CHAPTER 15

MATERIAL ASSETS

QUARRY CONSULTING

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CHAPTER 15: Material Assets

Introduction

15.1 The purpose of this chapter is to evaluate the potential impact of the proposed development on Material Assets.

15.2 Material assets of natural origin and the existing quality of natural resources such as land, soil & geology, water, air and landscape are discussed in depth in the Chapters 7, 8, 10 and 12 of the EIAR. Material assets of human origin such as roads and traffic, archaeological /architectural heritage are discussed in Chapters 13, and 14.

15.3 The material assets of human origin that are included in this assessment comprise:

- Land Use.
- Property.
- Transport Network.
- Recreational Facilities & Amenities.
- Public Utilities.

15.4 The material assets of natural origin that are included in this assessment comprise:

- Land Resources.
- Geological Resources.
- Natural Resources.
- Raw Materials & Waste.

15.5 The Chapter considers the effects on material assets and not the people using the assets. People along with issues and impacts are discussed in Chapter 5 (Population and Human Health).

Professional Competence

15.6 Quarry Consulting undertook the impact assessment presented in this chapter on behalf of Mc Graths Limestone Works Ltd. The lead consultant for the EIAR study was Peter Kinghan (Chartered Mineral Surveyor), Post Graduate Diploma in Environmental Engineering. This chapter and the associated assessment has been completed by Irene Curran who is a chartered town planning consultant (MRTPI) with over 20 years' experience. Irene's qualifications are as follows:

- BSc Environmental Science (Honours) – University of Limerick – 1997.
- MSc Town and Country Planning (Distinction) – Queens University Belfast – 2000.
- Dip Field Ecology - University College Cork – 2014.

Legislative and Policy Context

Relevant Legislation

15.7 The European Union Directive 85/337/EC required that certain private and public projects which are likely to have significant resultant environmental impacts are subject to a formalised Environmental Impact Assessment prior to their consent. This Directive was subsequently

amended by the EU through three amendments: 97/11/EC, 2003/4/EC and 2009/31/EC and then codified in Directive 2011/92/EU. Subsequently, on 16 April 2014, Directive 2011/92/EU was amended by Directive 2014/52/EU. Directive 2011/92/EU, as amended by Directive 2014/52/EU, will be hereafter referred to as the 'EIA Directive'.

15.8 Article 3 of the EIA Directive sets out the factors that should be identified, described and assessed in terms of direct and indirect significant effects of a project. Material assets are included as one of these factors. Annex IV of the EIA Directive sets down the minimum information to be supplied in an EIAR and also makes specific reference to material assets as a factor that should be described if it is likely to be significantly affected by the project.

15.9 The 2014/52/EU Directive was transposed into Irish law through European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018) which amended the Planning and Development Act, 2000, and the Planning and Development Regulations, 2001.

Relevant Policy & Guidelines

15.10 There is no specific Irish guidance for the assessment of material assets in the context of EIA. The 2015 EPA Advice Notes for Preparing Environmental Impact Statements defined Material Assets as "resources that are valued and that are intrinsic to specific places". The EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022), discuss material assets as follows:

> "*In Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.*"

15.11 The EPA Guidelines (2022) lists three broad headings under which Material Assets should be evaluated. These are set out below, with the "typical topics" associated with those headings:

- Roads & Traffic – Construction Phase, Operational Phase, Unplanned Events (i.e. Accidents).
- Built Services – Electricity, Telecommunications, Gas, Water Supply Infrastructure, Sewerage.
- Waste Management – Construction Waste, Operational Waste.

15.12 The 2017 EC Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report, includes a review checklist, of which 2.13 and 3.14 relate to Material Assets:

> *2.13. Have any material assets in that area that may be affected by the Project been described? (including buildings, other structures, mineral resources, water resources).*
>
> *3.14. Have the direct, primary effects on material assets and depletion of natural resources (e.g. fossil fuels, minerals) been described?*

Assessment Methodology and Significance Criteria

15.13 The effects of the proposed development on the Material Assets are assessed in compliance with the EIAR Guidelines as outlined in Chapter 2 (EIA Report Methodology).

