors have been assessed in sections 10.2.10.1 to Section 10.2.10.5. This assessment has been informed by the viewsheds and Photomontage Report.

3.2.10.1 ***Dwellings with views orientated towards the Proposed Development***

Dwellings with views orientated towards the Proposed Development are generally accepted as having a high visual sensitivity.

The setting is predominantly rural with surrounding land uses of agriculture, forestry and a number of one-off residential dwellings quite dispersed.

The site is located 1.5km south of the village of Old Leighlin and 5km southwest of Leighlinbridge, Co. Carlow. On a more regional scale, the Proposed Development site is situated 17km south of Carlow Town and 22km northeast of Kilkenny City.

South of the site there is one dwelling about 110 meters distance and one small settlement about 300 meters distance. North of the site there are 3 dwellings about 700 meters distance. East of the site there are no dwellings between the site and M9. There is no visibility from these dwellings to the site due to the existing quarry and the green barriers between the site and the dwellings. West of the site there is a settlement with a total of 11 dwellings, with the closest ones about 150 metres of the site. Despite this short distance, there is no visibility to the site given the difference in height between the settlement area and the escarpment where the site is located.

3.2.10.2 ***Users of the High Amenity areas***

There are no High Amenity areas overlapping the site of the Proposed Development and no High Amenity areas were identified in the broader landscape.

As areas of ecological, scenic and recreation interest, the paths and green areas associated with the banks of the *Barrow River* (located 4km to the east of the site) can be highlighted. In a lesser extent, the same elements of the *Madlin River* (located 1.5km to the north of the site) can also be mentioned.

3.2.10.3 ***Outdoor workers***

People engaged in outdoor work are not likely to focus on the surrounding view thus having medium to low visual sensitivity.

3.2.10.4 ***Road / transport users***

Users of the main roads close to the Proposed Development are accepted as having medium to low visual sensitivity.

The existing established access is via an existing agricultural access from the L3036 to the east of the site. The site access is ca. 4.9 metres wide where it interfaces with the public road. The access is currently unpaved and accommodates vehicular movements to /from the existing field for agricultural purposes only.

The Proposed Development site is located to the west of the L3036 (that connects Old Leighlin to the north, with Paulstown to the south). The M9 motorway is located approximately 750 metres (straight line distance) to the east of the subject site. The M9 can be accessed at junctions 6 (to the north) and 7 (to the south), both via the R448.

3.2.10.5 ***Indoor workers***

People engaged in work activities indoors, with limited opportunity for views of the development are accepted as having a low visual sensitivity. It is predicted no adverse visual effect to these types of receptors.

3.3 The Existing and Receiving Environment (Baseline Situation)

3.3.1 Site Context

The Proposed development site at *Bannagagole*, *Old Leighlin* Co. Carlow, occupies a total area of 9.43 hectares (ha) and forms part of the Applicant's wider landholding of 26ha. Regionally the site is situated 17km south of Carlow Town and 22km northeast of Kilkenny. On a more local scale, the site is located 1.5km south of the village of Old Leighlin, 5km southwest of Leighlinbridge and immediately south of the existing Old Leighlin Quarry.

The M9 motorway is located to the east of the site with the closest access point being located 7km to the south at Junction 7. Junction 6 of the M9 motorway at Powerstown is located 10km to the northeast.

The setting is rural with surrounding land uses of agriculture, forestry and a number of one-off residential dwellings.

The site lies immediately to the south of an existing limestone bedrock quarry at Bannagagole (Old Leighlin Quarry) which is operated by Kilkenny Limestone Quarries Ltd. Rock extraction, processing, and surplus rock storage is carried out at the existing quarry.

The River Barrow is located 4km to the east of the site, while the Madlin River, a tributary of the Barrow runs in a west to east direction 1.5km north of the site.

The site is accessed from the L3036 which connects to the village of Old Leighlin to the north and the R448 to the east. A small laneway extends westwards into the site from this local road. This laneway connects the road with a derelict farmhouse and associated derelict farm outbuildings which are located within the landholding.

Below are the most relevant sites in the broader landscape of the Proposed Development site, whose correspondence can be found in Figure 10-4:

1 – Old Leighlin
2 – M9
3 – Existing Quarry
4 – Leighlinbridge
5 – River Barrow
6 – R448
7 – Madlin
8 – Rathellen
9 – Kyletock
10 – Equestrian Center
11 – Castle Gardens
12 – Tinnegarney
13 – Muine Bheag
14 – Royal Oak Destillary
15 – Railway
16 – Shankill Castle
17 – Madlin River

Figure 3-4: Aerial View with the identified sites that contribute to the wider landscape character in the Study Area

3.3.2 **Designation and Zoning**

The Planning and Development Act requires that a development plan includes objectives for: "T*he preservation of the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation of views and prospects and the amenities of places and features of natural beauty or interest*", and "*The conservation and protection of the environment including, in particular the archaeological and natural heritage and the*

conservation of European sites and any other sites which may be prescribed for the purposes of this paragraph:

(a) the encouragement, pursuant to Article 10 of the Habitats Directive, of the management of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the European network and essential for the migration, dispersal and genetic exchange of wild species;

(b) the promotion of compliance with environmental standards and objectives established-

> *(i) for bodies of surface water, by the European Communities (Surface Waters) Regulations 2009;*
>
> *(ii) for groundwater, by the European Communities (Groundwater) Regulations 2010; which standards and objectives are included in river basin management plans (within the meaning of Regulation 13 of the European Communities (Water Policy) Regulations 2003).”*

“*The preservation of public rights of way which give access to seashore, mountain, lakeshore, riverbank or other place of natural beauty or recreational utility, which public rights of way shall be identified both by marking them on at least one of the maps forming part of the development plan and by indicating their location on a list appended to the development plan.”*

“*Landscape, in accordance with relevant policies or objectives for the time being of the Government or any Minister of the Government relating to providing a framework for identification, assessment, protection, management and planning of landscapes and developed having regard to the European Landscape Convention done at Florence on 20 October 2000.”*

According to Corine landcover mapping (2018), the site comprises agricultural pastures. No significant land use changes are recorded by previous Corine land cover maps (1990 – 2018). Land use in the surrounding area is also mapped by Corine as agricultural pastures with some areas of coniferous forestry mapped further to the west of the site on higher ground associated with the Castlecomer Plateau.

3.3.3 **Landscape Capacity of the Site**

According to the Carlow County Development Plan 2022-2028 the existing, adopted Landscape Character Assessment 2008 of County Carlow included a comprehensive and insightful examination that grouped the landscapes of Carlow into four major Landscape Character Areas as seen in Figure 10-5. These areas were subject to more detailed analysis that identified 6 Landscape Types (Figure 10-6). These were intended to provide a more specific basis to assist development management by recognising specific features such as river valleys and transitional mid slope areas.

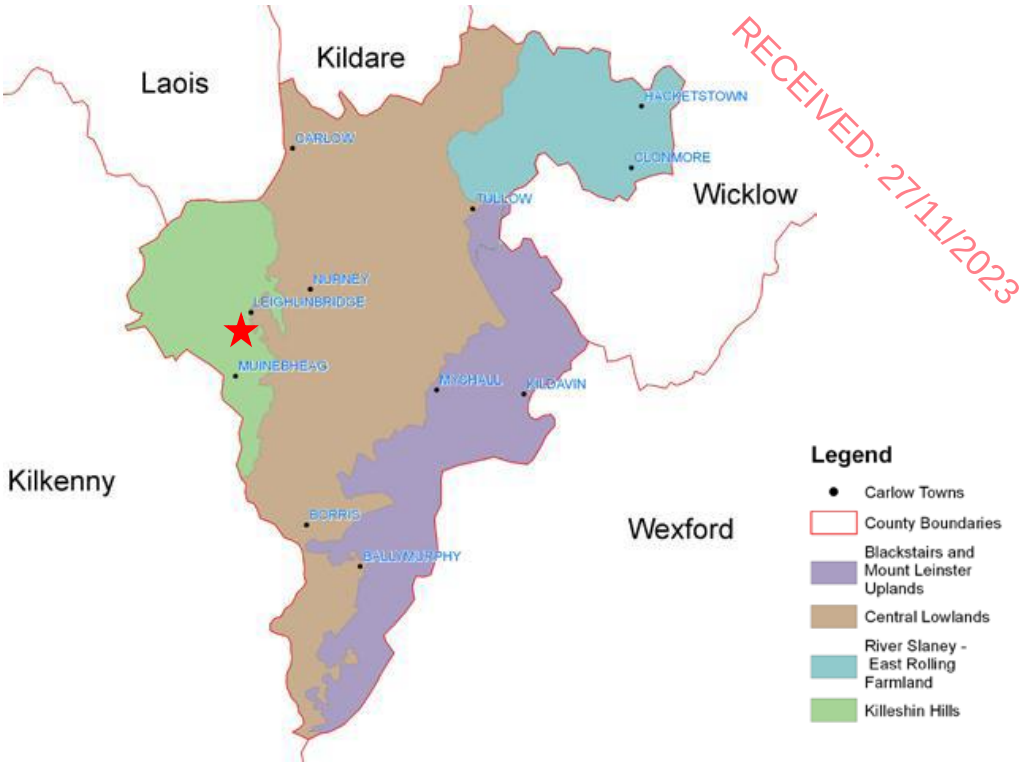


Figure 3-5: Principal Landscape Character Areas. Source: Carlow County Council Development Map 2022-2028. Proposed Development site marked with a star

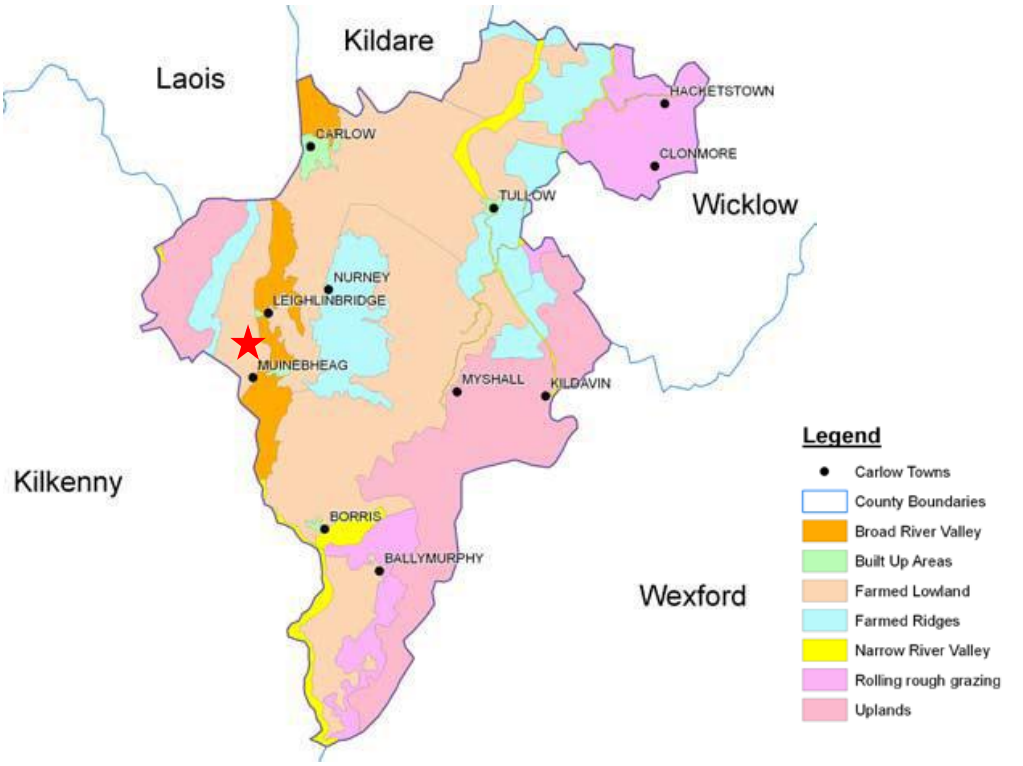


Figure 3-6: Principal Landscape Types. Source: Carlow County Council Development Map 2022-2028. Proposed Development site marked with a star

According to Figures 10-5 and 10-6 the Proposed Development site is part of the "*Killeshin Hills*" Landscape Area and part of the "*Farmed Lowland*" Landscape Type.

The Carlow County Council Development Plan refers to the "*Killeshin Hills*" Landscape Area as:

Key Characteristics

- Rural character with few settlements.
- Distinct prominence of Castlecomer Plateau forms a backdrop to the area and separates the County from Kilkenny.
- Mixture of grassland, rough gazing, and forestry plantations at higher elevations.
- River Barrow forms eastern edge of area.
- Isolated stone quarries and lime workings have left a mark on the landscape.
- Open views and vistas with extensive views across the entire County from ridges and from the Castlecomer Plateau.

Description

This character 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 N90 skirting along the east side of the valley. The lands adjoining the river valley are gently undulating hills which ascend steeply to uplands adjoining County Kilkenny: the Castlecomer Plateau. There are extensive panoramic views of the entire County to be had from the eastern slopes.

The character area contains the following landscape types: uplands, farmed ridges, farmed lowlands and broad river valley.

Geology Soils and Topography

This area is underlain almost wholly by bedrock of Namurian shale and sandstone. It corresponds to the eastern flank of the Castlecomer Plateau, which extends into this portion of northwest County Carlow.

The plateau area is generally characterised by a landscape with bedrock at a shallow depth, and the till and peat subsoils of the ridge area are generally no more than 5m deep. Often, bedrock is within 1m of the surface on the ridge summit and shoulders.

The till on the ridge is dominated by clay subsoil, which means that poorly drained surface water gley soils dominate. The drainage density in this area is therefore higher than in the rest of Carlow, as runoff dominates and infiltration rates are low.

Peat soils occur in areas of blanket peat that have developed in the hollows on top of the ridge.

Alluvial soils occur discontinuously in narrow bands along the streams running off the ridge.

Landcover

The character area has a strong rural ambience with no significant urban settlements/ villages. It is largely an agricultural area with a tapestry of small to medium scale fields in grassland on the lower ground merging into rough grazing and plantation forestry at higher elevations. Boundaries are defined with a mixture of hedge, stone walls, wire fences and grassy banks. There are isolated stone quarries and lime workings.

Settlements

There are no significant urban settlements in the area. Farm buildings tend to be concealed among the rolling hills and enclosed with shelterbelts. There is a scatter of one-off modern houses along the road network. There are also quite incongruous small housing estates in rural areas.

Key Issues

- Development pressure on the countryside for single houses.
- Degrading of the typical landscape character through the removal of internal hedgerows.
- Over management of roadside hedges.

Recommendations

- Conserve character of land pattern and landform typified by small fields defined by hedges and occasional stone walls.
- Review the hedge maintenance regime.
- Encourage the use of native and indigenous planting in new developments to integrate buildings into the surrounding landscape.
- The layout of new forest plantations should not be geometric and should form irregular blocks within established field boundaries.

The above underlined points within the *Key issues* and *Recommendations* are the ones considered to be more important to be considered in the Proposed Development assessment.

3.3.4 Landscape Sensitivity of the Site

A Landscape Sensitivity map was prepared within the Carlow County Development Plan, according to Sensitivity rating to the existing adopted Principal Landscape Character Areas [Locii/Cregan 2008].

According to Figure 10-7 the Proposed Development site is graded with a 2-3 Landscape Sensitivity factor.

Killeshin Hill's area is almost entirely a rural agricultural landscape with a moderate level of sensitivity and moderate potential capacity to absorb different types of development. The east-facing slopes enjoy sweeping panoramic views over most of the County. Due to this upland character and relative exposure, it has a low potential capacity to absorb rural housing or industrial development.

