



**Preliminary Ecological Appraisal:
Rockfield Quarry Proposed Extension 2**

Report by:

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For:

Six-West Ltd

**Date:
Addendum**

**21/09/2022
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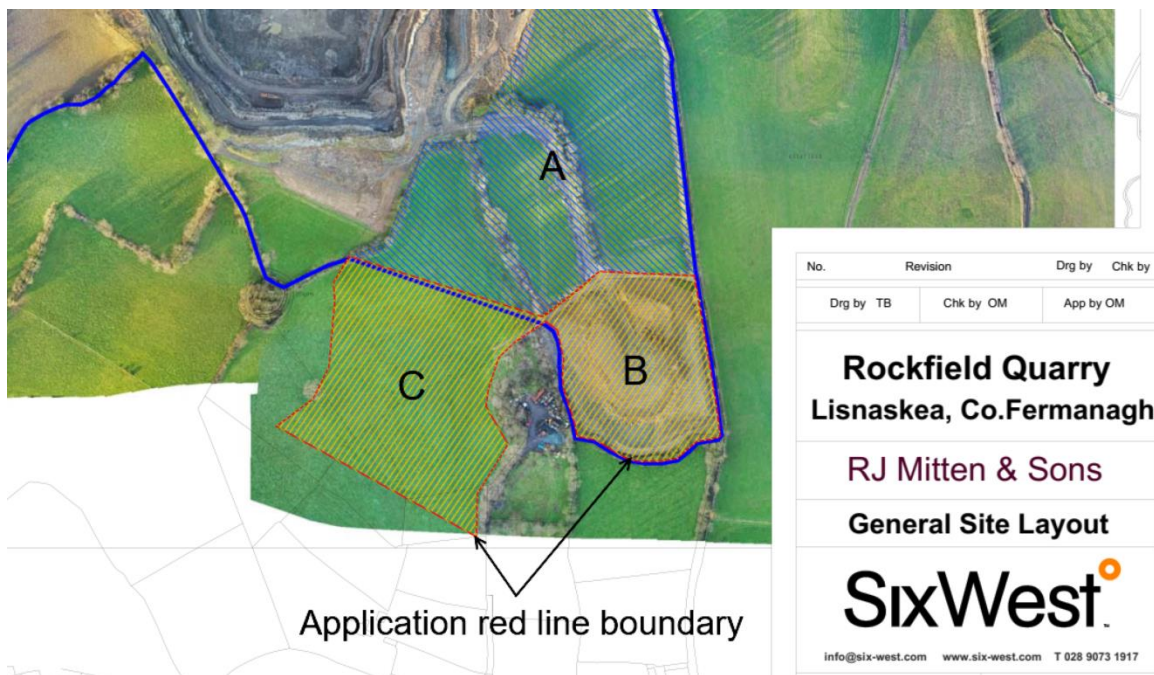
1. Background

R J Mitten & Sons extract limestone from Rockfield Quarry at 371 Dernwilt Road, Lisnaskea, BT92 5EA. The location, 4.5 km south-east of Lisnaskea is in working farmland and the Mitten's ownership includes managed agricultural lands around the current quarry extent. It is intended that the quarry is gradually expanded into these lands.

Six-West are now managing a Planning Application for overburden storage in part of a field currently beyond the quarry ownership, but adjacent to an area currently with consent for extraction, plus further storage in a part of the consented site that is already in use for that purpose.

The proposal overview is depicted below where:

- A = managed agricultural lands where extraction is consented under L/2009/1042/F
- B = current consented overburden store where additional storage is planned.
- C = proposed new location for a further overburden store.



Areas B and C would both receive stripped overburden from A

This Preliminary Ecological Appraisal (PEA) has been commissioned to ensure that the design process is fully cognisant of biodiversity issues, and to inform the subsequent assessment of the pending application.

The aims of this report are:

1. Identification of potential ecological constraints to the development, for example:
 - Priority species and habitats as defined by Planning Policy Statement 2;
 - Species protected under the Wildlife Order;
 - Invasive species listed on Schedule 9 of the Wildlife Order.
2. Identification of any additional surveys that DAERA/NED may require to enable them to complete their assessment the pending planning application.
3. Provide advice if necessary on the most economically effective response to any identified constraints.

A Bat Roost Potential (BRP) survey conducted as a part of the PEA has been presented as a separate report which should be read in conjunction with this main PEA report.

A new extension is currently being proposed in a different location and will be the subject of a separate planning application and a separate PEA report.

As of 11/09/2023 we were made aware of an adjustment to the 2022 proposal – this is covered in an update in Appendix 1. No additional field survey was undertaken.

Legal Framework:

E.U. Directives	
Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive'). Remains transposed in NI legislation.	Provides a requirement and framework for the designation Special Areas of Conservation (SACs). Article 6 sets out Appropriate Assessment tests of the predicated effects of developments likely to impact upon SACs (and SPAs). These tests now known as a Habitat Regulations Assessment (HRA)
Domestic (Northern Irish) legislation	
The Planning (General Development Procedure) (Amendment) Order (NI) 2016	Requires the new Councils when determining a planning application to consult DAERA where a development could impact upon an NI priority habitat or species, or have an effect on an ASSI, or a Natura 2000 site.
The Wildlife (Northern Ireland) Order 1985 and its amendment	Sets out the protection which is afforded to wild animals and plants in Northern Ireland. Lists non-native species that it is illegal to release or to cause to grow in the wild.
Wildlife and Natural Environment Act (Northern Ireland) 2011	Makes it a legal duty of public bodies to conserve Biodiversity. Protects a wider range of native species, and proscribes a wider range of non-native invasive species,
The Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019	Widens the list of species for which it is an offence to cause to grow in the wild to include species on the EU Invasive Alien Species Regulation but not in Schedule 9 of the Wildlife Order.
Policies and procedures	
Planning Policy Statement 2: Natural Heritage (July 2013)	Details the Planners responsibilities to Biodiversity and establishes a requirement for Sites of Local Nature Conservation Interest to be declared in Local Plans.
Valuing Nature: A Biodiversity Strategy for Northern Ireland to 2020	The strategy identifies habitats and species in Northern Ireland for which priority action is required.
The NI Executive's 'Everyone's Involved – Sustainable Development Strategy'	Includes the strategic objective: Take action to reduce biodiversity loss
Biodiversity Strategy and Action Plan 2022-2027	Acknowledges the Council's responsibilities under the Wildlife and Natural Environment Act. Doesn't set local Priority habitats or species, but focusses upon pollinators and trees/woodlands.

