

15 LANDSCAPING & RESTORATION

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15.1 Introduction

This section of the remedial Environmental Impact Assessment Report (rEIAR) will establish potential landscape and visual impacts/effects arising from the existing extraction and ancillary operations associated with this quarry site at Trentamucklagh, St. Johnston, Co. Donegal. It aims to identify and assess the effects on the appearance and character of the local environs arising from the existing development. A landscaping plan is proposed which will be implemented during the operational lifetime of the extraction site with a restoration plan to be implemented upon closure of the quarry.

A Landscape and Visual Impact Assessment combines the magnitude of change with the sensitivity of the landscape to the existing development, which provides a measure of the significance of the impacts. The acceptability of a development is determined by the extent to which the long-term landscape and visual effects are significant. Understanding the character, quality and value of the landscape determines the sensitivity of that landscape to accommodate change through development. The two principal factors determining the visual impact of a development are the sensitivity of the location or receptor and the scale or magnitude of the development.

15.2 Methodology

A detailed landscaping and visual assessment were undertaken to assess the impact of the existing development on the surrounding landscape. This involved field work and a desk-based study to gather information on the existing landscape, visual resources, planning context and landscape designations. Information has been gathered from:

- Ordnance survey Ireland
- Aerial photography
- Field surveys
- Donegal County Development Plan 2018-2024

The following methodologies for assessment of landscape character, sensitivity and visual impact have also been used in the preparation of this report:

- DOE Landscape and landscape assessment guidelines (June 2000).
- EPAs Guidelines on the information to be contained in an Environmental Impact Statement, 2022.
- Guidelines for landscape and visual impact assessment, (GLVIA) by the landscape Institute of Environmental Management and assessment (Second edition, 2002).
- The landscape Institute with the Institute of Environmental Management and Assessment, 2013, Guidelines for landscape and visual assessment (Third edition).

Field observations were undertaken to assess the landscape character and structure of the subject site and surroundings. A visual impact assessment of the subject site was undertaken from publicly accessible viewpoints in the vicinity. This section now assesses the potential impacts that may arise from the existing development on the landscape within the receiving environment.

15.2.1 Landscape assessment criteria

When assessing the potential impacts on the landscape resulting from a development, the following criteria are considered:

- Landscape character, values and sensitivity.
- Magnitude of likely impacts.
- Significance of landscape effects.

The sensitivity of the landscape to change is the degree to which a particular landscape receptor can accommodate changes or new features without unacceptable detrimental effects to its essential

characteristics. Table 15.1 outlines landscape value and sensitivity classified using the following criteria:

Table 15.1: Landscape value and sensitivity

Sensitivity	Description
High	A landscape of particularly distinctive character, susceptible to relatively small changes.
Medium	A landscape of moderately valued characteristics reasonably tolerant to change.
Low	A relatively unimportant landscape, the nature of which is potentially tolerant to substantial change.

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced because of the development. The magnitude considers whether there is a direct physical impact resulting from the loss of landscape components and/ or change that extends beyond the proposal site boundary that may have an effect on the landscape character of the area, as outlined in Table 15.2.

Table 15.2: Magnitude of landscape impacts

Magnitude of impact	Description
High	Notable changes in landscape characteristics over an extensive area and/or permanent long-term change.
Medium	Moderate changes in a localised area and/or medium-term change.
Low	Small change in any components and/or short term/temporary change.

The significance of a landscape impact is based on a balance between the sensitivity of the landscape receptor and the magnitude of the impact. Table 15.3 that outlines the significance of landscape impacts is arrived at using the following matrix.

Table 15.3: Landscape impact significance matrix

Magnitude of landscape resource change	Landscape Sensitivity		
	Low	Medium	High
No change	No change	No change	No change
Low	Slight	Slight/ Moderate	Moderate
Medium	Slight/Moderate	Moderate	Moderate/Substantial
High	Moderate	Moderate/Substantial	Substantial

15.2.3 Visual Impact Assessment criteria

As with the landscape impact, the visual impact of the development is assessed as a function of sensitivity versus magnitude. In this instance the sensitivity of the visual receptor is weighted against the magnitude of the visual effect.

Sensitivity of visual receptors

Unlike landscape sensitivity, the sensitivity of visual receptors, see Table 15.4, has an anthropogenic basis (i.e. it balances the visual susceptibility of the viewer against the value of the view on offer). The susceptibility of a viewer to changes in a particular view is related to the occupation or activity they are engaged in at that location and whether views of the surrounding landscape are an important aspect of that occupation or activity i.e., hill walkers versus commuters. By comparison, the value of the view relates to the visual setting of the viewer and whether this is recognised through county designations and guidebooks or is likely to just have local value.

Table 15.4: Visual receptor sensitivity

Sensitivity	Description
High	e.g. users of an outdoor recreation feature which focuses on the landscape; valued views enjoyed by the community; tourist visitors to scenic viewpoint; occupiers of residential properties with a high level of visual amenity.
Medium	e.g. users of outdoor sport or recreation which does not offer or focus attention on landscape; occupiers of residential properties with a medium level of visual amenity
Low	e.g. regular commuters, people at place of work; occupiers of residential properties with a low level of visual amenity.