Subject to appropriate mitigation measures there may be moderate scope to absorb extractive industry and wind farming. The area has high potential capacity to absorb farm developments

and a limited level of rural housing with appropriate conditions relating to siting and design. This would apply selectively to farmed ridges and farmed lowland.

As noted above, the upland areas are open to view from a wide area within the County and would have a much higher level of sensitivity where housing would be more exposed to view.

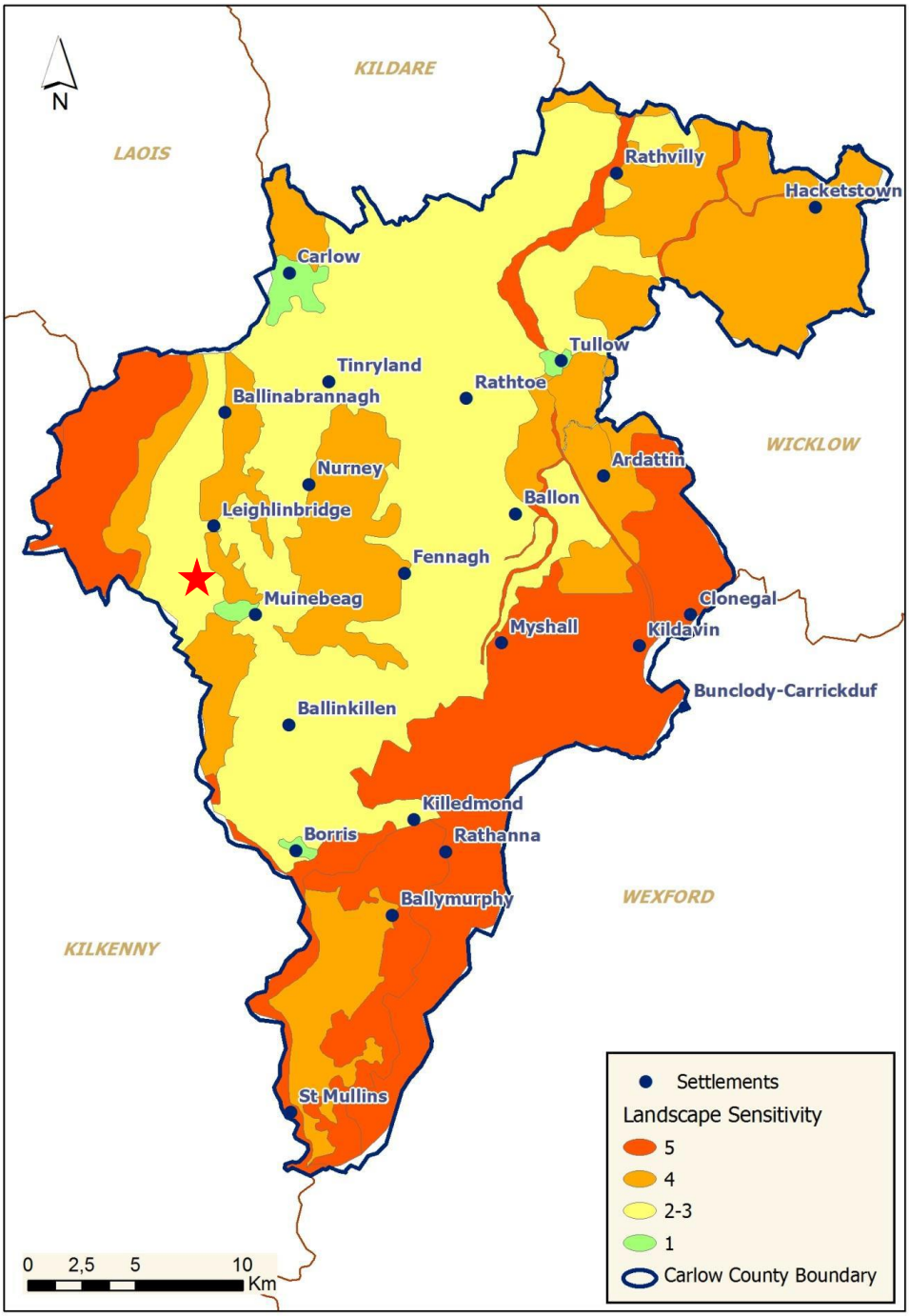


Figure 3-7: Carlow Landscape Sensitivity Map. Source: Carlow County Council Development Map 2022-2028. Proposed Development site marked with a star

Table 10-13 shows how land use policy and development management will have regard to the capacity of the landscape to absorb different types of land use:

Table 3-13: *Land Use Capacity Matrix. Source: Carlow County Council Development Map 2022-2028*

Land use type	Mount Leinster - Blackstairs	Central lowlands	River Slaney - East Rolling Farmland	Killeshin Hills
Agriculture	Low	High	High	High
Rural housing	Low	Moderate	Low	Low
Urban development/ expansion Low Moderate Moderate Low	Low	Moderate	Moderate	Low
Forestry plantation	Moderate	Moderate	Moderate	Moderate
Tourism related activity*	High	High	High	High
Industrial development	Low	Low	Low	Low
Extractive industry	Low	Moderate	Moderate	Moderate
Wind farming	Low	Moderate	Moderate	Moderate

After reviewing Table 10-13 we can conclude that the site, being a Proposed Development for an "*Extractive Industry*" and being on "*Killeshin Hills*" Landscape Character Area is considered to be of "*Moderate*" capacity to absorb different types of land use.

According to Carlow County Development Plan, in providing for new development, particular care shall be taken to conserve, and where appropriate, to restore and enhance those features that contribute to local distinctiveness including:

- The setting of settlements, buildings and historic monuments within the landscape;
- The historic patterns of field boundaries, hedgerows, and other wild and semi-wild vegetation;
- The special qualities of rivers;
- Historic demesne landscapes;
- Skylines, ridges and hill features, including prominent views.

To *Killeshin Hills Landscape Character Area* the general policy objectives are:

- Balance conservation with enhancement of the existing landscape character.
- New developments to maintain integrity of landscape character area though careful location, siting and design.
- Forestry to respect the grain of the landscape.

3.3.5 **Topography and Soils**

The site is located to the east of the *Castlecomer Plateau*, with ground elevations within the site sloping to the east. Natural ground levels within the site range from approximately 75m AOD in the east, adjacent to a local road (L3036), to a high of approximately 130mOD in the west. Topography to the west of the site rises steeply.

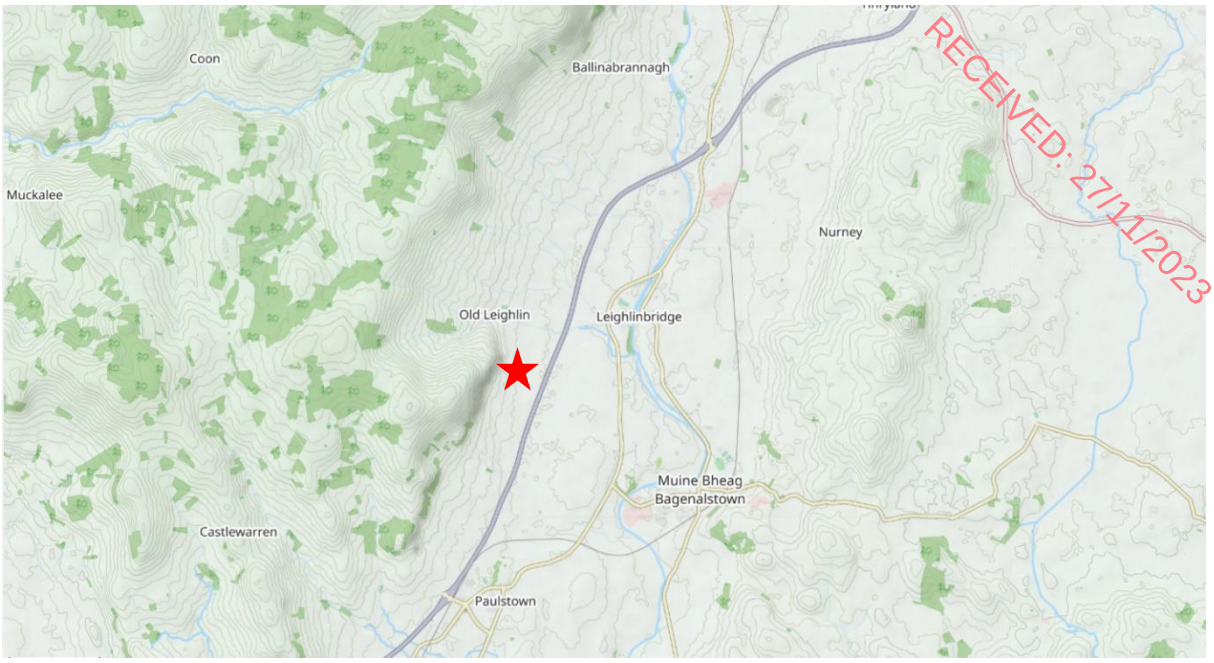


Figure 3-8: Topography on the Broader Landscape. Source: Openstreetmap
Proposed Development site marked with a star

The existing topography of the Proposed Development site can be seen in Figure 10-9. There is a difference of 45 meters between the eastern and western part of the site. The topography of the terrain is smoother in the eastern part becoming increasingly pronounced to the western part.

The EPA soils map for the local area shows that the soils overlying the site are predominantly acid poorly drained mineral soils (AminPD). The EPA map some acid deep well-drained mineral soil (AminDW) and basic shallow well-drained mineral soils (BminSW) in the west of the site. Soils in the surrounding lands are mapped as acidic shallow well-drained mineral soils (AminSW) to the west of the site and within the overall landholding. Soils to the east of the site are mapped as basic deep poorly drained mineral soils (BminPD). An area of made ground is also mapped to the northeast of the site within Old Leighlin Quarry. Soils to the south of the site and within the overall landholding are similar to those mapped within the site.

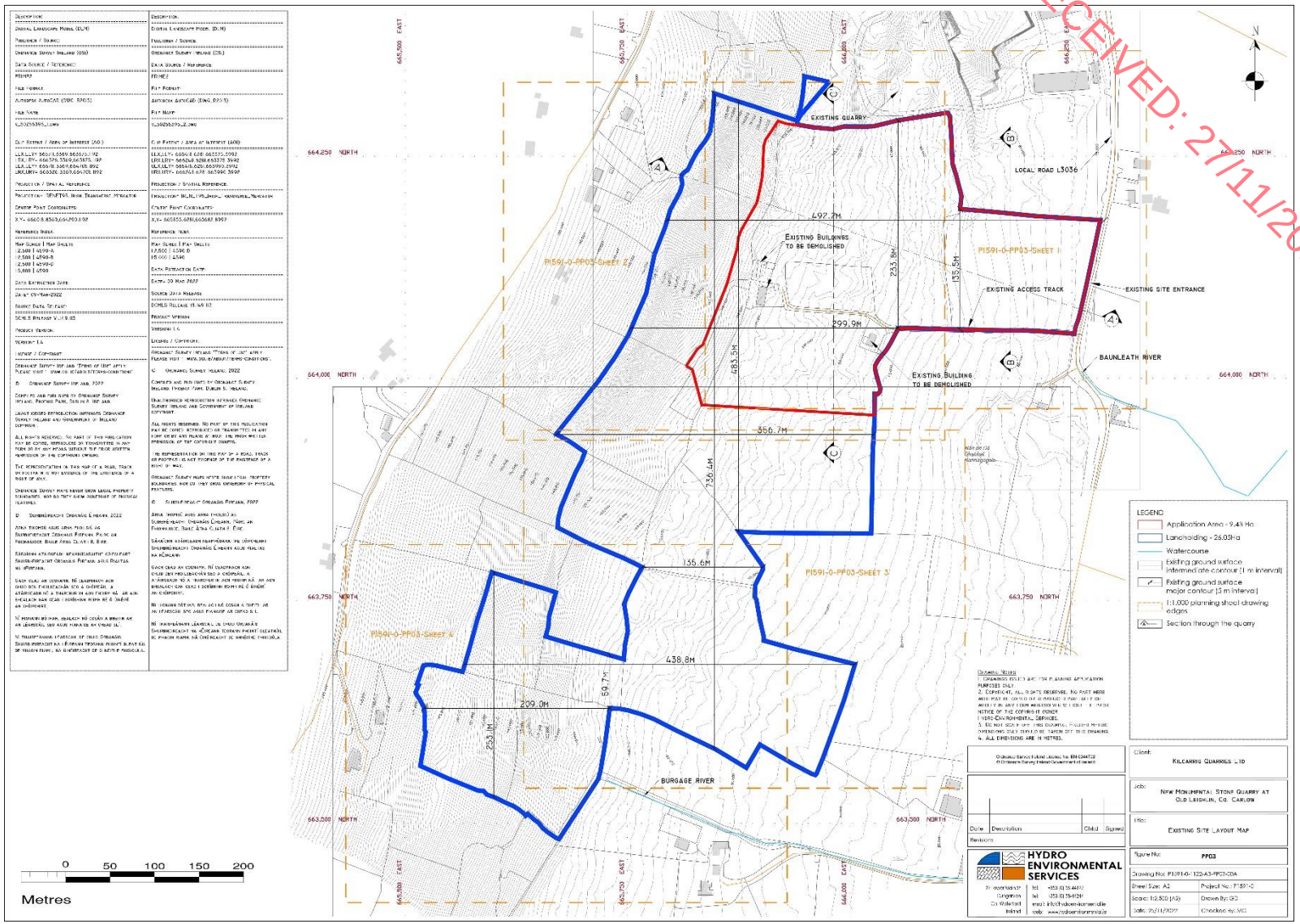


Figure 3-9: Existing topography of the site of the Proposed Development. Proposed Development site outlined in red

3.3.6 **Existing landscape**

As can be seen in figure 10-10, the closer landscape is dominated by the existing quarry, at north of the site. Excluding this area 3, other elements stand out in the landscape:

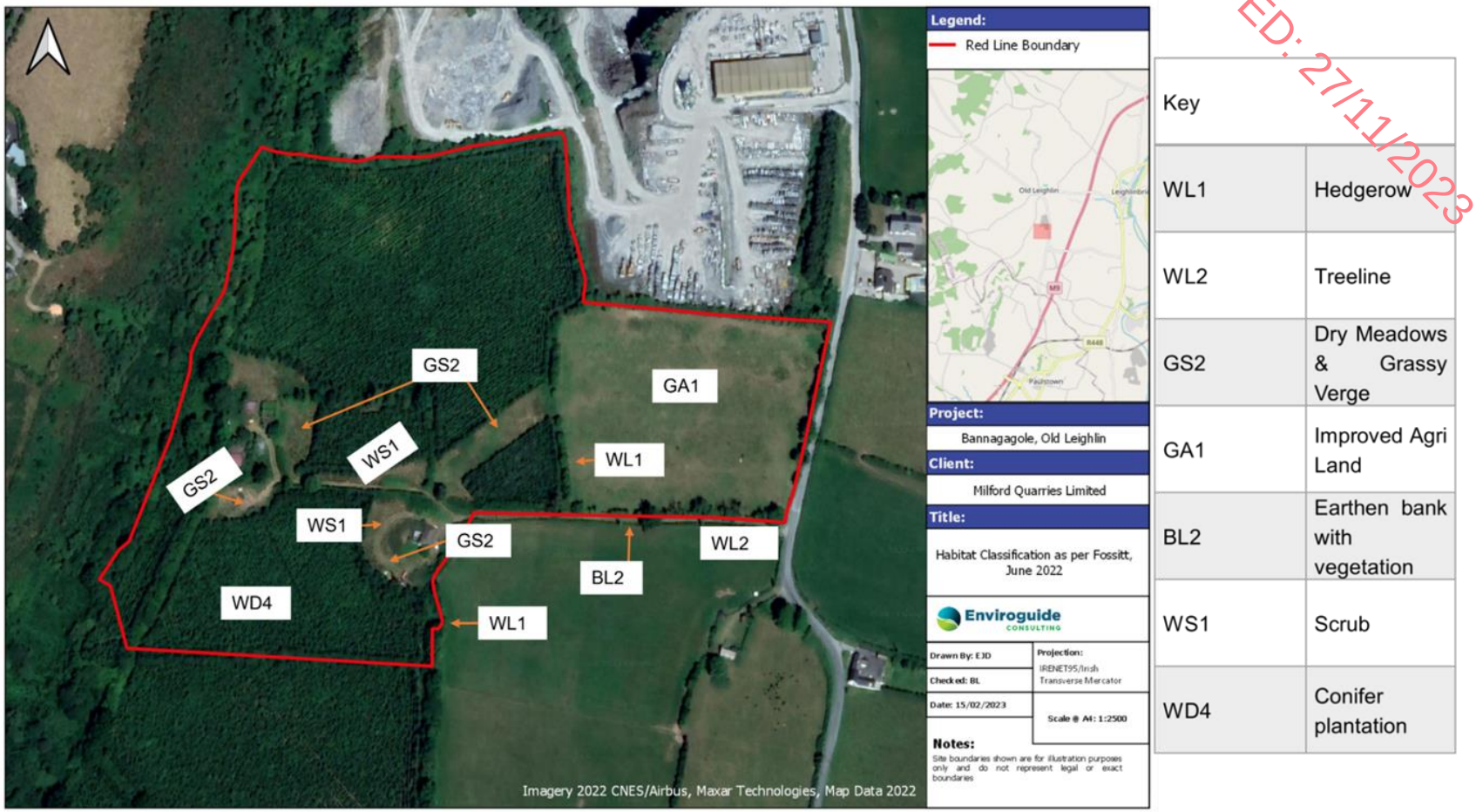
a) The mesh of agricultural fields criss-crossed by hedgerows, at south and east of the site;
b) The forest mesh in the higher area, at west of the site;
c) Some settlements, mainly west of the site, with dispersed dwellings mixed with agricultural fields.

The desk study revealed that a number of different elements on the ground have a bearing on the visibility of the Proposed Development:

- The site is currently a mix of a conifer plantation and a greenfield site;
- Existing hedgerows mainly in the eastern and south-eastern boundaries and in the northern boundary (part of this hedgerow belongs to the existing quarry site);
- The setting is in a rural with surrounding land uses of agriculture, forestry and a number of one-off residential dwellings;
- The general surrounds of the site are covered with existing hedgerows, shrubs of gorse on dry areas and rushes on the wetter, and a scatter of trees;
- Forestry plantation forms the western boundary of the site ownership (relatively young conifer plantations).

Figure 3-10: Aerial View with the limits of the Proposed Development in red. Source: Google Earth

According to the Biodiversity Chapter the habitats of the site are distributed according to Figure 10-11.



Key	
WL1	Hedgerow
WL2	Treeline
GS2	Dry Meadows & Grassy Verge
GA1	Improved Agri Land
BL2	Earthen bank with vegetation
WS1	Scrub
WD4	Conifer plantation

Figure 3-11: Habitat Map of the Proposed Development. Source: Biodiversity Chapter

The site area is predominantly conifer plantation (WD4) and improved agricultural grassland (GA1), while treeline and hedgerows, (WL1 and WL2), constitute the main ecological value of the site. Also present are grassy verges, dry meadows and improved agricultural grasslands (GS2 and GA1). Another dominant feature of the site is the conifer plantation, containing Scot's pine (*Pinus sylvestris)* and some commercial species. No invasive species are present apart from Sycamore (A*cer pseudoplatanus)*.

Considering the percentage of land occupation on the site, shown in Figure 10-11, the following habitats stand out:

WL1 – Hedgerow & WL2 Treelines

Hedgerows (WL1) and Treelines (WL2) comprise the primary ecological value of the site, and function as active boundaries internally and external to the site. WL1 and WL2 habitats were observed bounding the site along the southern and western portions of the site boundary. Their construction was primarily linear and their structure was overgrown with dense bases. The condition of the hedgerows and treelines was generally good, with minimal gaps observed. These habitats occurred adjacent to a local road to the east of the site, the L3036, adjacent to agricultural land, and adjacent to the conifer plantation within the southern portion of the site. Common hedgerow tree species were present including Hawthorn (*Crataegus monogyna)*, Blackthorn (*Prunus spinosa)*, and Grey Willow (*Salix cinerea*). Trees were of varying age, and examples of young oak (*Quercus sp*.) were observed. Other common species such as Dog Rose (*Rosa canina)*, Greater Stitchwort (*Rabelera holostea),* Ivy (*Hedera sp.)*, and Bramble (*Rubus* sp.) were also present. Some management was observed along the roadway where hedgerows were trimmed, presumably with a bar cutter (to partial height).

Figure 3-12:Clockwise from top left: WL1, WL1 with taller tree species; and WL2

GS2 – Dry Meadow and Grassy Verge

Corridors of GS2 link the GA1 habitat directly south of Old Leighlin Quarry, with further pockets of GS2 present throughout the site. Floral species observed within this habitat include Ribwort plantain (*Plantago lanceoleta*), Ox-eye daisy (*Leucanthemum vulgare),* Meadow vetchling *(Lathyrus pratensis),* Hogweed *(Heracleum sphondylium)* and Red clover *(Trifolium pratense)*.

Figure 3-13: GS2 Dry Meadows and grassy verges

GA1 – Improved Agricultural Grassland

The GA1 habitat is located directly south of the Old Leighlin Quarry site, within the site boundary. Perennial ryegrass, species of dock, nettle and thistle were observed.

Figure 3-14: GA1 Improved agricultural grassland

WD4 – Conifer Plantation

Along the southern section of the site is located a conifer plantation (WD4). Access was not possible in the southern portion of the site due to dense vegetation.

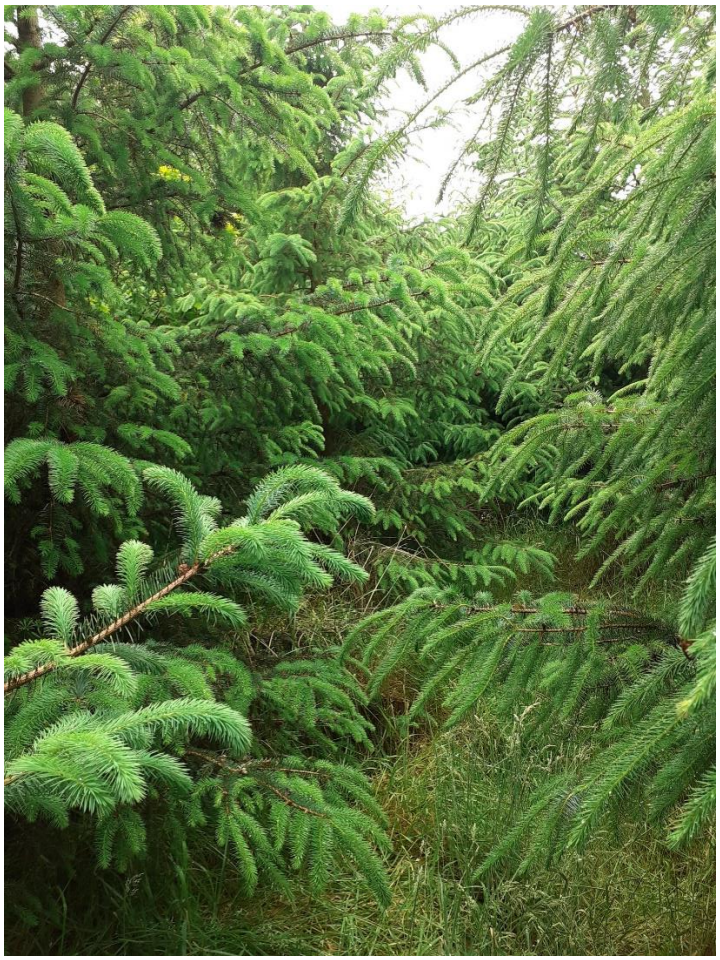


Figure 3-15: Example of dense conifer vegetation

3.3.7 **Preserved / Protected Views, Scenic Routes**

Michael Cregan and Associates in association with Compass Informatics have been commissioned by Carlow County Council to prepare a Views and Prospects Report for the County. The report is guided by a Landscape Character Assessment of the County. The report consists of a listing of views, prospects and scenic routes in the county which merit protection because of their inherent quality. The listing provides a basis for decision making and policy formation for developments in the landscape.

The objectives of the report are as follows:

- To identify and compile a list of the County's most important views, prospects and scenic routes.
- To provide the Council with a mechanism for formulating policies and objectives that ensure that changes arising from developments will be sympathetic to these views and scenic routes, and thus contribute to the protection of the character of the county's landscape.
- To contribute to the process of landscape planning and management consistent with principles of sustainable development.

The outputs of the study will consist of:

- A list of important views, vistas and scenic routes with an accompanying description of their precise location, extent, and orientation, and their particular attributes.
- A map showing the location of the views, prospects, and scenic routes. These maps are shown in Figures 10-16 and 10-17.

The following Protected Views were identified in the broader landscape:

Protected View 29 - View south, of River Barrow

Location – Leighlinbridge; Orientation – South; Route - R705-24; Type – View; Features – River Barrow; Qualities – 2

Distance to the Site – 3.00 kilometres

Protected View 30 - View north, of River Barrow and Black Church

Location – Leighlinbridge; Orientation – North; Route - R705-24; Type – View; Features – River Barrow and Black Church; Qualities - 2

Distance to the Site - 3.00 kilometres

Protected View 31 - Vista east, panorama across central plain to Blackstairs. Ridge Cross

Location - Ridge Cross; Orientation – East; Route - L3037-24; Type – Vista; Features – Panorama across Central Plain to Balckstairs; Qualities – 3

Distance to the Site - 3.60 kilometres

Protected View 32 - Vista east, panorama from Killeshin Hills across central plain to Blackstairs. Tuolcreen Cross

Location - Tuolocreen Cross; Orientation – East; Route - L7123; Type – Vista; Features - Panorama from; Qualities – 3

Distance to the Site - 5.20 kilometres

Protected View 34 - Muine Bheag

Location - Muine Bheag; Orientation – South; Route - R705 -42; Type – View; Features - View of town from point to north of entrance along River Barrow; Qualities – 3

Distance to the Site - 4.75 kilometres

No visual effect was identified in any of these 5 Protected Views, giving the distance of these views to the Site, and the existing screening by the natural and artificial elements between the Site and these locations.

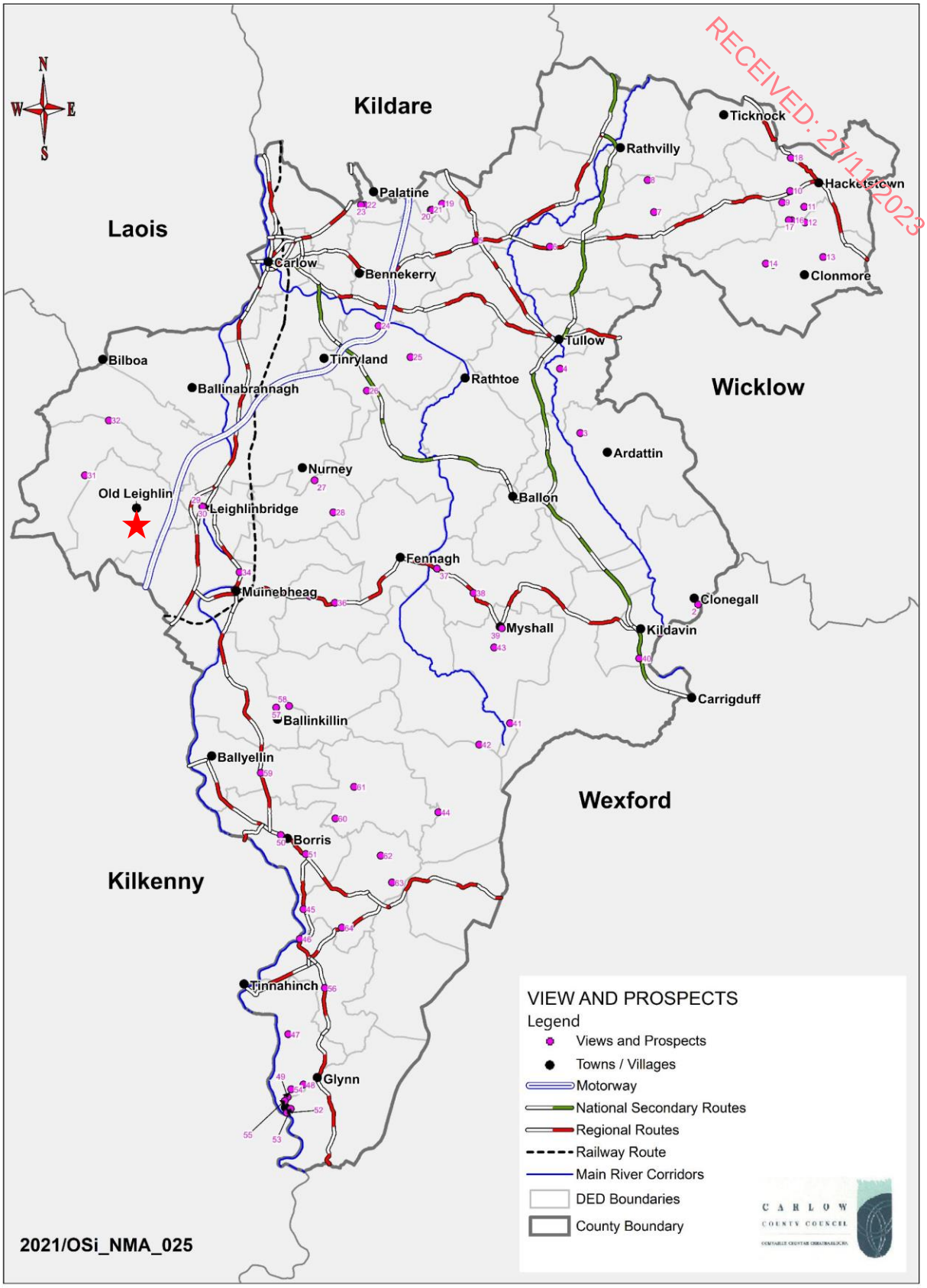


Figure 3-16: View and Prospects Map. Source: Carlow County Council Development Map 2022-2028. Proposed Development Site marked with a star