2. Survey details

Site visits

13/09/2022	Shaun Wolfe-Murphy BSc., Dip. EIA Mgmt., MCIEEM
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Statement of Authority: Shaun has > 35 years' experience as a professional botanist, including working for the NIEA habitat survey and designations team, the England Field unit of the (then) NCC and for the survey and designations unit of Dúchas in the government conservation agency of Republic of Ireland. During the time spent working for these agencies much emphasis was on the survey and ecological evaluation of sites.

Since establishing WM Associates in 1994 as an ecological consultancy, he has routinely compiled ecological impact assessments for a wide variety of development projects in both urban and rural habitats.

Statement of Objectivity: The data have been collected and presented impartially, as required by the CIEEM code of professional conduct. Payment or other favour is not dependent upon any particular planning outcome, and there is no other vested or personal interest in any particular outcome, or any commercial products mentioned.

Survey method

The site was visited and habitats within and around the site were described and assessed in survey compartments allocated on the survey day according to vegetation type. The habitat type was allocated to the JNCC classification and notes were made of the main plant species, and other species that are indicative of the condition and management of the habitat.

In describing the status of plant species in an area, the qualitative DAFOR scale is used, where:

D	=	Dominant		Qualifying prefixes
A	=	Abundant		
F	=	Frequent	L	= Local – patchy distribution
O	=	Occasional	V	= 'very'
R	=	Rare		

Lists are tabulated in order of descending abundance.

Where appropriate, semi-natural communities were allocated to their National Vegetation Classification (NVC) vegetation community type. This system has been comprehensively adopted by the respective country Nature Conservation Agencies, including DAERA, and provides them with a convenient system of reference and comparison.

Where trees were measured during this survey, their diameter at breast height (dbh) is given in cm. For multi-stemmed trees the basal diameter above the root flare was also recorded.

The habitat suitability for different animals or animal groups was assessed, specifically:

Badgers – The PEA survey incorporated a Badger survey to NIEA requirements of 17/02/2017. Badger signs were searched for throughout the survey periods (12.30am - 18.30). No special equipment was used. The survey included a search for signs of usage by Badger, such as foraging tracks, snagged guard hairs, dung etc. In particular a search was conducted for potential sett entrances. The search area included a buffer of at least 25m beyond the site boundary where access was possible.

Bats – See the Bat Roost Potential (BRP) Survey report presented as Appendix 1.

Otters – No waterways required to be surveyed for Otter.

Birds - Suitable nesting and feeding habitats were noted on and around the site.

Common lizard – The survey included an assessment of suitable habitat for lizards.

Newts – The survey included an assessment of suitable habitat for newts, including terrestrial habitats and potential breeding ponds.

Invertebrates – Habitats of special importance for invertebrates were noted.

All survey compartments were photographed. All photos are archived and available on request as high resolution graphic files.

Limitations:

Enough plant species were recorded to characterise habitats, but a full inventory was not intended.

Trees were mapped and inventoried, but this does not correspond to a tree survey to BS5837 (*Trees in Relation to Design, Demolition and Construction*) specifications.

3. Site Description

3.1 Setting

The quarry is in intensive farmland at an altitude of around 100 m. It is located in a narrow valley between drumlin covered hills in Rockfield and Mullaghcapple Glebe townlands to the west and east respectively.

The limestone that it extracts is within the Carboniferous Dartry Formation and at north end, the contact between this and the Meenymore limestone formation earns the quarry its place in the Earth Science Conservation Review register

The field beyond the current ownership slopes up to the south east away from the existing quarry. Surface drainage is to the east where there is a small damp hollow between the current overburden store and the drumlin slope. This is partly occupied by a yard on infill that is in adjacent ownership. There are new modestly active drains around the existing infill store and it can be assumed that current drainage is into the quarry void. There are no other ditches or watercourses along the field boundaries.

Rockfield Stream runs along the eastern side of the current quarry then runs south into Moorlough Lake via Drumgallon River (DC Watercourse Number 081 aka Drumgallagh or Donagh River). Moorlough Lake drains into Upper Lough Erne via the Derryadd inlet – the hydrological connection between the quarry and the Upper Lough is around 11.7 km.

Following settlement, consented discharge from the quarry is pumped into the Drumgallon River. Precautions to minimise the risk of groundwater pollution (e.g. from hydrocarbons and chemicals stored within the quarry) are a part of the normal quarry management regime.

The proposed extension is currently under intensive agricultural management that is similar to the surrounding farmland. It was cattle grazed on the survey day. The livestock had recently been turned out – it seems likely that there had been a silage crop earlier in the year.

3.2 Nature Conservation Designations

The closest Natura2000 designation is **Slieve Beagh-Mullaghfad-Lisnaskea SPA** (Special Protection Area) which starts 3.5 km to the north-east of the proposed extension and at a higher altitude (around 145 m). This site includes the Slieve Beagh massif, Mullaghfad Forest and Lisnaskea Forest and encompasses blanket bog, wet and dry heath, grass moor, scrub, coniferous plantations and a little semi-improved agricultural grassland. These habitats are used by the breeding population of Hen Harrier.

