

11 LANDSCAPE AND VISUAL

11.1 INTRODUCTION

This Remedial Landscape and Visual Impact Assessment (rLVIA) has been prepared to accompany a substitute consent application for an existing quarry located in the townland of Hempstown Commons, Co. Kildare.

The substitute consent application is to be made concurrent with an application for further development of the quarry for extraction under S.37L of the Planning and Development Act, 2000 as amended that is accompanied by an EIAR

The Substitute Consent application relates to works that have taken place from 29 December 2019 to the present day, which are illustrated and described in detail in Chapter 2 - Project Description.

Landscape Impact Assessment (LIA) relates to assessing effects of a Development on the landscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.

Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements.

11.1.1 STATEMENT OF AUTHORITY

This rLVIA was prepared by Richard Barker, MLA, PgDip Forestry, BA Environmental, MILI. Richard has over 20 years' experience in LVIA and has worked on the Landscape and Visual Assessment for a vast range of developments throughout Ireland, including wind and solar energy, infrastructure, quarry developments, flood relief, residential and recreation projects.

11.1.2 STUDY AREA

A 5km radius study area has been selected for this impact assessment. This strikes a balance between potential significant impacts to have occurred (most potential within 2km) and the need to examine a number of sensitive receptors such as settlements, amenity areas and scenic designations within the wider landscape context.



Figure 11-1 - 5km study area extents map.

11.1.3 TECHNICAL SCOPE

Production of this rLVIA involved:

- A desktop study to establish an appropriate study area, relevant landscape and visual designations in the expired, but relevant Kildare County Development Plan 2017-2023, the expired Wicklow County Development Plan 2016-2022 the expired South Dublin County Development Plan 2016-2022, as well as the respective current development plan (section 11.2.2), that also cover the temporal scope of this assessment i.e. from 29 December 2019 to present day. The desktop study also identifies other sensitive landscape and visual receptors;
- Fieldwork to establish the landscape character of the receiving environment and to confirm and refine the set of viewpoints to be used for the EIA visual assessment stage;

- Assessment of the significance of the landscape impact of the development as a function of landscape sensitivity weighed against the magnitude of the landscape impact;
- Assessment of the significance of the visual impact of the development as a function of visual receptor sensitivity weighed against the magnitude of the visual impact. This aspect of the assessment is supported by photomontages prepared in respect of the selected viewpoints.

For more detailed information on the Landscape and Visual Impact Assessment Criteria, as well as assessment methodology used in this appraisal, please see section 11.3.

11.1.4 GEOGRAPHICAL AND TEMPORAL SCOPE

The quarry has been in use since the mid 1940's and has been formally registered under Section 261, Planning & Development Act 2000 (Quarry Ref. No. QR 39) and subsequent planning permission for continuance of quarrying operations was granted under Planning Reg. Ref. 07/443 ABP PL09253338.

The expiry of the Planning Reg. Ref. 07/443 appropriate period was 29 December 2019 as confirmed by Kildare County Council, and as such the baseline of this rEIAR has been set at that appointed day. Therefore, the drawings submitted in support of the substitute consent application identify the site as it existed circa December 2019 onwards to today. The rEIAR assessment period has been established as the period of 29 December 2019 to the present day.

There is a requirement to seek planning permission through the substitute consent process for the following components:

- To date, rock has been extracted within an area of ca. 5 ha through drilling, blasting, and mechanical breaking of greywacke (and shale) rock (Pollaphuca Formation);
- mobile crushing, and screening of the rock into specific aggregate sizes;
- temporary stockpiling of screened aggregate in an area to the south and west of the quarry void space; and,
- loading aggregate materials onto road trucks for sale and distribution.

The current quarry void is centrally located within the EIA unit. Stockpiles are located to the southwest and west of the quarry void space. At the south-west of the current quarry area is the weighbridge and weighbridge office, wheelwash and associated tank and borehole, and staff private vehicle and visitor parking area. The site entrance is located further west. The location of mobile plant has varied over the assessment period.

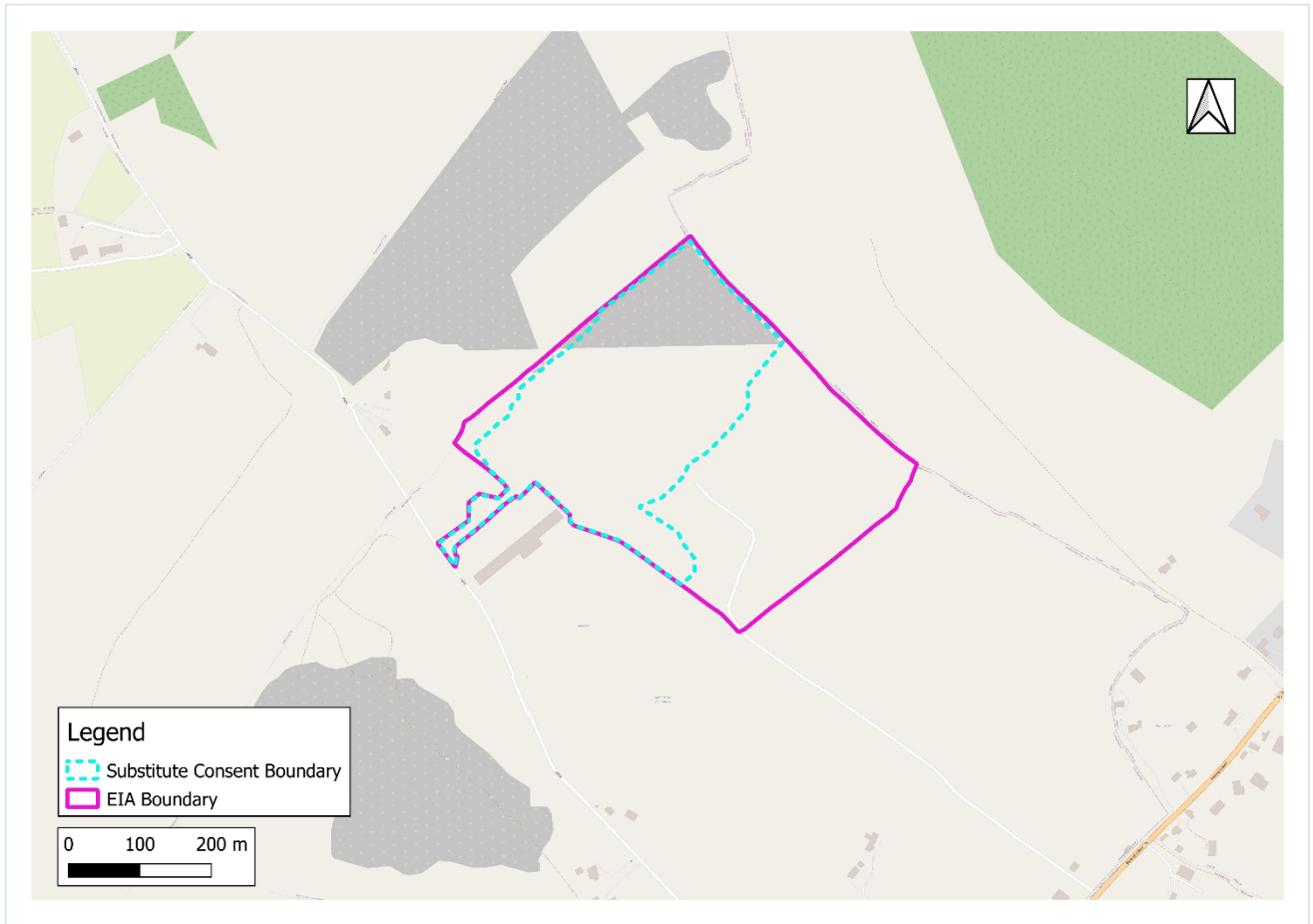


Figure 11-2 – Substitute Consent application area and the lands the subject of the EIAR.

11.2 LEGISLATIVE AND POLICY CONTEXT

11.2.1 LEGISLATION

The role of landscape and protection of its character through establishing planning policies and designations as part of the decision making at national through to county council level is governed by the Planning and Development Act 2000 (as amended).

The Planning and Development Act has applied the same meaning to landscape as in Article 1 of the European Landscape Convention (ELC) 2000, ratified by Ireland in 2004, which states Landscape as being an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. The Irish Government has produced the National Landscape Strategy 2014-2025 to implement the ELC which aims to implement six core objectives through decision making including recognise landscape in law, national landscape character assessment, landscape policies, increased landscape awareness, education and public participation

The general EIA legislation and guidance documents are listed in Chapter 1 (Introduction) of this rEIAR.

11.2.2 RELEVANT POLICIES AND PLANS

This section sets out a review of landscape related planning policy of the county development plans of KCC and neighbouring WCC, as both local authorities fall within the extent of the study area. The review includes the current adopted and recently expired CDP of both local authorities, as this rEIAR baseline covers the period from 29 December 2019 to present. It includes:

- Kildare County Development Plan 2017-2023 (expired).
- Kildare County Development Plan 2023-2029.
- Wicklow County Development Plan 2016-2022 (expired).
- Wicklow County Development Plan 2022-2028.

The local planning and other policies from the above development plans are reviewed, which identify key relevant development objectives and policies.

11.2.2.1 Kildare County Development Plan 2017-2023 (expired)

A 2004 Landscape Character Assessment of County Kildare identifies that the Landscape Character Area in which the site is located is the “Eastern Uplands.” This area is designated with a “Class 3 - **High Sensitivity**” (out of an option of five sensitivity ratings, with Class 1 being ‘Low Sensitivity’ and Class 5 being ‘Unique Sensitivity’). The sensitivity of Class 3 is described in Table 14.2 of the CDP as,

“Areas with reduced capacity to accommodate uses without significant adverse effects on the appearance or character of the landscape having regard to prevalent sensitivity factors.”

In addition, the CDP states:

“Landscape sensitivity is a measure of the ability of the landscape to accommodate change or intervention without suffering unacceptable effects to its character and values. It is determined using the following factors: slope, ridgeline, water bodies, land use and prior development ... In order to determine the likely perceived impact of a particular development on the landscape, the potential impact of the development must be viewed in light of the sensitivity of the area.”

Table 14.3 of the CDP (see Figure 13 below) sets out the likely compatibility between a range of land-uses and the designated Landscape Character Areas (LCAs). According to that table, the Eastern Uplands is most compatible with “agriculture, forestry and tourism projects.” For all other land-uses, including extraction (i.e. sand & gravel), it is rated as having a “**medium**” compatibility.

Compatibility Key		Sensitivity Class																										
<div></div>	Most		Agriculture and Forestry		Housing	Urbanisation			Infrastructure	Extraction		Energy																
<div></div>	High																											
<div></div>	Medium		Principal Landscape Character Areas	Agriculture	Forestry	Rural Housing	Urban Expansion	Industrial Projects	Tourism Projects	Major Powerlines *	Sand & Gravel	Rock	Windfarm	Solar														
<div></div>	Low																											
<div></div>	Least																											
North Western Lowlands															1	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
Northern Lowlands		1													<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>		
Western Boglands		3	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>														
Eastern Transition		2	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>														
Eastern Uplands		3	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>														
South-Eastern Uplands		2	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>														

Figure 11-3 – Excerpt of Table 14.3 from the Kildare CDP, showing “likely compatibility between a range of land-uses and Principal Landscape Areas.”

