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Lobinstown Quarry

Environmental Impact Assessment Report

Non-Technical Summary

2024

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1 INTRODUCTION

1.1 GENERAL BACKGROUND

This Environmental Impact Assessment Report (EIAR) pertains to a proposed development at an existing quarry at Heronstown, Lobinstown, Navan, Co. Meath, known as Lobinstown Quarry (Refer to Figures 1.1 to 1.3). The development will consist of the continuance of operation of the existing permitted quarry and associated infrastructure (ABP Ref. 17.QD.0017; P.A. Ref. LB200106 & ABP Ref. 309109-21), deepening of the quarry extraction area by 1 no. 15 metre bench from 50m OD to 35m OD, a lateral extension to the quarry over an area of c. 4.8 ha to a depth of 35m OD, provision for aggregates and overburden storage, and restoration of the site to natural habitat after uses following completion of extraction, within an overall application area of c. 18.5 hectares. An extraction capacity of up to 300,000 tonnes per annum is sought to provide the applicant with the ability to respond to demand for aggregates in the region. Permission is sought for a period of 20 years in order to extract a known resource with a further 2 years to fully restore the site.

Lagan Materials Ltd., t/a Breedon Ireland. (hereafter Breedon) has full control of the lands via a freehold interest in the c. 24.8 ha landholding that holds the existing quarry and proposed extension area.

The EIAR and accompanying planning application are being submitted by Breedon for consideration to Meath County Council, which is the competent authority for the proposed development. The application has been prepared and compiled under the supervision of John Sheils, (B.Eng. (Mining), MSCS, MRICS) on behalf of the applicant, Breedon. John Sheils is the principal of "J Sheils Planning & Environmental Ltd" (JSPE), a company that provides planning, environmental and valuation services and specialises in the areas of mineral extraction and inert waste management. In addition to the studies within the EIAR carried out by J Sheils Planning & Environmental Ltd (JSPE), some additional technical studies have been carried out by independent consultants. These studies are incorporated within the EIAR or are attached to the EIAR as appendices.

1.2 SITE LOCATION & DESCRIPTION

The site is located in the Townland of Heronstown c. 2 km southeast of Lobinstown, c. 9 km northwest of Slane, c. 9 km west of Collon, c. 10 km southwest of Ardee, c. 14.5 km north-northeast of Navan.

The quarry is located on the north side of, and with direct access onto, the L1603 Local Road, which extends from the N52 south before crossing the L1604 Local Road (i.e., Collon Road) c. 1.2 km east of Lobinstown and continuing on to the N51 at Harlinstown Cross Roads c. 1.5 km west of Slane (Refer to Figures 1.1 & 1.2). The L1603 is known as the Slane Road south of the intersection with the L1604 at McEntegart's Crossroads and in the vicinity of the site.

The existing quarry is generally rectangular in shape with an axial orientation of NE-SW across the existing extraction area which covers an area of c. 4.5 ha and has permission to extract

bedrock to a depth of 50 m OD (permitted under P.A. Ref. LB200106 & ASP 309109-21). The proposed extension will extend east from the northern section of the existing extraction area and result in a roughly inverted L-shaped extraction area.

To date, extraction has taken place to a depth of c. 65 m OD in a series of 10-15 m high benches in the southern and central sections of the active, permitted quarry. There is a level processing area located in the central section of the site and an oval-shaped extraction area developed into the central and southern sections of the site. The northern section of the site accommodates the settlement pond and screening embankment along the northern site boundary with the Killary Water. The site holds a valid, current Section 4 Discharge Licence (Ref. 20/01), which was issued by Meath County Council in 2020, for a discharge from the treatment systems to the Killary Stream.

In June 2022, Breedon were granted planning permission to develop a readymix concrete plant in the northern section of the quarry (P.A. Ref. 22/328), which has not been developed to date.

In December 2023, Breedon were granted planning permission for construction of a new single storey office building (P.A. Ref. 23/917) adjacent to the quarry entrance onto the L1603. The internal access road extends from the entrance on the southern boundary around the western perimeter, connecting to the northern part of the quarry. The portacabin office, wheelwash and weighbridge are adjacent to the internal access road on the western side of the quarry. The application area under consideration can be accessed from the internal routes already established within the quarry. The existing site layout is shown by Figure 1.3

The quarry has direct access onto the L1603 at the southeast corner of the existing quarry with a well spayed, paved and secure entrance with a large, lockable industrial gate. Visibility along the L1603 from the quarry access is adequate for the prevailing vehicle speeds, with sightlines of c. 160 m in each direction as required under P.A. Ref. LB200106.

The surrounding lands are agricultural, specifically pasture, with minor levels of scrub and forestry plantation in the wider area. The topography of the region is characterised by relatively flat to undulating landform to the northwest, which is relatively typical of the lowlands in County Meath. A series of NE-SW trending hills, known as the Ferrard Hills are located c. 1 km southeast of the site.

The site will continue to be worked from the existing quarry area in an easterly direction in a series of typically 15 m high benches with consideration given to direction of working, phasing of development and progressive restoration of quarry faces (particularly upper southern quarry face) to reduce the visual impact from views to the north

The existing road network around the quarry comprises of rural local roads. Access to the wider public road network is provided by three main national routes, which are: (1) N52 Regional Road located c. 4.5 km to the north of the site, which connects Kells to Ardee; (2) N51 Regional Road, Slane to Navan Road, which is located c. 8.5 km south of the site; and (3) N2 National Primary Road, Dublin to Monaghan Road, which is located c. 8.5 km south of the site. These are the main haulage routes of the existing quarry and allow the HGV traffic from the site to access the national and regional road network at the earliest opportunity. Recent traffic surveys and junction capacity analysis for the Slane Road and access junction has indicated that the roads can accommodate production volumes well in excess of that proposed at the quarry. The traffic volume splits are expected to be 70:30 with the 70% travelling south on the L1603.

The closest large residential settlement to the site is Slane, which is located c. 9 km to the southeast. There are no occupied residences within the application site or landholding. The nearest residence is 120 m to the southwest of the permitted extraction area. There are 7 residences within 250 m, 15 within 500 m, 31 within 750 m and 45 within 1 km of the proposed extraction area. Heronstown National School is c. 627 metres north of the extraction area.

1.3 APPLICANT

The applicant, Breedon, is part of Breedon Group plc. Breedon is a public company with ordinary shares traded on the Alternative Investment Market (AIM). Breedon is a leading construction materials group in Britain and Ireland. The company employs approximately c. 3,600 people, and operates 2 cement plants, 70 quarries, 40 asphalt plants, 200 ready-mixed concrete plants, 9 concrete and clay products plants, 4 contract surfacing businesses, 6 import/export terminals and 2 slate production facilities.

Breedon trades in the Republic of Ireland as Breedon Ireland, a fully-integrated aggregates and downstream products business headquartered in Dublin. It comprises all Breedon's construction materials and contracting services businesses (aggregates, asphalt, ready-mixed concrete, bitumen, contract surfacing highway maintenance, civil engineering, and airfield construction) in the Republic of Ireland. Breedon and the wider Breedon Group are fully committed to sustainability and social responsibility.

2 REASONABLE ALTERNATIVES

The Directive 2014/52/EU requires “A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”

The existing site comprises a medium-sized hard rock quarry, which is being worked using conventional blasting techniques following by processing using mobile crushing, screening and washing plant / machinery.

If the development did not proceed, the aggregate resource would continue to be worked within the confines of what is permitted under the current planning permission (P.A. Ref. 200106) whilst the remainder of the proven mineral resource would remain unused in situ, and the local supply of quality aggregates would be more restricted. Under the ‘Do Nothing’ scenario, all quarrying and ancillary activities would be completed under P.A. Ref. 200106 and operations would cease thereafter. The site would then be restored as per the requirements of the existing planning permission (P.A. Ref. 200106).

Aggregates used in construction are generally won from hardrock quarries and sand and gravel pits. There are no reasonable alternatives in the near term to the current terrestrial sources of aggregates. Secondary aggregates cannot be relied upon as a real alternative to primary aggregates, given on-going issues with classification of end-of-waste and the very low volume of C&D waste suitable for recycling as secondary aggregates for use in construction.

Today, marine aggregates are dredged from the seabed in the UK and elsewhere around the globe, but none is being exploited in Ireland. In the absence of significant volumes of aggregates from marine and recycled/ secondary sources, terrestrial deposits, such as at Lobinstown Quarry, will continue to be the main source of construction aggregates in Ireland.

In considering alternative locations it is a basic principle that minerals can only be worked where they naturally occur. The products are generally of low unit value such that the most significant cost is transportation. Consequently, most quarries typically operate within a radius of c. 25 km of their market and up to c. 40 km where the quarry produces premium aggregate products such as the high Polished Stone Value (PSV) greywacke material at Lobinstown Quarry.

It is generally considered preferable to allow continuance of use and extensions to existing mineral workings in contrast to opening new quarries at ‘greenfield’ sites. The continued use and extension of the existing quarry along with the deepening of the quarry also has the benefit of lower development costs as there is already an available working quarry face, existing infrastructure such as access roads, processing plant, offices, etc., in place to operate the quarry.

A fundamental and important consideration in this instance is that this is a site with proven reserves of good quality rock capable of producing a high PSV durable aggregate that are valued in roads and other infrastructure projects.

The scale of the development refers to the scale or rate of production and is dictated by many considerations, including the volume of the resource, capital costs, and cost efficiencies. An extraction capacity of up to 300,000 tonnes per annum is sought to provide the applicant with the ability to respond to demand for aggregates in the region. A quarry of this size would be considered to be at the lower end of medium scale for quarry development. Permission is sought for a period of 20 years.

The layout largely relates to the logical placement of infrastructure and plant associated with the elements of the process within the area of the site. It is mainly dictated by the commercial imperatives of process efficiency, operational efficiency and cost-efficiency, as well as environmental considerations such as noise, dust, and visual impact. As this is an established quarry with existing infrastructure currently in situ, the layout is largely predetermined. Upgrading of the water management system, including settlement ponds and hydrocarbon interceptor has taken place with respect to the existing quarry development and these works will facilitate both the lateral and extension to depth of the total extraction area to 35 m OD.

Design more closely relates to the visual aesthetics of the development, which is less of a consideration in quarries as compared to enduring public buildings or major pieces of infrastructure. Nonetheless, as negative visual impact can be a major environmental aspect associated with such developments, optimising the design alternatives is considered a priority.

Visual impacts can be resolved through a number of design solutions by varying key aspects such as the location, shape, size, orientation, colour, etc. of the facilities. Consideration has been given to direction of working, phasing of development and progressive restoration of quarry faces (particularly upper southern quarry face) to reduce the visual impact from views to the north.

Extracted rock is loaded by excavator or front-end loader to a mobile crushing and screening plant at the quarry face. The crushing and screening operation comprises primary, secondary and tertiary stages to produce the range of sizes required. The aggregates produced are then stockpiled and subsequently loaded out by a front-end loader to road trucks for transport off site. A significant advantage of using mobile crushing and screening equipment is that the plant can be located close to the working face thereby reducing the impact of the plant with respect to dust, noise and visual intrusion.

Processing generally occurs on the floor of the quarry using mobile crushing and screening equipment to produce saleable aggregates. There are no viable alternatives to this widely used, conventional method of quarrying.

There are three established strategies for impact mitigation - avoidance, reduction and remedy, and thus it may be possible to mitigate effects in a number of different ways. The EIAR describes the various options and provides an indication of the main reasons for selecting the chosen options, including a comparison of the environmental effects.

3 DESCRIPTION

The description of the characteristics of the project development should consider location, site layout, design, size/scale, resource use, waste production, emissions and nuisance, and risk of accidents. The description should consider the full life-cycle of these characteristics, as they have the potential to generate different effects at different times and different places, both on- and off-site.

3.1 THE EXISTING SITE

The site is located in the Townland of Heronstown c. 2 km southeast of Lobinstown and c. 9 km northwest of Slane, Co. Meath. The quarry is located on the north side of, and with direct access onto, the L1603 local road, which extends from the N52 south before crossing the L1604 Local Road (i.e., Collon Road) c. 1.2 km east of Lobinstown and continuing on to the N51 at Harlinstown Crossroads c. 1.5 km west of Slane. The L1603 is known as the Slane Road south of McEntegart's Crossroads and in the vicinity of the site.

The surrounding lands are largely agricultural, specifically pasture, with a substantial level of forestry plantation in the wider area. The lands in the vicinity of the site are typically at elevations of 85-120 m OD and gradually increase to the southeast from c. 83 m OD at the northwestern boundary of the landholding to c. 111 m OD at the eastern boundary.

The existing quarry has a permitted extraction depth of 50 m OD (permitted under P.A. Ref. LB200106 & ABP 309109-21). To date, extraction has taken place to a depth of c. 65 m OD in a series of benches in the southern and central sections of the quarry. The site will be worked from the existing quarry area in an easterly direction in a series of c. 15 m benches between c. 105 and 35 m OD.

In June 2022, Breedon were granted planning permission to develop a readymix concrete plant in the northern section of the quarry (P.A. Ref. 22/328). However, this concrete plant has not been developed to date.

The quarry comprises disturbed ground with a large, level processing area located in the central section of the quarry and an extraction area in the central and southern sections of the quarry, which has been driven into rising to the southeast. The northern section of the site currently accommodates the settlement pond and screening embankment along the northern site boundary with the Killary Water. The existing quarry is bounded by thick, mature hedgerows on all boundaries. Perimeter earthen berms will be constructed from the stripped overburden and seeded on the boundaries of the proposed extension area and the northern field, which is the site of settlement lagoon and permitted readymix concrete batching plant.

Extension further to the east is limited by a 220 kV overhead transmission line traversing the eastern side of the landholding in a NNW-SSE orientation. A 10 and 20 m standoff will be maintained to the application and extraction areas, respectively. It is proposed to retain a drainage channel and associated hedgerow to the east of the site, and the extraction area will remain at least 10 m from the feature.

The residential development in the area consists of dispersed farmsteads and diffuse, clustered or more rarely ribbon development along roadsides and around villages. There are 7 residences within 250 m, 15 within 500 m, 31 within 750 m and 45 within 1 km of the proposed extraction area. There are no occupied residences within the application site or landholding, and the closest is located c. 120 m southwest of the quarry extraction area. There are no community facilities near Heronstown, except for Heronstown National School (Scoil Naisiunta Mhuire primary school) on the L1604, which is located c. 627 metres north of the extraction area.

3.2 PROPOSED DEVELOPMENT

The proposed development will consist of the continuance of operation of the existing permitted quarry and associated infrastructure (ABP Ref. 17.QD.0017; P.A. Ref. LB200106 & ABP Ref. 309109-21), deepening of the quarry extraction area by 1 no. 15 metre bench from 50 m OD to 35 m OD, a lateral extension to the quarry over an area of c. 4.8 ha to a depth of 35 m OD, provision for aggregates and overburden storage, and restoration of the site to natural habitat after uses following completion of extraction, within an overall application area of c. 18.5 hectares. An extraction capacity of up to 300,000 tonnes per annum for a period of 20 years is sought, with a further 2 years to fully restore the site.

The existing site infrastructure includes site entrance, internal access roads, weighbridge, wheelwash, portacabin office, car park, mobile crushing, screening and wash plant, settlement lagoon system, and other ancillaries, which will be maintained on-site for the duration of the works (Refer to EIAR Figure 3.1).

Extraction has taken place to a depth of c. 65 m OD in a series of 10-15 m high benches in the southern and central sections of the quarry. The quarry comprises disturbed ground with a level processing area located in the central section of the site and an oval-shaped extraction area developed into the central and southern sections of the site. The northern section of the site accommodates the settlement pond and screening embankment along the northern site boundary with the Killary Stream.

The site will continue to be worked from the existing quarry area in an easterly direction in a series of typically 15 m high benches with consideration given to direction of working, phasing of development and progressive restoration of quarry faces (particularly upper southern quarry face) to reduce the visual impact from views to the north.

The existing quarry is bounded by thick, mature hedgerows on all boundaries. . Perimeter earthen berms will be constructed and seeded on the boundaries of the quarry extension area and site of the readymix concrete plant.

Development of the quarry at depth below the current floor will require continued dewatering and discharge to surface water. Waters will collect in the quarry sump and will be pumped to the settlement lagoon, via a hydrocarbon interceptor prior to discharge. Discharge of water from the settlement lagoon at the northern boundary of the existing quarry into the adjacent Killary Stream is undertaken in compliance with a current, valid trade effluent discharge licence consent (Ref. 20/01).