This bird of prey is the site feature for which the site was designated.

As describe above, there is an 11.7 km hydrological connection between the quarry and **Upper Lough Erne SAC** (Special Area of Conservation) the habitat features of which are:

- 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation;
- 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isle;
- 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature.

And the species feature of which is

- 1355 Otter Lutra lutra.

The closest Area of Special Scientific Interest is **Upper Lough Erne – Trannish ASSI**. The closest designated section being Lough Head, a satellite of the main lough that is located 4.7 km west of the quarry and which is not fed by the Drumgallon River.

The ASSI was designated for Eutrophic standing waters; Fens; Purple Moor-grass and rush pastures; Reedbeds and swamps, and Wet woodland, plus for its Higher plant assemblage; Invertebrate assemblage; Otters; Breeding wader assemblage; Coot; Goldeneye; Great Crested Grebe; Little Grebe; Mute Swan; Pochard; Tufted Duck; and Whooper Swan.



The task of identifying and designating SLNCIs in the former Fermanagh Council Area has yet to be undertaken. The closest Local Wildlife Site (LWS) depicted on the NIEAs Map Viewer is the eastern face of Rockfield Quarry – an earth science site featuring the contact between different limestone formations as described above. The closest biological LWS is **Mullaghcapple Wood** adjacent to the eastern side of the quarry void and 650 m to the north of the proposed new overburden store, although the LWS boundary was drawn on an earlier map and includes the quarry void to within 500 m of the proposal site.

Mullaghcapple Wood is also the closest Long-established woodland on the Woodland Trust's inventory (site no 1100).



Hierarchy of designations referred to:

International:

Collectively called Natura 2000 sites, Special Protection Areas (SPA) are designated under the 'Birds Directive' and Special Areas of Conservation (SACs) are designated under the 'Habitats Directive' Both require signatory EU states to establish a network of sites that will make a significant contribution to conserving Annexed habitats and species.

National:

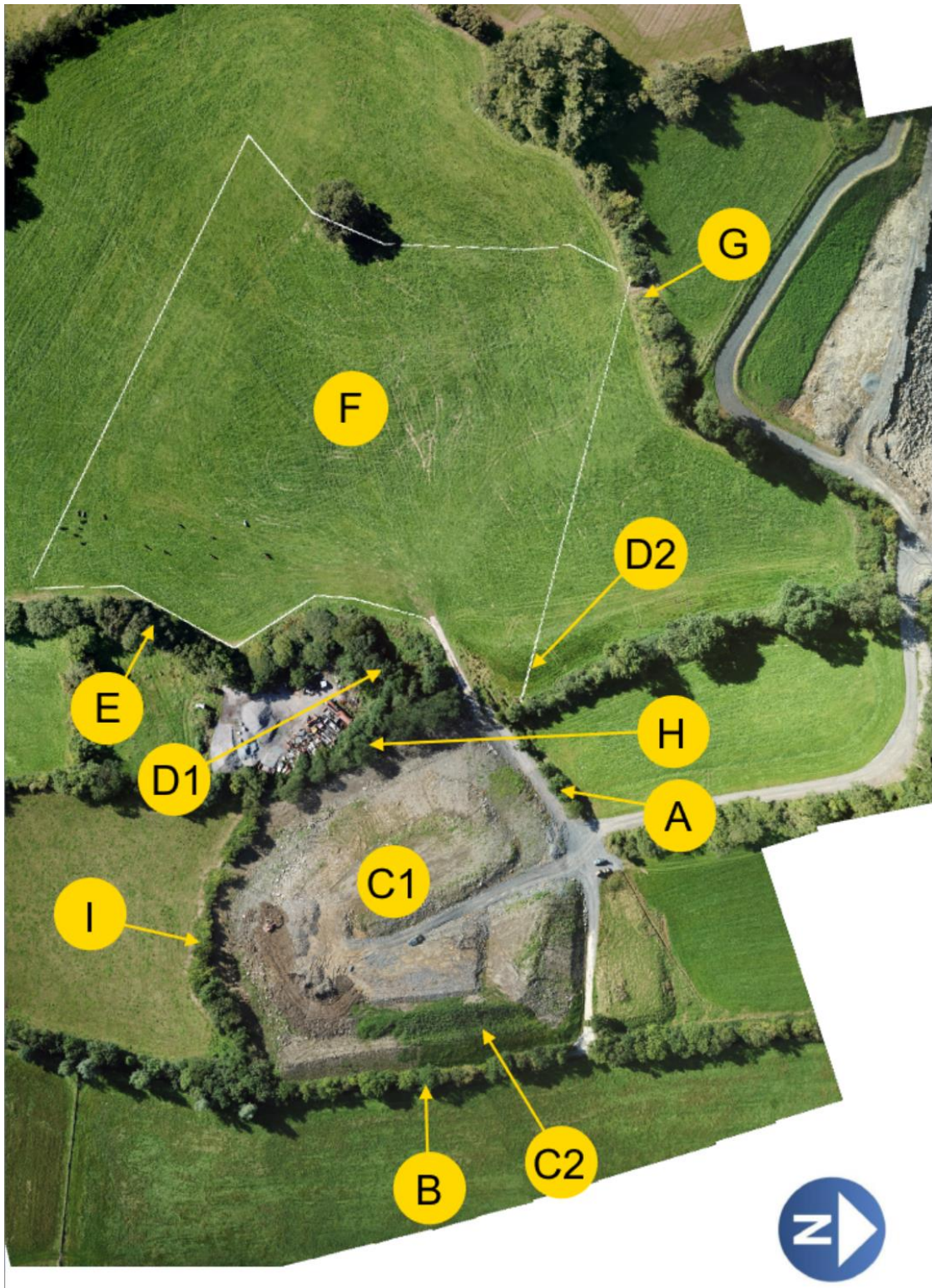
Areas of Special Scientific Interest (ASSIs) designated under the Environment (Northern Ireland) Order 2002 and selected as the best examples of given habitats, best representation of rare species or best examples of physiographic or geological features, such that the ASSI network provides a nationwide series.