Table 14.4 from the Kildare CDP (see Figure 14 below) sets out the “likely compatibility between a range of land-uses and proximity to Principal Landscape Sensitivity Factors.” This is not just confined to the site itself, but proximity to within 300m of Principal Landscape Sensitivity Factors. The site of the proposed pit extension is located close to a ridgeline (as identified in Figure 24 below). In relation to sand & gravel extraction, it is **“very unlikely to be compatible”** (i.e. ‘0’ rating) if within 300m of a ridgeline; “compatible only in certain circumstances” (i.e. ‘2’ rating) if within 300m of mixed forestry and is “likely to be compatible with great care” (i.e. ‘3’ rating) if within 300m of “agricultural land with natural vegetation.”

In Section 14.4.2 of the CDP it is also acknowledged that:

“All developments are unique and at micro/local level, landscapes vary in terms of their ability to absorb development and each site should be assessed on its individual merits.”

Proximity within 300m of Principal Landscape Sensitivity Factors.	Agriculture	Forestry	Rural Housing	Urban Expansion	Industrial Projects	Tourism Projects	Major Powerlines	Sand and Gravel	Rock	Windfarm	Solar
Major Rivers and Water bodies	5	5	2	2	2	3	2	1	0	1	0
Canals	5	5	2	2	2	3	2	1	0	1	1
Ridgelines	5	5	1	1	1	1	1	0	0	2	0
Green Urban Areas	4	5	2	0	0	4	3	3	3	2	2
Broad-Leaved Forestry	3	5	2	2	2	4	3	2	3	1	2
Mixed Forestry	3	5	2	2	2	4	3	2	3	1	2
Natural Grasslands	5	2	2	1	1	4	2	1	1	2	2
Moors and Heathlands	2	2	1	0	0	1	2	1	0	2	1
Agricultural Land with Natural Vegetation	5	5	2	2	2	3	3	3	3	4	2
Peat Bogs	0	0	0	0	0	0	2	0	0	3	1
Scenic View	5	5	2	1	1	5	1	3	0	0	2
Scenic Route	5	5	2	1	1	5	1	3	0	0	2

Figure 11-4 – Excerpt of Table 14.4 from the Kildare CDP, showing Likely compatibility between a range of land-uses and proximity to Principal Landscape Sensitivity Factors.

Note: 0 = “very unlikely to be compatible”; 1 = “Compatible only in exceptional circumstances”; 2 = “Compatible only in certain circumstance”; 3 = “Likely to be compatible with great care.”

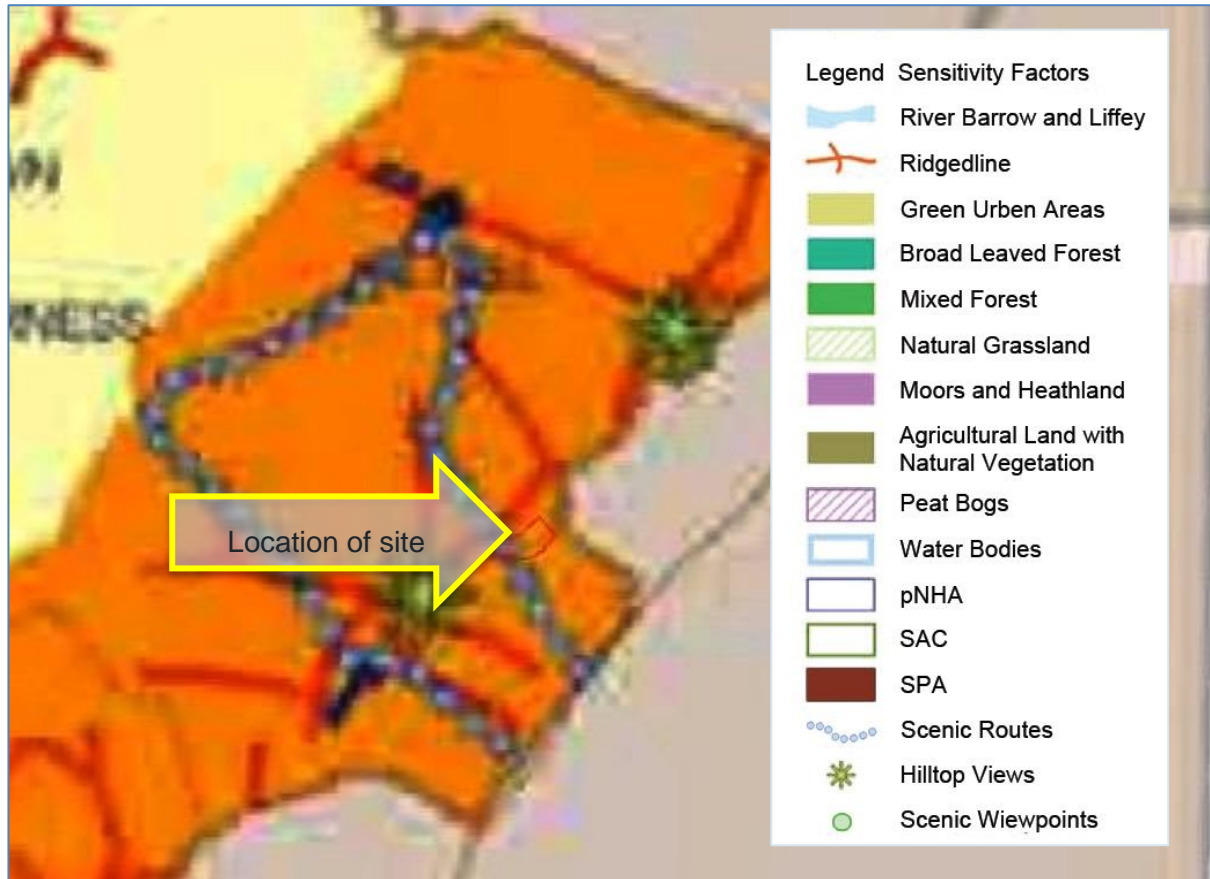


Figure 11-5 – Low-resolution excerpt from Kildare CDP Landscape Sensitivity Map.

Areas of High Amenity

Section 14.5 of the CDP states:

“In addition to Landscape Character Areas and the sensitivity of these areas to development, there are certain special landscape areas within the county, some of which overlap with sensitive landscapes. For the purposes of this Plan, these areas have been defined as Areas of High Amenity. They are classified because of their outstanding natural beauty and/or unique interest value and are generally sensitive to the impacts of development.”

The site is located within the “East Kildare Uplands Area of High Amenity,” which overlaps and shares the same boundaries as the aforementioned Eastern Uplands. The East Kildare Uplands Area of High Amenity is described in the CDP as:

“The Eastern Uplands are located in the east of the county and are part of the Wicklow Mountain complex. The topography rises from the lowland plains, through undulating terrain to the highest point of 379m above sea level (O.D.) at Cupidstownhill, east of Killeel. The elevated nature of this area provides a defined skyline with scenic views over the central plains of Kildare and the neighbouring Wicklow Mountains, which further define the skyline and the extent of visibility. The East Kildare Uplands are rural in character with a number of scenic views from elevated vantage points. The general land use on the uplands is pasture, with some tillage, quarrying and forestry.

“Along a number of roads, which cross the upper and lower slopes of the uplands, there are long-distance views towards the Kildare lowlands and the Chair of Kildare. The sloping land provides this

area with its distinctive character and intensifies the visual prominence and potential adverse impact of any feature over greater distances. Slope also provides an increased potential for development to penetrate primary and secondary ridgelines when viewed from lower areas.

“In the Eastern Kildare Uplands, nearly all ridgelines are secondary when viewed from the lowland areas, as the Wicklow Mountains to the east define the skyline (i.e. form primary ridgelines). Gently undulating topography and shelter vegetation provided by conifer and woodland plantation can provide a shielding of built form. Views of the River Liffey Valley as well as of the Poulaphouca Reservoir are available from the hilltops and high points on some of the local roads.”

Policies – General Landscape

14.8.1 General Landscape:

LA1: Ensure that consideration of landscape sensitivity is an important factor in determining development uses. In areas of high landscape sensitivity, the design, type and the choice of location of proposed development in the landscape will also be critical considerations.

LA2: Protect and enhance the county’s landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape.

LA3: Seek to ensure that local landscape features, including historic features and buildings, hedgerows, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area, whilst providing for future development.

14.8.3 Upland Character Areas including East Kildare Uplands (Area of High Amenity)

LU1: Ensure that development will not have a disproportionate visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere with or detract from scenic upland vistas, when viewed from areas nearby, scenic routes, viewpoints and settlements.

LU2: Ensure that developments on steep slopes (i.e. >10%) will not be conspicuous or have a disproportionate visual impact on the surrounding environment as seen from relevant scenic routes, viewpoints and settlements.

LU5: Have regard to the potential for screening vegetation when evaluating proposals for development within the uplands.

14.9 Scenic Routes and Protected Views

SR1: Protect views from designated scenic routes by avoiding any development that could disrupt the vistas or disproportionately impact on the landscape character of the area, thereby affecting the scenic and amenity value of the views.

Objectives – Landscape

LO1: Have regard to the Landscape Sensitivity Factors in the vicinity of sites in the consideration of any significant development proposals.

LO4: Protect the visual and scenic amenities of County Kildare’s built and natural environment.

LO5: Preserve the character of all important views and prospects, particularly upland, river, canal views, views across the Curragh, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty.

L06: Preserve and protect the character of those views and prospects obtainable from scenic routes identified in this Plan listed in Table 14.5 and identified on Map 14.3.

Scenic Routes and Viewpoints

Scenic Routes and Viewpoints are shown on a countywide map on Page 325 (Chapter 14 – Landscape, Recreation & Amenity) of the CDP (see Figure 16 below). The scenic routes are itemised in Table 15-5, but there is no separate table listing identifying the Hilltop Views that are indicated in this map. The following three scenic routes, which are taken from Section 14.6 (Scenic Routes and Protected Views) of the CDP and its Appendix 4 (Scenic Routes), are the only County Kildare scenic routes in the study area of relevance to the site:

Scenic Route 12

Views West of the Kildare Plains from Redbog Area and Views towards Caureen; from Rathmore Cross Roads to Pipershall. Location: Greenmount, Redbog, Pipershall, Rathmore West. The local road that runs through Rathmore provides scenic vistas of the Kildare plains to the southwest and the undulating lands at the County Boundary to the southeast. The elevated nature of the road and the generally low hedgerows and vegetation of the agricultural lands allow long-distance visibility. Although scattered rural housing is located in the area, these are partially screened by existing vegetation. The views available from hedge opening along the road remain unaffected.

Scenic Route 22

Views to the North-West of the open countryside; from Kilteel Village to Rathmore Village. Location: Furryhill, Kilteel Lower, Rathmore East

Open and extensive views of the surrounding lowlands are available to the west, whilst views onto the hilltops are provided to the east. The undulating nature of the lowlands in this part of the county and the existing hedgerows with mature trees add complexity to the vistas, as well as partially screening views along the roads. Although scattered housing is located in the area, the landscape character remains unaffected and, similarly, the views along the road onto the lowlands maintain their scenic value. Although the hilltops to the west limit the extent of the vistas, these remain highly scenic.