Study Area

15.14 The site is within the Municipal District of Claremorris – Swinford and within Cong Electoral Division. The following Electoral Divisions (ED's) are within a 5km radius of the application site, these Electoral Divisions have been selected as the study area, unless stated otherwise in this chapter:

- Cong
- Neale
- Cloonbur
- Houndswood

Sources of Information

15.15 A desk-top study of the proposed development site and the surrounding study area was completed in November 2024. The desktop study included consultation with publicly available environmental and planning datasets:

- Environmental Protection Agency database (https://gis.epa.ie/EPAMaps/)
- Geological Survey of Ireland database (www.dcenr.maps.arcgis.com)
- Ordnance Survey Ireland (https://store.osi.ie/ & http://map.geohive.ie/mapviewer.html)
- Catchments website (https://www.catchments.ie/maps/)
- Mayo County Council Planning database (https://www.eplanning.ie/mayocc/searchtypes)
- Property Registration Authority (PRA) land registry services (https://www.landdirect.ie/)
- https://www.esbnetworks.ie/new-connections/generator-connections-group/availability-capacity-map

15.16 A site visit was undertaken in September 2024 to verify the findings of the desk study and to obtain an understanding of the site and the wider study area.

Identification and Description of Potential Effects

15.17 The characteristics of the proposed development were considered and the changes occurring as a result of aspects of the operation and decommissioning of the proposed development were identified. The impact of these effects on material assets (beneficial and adverse) were consequently identified and assessed.

15.18 The criteria used to describe the predicted effects across land use, social and health considerations are adapted from Table 3.4 of the EPA Guidelines (EPA, 2022).

Table 15.1
Description of Effects

Description of Effects		
	Positive Effects	A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).

Quality of Effects	Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/Adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Extent and Context of Effects	Extent	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
	Context	Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Duration & Frequency	Momentary Effects	Effects lasting from seconds to minutes.
	Brief Effects	Effects lasting less than a day.
	Temporary Effects	Effects lasting less than a year.
	Short-term Effects	Effects lasting one to seven years.
	Medium-term Effects	Effects lasting seven to fifteen years.
	Long-term Effects	Effects lasting fifteen to sixty years.
	Permanent Effects	Effects lasting over sixty years.
	Reversible Effects	Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Direct/Indirect	Direct Effects	Effects that result directly from the proposed development or project.
	Indirect Effects	Defined by the EC as 'Impacts on the environment, which are not a direct result of the project, often produced away from (the site) or as a result of a complex pathway.'
Cumulative Effects	Cumulative Effects	The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects

Significance of Effects

15.19 The assessment process evaluates how the proposed development impacts on baseline environmental and social factors and considers whether the effects that are associated with positive or negative outcome for the material assets of natural and human origin. The significance of an effect is informed by the description of the effects.

15.20 Table 15.2 below provides the significance criteria that were used to determine the significance of an effect on material assets excluding materials and waste (based on Table 3.4 of the EPA Guidelines (EPA, 2022)).

Table 15.2
Significance Criteria

Description of Significance of Effects		
Significance	Imperceptible	An effect capable of measurement but without significant consequences.
	Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects	An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
	Very Significant	An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
	Profound	An effect which obliterates sensitive characteristics.

Table 15.2: Significance criteria

15.21 For the significance of effects associated with imported materials and waste, in addition to the EPA EIAR Guidelines (EPA 2022), the IEMA Guide to: Materials and Waste in Environmental Impact Assessment (IEMA 2020) (hereafter referred to as the IEMA Guidance) was used. Table 15.3 sets out a sensitivity value, Table 15.4 sets out a magnitude value and Table 15.5 evaluates the significance based on these values.

Table 15.3
Sensitivity Criteria – Materials (IEMA 2020)

Value	Description On balance, the key materials required for construction of a development….
Very High	Are known to be insufficient in terms of production, supply and / or stock; and / or Comprise no sustainable features and benefits compared to industry-standard materials*.
High	Are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock; and / or Are available comprising some sustainable features and benefits compared to industry-standard materials*.
Medium	Are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock; and / or Are available comprising some sustainable features and benefits compared to industry-standard materials*.
Low	Are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock; and / or Are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials*.
Negligible	Are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock; and / or Are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials*.

*Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise reused, secondary or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.

Table 15.4
Magnitude Criteria – Materials (IEMA 2020)

Value	Description The assessment is made by determining whether through a development, the consumption of…
Major	...one or more materials is >10% by volume of the regional* baseline availability
Moderate	...one or more materials is between 6-10% by volume of the regional* baseline availability
Minor	...one or more materials is between 1-5% by volume of the regional* baseline availability
Negligible	...no individual material type is equal to or greater than 1% by volume of the regional* baseline availability
No change	…no materials are required
* or where justified, national.	