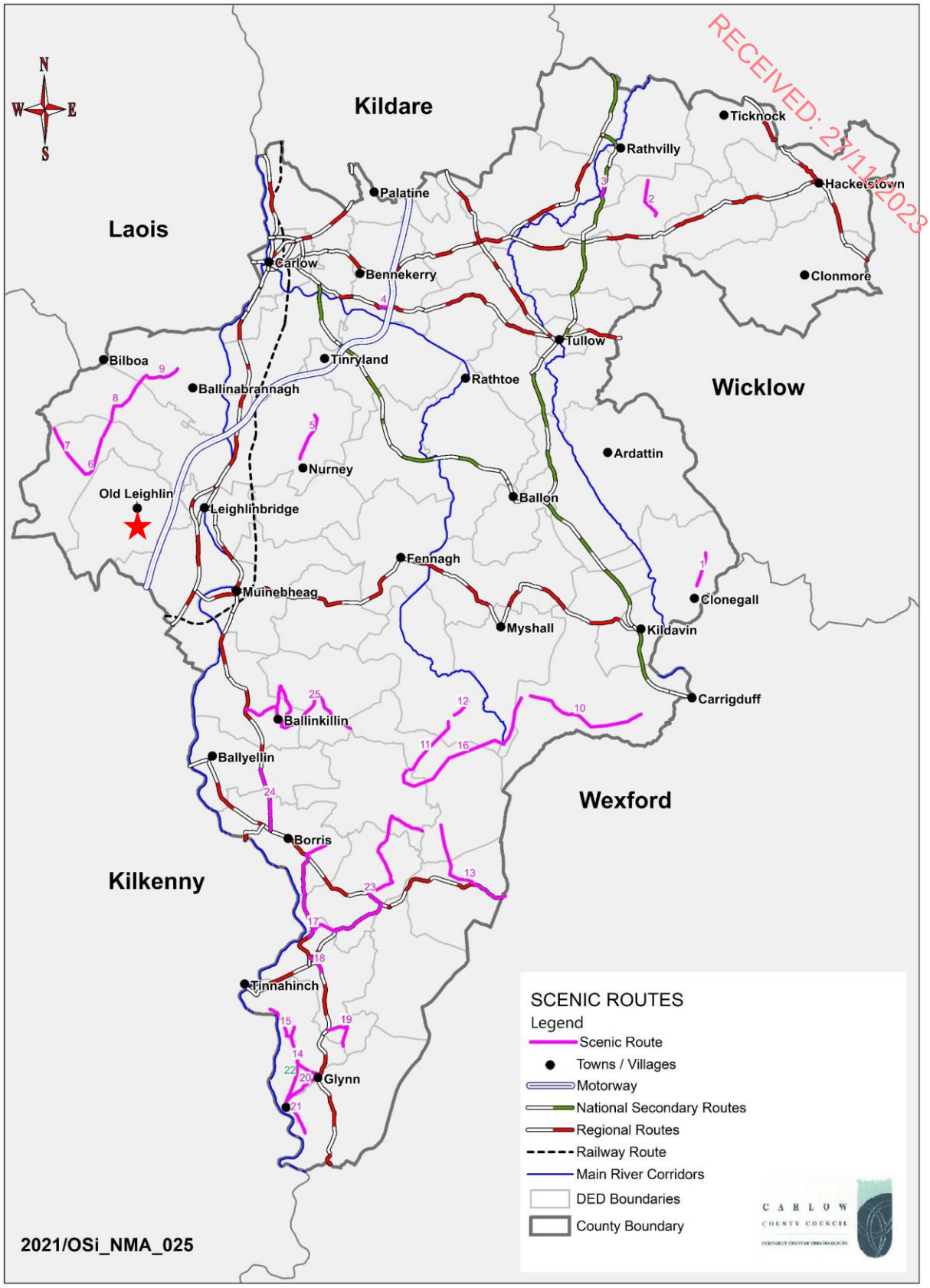


Figure 3-17: Scenic Routes Map. Source: Carlow County Council Development Map 2022-2028. Proposed Development Site marked with a star

Scenic Route 6

Location - Ridge Cross Roads; Route - L7123-0; Features - Central Plain; Qualities – 3; Comments - One off housing effect on view

Scenic Route 7

Location - Road to the Butts; Route - L3037- 11; Features - Panorama across central plain; Qualities - 3

Scenic Route 8

Location - Tomard Wood; Route - L7130 -26; Features - Panorama to south east; Qualities – 2; Comments - Partly obscured by road embankments

Scenic Route 9

Location - Tomard lower; Route - L3041- 19; Features - Panorama across central plain; Qualities – 2

No visual effect was identified in any of these 4 Scenic Routes, giving the distance of the of these routes to the Site, and the existing screening by the natural and artificial elements between the Site and these locations.

3.3.8 Protected Structures/Sites and Monuments

According to the National Inventory of Architectural Heritage, there are no Protected Structures, Sites and Monuments Recorded within the Site boundary and in the vicinities of the Site. In the broader landscape the following elements stand out:

A. Protected Structures

14 no. *Protected Structures* were identified within the broader landscape, as shown in Figure 10-18 (blue circles):

Saint Laserian's Cathedral - Reg. No. 10301101
Date: 1150 – 1900; Original Use: cathedral; In Use as: cathedral; Rating: National
Oldleighlin House - Reg. No. 10301103
Date: 1830 – 1850; Original Use: house; In Use as: house; Rating: Regional; Saint Laserian's
Catholic Church - Reg. No. 10400503
Date: 1820 – 1840; Original Use: church/chapel; In Use as: church/chapel; Rating: Regional
Reg. No. 10400507
Date: 1830 – 1850; Original Use: store/warehouse; In Use as: shop/retail outlet; Rating: Regional
Reg. No. 10400506
Date: 1830 – 1850; Original Use: store/warehouse; Rating: Regional
Reg. No. 10400505
Date: 1820 – 1840; Original Use: post office; Rating: Regional
Garrison House - Reg. No. 10400509
Date: 1750 – 1780; Original Use: house; In Use as: house; Rating: Regional
Reg. No. 10400510
Date: 1720 – 1760; Original Use: house; In Use as: public house; Rating: Regional
Glen Lodge - Reg. No. 10400511

Date: 1740 – 1760; Original Use: house; In Use as: house; Rating: Regional
Rathvinden House - Reg. No. 10400502
Date: 1800 – 1860; Original Use: house; In Use as: house; Rating: Regional
Burgage House - Reg. No. 10301602
Date: 1760 – 1770; Original Use: house; In Use as: house; Rating: Regional
Reg. No. 10301603
Date: 1840 – 1870; Original Use: culm crusher; Rating: Regional
Killinane House - Reg. No. 10301604
Date: 1760 – 1780; Original Use: house; In Use as: house; Rating: Regional

The Proposed Development site is not visible from any of these structures, given the existing vegetation and physical barriers.

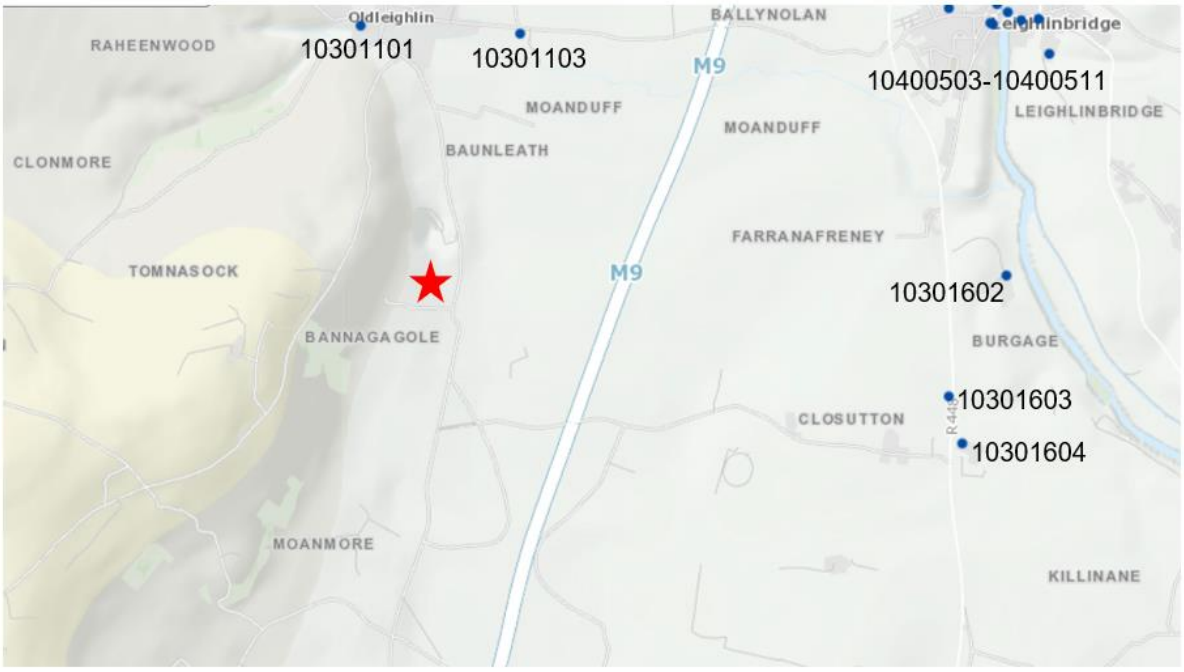


Figure 3-18: Protected Structures, National Monuments Service.
Proposed Development Site marked with a star

B. Sites and Monuments

30 no. *Sites and Monuments Recorded* were identified within the broader landscape, as shown in Figure 10-19 (red circles).

The Proposed Development site is not visible from any of these sites, given the existing vegetation and physical barriers.

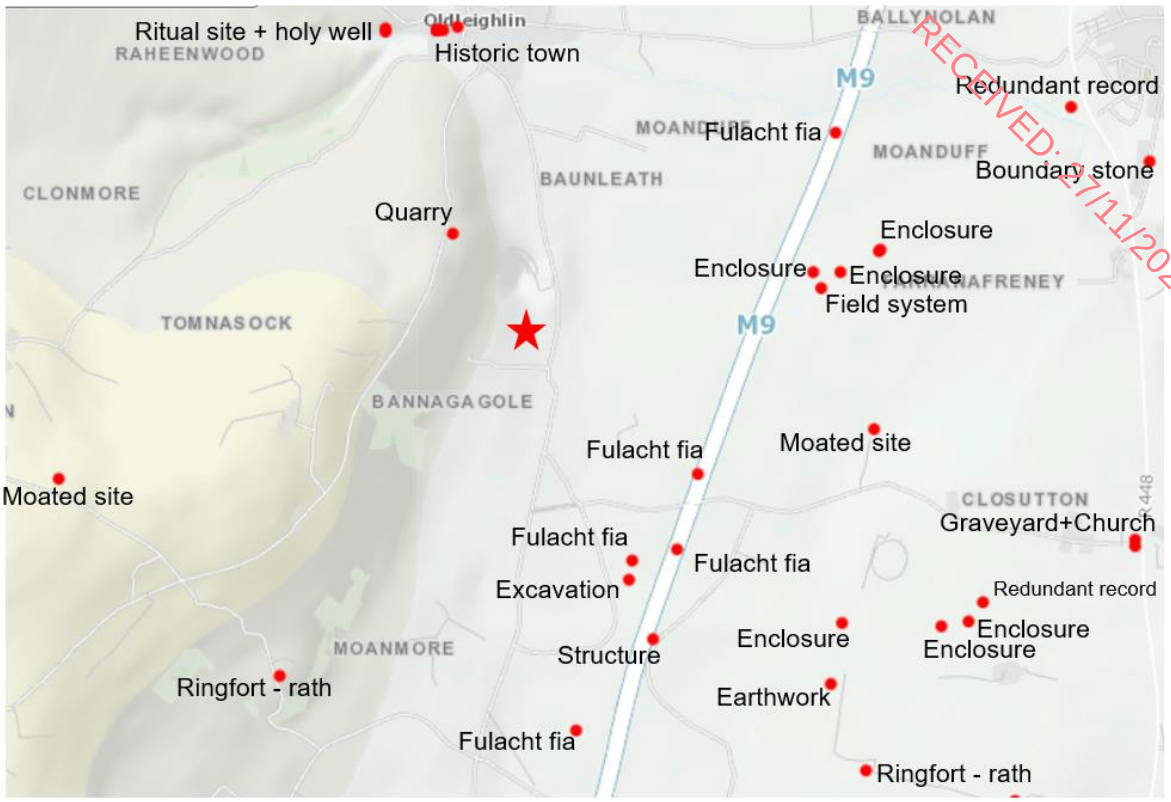


Figure 3-19: Recorded Monuments and Places. Proposed Development site marked with a star

3.4 Characteristics of the Proposed Development

3.4.1 Project Description

See Chapter 2 for full description of the construction phase and operational phase of the Proposed Development and Site Layout.

3.4.2 Landscape Plan

A landscape proposal is included within the Proposed Development. This project includes the plantation of trees along the North, East and West borders of the Site, as illustrated in Figures 10-20, 10-21 and 10-22. In these Figures is also possible to see that most of the southern and northern existing hedgerows are kept within the Site.

The installation of this new green structure will compensate for the existing vegetation that will be removed. The new plantations are defined along the Site boundaries, mostly associated with the proposed berms, creating a “green wall” that will mitigate, in the short to medium-term, the visual effects of the Proposed Development.

The proposed Native Woodland Planting will be planted with a mixture of native small trees and shrubs. They will be planted at 1msq spacing. This mixture will provide additional habitats and food for wildlife and provide additional screening of the proposed development.

These areas will be planted to the specifications below. All areas will be cultivated to a depth of 400mm incorporating suitable organic material at the rate of 50kg per 4 sq. meters. Any

plants that die will be replaced. An area of one metre squared around all plants shall be kept weed free for 4 years to aid strong establishment.

As this planting grows less and less of the quarry floor will be seen. It is estimated that within the short term (less than 5 Years) views of the quarry floor will not be visible from the close-range viewpoints.

It is proposed retain large part of the existing hedgerows. They have tree primary functions:

1. Providing additional habitats for local flora and fauna and act as an ecological link between existing habitats.

2. Provide soft edges to help blend the development into the landscape

3. They will resemble traditional field boundaries of non-intensive farming and add to the rural landscape character.

Sightlines (as per county council recommendations) on the roadside boundary shall be maintained by regular pruning when necessary.

All the specifications of the new green structure are included in the Landscape Drawings, in Appendix C of this EIAR Addendum. The timeline of planting is divided in 3 phases - Construction Phase (1st year); Operational Phase (5th year) and Restoration Phase (14th year).

All the species specifications are detailed in the referred drawings.

The proposed trees are distributed by individual unit in the drawings, with a different representation for each specie, and have an estimated 5-year grow projection in the drawing's representation.