Local:

Sites of Local Nature Conservation Importance (SLNCIs) are protected through the planning process. There is normally a presumption against granting planning permission to development proposals that it is anticipated would have a significant detrimental effect on the biodiversity value of SLNCIs.

The Woodland Trusts inventory *Back on the Map* maps the extent of woodlands that were represented on the First Edition OS maps and identifies those areas that remain as woodland (and are thus protected under PPS2), plus those areas for which there is evidence that the woodland dates back to 1600 or earlier.

3.3 Habitats on and around the site



Map 1 – Surveyed Compartments

Compartment A: J:23 hedge with trees

A poor-structured hedge beside a new access comprising Ash, including mature trees but mainly grown on young to semi-mature.

<i>Ash (Fraxinus excelsior)</i>	F
<i>Bramble (Rubus fruticosus agg.)</i>	A
<i>Dog-rose (Rosa canina agg)</i>	F
<i>Hawthorn (Crataegus monogyna)</i>	OLF
<i>Guelder-rose (Viburnum opulus)</i>	LO

The hedge base with:

<i>Common Nettle (Urtica dioica)</i>	A
<i>Creeping Bent (Agrostis stolonifera)</i>	OLF
<i>Creeping Buttercup (Ranunculus repens)</i>	O
<i>Great Willowherb (Epilobium hirsutum)</i>	LA
<i>Common Ivy (Hedera helix)</i>	LA
<i>Cleavers (Galium aparine)</i>	LF
<i>Herb-Robert (Geranium robertianum)</i>	LO
<i>Honeysuckle (Lonicera periclymenum)</i>	R
<i>Soft Shield-fern (Polystichum setiferum)</i>	R
<i>Nipplewort (Lapsana communis)</i>	R



A



A

Compartment B: J:23 hedge with trees

Lane side Hawthorn (*Crataegus monogyna*) with frequent early mature to mature Ash (*Fraxinus excelsior*). Hawthorn are also occasionally tree-like in structure with stems to 14 cm Ø.

<i>Ash (Fraxinus excelsior)</i>	A-D	Semi-mature to mature
<i>Blackthorn (Prunus spinosa)</i>	F	
<i>Dog-rose (Rosa canina agg)</i>	O	
<i>Wych Elm (Ulmus glabra)</i>	R	

The bank and lane side with:

<i>Common Ivy (Hedera helix)</i>	D
<i>Red Fescue (Festuca rubra)</i>	F
<i>Bramble (Rubus fruticosus agg.)</i>	F
<i>Meadow Foxtail (Alopecurus pratensis)</i>	OLF
<i>Common Nettle (Urtica dioica)</i>	OLF
<i>Meadow Vetchling (Lathyrus pratensis)</i>	O
<i>Bush Vetch (Vicia sepium)</i>	O
<i>Yorkshire-fog (Holcus lanatus)</i>	O
<i>Dandelion (Taraxacum officinale)</i>	O
<i>Nipplewort (Lapsana communis)</i>	O
<i>Meadowsweet (Filipendula ulmaria)</i>	LF
<i>Cleavers (Galium aparine)</i>	LF
<i>False Oat-grass (Arrhenatherum elatius)</i>	LO
<i>Germander Speedwell (Veronica chamaedrys)</i>	LO
<i>Cock's-foot (Dactylis glomerata)</i>	R
<i>Common Couch (Elytrigia repens)</i>	R
<i>Honeysuckle (Lonicera periclymenum)</i>	R



B



C1 vegetated slope

Compartment C: J:4 bare ground + J:13 disturbed land (+ C:31 ruderal tall herb)

Clay till overburden that has been removed from other working areas of the quarry and is largely unvegetated, especially over the flat summit, but the slopes more likely to include early weed establishment, of:

<i>Creeping Bent (Agrostis stolonifera)</i>	OLA
<i>Colt's-foot (Tussilago farfara)</i>	OLF
<i>Yorkshire-fog (Holcus lanatus)</i>	OLF
<i>Perennial Rye-grass (Lolium perenne)</i>	O
<i>Spear-leaved Orache (Atriplex prostrata)</i>	O
<i>Redshank (Persicaria maculosa)</i>	O
<i>Creeping Buttercup (Ranunculus repens)</i>	O
<i>Prickly Sow-thistle (Sonchus asper)</i>	O
<i>Dandelion (Taraxacum officinale)</i>	O
<i>Common Chickweed (Stellaria media)</i>	O
<i>Spear thistle (Cirsium vulgare)</i>	O
<i>Groundsel (Senecio vulgaris)</i>	O

<i>White Clover (Trifolium repens)</i>	O	
<i>Rosebay Willowherb (Chamerion angustifolium)</i>	LO	
<i>Common Nettle (Urtica dioica)</i>	R	
<i>Wheat (Triticum cv)</i>	R	
<i>Common Sorrel (Rumex acetosa subsp acetosa)</i>	R	
<i>Smooth Hawk's-beard (Crepis capillaris)</i>	R	
<i>Thyme-leaved Speedwell (Veronica serpyllifolia)</i>	R	
<i>Dove's-foot Crane's-bill (Geranium molle)</i>	R	
<i>Shepherd's-purse (Capsella bursa-pastoris)</i>	R	
<i>Greater Plantain (Plantago major)</i>	R	
<i>Knotgrass (Polygonum arenastrum)</i>	R	
<i>Meadow Foxtail (Alopecurus pratensis)</i>	R	
<i>Blinks (Montia fontana)</i>	R	
<i>Jointed Rush (Juncus articulatus)</i>	R	
<i>Rusty Willow (Salix cinerea subsp oleifolia)</i>	R	Seedlings
<i>Marsh Woundwort (Stachys palustris)</i>	R	
<i>Nipplewort (Lapsana communis)</i>	R	
<i>Wavy Bitter-cress (Cardamine flexuosa)</i>	R	
<i>Toad Rush (Juncus bufonius agg)</i>	R	
<i>Cleavers (Galium aparine)</i>	R	