Table 15.5
Significance– Materials (IEMA 2020)

		Magnitude of Impact				
Sensitivity (or Value) of Receptor		No Change	Negligible	Minor	Moderate	Major
	Very High	Neutral	Slight	Moderate or Large	Large or Ver Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

Baseline Conditions – Material Assets of Human Origin

Land Use

15.22 McGraths Limestone Quarry (the overall quarry site) is located in the townland of Cregaree, situated approximately 250km north of the village of Cong in County Mayo. The quarry is approximately 10km south-west of Ballinrobe and 15km north-west of Headford, while Galway is approximately 35km to the south-east.

15.23 McGraths Limestone Quarry is located directly to the north of the R345. In the vicinity of the access the R345 comprises a marked single carriage road with a 60km/hr speed limit. The access road and lands to the south of the application site (the site) fall within County Galway, while the remainder of the quarry site falls within the bounds of County Mayo.

15.24 The overall quarry site has an extraction area of approximately 62.45 hectares and can be divided into the following three areas::

Area A: This southern section of the overall quarry site extends to an area of 43.47 hectares (Plan Ref File No. Q18). This existing working area benefits from a pre-1963 authorisation with conditions imposed following registration under Section 261 of the Planning and Development Act.

Area B: This section of the overall quarry site consists of an area of 10.58 hectares which has been authorised by way of a substitute consent application (Reference PL 16.SU0132) and a 37L application (Reference QD 16.QD0009) granted by An Bord Pleanála. Permission granted for the extraction of material to 5 mOD.

Area C: This section of the overall quarry site consists of an area of 8.4ha which has been authorised under a Section 34 Application (Plan Ref. File No. 20/77/ ABP Ref: ABP-308748-20) in 2019. Permission provided for the extraction of material to 5 mOD.

15.25 The existing quarry operations comprise extraction of limestone using blasting techniques, processing (crushing and screening) of the fragmented rock to produce aggregates. Ancillary facilities include an office, weighbridge, canteen, toilets and a wheelwash (with side and overhead spray bars).

15.26 The application site (the site) is broadly triangular in shape with a site area of 19ha. The site occupies the northern section of the "overall quarry site" (areas B & C). The site is presently defined by a mix of excavated areas as well as overburden storage areas, with the eastern section of the site comprised of an undeveloped area of scrub.

15.27 The overall quarry site is bounded to the south by the R345 and to the east by the Cong Canal, while to the north and west is agricultural land interspersed with woodland and scrub. Boundaries are mainly defined by fencing and screening berms.

15.28 Landuse in the vicinity of the overall quarry site predominantly comprises agriculture with interspersed large areas of woodland, the most significant of which is associated with Ashford Castle, a medieval castle built in 1228 by the Anglo-Normans that has been turned into a five star hotel, located approximately 1.8km to the south. The village of Cong has a range of other tourist offerings including museums, gift shop, accommodation, pubs, cafes and restaurants.

15.29 The predominant surface water features in the landscape are Lough Corrib, 1.5km to the south and Lough Mask, 2.5km to the north, which are connected by the Cong Canal, which runs in a north to south direction from Thornhill to Cong.

15.30 Inland Fisheries Ireland maintains a salmon hatchery 300 meters downstream of the overall quarry site. The fish hatchery is owned and operated by Inland Fisheries Ireland and was established to supplement salmon stocks in the Corrib catchment area.

15.31 Residences within the general area typically consist of one-off rural houses and ribbon development along the local road network. The nearest properties to the site comprise two dwellings situated to the east in the townland of Drumsheel Upper which are within approximately 100m of the site. There are approximately 51 dwellings within 500m of the site.

Property

15.32 Mc Graths Limestone Works Ltd. is the owner of the site on which the proposed development will be located. A summary of the planning history of the site is provided below:

Q18: Conditions imposed on quarry in accordance with quarry registration process under S261 of Planning and Development Act 2000.