Figure 3-20: Proposed Landscape Plan

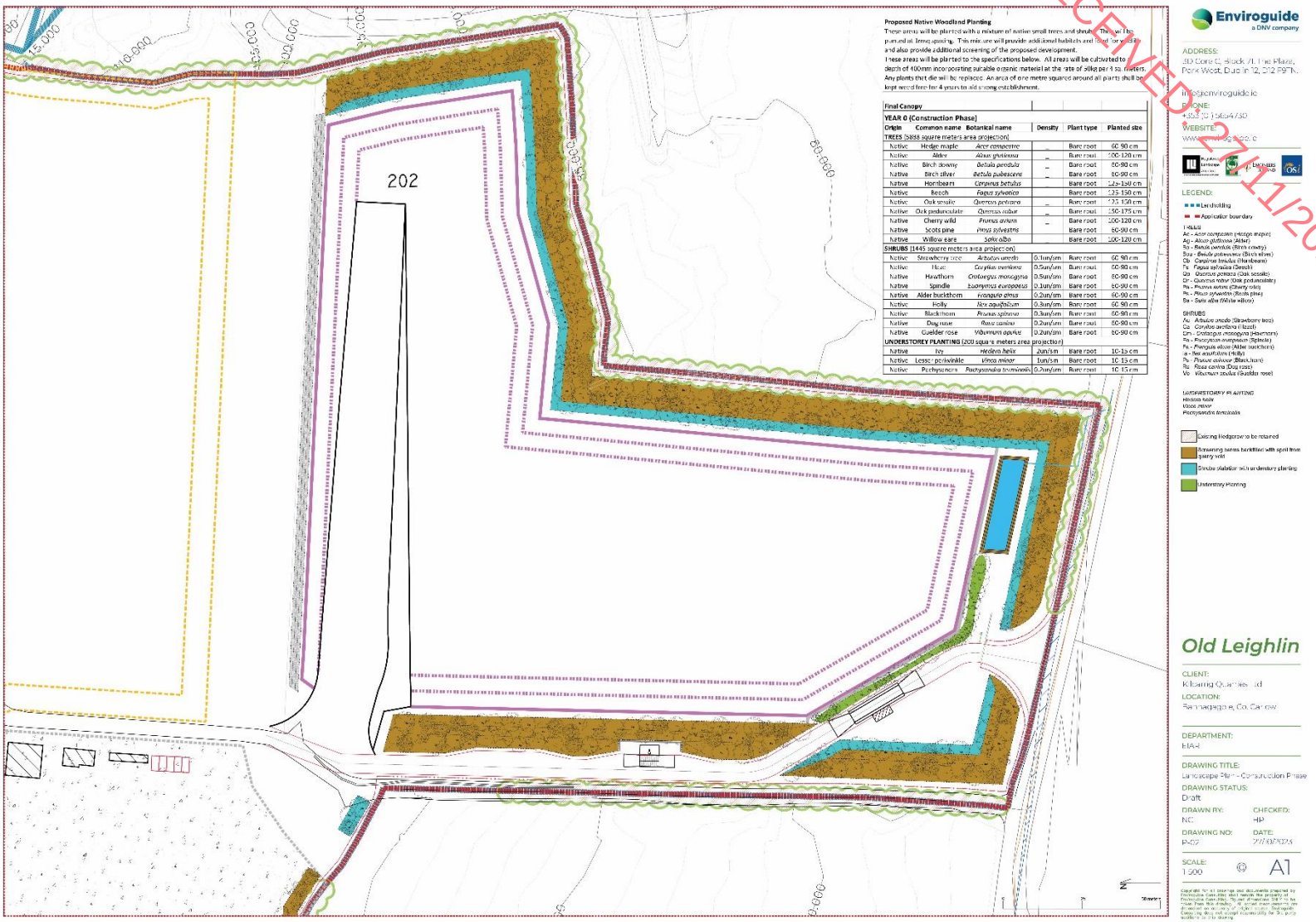


Figure 3-21: Proposed Landscape Plan (Construction Phase)

Figure 3-22: Proposed Landscape Plan (Operational Phase – Year 5)

Figure 3-23: Cross Sections. Source: Hydro Environmental Services

3.4.3 Restoration Plan

A Restoration Plan is included in the Proposed Development, as illustrated in Figures 10-24 and 10-25. The Restoration Plan main objective is to "*create a natural habitat throughout the Site, which is one of the beneficial after uses proposed in the EPA Guidelines: 'Environmental Management in the Extractive Industry (2008)*".

On completion of all quarry activities, the following will be completed:

1. Removal of all remain stone and materials from the storage/processing yard and place them in the base of the quarry void.

2. Plantation of the proposed trees and shrubs.

3. Area seeded with grass and clover mixture and returned to agricultural use

4. All structures will be cleared and removed from the Site.

5. The quarry void will be left to naturally infill with groundwater, which will likely settle at around ~70m AOD.

6. Retention of the berms defined in the Construction Phase with the trees and shrubs, that will have a 14-year growth, functioning as a mitigation screening to the surroundings.

All proposed tree/shrub species are native and will be sourced locally. All planting works will be carried out in line with the current best practice.

Also, Gorse (*Ulax auropaeus*) will be encouraged to grow on the elevated section along the western boundary and on the soil storage area. This may colonise naturally and will also be introduced via seed.

Most of the Northern, Easter and South-eastern existing hedgerows are kept within the Proposed Development. This is fundamental to mitigate the visual effects from most of the visual receptors identified in Section 10.2.10 of this chapter. The installation of the new green structure will compensate for the existing vegetation that will be removed.

Figure 3-24: Proposed Restoration Plan

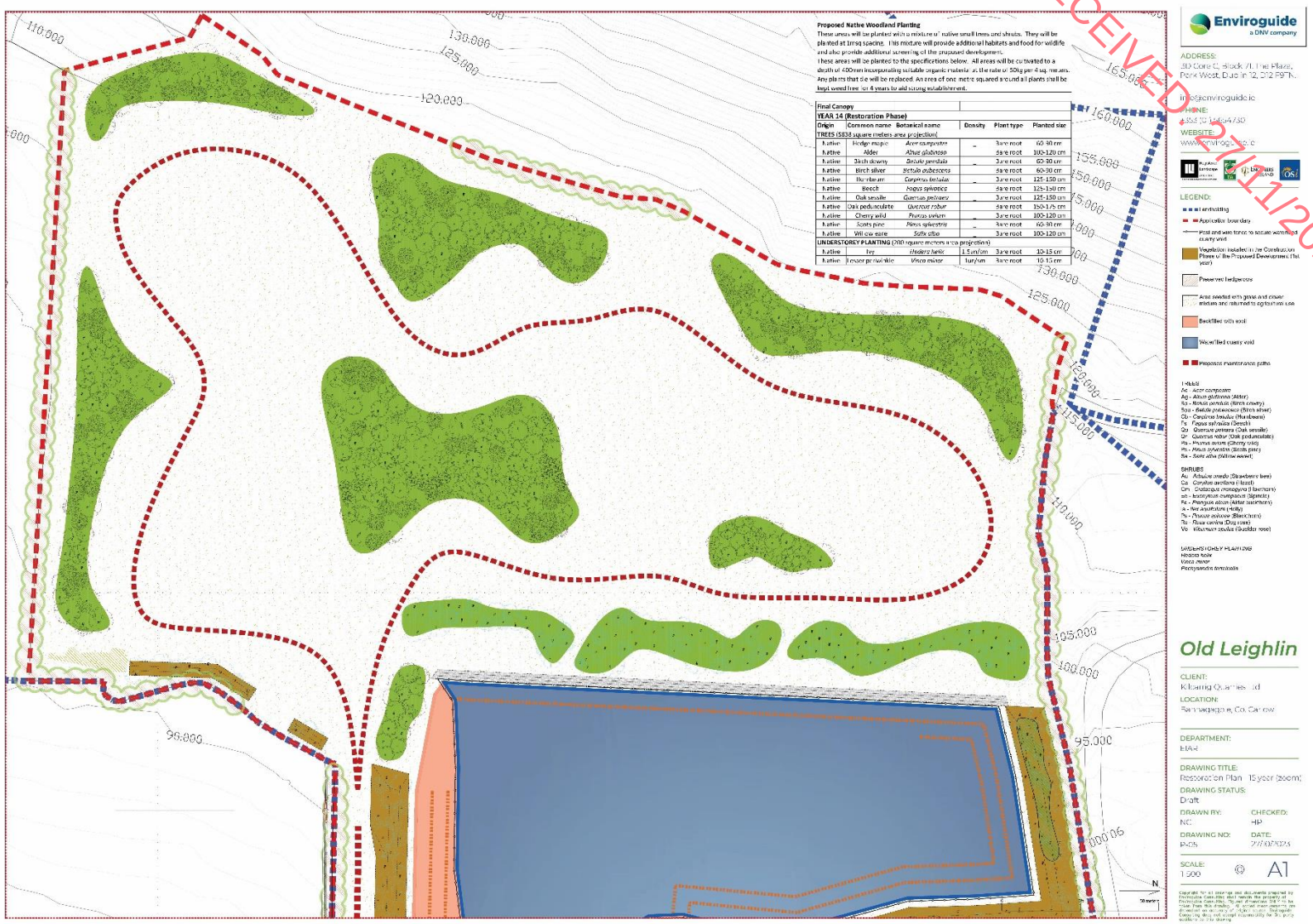


Figure 3-25: Proposed Restoration Plan (zoom)

3.5 Potential Effect of the Proposed Development

3.5.1 Potential Landscape Effect

Landscape effects – degree of change to physical characteristics or elements of the landscape, which together form the character of that landscape, e.g., landform, vegetation, boundaries, buildings.

3.5.1.1 *Construction Phase*

The Construction Phase of the Proposed Development will be short in duration and will include Site preparation works and some construction works to install the necessary infrastructure. The construction activities will include the construction of the set-down area, weighbridge, office building, wheel wash, machinery shed and welfare unit. All these facilities are located in the south east of the Site. During the Construction Phase, the site's landscape will undergo some changes. Predicted landscape impacts include:

- Demolition of two existing derelict buildings;
- A general site clearance to remove any non-structural materials that are not required for the Proposed Development;
- Some large, brightly coloured earth moving equipment, construction machinery, cranes operating on the Site and construction site offices/facilities, security lighting and fencing;
- Change in colour and form of topography due to the excavation, removal and storage of soils; and
- Removal of some existing vegetation.

It is concluded that the Proposed Development will, therefore, have a minor to moderate, neutral to adverse and short-term effect on the landscape character of the site during the Construction Phase mainly due to the removal of existing vegetation.

3.5.1.2 *Operational Phase*

The Operational phase of the Proposed Development will cause some adverse landscape effect in the short to medium-term within the Site. These effects will be less significant since four phases are predicted, as seen in Figure 10-26.

Once the quarrying is complete the Applicant will seed part of the land and return it to agricultural/forestry use. The Site land use will become largely a scrubland and water deposit.

3.5.1.3 *Conclusion*

The Proposed Development and mitigation measures will result in a neutral landscape effect in the long term.

Figure 3-26: Indicative Extraction Phasing. Source: Hydro Environmental Services

3.5.2 **Visual Effects**

3.5.2.1 ***Visual Receptor Sensitivity***

In terms of visual sensitivity, the receptors will be categorised as those being:

- Typically, non-designated viewpoints of modest visual amenity representing local residential receptors. These are deemed to be of Medium-low visual sensitivity.
- Typically, single designation viewpoints representing tourists / visitors or local residents involved in recreational or amenity based activity where an appreciation of the visual setting is integral to the experience and pleasant views are afforded. These are deemed to be of Medium visual sensitivity.
- Typically, an amenity and/or heritage feature viewpoint with aesthetic and/or extensive views, but without any scenic designation. This is deemed to be of Medium visual sensitivity.
- Typically, a scenic designation viewpoint, in combination with a separate heritage/amenity designation. These are deemed to be of High-Medium visual sensitivity.

3.5.2.2 ***Magnitude of Visual Effect***

The assessment of visual effects 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:

1. Existing View
2. Montage View

The baseline photography, captured by Redline Studios, was divided in two moments:

- The 1st moment (Viewpoints 1 to 5) was captured in February 2023, and thus, deciduous trees are without leaf. In this instance seasonal factors are considered to contribute to material differences in the visual effects assessed below and any likely variations will be described.
- The 2nd moment (Viewpoints 6 to 13) was captured in August 2023, in response to the FI request from Carlow County Council (number PL 23/60042). In this second series the trees are with full leaf, so no seasonal factors are considered to contribute to material differences in the visual effects assessed below and any likely variations will be described.

The visual effects have a higher effect level in the 1st moment than in the 2nd moment.

3.5.2.3 *Viewpoint Locations*

A total of 13 viewpoint locations were selected for use in the photomontage assessment of visual effects, as can be illustrated in Figures 10-27 and 10-28. The choice of viewpoint locations is influenced by both the views available and the type of viewer. Choice of viewpoint locations aimed to incorporate prominent visual receptors where there is likely to be either a high residential receptors or regular motor traffic. The choice of viewpoint locations should cover locations where the Proposed Development will be completely visible as well as partially visible and the choice of viewpoint locations in this instance did so.

Figure 3-27: Proposed viewpoint's location. Image source: Google Earth Pro

Figure 3-28: Proposed viewpoint's location (distant views). Image source: Google Earth Pro

3.5.2.4 ***Viewpoint Assessment***

Whether a visual effect is deemed to be positive, adverse or neutral involves a degree of subjectivity. What appears to be a positive effect to one viewer could be deemed to be an adverse effect by another viewer. All predicted visual effects of the viewpoints below are long term and direct effects.

The images that follow intend to represent, as accurately as possible, the physical and visual characteristics of the Proposed Development from a variety of distances and directions around the Site. Priority was given to views from the public domain, such as main roads and to views from potentially sensitive locations such as residential areas. The location of all views is shown on Figures 10-27 and 10-28. For each of the visuals, an existing and a proposed view is presented and where the Proposed Development is not visible in the view, the elements of the development will be shown as a red outline.

- ***Viewpoint 01***

Figure 3-29 Viewpoint 01, Bannagagole, Existing View

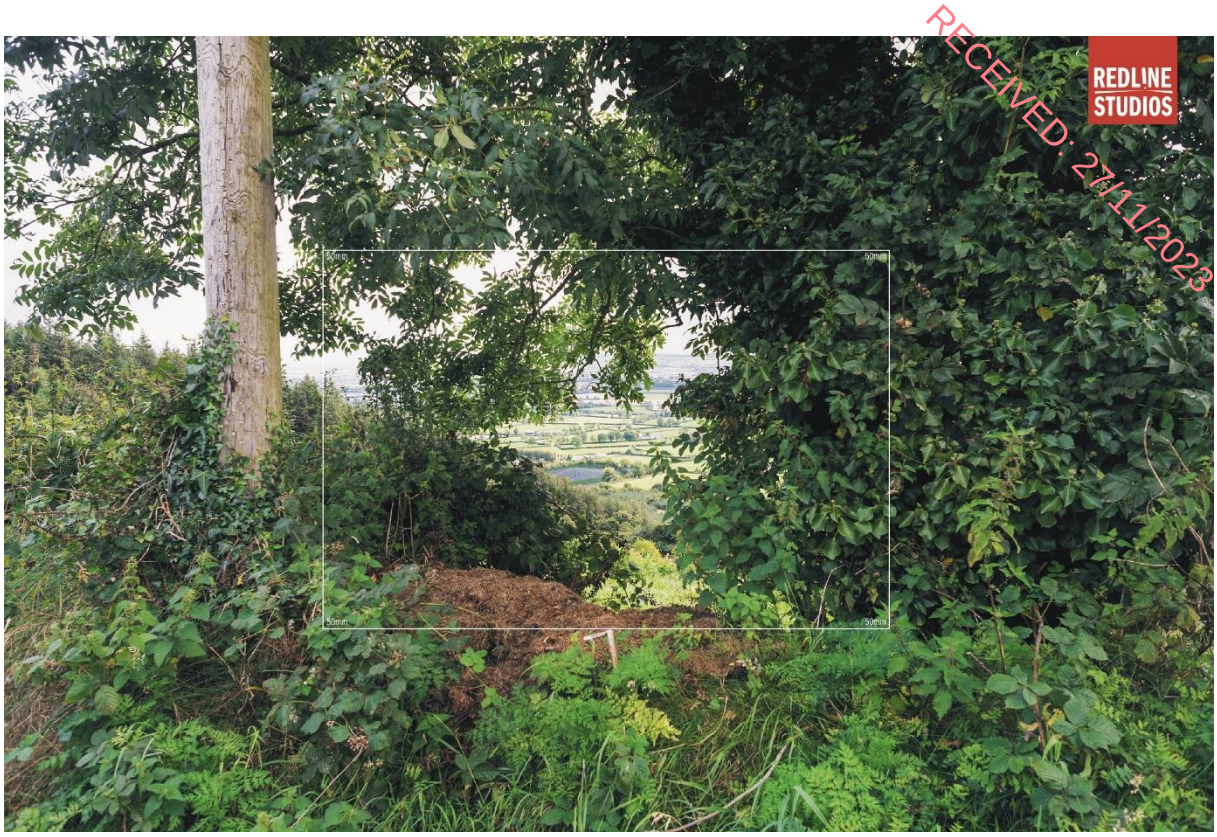


Figure 3-30 Viewpoint 01, Bannagagole, Proposed View

Viewpoint 1 (Figures 10-29 and 10-30)	
Location	Bannagagole
Coordinates	Latitude & Longitude: 52.431312, -7.15374
Viewing distance to site boundary	690 meters
Direction of View	Northeast
Date / Time	2nd February 2023 (11:41)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View with a wide visual range, from a higher point in relation to the western area of the Site (with a 60 meters difference), next to a settlement in *Bannagagole*. Given the high altitude at this point, we can have a view for *Closutton* and *Killinane* which are at a lower altitude. In the foreground it's possible to see a forestry area and in the lower plains a landscape with a tracery of agricultural fields intersected by hedgerows and the presence of some scattered dwellings.
Value of the View	Medium
Visual Susceptibility	High
Visual Sensitivity	High

Magnitude of Visual Changes	Medium
Duration of Effects	Medium-term
Quality of Effects	Adverse
Significance of Landscape and Visual Effects	Minor to Moderate
Conclusion on Visual Effect of Proposed Development	There is limited visibility to the Proposed Development from this viewpoint due to the screening of existing vegetation and ground level topography on the foreground. The visibility from this section of the road is linked with a flaw in the vegetation on the boarder of the road. No more sections with visibility to the Site from the rest of this local road were detected. There is a minor to moderate visual effect of the Proposed Development, An area of ground works will be visible on the eastern part of the Quarry Area. After the operational phase, and Restoration Plan implementation the effect will become imperceptible, neutral and temporary.