The site is situated c. 2 km southeast of Lobinstown Village with access to the N2, N51 and N52 National Roads provided via the L1603, which runs adjacent to the quarry site. These are the main haulage routes, allowing the HGV traffic from the site to access the national and regional road network at the earliest opportunity.

The entranceway has substantial splays providing good visibility. Sight distances at the site entrance of at least c. 160 m are achievable in each direction along the L1603 at a distance of 3 m back from the hard shoulder. Hedges and trees near the quarry entrance will continue to be maintained regularly in order to ensure that the sightlines at the access are kept clear at all times.

This application seeks to secure permission for the extraction of further mineral reserves within the landholding. This is extremely important if the site is to be worked in accordance with sound planning practice. In particular, the ongoing restoration of the site needs to be considered as part of a restoration scheme for the whole of the site. Many extractive operations begin without a long-term strategic vision, principally because of the tendency for granting of short-term permissions only. Such short-term permissions lead to a fragmented approach to site operation and in particular to the site restoration.

The proposed development is required for a duration of c. 20 years in order to extract a known resource with a further 2 years to fully restore the site to a secure wildlife refuge / amenity use, and to justify the capital expenditure and provide for the continued employment of the current workforce within the local community and a supply of locally sourced construction aggregates and concrete.

3.3 EXISTENCE OF THE PROJECT

The development will consist of the continuance of operation of the existing permitted quarry and associated infrastructure (ABP Ref. 17.QD.0017; P.A. Ref. LB200106 & ABP Ref. 309109-21), deepening of the quarry extraction area by 1 no. 15 metre bench from 50 m OD to 35 m OD, a lateral extension to the quarry over an area of c. 4.8 ha to a depth of 35 m OD, provision for aggregates and overburden storage, and restoration of the site to natural habitat after uses following completion of extraction, within an overall application area of c. 18.5 hectares.

The overburden has been stripped from the southern and central sections of the site permitted under P.A. Ref. LB200106, and it is proposed to extend extraction to the east.

The quarry has been worked below the water table, and in order to maintain a dry working environment on the floor of the quarry, some rainfall-runoff and groundwater is discharged from site via an extensive water management system in compliance with discharge licence Ref. 20/01.

The site will be worked from the existing quarry area in an easterly direction in a series of c. 15 m benches between c. 105 and 35 m OD (Refer to EIAR Figures 3.1 & 3.3). It is proposed to develop an additional extractive bench below the current quarry floor to 35 m OD. Development of the quarry at depth below the current floor will require continued dewatering of rainfall-runoff and groundwater and discharge to surface water in order to maintain a dry working environment on the floor of the quarry.

The workable aggregate reserves within the proposed extraction area have been calculated as c. 6 million. An average extraction capacity of 300,000 tonnes is anticipated over a 20-year extraction life for the proposed development, plus an additional two years to complete final restoration works.

The site is an existing hard rock quarry and therefore the infrastructure required for this type of extraction operation is already in place.

It is proposed to continue to use the existing entrance to the site. Access to the proposed development is directly onto the L1603 local road. All materials from the site are transported directly via McEntegart's Crossroads c. 1.5 km to the north or the Sally Gardens Crossroads and Harlinstown Cross Roads c. 3.8 and 7.7 km, respectively, to the south. At the quarry access junction on the L1603, when travelling to/from the quarry, it is anticipated that development traffic will be split 30:70 to the north and south, respectively.

A wheelwash is already in-situ and will ensure that the wheels and undersides of all vehicles transporting aggregate from the site onto the public road are cleaned. A weighbridge is also in-situ to ensure that all vehicles transporting materials are weighed prior to exiting site and meet weight restriction requirements for commercial HGV's.

Warning signs are displayed at appropriate intervals along the property and excavation boundary. The existing boundaries around the site perimeter will be maintained and will be reinforced, where necessary. The boundaries will be maintained in accordance with the operator's obligations under various health and safety legislation. The access gate is kept padlocked outside of the normal working hours unless exceptional circumstances require otherwise.

3.4 DESCRIPTION OF COMMISSIONING

On some large projects there is a considerable time delay between the end of construction and the commencement of full operation. Given that the development is located within an existing, working quarry, which has the necessary plant and machinery and site infrastructure, including site offices, welfare facilities, an experienced workforce and an established EMS, there will be no expected delay to the continuance of operations. Minimal construction is anticipated, unless required by conditions under the planning permission.

The proposed development will continue to be carried out in accordance with a phased working plan with progressive restoration of residual quarry faces.

3.5 OPERATION OF THE PROJECT

Breedon has established an environmental management system (EMS) which is accredited to ISO 14001:2015 standard. The Environmental Management Plan (EMP) for the quarry includes regular monitoring activities (e.g., Water, Blasting, Noise and Dust) to demonstrate that the development is not having an adverse impact on the surrounding environment.

The proposed quarry working hours are consistent with Condition No. 10 of P.A. Ref. LB200106 and Condition No. 4 of P.A. Ref. 22/328:



Monday to Friday:	07:00 to 18:00 hours.
Saturdays:	07:00 to 14:00 hours
Sundays/Public Holidays	No activities permitted unless otherwise agreed with the Planning Authority for Exceptional circumstances.

No rock-breaking activity shall be undertaken within any part of the site before 08:00 hours on any day.

There are no changes proposed to the method of extraction and processing as in this planning application. Drilling and blasting will continue to be utilised with processing of extracted rock using mobile crushing and screening plant located within the quarry floor. This will reduce handling of material and will also have the benefit of screening these activities from outside views, and being at depth, will also mitigate impacts associated with noise and dust.

To date, extraction has taken place to a depth of c. 65 m OD in a series of 10-15 m high benches in the southern and central sections of the active, permitted quarry. It is proposed to deepen the quarry within the current permitted extraction area by 1 no. 15 m bench from 50 m OD to 35 m OD.

The site will continue to be worked from the existing quarry area in an easterly direction in a series of typically 15 m high benches between c. 105 and 35 m OD with consideration given to direction of working, phasing of development and progressive restoration of quarry faces (particularly upper southern quarry face) to reduce the visual impact from views to the north (Refer to EIAR Figures 1.3 & 3.1 to 3.3).

Development of the quarry at depth below the current floor will require continued dewatering of rainfall-runoff and groundwater infiltration with discharge to surface water in order to maintain a dry working environment on the floor of the quarry. The site's existing water management structure including settlement lagoons is of sufficient capacity to adequately treat and appropriately attenuate waters arising without the need for any more water treatment infrastructure under the conditions of the existing Section 4 Discharge Licence,

Warning signs are / will be displayed at appropriate intervals along the property and excavation boundary. The existing boundaries around the site perimeter will be maintained and, if necessary, reinforced. The boundaries will be maintained in accordance with the operator's obligations under various health and safety legislation. The access gate will be kept padlocked outside of the normal working hours unless exceptional circumstances require otherwise.

In the interest of public safety and to prevent public access to the quarry, a barrier system will be put in place, which is designed to be a permanent, maintenance-free barricade to man and farm animals. Together the berms, existing trees, hedgerows and all other natural vegetation will develop into a permanent, dense & impenetrable barrier. The above measures are considered sufficient to prevent accidental access to the quarry workings.

A double skinned fuel tank is provided on-site for refueling of some mobile plant and machinery. For larger mobile plant such as crushers and screeners, refuelling takes place on the quarry floor on an as-needs basis by a mobile fuel truck. Servicing of vehicles will take place off-site. Haulier HGVs will not be refuelled onsite.

Breedon has appointed a competent quarry manager with the relevant experience of extraction, crushing and screening and haulage of construction aggregates. The quarry will continue to provide employment. It is not anticipated that the numbers will increase. Indirect employment will continue for several sub-contractors e.g., local hauliers and crushing contractors.

Recent traffic surveys and junction capacity analysis for the Slane Road and access junction have indicated that the roads can accommodate production volumes well in excess of the 300,000 tpa proposed at the quarry. The existing and proposed traffic volumes on the Slane Road fall within the envelope of available capacity. Thus, the traffic impact of the proposed development on the Slane Road will result in an increase in traffic on the network, but this increase is imperceptible.

The operator has put in place an EMS that will address such matters as Emergency Preparedness & Response in dealing with accident and emergency situations resulting in impacts on the environment. In order to prevent and mitigate the environmental impacts of accidents and emergency situations, Breedon has established and maintains procedures to identify and respond to these situations. The Company will review and revise, where necessary its emergency preparedness and response procedures.

3.6 SITE RESTORATION, DECOMMISSIONING & AFTERCARE

The development will be worked in a phased manner to ensure full implementation of the mitigation and restoration measures proposed. Plans and sections of the design and associated restoration are shown on EIAR Figures 3.1 to 3.3. Site restoration allows vegetation to become established during the course of the development, thereby reducing the overall impact of the development (i.e., visual impact, dust impact, flora and fauna impact, etc.).

A well-coordinated restoration process (in consultation with the GSI) will ensure that representative areas of quarry faces can be left unvegetated. Parts of the upper benches will also be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face.

Cross sections through the site also illustrate the effectiveness of working the quarry top-down in successive benches, including provision of a temporary berm at 98m OD within the eastern extension area, with progressive restoration of the upper back southern face and existing stockpiling area to further reduce the visual impact of the development on the surroundings (Refer to EIAR Figures 3.1 to 3.3).

The main aim of the restoration is to minimise the impact of quarrying on the existing landscape of the area, both now and into the future. Restoration of the site will be carried out in a progressive fashion over the life of the operation. Final restoration will involve removal of the site infrastructure, including hard standings, fuel storage, site offices, wheelwash, weighbridge and other ancillaries. It is anticipated that final restoration will be achieved within 2 years of completion of extraction operations. Final restoration will be to a beneficial after-use as a secure wildlife amenity with water feature. The EMS, including environmental monitoring (Surface &

Groundwater only), shall remain in place and will continue to be actively implemented during the closure period.

All components of the barrier system for the site protection will remain in place after quarry operations have ceased. The growth of vegetation over the duration of the operation will have created a thick, virtually impenetrable barrier around the site. This, in conjunction with the other barriers, is considered sufficient to prevent unauthorised access to the restored quarry.

The final site restoration will contain a landscaped woodland / amenity with water feature. The intention is to create a habitat suitable for aquatic life and birds, such that the disused workings will eventually become of considerable amenity value.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of quarrying activity. The former plant areas will be restored using topsoil / overburden and planted with a mixture of native trees and shrubs.

3.7 CHANGES TO THE PROJECT

The proposed development has taken into consideration the application area as a whole. It is considered that given appropriate stand-offs to sensitive receptors within the vicinity that the application area can accommodate the extraction area as proposed. Further development outside of the identified application area is restricted by the extent of the mineral resource, land ownership, proximity to a high voltage transmission line and residential property.

Continuation of quarrying operations in accordance with the scheme proposed will provide for the security of the existing business of Breedon Ireland for the full duration of the permission being sought, i.e., 20 years plus 2 years to complete final restoration. Lobinstown Quarry is an important component in Breedon Ireland's future business model.

No future expansion of the development is expected, and the site will be decommissioned, and the lands will be restored in accordance with a Restoration Scheme agreed with the Planning Authority.

3.8 DESCRIPTION OF RELATED PROJECTS

In June 2022, Breedon were granted planning permission to develop a readymix concrete plant in the northern section of the quarry (P.A. Ref. 22/328). However, this concrete plant has not been developed to date. This development once constructed will be subject to compliance with a separate planning permission and is only considered here as it will form part of the integrated quarry development works on-site.

From a planning perspective, it is generally preferred that value added facilities are located on the site of aggregate extraction. This results in reduced materials handling and road transport impacts, as it is not necessary to export aggregates to other locations with value added facilities.

There are no required or apparent opportunities for any further associated developments at this time.

3.9 CUMULATIVE IMPACT

There are several quarries in the wider area, including O'Reilly Concrete Lobinstown Quarry c. 2.5 km to the west (currently in final stages of restoration), Roadstone's Slane Quarry, c. 7 km to the south, an unidentified quarry at Knockmooney on the N2 c. 8.5 km to the southeast, and a disused quarry, now operating as an SRF, at Mullaghdillon c. 6 km to the southeast. The only significant industrial/commercial activity within 5 km of the site is the industrial/warehouse estate in Grangegeeth, c. 4.5 km to the southeast.

The nearest substantial commercial activity is Meade Farm Group's Packing, Storage and Distribution facility c. 1.25 km northeast of the site at Braystown. The substantial facility employs c. 340 employees.

There are also other developments nearby, including solar farms, both existing and proposed, that could give rise to potential cumulative impacts. However, these developments are subject to planning and/or the requirements for EIA and are subject to compliance with both planning and licensing conditions. There is no other significant industrial/commercial activity within a 5 km radius of Lobinstown Quarry.

Given the nature of the proposed development, compliance with the mitigation measures specified in the EIAR and the best practice measures that will be implemented, it is considered highly unlikely that any significant cumulative impacts will arise as a result of the proposed development in combination with other local existing developments, quarries, projects and plans.

An EMS, which is accredited to ISO 14001 standard, is in place at Lobinstown Quarry. It addresses monitoring of water, noise & vibration and dust, and may be revised to comply with any new condition of planning. The potential cumulative impacts will be assessed through the environmental monitoring programmes that have or will be established in compliance with the existing or future planning permissions.

4 POPULATION & HUMAN HEALTH

This section of the EIAR establishes the human environment in the vicinity, and assesses the potential impact, if any, of the proposed continued operation of Lobinstown Quarry at Heronstown on the existing environment in respect of human beings. Potential negative impacts on human beings and amenity of the area arising from the development relate mainly to nuisance from noise, dust, water pollution, traffic and visual intrusion. The issues considered here include, land use, population, economy & employment, social infrastructure, amenity, tourism and recreation and health and safety. The human environment was assessed by undertaking a desktop study and conducting visits to the site and the area.

The site is located on the north side of, and with direct access onto, the L1603 local road, which extends from the N52 south before crossing the L1604 Local Road (i.e., Collon Road) c. 1.2 km east of Lobinstown and continuing on to the N51 at Harlinstown Crossroads c. 1 km west of Slane. The L1603 is known as the Slane Road south of the intersection with the L1604 at McEntegart's Crossroads. The pavement in the vicinity of the existing quarry is in good condition.

The closest large residential settlement to the site is Slane, which is located c. 8.5 km to the southeast. There are no occupied residences within the application site or landholding. The nearest residence is 120 m to the southwest of the permitted extraction area. There are 7 residences within 250 m, 15 within 500 m, 31 within 750 m and 45 within 1 km of the proposed extraction area. Heronstown National School is c. 627 metres north of the extraction area (Refer to Figure 4.1).

Most residential properties in the area are serviced by private bored wells, mainly due to the limited coverage offered by the Uisce Éireann mains network. Most houses are also serviced by septic tank systems and proprietary effluent treatment systems.

There are no industrial or commercial developments within 1 km of the site, the nearest being a Meade Farm Food Packing, Storage and Distribution facility c. 1.25 km northeast of the site.

Lobinstown is located in Landscape Character Area (LCA) 3 North Navan Lowlands, and is considered to be of Moderate Landscape Value, Medium Landscape Sensitivity, and Regional Landscape Importance. There are no designated views and prospects towards the proposed development at Heronstown with the nearest view No. 24 being views from an unnamed local county road linking Rathkenny Cross Roads to Parsonstown (or Mullaghregan) Cross Roads to the west of the site. The protected views and prospects from this route, which also forms part of the Táin Trail, is to the west and northwest and not towards the quarry development. As the quarry is well screened by mature vegetation and has been developed into rising ground at the foot of the slope upon which the viewpoint No.24 is located, it is considered that the development will not have any significant visual impact on any of the views and prospects in the county.

The quarry site has restricted views from the surrounding countryside, namely limited middle-distance views from the north along a section of the L1604 local road west of the Scoil Mhuire primary school. No sites of archaeological importance, national monuments or protected structures listed in the Meath Development Plan 2021-2027 (Meath 2021) are located within the proposed development area.

The operation of Lobinstown Quarry at Heronstown arises from the continued demand of human beings to have their buildings, roads and structures, modified and improved. The supply of construction materials is therefore essential to the aspirations and material progress of humans and their settlements and infrastructure.