73/1614:	Permission granted for quarrying on part of the overall site to Clonbur Concrete Group.
91/546:	Permission granted for a workshop for storing vehicles.
09/667:	Permission granted for the construction of an ESB electricity substation and switch room building.
16/200:	Permission granted for the erection and operation of an asphalt mixing plant with a stack height of 21.6m, associated aggregate loading bins and all ancillary facilities on 0.2ha site within the existing quarry.
PL16.SU0132:	Substitute Consent granted 08/12/17.
QD16.QD0009:	Section 37L permission granted 08/12/17 granted by An Bord Pleanála.
18/724:	Permission granted for an extension to the existing workshop/garage and the erection of a machinery storage shed and all associated ancillary facilities.
20/77:	Permission (granted by ABP on appeal (ABP-308748-20) for the removal of vegetation and overburden, extraction of rock by blasting and rock breaking means, landscaping and restoration of site and all associated ancillary facilities.

Transport Network

15.33 Within the semi-rural setting surrounding the application site, the road infrastructure plays a crucial role in facilitating transportation and connectivity. The network of roads consists of various types, including local roads that serve nearby communities, regional roads that connect towns and villages, and national roads that form important transportation arteries.

15.34 The site is located between three public roads – the L5657 is to the east of the site, an unnamed local road is to the west of the site and the R345 is located to the south of the site. Access to the overall quarry site is provided directly from the R345. The existing entrance is a gated access with a width of approximately 7.5m.

15.35 Access to the site is via an internal haul road that can be accessed from the existing operating quarry entrance onto the R345. Internally, the site operates a of haul roads which provide a dedicated pathway for vehicles involved in the quarrying operations. By effectively linking the working quarry with the application area, these internal haul roads ensure smooth and controlled movement of vehicles, optimising the efficiency of operations.

15.36 In the vicinity of the site access, the R345 comprises a marked single carriage road with a 60km/hr speed limit. The R345 has an approximate carriageway width of 6.3m, with a partial hard strip and little to no verge in the vicinity of the quarry entrance. The carriageway width (wall to wall) is approximately 9.0m in the vicinity of the quarry entrance.

15.37 The R334, intersects with the N84 at Ballinrobe 9.2km northeast of the site. The N84 road serves as a major thoroughfare linking the town of Headford with Ballinrobe.

15.38 Public transportation in the area is very limited, however Bus Eireann operates bus service no. 431 from Claremorris too Carraroe, runs along the R345 south of the site. The bus Eireann service no. 422 runs between Headford and Castlebar via Cong village, 250m south of the overall quarry site. Bus Eireann stop (Stop ID -531691) located in the Cong village. The nearest train station is located in Claremorris to the north-east or Galway City to the south.

15.39 Counties Mayo and Galway have extensive networks of trails which provide a recreational resource for both visitors and locals. Much of the hiking trails are focused on the west of both counties, including The Western Way and Connemara National Park, however the following trails and loop walks are noted in the study area.

- Coillte Trails: Cong Nature Trail.
- Coillte Trails: Pigeon Hole Loop.
- Coillte Trails: Cong/ Clonbur Trail.
- Coillte Trails: Clonbur Village Loop.
- Coillte Trails: Ballykine Loop.
- Coillte Trails: Big Island Loop.
- Coillte Trails: Ardnageeha Loop.
- Fáilte Ireland Activity Listings 2017: Mount Gable Walk.
- Looped Walks: Seanbothar.
- Looped Walks: Cong Loops.

15.40 Other recreational and community facilities and amenities are available in the village of Cong. These include a GAA club (The Neale GAA), shops, Ashford Castle, community hall and churches.

Public Utilities

Electricity

15.41 The overall quarry site benefits from an existing connection to the electricity grid via an overhead line. There is no electricity infrastructure within or crossing the site.

Water Supply

15.42 Potable water for the onsite welfare facilities is provided by an existing onsite well.

15.43 Water required for the wheelwash and dust suppression is provided from the existing quarry water management system.

15.44 Water required for the processing plant is provided from the existing quarry water management system.

15.45 All of the aforementioned infrastructure will remain in place to facilitate the proposed development.

15.46 The proposed site is not located inside any mapped Public Water Supply (PWS) or National Federation Group Water Scheme (NFGWS) groundwater protection zones.

Wastewater

15.47 No wastewater collection infrastructure has been identified crossing the application.

Communications Infrastructure

15.48 Communications infrastructure comprises local network wires, cables, poles and masts for the provision of telephone, internet, mobile phone, television and radio services. Communications infrastructure is present throughout the study area.

15.49 There is no telecommunication infrastructure within the site. The existing quarry benefits from existing telecommunication connections.