@C2 the lower uppermost slope is where the C:31 has been allowed to establish, this with a similar range of species, but in a taller, near continuous vegetation of

<i>Yorkshire-fog (Holcus lanatus)</i>	D
<i>Prickly Sow-thistle (Sonchus asper)</i>	A
<i>Redshank (Persicaria maculosa)</i>	F
<i>Common Chickweed (Stellaria media)</i>	F
<i>Creeping Buttercup (Ranunculus repens)</i>	F

Below this the steep slope down to the Compartment C hedge has been sown out with an agricultural Perennial Rye-grass (*Lolium perenne*). This is well established, but with a range of the same weed species established elsewhere on C present.



C2 upper



C2 lower

Compartment D: A:111 broad-leaved semi-natural woodland + B:22 semi-improved neutral grassland

@D1 Beyond the red line boundary of the application, which on the survey day was approximately demarcated by an electric fence. Common Alder (*Alnus glutinosa*) are frequent along the Compartment H boundary, but also within the adjacent level damp grassy field base in an open and grassy stand.

<i>Common Alder (Alnus glutinosa)</i>	F	Semi mature
<i>Rusty Willow (Salix cinerea subsp oleifolia)</i>	LF	
<i>Hazel (Corylus avellana)</i>	R	
<i>Domestic Apple (Malus pumila)</i>	R	

The ground, though damp, does not puddle underfoot, and wetland species are rare, and mainly beside the Compartment H embankment.

<i>Yorkshire-fog (Holcus lanatus)</i>	D
<i>Creeping Bent (Agrostis stolonifera)</i>	F
<i>Soft-rush (Juncus effusus)</i>	OLF
<i>Rough Meadow-grass (Poa trivialis)</i>	O
<i>Meadowsweet (Filipendula ulmaria)</i>	O
<i>Colt's-foot (Tussilago farfara)</i>	LF
<i>Common Nettle (Urtica dioica)</i>	LF
<i>Great Willowherb (Epilobium hirsutum)</i>	LF
<i>Water Horsetail (Equisetum fluviatile)</i>	LO
<i>Broad Buckler-fern (Dryopteris dilatata)</i>	LO
<i>Yellow Iris (Iris pseudacorus)</i>	LO
<i>Marsh-bedstraw (Galium palustre)</i>	R
<i>Bittersweet (Solanum dulcamara)</i>	R

@D2 at the base of the sloping Compartment F grassland, mainly within the consented extraction area and contiguous with the improved sward; so mown when the silage crop was taken. The level ground is a contention of the damp (but not puddling) ground – here fully open and under a species-poor B:22 semi-improved neutral grassland sward:

<i>Soft-rush (Juncus effusus)</i>	A
<i>Creeping Bent (Agrostis stolonifera)</i>	A
<i>Meadowsweet (Filipendula ulmaria)</i>	F
<i>Yorkshire-fog (Holcus lanatus)</i>	F
<i>Meadow Buttercup (Ranunculus acris)</i>	OLF
<i>Perennial Rye-grass (Lolium perenne)</i>	O-F
<i>Creeping Buttercup (Ranunculus repens)</i>	O
<i>Sharp-flowered Rush (Juncus acutiflorus)</i>	O



D1



D1 interior



D2



D2 sward

Compartment E: J:23 hedge with trees

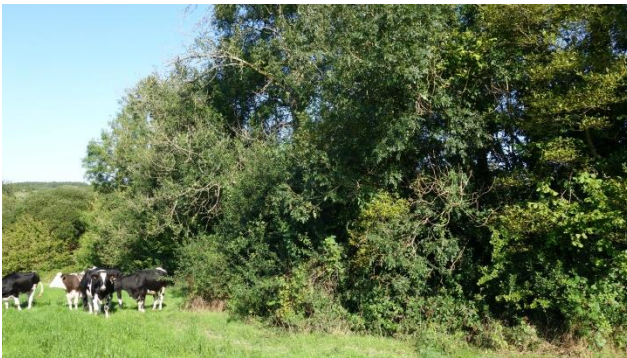
An uncut hedge boundary at the side of the track leading to the hard standing area off-site. This is planted on an embankment around 1.5m wide x 50 cm tall, with a mantle of Bramble (*Rubus fruticosus* agg.) spreading into the Compartment F field.

<i>Blackthorn (Prunus spinosa)</i>	FLA	
<i>Ash (Fraxinus excelsior)</i>	F	Mature
<i>Holly (Ilex aquifolium)</i>	F	
<i>Hazel (Corylus avellana)</i>	OLF	
<i>Hawthorn (Crataegus monogyna)</i>	O	
<i>Ash (Fraxinus excelsior)</i>	O	Less than mature
<i>Dog-rose (Rosa canina agg.)</i>	O	
<i>Beech (Fagus sylvatica)</i>	R	
<i>Rusty Willow (Salix cinerea subsp oleifolia)</i>	R	

The hedge base/verge and embankment with

<i>Common Ivy (Hedera helix)</i>	A
<i>Bramble (Rubus fruticosus agg.)</i>	FLA
<i>Slender Mouse-tail Moss (Isoetes macrospora)</i>	F
<i>Creeping Bent (Agrostis stolonifera)</i>	OLF
<i>Herb-Robert (Geranium robertianum)</i>	OLF
<i>Soft Shield-fern (Polystichum setiferum)</i>	O