If the development did not proceed, the aggregate resource would continue to be worked within the confines of what is permitted under the current planning permission (P.A. Ref. 200106) whilst the remainder of the proven mineral resource would remain unused in situ, and the local supply of quality aggregates would be more restricted.

The quarry has been in operation since its commencement in 1958. Thus, the area has a long history of quarrying, such that these activities have co-existed with other, predominantly agricultural, land uses in the area. The proposed land use on-site will continue the tradition of quarrying activities and associated operations.

The quarry has had a number of mitigation measures with respect to screening and landscaping, environmental management and monitoring put in place to ensure that operations do not result in significant impacts on the surroundings, including the human environment.

On completion of site activities, the site of the quarry will be decommissioned and left safe and secure. Furthermore, the quarry will be restored in accordance with an approved restoration scheme, and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity of the area.

There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, phasing and direction of working with respect to receptors to reduce visual impact, while impacts due to noise and dust are substantially attenuated.

Consideration has been given through preparation of the quarry design with respect to preservation of perimeter hedgerows, provision of screening berms, phasing, direction of working and restoration of the residual quarry faces (particularly the southern face) to ensure there are no significant views of the site. It is considered that there will be a likely, not significant, long-term effect with respect to visual impact from this vantage.

A working scheme has been designed for the quarry that provides for the sequence and direction of working. The objective of this scheme is to reduce as far as possible the overall visual impact of the workings (Refer to EIAR Figures 3.1 to 3.3). The existing workings have been incorporated into the overall phasing of the scheme to ensure a consistent approach to landscaping and restoration within the entire project area.

Cross sections through the site also illustrate the effectiveness of working the quarry top-down in successive benches, including provision of a temporary berm at 98m OD within the eastern extension area, with progressive restoration of the upper back southern face and existing stockpiling area to further reduce the visual impact of the development on the surroundings (Refer to EIAR Figures 3.1 to 3.3).

On completion of site activities, the site of the quarry will be decommissioned and left safe and secure. Furthermore, the quarry will be restored in accordance with an approved restoration

scheme, and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity of the area.

There will be no significant indirect, cumulative or transboundary impacts associated with the operation of the quarry. Also, based on the mitigation measures provided for, there will be no significant residual impacts in terms of community and other socio-economic issues.

The mitigation measures that relate to the human environment, and the sensitive receptors in particular, mainly involve water, air, noise and vibration, landscape and traffic. As the proposed development relates to the continuation of extraction at an existing quarry, with extension laterally and to depth, there will be a minimal requirement for a construction stage and attendant mitigation measures. During the operational stage, mitigation measures proposed by the operator and those conditioned by the Planning Authority will be in effect and controlled and monitored by the Environmental Management System (EMS) and environmental monitoring programme. During the closure and decommissioning stage, the site will be restored to beneficial after-use, and no additional mitigation measures are proposed.

The applicant, Breedon, has established an environmental monitoring programme for the quarry site. The programme allows for on-going monitoring of environmental emissions (e.g., noise, dust, blasting, water) from the site, thereby assisting in ensuring compliance with requirements or regulations.

The development will be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by planning conditions imposed by the competent authority. The proposal will have no major and/or long-term effect on the human environment.

It is the policy of the operator to ensure the health and welfare of its employees by maintaining a safe, clean and tidy working environment, and employing safe working procedures that accord with the requirements of employment legislation, regulations, and best work practices.

Access to the site has and will be controlled at all times, and all visitors and contractors will undergo a site induction before entering the site. The wearing of protective clothing, such as footwear, helmets and high visibility clothing, will be mandatory in operational areas.

Adequate fencing, signage and other barriers have been erected around the existing site for the safety of the general public and to prevent livestock straying into the development, and these measure will be extended to the proposed quarry extension area. Large lockable gates are in place to guard against unauthorised and unsupervised entry to the site outside working hours.

5 BIODIVERSITY

This chapter provides an assessment of the impacts of the proposed development in question on the ecological environment, i.e., flora and fauna. The subject site is located at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath. The lands in which the proposed development is located have no formal designations.

The nearest European sites to the Proposed Development are associated with the River Boyne and include the River Boyne and River Blackwater SAC (Site Code 002299), which is located almost 8 km to the southeast, and the River Boyne and River Blackwater SPA (Site Code 004232), which is located approximately 8.3 km to the southeast. However, the Proposed Development lies in a separate hydrological catchment to the River Boyne and the associated sites referenced above, and there is no connectivity to these sites and the River Boyne.

The Killary Stream runs adjacent to the northern boundary of the active quarry and outfalls to the Killary Water_010, which in turn enters the River Dee. The site holds a current, valid, Section 4 Discharge Licence (Ref. 20/01), which was issued by Meath County Council in 2020, for a discharge from the treatment systems (settlement lagoons) to the Killary Stream. The Killary Stream ultimately flows into the River Dee almost 10 river kilometres downstream, which in turn discharges into Dundalk Bay a further 30 river kilometres downstream.

The most recent EPA Biological Water Quality results from the nearest downstream station at Killary Bridge reports a Q Value of 3-4, indicating Moderate water quality status.

With respect to designations, none of the watercourses connecting the site with Dundalk Bay are European sites. Dundalk Bay is designated as an SAC (000455), an SPA (004026) and pNHA (000455). The hydrological distance between the site and this designated site is c. 43 km. Given all site measurements for the discharge flow and quality, the low volume calculated for future water management at the entire proposed excavation area and the large, underutilised capacity of the site's existing water treatment infrastructure, there will be no impact on Dundalk Bay SAC and SPA.

The proposed development includes specific measures for the attenuation and discharge of surface water and there will be no indirect effects on water quality as a result of the proposed development. The site holds a current, valid Section 4 Discharge Licence (Ref. 20/01), which was issued by Meath County Council in 2020, for a discharge from the treatment systems (settlement lagoons) to the Killary Stream.

The quarry habitats are identified as a mosaic of mixed woodland (WD1) on the eastern and western boundaries with scattered scrub (WS1) areas elsewhere, improved grassland (GA1) around the attenuation pond, and the active quarry areas (ED4). There are four remnant hedgerows extending into the footprint of the proposed extension area. The hedgerows are not well managed and the dominant species present are Hawthorn and Ash.

There will be no significant change to the quarry habitats from the continued working of the quarry. The predicted direct effect on footprint habitats is neutral, imperceptible and permanent. The surrounding Scrub/Grassland mosaic will continue to be managed as part of the quarry operation with similar levels of grazing and maintenance of tracks and access

areas. The predicted direct effect on surrounding habitats is neutral, imperceptible and long term. The loss of improved grassland habitat will not result in a significant effect on biodiversity. The predicted direct effect on Woodland is negative, 'not significant' and permanent. The predicted direct effect on Hedgerow is negative, slight and permanent.

There are no records of bats encompassing the quarry site for a distance of up to 100 m from the site boundary and night time detector surveys returned relatively low numbers of bats. There are no roosting habitats in the footprint of the proposed development and there are no predicted significant direct effects on bats. There will be significant remaining hedgerows and woodland surrounding the existing quarry and proposed extension area which will continue to provide commuting connectivity and foraging habitats for bats in the area. The predicted indirect impact on surrounding habitats is neutral, imperceptible and long term and as such there will be no indirect impact on bats in the surrounding area.

In respect of badgers, no specific feeding signs or setts were found within the quarry site boundary and a survey of the proposed extension area did not reveal any setts. There are no suitable habitats for otters on the proposed development site and no signs of otter were recorded within the site. There will be no indirect impacts on badgers or otters as a result of the proposed development.

Birds recorded during the site visit were typical of the wider countryside. There will be no cutting of vegetation during the bird nesting season and no direct effects on nesting birds.

The presence of Peregrine falcons (*Falco Peregrinus*) at Lobinstown Quarry is well documented and a management plan has been in place for a number of years to promote use of the quarry by the falcons and to enhance their chances of successful regeneration. An annual Peregrine Falcon Survey is undertaken in accordance with Condition No. 16 (b) of P.A. Ref. LB200106. The predicted indirect impact on surrounding habitats is neutral, imperceptible and long term and as such there will be no indirect impact on Peregrine Falcons feeding in the surrounding area.

There are no predicted adverse effects on local or downstream biodiversity, flora or fauna as a result of the proposed development given the inclusion of workable industry standard mitigation measures that will be monitored to ensure continued efficacy. There are also no predicted in-combination or cumulative effects given that it is predicted that the Proposed Development will have no significant effect on Biodiversity.

It is concluded, in light of demonstrated compliance with the requirements of the Groundwater and Surface Water Regulations, as well as aiding the objectives of the Water Framework Directive's implementation in the region, that there are no 'Water' impediments to the proposed development.

6 LAND, SOILS & GEOLOGY

The potential impacts of the proposed continuance of quarry operations at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath, on the geological environment is assessed and possible mitigation measures proposed to reduce any significant impacts.

The desk study was undertaken to compile, review and interpret available information, data and literature pertaining principally to the geological and soil environment of the site, its immediate environs and regional setting.

Land use in the area is almost exclusively agricultural, which is divided relatively evenly between tillage and moderate-intensity agricultural grassland supporting livestock production and dairy.

Teagasc soil mapping indicates that the application site is covered in shallow, poorly drained mineral soils with an acidic signature.

SLR Consulting undertook a geological appraisal of the bedrock underlying the application site and immediate surrounds in 2021. The aim of this assessment was to confirm the quality of rock in this area. The visual inspection performed as part of those works confirmed that the existing quarry has been developed in medium to thickly bedded metasandstones and metamudstones.

Three benches are currently exposed with the upper bench being thicker in places due to topography on the hilltop. The rock being quarried is a high PSV (Polished Stone Value) greywacke.

The current quarry extraction area has been stripped of overburden. It is proposed to deepen the quarry within the current permitted extraction area by 1 no. 15 metre bench from 50 m OD to 35 m OD. Drilling in the active quarry area confirms very hard competent metasediments at depth with no significant groundwater inflows. The southern, western, and northern boundaries of the active quarry are well defined and will remain as they were historically.

Site investigations in the proposed extension lands to the east of the working quarry indicate relatively shallow overburden of soils and subsoils (less than 3 m) requiring stripping and use in perimeter screening berms and/or quarry restoration works. The bedrock within the eastern extension application area is the same high PSV metasediment with little to no groundwater other than at the subsoil bedrock interface, which is normal.

The southern boundary of the proposed extension area was revised after the site investigations were completed and reported, specifically Apex's Geophysical Survey (Apex, 2021) and SLR's Site Investigation Geotechnical Assessment Drilling (SLR, 2021). The site investigations identified the transition from the highly competent 'Salterstown' sandstone/mudstone metasediment unit, that is the rock of interest, to the less suitable, highly weathered, banded tuff with slaty metamudstones unit with visible coarse pyrite. The bedding planes dip at c. 40° to the southeast, and therefore, it is projected that the proposed excavations under consideration will not intersect the weathered bedrock immediately south of the proposed extension area.

Extension further to the east is principally limited by above ground physical constraints rather than geological features. A 220 kV overhead transmission line traverses the eastern side of the landholding in an NNW-SSE orientation. A 10 and 20 m standoff will be maintained to the application and extraction areas respectively.

Another physical constraint is an ephemeral stream/drainage channel to the east of the application area that is rainfall runoff driven. It is proposed to retain this stream and associated hedgerow, while the extraction area will not encroach within 10 m of the eastern site boundary. The western boundary of the proposed extension area is the current eastern boundary of the existing operational quarry site.

The lands north of the northern boundary of the proposed extension area have recently been planted with forestry and were found to be underlain by 4 to 7 m of overburden (Alluvium), and as such the area was not considered economically viable to develop.

A search of the GSI Geological Heritage Database reveals that Lobinstown Quarry is not mapped as a County Geological Heritage Site (CGS). The closest CGS mapped by the GSI are the Rathkenny Subaerial Fan, Rathkenny Sandur (MH015) c. 3 km to the south, and the Ardee-Newtown Bedform Field (LH001) c. 4 km to the northeast.

The GSI's Aggregate Potential Mapping (APM) database shows areas geologically suitable for quarry development. The Lobinstown Quarry is considered to have a 'High potential' for quarrying of 'crushed rock aggregate'. The database describes the site at Heronstown as 'a quarry producing high PSV surfacing gritstone'.

The bedrock at the site is considered to be a geological attribute of High importance (moderately sized existing quarry) while the proposed works have a potential adverse impact of Moderate magnitude (Loss of moderate proportion of future quarry or pit reserves). Thus, the impact to the geological bedrock attribute is deemed to be 'Significant/Moderate'. Given their poor drainage properties and low fertility status, the soils/subsoils at the site are deemed to be a geological attribute of Low importance, such that the impact to the geological (soils/subsoils) attribute is deemed to be 'Negligible'.

A total of c. 6 million tonnes of workable reserves are available within the proposed extraction area. The maximum annual output will be in the order of 300,000 tonnes giving an anticipated duration for the extraction of c. 20 years. By its nature, quarrying of the underlying rock would involve removal of an identified geological resource and therefore some impact upon land, soils and geology must be expected.

Construction phase works involve stripping of overburden from the extension area, stockpiling of overburden, etc. The removal of soil/subsoil will remove the capacity of the subject lands to provide agricultural production. Soil/subsoil used in perimeter berms provides both site security screening (visual, noise & dust) and will be reused or integrated as a fundamental part of site rehabilitation.

The primary activity with potential to impact the land, soil and geological environment during the operational phase is the extraction of bedrock. Extraction of bedrock within the application site will have a direct impact on the geology of the sandstone/mudstone within the bedrock extraction area, and is considered to be a direct and permanent impact to bedrock. This impact has occurred historically within the active quarry, and is considered appropriate in order

to continue extraction of bedrock at this site. The significance of the continued extraction of bedrock is considered to be significant/moderate, again as a function of scale, as a quarry of this size would be considered to be at lower end of medium scale for quarry development.

Extracted material has been, and will continue to be, used both locally and regionally as a raw material in the construction and infrastructure industries. These are considered to be beneficial impacts. The necessity for such raw materials is recognised in the Meath County Development Plan 2021–2027.

The extracted resource is required for the viability of local and regional construction. The high PSV stone is considered a premium product primarily used as a constituent in bituminous mixtures for surface dressing and for surface treatments of roads. The crushed stone also has a use in added value concrete and concrete products.

Quarrying presents a risk of potential impact on the stability of the bedrock environment. Subsidence, slope stability, compaction and slope failure are fully considered in the design of all extraction phases at this site, which ensures that these impacts will be prevented.

No cumulative impacts with respect to land, soil, and geology due to the operation of the quarry at Heronstown were identified, and as such it is considered there is no significant cumulative impact with respect to the operation of the quarry.

No significant, long-term, adverse residual impacts are predicted in terms of Land, Soils and Geology during the operational phase, other than the inevitable loss of mineral resources.

Following full restoration and closure of the site, there will be no significant, long-term, adverse impacts in terms of Land, Soils and Geology, other than the permanent, significant negative impact due to extraction of the mineral resources. The restored quarry will result in a change in land-use from mineral extraction to beneficial future land-use as a wildlife amenity.

If the development did not proceed, the aggregate resource would continue to be worked within the confines of what is permitted under the current planning permission (P.A. Ref. 200106), while the remainder of the proven greywacke resource would remain unused in situ. Under the 'Do Nothing' scenario, all quarrying and ancillary activities would be completed under P.A. Ref. 200106 and operations would cease thereafter. The site would then be restored as per requirements of the existing planning permission.

As the proposed activities are a continuation and extension of activities into the adjoining lands, it is envisaged that no new or different potential impacts would be introduced when compared to the current operational phase.

As no significant impacts are expected with respect to Land, Soils and Geology, other than the loss of the mineral resource, no specific monitoring with respect to the land, soil or geological environment is likely envisaged.

7 WATER

Proposed works involve continued extraction of bedrock by blasting and mechanical means as an open quarry void at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath. The current active quarry floor is at c. 65 m OD, but existing permission allows for the floor to be worked to 50 m OD. It is also proposed to deepen the quarry's floor from 50 m OD, when that level is reached, and to extend in an easterly direction. This will bring the floor and adjacent green field to the same future elevation of 35 m OD. Works will progress from the current floor to one bench deeper and also over a number of benches in an easterly direction.

7.1 EXISTING WATER MANAGEMENT & CONCEPTUAL MODEL

The site operates under Discharge Licence Ref. 20/01, which permits a daily maximum flow of 1,728 m³/d, with an hourly maximum flow of 72 m³/hr.