Baseline Conditions – Material Assets of Natural Origin

Land Resources

15.50 As stated above, the surrounding area comprises a mix of a mix of agriculture and residential uses.

15.51 The site is not located within any designated European sites, however the following designated sites are located within 5km of the application site:

- Lough Carra/Mask Complex SAC - 1.1km West
- Lough Corrib SAC/SPA - 1.7km South
- Lough Mask SPA - 2.2km North-west
- Ballymaglancy Cave, Cong SAC - 2.5km South-west
- Kildun Souterrain SAC – 3.46km West

15.52 There are no NHA's located within 5km of the application site, there are a number of pNHA's which are outlined below:

- Lough Corrib pNHA – 1.6km south-east
- Lough Carra/Mask Complex pNHA – 1km west
- Ballymaglancy Cave, Cong pNHA – 2.5km south-west

Geological Resources

15.53 The application site and its encompassing areas are described by the GSI as being underlain by the Cong Limestone Formation which is described as thick bedded pure limestone and consists mainly of clean, thickly bedded calcarenites with occasional cerioid Lithostrotion.

15.54 According to the Geological Survey of Ireland (GSI) Spatial Resources the following geological heritage sites are situated near the application site:

- MO040: 452m - Curreighnabannow Spring
- GY036: 650m – Cong Springs and Pigeon Hole
- GY093: 1.1km – Lough Corrib
- GY015: 1.9km – Ballymaglancy Cave
- MO027: 2.1km – Castle Lake (Lough Mask)
- MO078: 2.2km – Lough Mask

15.55 The GSI Aggregate Potential Mapping highlights the area as having very high potential for "crushed rock aggregate potential".

15.56 There are numerous karst features in the vicinity of the overall quarry site, including enclosed depressions, caves and turloughs. The nearest Karst feature to the site is a spring in the townland of Drumsheel Upper, approximately 390m to the east.

Natural Resources

Woodland

15.57 Tree cover on the site is limited to some field boundaries and screening.

15.58 There are large areas of woodland in the vicinity of the site, most notably Cong Woods, which are situated immediately to the south of the R345 and which were formerly part of the grounds of Ashford Estate. The woods are now state owned and managed by Coillte, with several publicly accessible woodland walks. Cong woods includes an area of ancient and long established woodland at Ballykine Wood, approximately 2km west of the site.

Raw Materials & Waste

Raw Materials

15.59 The existing / historic use of the site for rock extraction requires very low raw material volumes. Raw materials used (e.g. diesel for machinery) are typical of those uses.

Waste

15.60 The existing / historic use of the site for rock extraction generates very low waste volumes and comprise waste types typical of those uses.

15.61 Information on the capacity of landfill sites in County Mayo has been sourced from the following documents:

- Connacht Ulster Waste Management Plan 2015-2021.
- Waste Collection Benchmarking Report fort the Irish Waste Management Association.
- Construction and Demolition Waste, Soil and Stone Recovery/Disposal Capacity Update Report 2020 for all Waste Management Plans 2015-2021.
- National Waste Management Plan for A Circular Economy 2024-2030, EPA.

Assessment of Potential Effects – Material Assets of Human Origin

15.62 The following assessment considers the operational and post-operational stage effects only as there will be no construction phase associated with the proposed development.

Land Use

Operational Phase

15.63 As the proposed development comprises the deepening of the existing quarry there would be no discernible change in land-use during the operational phase of the development. The existing quarry already has a visual influence over the surrounding area and therefore the change would not be readily discernible from beyond the site boundaries.

Land-use		
	Quality	Negative
	Extent	19ha application site directly affected.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	19ha application site directly affected.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.6: EPA Description of Effects – Land-use, operational phase

Post Operational Phase

15.64 Following the cessation of operations, the application site will be restored, with the focus of the restoration plan being to allow the quarry sides to revegetate naturally. The quarry void

would be allowed to flood. This would result in the introduction of a variety of habitats into the site and achieve a biodiversity net gain at this site. In land-use terms, the long term effect would be the change from baseline quarry use to more diverse habitats, which in environmental terms is considered to be a "long term", "positive effect".

Land-use	**Quality**	Positive
	Extent	19ha application site directly affected.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	19ha application site directly affected.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.7: EPA Description of Effects – Land-use, post-operational phase

Property

Operational Phase

15.65 The main potential impacts on residences from the existing and proposed development would be associated with landscape and potential noise, vibration and air emissions as a result of day to day activities.

15.66 The proposed development will not result in an increase in quarry related traffic. Emissions in relation to noise, vibration and air will be below recommended guideline values at nearest dwellings.