Visual impact magnitude

The magnitude of visual effects, see Table 15.5, is determined on the basis of two factors; the visual presence of the development and its effects on the visual amenity. Visual presence is something of a quantitative measure relating to how noticeable or visually dominant the proposal is within a particular view. This is based on a number of aspects beyond simply scale in relation to distance. Some of these include the extent of the view as well as its complexity and the degree of movement is presented and its relationship with other focal points or prominent features within the view is also considered. Visual presence is essentially a measure of the relative visual dominance of the proposal within the available vista.

Table 15.5: Magnitude of visual impact

Criteria	Description
High	Total loss or alteration to key elements/features/characteristics of the existing landscape or view and/or introduction of elements considered totally uncharacteristic when set within the attributes of the receiving landscape or view.
Medium	Partial loss or alteration to key elements/features/characteristics of the existing landscape or view and/ or introduction of elements that may be prominent but not necessary substantially uncharacteristic when set within the attributes of the receiving landscape/ view.
Low	Minor loss or alteration to key elements/features/characteristics of the existing landscape or view and/or introduction of elements that may not be uncharacteristic when set within the attributes of the receiving landscape/view.
No change	Very minor loss or alteration to key elements/features/characteristics of the existing landscape or view and/or introduction of elements that are not uncharacteristic when set within the attributes of the receiving landscape/ view.

Visual impact significance

As stated above, the significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude. The relationship is expressed in the significance matrix in Table 15.6.

Table 15.6: Visual impact significance matrix

Magnitude of visual resource change	Visual sensitivity		
	Low	Medium	High
No change	No change	No change	No change
Low	Slight	Slight/Moderate	Moderate
Medium	Slight/Moderate	Moderate	Moderate/Substantial
High	Moderate	Moderate/Substantial	Substantial

15.3 Scope

The scope of this section includes:

- An assessment and description of the existing landscape.
- The capacity of the existing landscape to absorb the existing development.
- An assessment of the impact of the quarry development and its ancillary activities on the landscape character and the visual impact of the quarry development.
- Recommendation of remedial measures to reduce or mitigate against any potential visual impacts or adverse effect on landscape character.

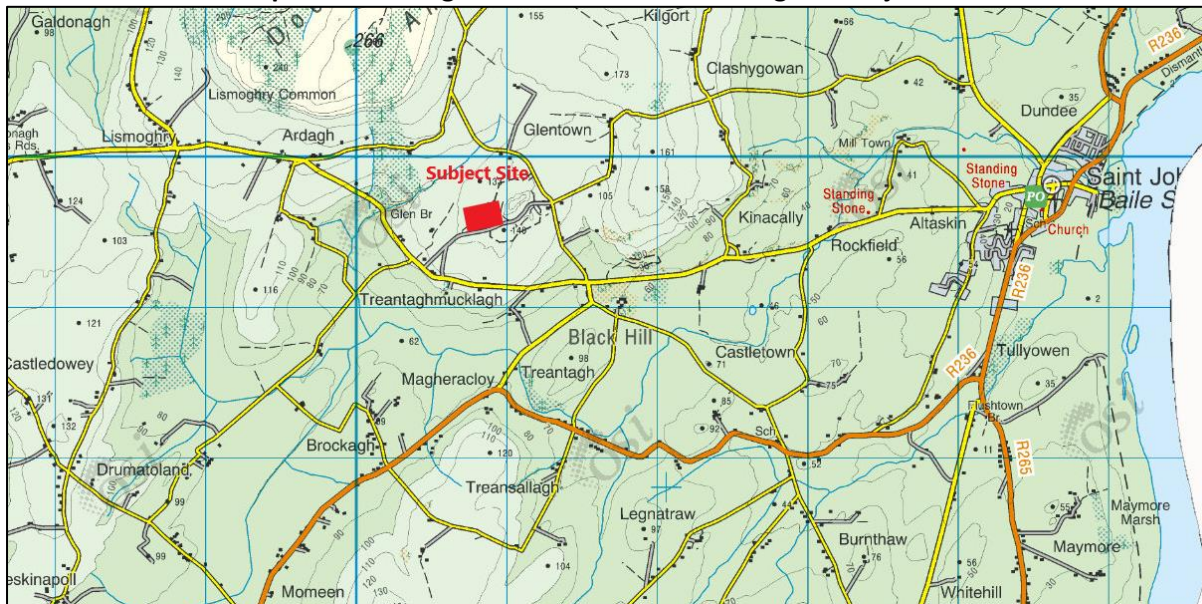
15.4 Existing environment

The quarry is situated in a sparsely populated rural area with sporadic once off housing, the closest occupied dwelling is approximately 120m Southwest of the subject site. There is also a dwelling situated 190m from the subject site on the L-5414-1 local secondary road on the approach to the quarry. Figure 15.1 shows domestic dwellings in relation to the quarry with 500m radius. Map 15.1 illustrates the existing road network.