Domestic effluent generated by on-site office workers is treated by the wastewater treatment system (WWTS) providing secondary treatment (Tricel). This is located south of the portacabin office at the weighbridge. Treated effluent is disposed of via soil polishing filters.

As conditioned in the Section 4 Discharge Licence Ref. 20/01, all waters arising at the site are pumped to the final lagoon. This lagoon treatment unit is large and has been sized as per documentation submitted with the Discharge Licence application by SLR in 2020, for the removal of solids prior to discharge to the receiving Killary Stream.

All waters leaving the site boundary via the licensed discharge point pass through a hydrocarbon interceptor, which has been installed immediately downstream of the outlet of the main settlement lagoon. This will ensure removal of all oils and hydrocarbons from discharge waters prior to leaving the site.

Site monitoring data, including a daily record of discharge flow rate, hydrochemistry and macroinvertebrate surveying of the receiving water, are presented in Appendix 7.3 of the EIAR.

The site currently discharges 10%, approximately, of the permitted Emission Limit Value (ELV) for flow volume. This has significance to the consideration for extension of the quarry. It is envisaged that considering the same bedrock is proposed for excavation, there is capacity and headroom in the existing licence, which can accommodate increases in waters arising. Considering that the total quarry void area proposed is c. 9.7 ha and the lateral extension part of that total area is c. 4.1 ha. Those areas essentially suggest that the footprint of the excavation area will be doubled. Considering that the site currently discharges an average of 174 m³/d, even if that average volume increased at the same rate of areal increase at the site, the future total discharge would be 348 m³/d. This is still only 20% of the maximum permitted ELV for volume. The maximum ELV volume of the current Discharge Licence is a volume that has been proven as a safe discharge amount to protect WFD Status

Given that the site's measured discharge rates are 1/10th, on average, of those permitted in the Section 4 discharge licence Ref. 20/01 and that the total volumes calculated for rainfall and groundwater that will be encountered in the future are less than that permitted ELV for

volume in the licence, the receiving waters remain with hydraulic and assimilative capacity to support the proposed further development at the site.

A site-specific flood risk assessment (FRA) was carried out by Envirollogic in November 2023 and is included as Appendix 7.2 of the EIAR.

The results of the FRA surveying and simulations suggests that the addition of the maximum quarry discharge ($0.02 \text{ m}^3/\text{sec}$) to the river when it is under flood conditions does not cause any discernible increase in flood elevations downstream of the discharge point. The proposed discharge from the quarry will not cause any increase in flood risk to downstream receptors during flood conditions. Hence, upgrade works are not deemed necessary on the route to facilitate the predicted discharge during a storm event.

7.2 FIELD STUDIES FOR THE ASSESSMENT

A comprehensive number of boreholes have been drilled at the site. A borehole location map is included as Figure 7.8 of the EIAR.

For the specific purpose of this hydrogeological (water) assessment, five boreholes were drilled across the current working quarry and the greenfield eastern application area, as follows: PW1, PW2, PW3, PBH1 and PBH2.

Hydraulic properties of the sandstone/mudstone that make up the Salterstown Formation in the area confirm that the primary porosity is low, with no discrete groundwater-bearing fractures encountered.

A survey of recently installed on-site groundwater monitoring points shows groundwater flow direction is from the south, from the hilltop, to the northeast. The upgradient groundwater catchment is negligible. Local area wells to the southeast have water level elevations significantly higher (+50 m higher) and above the elevation of the sump on the floor of the quarry. Local wells are unaffected by the quarry.

There is very little groundwater in this high PSV bedrock type. There is zero discharge from the site when there is no rainfall. This means that there is no groundwater baseflow to the river system.

The potential radius of influence (R_o) upon completion of works is illustrated in Figure 7.12 of the EIAR. With reference to Figure 7.12 and the calculated R_o , it can be confidently concluded that there are no active groundwater receptors (boreholes) that may be at risk of impact from groundwater drawdown within 75 m of the perimeter of the final excavation area. No domestic wells will be affected by proposals to continue high PSV bedrock extraction at the quarry.

The site has proven established water management infrastructure to treat waters arising, and they have the capacity to treat the additional waters arising from the proposed development.

Hydraulic modelling of the surface water system, based on cross sections and surveying, has demonstrated that the local area's surface water network can accommodate the envisaged dewatering amounts, in combination with flood flows and allowances for climate change.

7.3 IMPACT ASSESSMENT

A summary table for potential impacts associated with each phase is presented as Table 7.20. The procedure for determination of potential impacts on the receiving hydrogeological environment was to identify potential receptors within the site boundary and surrounding environment and use the information gathered during the field work and desk study to assess the degree to which these receptors will be impacted upon.

The in-combination effect of the quarry with all other EPA Registered Abstractions from this groundwater body (GWB) suggests that the total take is 1.2% of the available groundwater resource volume. It is taken that the calculated % is in the <2% bracket according to GW5 criteria, resulting in a conclusion of **'No Potential Impact'**. This water balance data provides the confidence to assert that there will be no negative quantitative impact on the GWB regime. The site's monitoring data has proved that there is no qualitative impact on the GWB or surface water regime.

With respect to designations, none of the watercourses connecting the site with Dundalk Bay are European sites. Dundalk Bay is designated as an SAC (000455), an SPA (004026) and pNHA (000455). The hydrological distance between the site and this designated site is c. 43 km. Given all site measurements for the discharge flow and quality, the low volume calculated for future water management at the entire proposed excavation area and the large, underutilised capacity of the site's existing water treatment infrastructure, there will be no impact on Dundalk Bay SAC and SPA. More details are provided on this issue, specifically for the AA Screening, at the end of the Water Chapter 7 in the EIAR.

The site's drilling, pump testing and hydraulic response testing enabled calculations of potential future dewatering volumes that could be encountered based on academic empirical hydrogeological equations. Two empirical academic methods were employed and both methods suggest that the future total volume arising from the proposed future extraction area and rainfall runoff will be c. 200 m³/d. The value returned by the academic calculations is close to the current average value because there will be little extra groundwater encountered in the application bedrock and the rainfall runoff value for the site already includes some contribution from the eastern lands.

On a worst-case Factor of Safety (FOS) basis, the c. 200 m³/d could be multiplied by a 2, 3, 4, 5, 6, 7, or 8 x FOS and the site's water management systems will still have the capacity to attenuate and treat the future waters arising over the entire application area.

It is concluded that with the application of the specified mitigation measures there will be no residual impact on the water environment. The potential for impact on European sites was discussed in detail in its own potential impact section and it is concluded that there is no potential for any impacts. Similarly, it has been determined that there is no potential for cumulative impacts.

Given that guidance on impact assessment has been applied as per EPA (2022), it is respectfully proposed that the assessment presented also complies with the EIA Directive.

8 CLIMATE

This section of the Environmental Impact Assessment Report (EIAR) describes the Climate, Impact on Climate and Resilience to Climate Change in respect to the proposed development at the quarry at Heronstown, Lobinstown, Navan, Co. Meath, and its impact on the climate of the application site and its environs as a result of the activities being undertaken. It involves an assessment of the prevailing climatic conditions and assesses the potential impact of the development on the latter.

There is no guidance on the general climate other than, in respect of EIARs, the EPA's 2015 Draft Advice Notes for Preparing an Environmental Impact Statement.

The study of climate in respect of the proposed development was entirely a desktop study, involving the compilation and analysis of data and information on weather, climate, climate change, and impact of, and vulnerability to, climate change.

Local weather data are provided by the nearest synoptic station to the site, which is Dunsany (Grange), which suggests that the average annual potential evapotranspiration (PE) rates are 536 mm. Actual evapotranspiration (AE) is conventionally estimated by multiplying PE by 0.95, to allow for the reduction in evapotranspiration during periods when a soil moisture deficit is present (Water Framework Directive Working Group GW5, 2004). Actual evapotranspiration is therefore 509 mm/yr (0.95 PE).

The average daily air temperatures at Dublin Airport (1991-2020) range from 5.2°C to 15.4°C, with a mean 9.7°C. These values can be considered comparable to those expected at the application site.

The prevailing winds in this area are from the southwest and west.

A site-specific flood risk assessment was carried out and is included as EIAR Appendix 7.2. Hydraulic modelling of the surface water system has demonstrated that the local area's surface water network can accommodate the envisaged dewatering amounts, in combination with flood flows and allowances for climate change (Refer to EIAR Section 7.6).

GHG emissions for Lobinstown were calculated based on current quarry production levels of 200,000 tpa (i.e., 910 CO₂eq tonnes); and maximum quarry production levels of 300,000 tpa with concrete production levels of c. 25,000 cu.m per annum (i.e., 1,593 CO₂eq tonnes).

Based on the calculated annual total of 1,593 tpa CO₂eq for the quarry during its operational stage, and a comparison to Ireland's 2022 emissions value of 60.76 Mt CO₂eq, the proposed development at Lobinstown would represent a maximum of just 0.0026% of Ireland's recent annual CO₂eq emissions. It is notable that the HGVs used to transport the quarry aggregates and readymix concrete account for approximately 37% of the GHG emissions, which emphasises the importance of having a fleet of well maintained, modern trucks.

The GHG emissions associated with the quarry are expected to generate likely, direct, long term, imperceptible, negative effects with respect to global climate change.

Based on the GHG monitoring results, Breedon shall establish short, medium, and long-term objectives and targets for a GHG reduction programme and energy management plan.

Breedon Ireland are committed to continual improvement of energy performance and have clearly defined energy management targets and objectives as part of an energy management system which is implemented across the business. This Energy Management System meets the requirements of ISO 50001:2018.

If the proposed development is not granted planning permission, local demand for road aggregate may require materials to be transported from further afield, with a consequential impact in terms of increased vehicular exhaust emissions. It is considered that failure to continue the quarry will nonetheless have an imperceptible, negative impact with respect to climate.

The proposed development is for a maximum annual extraction rate of up to 300,000 tpa with concrete production levels of c. 25,000 cu.m per annum. A quarry of this size would be considered to be a medium size scale of operation and would have an imperceptible negative long-term impact with respect to regional or local climatic conditions.

Breedon Ireland have implemented an Energy and Carbon Policy. This policy commits to operating in a manner that ultimately eliminates its contribution to global warming by mitigation of climate change impacts through industrial innovation and the application of industry best practice.

As the development is not expected to affect the local climate or microclimate of the area, there is no requirement for mitigation or monitoring within this development proposal in respect of climatic issues. Therefore, there are no mitigations proposed specifically with regard to the climate. The proposed development will ultimately lead to the restoration of the quarry lands to a wildlife amenity with water feature, which will generate no further emissions from fossil fuels or dust, further lessening any impact on the climate.

The resilience of infrastructure to withstand storms, heavy rainfall events and high winds associated with extreme weather events triggered by climate change needs to be integrated into the design of the on-site infrastructure. However, as all the required site infrastructure is already in-situ, there are only limited opportunities to augment climate resilience.

9 AIR QUALITY

This section of the EIAR deals with the issue of air quality associated with the proposed development at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath. It will assess the level of airborne dust and particulate matter in the vicinity of the site, the impacts and appropriate mitigation measures, if required, by the applicant to remedy any significant adverse effects on the environment.

The baseline study comprised a desktop review of:

- Relevant policy, legislation and guidance with respect to air quality and emissions;
- Existing dust monitoring results were analysed to evaluate the current air quality conditions; and
- Impact of the development on the existing air quality of the area.

The principal concern in respect of emissions from the facility is the effect on residential amenity. The site is located in a sparsely populated rural area of northeastern County Meath. The surrounding lands are largely agricultural and held in pasture, with scrub and forestry plantations in the wider area. There is a relatively high level of forest cover in the Heronstown area, much of which is mono-type afforestation comprising scattered, rectilinear patches of coniferous forest. The existing quarry is bounded by thick, mature hedgerows on all boundaries (Refer to EIAR Figure 1.3), while the proposed extension is only partly bounded by field boundary hedgerows, while elsewhere it traverses open fields. The new boundaries will be secured with stock fencing and earthen berms will be constructed and planted.

The closest large residential settlement to the site is Slane, which is located c. 9 km to the southeast. There are no occupied residences within the application site or landholding. The nearest residence is 120 m to the southwest of the permitted extraction area. There are 7 residences within 250 m, 15 within 500 m, 31 within 750 m and 45 within 1 km of the proposed extraction area. Heronstown National School is c. 627 metres north of the extraction area (Refer to EIAR Figure 4.1). There are no community facilities near Heronstown, except for Scoil Naisiunta Mhuire primary school on the L1604), with the next nearest being those in Lobinstown (e.g., Post Office) c. 1.8 km northwest of the site.

There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, direction of working and phasing of working with respect to receptors, in order to reduce visual impact, while impacts due to noise and dust are substantially attenuated.

There are no industrial or commercial developments within 1 km of the site, the nearest being the Meade Farm Food Packing, Storage and Distribution Facility located c. 1.25 km northeast of the site.

The relatively high rainfall of the area (929 mm per annum), and experience of similar environments elsewhere in Ireland, suggests that baseline dust levels of approximately 40 to 60 mg/m²/day would be expected for an open pastoral landscape during drier periods of the year (May to September).

Routine dust deposition monitoring has been carried out at the site in compliance with condition No. 9.(b) of P.A. Ref. LB200106 for the existing quarry development. Dust monitoring using Bergerhoff dust deposition gauges is carried out on-site at four locations (D1 to D4) within the site (Refer to EIAR Figures 1.3 & 3.1). Two additional dust monitoring locations (D5 & D6) will be established with the approval of the planning authority with respect to the continuance of quarry operations and extension into the eastern area

The most recent monitoring results for the operation show that the dust levels at the site boundary are within the recognised TA Luft dust deposition limit value. The existing dust monitoring programme will allow on-going monitoring of fugitive dust emissions from the site, thereby assisting in ensuring compliance with the accepted TA Luft dust deposition limit value to be adopted at site boundaries associated with quarry developments – total dust deposition (soluble and insoluble): 350 mg/m²/day (when averaged over a 30-day period).

The existing operation has in place a number of mitigation measures to ensure the continued operation of the quarry (P.A. Ref. LB200106) , including permitted concrete plant (P.A. Ref. 22/328), will not result in any significant effect on residential receptors or local amenities.

Experience of quarry workings and associated ancillary activities indicates that mechanical activity is the most significant factor in material erosion and dust generation. Dust emanates from a number of site activities. However, the effect of wind and high ambient temperatures are also important factors in dust generation and migration. As dust travels downwind from the source it initially disperses outwards and upwards and then progressively falls to the ground surface. Most emitted dust is in fact deposited close to its source, generally within a distance of a few tens of metres.

The proposed development will require the stripping, transport and placement of soils and overburden as part of the quarry extraction, but only in the area of the extension, as this has already been done in the area of the existing extraction area. This will be undertaken in a progressive and phased manner. Although these operations will be of a relatively short-term duration, a variety of mitigation measures will be employed as part of on-going operational procedures to limit erosion/dust generation as much as possible.

Peripheral screening berms are already in place along the boundaries of the existing permitted quarry, and will be constructed for the northern, eastern and southern boundaries of the extension area.

It is considered that any direct impact with respect to emissions to air will be slight, occasional and negative due to construction works.

This is an established, well-developed quarry and as such the working face has already been developed/exposed within the site. The mobile crushing and screening plant will be located centrally within the existing excavation, relocating periodically as the working face is developed to the east.

The impacts of any dust deposition from the operations will be direct, slight, occasional, negative and largely confined to the site area.

Mitigation measures are already in place at the site and included in the existing Environmental Management Plan (EMP). Continual monitoring and measurement will ensure the effective application of these mitigation measures and ensure that activity at the quarry will not result in any significant environmental impact.

An EMS accredited to ISO 14001 standard is in place at Lobinstown Quarry. It addresses monitoring of water, noise and dust, and may be revised to comply with any new condition of planning.

Given the low inherent potential for dust and its dispersion from the proposed development, the rural location and the mitigation measures incorporated in the quarry design, it is anticipated that the impact on the existing air quality during the operational phase will likely be, direct, negative, brief, slight, long-term effects. These will be due to general activities, such as extraction, crushing, concrete manufacture, movement of materials and site traffic on access roads in dry weather.

A number of mitigation measures will continue to be carried out with respect to the proposed quarry in order to promote fugitive dust reduction and ensure that the operation is within any specified thresholds, and in line with good industry practice.

10 NOISE & VIBRATION

This section of the EIAR deals with the issue of noise and blast vibration associated with the proposed development at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath.