15.67 Chapters 10 and 11 provide additional information in respect of the potential effects on Air and Noise, which have the potential to undermine the residential amenity of neighbouring properties which could in turn affect property values. These chapters indicated that the associated effects of the proposed deepening would not be significant.

15.68 The proposed development is not predicted to have any impact on the local property values as the area has a long association with quarrying and the quarry is well screened from the majority of residential properties in the area.

Property	**Quality**	Negative
	Extent	19ha application site directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Probability	Likely
	Frequency	Daily – traffic, noise & atmospheric emissions. Vibration – fortnightly or monthly.
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	19ha application site directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.8: EPA Description of Effects – Property, operational phase

Post Operational Phase

15.69 As stated above, the decommissioning phase comprises the restoration of the application site. The restoration proposals offer the potential for biodiversity gain at the site. The effect on

property would however be neutral as the changes would not be perceptible compared to the baseline environment.

Property	Quality	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.9: EPA Description of Effects – property, post-operational phase

Transport Network

Operational Phase

15.70 Chapter 13 provides a detailed assessment of the effect of the proposed development of the existing transport network and traffic volumes.

15.71 The results of the traffic and transport assessment confirm that the development would not have a significant effect on traffic flows and the transport network would not be altered by the proposed development.

Transport	Quality	Neutral
	Extent	At site access and local road network.
	Probability	Likely
	Frequency	Hourly
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Direct effect at site access.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.10: EPA Description of Effects – Transport, operational phase

Post Operational Phase

15.72 Traffic associated with this stage would be minimal and predominately associated with the removal of equipment from the site.

Transport	Quality	Neutral
	Extent	At site access and local road network.
	Probability	Likely
	Frequency	Daily
	Duration	Short-term
	Reversibility	Reversible
	Direct/Indirect	Direct effect at site access.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.11: EPA Description of Effects – Transport, post-operational phase

Operational Phase

15.73 It is not anticipated that the deepening of the quarry would have any effect on recreational resources identified above. The existing quarry offers no value for recreational amenity as it comprises mainly private land and it does not contain any paths or recreational facilities.

15.74 The effects of the proposed development would be long-term due to the design life of the proposed development, however the quarrying activity is a long established land use in the area and has not impacted on the recreational amenity of the study area.

15.75 The application site would not be visible from the majority of locations within the study area and existing trees and shrubs will further aid screening as they further mature over time. Noise associated with the deepening of the quarry would be heard from within the nearby woodland walks, however it is unlikely to be of a level that would detract from the visitor's experience.

15.76 It is therefore predicted that the significance of the effects on tourism and recreational resources would be "not significant".

Recreation	**Quality**	Negative
	Extent	19ha application site directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Probability	Likely
	Frequency	Daily –Noise & atmospheric emissions. Vibration – fortnightly or monthly.
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	19ha application site directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Significance	Not significant - *an effect which causes noticeable changes in the character of the environment but without significant consequences.*

Table 5.12: EPA Description of Effects – Recreation, operational phase

Post Operational Phase

15.77 Following the cessation of the proposed works, the appearance of the application site will have altered to natural habitat. The effects of the restored development will be negligible in terms of tourism and recreation.

Recreation	**Quality**	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.13: EPA Description of Effects – Recreation, post-operational phase

Operational Phase

15.78 There is no need for the proposed development to be connected to public utilities. The existing quarry site is connected to existing utilities and this arrangement would not be altered by the proposed development. Potential effects of the proposed development on existing public utilities are therefore not anticipated to occur.

Public Utilities	**Quality**	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.14: EPA Description of Effects – Public Utilities, operational phase

Post Operational Phase

15.79 The restoration of the site would not have any affect on existing public utilities.

Public Utilities	**Quality**	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.15: EPA Description of Effects – Public Utilities, post-operational phase

The Assessment of Potential Effects – Material Assets of Natural Origin

Land Resources

Operational Phase

15.80 Chapter 6 provides a detailed assessment of the effect of the proposed development on biodiversity and Chapter 12 assesses the landscape and visual effects of the proposed development. No significant direct or indirect effects on land resources are anticipated.

15.81 The proposed development will not have any direct or indirect effects on any known cultural heritage sites, archaeological remains, or buildings of heritage significance within the application area or its surrounding area.

Post Operational Phase

15.82 See Chapter 6 and 12 above, no significant adverse direct or indirect effects on land resources are anticipated. The restoration proposals include opportunities for biodiversity net gain.