Figure 15.1: Site Location in Relation to Local Dwellings

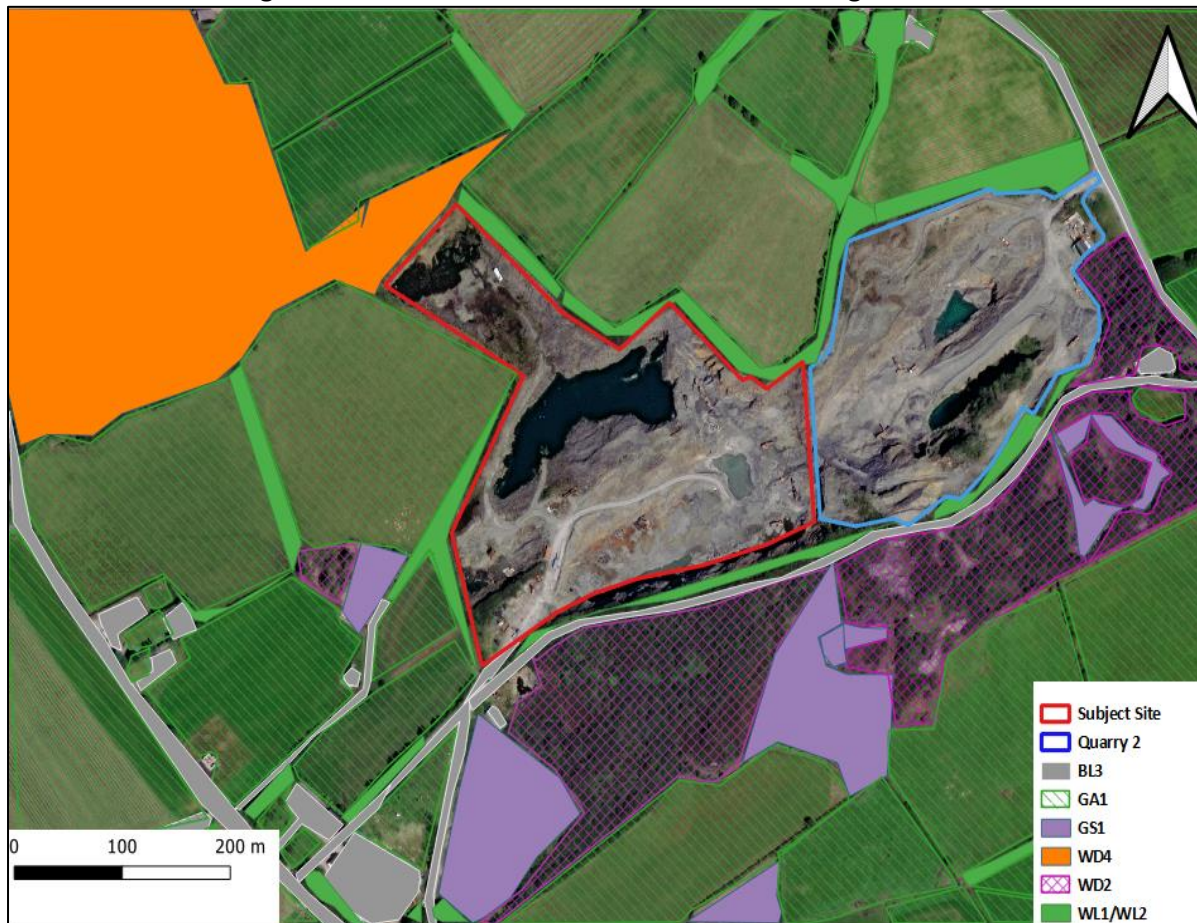


Map 15.1: Existing Road network surrounding the subject site



CYAL50244901 © Ordnance Survey Ireland/Government of Ireland

The quarry is situated in a rural area with sporadic housing. The site is surrounded by agricultural land on all sides apart from the east where a quarry face separates the subject site from a separate quarry which is operated by a different owner. A detailed habitat assessment of the subject site and surrounding environs was conducted as part of Section 6: *Biodiversity*. Figure 15.2 demonstrates the locations of improved grassland (green lines) which can be used for agricultural purposes and existing areas of conifer plantations (green dots) in relation to the subject site.

Figure 15.2: Location of habitats in the surrounding environs

This map was created on QGIS software and using data collected during site visits according to Fossitts guide to habitats in Ireland.

Land use immediately surrounding the quarry site is predominantly agricultural with some isolated blocks of commercial forestry (WD4) to the North and Northwest of the site. These are mainly plantations of Sitka Spruce and Lodgepole Pine. Most of these commercial plantations which are privately owned and currently provide limited ecological roles within these areas. Intensive livestock grazing is the dominant agricultural activity surrounding the existing quarry. The field pattern in the general area is regular with fields extending from the local primary road L-1264-4 and surrounding the quarry. The subject site is not visible from the L-1264-4 road passing the entrance as the mature tree line along the road and topography is shielding it from sight. Another quarry owned by a separate operator lies to the east of the subject site with a large ridge separates the two quarries. The subject site borders have become dominated mainly by gorse and bramble and measure approximately 1.4 Km.

The entire site is located on the upper western slopes of a small hill, the summit of which lies immediately south of the site at approximately 140 mOD. Topography on the application site varies from 140 mOD at the northeast corner to 106 mOD on the existing quarry deck.