The section will determine the existing environment with respect to noise and blast vibration by assessing the level of noise and vibration in the vicinity of the site, the potential impacts on the environment, and propose appropriate mitigation measures, if required, by the applicant to avoid, reduce or remedy any significant adverse impacts on the environment.

The baseline study included a desktop review of relevant policy, legislation, planning guidelines and technical guidance with respect to noise emissions. A review of the guidance enabled identification of appropriate noise criteria for the proposed development, and prediction of the levels of noise & vibration emissions at noise sensitive locations near the site.

The principal concern in respect of emissions from the proposed development is the effect on residential amenity.

The surrounding lands are largely agricultural and held in pasture, although there is significant afforestation nearby to the east and north. The existing quarry is bounded by thick, mature hedgerows on all boundaries (Refer to EIAR Figure 1.3), while the proposed extension is only partly bounded by field boundary hedgerows, while elsewhere it traverses open fields. These new boundaries will be secured with stock fencing and earthen berms will be constructed and planted.

The closest large residential settlement to the site is Slane, which is located c. 9 km to the southeast. There are no occupied residences within the application site or landholding. The nearest residence is 120 m to the southwest of the permitted extraction area. There are 7 residences within 250 m, 15 within 500 m, 31 within 750 m and 45 within 1 km of the proposed extraction area. There are no community facilities near Heronstown, except for Heronstown National School, i.e., Scoil Naisiunta Mhuire, which is located on the L1604 c. 627 metres north of the extraction area (Refer to Figure 4.1).

There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, direction of working and phasing of working with respect to receptors.

There are no industrial or commercial developments within 1 km of the site, the nearest being the Meade Farm Food Packing, Storage and Distribution facility c. 1.25 km northeast of the site.

Routine noise monitoring is carried out at Lobinstown Quarry on a quarterly basis at three noise monitoring locations (N1 to N3). The locations of the noise monitoring stations are shown on the Existing Site Plan Figure 1.3. Most of these locations are at the site boundaries as opposed to nearest Noise Sensitive residences which are further removed.

A summary of the recent noise monitoring results shows that the LAeq,T values range from 36dB to 53dB LAeq,T. All measurement results comply with the current planning permission limits (P.A. Ref. LB200106 & P.A. Ref. 22/328).

The results of the monitoring survey confirm that the existing quarry at Lobinstown is operating in accordance with Planning Permission P.A. Ref. LB200106 and within the accepted noise limits for this type of development, i.e., $L_{Aeq} < 55$ dB daytime at the nearest noise sensitive locations.

Blast monitoring is carried out at Lobinstown Quarry for all blasts and is undertaken by Irish Industrial Explosives. Recent blast monitoring results confirm that Lobinstown Quarry is operating within accepted limits for this type of development i.e., in accordance with Condition Nos. 11 and 12 of Planning Permission P.A. Ref. LB200106.

The principal concern in respect potential noise emissions from the proposed development is the effect on residential amenity.

The noise environment in the immediate vicinity of the existing quarry site is determined primarily by noise from the L1603 road. Residences along the road are typically experiencing noise levels of 47-53 $dB_{L_{Aeq}}$ during daytime hours due to passing traffic on the L1603.

As an existing quarry with all of its infrastructure in-situ, only a brief construction phase is envisaged. The proposed development will require the stripping, transport and placement of soils and overburden, but only in the area of the extension.

Peripheral screening berms are already in place along the boundaries of the existing permitted quarry, and will be constructed for the northern, eastern and southern boundaries of the extension area. These activities will be short term and will only occur a few times over the course of the quarry development.

The current vegetated site boundaries will be retained in-situ and the existing vegetation and intervening natural topography, coupled with the distance to neighbouring residences will ensure that the development does not impinge on the locality.

Blasting will continue to be used as the method of extraction, to fragment the rock prior to crushing and screening using mobile plant on the quarry floor, and aggregate washing within the site using mobile wash plant.

This is an established well-developed quarry and as such the working face has already been developed/exposed within the central portion of the site. The mobile crushing and screening plant will be located centrally within the existing excavation, relocating periodically as the working face is developed to the east.

Elevated noise levels may be experienced along site boundaries during construction of screening embankments. However, these works will be of a short-term nature and intermittent as the quarry is progressively advanced to its limits.

There will be no changes to the method of extraction and processing as a result of this planning application. Drilling and blasting will continue to be utilised with processing of extracted rock using mobile crushing and screening plant located within the quarry void. This will reduce handling of material and will also have the benefit of screening these activities from outside views and also mitigate impacts associated with noise and dust.

The proximity to residences and the requirement to protect their amenity value has been given due consideration through scale, siting and layout of plant and machinery, preservation of

perimeter hedgerows, provision of screening berms, phasing, direction of working and restoration of the residual quarry faces (particularly the southern face).

The objective of the working scheme is to reduce as far as possible the overall visual impact of the workings (Refer to Figures 3.1 to 3.3). Furthermore, mitigation measures to alleviate any adverse impacts from the development on the environment have been incorporated into the design to ensure that the development can be operated above / within accepted thresholds / standards for this type of development.

The quarry will continue to be worked top-down and phased with development in a easterly direction. The main site activity including mobile processing plant is sited on the quarry floor and as such benefit from screening afforded by the existing quarry faces, topography, perimeter berms and hedgerows.

Sources of noise from the development originate mainly from the operation of extraction equipment, processing plant, from mobile plant and from the movement of vehicles.

The proposed extension area is significantly further removed from noise sensitive locations. Noise levels will reduce further as quarrying is developed eastwards with quarry activity being further removed from Noise Sensitive Locations.

Noise prediction modelling indicates that the combined noise levels at the noise sensitive receptors are between 43 and 53 dB LAeq. The estimated noise levels are based on all machinery working continuously, which can be considered a worst case scenario. The proposed extension area is significantly further removed from noise sensitive locations, such that noise levels will reduce further as quarrying is developed progressively eastwards.

The impact assessment and its context are such that the development is unlikely to result in an adverse effect.

It is considered that any direct impact with respect to noise emissions will be long-term, slight, negative due to continued operation of the quarry.

It is considered that any direct impact with respect to noise emissions will likely be slight, temporary, negative effects during the construction, decommissioning and restoration stages.

Noise resulting from the quarry operations can continue to be kept to below the specified limits by the implementation of good design, effective operation and management and by the implementation of measures which are deemed to be best practice. As such, there is no reason from a noise impact perspective for this development not to proceed.

Blasting will be carried out using industry standard bench blasting techniques. Blasting generates ground vibration measured as peak particle velocity (i.e., PPV) and air overpressure measured as the noise level of "air blast" (i.e., dB (Lin)), both of which will continue to be measured for each blast.

Recent blast monitoring results confirm that Lobinstown Quarry is operating within accepted limits for this type of development i.e., in accordance with Condition Nos. 11 and 12 of Planning Permission P.A. Ref. LB200106. Ground vibration and air overpressure measurements will continue to be undertaken at agreed residences within the area.

Breedon have in place a "Blast Notification Procedure & Blast Monitoring Programme. This procedure will be amended as necessary to take account of specific conditions attached to any grant of planning permission for the quarry development.

It is considered that any likely direct impact with respect to blast emissions will be momentary, not significant, negative due to continued operation of the quarry.

A number of mitigation measures are in place with respect to the continued operation of the quarry in order to minimise noise emissions and blast vibration as much as possible, and to ensure they remain below specified limits. These mitigation measures will ensure that the operation remains within all specified thresholds, and compliant with good industry practice.



11 LANDSCAPE

This section of the EIAR addresses the landscape and visual impacts with respect to an accompanying planning application for the proposed development of Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath. The section provides an overview of the landscape and visual amenity within the vicinity of the proposed development, coupled with an assessment of the potential impact, if any, of the proposed development on the existing environment in respect of these issues.

The landscape and visual baseline study comprised a desktop study with follow-up field survey in the vicinity of the site. Although closely linked, landscape and visual impacts are assessed separately. The desk study was used to determine the nature of the visual amenity of the area along with the approximate visibility of the development, which was determined through topographic analysis of map data. Potential receptors of visual effects, including residents and visitors through the area were also identified.

Ordnance Survey Ireland (OSi) Discovery Series 1:50,000 and OSi 1:5,000 raster mapping and aerial photography were examined. A survey of the existing site was conducted by JSPE on 7th July 2023. The survey was modeled using digital terrain modeling software through which cross sections were produced (Refer to Figure 3.3). LSS Digital Terrain Modelling software has been used to undertake ZTV (Zones of Theoretical Visibility analysis).

Site visits were undertaken on 7th July 2023, 17th December 2023 and 14th January 2024. The purpose of the site visits was to enable familiarisation with the site, establish the general landscape character of the area and identify principal representative viewpoints including residences, prospects, public pathways and roads with views of the site. The actual extent of visibility was also checked in the field due to localised screening effects of buildings, walls, fences, trees, hedgerows and banks.

The visual survey also includes and is supported by a photographic record from the principal and other relevant viewpoints. The photographs were taken at eye level at the point of interest towards the development area using a digital camera. Principal viewpoints were mapped, and these views illustrated by photographs with annotations to describe any important characteristics, and the changes that have arisen as a result of the development.

The quarry has been developed by excavating into ground that is gently rising to the southeast and as a result, the latter screens all views of the workings in an arc from the northwest anti-clockwise to the east. Presently, there are few and mostly intermittent views of the workings along the L1603 and L1604 local road from the north. There are no views of the workings at the quarry entranceway, with most views of the current quarry workings screened by the intervening topography and vegetation, as well as mature peripheral hedgerows and screening berms on the boundaries of the existing permitted quarry. There are limited, middle-distance views along the L1604, which generally amount to views of the upper benches of the south-eastern quarry face.

The visual impact of the quarry from these vantages is considered to be direct, negative, slight to moderate, long term as extraction extends to eastwards.

There are no designated Views and Prospects towards the proposed development at Heronstown with the nearest view No. 24 being views from an unnamed local county road linking Rathkenny Crossroads to Parsonstown (or Mullaghregan) Crossroads to the west of the site. The protected views and prospects from this route, which also forms part of the Táin Trail, is to the west and northwest and not towards the quarry development. The Táin Trail continues on from Parsonstown (or Mullaghregan) Crossroads which is c. 500 m north of the quarry entrance along the L1603 local road to McEntegart's Crossroads and northwards via Hurlstown towards Ardee.

The site at Heronstown lies within LCA 3: North Navan Lowlands. This LCA consists of a large area of agricultural land to the north of Navan contained in the east and west by the Rivers Blackwater and Boyne, respectively, and to the north by a more complex hilly landscape along the north Meath border. Overall, this landscape character area is in a degraded condition. It comprises of a mixture of pasture and arable fields that have been enlarged by loss or removal of traditional boundaries, now often consist of post and wire or timber fences and drainage ditches along road corridors.

The site will continue to be worked from the existing quarry area in an easterly direction in a series of typically 15 m high benches with consideration given to direction of working, phasing of development and progressive restoration of quarry faces (particularly the upper south-eastern quarry face) to reduce the visual impact from views to the north (Refer to EIAR Figures 1.3, 3.1 to 3.3, 11.1 & 11.2 and Plates 11.1 to 11.6).

A well-coordinated restoration process (in consultation with the GSI) will ensure that representative areas of quarry faces are left unvegetated. Parts of the upper benches will also be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face.

Cross sections through the site also illustrate the effectiveness of working the quarry top-down in successive benches, including provision of a temporary berm at 98m OD within the eastern extension area to facilitate progressive restoration of the upper back southern face at the earliest opportunity (Refer to EIAR Figures 3.1 to 3.3).

A feature landscape mound is to be constructed at the site of the existing stockpiling area and planted with suitable native species. This feature mound will help break up views particularly from the north of the upper quarry face within the existing quarry. Perimeter screening berms will also be provided at the boundaries of the proposed extension area (Refer to EIAR Figures 3.1 to 3.3).

The proposed development will enable the operator to fully complete the restoration of both the existing quarry and the proposed development to beneficial after-use. Plans and sections of the design and associated restoration are shown on EIAR Figures 3.1 to 3.3. This will ensure that the upper back face is restored at the earliest opportunity, that the working face is not open to view, and that as the quarry pushes eastwards only the restored upper face will be revealed as quarrying progresses to the limit of extraction.

The site has a long history of quarrying, and these activities have co-existed with other land uses in the area, particularly medium intensity agriculture.

The visual impact with respect to the quarry from these vantages is considered to be direct, negative, slight to moderate, long term.

The visual impact of the restoration is likely to be direct, positive, moderate, permanent effects due to closure with final restoration to beneficial amenity after-use with ongoing establishment of biodiversity.

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12 CULTURAL HERITAGE

Dr. Charles Mount was commissioned by J Sheils Planning & Environmental Ltd, on behalf of Breedon to prepare an assessment that addresses the impacts of the proposed development on the archaeological, architectural and cultural heritage of the application site and surrounding area at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath.

The assessment represents the cultural heritage and archaeological component of the Environmental Impact Assessment Report (EIAR) pertaining to the proposed development of quarry. The assessment consisted of a desktop and fieldwork study. The field inspection was carried out on the 27th of April 2023 to determine the location, extent and significance of any archaeological and architectural sites, to identify any previously unrecorded or suspected sites and to assess impacts on architecture.

The study involved detailed investigation of the archaeological and historical background of the development site, the landholding and the surrounding area extending 1 km from the development boundary. This area was examined using information from the Record of Monuments and Places of County Meath, the Meath County Development Plan, lists of excavations and cartographic and documentary sources.

Examination of the Record of Monuments and Places (RMP) for County Meath indicated that there are no RMPs located within the application area, although there is one RMP within the surrounding 1 km study area. Examination of the Sites and Monuments Record (SMR) indicated that there are no SMRs listed in the application area or the study area.

Examination of the Meath County Development Plan 2021-2027 Record of Protected Structures (RPS) indicated that there are no RPS located within the application area, although there are four in the study area. The closest RPS to the application area is a Milestone (RPS MH012-116) in Parsonstown Demesne townland c. 530 m to the northwest. The four RPS are considered to be too distant to be directly or indirectly impacted by the proposed development.

Examination of the Ordnance Survey 1995, 2000 and 2005 imagery as well as Google Earth imagery from 2010, 2011, 2013, 2018, 2019, 2020, 2021 and 2022 and Bing imagery did not indicate any additional archaeological or cultural heritage sites in the application area.

Examination of the excavations.ie database of Irish excavation reports indicated that there have been no archaeological investigations carried out in the study area.

A field inspection was carried out on the 27th of April 2023 to identify any previously unknown archaeological, architectural or cultural heritage sites in the application area. There is no visible indication of any archaeological, architectural, or cultural heritage material at ground level.

There will be no direct, indirect or cumulative impacts on the archaeological, architectural or cultural heritage resource. As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, negative, residual impacts on the archaeological, architectural or cultural heritage resource are predicted during the operational phase.

It is considered that following full restoration and closure of the site, that there will be no significant, long-term, negative impacts in terms of cultural heritage.

There will be no residual impacts on the archaeological, architectural or cultural heritage resource. In the worst case, the development might have a negative and permanent impact on previously unknown subsurface archaeological deposits or artefacts.

No direct or indirect impacts warranting specific mitigation were identified during the course of the cultural heritage assessment.

The potential negative and permanent impact on unknown subsurface archaeological deposits or artefacts should be mitigated by monitoring of all topsoil-stripping by a qualified archaeologist. Any archaeological material identified during archaeological monitoring should be preserved *in situ* or by record as appropriate under licence from the National Monuments Service.



13 MATERIAL ASSETS

This section of the EIAR provides an overview of the material and amenity resources within the vicinity of the proposed development at Heronstown, Lobinstown, Navan, Co. Meath, coupled with an assessment of the potential impact, if any, of the development on the existing environment in respect of these assets.

Material assets may be defined as resources that are valued and that are intrinsic to specific places, and may be either of human or natural origin, and the value may arise from either economic or cultural reasons.

Based on the nature of the proposed development, the material assets that could potentially be impacted by the quarry, and which were identified for assessment are: (1) non-renewable resources (minerals, soils); (2) settlement - residential development; (3) land use; (4) transport infrastructure; (5) built services; (6) waste management infrastructure (7) cultural assets - archaeological, historic and architectural heritage; and (8) landscape and natural heritage.