Geological Resources

15.83 The operation of the quarry will require the removal of the limestone resource from the site which would be utilised for a range of purposes including as construction aggregates. The removal of the material will have a "permanent" effect on the existing limestone resource, however as this resource is presently sub-surface, the impact of the loss would be visible predominately within the site boundaries. Nevertheless, the extracted material will be utilised in the local construction industry, benefiting both private and public sector projects and thereby making a positive contribution to the economy at the local, regional, and national levels.

15.84 To minimise the effect of the proposed development on geological resources, re-fuelling of equipment will take place in designated areas wherever possible. A fuel handling protocol will be put in place to minimise the risk of fuel spills and to advice on actions in the event of spillages.

15.85 Given the distance between the application site and the geological heritage sites identified above, there is unlikely to be any significant effects.

Geology	**Quality**	Negative
	Extent	19ha application site directly affected as geological resource would be removed to a depth of -12m OD.
	Probability	Likely
	Frequency	Daily
	Duration	Long-term
	Reversibility	Irreversible
	Direct/Indirect	Direct effect on 19ha of site
	Significance	Moderate - An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

Table 5.16: EPA Description of Effects – Geology, operational phase

Post Operational Phase

15.86 The restoration of the site would not have any affect on existing geological resources as it is proposed to flood the quarry and introduce additional planting onto the site. No further disturbance of the sub-surface geology is proposed at this phase.

Geology	**Quality**	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.17: EPA Description of Effects – Geology, post-operational phase

Operational Phase

15.87 The potential effect of the proposed development has been evaluated in chapter 6 – Biodiversity and has concluded that as the habitat is of Local (lower) level, the effect is not significant.

Post Operational Phase

15.88 See Chapter 6 and 12 above, no significant adverse direct or indirect effects on land resources are anticipated. The restoration proposals include opportunities for biodiversity net gain.

Raw Materials & Waste

Operational Phase

15.89 Waste volumes associated with the Operational Phase of the proposed development are anticipated to be very low and significantly less than 0.1% of the available landfill capacity of the County Mayo and Galway. There are existing waste management arrangements in place in relation to general waste, ancillary generation of operational waste (e.g. batteries, tyres, waste oil). These arrangements will remain in place for the duration of the operational stage.

15.90 Materials such as lubrication oils and fuel oil, will be required during the Operational Phase of the proposed development. The anticipated volumes used on site are predicted to be significantly less than 1% by volume of the regional baseline availability.

Waste Volumes	**Quality**	Negative
	Extent	County
	Probability	Unlikely
	Frequency	Rarely
	Duration	Long-term
	Reversibility	Irreversible
	Direct/Indirect	Direct effect on capacity of landfill sites
	Significance	Imperceptible (EPA) Neutral (IEMA 2020)

Table 5.18: EPA Description of Effects – Waste, operational phase

15.91 The proposed development will result in the extraction of limestone which is a valuable raw material for the construction industry.

Raw Materials	**Quality**	Positive
	Extent	County
	Probability	Likely
	Frequency	Daily
	Duration	Long-term
	Reversibility	Irreversible
	Direct/Indirect	Direct effect on supply of limestone aggregates
	Significance	Neutral (IEMA 2020)

Table 5.19: EPA Description of Effects – Raw Materials, operational phase

Post Operational Phase

15.92 The restoration of the proposed development will require minimal raw materials and would generate minimal waste streams. Fertiliser will be utilised during the re-planting process, however the volumes will be carefully managed to ensure that excessive amounts are not utilised. No other raw materials or waste will be used or generated during the restoration process.

Waste & Raw Materials	**Quality**	Negative
	Extent	County
	Probability	Likely
	Frequency	Daily
	Duration	Short-term
	Reversibility	Irreversible
	Direct/Indirect	Direct effect on capacity of landfill sites & supply of limestone aggregates.
	Significance	Neutral (IEMA 2020)

Table 5.19: EPA Description of Effects – Waste & Raw Materials, post-operational phase

Cumulative Effects / Synergistic Effects

15.93 In the assessment of cumulative effects other permitted and proposed developments in the surrounding area have been considered where they have the potential to generate cumulative effects with the proposed development. Chapter 16 sets out the methodology for identifying those developments which have the potential to cause cumulative effects. It excluded developments that were already constructed as these are already assessed as part of the baseline. Also excluded were small scale developments that would not have the potential to cause cumulative effects.