- ***Viewpoint 02***

Figure 3-31 Viewpoint 02, L3036 (Bannagagole), Existing View

Figure 3-32 Viewpoint 02, L3036 (Bannagagole), Proposed View

Viewpoint 2 (Figures 10-31 and 10-32)	
Location	L3036 (Bannagagole)
Coordinates	Latitude & Longitude: 52.432288, -7.1861
Viewing distance to site boundary	250 meters
Direction of View	Northwest
Date / Time	2nd February 2023 (11:29)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View from a road parallel to the M9, to the east, which gives access to the old quarry, north of the Site, and links to *Oldeighlin*, to the north. Landscape consisting of an open field with a forest patch in the background accompanying the elevation of the land that exists to the west. An existing building on the land of the existing quarry is visible.
Value of the View	Medium
Visual Susceptibility	Medium
Visual Sensitivity	Medium
Magnitude of Visual Changes	Medium

Duration of Effects	Medium-term
Quality of Effects	Adverse to Neutral
Significance of Landscape and Visual Effects	Minor to Moderate
Conclusion on Visual Effect of Proposed Development	The works to create the berm and planting will be noticeable due to ground colour change but will be in a scale in line with other agricultural and forestry operations that commonly happen within the landscape. The Proposed Development ends up having a minor to moderate visual effect in the medium-term, considering the Construction Phase, and part of the Operational Phase, becoming almost imperceptible in the short-term to medium term with the berm implementation and development of the vegetation in the foreground in the east part of the Proposed Development site.

- ***Viewpoint 03***

Figure 3-33 Viewpoint 03, L3036 (Bannagagole), Existing View

Figure 3-34 Viewpoint 03, L3036 (Bannagagole), Proposed View

Viewpoint 3 (Figures 10-33 and 10-34)	
Location	L3036 (Bannagagole)
Coordinates	Latitude & Longitude: 52.432799, -7.1758
Viewing distance to site boundary	150 meters
Direction of View	Southwest
Date / Time	2nd February 2023 (11:32)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View a little further north than viewpoint 2, on the same road, but with a different visual orientation (now facing south). There is not much visibility for this viewpoint (to the Site's direction) considering the increasing elevation that exists to East. It is, however, visible a small clearing slightly higher than the level of the road and a forest patch in the background, mostly composed of deciduous trees. Towards the south there is also not much visibility due to the tree/bush hedge that exists next to the road.
Value of the View	Medium
Visual Susceptibility	Medium

Visual Sensitivity	Medium
Magnitude of Visual Changes	None
Duration of Effects	Temporary
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	The visual effect of the Proposed Development is imperceptible, due to the screening of the existing vegetation and the existing ground levels in the foreground. The silhouette of the Proposed Development is represented in the image by a red line.

- ***Viewpoint 04***

Figure 3-35 Viewpoint 04, M9 (Closutton), Existing View

Figure 3-36 Viewpoint 04, M9 (Closutton), Proposed View

Viewpoint 4 (Figures 10-35 and 10-36)	
Location	M9 (Closutton)
Coordinates	Latitude & Longitude: 52.43627, -7.03779
Viewing distance to site boundary	1000m
Direction of View	Northwest
Date / Time	2nd February 2023 (11:07)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View from an overpass over the M9, east of the Site. As it is a higher point, we can have a wide range of views from this viewpoint, with visibility to the *Tomnasock* area. In the foreground presence of agricultural fields interspersed with hedges and some dwellings and scattered agricultural units. In the middle ground there is a forest spot and visibility to the existing quarry and in the higher ground agricultural fields.
Value of the View	Medium
Visual Susceptibility	Medium
Visual Sensitivity	Medium

Magnitude of Visual Changes	Medium
Duration of Effects	Medium-term
Quality of Effects	Adverse to Neutral
Significance of Landscape and Visual Effects	Minor
Conclusion on Visual Effect of Proposed Development	The Site ends up having some visibility as it occupies a central position in this view. However, given the typology of development, there is only a minor medium-term visual effect associated with the Operational Phase of the Proposed Development. The Quarry activity will be noticeable due to ground colour change but will be on a scale in line with other extractive operations that exist in the area. As can be seen in Figure 10-33 the existing Quarry turns out to have the most visual effect, even with the projection of the Proposed Development. This visual effect will become neutral and imperceptible in the medium-term, with the development of the proposed vegetation, that blends in with the matrix of the existing vegetation in the broader landscape.

- ***Viewpoint 05***

Figure 3-37 Viewpoint 05, R448, Existing View

Figure 3-38 Viewpoint 05, R448, Proposed View

Viewpoint 5 (Figures 10-37 and 10-38)	
Location	R448
Coordinates	Latitude & Longitude: 52.432339, -6.585851
Viewing distance to site boundary	2600 meters
Direction of View	West
Date / Time	2nd February 2023 (10:57)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View from the R448, east of the Site, close to the access to the Burgage House (Protected Structure with Reg. No. 10301602). This road has tree hedges for most of its length on both sides, this being one of the sections where this hedge does not exist, which allows visibility to the background. There turns out to be a great visual range given the predominance of agricultural fields with mostly low shrubby hedges separating the fields. There is still visibility to the highest part of *Bannagagole* where there is a greater predominance of forest spots. We end up having little visibility to the existing quarry from this viewpoint given the distance at which we are.

Value of the View	Medium
Visual Susceptibility	Medium to High
Visual Sensitivity	High-Medium
Magnitude of Visual Changes	None
Duration of Effects	Temporary
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	The visual effect of the Proposed Development is imperceptible, due to the screening of the existing vegetation and the existing ground levels in the foreground. The silhouette of the Proposed Development is represented in the image by a red line.

- ***Viewpoint 06***

Figure 3-39 Viewpoint 06, Moanmore bridge, Existing View

Figure 3-40 Viewpoint 06, Moanmore bridge, Proposed View

Viewpoint 6 (Figures 10-39 and 10-40)	
Location	Moanmore bridge on M9
Coordinates	Latitude & Longitude: 52.422299, -7.1012
Viewing distance to site boundary	2000 meters
Direction of View	North
Date / Time	25th August 2023 (11:56)
Weather Conditions / Visibility:	Cloudy / Good
Existing View	View from the Moanmore bridge on M9, southeast of the Site. The view is dominated by the M9, with visibility to the east and west limited by the presence of arboreal-shrub hedges on both sides of the road. To the west there is some visibility, this being a high point, but the hedgerows that interrupt the agricultural fields also screen most of the visibility. There is some visibility to the higher areas west of the Site (*Tomnasock* and *Annagar*).
Value of the View	Medium-Low
Visual Susceptibility	Low
Visual Sensitivity	Medium-Low
Magnitude of Visual Changes	Low
Duration of Effects	Short-term
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Minor
Conclusion on Visual Effect of Proposed Development	There is a minor visual effect of the Proposed Development, mainly associated with the soils deposit on the northern part of the Site – the operational phase of the Proposed Development will be developed in the lower ground so there is no visibility from this viewpoint. This visual effect will be mitigated, in the short-term, with the maintenance of part of the existing hedgerows and the proposed planting on the southern part of the Site.

- ***Viewpoint 07***

Figure 3-41 Viewpoint 07, Closutton road, Existing View

Figure 3-42 Viewpoint 07, Closutton road, Proposed View

Viewpoint 7 (Figures 10-41 and 10-42)	
Location	Closutton road
Coordinates	Latitude & Longitude: 52.44918, -7.05057
Viewing distance to site boundary	1500 meters
Direction of View	West
Date / Time	25th August 2023 (11:18)
Weather Conditions / Visibility:	Cloudy / Good
Existing View	View from *Closutton* road, east of the Site, close to the *W P Mullins* - Horse trainer and a cluster of dwellings. The landscape is mainly dominated by the dwellings and gardens in the foreground, with some visibility to the higher ground in *Bannagagole*.
Value of the View	Medium
Visual Susceptibility	High
Visual Sensitivity	High
Magnitude of Visual Changes	None
Duration of Effects	Temporary

Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	The visual effect of the Proposed Development is imperceptible, due to the screening of the existing vegetation and the existing ground levels in the foreground. The silhouette of the Proposed Development is represented in the image by a red line.

- ***Viewpoint 09***

Figure 3-43 Viewpoint 09, R448 and Ballyknockan Manor junction, Existing View

Figure 3-44 Viewpoint 09, R448 and Ballyknockan Manor junction, Proposed View

Viewpoint 9 (Figures 10-43 and 10-44)	
Location	R448 and Ballyknockan Manor junction
Coordinates	Latitude & Longitude: 52.425144, -7.03864
Viewing distance to site boundary	2600 meters
Direction of View	South
Date / Time	25th August 2023 (10:39)
Weather Conditions / Visibility:	Cloudy / Good
Existing View	View from the R448, southeast of the Site, close to the *Ballyknockan* Manor junction and the *Ballyknockan* settlement. The vegetation in the border of the road screens most of the visibility to the west, but there is some visibility to the higher areas of *Bannagagole* and *Tomnasock*. The existing quarry occupies a position in the middle ground of this view, with a minor visual effect, this section being one of the fewest that has some visibility to the existing quarry.
Value of the View	Medium
Visual Susceptibility	High
Visual Sensitivity	High

Magnitude of Visual Changes	Low
Duration of Effects	Short-term
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Minor
Conclusion on Visual Effect of Proposed Development	Given the screening of the vegetation on the foreground, and the screening of the proposed vegetation in the eastern border of the Site, the visual effect of the Proposed Development turns out to be almost imperceptible and will be mitigated in the short-term by the growth of the vegetation in the foreground.

- ***Viewpoint 10***

Figure 3-45 Viewpoint 10, Ballyknockan Manor road, Existing View

Figure 3-46 Viewpoint 10, Ballyknockan Manor road, Proposed View

Viewpoint 10 (Figures 10-45 and 10-46)	
Location	Ballyknockan Manor road
Coordinates	Latitude & Longitude: 52.44899, -6.595715
Viewing distance to site boundary	2000 meters
Direction of View	Southwest
Date / Time	25th August 2023 (10:46)
Weather Conditions / Visibility:	Cloudy / Good
Existing View	View from the *Ballyknockan* Manor road, in a bridge above the M9, northeast of the Site. The landscape is marked by the presence of the M9 with a hedgerow in the west border of the road screening most of the visibility to the west/south. There is some visibility to the existing quarry, but the vegetation on the fields and higher mountains has visual predominance from this view.
Value of the View	Medium
Visual Susceptibility	Medium to Low
Visual Sensitivity	Medium-Low

Magnitude of Visual Changes	Low
Duration of Effects	Short-term
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Minor
Conclusion on Visual Effect of Proposed Development	There is a minor visual effect, associated with the removal of vegetation and deposit of soil. However, the existing quarry still visually prevails from this view, regarding the Proposed Development. The proposed vegetation will mitigate in the short/term the identified minor visual effect.

- ***Viewpoint 11***

Figure 3-47 Viewpoint 11, Bannagagole road junction, Existing View

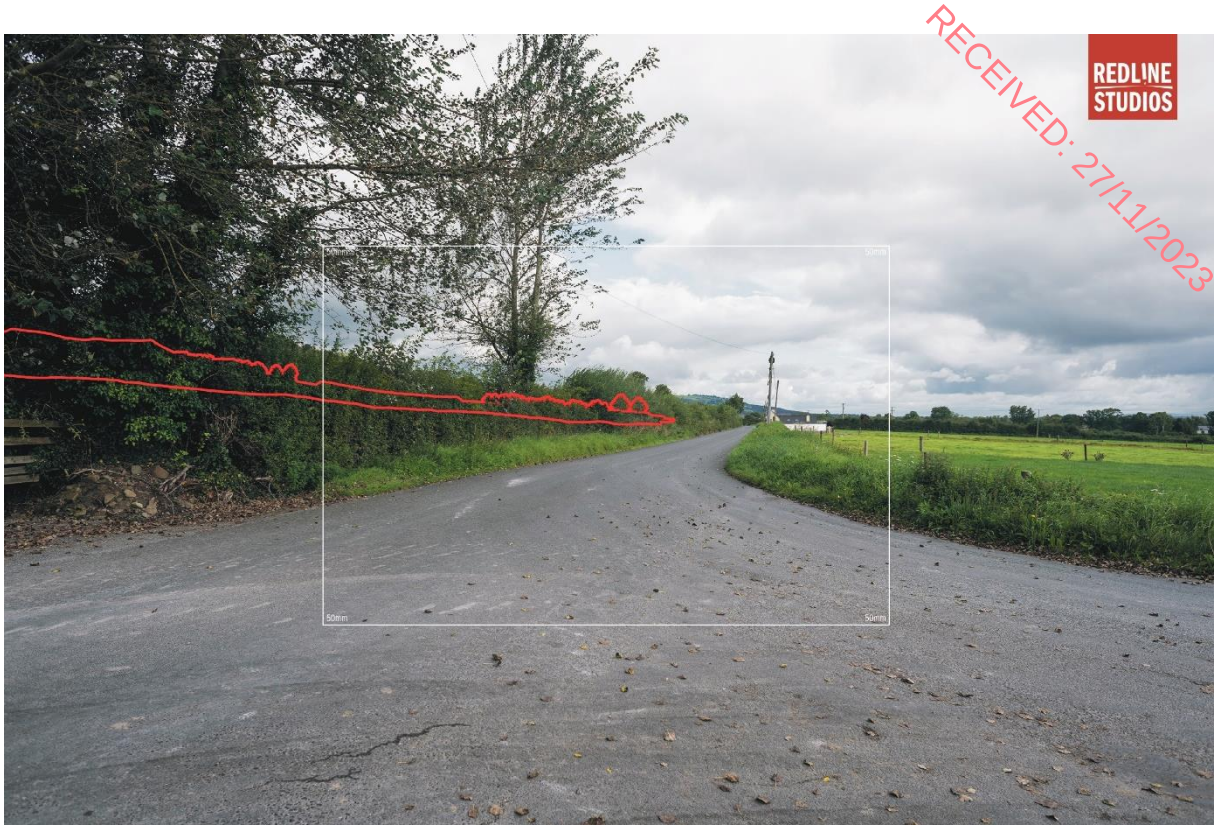


Figure 3-48 Viewpoint 11, Bannagagole road junction, Proposed View

Viewpoint 11 (Figures 10-47 and 10-48)	
Location	Bannagagole road junction
Coordinates	Latitude & Longitude: 52.431323, -7.11032
Viewing distance to site boundary	450 meters
Direction of View	Northwest
Date / Time	25th August 2023 (11:24)
Weather Conditions / Visibility:	Cloudy / Good
Existing View	View close to the *Bannagagole* road junction, south of the Site, close to a cluster of dwellings mainly east of this road. The hedgerow on the border of the road screens most of the visibility to the west. To the east there is predominance of open agricultural fields and some dwellings in the background.
Value of the View	Medium
Visual Susceptibility	Medium
Visual Sensitivity	Medium
Magnitude of Visual Changes	None

Duration of Effects	Temporary
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	The visual effect of the Proposed Development is imperceptible, due to the screening of the existing vegetation and the existing ground levels in the foreground. The silhouette of the Proposed Development is represented in the image by a red line.