The study involved a virtual, but comprehensive, aerial examination of the study area and surrounding region using Google Maps and available OSI maps to identify the material assets. All assets identified during this survey were interrogated, described, and evaluated in terms of scale and significance prior to inclusion in the study.

The proposed development arises from the continued demand of human beings to have their buildings, roads and structures, modified and improved. The supply of construction materials is therefore essential to material progress of human society and their built environment.

The location of Heronstown in northeastern Meath and within 25 km of numerous towns and two county town (i.e., Navan and Dundalk, albeit the outskirts of the latter), renders the proposed quarry development well positioned to serve this vibrant construction market. The location of the quarry with reasonable access to Navan, Dundalk and Drogheda, three of the four largest towns in the State, should ensure access to a strong, growing market for good quality aggregate.

If the development did not proceed, the aggregate resource would continue to be worked within the confines of what is permitted under the current planning permission (P.A. Ref. LB200106) whilst the remainder of the proven mineral resource would remain unused in situ, and the local supply of quality aggregates would be more restricted. Under the 'Do Nothing' scenario, all quarrying and ancillary activities would be completed under P.A. Ref. LB200106, and operations would cease thereafter. The site would then be restored as per the requirements of the existing planning permission (P.A. Ref. LB200106).

As the quarry area is currently active, the absence of the proposed development would have significant impact on the material assets within the site, resulting in an identified and workable aggregate resource being left unworked.

The absence of the proposed quarry would have a likely, direct, neutral effect on the material assets in the area beyond the site.

The quarry will enable the production of quality aggregates and concrete products for the Meath, Louth and surrounding region and thus help sustain economic development in the region. It is expected that the potential negative impacts on material assets of the area arising from the quarry, will relate primarily to nuisance from noise, dust and traffic.

It is considered that following restoration and the mitigation measures incorporated in the design that there will be no significant adverse effects in terms of material assets, other than the inevitable but necessary loss of the mineral resource. Restoration of the site to beneficial after-use, most probably as a wildlife amenity, will result in a likely, direct, positive, slight, permanent effect on the material assets of the area.

There are several quarries in the wider area, including O'Reilly Concrete Lobinstown Quarry c. 2.5 km to the west (currently in final stages of restoration), while the rest are > 5 km distant. The only significant industrial activity within 5 km of the site is the industrial/warehouse estate in Grangegeeth, c. 4.5 km to the southeast, while Meade Farm Group's Packing, Storage and Distribution facility is a substantial commercial activity c. 1.25 km northeast of the site at Braystown. There are also other developments nearby, including solar farms, both existing and proposed. It is our assessment that there will be no significant cumulative impacts with respect to material assets resulting from the proposed development, in combination with other local existing developments, quarries, projects and plans.

As a result of the proposed mitigation and enhancement measures incorporated in the design, there will be no significant, adverse residual impacts on the material assets of the area during the operational phase, other than the loss of mineral resources due to extraction. It is also considered that following full restoration and closure of the site, there will be no significant, long-term, adverse impacts in terms of the material assets.

The applicant has established an environmental monitoring programme for the quarry site, which allows for on-going monitoring of environmental emissions (e.g., noise, dust, blasting and water) from the site, thereby assisting in ensuring compliance with requirements or regulations. The results of this monitoring will be made available to Meath County Council on a regular basis. The monitoring programme is sufficiently robust to ensure compliance with any conditions attached to a decision to grant planning permission.

This quarry is located in a rural area of low population density. The boundaries of the quarry are enclosed by a combination of berms, hedgerows and fencing, which is designed to blend into the surrounding landscape. There will be ongoing monitoring to ensure that site boundaries are maintained in a proper manner, and these include thickening of hedgerows, fencing of the landholding, provision and maintenance of quarry signage.

The development will be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by conditions imposed by the relevant regulatory authority. The development does not have a significant impact on lands, property or amenity within the area and hence there will be no significant effect on material assets, except the loss of the mineral resource that has been extracted.

14 ROADS & TRAFFIC

This section of the EIAR addresses the issues related to roads & traffic within the vicinity of the proposed development at Lobinstown Quarry, Heronstown, Lobinstown, Navan, Co. Meath, coupled with an assessment of the potential traffic impacts, if any, of the development on the existing road network adjacent to the proposed development.

The objective of this chapter is to examine the traffic implications associated with the proposed development in terms of its integration with existing traffic in the area. The chapter determines and quantifies the extent of additional trips generated by the development, and the impact on operational performance of such trips on the local road network.

The proposed development will consist of the continuance of operation of the existing permitted quarry and associated infrastructure (ABP Ref. 17.QD.0017; P.A. Ref. LB200106 & ABP Ref. 309109-21), deepening of the quarry extraction area to 35 m OD, a lateral extension over an area of c. 4.8 ha to a depth of 35 m OD, and restoration of the site to natural habitat after uses, within an overall application area of c. 18.5 hectares. An extraction capacity of up to 300,000 tonnes per annum (tpa) for a period of 20 years is sought.

This study has been prepared by Alan O'Reilly BA BAI MSc CEng MIEI RSACert. Alan is a Chartered Engineer with PMCE, and has almost 10 years' experience in the area of Traffic and Transport Engineering including Road Safety Audits, Traffic and Transport Assessments, Collision Investigation and Road Design.

The existing road network around the quarry comprises rural local roads. The site is situated c. 2 km southeast of Lobinstown Village with access to the N2, N51 and N52 National Roads provided via the L1603, which runs adjacent to the quarry site.

The existing quarry is located with direct access onto the L1603 local road, which is c. 14 km in length and runs in a north-south direction, extending from the N52 in the north to the N51, c. 1 km west of Slane, in the south. The L1603 is known as the Slane Road south of McEntaggart's Crossroads junction and in the vicinity of the site access, and is a two-way single carriageway road c. 6 m wide. There are no hard shoulders or footpaths provided on either side of the road in the vicinity of the site access.

Visibility to the north (right) and south (left) from the quarry access is adequate for the design speed on the Slane Road, with sightlines in excess of 160 m being available in each direction. Hedges and trees near the entrance will be maintained regularly in order to ensure that the sightlines at the access are kept clear at all times.

Given the size of the proposed development, and the number of staff (4), the existing parking provision within the site is considered to be adequate to accommodate the expected demand. Provision will be made to facilitate entry of HGVs into the site to queue safely prior to gate opening times. This will ensure that the formation of a queue of HGVs awaiting entry to the quarry prior to opening does not occur along the L1603.

Traffic Counts (12-hour classified junction turning counts) were carried out on Tuesday the 14th of March 2023 at three junctions, namely McEntaggart's Crossroads, Quarry Access on the L1603, and Sally Gardens Crossroads. Each of the traffic surveys were carried out between 7:00 am and 7:00 pm, which includes the peak hours on the adjacent road network.

The morning and evening peak hours were established as follows:

- McEntaggart's Crossroads Junction – 08:15–09:15 (AM Peak) and 17:00–18:00 (PM Peak)
- Quarry Access Junction – 07:30–08:30 (AM Peak) and 16:45–17:45 (PM Peak)
- Sally Gardens Crossroads Junction – 07:30–08:30 (AM Peak) and 16:45–17:45 (PM Peak)

The count data for each site have been converted to Annual Average Daily Traffic (AADT) values in order to determine the percentage increase in traffic volumes on the road network as a result of the trips generated by the proposed development.

The total daily trips associated with the quarry operation accounts for 132 movements daily, 114 of which relate to HGVs (86.4%). There will be 86 daily truck movements associated with the export of materials from the quarry, 28 daily truck movements associated with the ready-mix concrete batching plant, 8 staff trips daily, and 10 miscellaneous trips. The development traffic does not exceed 10% of the background traffic at any of the above three junctions.

The TRICS database was used to derive the forecast arrivals/departures distribution at the quarry. The pattern of arrivals/departures is consistent with a short turnaround within the site, likely to be less than 1 hour. The distribution of the development traffic on the adjacent road network is based on an assessment of the existing traffic flows at the site access derived from the traffic count data.

The TII Publications document reference DN-GEO-03031 advises that the capacity of a Type 3 Single Carriageway Road with 6 m cross-section, such as the Slane Road, is 5,000 AADT for a Level of Service (LOS) D. The combined background and site traffic volumes for each of the assessment 2024, 2029, 2039 and 2044 is less than the LOS D capacity of 5,000 AADT, and thus it is considered that the Slane Road will operate within capacity for each of the assessment years. Results of the junction capacity analysis indicate that the site access junction will continue to operate within capacity for each of the assessment years up to 2044.

Under the 'Do Nothing' scenario, all existing quarrying and ancillary activities would continue for the duration of the existing planning permission (P.A. Ref. LB200106) and the site would continue to have a negligible impact on the surrounding road network. The site would be restored as per the requirements of the existing planning permission. There would be a slight, temporary impact from the decommissioning and restoration phases. If the continuing use of the quarry did not proceed, the local supply of good quality aggregates would be more restricted, resulting in the need to transport aggregates from more remote locations to meet demand in the region.

Increasing the extraction rate by an additional 100,000 tonnes per annum would result in a consequent increase in traffic volumes of the order of 15 vehicles a day, all of which would be HGVs. It would be most pronounced along the Slane Road from the site entrance to the Sally Gardens crossroads junction to the southeast.

The capacity of the Slane Road at the quarry access junction is 5,000 AADT and the existing and proposed volume on the Slane Road falls within this envelope of available capacity, with spare capacity available. Thus, no additional access requirements will be needed for the proposed development.

The traffic impact of the quarry site on the Slane Road will result in an increase in traffic on the network, but this increase is imperceptible. The projected increase in traffic due to the quarry site is between 3.6% and 6.6% of the total traffic on the Slane Road. The existing capacity of the adjacent road network can accommodate these minor increases.

The traffic impact on the Slane Road/Quarry Access junction will result in a slight increase in vehicles entering and exiting the quarry during the day. The increase in traffic at the Quarry Access Junction will result in a slight increase in impedance at the junction with a slight increase in delay of the order of c. 0.5 seconds. This is considered to have an imperceptible impact on the operation of the junction, which is forecast to have spare capacity for the lifetime of the development.

The volume of traffic generated by the proposed development will result in an increase in the total daily vehicle flow to 66 vehicles, resulting in 132 daily trips. It has been shown that this increase can be accommodated by the local road network, such that any indirect impacts will be imperceptible to not significant. There will also be no cumulative impacts resulting from the proposed development during the operational, or decommissioning phases of the proposed development.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, adverse residual impacts are predicted in terms of roads and traffic during the operational phase of the development. It is considered that following full restoration and closure of the site that there will also be no significant, long-term, adverse impacts on the local road network.

The Worst-Case Impact of the proposed development could be the accelerated deterioration of the pavement along the Slane Road due to increased HGV traffic, particularly at the site entrance. This may require maintenance works during the life of the development. The mechanism for dealing with this long-term maintenance issue can be incorporated in a condition of planning.

As the proposed development will generate increased traffic movements, a number of standard mitigation measures will be put in place to reduce the impacts of quarry traffic on the local road network.

15 INTERACTIONS

The interactions of the impacts and mitigation measures between one topic and another, where applicable, are discussed under the respective environmental factor in EIAR sections 4 to 14, rather than in EIAR Section 15 Interactions. This section draws attention to significant interactions and interdependencies in the existing environment, but the actual interactions and their significance are dealt with in the relevant chapter.

The general practice is to include a matrix to show where interactions between effects on different environmental factors have been addressed. This is usually done using the actual headings used in the EIAR for each factor. The following matrix has been generated to show where possible interactions (top of matrix) may result between the various environmental factors including brief details (bottom of matrix). For details of any interactions refer to the relevant sections of the EIAR.