<i>Wood Avens (Geum urbanum)</i>	O
<i>Wood Speedwell (Veronica montana)</i>	O
<i>Wood-sedge (Carex sylvatica)</i>	O
<i>Nipplewort (Lapsana communis)</i>	O
<i>Bush Vetch (Vicia sepium)</i>	O
<i>Field Horsetail (Equisetum arvense)</i>	LO
<i>Primrose (Primula vulgaris)</i>	LO
<i>Male-fern (Dryopteris filix-mas)</i>	R
<i>Broad Buckler-fern (Dryopteris dilatata)</i>	R
<i>Cow Parsley (Anthriscus sylvestris)</i>	R
<i>Intermediate Polypody (Polypodium interjectum)</i>	R
<i>Hart's-tongue (Asplenium scolopendrium)</i>	R
<i>Tutsan (Hypericum androsaemum)</i>	R
<i>Hedge Bindweed (Calystegia sepium agg)</i>	R



E



E

Compartment F: B:4 improved grassland

The main area under consideration to receive overburden as fill material is within a single large field, formerly 9 smaller fields (as depicted on the 6 inch OS map 1952-69) the whole area with the same B:4 improved grassland sward comprising relatively weed-free Rye-grass:

<i>Italian Rye-grass (Lolium multiflorum)</i>	D	The taller of the sown grasses
<i>Perennial Rye-grass (Lolium perenne)</i>	A	
<i>Creeping Buttercup (Ranunculus repens)</i>	O-F	
<i>Broad-leaved Dock (Rumex obtusifolius)</i>	OLF	
<i>Common Chickweed (Stellaria media)</i>	O	
<i>Meadow Buttercup (Ranunculus acris)</i>	O	
<i>Creeping Bent (Agrostis stolonifera)</i>	LO	
<i>Yorkshire-fog (Holcus lanatus)</i>	LO	
<i>Cuckooflower (Cardamine pratensis)</i>	R	
<i>Wavy Bitter-cress (Cardamine flexuosa)</i>	R	
<i>Dandelion (Taraxacum officinale)</i>	VLF	



F

Compartment G: J:23 hedge with trees

The tip of the survey area adjoins a wide, spreading hedge of suckering Blackthorn (*Prunus spinosa*). It presents a dense front, but inside it is mature enough to have an elevated canopy around a steep bank and dry ditch where taller Hawthorn (*Crataegus monogyna*) still mark the original planting.

<i>Blackthorn (Prunus spinosa)</i>	ALD	
<i>Bramble (Rubus fruticosus agg.)</i>	A	At edges
<i>Gorse (Ulex europaeus)</i>	R	
<i>Ash (Fraxinus excelsior)</i>	R	Mature
<i>Hawthorn (Crataegus monogyna)</i>	F	Tall
<i>Holly (Ilex aquifolium)</i>	R	

A reasonable light climate for ground-flora development, but a disappointing species-poor ground-flora overwhelmingly dominated by Ivy.:

<i>Common Ivy (Hedera helix)</i>	D	
<i>Soft Shield-fern (Polystichum setiferum)</i>	F	
<i>Creeping Bent (Agrostis stolonifera)</i>	LF	Edges
<i>Common Nettle (Urtica dioica)</i>	R	
<i>Honeysuckle (Lonicera periclymenum)</i>	R	



G



G

Compartment H: J:23 hedge with trees

Part of the boundary around the tip of the approved L/2009/1042/F application. The boundary is represented by an embankment (1.2 m wide x 50 cm tall) around which a ditch has been cut on the soil store side. Gravel in the base of the ditch is probably covering a perforated land drain.

Near continuous multi-stemmed Common Alder (*Alnus glutinosa*) make up the great majority of the boundary vegetation structure. On the adjacent side initially it runs beside the Compartment D1 damp woodland. There is no discernible ditch anymore, but Marsh-bedstraw (*Galium palustre*) is only common here, sometimes spreading over the embankment, but not into the adjacent damp grassland ground-flora.

<i>Common Alder (Alnus glutinosa)</i>	D	To 25 cm dbh. Coppiced
<i>Ash (Fraxinus excelsior)</i>	R	Sapling
<i>Holly (Ilex aquifolium)</i>	R	
<i>Rusty Willow (Salix cinerea subsp oleifolia)</i>	R	
<i>Osier (Salix viminalis)</i>	VR	Fallen



H



H

The bank and hedge base with:

<i>Common Feather-moss (Kindbergia praelonga)</i>	F
<i>Bramble (Rubus fruticosus agg.)</i>	F
<i>Creeping Bent (Agrostis stolonifera)</i>	OLD

<i>Marsh-bedstraw (Galium palustre)</i>	OLF
<i>Broad Buckler-fern (Dryopteris dilatata)</i>	O
<i>Remote Sedge (Carex remota)</i>	O
<i>Meadowsweet (Filipendula ulmaria)</i>	O
<i>Herb-Robert (Geranium robertianum)</i>	O
<i>Common Ivy (Hedera helix)</i>	LA
<i>Soft-rush (Juncus effusus)</i>	LF
<i>Yorkshire-fog (Holcus lanatus)</i>	LF
<i>Cleavers (Galium aparine)</i>	LO
<i>False Oat-grass (Arrhenatherum elatius)</i>	LO
<i>Water Horsetail (Equisetum fluviatile)</i>	LO
<i>Floating Sweet-grass (Glyceria fluitans)</i>	LO
<i>Creeping Buttercup (Ranunculus repens)</i>	LO
<i>Yellow Iris (Iris pseudacorus)</i>	R
<i>Bittersweet (Solanum dulcamara)</i>	R
<i>Common Nettle (Urtica dioica)</i>	VLF

Compartment I: J:23 hedge with trees

Part of the boundary around the tip of the approved L/2009/1042/F application. The boundary is marked by a low embankment. The ditch cut at the base of the embankment continues to the lane at B. With the ground rising slightly from the Compartment H section, the free board increases, here about 80 cm on the site (overburden store) side. The hedge comprises tall Hawthorn (*Crataegus monogyna*) and Holly (*Ilex aquifolium*) with mature Ash (*Fraxinus excelsior*), some of which have been damaged by the ditch cutting, but appear not to have been badly impacted.