Scenic Route 33

Views to and from the Ridgeline on the East Kildare Uplands and Views of the Central Plains. Location: Cromwellstownhill, Cupidstown Hill, Rathbane, Punchestown, Caureen, Hempstown Common, Pipershall, Crosscool harbour. Long-distance vistas of the central plains (i.e. lowlands agricultural and urban areas) are available from all the hilltops on the eastern boundary of County Kildare. Due to the open and extensive nature of the available views, these can be described as scenic. However, many views have been affected by development. Views to the upland areas are also of scenic value as ridgelines define the skyline as well as presenting conspicuous landscape features and focal points. Despite the fact that industrial and infrastructure developments have affected some of the available vistas, the continuous designation and inclusion of these areas in the Development Plan is recommended.

It should be noted that while Scenic Route 29 fringes the study area (i.e. “Views of Countryside and East Kildare Uplands from Bishopshill Commons”) the direction of the noted view (i.e. east towards the Wicklow mountains) is of no relevance to the site. It should also be noted that in the map of designated scenic routes and viewpoints on Page 325 (Chapter 14) of the Kildare CDP, Scenic Route 33 does not appear, although it is listed in Appendix 4 (Scenic Routes) of the CDP.

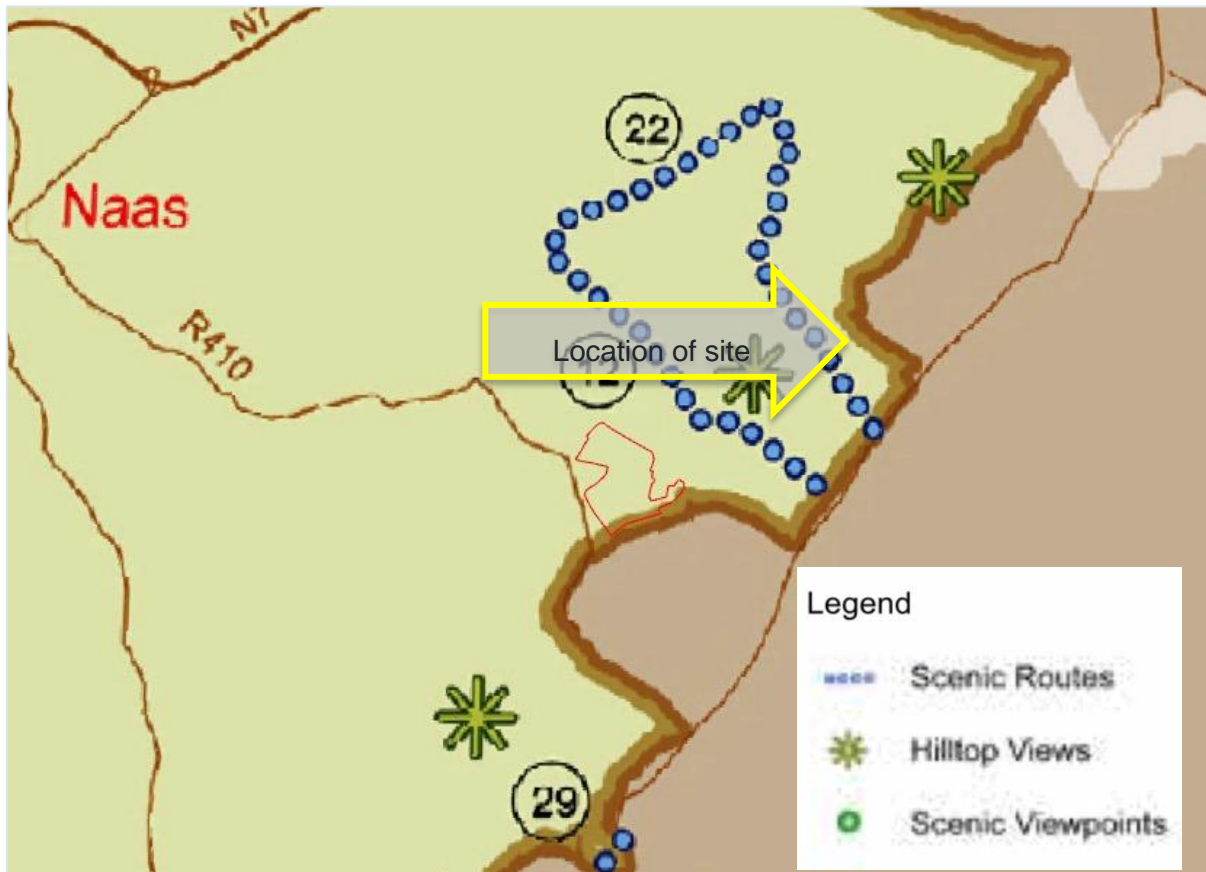


Figure 11-6 – low-resolution extract of map of designated scenic routes and viewpoints on Page 325 (Chapter 14) of the Kildare CDP. Please note: Scenic route 33 does not appear on this map, although it is listed in Appendix 4 (Scenic Routes) of the CDP.

In relation to scenic routes and protected views, Section 14.6.2 of the CDP makes specific reference to ‘Views to and from Hills.’ The CDP states:

“As the landform of the county is generally flat, with very little variation in topography and predominantly low vegetation, extensive views can be obtained from hilltops, allowing vistas over long distances, and similarly from the lowland areas the eye is drawn to the primary and secondary ridgelines that define the skyline throughout the county. Ridgelines are conspicuous features of the natural landscape as they perform an important role as dominant landscape focal points. It is important that development does not interrupt the integrity of ridgelines. Development on steeply sloping land can be viewed over greater distances.”

11.2.2.2 Kildare County Development Plan 2023-2029 (current)

Review of the current Kildare County Development Plan (2023-2029) and comparison with its predecessor, the 2017 – 2023 KCCDP indicates that very little has changed in terms of landscape and visual related policies and designations. The same Landscape Character Assessment forms the basis of policy and although some of the figure references and policy numbers have changed, the content is largely the same. There is one change in Landscape Policy LR P1 to *“Protect and enhance the County’s landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape”*, and there are 16 no. objectives to support that policy. Whereas most of these objectives are the same or of similar intent to previous versions and without specific consequence for this project, there is one relating specifically to quarries. This is LR 08, which states;

“LR 08 -Ensure that all quarrying activities and projects associated with the extractive industry comply with all relevant Planning and Environmental Legislation and the Guidelines for the Protection of Biodiversity within the Extractive Industry document ‘Wildlife, Habitats & the Extractive Industry’”.

For the above reasons it is not considered necessary to duplicate the level of detail provided in section 11.2.2.1 related to the former CDP.

11.2.2.3 Wicklow County Development Plan 2016-2022 (Expired)

The Wicklow CDP is addressed in this section, for any protected views or scenic routes that may be of relevance to the proposed development. There are 48 designated “Views of Special Amenity value or Special Interest” listed in Chapter 10 of the CDP. However, only two are in the study area (i.e. View 33 and View 34), neither of which is orientated in the general direction of the site.

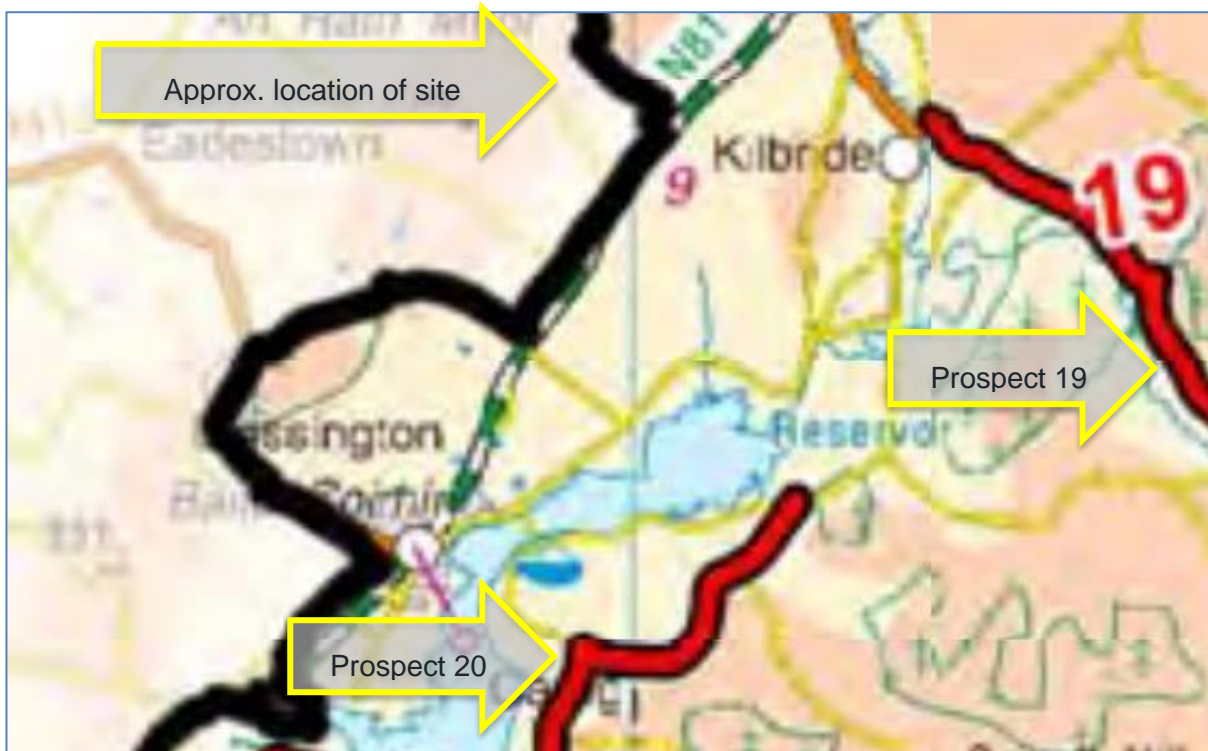


Figure 11-7 – low-resolution extract of map of designated “prospects” in the Wicklow CDP that are also in the study area.

There are 66 designated “Prospects of Special Amenity value or Special Interest” listed in Chapter 10 of the CDP. It should be noted that in the case of the Wicklow CDP, “prospects” take the form of specific routes along certain roads (i.e. what some other counties designate as “scenic routes” in their respective CDPs). Only two such prospects are in the study area (please refer to Figure 17, above): Prospect 19 and Prospect 20.

Prospect 19 covers “R759 Manor Kilbride To Ballysmutton, Liffey Valley Drive.” Its listed feature is identified as “Prospect of Liffey valley and mountains.” However, the site of the proposed development, as well as the low County Kildare hill range upon which it is set, is located northwest of the route: the aforementioned “Liffey valley and mountains” is located south/southwest of this route.

Prospect 20 covers the “R758, L8369, L4364 & L4365, Lake Drive from the N81 at Glashina to Oldcourt.” Its listed feature is identified as “Prospect of Poulaphuca.” However, the proposed development is set back more than 3km from the Poulaphuca reservoir, and more than 4km from this prospect at all times.

Views and Prospects Objectives

NH52: To protect listed views and prospects from development that would either obstruct the view/prospect from the identified vantage point or form an obtrusive or incongruous feature in that view/prospect. Due regard will be paid in assessing development applications to the span and scope of the view/prospect and the location of the development within that view/prospect.