15.94 A search of the Mayo and Galway County Council online planning search facilities indicates that there are no other planned developments in the vicinity of the application site that have the potential to have any significant cumulative effects with the proposed development.

Transboundary Impacts

15.95 It is not anticipated that the impacts of the proposed development would have any significant transboundary effects on population and human health.

Interaction with Other Impacts

15.96 It is not anticipated that the effects of the proposed development on material assets would interact significantly with other impacts.

Do Nothing Scenario

15.97 Under a do-nothing scenario, Mc Graths Limestone Works Ltd. would not deepen the existing quarry and it would remain as an operational quarry until the existing permission ends, with the underlying geology left intact.

15.98 As the site is situated immediately adjoining an existing operational quarry, the existing quarry would continue to operate and the site would continue to have a strong visual association with it.

15.99 There is a continued need for limestone quarries in Ireland to support the country's infrastructure development, construction projects, and economic growth. Limestone quarries provide essential raw materials for the production of aggregates, concrete, and other construction materials, playing a vital role in meeting the demands of a growing population and ensuring sustainable development in line with Ireland's long-term goals and objectives outlined in Project Ireland 2040.

15.100 The application site is situated in a part of County Mayo that is relatively free from constraints such as nature conservation designations, in addition it is located relatively near to a number

of urban centres and sources of demand. The do-nothing scenario could result in pressure for alternative, less suitable locations being proposed for quarries to address this short-fall in supply.

Mitigation Measures

15.101 Reference should be made to the following chapters of this EIAR for detailed mitigation measures to address the potential pathways for effects on material assets of human origin:

Chapter 5: Population and Human Health.

Chapter 13: Traffic.

Chapter 14: Cultural Heritage.

15.102 Reference should be made to the following chapters of this EIAR for detailed mitigation measures to address the potential pathways for effects on material assets of natural origin:

Chapter 7:Land, Soils and Geology.

Chapter 8: Water.

Chapter 10: Air Quality.

Chapter 11: Noise.

Chapter 12: Landscape.

15.103 The following additional mitigation measures are proposed:

15.104 The following waste management procedure should be extended to include waste generated at the application site:

A. Categorise waste according to type - hazardous/non-hazardous, recyclable, non-recyclable, compostable.

B. Store waste appropriately - waste should be stored and labelled according to categorises set out above. All waste containers should be stored on a an Impermeable surface and protected from the risk of accidental leaks.

C. Transport & Disposal: An appropriately licenced and trained operator should be responsible for the transport and disposal of all waste generated at the site. If hazardous waste is being disposed off, a hazardous waste Identification number must be assigned.

D. Plan for emergencies: Maintain spill and appropriate emergency response equipment in an accessible area.

E. Training: All employees and contractors should be trained in the waste management procedure, including the plan for emergencies.

F. Keep records: Records should be kept to ensure that waste Is stored, transported and disposed of according to the procedures set out in the waste management plan.

Residual Impact Assessment

Operational Stage Impacts

15.105 Following the implementation of mitigation measures identified above and in other chapters of this report, no residual impacts on material assets are anticipated in the operational phase of the development.

15.106 Following the implementation of mitigation measures identified above and in other chapters of this report, no residual impacts on material assets are anticipated in the post-operational phase of the development.

Monitoring

Monitoring is not proposed in relation to material assets.

Difficulties Encountered

No significant difficulties were encountered.

References

Environmental Impact Assessment of Projects. Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017).

Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022).

Implementation Of Directive 2001/42 On The Assessment Of The Effects Of Certain Plans And Programmes On The Environment

http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/Key-Tourism-Facts-2018.pdf?ext=.pdf

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https://www.failteireland.ie/Research-Insights/Activities/visitor-numbers-to-attractions-dashboard.aspx

IEMA Guide to: Materials and Waste in Environmental Impact Assessment (IEMA 2020)

Environmental Protection Agency database (https://gis.epa.ie/EPAMaps/)

Geological Survey of Ireland database (www.dcenr.maps.arcgis.com)

Ordnance Survey Ireland (https://store.osi.ie/ & http://map.geohive.ie/mapviewer.html)

Catchments website (https://www.catchments.ie/maps/)

Mayo County Council Planning database (https://www.eplanning.ie/mayocc/searchtypes)

Property Registration Authority (PRA) land registry services (https://www.landdirect.ie/)