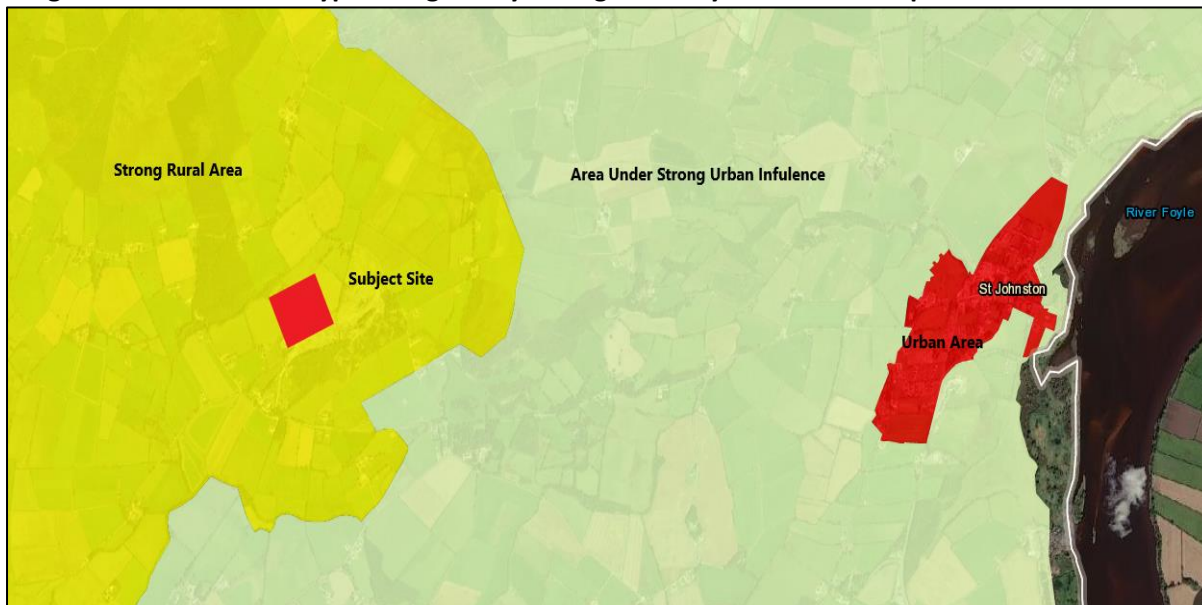
Landscaped berms surrounding the quarry are in place to screen workings. These were created with the overburden from the development in the past and have become naturally vegetated with time.

15.5 Landscape Character Assessment

The Donegal County Council Development Plan 2018-2024 classifies the subject site as being in a Strong Rural Area with an Urban Area located 4km from proposed site in the village of St. Johnston

and adjacent environs to the east are classed as an Area Under Strong Urban Influence as shown in Figure 15.3.

Figure 15.3: Rural area types assigned by Donegal County Council Development Plan 2018-2024



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The County Development plan for 2018-2024 highlights areas of Especially High Scenic Amenity (EHSA) as worthy of protection from any deterioration in landscape character. The quarry site is located outside of the EHSA. The quarry site is classified as being located within an Area of High Scenic Amenity shown in Figure 15.4.

Figure 15.4: Areas of Scenic Amenity as described by Donegal Development Plan 2018-2024



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15.6 General Visual Impact

The quarry faces are visible from many Northwest, Northeast and Eastern viewpoints investigated due to their elevated location above the quarry. The faces of the quarry are not visible from many Southern viewpoints due to the topography, treelines and the existing boundary berms that are heavily vegetated which aid in the screening of the subject site.

The visibility of the quarry site was initially assessed by a desktop study of OS and street view maps to identify potential viewpoints. This was followed up by a field survey where viewpoints were chosen at locations from which the quarry was visible. The viewpoints were chosen to give a representative sample of views of the quarry development within the landscape to illustrate the impact on local residential properties and on protected views, where relevant. Figure 15.5 identifies locations within the surrounding environs which were investigated regarding the visual impact of the quarry site. Photographs 15.1 to 15.17 shows the view from the various viewpoints in relation to the subject site. Table 15.7 displays the locations of the viewpoints in relation to the subject site and whether the quarry was visible or not.

Figure 15.5: Locations from which the visual assessment of the subject site was made



This map was created using QGIS

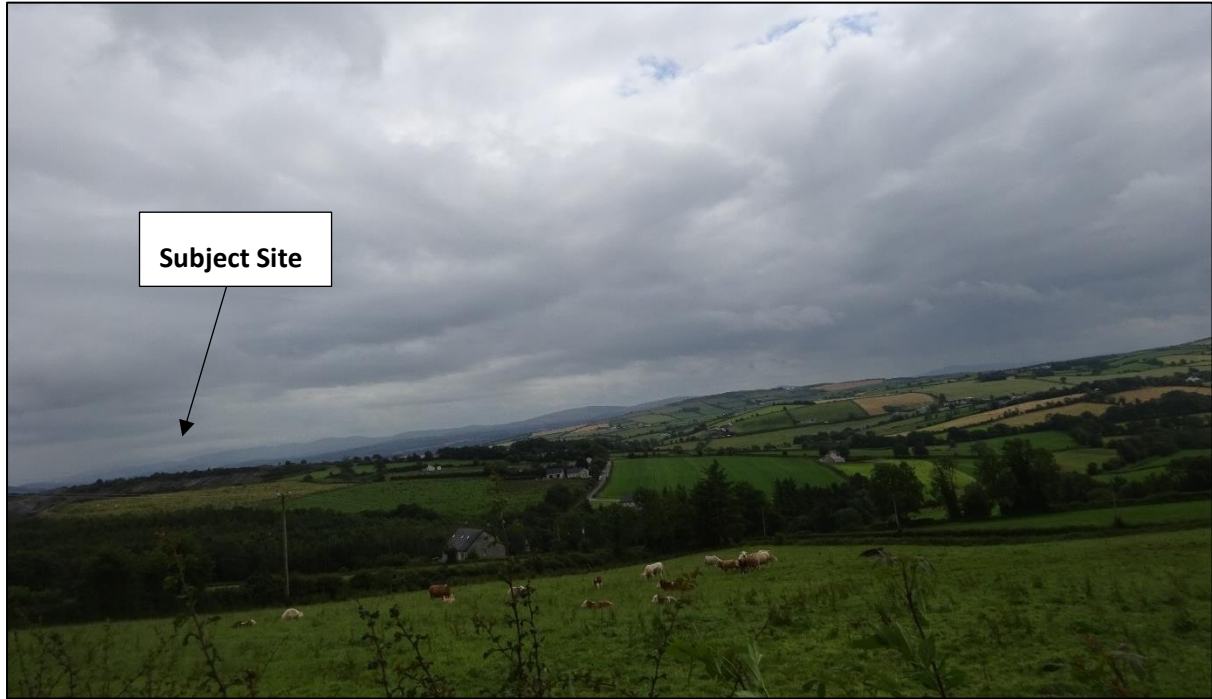
Photograph 15.1: View from point 1.