Blackthorn (*Prunus spinosa*) in places spreads into the adjacent grassland.

<i>Hawthorn (Crataegus monogyna)</i>	A	
<i>Ash (Fraxinus excelsior)</i>	F	Mature
<i>Holly (Ilex aquifolium)</i>	F	
<i>Blackthorn (Prunus spinosa)</i>	F	
<i>Osier (Salix viminalis)</i>	R	



I



I

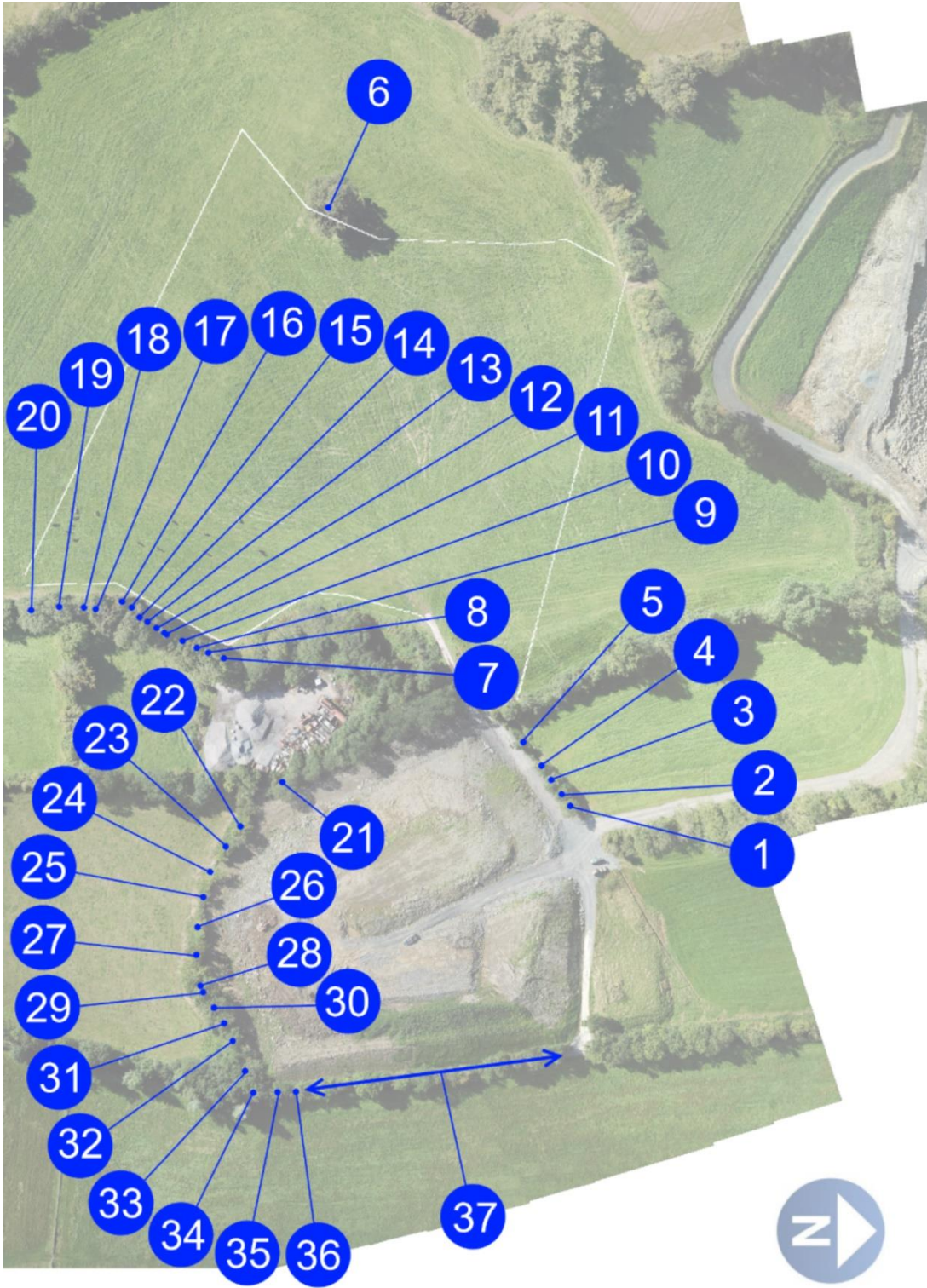
The bank, including the slope down to the new ditch:

<i>Common Feather-moss (Kindbergia praelonga)</i>	A
<i>Common Ivy (Hedera helix)</i>	F
<i>Primrose (Primula vulgaris)</i>	OLF
<i>Herb-Robert (Geranium robertianum)</i>	OLF
<i>Hart's-tongue (Asplenium scolopendrium)</i>	O-F
<i>Wild Strawberry (Fragaria vesca)</i>	O
<i>Male-fern (Dryopteris filix-mas)</i>	O
<i>Hart's-tongue (Asplenium scolopendrium)</i>	O
<i>Herb-Robert (Geranium robertianum)</i>	O
<i>Common Pocket-moss (Fissidens taxifolius)</i>	LO
<i>Intermediate Polypody (Polypodium interjectum)</i>	R
<i>Creeping Buttercup (Ranunculus repens)</i>	R
<i>Wood-sorrel (Oxalis acetosella)</i>	R
<i>Wood Speedwell (Veronica montana)</i>	R
<i>Cleavers (Galium aparine)</i>	R
<i>Scaly Male-fern (Dryopteris affinis agg.)</i>	R
<i>Common Dog-violet (Viola riviniana)</i>	R
<i>Field Horsetail (Equisetum arvense)</i>	R