- ***Viewpoint 12***

Figure 3-49 Viewpoint 12, R448, Existing View

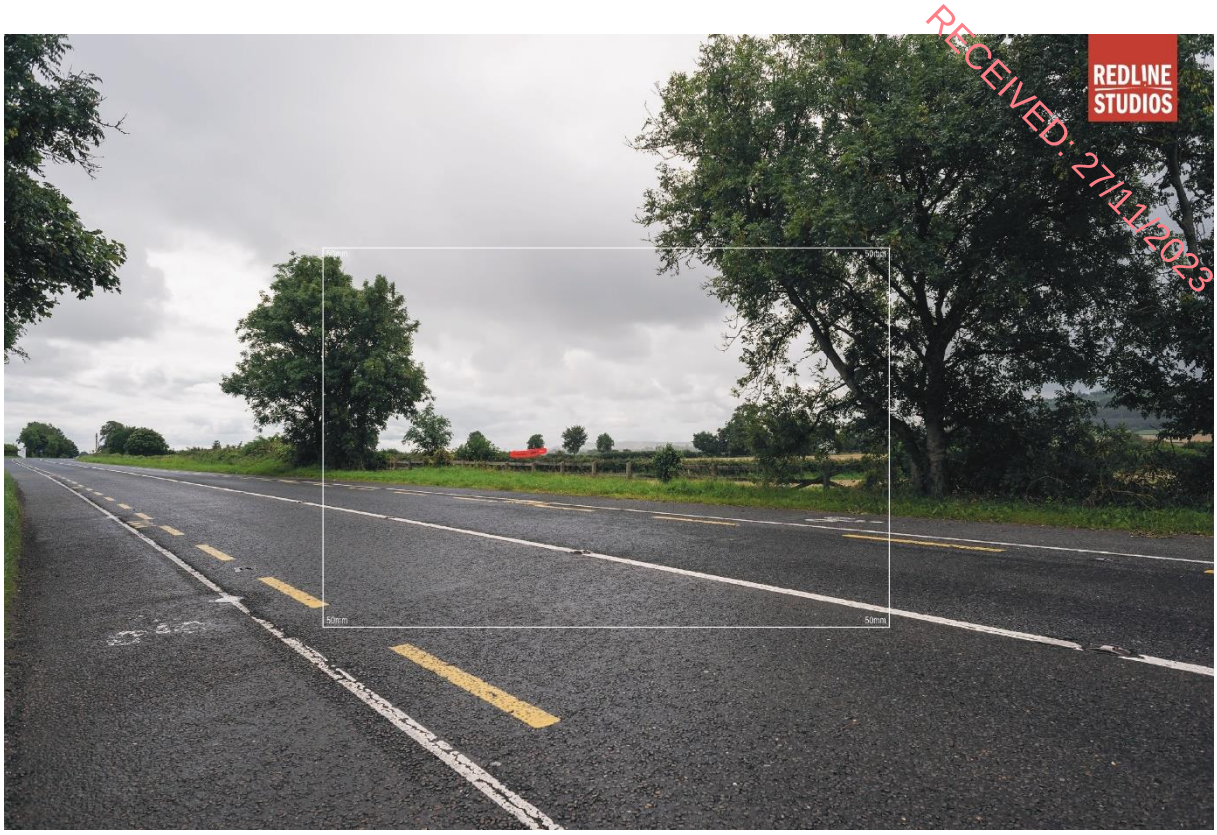


Figure 3-50 Viewpoint 12, R448, Proposed View

Viewpoint 12 (Figures 10-49 and 10-50)	
Location	R448
Coordinates	Latitude & Longitude: 52.483444, -6.571060
Viewing distance to site boundary	2000 meters
Direction of View	South
Date / Time	25th August 2023 (12:15)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View from the R448, north of the Site, close to Carlow's town entrance (375 meters from the Woodford Domen Hotel). This road has visual predominance with hedgerows on both sides with some openings, mainly south of this section of the road. In the opening of the hedgerow there is some visibility to the agricultural fields in the background with hedgerows crisscrossing the fields.
Value of the View	Medium
Visual Susceptibility	Medium
Visual Sensitivity	Medium
Magnitude of Visual Changes	None

Duration of Effects	Temporary
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	The visual effect of the Proposed Development is imperceptible, due to the screening of the existing vegetation and the existing ground levels in the foreground. The silhouette of the Proposed Development is represented in the image by a red line.

- ***Viewpoint 13***

Figure 3-51 Viewpoint 13, Mount Leinster, Existing View

Viewpoint 13 (Figures 10-51)	
Location	Mount Leinster
Coordinates	Latitude & Longitude: 52.371055, - 6.465690
Viewing distance to site boundary	2600 meters
Direction of View	Northwest
Date / Time	25th August 2023 (10:04)
Weather Conditions / Visibility:	Cloudy / Medium
Existing View	View from *Mount Leinster* with a considerable distance to the Site and in a higher ground (more than 500 meters high difference). There is a great visual scope from this point with a landscape mainly dominated by agricultural fields divided by hedgerows and some forestry. There is also visibility to dispersed dwellings. There isn't any medium-density housing cluster distinguishable in this view. Some wind turbines are also visible from this view, breaking somewhat the landscape uniformity.
Value of the View	High
Visual Susceptibility	High
Visual Sensitivity	High
Magnitude of Visual Changes	None
Duration of Effects	Temporary
Quality of Effects	Neutral
Significance of Landscape and Visual Effects	Imperceptible
Conclusion on Visual Effect of Proposed Development	Considering the distance there is no visibility to the Site, not even the existing quarry north of the Site. It's not possible to represent the silhouette of the Proposed Development considering the size of the hypothetical silhouette in the image.

3.5.2.5 *Visual Effects Conclusion*

After evaluating the visual effect on these 12 viewpoint locations, Table 10-14 summarizes 3 of these criteria (Duration, Quality and Significance) of the 7 assessed in each image. This is because these are the criteria that are considered more important to the final visual effect assessment.

Viewpoint 8 (view from the M9) was not possible to capture due to safety reasons - the surveyors would have had to close that lane to capture the photo. Considering this, viewpoint 8 was excluded from this assessment.

Table 3-14 Visual Effect Assessment Results

Duration of the Effects	Viewpoints	Total	%
Permanent	_	0	0%
Long-term to Permanent	_	0	0%
Long-term	_	0	0%
Medium to Long-term	_	0	0%
Medium-term	2, 4	2	17%
Short to Medium-term	1	1	8%
Short-term	6, 9, 10	3	25%
Short-term to Temporary	_	0	0%
Temporary	3, 5, 7, 11, 12, 13	6	50%
Quality of the Effects			
Beneficial	_	0	0%
Neutral to Beneficial	_	0	0%
Neutral	3, 5, 6, 7, 9, 10, 11, 12, 13	9	75%
Neutral to Adverse	2, 4	2	17%
Adverse	1	1	8%
Significance of Landscape and Visual Effects			
Imperceptible	3, 5, 7, 11, 12, 13	6	50%
Minor to Imperceptible	_	0	0%
Minor	4, 6, 9, 10	4	33%
Minor to Moderate	1, 2	2	17%
Moderate	_	0	0%
Moderate to Significant	_	0	0%
Significant	_	0	0%
Profound	_	0	0%

It is predicted that in the viewpoints considered as having a minor or moderate effect, the mitigation measures will reduce this effect to a minor to imperceptible effect in the medium-term.

3.5.3 **Potential Cumulative Effects**

Cumulative effects can be described as effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.

Whilst the other land use activities in the surrounding area are mainly agricultural, the site is located immediately to the south of the existing Old Leighlin Quarry. Due to the proximity of the site to this existing quarry there is the potential for cumulative effects to arise.

In the context of landscape and visual effect and given the rural nature of the location of the Proposed Development and its surrounding environment, no cumulative effects are anticipated from the introduction of the Proposed Development.

3.5.4 **"Do Nothing" Effect**

The do-nothing effect refers to the non-implementation of the Proposed Development. The primary effect of this would be that the effects identified would not directly occur.

A do-nothing scenario would result in the site remaining as an existing agricultural/forestry area. The site would continue to be used for grazing by local farmers. If the Proposed Development were not to proceed, the existing site would continue to be present in the landscape.

3.6 Avoidance, Remedial and Mitigation Measures

Landscape and visual effects have been avoided and reduced by a number of measures. The quarry area will be surrounded by berms of varying heights. The heights have been chosen to restrict views of machinery moving within the site and of quarry excavations. Planting on the berms will further reduce potential views, as will the excavation below existing ground levels. The proposed planting as it matures will maintain this visual neutrality. The maintenance of the proposed new plantations, in the long term, is essential.

For those trees proposed for retention (hedgerows in the peripheral areas of the site, indicated in Figure 10-52), mitigation measures will be put in place in order to prevent or reduce effect to its very minimum. Mitigation measures used will need to include the erection of protective fencing at the very start of the works, ground protection installation within root zones where fencing cannot be erected to enclose the entire root zones, monitoring of the site works by a qualified Landscape Architect throughout the construction process and the use of tree friendly techniques and products for the construction process.

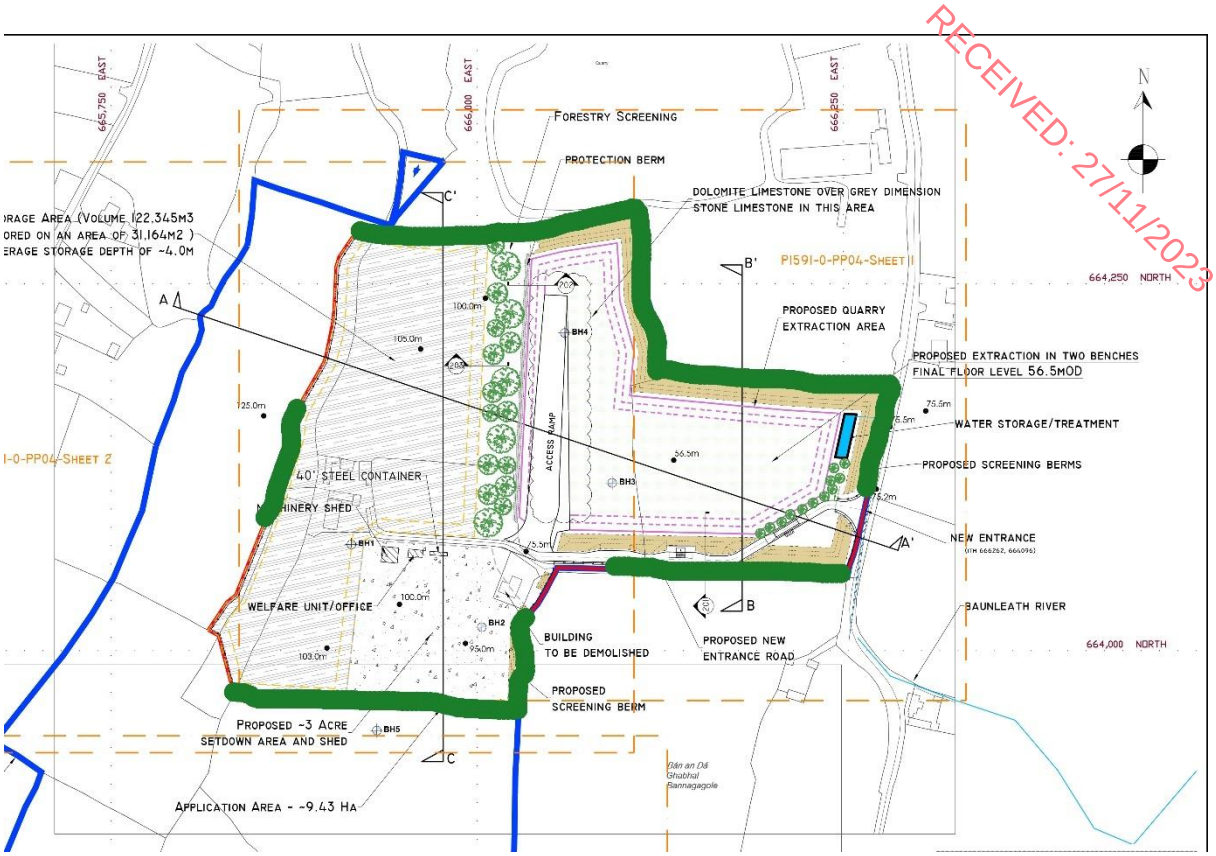


Figure 3-52 Scheme with the existing hedgerows to be retained

3.6.1 **"Worst Case" Scenario**

The worst-case effects arise when the mitigation measures as proposed substantially fail.

This would result in landscape and visual effects lasting in the medium to long term as natural regeneration of pioneer species would be expected to grow and help mitigate effects. The local authority also has the option of instigating enforcement action to force the implementation of mitigation measures.

3.7 Residual Effects

Residual Effects are defined as '*effects that are predicted to remain after all assessments and mitigation measures'*. They are the remaining '*environmental costs'* of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse effects.

Potential residual effects from the Proposed Development were considered as part of this environmental assessment. No adverse residual effects in the context of landscape and visual effect are anticipated regarding this Proposed Development.

3.7.1 Construction Phase

Notwithstanding the proposed ameliorative and mitigation measures proposed during the Construction Phase, it is considered that there will be imperceptible, neutral, long-term residual effects.

3.7.2 Operational Phase

Notwithstanding the proposed ameliorative and mitigation measures proposed during the Operational Phase, it is considered that there will be imperceptible, neutral long-term residual effects.

3.8 Monitoring

3.8.1 Construction Phase

Any construction works within close proximity to retained trees are advised to be undertaken in accordance with approved method statements prepared by the construction contractor under the direct supervision of a qualified Landscape Architect. Therefore, during the construction works, a professionally qualified Landscape Architect is recommended to be retained by the principal contractor or site manager to monitor and advice on any works within the root protection area of retained trees to ensure successful tree retention and planning compliance. The Landscape Architect is to make regular site visits to ensure that the tree protection measures are in place and adhered to.

3.8.2 Operational Phase

The mitigation measures for long term, neutral landscape effects are detailed in the Restoration Plan. The methodology and final details of the detailed Restoration Plan was prepared by a qualified Landscape Architect.

The maintenance and supervision of the existing hedgerows should continue throughout the operational phase of the project and will be considered in the Restoration Plan.