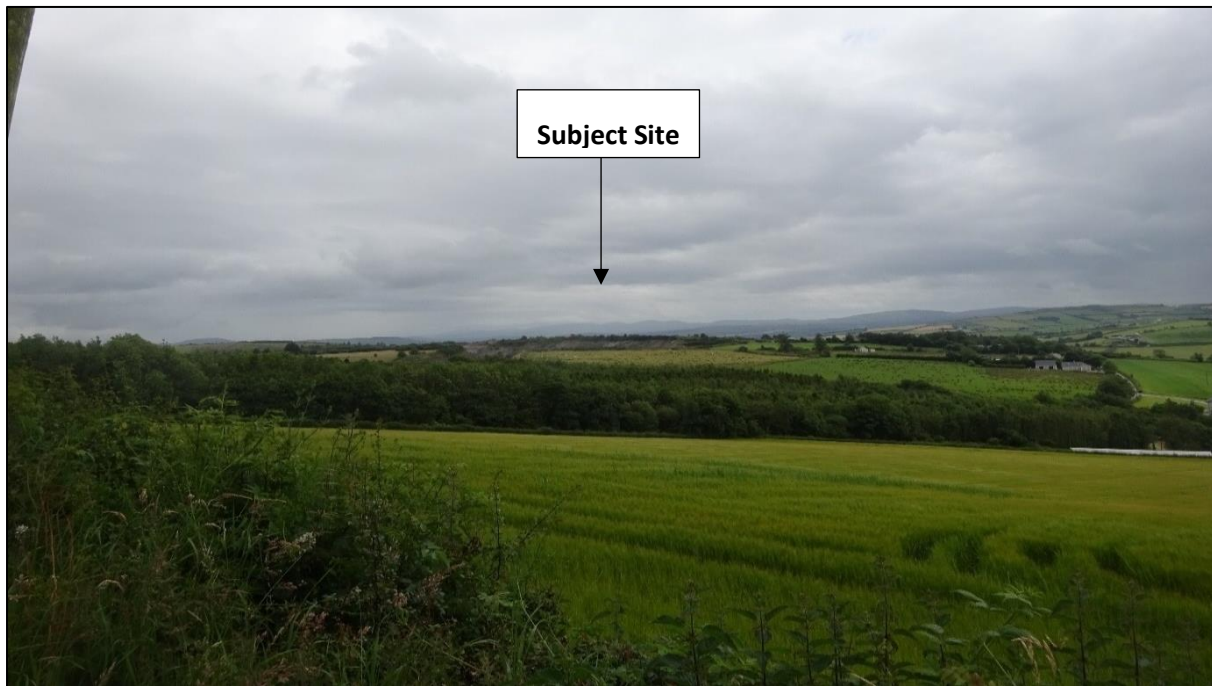
Photograph 15.2: View from point 2.



Photograph 15.3 View from point 3.