It should be noted that there are two Areas of Outstanding Natural Beauty (AONB) in the study area. These are the Mountain Uplands AONB and Poulaphuca Reservoir AONB. However, it is worth noting that both are more than 3km from the site

11.2.2.4 Wicklow County Development Plan 2022-2028 (Current)

Similar to the current Kildare CDP, review of the current Wicklow County Development Plan (2022-2028) and comparison with its predecessor, the 2016 – 2022 CDP indicates that very little has changed in terms of landscape and visual related policies and designations. The same Landscape Character Assessment forms the basis of policy and although some of the figure references and policy numbers have changed, the content is largely the same. The only minor point to note is that the two relevant scenic prospects from the expired CDP – Prospect 19 and Prospect 20 are now labelled prospect 20 and Prospect 21 respectively in the current CDP.

For the above reasons, it is not considered necessary to duplicate the level of detail provided in section 11.2.2.3 related to the former CDP.

11.2.2.5 South Dublin County Development Plan 2016-2022 (Expired)

Although only the north-eastern fringe of the study area enters into County Dublin, its relevant Country Development Plan (CDP) will here be addressed for any designated/protected scenic routes, views or prospects within the study area.

Views and Prospects

Section 9.2.1 of the South Dublin CDP related to views and prospects, about which it states:

“The County contains many scenic views and prospects (distant objects) of places of natural beauty or interest that are located in the County and in adjoining counties. These include localised views and panoramic prospects of rural, mountain, hill, coastal and urban landscapes such as Dublin City and environs, Dublin Bay, the Liffey Valley and the Dublin and Wicklow Hills and Mountains including the Glenasmole Valley. Views of places of natural beauty or interest are not confined to those that are visible from scenic places but also from and to existing built up areas. Prospects [...] relate to prominent landscapes or areas of special amenity value or special interest that are widely visible from surrounding areas. Prospects from prominent public places will be protected.”

There is one designated prospect within the study area: Saggart Hill (see Figure 18, below). Policy 8 Views and Prospects of Heritage, Conservation And Landscapes (HCL) within the CDP states that:

“It is the policy of the Council to preserve Views and Prospects and the amenities of places and features of natural beauty or interest including those located within and outside the County.”

However, the only policy objective that is of relevance to the study area is:

“HCL8 Objective 1: *To protect, preserve and improve Views and Prospects of special amenity, historic or cultural value or interest including rural, river valley, mountain, hill, coastal, upland and urban views and prospects that are visible from prominent public places.”*

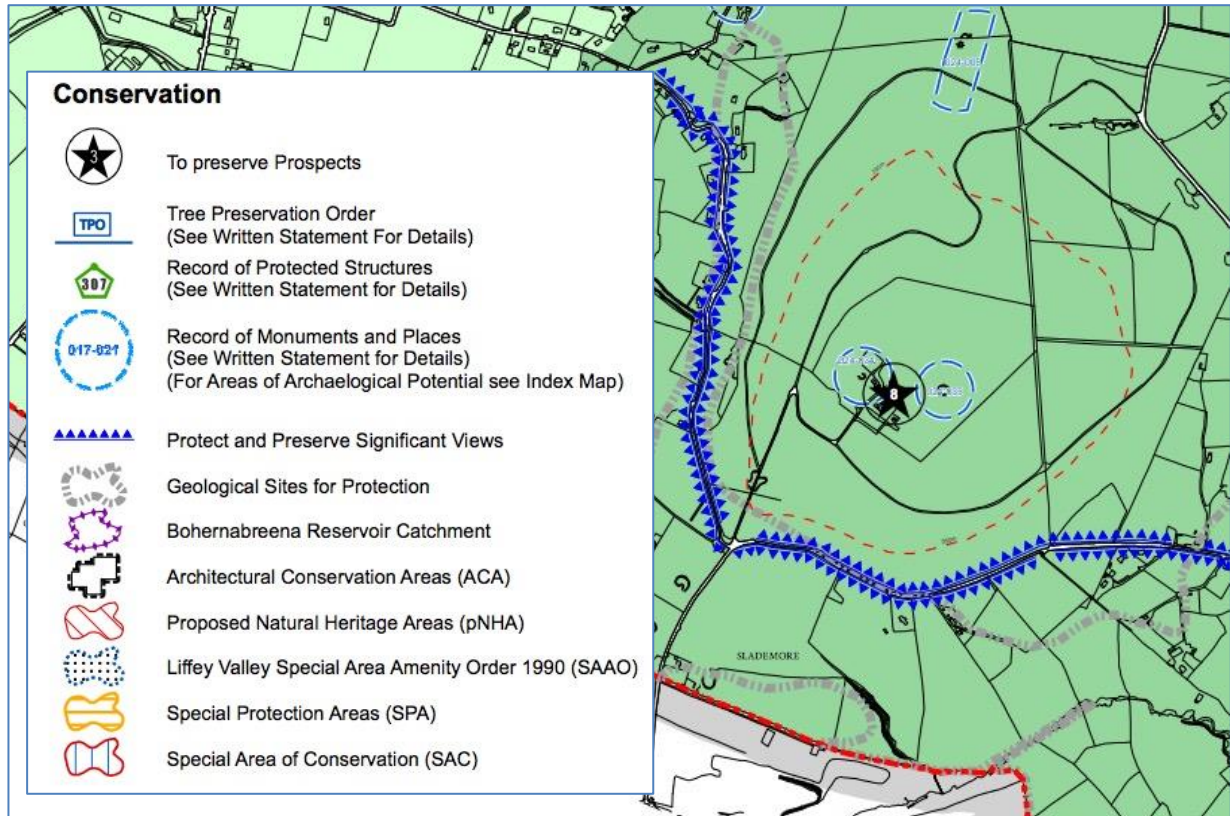


Figure 11-8 – extract of Map 11 from the South Dublin County Development Plan, which shows the designated prospect of Saggart Hill (i.e. black star symbol, marked with the figure ‘8’) that is within the study area.

In addition, there is one designated South Dublin view within the study area, which relates to a third-class road that arcs about the southern and western base of Saggart Hill (i.e. approx. 4.2km from the site).

It should be noted that the same relevant scenic designations from the expired South County Dublin Development Plan have been carried through into the current SDCDP (2022-2028).

11.2.3 RELEVANT GUIDANCE

This LVIA uses methodology as prescribed in the following guidance documents:

- Environmental Protection Agency (EPA) publication ‘Guidelines on the Information to be contained in Environmental Impact Assessment Reports’ (2022);
- Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment (2013).

11.3 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

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

“Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” (Council of Europe, 2000). Thus, GLVIA-2013 covers all

landscapes from “high mountains and wild countryside to urban and fringe farmland (rural landscapes), marine and coastal landscapes (seascapes) and the landscapes of villages towns and cities (townscapes)” - whether protected or degraded”.

11.3.1 LANDSCAPE IMPACT ASSESSMENT CRITERIA

11.3.1.1 Landscape Sensitivity

The sensitivity of the landscape to change is the degree to which a particular setting can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. In accordance with GLVIA3, the sensitivity of a landscape receptor (Landscape Character Area or feature) is derived from combining judgements in relation to its susceptibility to change and its value. The judgement reflects such factors as its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted. Landscape Sensitivity is classified using the following criteria set out in Table 11.1.

Table 11.1 Landscape Value and Sensitivity

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

11.3.1.2 Magnitude of Change – Landscape

The magnitude of change is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed development and to a lesser extent the duration and reversibility of that effect. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the

immediate setting that may have an effect on the landscape character. Table 11.2 outlines criteria used to inform this judgement.

Table 11.2 Magnitude of Change – Landscape

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

11.3.2 VISUAL IMPACT ASSESSMENT CRITERIA

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

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

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

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

11.3.2.1 Sensitivity of Visual Receptors

As with landscape sensitivity, the sensitivity of a visual receptor is categorised as Very High, High, Medium, Low, and Negligible. Unlike landscape sensitivity however, the sensitivity of visual

receptors has an anthropocentric (human) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity the viewer is engaged in and whether this heightens their awareness of the surrounding environment.

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

Susceptibility of Visual Receptors to Change

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

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

Values attached to Views

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

- Recognised scenic value of the view (Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Development Plans, for example, a public consultation process is required;
- Views from within highly sensitive landscape areas. These are likely to be in the form of Architectural Conservation Areas, which are incorporated within the Development Plan and therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;
- Primary views from residential receptors. Even within a dynamic city context, views from residential properties are an important consideration in respect of residential amenity;
- Intensity of use, popularity. This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at a national or regional scale;
- Provision of vast, elevated panoramic views. This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;
- Sense of remoteness and/or tranquillity. Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of a busy street scene, for example;

- Degree of perceived naturalness. Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features;
- Presence of striking or noteworthy features. A view might be strongly valued because it contains a distinctive and memorable landscape / townscape feature such as a cathedral or castle;
- Historical, cultural and / or spiritual significance. Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;
- Rarity or uniqueness of the view. This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country;
- Integrity of the landscape character. This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;
- Sense of place. This considers whether there is special sense of wholeness and harmony at the viewing location;
- Sense of awe. This considers whether the view inspires an overwhelming sense of scale or the power of nature.
- Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity, and no relative importance is inferred by the order of listing.

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

11.3.2.2 Magnitude of Change – Visual

The magnitude of change is again a product of the scale, extent, or degree of change that is likely to be experienced as a result of the proposed development. This is directly influenced by its 'visual presence / prominence', as experienced by visual receptors in the landscape. These terms are somewhat quantitative in nature, and essentially relate to how noticeable or 'dominant' the proposal is within a particular view. Aside from the obvious influence of scale and distance, a development's visual presence is influenced by the extent and complexity of the view, contextual movement in the landscape, the nature of its backdrop, and its relationship with other focal points or prominent features within the view. It is often, though not always, expressed using one of the following terms: Minimal; Sub-dominant; Co-dominant; Dominant; Highly dominant. Criteria used to inform judgements are provided in Table 11.3.

Table 11.3 Magnitude of Change – Visual

Criteria	Description
Very High	Complete or very substantial change in view, dominant, involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g., through removal of key elements.

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

11.3.3 SIGNIFICANCE OF EFFECT

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

The significance category judgement is arrived at using the Significance Matrix at Table 11.4 as a guide. This applies the principle of significance being a function of magnitude weighed against sensitivity, but employs slightly different terminology that avoids the potentially confusing use of the term ‘significant’ (as recommended by GLVIA3 Statement of Clarification 1/13 (Landscape institute, 10th June 2013)).

Indicative criteria descriptions used in relation to the significance of effect category are presented at Table 11.5.

Table 11.4 Significance Matrix

	Sensitivity of Receptor				
Magnitude	Very High	High	Medium	Low	Negligible
Very High	Profound	Profound-substantial	Substantial	Moderate	Slight
High	Profound-substantial	Substantial	Substantial-moderate	Moderate-slight	Slight-imperceptible
Medium	Substantial	Substantial-moderate	Moderate	Slight	Imperceptible

Low	Moderate	Moderate-slight	Slight	Slight-imperceptible	Imperceptible
Negligible	Slight	Slight-imperceptible	Imperceptible	Imperceptible	Imperceptible

Table 11.5 Indicative significance of effect criteria descriptions

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

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

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

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

11.3.4 QUALITY OF EFFECTS

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

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

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

11.3.5 TIMESCALE OF EFFECTS

In accordance with EPA guidance, impacts / effects are also categorised in terms of their timescale as follows;

- Temporary – Effects lasting one year or less
- Short Term – Effects lasting one to seven years
- Medium Term – Effects lasting seven to fifteen years
- Long Term – Effects lasting fifteen to sixty years
- Permanent – Effects lasting over 60 years

11.4 BASELINE AND SUBSEQUENT CONDITIONS (29 DECEMBER 2019 TO PRESENT)

Landscape character is described in terms of 'landform and drainage', 'vegetation land use', 'centres of population and houses', 'transport routes' and 'recreation and public amenities'. The description of the 2019 baseline benefits from Macro Works (the authors of this chapter) having prepared a LVIA at that time for a proposed quarry extension (timeline and extent). Thus, it is a reliable temporal 'snapshot' of the quarry just prior to its consent lapsing (KCC Planning Reg. 07/443; ABP Ref. PL09.233338).