3.9 Interactions

Interactions between Landscape and Visual Effect and other aspects of this Environmental Effect Assessment Report have been considered and are detailed below.

3.9.1 Population and Human Health

It is not considered that the Proposed Development by virtue of its visual appearance and in the context of the proposed zoning of the site of the Proposed Development and the nature of the surrounding landscape, will cause any issues for the residential local population.

3.9.2 Biodiversity

The proposed landscaping of the site interacts with its biodiversity and ecology through the changes that will occur to the existing habitats and flora at the site. The landscaping proposals

will entail losses and contributions in terms of vegetation at the site, which in turn will affect the ecology of the site.

The majority of vegetation at the site will not be retained, due to the nature of the Proposed Development. As described, vegetation will be stripped, and the quarry excavated. The effects on local flora and fauna will be localised (i.e., only within the proposed extraction area) and will be mostly mitigated through the adoption of a suitable landscape and restoration plan which will be undertaken on completion of the extraction works. The Restoration Plan includes the re-establishment of vegetative corridors surrounding the site, and the "restoration" of scrubby grassland on the portion of the site previously occupied by the conifer plantation.

3.9.3 Archaeology and Cultural Heritage

An archaeological assessment carried out by Dr Charles Mount programme of archaeological testing identified no assets of archaeological significance was identified during archaeological test-trenching. There are no impacts on any known items of archaeological heritage or buildings of special architectural interest in the application site or the vicinity.

3.10 Difficulties Encountered When Compiling

No difficulties were encountered in the preparation of this Chapter.

3.11 Conclusion

This LVIA is updated assessment following the FI Request with reference PL23/60042 (May 2023) and additional project design and viewpoints.

It is considered that the Proposed Development will not have any landscape or visual effect in any Protected View, Scenic Route or Protected Structure identified in the *Carlow County Development Plan 2022-2028*.

In terms of the landscape impact assessment, it is concluded that the Proposed Development will have a minor to moderate, neutral to averse and short-term effect on the landscape character of the site during the Construction Phase due to the removal of existing vegetation. Once the quarrying is complete the Applicant will seed part of the land and return it to agricultural use/scrubland, in accordance with the proposed Restoration Plan. The Proposed Development and mitigation measures will result in a neutral landscape effect in the long term.

In what refers to the visual impacts, 12 viewpoints were assessed, chosen by sensitivity of the view's through site visits and Viewsheds analysis. As it can be seen by the conclusion on the visual effects (Chapter 10.5.2.5) the visual effects of the Proposed Development, in the worst cases have a minor or minor to moderate effect that will change to an imperceptible effect in the medium-term, with the implementation of the Restoration Plan.

Long term potential significant adverse landscape and visual effects have been avoided and reduced by a number of measures. The quarry area will be surrounded by berms of varying heights. The heights have been chosen to screen views of machinery moving within the site and of quarry excavations. Planting on the berms could further reduce potential views, as will the excavation below existing ground levels. With the implementation of the proposed

mitigation measures that the proposed development's landscape and visual effects (using standard landscape and visual effects assessment definitions), are described as effects that:

- Will cause noticeable changes in the character of the landscape without adversely affecting its sensitivities (minor adverse effect);
- Will neither enhance nor detract from the landscape character or viewpoint (Neutral effect) over the medium to long-term;
- Will last one to seven years (short-term effects). The peripheral plantation will outgrowth sufficiently to screen off the interior area, reducing the effects further.

The Restoration Plan will have a positive effect in terms of returning the site back to either scrubland or water retention area. The maintenance of the existing hedgerows along the periphery of the site, in the long term, is essential to the maintenance of the minor visual effects so that the quarry area can be maintained as a "hole in the ground" that is surrounded by a mixture of vegetation that can't be looked into in the medium term.

3.12 References

- Carlow County Development Plan 2022-2028;
- The Landscape Institute, 'Guidelines for Landscape and Visual Effect Assessment', (3rd Edition) 2013;
- Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Effect Assessment Report (2022);
- Technical Information Note on Townscape Character Assessment, 2016, published by the Landscape Institute;
- 'The Countryside Agency and Scottish Natural Heritage – Landscape Character Assessment Guidance for England and Scotland' 2002;
- EPA Advice notes on current practice in the preparation of environment effect statements (2003);
- EPA - Environmental Management Guidelines - Environmental Management in the Extractive Industry;
- Section 177F of the Planning and Development Act 2000 (as amended);
- A Handbook on Environmental Effect Assessment, Scottish Natural Heritage;
- Journal of Environmental Psychology, Visual Thresholds for Detection, Recognition and Visual Effect in Landscape Settings (H. Shang and I.D. Bishop, 2000);
- Landscape design with plants, Brian Clouston; and
- Atlas of the Irish rural landscape, Aalen, Whelen, Stout.

4 ARCHAEOLOGY AND CULTURAL HERITAGE

An Archaeological Impact Assessment has been carried out by a qualified archaeologist and is included as Appendix D to this EIAR Addendum.

4.1 Introduction

This Chapter of the EIAR describes and assesses the potential effects of the Proposed Development, located at Bannagagole, Old Leighlin, Co. Carlow, on Archaeology, Cultural Heritage and Architectural Heritage.

The aim of this Chapter is to assess the baseline Archaeological and Cultural Heritage conditions of the surrounding environment for the Proposed Development, in order to determine any significant impacts that may arise as a result of the Proposed Development and highlight any potential effects this may have on these resources. In addition, if deemed appropriate, mitigation measures are recommended, in accordance with the policies of Carlow County Council, the Department of Culture, Heritage, and the Gaeltacht, National Monuments Acts 1930-2004 and best practice guidelines.

Quality Assurance and Competence

This Chapter was prepared by Arthur Greene, Graduate Environmental Consultant, Enviroguide Consulting. Arthur has a Master of Science (Hons) in Ecosystem Science and Policy from University College Dublin and a Bachelor of Arts (Hons) in Geography from Trinity College Dublin. Arthur has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Introduction, Archaeology and Cultural Heritage Chapters of EIARs.

An RFI response was prepared by Dr. Charles Mount for Milford Quarries Limited.

It represents a response to point 3 of the RFI issued by Carlow Co. Council in relation file number 2360042. On the 19th of May 2023 Carlow Co. Council wrote to Milford Quarries Limited seeking further information in relation to the development. At point 3 the RFI sought the following:

> **3.** A report received by the Planning Authority from the Department of Housing, Local Government and Heritage on the 08/05/2023 questions the adequacy and competency of the expertise involved in the archaeological and cultural heritage assessment (Section 11 of the EIAR) which does not appear to be commensurate to the nature and extent of the development proposed and the impacts that may occur to cultural heritage and in particular archaeology from the proposed development. Accordingly, you are requested to address the requirements of the Department and to engage the services of a suitably qualified Archaeologist to carry out a full Archaeological Impact Assessment (AIA). The AIA shall be carried out in accordance with Items 1-10 on the attached report from the Department.

Items 1-10 from the report from the Department of Housing, Local Government and Heritage sought the following:

The Archaeological Impact Assessment shall be carried out as follows:

1. The applicant is required to engage the services of a suitably qualified Archaeologist to carry out an Updated Archaeological Impact Assessment (Updated AIA) which should include a programme of Archaeological Geophysical Survey and Archaeological Test Excavation to respond to this request for Further Information. No sub-surface work (including Site Investigations works) shall be undertaken in the absence of the archaeologist without his/her express consent.

2. The archaeologist shall inspect the proposed development site (PDS) and detail the historical and archaeological background of the site (consulting appropriate

documentary sources), and review all cartographic sources and aerial photographs for the area.

3. The Archaeological Geophysical Survey must be carried out under licence from this Department and in accordance with an approved method statement; note a period of 2-3 weeks should be allowed to facilitate processing and approval of the licence application and method statement.

4. The archaeologist will liaise with this Department to establish—based on the results of this site inspection and the Archaeological Geophysical Survey—the appropriate scope of further advanced investigations such as Archaeological Test Excavation that may be required to adequately characterise the character and extent of any potential sub-surface archaeological material within the PDS.

5. The Archaeological Test Excavation—if required—must be carried out under licence from this Department and in accordance with an approved method statement; note a period of 5-6 weeks should be allowed to facilitate processing and approval of the licence application and method statement.

6. Test trenches shall be excavated at locations chosen by the archaeologist, having consulted the site drawings and the results of the Archaeological Geophysical Survey. Excavation is to take place to the uppermost archaeological horizons only, where they survive. Where archaeological material is shown to be present, the archaeologist shall stop works pending further advice from this Department. Please note that all features/archaeological surfaces within the test trenches are to be hand-cleaned and clearly visible for photographic purposes.

7. Having completed the work, the archaeologist shall submit a written report to this Department and the Local Authority describing the findings of the Updated AIA including the results of the geophysical survey and the test excavations (if required). The report shall comment on the degree to which the extent, location and levels of all proposed foundations, service trenches and other sub-surface works required for the development will affect the archaeological remains. This should be illustrated with appropriate plans, sections, etc.

8. Where archaeological material is shown to be present, further mitigation measures will be required; these may include refusal, redesign to allow for preservation in situ, excavation and/or monitoring as deemed appropriate. This Department will advise the Local Authority with regard to these matters. No decision should be

This Chapter has been updated in response to this RFI request. An Archaeological Impact Assessment Report prepared on behalf of Milford Quarries Limited has been undertaken to assess the impacts on the archaeological heritage and buildings of special architectural interest in the proposed development site, and the surrounding area, of the proposal to demolish existing disused buildings and development a dimension stone quarry with a projected lifetime of c. 14 years (12 – 13 years operational with an additional 1-year to allow for the implementation of a restoration plan) at this site of c. 9.34 hectares at Bannagagole,

Old Leighlin, Co. Carlow. 1.8 The assessment was prepared by Dr. Charles Mount who has more than thirty years of cultural heritage assessment experience. He holds B.A., M.A. and Ph.D. degrees in archaeology as well as a professional diploma in EIA and SEA Management and is a member of the Institute of Archaeologists of Ireland.

A Geophysical Survey Report (Appendix 3 of the Archaeological Impact Assessment Report) and an Archaeological Testing Report (Appendix 4 of the Archaeological Impact Assessment Report) have been prepared and submitted as part of this RFI request.

4.2 Study Methodology

4.2.1 Guidance and Legislation

The following legislation and guidance documents were consulted as part of this assessment. This legislation makes up the main legal mechanisms by which Archaeological, Architectural and Cultural Heritage resources are protected in Ireland.

- National Monuments Act, 1930-2014;
- Heritage Act, 1995;
- Architectural Heritage and Historic Properties Act, 1999;
- Local Government (Planning and Development) Act, 2000
- The Planning and Development (Strategic Infrastructure) Act, 2006;
- EPA 'Advice Notes for preparing Environmental Impact Statements' (Draft 2015);
- EPA ‘Guidelines on the Information to be Contained in Environmental Impact Statements’ (EPA, 2002);
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht, and Islands.
- Architectural Heritage Protection: Guidelines for Planning Authorities, 2011, (formerly) Department of Arts, Heritage, and the Gaeltacht.

The assessment contained in this Chapter has involved a desktop study which considered all publicly available archaeological, architectural, historical, and cartographic sources. This information was used in order to assess any potential impact on the receiving environment and to identify measures to ensure the conservation of any monuments or features.

4.2.2 Desk Study

The following archaeological, historical and cartographic sources were examined as part of the desk study:

- **Records of Monuments and Places (RMP)** is a list of monuments recorded under Section 12 (1) of the National Monuments (Amendment) Act 1994.
- **sites and Monuments Record (SMR)** is a national baseline database of known archaeological sites and monuments in Ireland.
- **Topographical Files of the National Museum of Ireland** is an archive containing records of all finds logged by the National Museum.
- **Aerial Photographs** provide an important archaeological resource in terms of detecting new sites and identifying the exact location and extent of known sites. These

features can be identified through surface anomalies such as earthworks or distinct vegetation marks.

- **Excavations Bulletin** is an annual publication, started in 1970, which summarises all archaeological excavations carried out in Ireland each year (www.excavations.ie).
- **The National Inventory of Architectural Heritage** is a comprehensive database of structures relating to the architectural heritage of Ireland.
- **Carlow County Development Plan** contains a list of Architectural Conservation Areas and recorded Protected Structures for County Carlow.
- **Cartographic Sources** are important in providing topographical information on areas of archaeological potential as well as tracing land use development within the Proposed Development area.

4.3 The Existing and Receiving Environment (Baseline Situation)

4.3.1 RMP files (Record of Monuments and Places) close to the study area

Within a 2km radius of the site there are 25 no. recorded archaeological monuments. The monuments are listed below, and identified by townland, RMP reference number, site type, site status and distance from the site to the Proposed Development. The RMP reference consists of a three-letter county code, the relevant number of the Ordnance Survey six-inch sheet on which the site is located, and the number of the individual monument. This information is gathered from the online Historic Environment Viewer provided by the Department of Culture, Heritage, and the Gaeltacht. These monuments are discussed above within the context of the historical and archaeological background of the surrounding area. No Recorded Monuments will be affected by the development plans.

RMP No.: CW015-002----

Townland: Bannagagole

Class: Quarry

Description: Listed in the RMP (1995) as 'Potential site - map' based on depiction on the 1908 ed. of OS 6-inch map. Area densely overgrown when inspected in 1987 by ASI. Shown as and marked 'Quarry (Disused)' on the 25 inch OS 6-inch map.

RMP No.: CW011-016003-

Townland: Oldleighlin

Class: Cross - High cross

Description: Small granite undecorated wheeled cross with edge mouldings now standing in modern enclosure by St Molaise's Well (CW011-016004-). Granite base set in modern plinth. (Cross, H 1.27m; max. Wth 0.60m; T 0.15m; Base H 0.15m; 0.70m x 0.70m) (Bradley 1989, 45).

RMP No.: CW011-016004-

Townland: Oldleighlin

Class: Ritual site - holy well

Description: Still venerated. Within modern enclosure beside granite cross (CW011-016003-) (Bradley 1989, 45).

RMP No.: CW011-016005-

Townland: Oldleighlin

Class: Cathedral

Description: Present remains consists of thirteenth-century long nave and chancel to which two transepts, low crossing tower and chapel were added in sixteenth century. Built of mixed rubble with dressed granite jambs, windows and sedilia. Nave may incorporate thirteenth-century stonework. Two fonts within cathedral: (1) thirteenth-century, Kilkenny limestone, large square bowl with rounded arcades, standing on possibly modern drum-shaped base: (2) large square undecorated limestone basin, on drum-shaped base, two mid-sixteenth-century limestone memorial slabs. Limestone tomb table and end stone of another in nave. (Bradley 1989, 46-50)

RMP No.: CW011-016006-

Townland: Oldleighlin

Class: Font (present location)

Description: A 13th-century font of Kilkenny limestone located inside the S entrance door of the cathedral's nave (CW011-016005-) (Bradley 1989, 47). It has a large square bowl decorated with rounded arcades resting on a large, possibly modern, drum shaped base (ibid.). According to Pike (1989, 574) this font, described as 'decorated with heavy Romanesque flutes, ten on each side, Fleur-de-lis decoration on the top surface', was moved here from St Mary's Church (KK020-060006-), Gowran, Co. Kilkenny (where the font is recorded as KK020-060070-).

RMP No.: CW011-016007-

Townland: Oldleighlin

Class: Font

Description: Large, square and undecorated limestone font located beside the north pier of the cathedral's crossing tower (CW011-016005-). It is mounted on a large drum-shaped base. The basin is straight sided and has a central drainage hole. (Bradley 1989, 47-8)