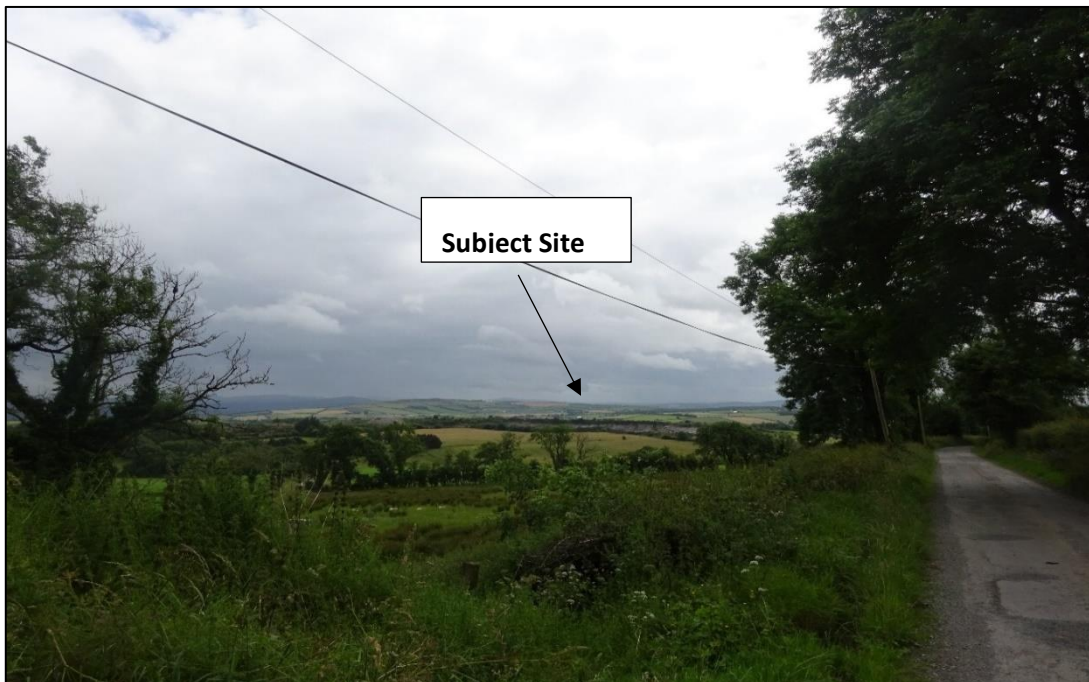
Photograph 15.4 View from point 4.



Photograph 15.5: View from point 5.



Photograph 15.6: View from point 6.



Photograph 15.7 View from point 7.



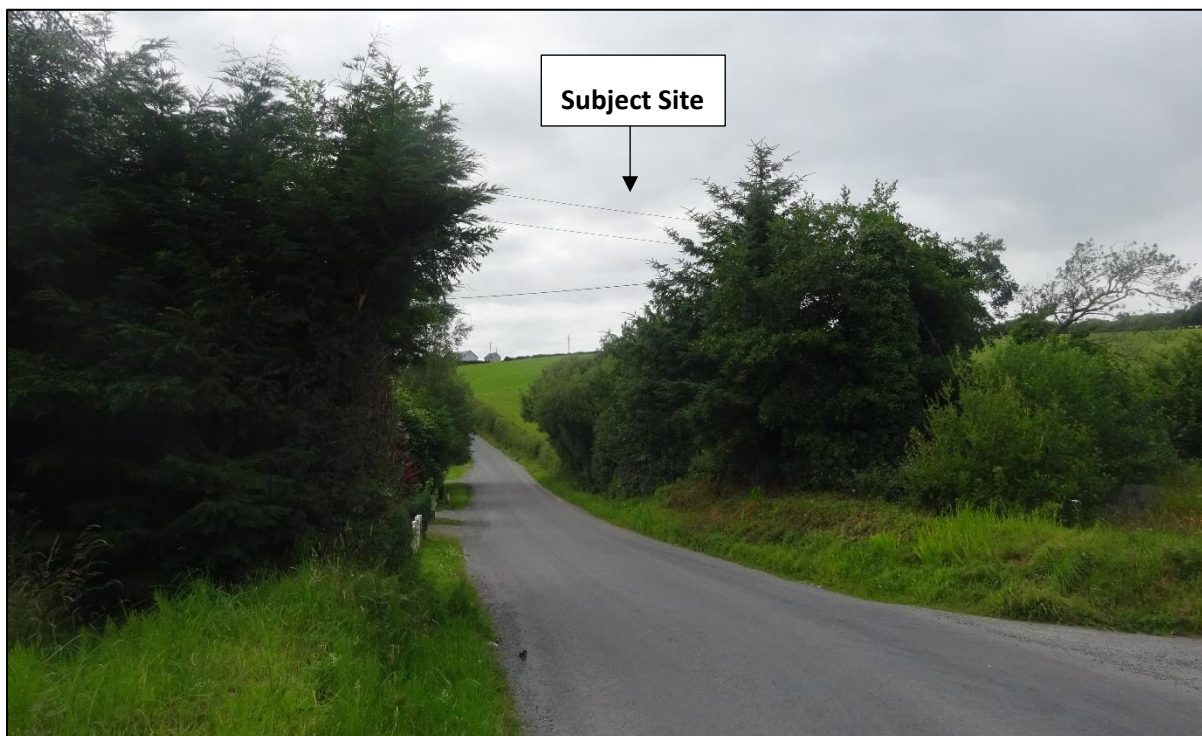
Photograph 15.8 View from point 8.



Photograph 15.9 View from point 9.



Photograph 15.10 View from point 10.



Photograph 15.11 View from point 11.



Photograph 15.12 View from point 12.



Photograph 15.13: View from point 13.



Photograph 15.14: View from point 14.



Photograph 15.15: View from point 15.



Photograph 15.16: View from point 16.