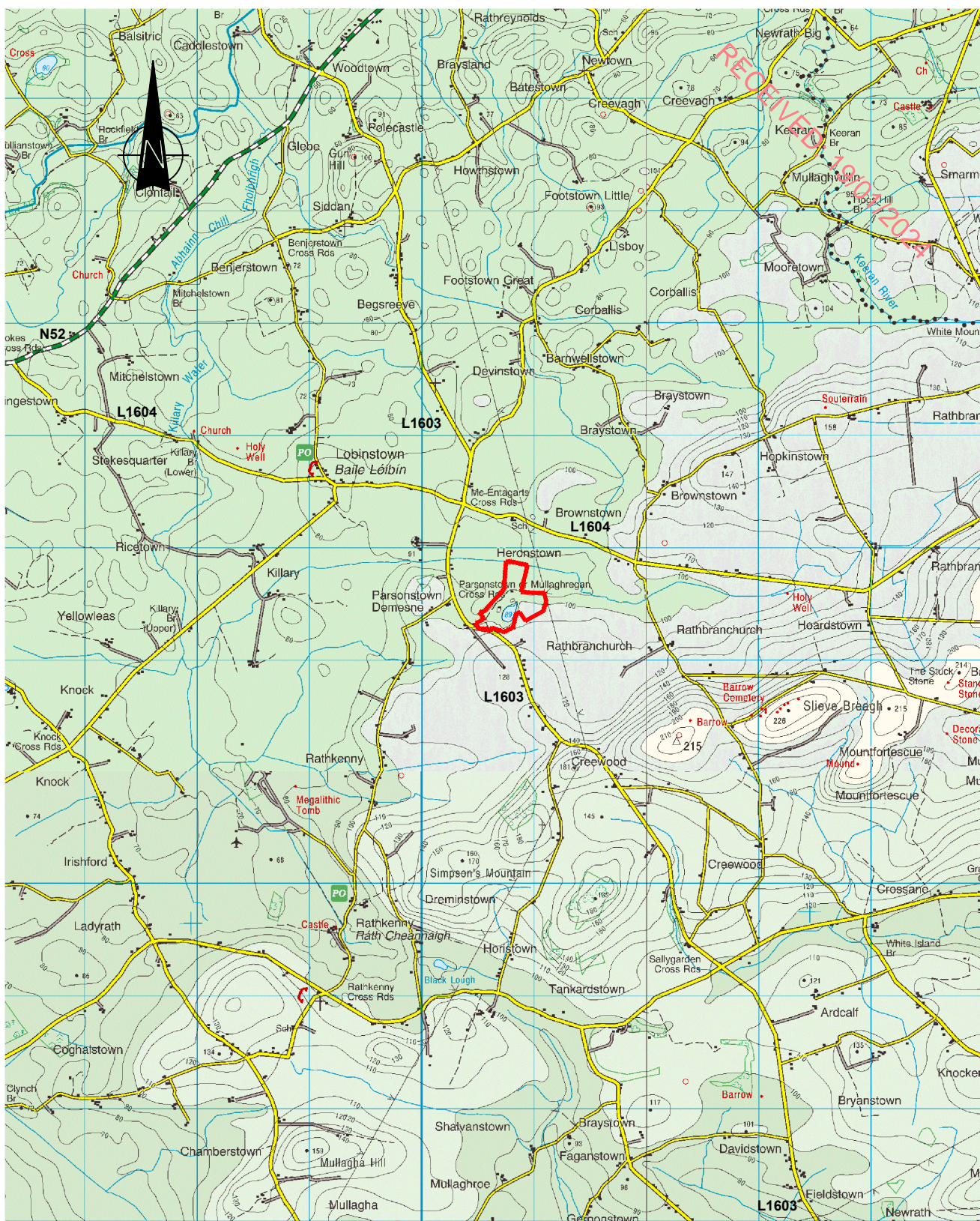
Table 15 Interactions Matrix

	X No Interaction		● Weak Interaction	● Some Interaction	● Strong Interaction						
Factors (Interaction)	4 Population & Human Health	5 Biodiversity	6 Land, Soils & Geology	7 Water	8 Climate	9 Air Quality	10 Noise & Vibration	11 Landscape	12 Cultural Heritage	13 Material Assets	14 Traffic
4 Population & Human Health		●	●	●	●	●	●	●	X	●	●
5 Biodiversity	The loss of improved grassland habitat will not result in a significant effect on biodiversity. The predicted direct effect on Woodland is negative, 'not significant' and permanent. The predicted direct effect on Hedgerow is negative, slight and permanent.		●	●	X	●	●	●	X	●	X
6 Land, Soils & Geology	The removal of mineral resources represents a moderate, long-term, negative impact on the bedrock geology, albeit an inevitable outcome of extractive operations. A well-coordinated restoration process (in consultation with the GSI; Refer to EIAR Table 6.7) will ensure that representative areas of quarry faces are left unvegetated.	The loss of improved grassland habitat will not result in a significant effect on biodiversity. The predicted direct effect on Woodland is negative, 'not significant' and permanent. The predicted direct effect on Hedgerow is negative, slight and permanent.		●	X	●	X	●	X	●	X
7 Water	The site's interaction with the Killary_Water_010 surface water is regulated and controlled by the site's Section 4 Discharge Licence, whose ELVs ensure compliance with the WFD and Water Pollution Act. Hydrology and hydrogeology interact with flora and fauna. The location of the proposed activity is not within any features designated with conservation objectives. There is no potential for interaction with Designated sites.		Unlikely, direct, constantly, long-term (Reversible) effects on third party wells due to dewatering. Groundwater quality at the site complies with the EC Communities Environmental Objectives (Groundwater) Reg's 2010 (as amended) and discharge of these waters will not have a detrimental impact on receiving waters.		●	X	X	X	X	●	X
8 Climate	GHG emissions from plant, machinery and HGVs will be of the order of 0.0026 % of Ireland's national carbon budget, which is a long-term, imperceptible impact in terms of Ireland's contribution to climate change.	X	X	Hydraulic modelling of the surface water system has demonstrated that the local area's surface water network can accommodate the envisaged dewatering amounts, in combination with flood flows and allowances for climate change.		●	X	X	X	X	●
9 Air Quality	Likely, direct, negative, brief, not significant, long -term effects due to general activities and site traffic on access roads in dry weather. Mitigation measures will be implemented to minimise any impacts as much as practical to ensure the operation of the quarry will not result in any significant impact on residences or local amenities.			X	GHG emissions from plant, machinery and HGVs will be of the order of 0.0026 % of Ireland's national carbon budget which is a long-term, imperceptible impact in terms of Ireland's contribution to climate change		X	●	X	X	●
10 Noise & Vibration	The existing quarry development is the "worse-case scenario" given that the proposed extension area is further removed from noise sensitive locations. Any impact with respect to noise emissions will be long-term, slight, negative due to the continued operation of the quarry.	There will be no cutting of vegetation during the bird nesting season and no direct effects on nesting birds.	X	X	X	X		X	X	●	●
11 Landscape	Due to intervening topography, screening, and vegetation, views towards the quarry site are generally limited to intermittent middle distance views from the L1604 local road to the north. Consideration has been given to screening of the development, phasing and direction of working and restoration of the upper quarry face with respect to receptors so as to reduce the visual impact. The visual impact with respect to the quarry from these vantages is considered to be direct, negative, slight to moderate, long term.	The loss of improved grassland habitat will not result in a significant effect on biodiversity. The predicted direct effect on Woodland is negative, 'not significant' and permanent. The predicted direct effect on Hedgerow is negative, slight and permanent. Continuance of the quarry operations has the benefit of enabling an appropriate final restoration of the quarry, which will allow full reinstatement of the land to beneficial after-use as a wildlife amenity.	A well-coordinated restoration process (in consultation with the GSI; Refer to EIAR Table 6.7) will ensure that representative areas of quarry faces are left unvegetated.	X	X	Dust (Visual Impacts): Likely, direct, negative, brief, slight, long -term effects due to general activities and site traffic on access roads in dry weather. This impact will be minimised by the mitigation measures described to minimise dust in Section 9.6.	X		X	●	X
12 Cultural Heritage	X	X	X	X	X	X	X	X		X	X
13 Material Assets	Likely, direct, negative, moderate permanent effects due to removal of natural resources due to extraction. The absence of the proposed development would have significant impact on the material assets within the site, resulting in an identified and workable aggregate resource being left unworked. The absence of the proposed quarry would have a likely, direct, neutral effect on the material assets in the area beyond the site.	Continuance of the quarry operations has the benefit of enabling an appropriate final restoration of the quarry, which will allow full reinstatement of the land to beneficial after-use as a wildlife amenity.	Likely, direct, negative, moderate permanent effects due to removal of natural resources due to extraction. The absence of the proposed development would have significant impact on the material assets within the site, resulting in an identified and workable aggregate resource being left unworked. The absence of the proposed quarry would have a likely, direct, neutral effect on the material assets in the area beyond the site.	Unlikely, direct, constantly, Long-term (Reversible) effects on third party wells due to dewatering. Groundwater quality at the site complies with the EC Communities Environmental Objectives (Groundwater) Reg's 2010 (as amended) and discharge of these waters will not have a detrimental impact on receiving waters.	X	X	The existing quarry development is the "worse-case scenario" given that the proposed extension area is further removed from noise sensitive locations. Any impact with respect to noise emissions will be long-term, slight, negative due to the continued operation of the quarry.	Due to intervening topography, screening, and vegetation, views towards the quarry site are generally limited to intermittent middle distance views from the L1604 local road to the north. Consideration has been given to screening of the development, phasing and direction of working and restoration of the upper quarry face with respect to receptors so as to reduce the visual impact. The visual impact with respect to the quarry from these vantages is considered to be direct, negative, slight to moderate, long term.	X		●
14 Traffic	The traffic generated by the quarry site on the Slane Road will result in an increase in traffic on the network, but the impact of this increase is imperceptible.	X	X	X	GHG emissions from plant, machinery and HGVs will be of the order of 0.0026 % of Ireland's national carbon budget which is a long-term, imperceptible impact in terms	Likely, direct, negative, imperceptible., long - term, effects due to plant and vehicle exhausts.	Likely, direct, negative, slight, long-term effects due to quarrying and HGV traffic.	X	X	"Worst-Case" Impact of the development could be accelerated deterioration of the pavement along Slane Road due to increased HGV traffic, This may require maintenance works subject to agreement with MCC.	

16 FIGURES

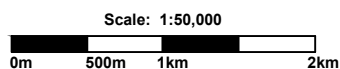
RECEIVED: 19/01/2024





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Extract from 1:50,000 OSI Discovery Series Map No.s 35 & 42



Legend

- Application Area
- L1603 Local County Roads



JSPE

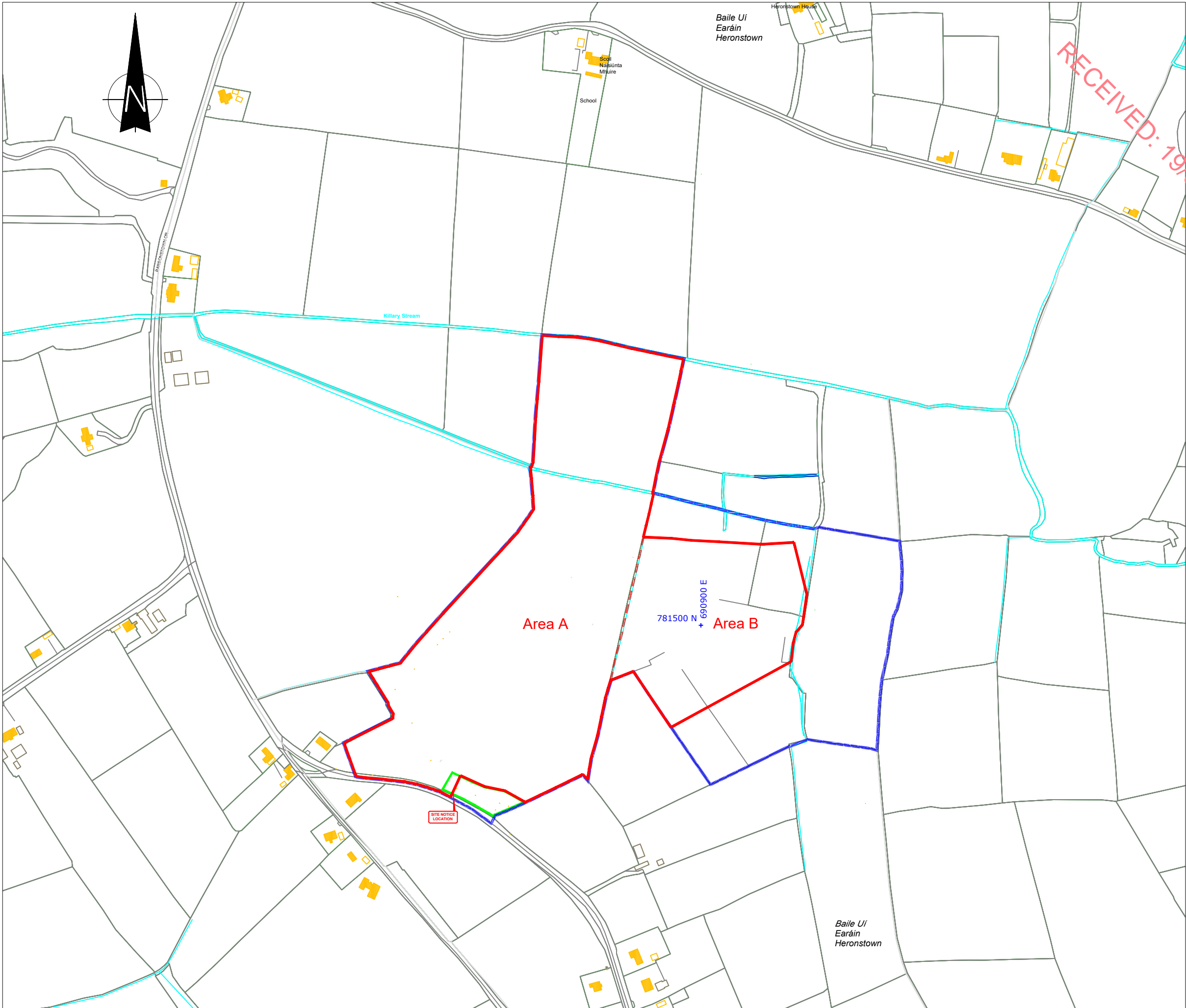
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J SHEILS PLANNING & ENVIRONMENTAL LTD

Site Location Map

Heronstown, Lobinstown, Navan, Co. Meath

Author: John Sheils	Job No. JSPE 301
Date: 06/01/24	Ref No. Figure 1.1

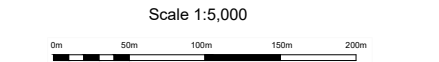


Legend

- Land Holding (c.24.8 ha)
- Total Application Area (c.18.5 ha)
Area A (c.13.7 ha) - Continuance of Quarrying
Area B (c.4.8 ha) - Quarry Extension
- Planning Permission P.Reg. No. 23/917 (0.29 ha)
New Office Building
- Irish Transverse Mercator (ITM)
geographic coordinates
- Residence

- NOTES:
- All Dimensions in metres (m)
 - Elevation Levels - metres Above Ordnance Datum (mAOD)
 - For Planning Purposes Only. Do not scale for setting out.

Description:
Digital Landscape Model (DLM)
Publisher / Source:
Ordnance Survey Ireland (OSi)
Projection= IRENET95_Irish_Transverse_Mercator
Centre Point Coordinates:
X,Y= 690784.0,781532.5
Reference Index:
Map Series | Map Sheets
1:5,000 | 2189
1:5,000 | 2188
1:2,500 | 2188-A
Data Extraction Date:
Date= 19-Apr-2023



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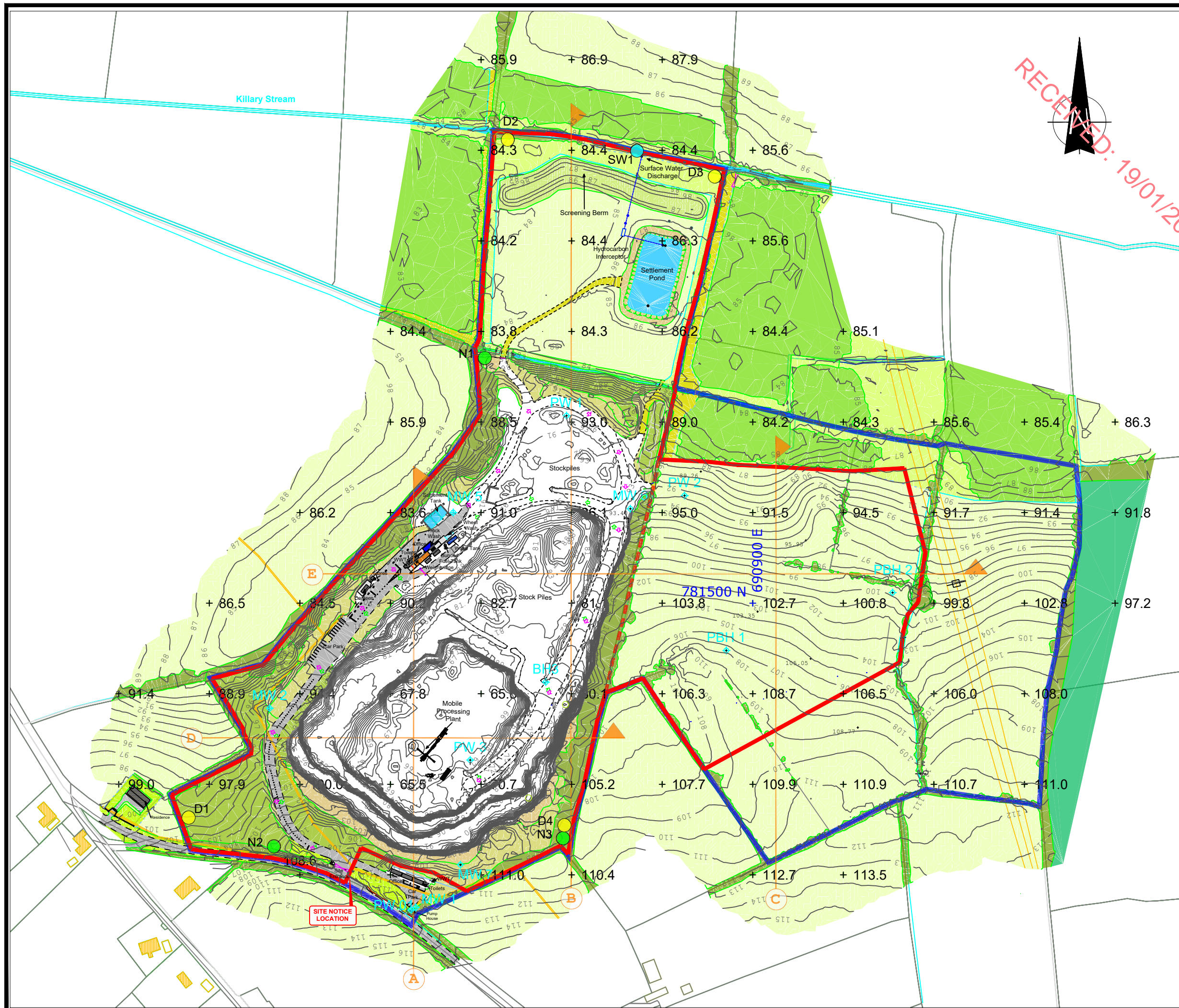


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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Breedon Ireland	
DRAWING	Application Area Map	
LOCATION	Heronstown, Lobinstown, Navan, Co. Meath	

Drawn by John Sheils	Scale 1: 5,000	
Checked by John Sheils	Job No. JSPE 301	
Date 06/01/24	Figure No. Figure 1.2	Rev. 0



Legend

- Land Holding (c.24.8 ha)
- Application Area (c.18.5 ha)
- Irish Transverse Mercator (ITM) geographic coordinates
- Residence
- Active Quarries & Mines (ED4)
- Improved Grassland (GA1)
- Scrub (WS1)
- Artificial Ponds (FL8)
- Hedgerows (WL1)
- Water Courses (FW1)
- Berms
- Buildings/Structures
- Soil Stripping
- Hard Standing/Asphalt
- Track
- Recolonisation of banks
- Telephone Lines
- 11 kV Power Lines
- 220 kV Pylon/Power Lines
- Forestry (Mature)
- New Forestry

- Fence
- Gate
- Contours (mAOD)
- D1 Dust Monitoring Points
- N1 Noise Monitoring Points
- SW1 Surface Water Monitoring Points
- PW Groundwater Monitoring Points & Wells
- MW
- Sections (Refer to Drawing D06 & Figure 3.3)
- Traffic In
- Traffic Out
- +91.7 Spot Levels (mAOD)

Description:
Digital Landscape Model (DLM)
Publisher / Source:
Ordnance Survey Ireland (OSI)
Preparation: 08/07/20, June, Transverse, Mercator
Centre Point Coordinates:
X: 400000.0, Y: 600000.0
Reference Index:
Map Series / Map Sheet:
1:5000 / 2388
1:5000 / 2388
1:5000 / 2388-A
Data Extraction Date:
Date: 19 April 2023