11.4.1 LANDFORM AND DRAINAGE

The landform within the study area is made up of two distinctive characters, which result in the 'sense of place' being considerably different as one moves from west to east, and north to south. This is largely derived from the hill range running northeast-southwest through the study area, lifting from approx. 260m AOD in the southwest at Athgarret, to 395m AOD at Saggart Hill/Slievethoul, in the northeast. This range principally separates County Wicklow (i.e. east of the range) from County

Kildare (i.e. west of the range). West of the range, land undulates between 100m-200m AOD, and is relatively mild in terrain, punctuated by a handful of small streams.



Figure 3 – view of hill range, on which the site is located, from west of the range in Co. Kildare (2019).

East of the range, in County Wicklow, landform is more dramatic, varied and picturesque. The lower slopes of the Wicklow Mountains lie in the south and southeast of the study area, with the “Blessington Lakes” (i.e. Poulaphouca reservoir) occupying the large basin in between the mountains and the aforementioned hill range. The River Liffey feeds into the reservoir in the far east of the study area. In addition, the north-eastern fringe of the study area enters into County Dublin, which undulates from as low as 150m AOD to almost 400m AOD.



Figure 4 – overview of Wicklow Mountains (in distance), in the east of the study area, where landform is more dramatic, varied and picturesque than in the west of the study area (2019).

11.4.2 VEGETATION AND LAND USE

While there is considerable variety of land use in the study area, pastoral farmland is, overall, dominant. Within County Kildare (i.e. in the west, north and northwest of the study area) and in County Dublin (i.e. in the northeast fringe of the study area), land use is overwhelmingly pastoral, followed by tillage, with medium-large sized fields bound by mature field boundaries, along with some small settlements/villages and some quarrying. Along the aforementioned hill range, while there is also pasture and, less so, commercial conifer plantations, a large degree of quarrying is evident. This is not just the case on the site, but for much of the aforementioned hillside for up to 3km southwest of the site. All of these quarries, like the site itself, are open cast. This includes an operational quarry that aligns the ridgeline of the hill range, within 200m west/northwest of the site, as well as a large, defunct/obsolete quarry that aligns the eastern side of adjacent road (i.e. within 150m southwest of the site). Factoring in their elevated and/or hilltop location, it results in these quarries being visible to several local receptors.



Figure 5 – overview of hill range (in distance) along which opencast quarries are evident for over 3km (2019)



Figure 6 – Hempstown Quarry (2019)



Figure 7 – View from within Hempstown Quarry (2019)



Figure 8 – View from the edge of the quarry towards the site facilities (2019)



Figure 9 – the eastern edge of the site ownership boundary (2019).

The history of quarries along the aforementioned ridgeline dates back several centuries. One case in point is that ‘slate quarries’ are evident adjacent to the site, in Ordnance Survey maps from 1829-1842 (see Figure 10 below).

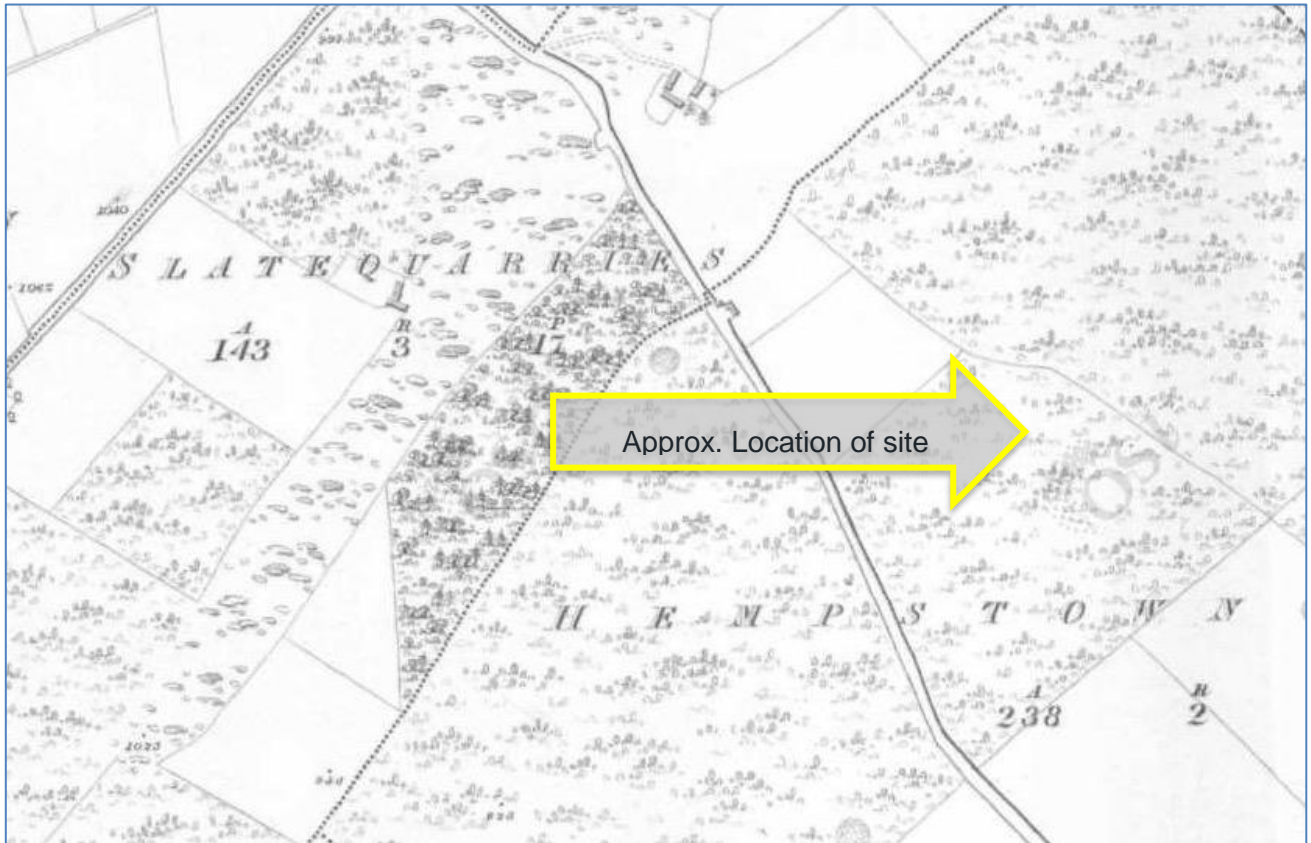


Figure 10 – Extract of Ordnance Survey maps from 1829-1842, with ‘slate quarries’ evident adjacent to the site.

The existing operational quarry has been in use since the mid 1900’s, while the (broader) Application Site comprises lands that are currently used for quarrying activities. The site is accessed via a privately-owned laneway connecting to a local/third class road, the L6030. A precast concrete manufacturing facility (i.e. Stresslite Floors Ltd.) is located adjacent to the west of the Application Site and shares a roadside entrance with Shillelagh Quarries. The boundaries of the application site mostly comprise of hedgerows and areas of scrub. There are a number of groundwater monitoring wells located within the site, as well as a number of structures relating to quarrying activities (e.g. wheelwash, weighbridge, office, staff facilities, mobile plant and associated infrastructure). The existing topography in the vicinity of the site varies in level from ca. 240m to 295m OD, with the topography rising gently to the north of the site, as it climbs towards the ridgeline of the hill.

In addition, Deerpark woodland blankets a small hill approx. 3.5km southwest of the site, while the commercial conifer plantation across Saggart Hill/Slievethoul, in County Dublin, lies approx. 4.5km northeast of the site. The Poulaphouca reservoir occupies a large portion of the study area, while the agricultural lower slopes of the Wicklow Mountains line the south-eastern edge.

11.4.3 CENTRES OF POPULATION AND HOUSES

The site is located approx. 4km northeast of Blessington in County Wicklow; a town of approx. 5,500 residents. While Blessington is the nearest settlement to the site in County Wicklow, the nearest settlements in County Kildare are the small villages of Killeel (approx. 3km north of the site) and Rathmore (3.5km northwest of the site). The southern outskirts of the town of Naas are located

within 9km west of the site (i.e. outside the study area). Because of its well-renowned natural beauty, in tandem with being less than 25km from the centre of Dublin City, even outside the aforementioned towns and small villages, this locality is relatively densely settled for an Irish rural context, with numerous residences cast across a network of regional and third-class roads in Wicklow, Kildare and Dublin counties.

11.4.4 TRANSPORT ROUTES

The most notable transport route in the study area is the N81; a national road connecting the M50 (i.e. suburban Dublin) with Tullow in County Carlow. There are a couple of regional roads in the study area, but otherwise the study area is populated with a network of local/third class roads serving the local community. The site is located within 900m northwest of the N81. The Site is accessed via a privately-owned laneway connecting to a local road, the L6030, which itself connects to the N81. There are no known rail lines in the area.



Figure 11 – The N81 where it enters the eastern periphery of Blessington (2019)

11.4.5 RECREATION & PUBLIC AMENITIES

The Poulaphouca reservoir is located within 3.2km south of the site, with the 'Wicklow Mountains Uplands' located within 6km (i.e. not within the study area); both being designated Areas of Outstanding Natural Beauty (AONB). In turn, the area is rich in land- and lake-based recreation (e.g. kayaking, rowing, hiking, cycling etc). In north-eastern fringe of the study area, Saggart Hill/Slievethoul contains interesting archaeological monuments, including tombs, cairns, barrows and ring forts. The 4km-long Saggart Hill Loop is a gentle walk/run around the wood, with the possibility of taking a path to the summit, which offers views out over the plains of Kildare. In addition, the publicly accessible Deepark woodland, which blankets an adjacent small hill, is located

approx. 3.5km southwest of the site. Within Blessington town, there are numerous sports clubs, including GAA and soccer clubs.



Figure 12 - the Poulaphouca reservoir is located within 3.2km south of the site (2019)

11.5 SELECTION OF SENSITIVE VISUAL RECEPTORS

The selection of visual receptors is based on the process outlined in the methodology section and relies on representation of a range of receptor types, distance and viewing angles for a robust assessment. More sensitive visual receptors include those involved in recreation, or at amenity areas where there is a focus on a scenic landscape, or residents with views of scenic quality. Less sensitive receptors would include those driving at higher speeds or those engaged in activities where there is not a focus on the landscape and where the views are not considered of high quality.