Photograph 15.17: View from point 17.**Table 15.7: Descriptions of view from viewpoints as shown in figure 15.5**

Viewpoint	Location of Viewpoint	Description of View from Viewpoint
1	View from L-1264-4 244m S from the subject site nearest boundary	No aspect of the development is visible from this site due to the existing tree line which aids in screening the site
2	Beside dwelling 180m SW of the subject site nearest boundary	No aspect of the development is visible from this site due to the existing tree line which aids in screening the site
3	Dwelling 770m NW of the subject site nearest boundary	The development is visible from this site
4	Dwelling 684m NW of the subject sites nearest boundary	The development is visible from this site
5	Dwelling 313m N of the subject sites nearest boundary	The development is visible from this site
6	View from where L-5194-2 meets L-5394-1 road 593m NE from nearest site boundary	The development is visible from this site
7	View from L-5394-1 road 375m NE of the subject site nearest boundary	No aspect of the development is visible from this site due the location of the subject site
8	Dwelling 330m E of the subject sites nearest boundary	The development is visible from this site
9	View from L-5414-1 in front of Agricultural sheds 507m E from subject site nearest boundary	No aspect of the development is visible from this site

Viewpoint	Location of Viewpoint	Description of View from Viewpoint
10	View from L-1264-4 road 671m SE of the subject site nearest boundary	No aspect of the development is visible from this site
11	View from the L-1264-4 road 416m S of the subject site nearest boundary	No aspect of the development is visible from this site due the location of the subject site
12	Dwelling located on access road 185m from the subject site nearest boundary	No aspect of the development is visible from this site due to the existing tree line which aids in screening the site
13	View from access road L-5414-1 29m S of the quarry entrance gates	The development is visible from this site
14	View from agricultural field 182m SW of the quarry	No aspect of the development is visible from this site due the location of the subject site
15	View from 48m SE from quarry boundary	No aspect of the development is visible from this site due to the existing boundary berm being heavily vegetated which aids in screening the site
16	View of berm at SE boundary	The development is visible from this site
17	Dwelling house along the L-5414 road 290m NE of the subject site nearest boundary	No aspect of the development is visible from this site due the location of the subject site

The visual impacts posed by the quarry on the dwelling views to the Northwest, Northeast and East are considered moderate. This quarry has existed long before these houses were built, even so, the visual impact from these dwellings need to be taking into consideration.

15.7 Impact Assessment

15.7.1 Landscape

Based on the field survey and reference to the current Donegal County Development Plan, the landscape character has been given a landscape value and sensitivity of “*High*” (Table 15.1). Quarrying has taken place in the area for over 200 years which has resulted in the alteration of the landscape. The current applicant has taken measures to reduce the visual impact of the current site by creating screening berms along the boundaries. These berms have become colonised naturally over time and helped the quarry integrated into the landscape.

15.7.2 Visual

The field survey confirmed that the application area is not screened from all of the viewpoints, part of the quarry faces are visible from various viewpoints to the Northwest, Northeast, and East of the subject site. The subject site is not visible from other southern viewpoints due to the topography, treelines and berms that have naturally vegetated over time.

As illustrated in Table 15.6, the assessment of the significance of the visual impacts on the viewpoint is based on a combination of the visual sensitivity and magnitude of visual changes to the viewpoint. The visual receptor sensitivity was considered “*Medium*” due to the High Scenic designation of the surrounding environs the visual amenities enjoyed by occupiers of neighbouring residential properties, the magnitude of visual impact was currently considered “*Medium*” due to the loss of characteristics of the existing landscape and the degree to which rock extraction activities have altered the landscape to date. The magnitude of the visual impact as a result of the development has therefore been currently assessed as “*Moderate*” (Table 15.6). Mitigation has been proposed below which will then reduce this to “*Slight*”.

15.8 Landscaping and Restoration Measures

15.8.1 Screening

The existing berms to the North of the quarry site near the settlement ponds will be planted with native trees which will reduce the visual impact of the subject site and add to the biodiversity value of the area. The use of native species will support a wider range of insects and animals and will contribute to the connectivity and biodiversity value of the region. Species to be planted are listed in 15.8.2.

The existing berms are illustrated schematically on the aerial photographs in Figures 15.18 and 15.19.

Photograph 15.18 Location of berms that are to be planted



Photograph 15.19: Location of berms that are to be planted

In the past berms have been constructed in and around the quarry site which have been allowed to regenerate with indigenous vegetation over time. No further overburden is going to be stripped from this quarry as it will be solely rock extraction. The location of the vegetated berms are shown on the aerial photograph in Figure 15.20.

Photograph 15.20: Existing vegetated berms around the quarry

15.8.2 Planting works

Planting of semi mature native species is to be carried out to the Northern berms surrounding both the extraction area and settlement ponds for additional screening.

All plants and trees must be purchased from a source compliant with the plant health regulation 2016/2031/EU. All planting works will be carried out during the dormant season (November to March).

Any trees that fail should be replaced during the next dormant planting season.

The planting mix to be used on site is as follows

- Alder
- Aspen
- Ash
- Blackthorn
- Crab apple
- Elm
- Hazel
- Hawthorn
- Holly
- Pedunculate oak
- Sessile oak
- Rowan
- Whitebeam
- Willow

In-planting between trees must also include the following:

- Spindle
- Guelder rose
- Dog rose
- Woodbine honeysuckle
- Cherry.

15.9 Mitigation Measures and Monitoring

Mitigation measures include planting existing berms to the North of the quarry to reduce the long-term visual impact of the extraction area and maintaining existing berms throughout the subject site to reduce any visual impact resulting from the existing development of the subject site.

Measures will be put in place to reduce loss of biodiversity, enhance the subject site area and reduce environmental impacts of quarrying activity.

These include:

- Planting the Northern berms with a mix of native trees to screen the development, will also help support a wide range of insects and animals while contributing to the ecological value of the area.
- Using plants suited to the given soil type and conditions to reduce the need for expensive and intrusive remedial measures (ex. Replacing failed plants).
- All planting of trees and shrubs must take place during the first dormant season, avoiding times of frost.