NOTES:
1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (07/07/22)

Scale 1:3,000

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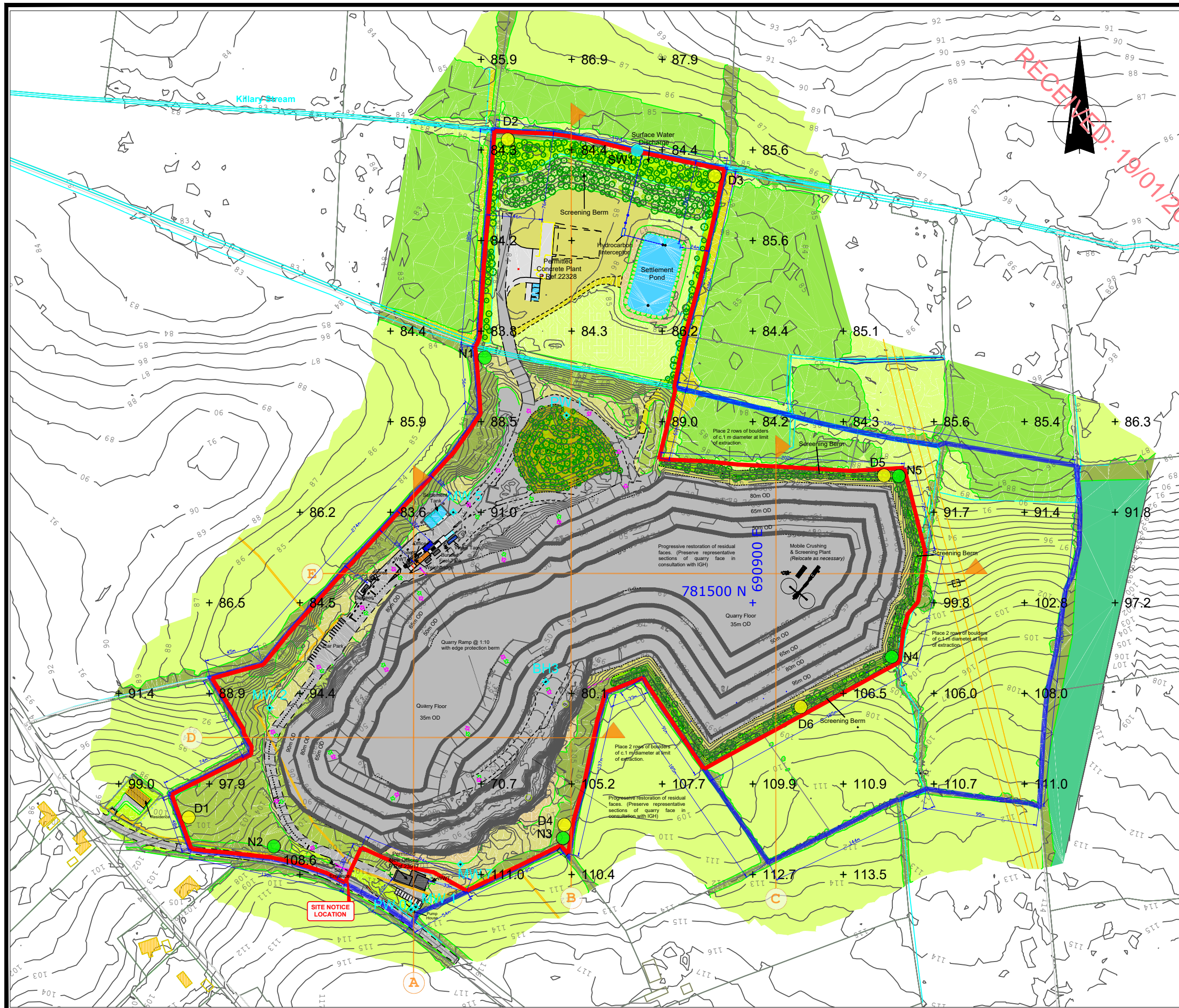
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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Breedon Ireland
DRAWING	Site Plan - Existing
LOCATION	Heronstown, Lobinstown, Navan, Co. Meath

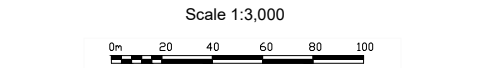
Drawn by	John Sheils	Scale	1: 3,000
Checked by	John Sheils	Job No.	JSPE 301
Date	11/12/23	Figure No.	Figure 1.3
		Rev.	00



Legend

- Land Holding (c.24.8 ha)
- Application Area (c.18.5 ha)
- Irish Transverse Mercator (ITM) geographic coordinates
- Residence
- Active Quarries & Mines (ED4)
- Improved Grassland (GA1)
- Scrub (WS1)
- Artificial Ponds (FL8)
- Hedgerows (WL1)
- Water Courses (FW1)
- Berms
- Buildings/Structures
- Soil Stripping
- Hard Standing/Asphalt
- Track
- Recolonisation of banks
- Telephone Lines
- 11 kV Power Lines
- 220 kV Pylon/Power Lines
- Forestry (Mature)
- New Forestry
- Fence
- Gate
- Contours (mAOD)
- D1
- N1
- SW1
- PW
- MW
- Sections (Refer to Drawing D06 & Figure 3.3)
- Distance of Structures from Boundaries of Site
- Traffic In
- Traffic Out
- +91.7 Spot Levels (mAOD)

NOTES:
1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point cloud survey (07/07/23)



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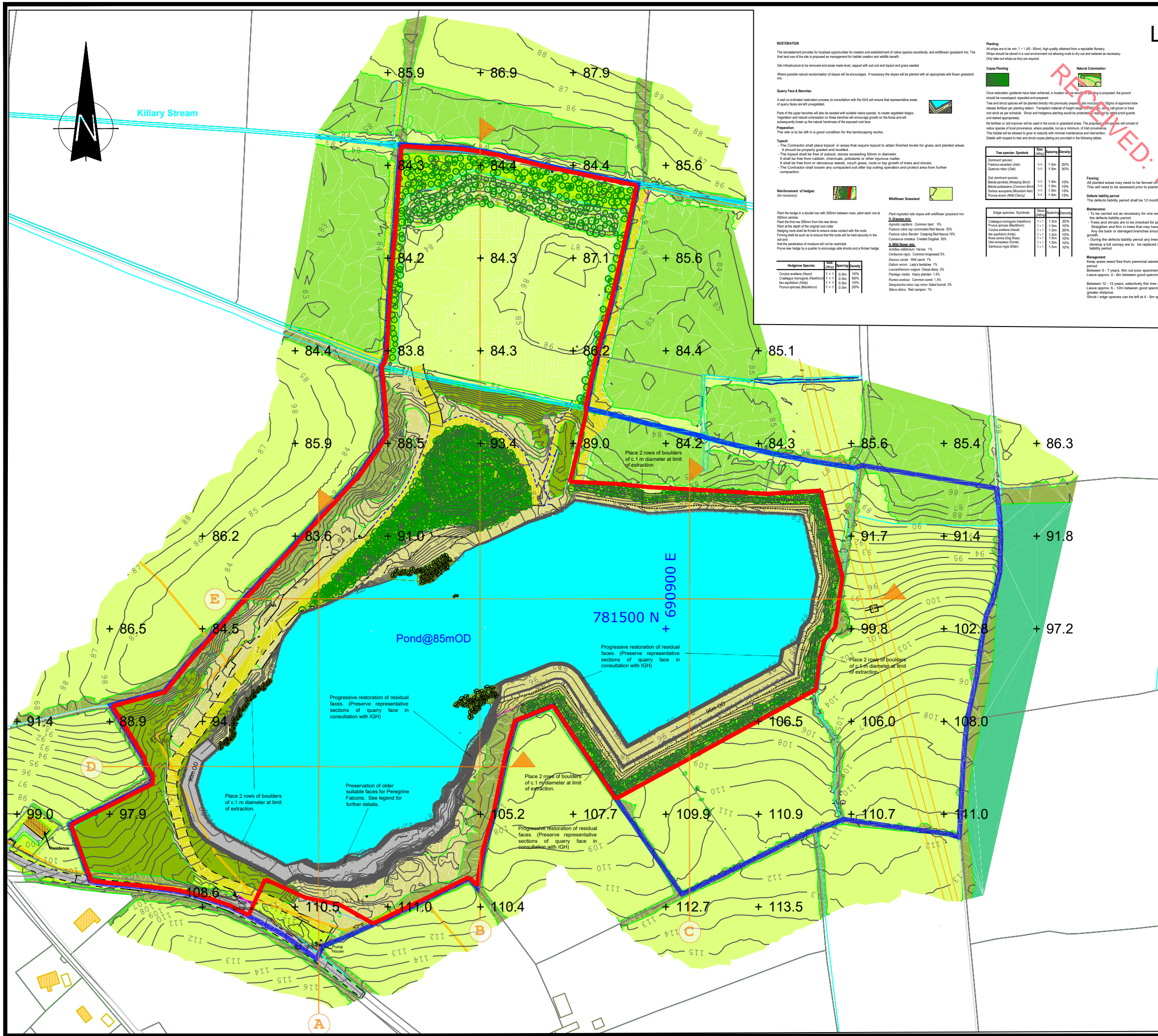


JSPE
J SHEILS PLANNING & ENVIRONMENTAL LTD

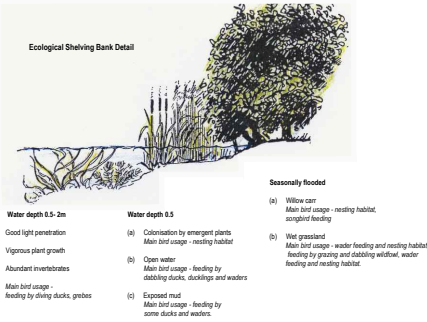
31 Athlumney Castle,
Navan, Co Meath
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Web: jspe.ie

CLIENT	Breedon Ireland
DRAWING	Site Plan - Proposed
LOCATION	Heronstown, Lobinstown, Navan, Co. Meath

Drawn by	John Sheils	Scale	1: 3,000
Checked by	John Sheils	Job No.	JSPE 301
Date	11/12/23	Figure No.	Figure 3.1
		Rev.	00



Legend



Planting of Pond Areas:		
Marginal planting in Quarry Lake	Spacing	Density
<i>Phragmites australis</i> (Common reed)	1000m blocks, plant @ 1m centres	n/a
<i>Typha latifolia</i> (Broadleaf)	1000m blocks, plant @ 1m centres	n/a
<i>Iris pseudacorus</i> (Yellow flag)	1000m blocks	20%
<i>Sagittaria arifolia</i> (Common arrowhead)	2 nos. plants per metre	15%
<i>Sagittaria arifolia</i> (Common arrowhead)	Plant in groups of 10	15%
<i>Sagittaria arifolia</i> (Common arrowhead)	groups of 10	n/a
<i>Sagittaria arifolia</i> (Common arrowhead)	2 nos. groups of 10	n/a

Tree adjacent to Ponds	Size	Spacing	Density
<i>Alnus glutinosa</i> (Alder)	1 + 1	Random	30%
<i>Betula pendula</i> (Weeping Birch)	1 + 1	Random	50%
<i>Salix alba</i> (Willow)	1 + 1	Random	20%

- Perennials**
- Preservation of older suitable trees for the perennials throughout the construction, operation and restoration phases.
 - Restriction of access above the nest site using appropriate barriers.
 - Confirming lesion during final restoration phase, with local rapier footwork, NPWS and the Irish Raptor Study Group to maintain links with wider stakeholders and assist data to annual rapier databases.
 - Maintain other significant bird habitats particularly scrub.
 - Refer to Lobbstown Quarry, Co. Meath. Peregrine Falcon Survey 2023 (Confidential) for further details with respect to mitigation measures.

Scale 1:3,000

0m 20 40 60 80 100

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J SHELLS PLANNING & ENVIRONMENTAL LTD

CLIENT	Breedon Ireland
DRAWING	Landscaping & Restoration Plan
LOCATION	Heronstown, Lobinstown, Navan, Co. Meath

Drawn by	John Sheils	Scale	1: 3,000
Checked by	John Sheils	Job No.	JSPE 301
Date	11/12/23	Figure No.	Figure 3.2
		Rev.	00

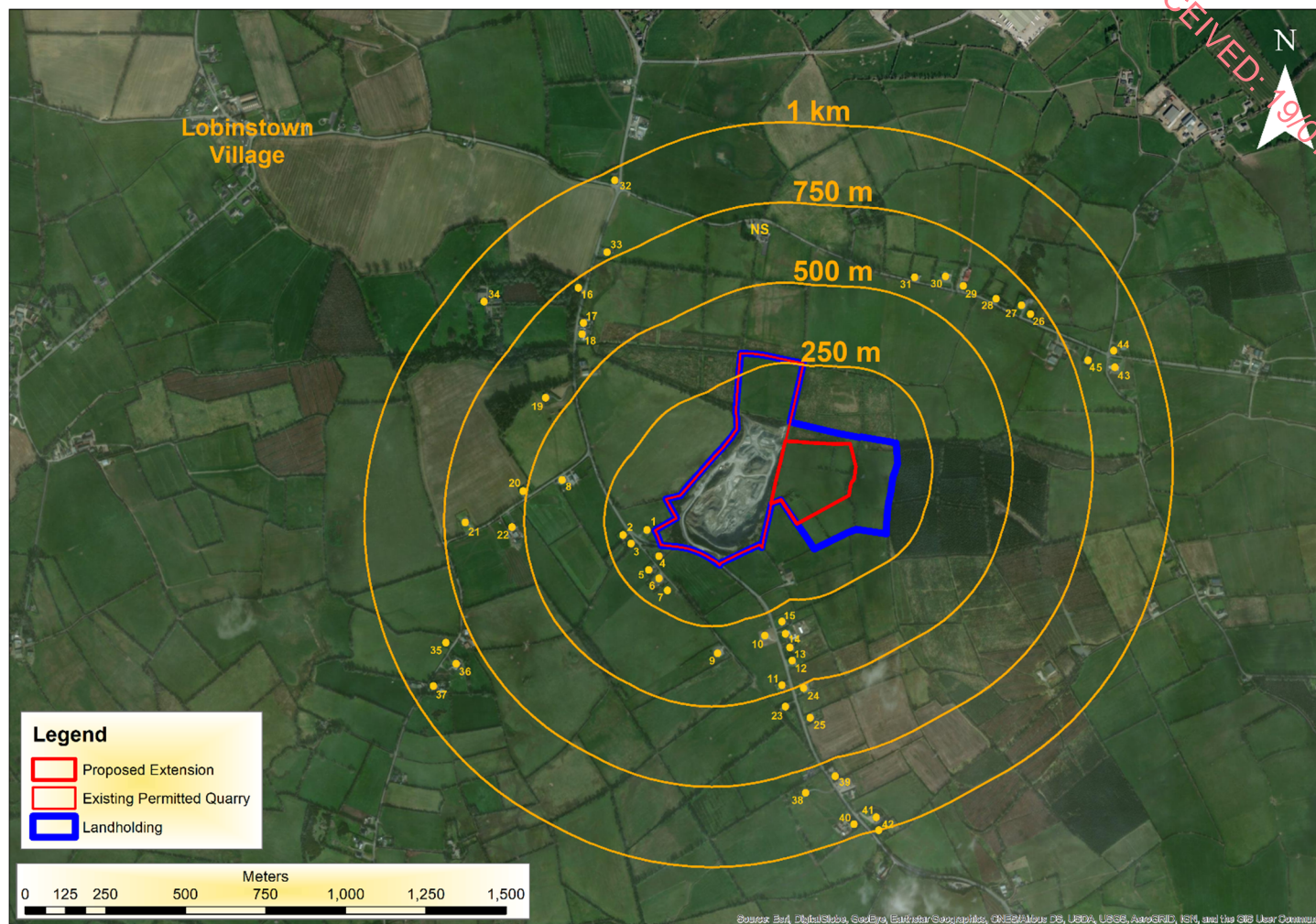


Figure 4.1 Aerial Image of Area around Lobinstown Quarry.

The landholding is outlined in blue, existing permitted quarry in red (thin line) and proposed extension in red (thick line). Yellow dots denote residences within 250 m (n = 7), 500 m (n = 15), 750 m (n = 31) and 1 km (n = 45) limits. Note location of Lobinstown Village at upper left. Rendered in ArcGIS 10.3.1 using aerial image from ESRI's world imagery.