The desktop study review of the previous 2019 application identifies a total of nine viewpoints that had been selected the original LVIA, and a further seven that had been introduced at Request for Further Information (RFI) stage. Together these covered a broad range of views including those from nearby residential properties, elevated sections of road and designated county Kildare/Wicklow scenic routes and views within the study area. All of these viewpoints were revisited during the field study in November 2024 and reviewed for their suitability for use in this visual assessment, i.e. to determine if any views had become obscured by vegetation or structures since 2020 or indeed, opened up by the removal of vegetation. All but one viewpoint were found suitable with no adjustments needed to their orientation or location. In the case of VP7, roadside gorse had grown up to obscure the view but a nearby block of forestry had been felled to reveal a more open view. Consequently, the new VP7 is around 100m to the northeast of the original location, but the relevant distant view context is very similar to the original location. The site visits also allowed the assessor

to consider the likely visual changes that may have occurred within each view since they were first assessed in 2019 and then in 2024.

The selected viewpoints are listed in Table 11-8 and mapped in Figure 11-19 below. The potential impact of the development upon these receptors existing views between 2019 and 2023 are assessed in the visual assessment section.

Table 11.6 Selected Viewpoints for Visual Impact Assessment

<i>VRP No.</i>	<i>Location</i>	<i>Direction of view</i>
VP1	Local road L6030 accessing the site	E/NE
VP2	N81 at Hempstown townland	NW
VP3	N81 near Pipershall townland	N
VP4	Rundle Bridge, Poulaphouca Reservoir	N
VP5	Elevated local road at Kilbride townland	NW
VP6	R759 at Knockatillane townland	NW
VP7	Local road at Blackrock townland	N
VP8	Ring road along northern periphery of Blessington Town	NE
VP9	Northern entry to Blessington Town along N81	N
RFI VP1	Scenic Route No. 33 approx. 950m south of site	N
RFI VP2	Scenic Route No. 33 approx. 630m south of site	N/NE
RFI VP3	Scenic Route No. 33 approx. 1.8km northwest of site	S/SE

internal management of the site which do not materially change the landform / fabric of the site, landscape character surrounding the site or visibility of the quarry and its associated activities.

Between June 2020 and March 2022 the quarried area increased by approximately 0.4 ha. This increase in area is associated with expansion to the south east and south west of the existing quarry. Between March 2022 and September 2023 the quarried area remained steady as expansion to the north east of the existing quarry involved the removal of an existing bench located on north east face of the quarry.

Between September 2023 and October 2024 extraction did not significantly alter the existing quarried area extents. The current quarry extent is approximately 5.1 ha.

The figures below shows the approximate active pit extents over the assessment period of extractive site use. Please see Site Layout plans submitted as part of substitute consent application (planning drawing pack) for the quarry that reflect baseline and current site conditions.

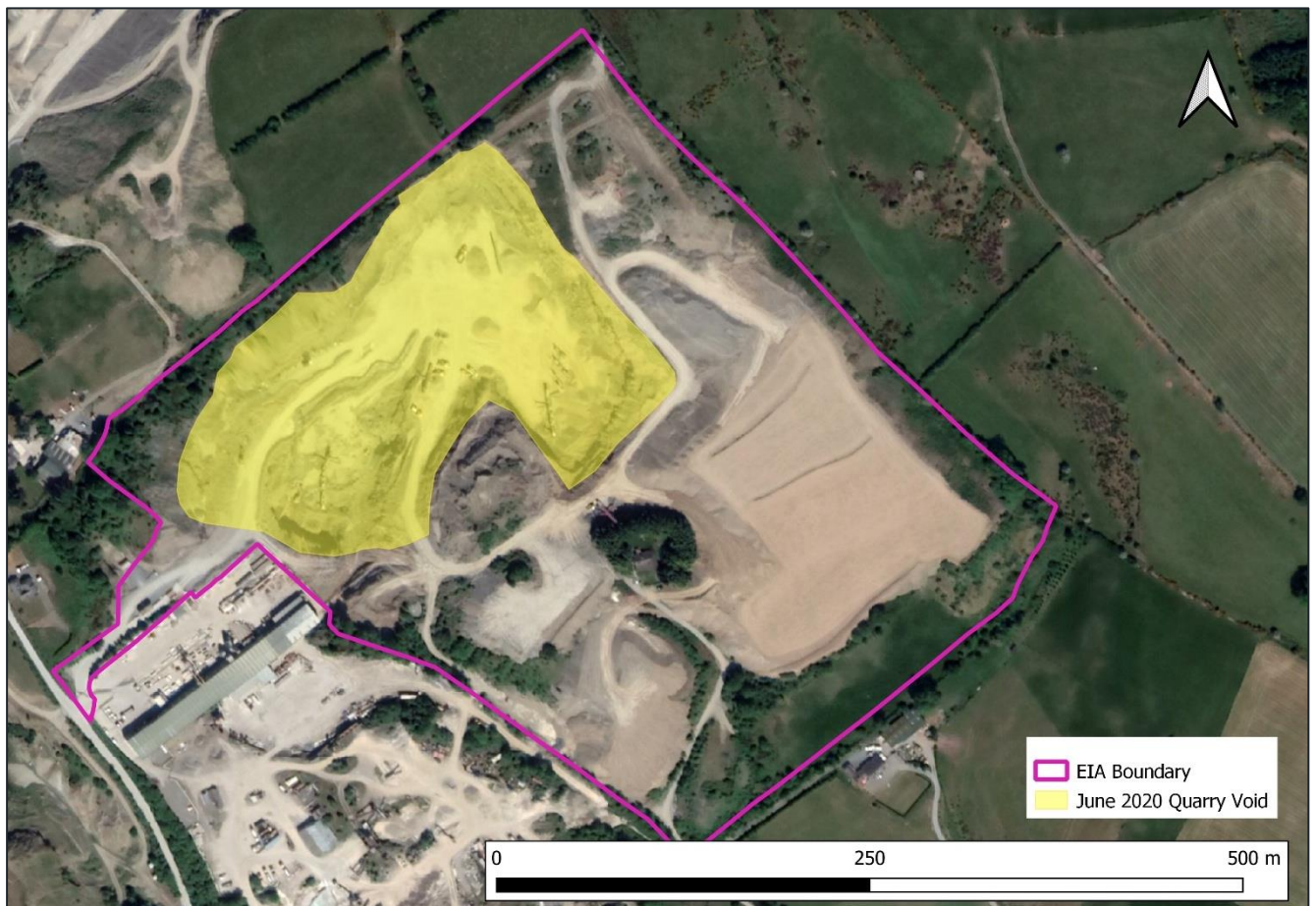


Figure 11-9 - Quarry area during June 2020 from Google Earth Imagery



Figure 11-10 - Quarry area during March 2022 from Google Earth Imagery



Figure 11-11 - Quarry Area During September 2023 from Drone Survey

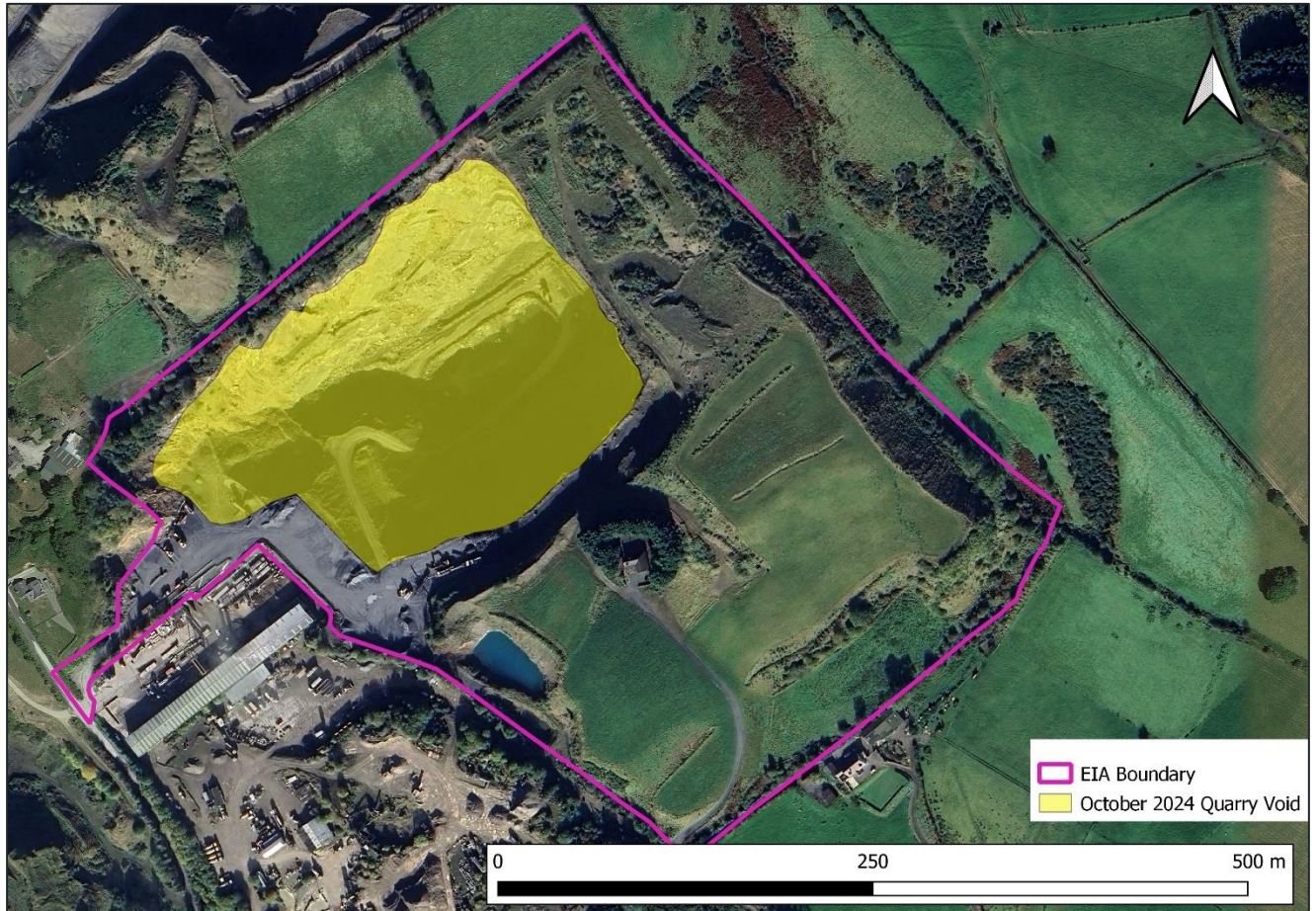


Figure 11-12 - Quarry area during October 2024 from Google Earth Imagery

The elevation contours in February 2019, prior to the review period, show that the deepest part of the quarry was at approximately 235 mAOD, the centre of the quarry and south corner of the quarry excavated into the bedrock.

The elevation contours from the September 2023 survey show that the deepest part of the quarry was at approximately 210 mAOD, in the centre of the quarry.

It is estimated that an average of ca. 115,650 tonnes of rock was excavated from the Site each year over the review period. This was transported from the site via trucks typically in the range of 5,500 truckloads per year between the hours of 0800 – 1800 on weekdays and 0800 – 1400 on Saturdays. There are typically 6 No. staff on site who use a car park on adjacent third-party lands.

11.7 POTENTIAL EFFECTS

11.7.1 LANDSCAPE EFFECTS

11.7.1.1 Landscape Sensitivity

In the 2019 planning application (07/433 ABP ref PL09253383), the LVIA included an assessment of the sensitivity of the receiving landscape within the study area. This included the following assessment of landscape sensitivity, which is relevant to the baseline year;

“Reflective of the aforementioned diversity of landform, land use and settlement in the study area, the landscape value and sensitivity is notably diverse for such a 10km diameter area; a diversity that is chiefly influenced by the aforementioned hill range that broadly separates counties Wicklow and Kildare.