15.10 After Use

The greatest potential for increased biodiversity in relation to the subject site is after the operation has ceased. With time, nature reclaims a quarry, and the landscape can revert to a rich zone of biodiversity with little intervention from human hands. The aim of any natural restoration plan is to restore ecological balance and to produce self-sustaining plant and wildlife communities and habitats. Restoration/decommissioning of a quarry can fall within three main activities, namely:

- Do Nothing
- Land Forming
- Revegetation/planting

Each activity and related options/recommendations are now examined in more detail.

5.10.1 Do Nothing

The most frequent form of reinstatement is the “do nothing” approach and allow nature to take its’ course. Upon decommissioning, the subject site will similarly be reclaimed by nature. The seedbank will have the opportunity to germinate and vegetation in the surrounding area will spread into the bare soils. As production in the extraction area ceases, pumping to the settlement tank system will no longer take place, water will gather in the quarry void creating a shallow lake of 1-2 meter in depth.

15.10.2 Land forming

The subject site will have vertical faces with various crevices and ledges upon decommissioning. The vertical faces of the quarry after use could provide potential nesting sites for birds and other small mammals. Topsoil could be imported and spread on the available benches against the bottom of the quarry face creating a buttress of approximately 0.5 to 1m in height. This buttress will provide a foot hold for vegetation to become established at the bottom of the quarry face to improve biodiversity.

15.10.3 Mitigation:

A full and comprehensive restoration plan must be submitted and agreed with the planning authority in relation to one or both of the following as they become relevant:

- Restoration of the c. 7.69-hectare excavation area.
- Restoration of the entire subject site of c. 9.92 hectares.

15.11 Cumulative Impacts

Although separate and distinct quarries in their own right, from a landscape perspective, Tinney’s quarry and the adjacent quarry to the east read as a single area of extraction from viewpoints to the northwest, northeast and east. The mature vegetation along the eastern boundary of the adjoining quarry restricts views into both quarries from the public road to the east. The proposed planting along the berms within Tinney’s quarry as indicated in section 15.8.1 will have the effect of screening part of the adjacent quarry to the east in addition to that of the site subject to this application for substitute consent.

15.12 Residual Impacts

The extraction area does have a visual impact on the landscape from the viewpoints of dwellings to the Northwest, Northeast and East of subject site. The proposed planting of the berms to the North of the subject site will help screen the quarry extraction area and reduce the residual impact of the proposal. The proposed restoration plans will create supporting habitat for many species with opportunities for nesting, foraging and water. The formation of new habitats will increase the biodiversity of the area and will go some way to mitigating the initial disturbances in the longer term.

A summary is presented in the Tables 15.12, 15.13 and 15.14 of impacts pre mitigation, mitigation measures and residual impacts post mitigation.

Table 15.12: Determination of Significance of Impacts Pre-mitigation

Impact	Receptor	Description of Impact (Character/Magnitude/ Duration/Probability/ Consequences) Negligible to High	Existing Environment (Significance/ Sensitivity) Negligible to High	Significance Imperceptible to Profound
Negative visual impact on the landscape character of the surrounding environs from stripping and extraction activities	Visual receptors within the vicinity of the subject site	Medium	Medium	Moderate
Loss of habitat from stripping from quarrying activities	Wildlife within the surrounding environs	Low	Low	Moderate
Loss of soils/subsoils due to extraction	Soils/ subsoils	Low	Low	Moderate
Loss of bedrock geology as extracted product	Bedrock geology	High	Low	Moderate

Table 15.13: Summary of Mitigation Measures Proposed

Summary of Mitigation Measures Proposed
Berms to the North of the quarry must be planted with a mix of native trees (15.8.2) to screen the extraction area and to provide natural vegetation and wildlife corridors of connectivity.
All planting of trees and shrubs must take place during the first dormant season, avoiding times of frost.
Planting to be monitored by the Ecological Clerk of Works with appropriate advice and guidance given to the site manager.
Maintaining and monitoring existing berms that are 2.5-3m in height throughout the subject site to reduce the loss of biodiversity and enhance the conservation value of the subject site area and reduce environmental impacts of quarrying activity.
A full and comprehensive restoration plan must be submitted and agreed with the planning authority in relation to one or both of the following as they become relevant: <ul style="list-style-type: none"> ● Restoration of the 7.69 ha excavation area. ● Restoration of the 9.92 ha entire subject site.

Table 15.14: Determination of Significance of Impacts Post mitigation

Impact	Receptor	Description of Impact (Character/Magnitude/ Duration/Probability/ Consequences) Negligible to High	Existing Environment (Significance/ Sensitivity) Negligible to High	Significance Imperceptible to Profound
Negative visual impact on the landscape character of the surrounding environs from stripping and extraction activities	Visual receptors within the vicinity of the subject site	Low	Low	Imperceptible
Loss of habitat from stripping and construction works	Wildlife within the surrounding environs	Low	Low	Imperceptible
Loss of soils/subsoils due to extraction	Soils/ subsoils	Low	Low	Slight
Loss of bedrock geology as extracted product	Bedrock geology	High	Low	Moderate

15.13 Technical Difficulties

No technical difficulties were encountered.