“If concentrating on the Poulaphouca Reservoir and foothills of the Wicklow Mountains, and a small part of south-western Co. Dublin, then the broader study area is one that favours naturalistic or scenic values. Within County Wicklow, and east of the aforementioned N81 national road, the landscape is picturesque and more sensitive. This is reflective of the presence of two Areas of Outstanding Natural Beauty (the Mountain Uplands AONB and the Poulaphouca Reservoir AONB), as well as a Special Protection Area and two Proposed Natural Heritage areas.

West of the aforementioned hill range (i.e. within County Kildare, and a small part of south-western County Dublin), land use is governed by intensive pasture management. It is a robust working landscape with values that tend to favour a rural based economy, and with more limited naturalistic or scenic values than in Co. Wicklow. Close to the centre of the study area, there is also the town of Blessington; a town of approx. 5,500 residents, approx. 4km southwest of the site.

Then there is the landscape sensitivity of the aforementioned hill range that broadly separates counties Wicklow and Kildare: the hill range in which the site is set. According to the aforementioned Kildare County Landscape Character Assessment, this area is deemed to have a ‘High Sensitivity,’ by virtue of it being within the “Eastern Uplands” Landscape Character Area. However, the Kildare County Landscape Character Assessment was completed in 2004, while the “Eastern Uplands” Landscape Character Area stretch northeast-southwest for a length of more than 30km. Such broad geographical brushstrokes do not and cannot take into account more localised and pertinent factors and conditions that arise within the study area. It is a landscape character area principally derived from that of elevation, rather than that of condition, quality, rarity or appearance. This is reaffirmed by the aforementioned Section 14.4.2 of the Kildare CDP, which acknowledges that:

“...at micro/local level, landscapes vary in terms of their ability to absorb development and each site should be assessed on its individual merits.”

Indeed, in the case of the site of the proposed development, that “micro/local level” is a much-quarried ridgeline that engenders a wider landscape character of centuries-old, much-worked extractive industries in the central study area. The landscape of the proposed pit extension is characterised and defined by the existing pit (i.e. a hugely modified landform and land use, created as a direct result of the existing quarry), as demonstrated in Figures 8 & 9, above. Within the Application Site Boundary, and south of the existing quarry and proposed pit extension, the landscape is characterised by quarrying spoil, temporary storage/stockpiling of industrial/extractive elements, a small and dilapidated warehouse/barn-like structure, as well as recolonizing vegetation across unmanaged land. While there is one private residence, as well as evidence of mature native vegetation, in this segment the southern half of the Application Site, such elements are in a minority, and the landscape integrity/condition is principally defined by degradation.

There are multiple open cast quarries along this hill range, some of which are in the direct vicinity of the site. However, there is also pastoral farming, to the northeast, east and southeast of the site, as well as a commercial conifer plantation within 350m east of the site. In their CDP, Kildare County Council also states that, “within each of these [landscape character] areas there can be a wide variety of local conditions that can significantly increase or decrease sensitivity”.

In addition, the site is set within an area that retains certain characteristics that will assist in absorbing and integrating the proposed quarry extension into its documented landscape character. These include:

- *The adjacent existing quarries;*
- *The mature field boundaries in the fields adjacent to and in the vicinity of the site;*
- *The historic precedent/influence of other quarries in the central study area, which have contributed to the character and value of this landscape for generations.*

*In accordance with the Guidelines for Landscape and Visual Impact Assessment (GLVIA - 2013), landscape sensitivity/susceptibility is relative to the nature of the development proposed. In this instance, the site in question is that of a quarry/quarry periphery, within a central study area that contains numerous such quarries, as well as predominantly pastoral farmland, in a robust, multi-faceted and deeply diverse working landscape. On the basis of the reasons outlined above, it is considered that the sensitivity of the receiving landscape within the application site is considered to be **Low**, but the sensitivity of the receiving landscape of the central study area is considered to be **Medium**.”*

On review of the present day landscape setting of the study area, and not accounting for further extraction within the quarry since the 2020 baseline date, it is considered that the sensitivity of the immediate site context or the wider study area has not materially changed. Whilst almost all landscapes constantly evolve, and particularly anthropogenic rural ones, this generally happens slowly. Consequently, the sensitivity of the site and its immediate surrounds is still deemed to be **Low**, the central study area **Medium** and the wider study area to the east of the N81, **High**.

11.7.1.2 Landscape Effects that have occurred since 29 December 2019 – Wider Study Area

In this instance, landscape effects on the wider study area can only relate to change in landscape character rather than physical changes to landscape fabric.

The effects of the extraction activity that has occurred within the site since December 2019 is contained within the very limited geographic area of the quarry site itself. The minor extension of the quarry pit and further lowering of the quarry floor and resulting processing and removing of the worked material off site is not dissimilar to the level /type of activity that has occurred across these lands as part of the previously approved development of the 2007 application. It is not likely to have been any more noticeable in terms of landscape impacts within the outer reaches of the study area than in the consented period 2007 to end of 2019.

The Magnitude of landscape character change is deemed to be **Negligible**. In accordance with Table 11-2. In terms of significance, this effect would be **Imperceptible**. In terms of duration and quality, this effect would be **Short Term** and **Neutral** respectively.

Therefore, no significant effects to the landscape of the wider study area have occurred since 29 December 2019.

11.7.1.3 Effects which have occurred since September 2020 – Site and Immediate Context

The effects upon the landform and landscape fabric of the additional extraction activity that has occurred within the site since 29 December 2019 is modest in terms of scale and extent and very similar in intensity to that which had been occurring from 2007 to December 2019. These works have not impacted on any hedgerows or farmed field within the site – instead on previously modified peripheral ground around the edge of the quarry void use for stockpiling and vehicle movement.

The only notable changes to have occurred within the quarry, since 29 December 2019, have been the increased depth of the quarry floor by a further 15m AOD and a 0.4ha increase in the quarried area to the south east and south west, which are not in the direction of the immediate quarry boundaries. There has also been continued use of stockpiling in the stockpile areas.

There have been changes to the drainage regime, which include the installation of two soakaways into bedrock and associated use of pump to get collected waters in the quarry void into the soakaway. There has been extension of the wheel wash facility. Both of these new facilities and its operation are small scale and internal to the quarry site where they do not represent marked impacts on landscape fabric or character of the site or its surrounds.

Indirect changes within the immediate landscape include the continued movement of the vehicles to/from the quarry as the finished processed material is removed off site. This movement has continued since 29 December 2019 collectively with the other adjoining quarries. This represents a temporal extension of traffic related activity, rather than a notable increase in its intensity.

Overall, it is considered that the magnitude of landscape change within and immediately around the quarry is deemed to be **Low**. When combined with the Low sensitivity of the immediate landscape context, the significance of effect is assessed to be **Slight-imperceptible**, of a **Short-term** duration and a '**Negative**' quality relative to a baseline context of not continuing quarrying activities at the site. This is not considered to be a significant effect in EIA terms.

11.7.1.4 Effects which are occurring

Extraction of resources within the quarry, as well as activity at the processing plant and maintenance area are continuing to date, with the gradual working out of the rock face, further lowering the quarry floor. This is resulting in no additional effects on the wider landscape and the site and immediate environment than those noted in Section 11.7.1.2 and 11.7.1.3 Therefore, no significant landscape effects are currently occurring.

11.7.2 VISUAL EFFECTS

In the December 2019 application Planning Reg. Ref. 07/443 ABP PL09253338, the LVIA included an assessment of visual effects that was based on nine representative viewpoints and a subsequent seven viewpoints which were requested at RFI stage. The revisiting and recapturing of photography at all of these viewpoints in November 2024 allows for a direct comparison of the visual effects of the changes that have taken place across the Substitute consent period from 29 December 2019 to present day. The relative baseline photography has been presented as comparison images on the

same sheet for each VP within the assessment set (see Appendix 11A). Five of the RFI views were presented directly within RFI stage LVIA update report as there were no potential views of the quarry to depict. For completeness, the same five views, recently recaptured (November 2024) are included below Table 11.7.

Of particular interest is whether there have been any changes in the intervening landscape e.g. vegetation growth or removal, that may have impacted upon the viewpoint receptor's potential visibility of the existing quarry activity which has occurred within the Site since 29 December 2019 to the present. For some receptors, it may be the case that their view towards the Site has not discernibly changed over the last few years and that the Site remains not visible from the viewpoint, as previously determined in the 2019 application.

11.7.2.1 Visual Receptor Sensitivity

Although minor changes have occurred within the foreground setting of some of the views, it is not considered that there are any changes to visual receptor sensitivity at any of the VPs across the substitute consent period.

11.7.2.2 Visual Impact Assessment

A comparative visual impact assessment between the 2019 view of the quarry and the current 2024 is contained in Table 11.7.

Table 11.7 Comparative Visual Impact Assessment across Substitute consent period

<i>VRP No.</i>	<i>Location</i>	<i>Change in view of Quarry</i>	<i>Change in Visual effect</i>
VP1	Local road L6030 accessing the site	There have been some minor changes to the visible quarry face and the stockpiles directly above it, but in the context of a busy and visually complex quarry site these are not material changes to a view that offers little in the way of visual amenity.	None
VP2	N81 at Hempstown townland	There have been some discernible changes to the visible stockpiles that rise above the quarry, but these are very minor and do not equate to material changes to the glimpse view afforded from here.	None
VP3	N81 near Pipershall townland	There have been some discernible changes to the configuration of stockpiles that rise above the quarry, but these are very minor and do not equate to material changes to the oblique middle-distance view afforded from here.	None
VP4	Rundle Bridge, Poulaphouca Reservoir	At this distance it may be possible to discern changes to the quarry face and stockpile configuration with scrutiny , however such	None

		changes are very minor and do not equate to material changes to the view afforded from here, which is focussed on the foreground lake.	
VP5	Elevated local road at Kilbride townland	It is possible to discern changes to the quarry face and stockpile configuration with scrutiny , however such changes are very minor and do not equate to material changes to the view afforded from here.	None
VP6	R759 at Knockatillane townland	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
VP7	Local road at Blackrock townland	Although the foreground context is slightly different due to the required adjustment of this VP location, the distant view of the quarry face and stockpile configuration has not changed to the degree that it will be material to the visual impact.	None
VP8	Ring road along northern periphery of Blessington Town	There has been the introduction of a new housing estate within the near middle ground, but there is still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
VP9	Northern entry to Blessington Town along N81	There has been some foreground vegetation removal in the intervening period, but still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP1	Scenic Route No. 33 approx. 950m south of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP2	Scenic Route No. 33 approx. 630m south of site	Still no clear visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP3	Scenic Route No. 33 approx. 1.8km northwest of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None

RFI VP4	Scenic Route No. 33 approx. 1.3km northwest of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP5	Scenic Route No. 33 approx. 950m northwest of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP6	Scenic Route No. 33 approx. 645m northwest of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None
RFI VP7	Scenic Route No. 33 approx. 530m northwest of site	Still no visibility of the quarry due to intervening screening. No material change to the visual impact.	None



Figure 11-13 – Viewpoint RFI 3 (recaptured 2024)



Figure 11-14 – Viewpoint RFI 4 (recaptured 2024)



Figure 11-15 – Viewpoint RFI 5 (recaptured 2024)



Figure 11-16 – Viewpoint RFI 6 (recaptured 2024)



Figure 11-17 – Viewpoint RFI 7 (recaptured 2024)

As can be seen from the assessments contained in Table 11.7, even when there might be discernible changes to the quarry face or stockpile configuration, none of the views that were used for the 2019 application have materially changed. Consequently, there has been no increase or decrease in visual impacts over the substitute consent period. Such effects are therefore, **Imperceptible, Short term** and of a **Neutral quality**. This is not a significant effect in EIA terms.

11.8 REMEDIAL MEASURES REQUIRED

None.

11.9 RESIDUAL EFFECTS

In this instance there are no remedial measures relating to landscape and visual effects required, so residual effects will be the same as assessed in Section 11.7.

11.10 CUMULATIVE EFFECTS

The cumulative effects associated with other permitted / under construction third-party developments have been considered in Chapter 15 of this rEIAR. Cumulative effects are considered to be **Not Significant**.

11.11 MONITORING

In this instance there are no remedial measures relating to landscape and visual effects required, so monitoring is not required.

11.12 DIFFICULTIES ENCOUNTERED

As this application is for retrospective planning permission through the substitute consent process, it has been necessary to undertake a review of historic data, where available, that have relevance to the landscape and visual baseline extending between the period of 29 December 2019 to the present day. This was done by reviewing the landscape baseline described within the LVIA chapter of the previous 2019 application, use of aerial mapping and a comparison of photography captured just before (October 2019) the substitute consent period and November 2024. Only one viewpoint location was required to be altered due to a change in the foreground context that had obscured visibility during the substitute consent period.

11.13 SUMMARY AND CONCLUSIONS

This rLVIA required consideration of the landscape and visual conditions that existed at the beginning of the substitute consent period, which was aided by an LVIA that was prepared in relation to the quarry at that time that included photography from representative visual receptor locations. This material was compared to the current condition of the site and surrounding landscape and visual context.

In terms of landscape effects, it is not considered that there have been any material effects to landscape character within the wider study area and the only material effects have occurred within the site and its immediate surrounds.

The effects upon the landform and landscape fabric of the additional extraction activity that has occurred within the site since 29 December 2019 is modest in terms of scale and extent and very similar in intensity to that which had been occurring from 2007 to December 2019. These works have not impacted on any hedgerows or farmed field within the site – instead on previously modified peripheral ground around the edge of the quarry void use for stockpiling and vehicle movement.

The only notable changes to have occurred within the quarry, since 29 December 2019, have been the increased depth of the quarry floor by a further 15m AOD and a 0.4ha increase in the quarried area to the south east and south west, which are not in the direction of the external quarry boundaries. There has also been continued use of stockpiling in the stockpile areas. Overall, it is considered that the significance of effect is **Slight-imperceptible** and this is not considered to be a significant effect in EIA terms.

In terms of visual effects, 16 no. comparative viewpoints were assessed that show the condition of the quarry at the beginning of the substitute consent period and the present day. It is concluded that although some minor changes to the internal working quarry faces and the stockpile configuration of spoil around the edge of the quarry void are discernible from some of the representative viewpoints, these do not contribute to material changes to the visual context across the substitute consent period. Consequently, there is not considered to be a material change in landscape and visual effects from the continued working of the quarry across that period. Such effects are therefore, **Imperceptible, Short term** and of a **Neutral quality**.

11.14 REFERENCES

- Kildare County Council (2023) Kildare County Development Plans 2023-2023 & 2017-2023
- Wicklow County Council (2022) Wicklow County Development Plans 2022-2028 & 2016-2022
- Department of the Environment, Heritage and Local Government (April 2004) Quarries and Ancillary Activities - Guidelines for Planning Authorities. Dublin:
<https://www.gov.ie/en/publication/a61d3-quarries-and-ancillary-activities/>
- Environmental Protection Agency (EPA) (2022). Guidelines on the Information to be Contained in Environmental Impact Reports (EIAR). Environmental Protection Agency, Wexford.
<https://www.epa.ie/publications/monitoring--assessment/assessment/guidelines-on-theinformation-to-be-contained-in-environmental-impact-assessment-reports-eiar.php>
- Landscape Institute and the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd edition, London: Routledge.
- Landscape Institute (2024) GLVIA3 – Statements of clarification, London: Landscape Institute.
- Landscape Institute (2019) Visualisation of development, London: Landscape Institute.

Appendix 11A

PHOTOMONTAGES



Hempstown Quarry, Co. Kildare

rLVIA Photomontages

December 2024

Prepared by



www.macroworks.ie

INDEX

Viewpoint 1 - Existing View (2019) + Existing View (2024)

Viewpoint 2 - Existing View (2019) + Existing View (2024)

Viewpoint 3 - Existing View (2019) + Existing View (2024)

Viewpoint 4 - Existing View (2019) + Existing View (2024)

Viewpoint 5 - Existing View (2019) + Existing View (2024)

Viewpoint 6 - Existing View (2019) + Existing View (2024)

Viewpoint 7 - Existing View (2019) + Existing View (2024)

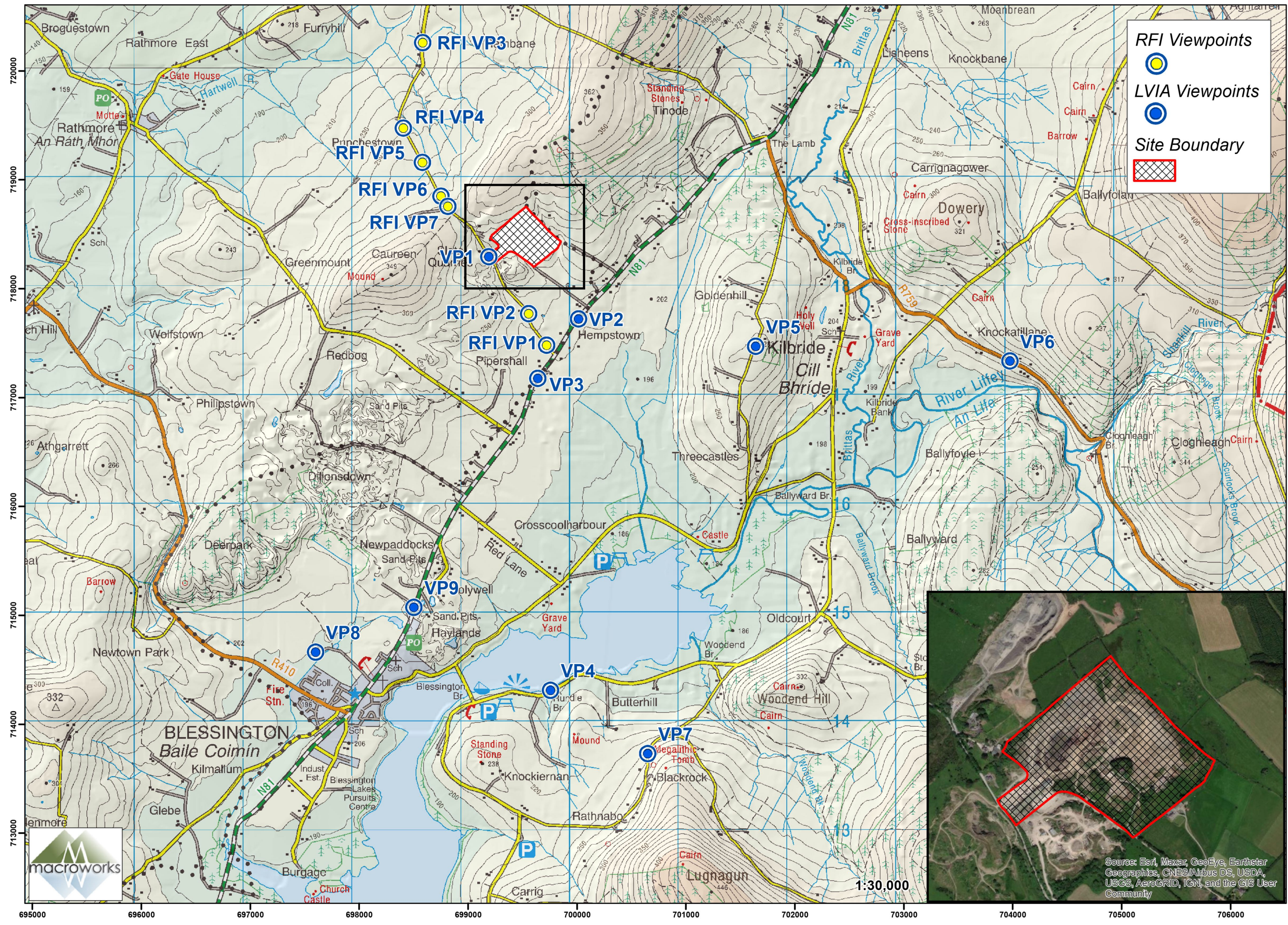
Viewpoint 8 - Existing View (2019) + Existing View (2024)

Viewpoint 9 - Existing View (2019) + Existing View (2024)

RFI 1 - Existing View (2020) + Existing View (2024)

RFI 2 - Existing View (2020) + Existing View (2024)

Viewpoint locations selected for the Hempstown Quarry rLVIA





These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699189	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	718293	Camera:	Canon 1-D Mark II digital SLR	Time:	10:44
Direction of View	56° E of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	15:00





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	700014	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	717719	Camera:	Canon 1-D Mark II digital SLR	Time:	11:07
Direction of View	33° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699638	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	717173	Camera:	Canon 1-D Mark II digital SLR	Time:	11:31
Direction of View:	5° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	13:40





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Easting (ITM): 699755
Northing (ITM): 714310
Direction of View 3° W of Grid North
Angle of View: 80°

Lens: 50mm / Full Frame Sensor
Camera: Canon 1-D Mark II digital SLR
Camera Height: 1.7m Above Ground Level

Date: 24/10/19
Time: 12:08
Date: 2/12/24
Time: 14:15





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	701639	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	717468	Camera:	Canon 1-D Mark II digital SLR	Time:	12:27
Direction of View	65° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	13:09





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	703973	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	717334	Camera:	Canon 1-D Mark II digital SLR	Time:	13:03
Direction of View	95° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	12:50





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	700649	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	713728	Camera:	Canon 1-D Mark II digital SLR	Time:	13:29
Direction of View	24° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	14:28





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	697599	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	714662	Camera:	Canon 1-D Mark II digital SLR	Time:	15:10
Direction of View	14° E of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	14:02





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	698502	Lens:	50mm / Full Frame Sensor	Date:	24/10/19
Northing (ITM):	715072	Camera:	Canon 1-D Mark II digital SLR	Time:	11:50
Direction of View	18° E of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/24
Angle of View:	80°			Time:	13:48





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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699720	Lens:	50mm / Full Frame Sensor	Date:	14/10/2020
Northing (ITM):	717480	Camera:	Canon 1-D Mark II digital SLR	Time:	16:05
Direction of View:	11° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/2024
Angle of View:	80°			Time:	14:48





These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699556	Lens:	50mm / Full Frame Sensor	Date:	14/10/2020
Northing (ITM):	717768	Camera:	Canon 1-D Mark II digital SLR	Time:	16:15
Direction of View	8° W of Grid North	Camera Height:	1.7m Above Ground Level	Date:	2/12/2024
Angle of View:	80°			Time:	14:54