Whole site

Trees



Map 2 – Inventoried trees

No.	Spp.	DBH cm	BRP	Condition/notes
1	<i>Ash (Fraxinus excelsior)</i>	32	1	Ivy covered. Borderline BRP2
2	<i>Ash (Fraxinus excelsior)</i>	To 24	0	Multi-stemmed from 104 cm Ø base
3	<i>Ash (Fraxinus excelsior)</i>	To 24	0	Multi-stemmed from 51 cm Ø base
4	<i>Ash (Fraxinus excelsior)</i>	To 28	0	Multi-stemmed from 39 cm Ø base
5	<i>Ash (Fraxinus excelsior)</i>	14	0	Impacted by Ash die-back
6	<i>Ash (Fraxinus excelsior)</i>	86	1	Barely impacted by Ash die-back
7	<i>Ash (Fraxinus excelsior)</i>	33	0	Behind container. Impacted by Ash die-back
8	<i>Ash (Fraxinus excelsior)</i>	To 62	1	2 stemmed from 90 cm Ø base
9	<i>Ash (Fraxinus excelsior)</i>	35	1	
10	<i>Ash (Fraxinus excelsior)</i>	36	1	
11	3 x <i>Ash (Fraxinus excelsior)</i>	55 25 33	1 1 1	Severely impacted by Ash die-back
12	<i>Ash (Fraxinus excelsior)</i>	25	0	Impacted by Ash die-back
13	<i>Ash (Fraxinus excelsior)</i>	To 43	2	3-stemmed, low breaking. 2 stems are snags; rot holes and loose bark
14	<i>Ash (Fraxinus excelsior)</i>	33	1	
15	<i>Ash (Fraxinus excelsior)</i>	33	0	
16	<i>Ash (Fraxinus excelsior)</i>	43	0	
17	<i>Ash (Fraxinus excelsior)</i>	To 42	1	1 dead leader, the other with severe Ash die-back. Borderline BRP2
18	<i>Ash (Fraxinus excelsior)</i>	To 35	1	2-stems. Impacted by Ash die-back
19	<i>Ash (Fraxinus excelsior)</i>	To 22	0	2-stems. Impacted by Ash die-back
20	<i>Ash (Fraxinus excelsior)</i>	To 48	1	2-stems. Much Ivy. Borderline BRP 2
21	<i>Common Alder (Alnus glutinosa)</i>	To 34	0	3-stems – the only large stems in H
22	<i>Ash (Fraxinus excelsior)</i>	28	1	Dark damage
23	<i>Ash (Fraxinus excelsior)</i>	30	1	Bark damage
24	<i>Ash (Fraxinus excelsior)</i>	30	2	Small tree with loose bark
25	<i>Ash (Fraxinus excelsior)</i>	31	1	Severely impacted by Ash die-back
26	<i>Ash (Fraxinus excelsior)</i>	33	1	Severely impacted by Ash die-back Borderline BRP 2
27	<i>Ash (Fraxinus excelsior)</i>	39	1	Borderline BRP 2 (Ivy)
28	<i>Ash (Fraxinus excelsior)</i>	36	1	
29	<i>Ash (Fraxinus excelsior)</i>	30	1	
30	<i>Ash (Fraxinus excelsior)</i>	31	1	
31	<i>Common Alder (Alnus glutinosa)</i>	39	1	
32	<i>Ash (Fraxinus excelsior)</i>	22	0	
33	<i>Ash (Fraxinus excelsior)</i>	18	0	
34	<i>Ash (Fraxinus excelsior)</i>	60	1	Borderline BRP 2 (Loose bark)
35	<i>Ash (Fraxinus excelsior)</i>	To 22	0	Multi-stemmed from 98 cm base
36	<i>Ash (Fraxinus excelsior)</i>	43	2	Dense Ivy mat

37	<i>Ash (Fraxinus excelsior)</i>	16	0	Compartment B south
	<i>Ash (Fraxinus excelsior)</i>	19	0	
	<i>Ash (Fraxinus excelsior)</i>	18	0	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	20	0	
	<i>Ash (Fraxinus excelsior)</i>	22	0	
	<i>Ash (Fraxinus excelsior)</i>	20	1	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	32	1	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	16	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	59	0	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	26	1	Impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	14	1	
	<i>Ash (Fraxinus excelsior)</i>	31	1	
	<i>Ash (Fraxinus excelsior)</i>	19	0	
	<i>Ash (Fraxinus excelsior)</i>	28	1	
	<i>Ash (Fraxinus excelsior)</i>	25	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	24	1	
	<i>Ash (Fraxinus excelsior)</i>	75	1	
	<i>Ash (Fraxinus excelsior)</i>	32	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	34	1	
<i>Ash (Fraxinus excelsior)</i>	26	1		
<i>Ash (Fraxinus excelsior)</i>	To 22	1	Compartment B north	

1 DBH = stem diameter at 1.3m from the ground (breast height)

2 BRP = Bat Roost Potential as per Bat Conservation Trust 2016 Good Practice guidelines

Under the BCT guidelines, trees with BRP 2 (Moderate) or more require emergence/return surveys if they are predicted to be impacted (see Appendix 1 BRP report).

Wildlife Order Schedule 9/Invasive Alien Species Order Article 3 species

No Scheduled species (such as Japanese Knotweed, Giant Hogweed, Himalayan Balsam etc.) were identified either in the proposed extension area, or in the passage through the quarry to access the proposed extension.

3.4 Protected Fauna

Badger: The full 25 m survey buffer was searched. All hedge boundaries walked both sides searching for mammal tracks.

The spreading Blackthorn (*Prunus spinosa*) and Bramble (*Rubus fruticosus* agg.) hedges are difficult and time consuming to check for Badger setts. Compartment B was checked internally at intervals.

The clear stemmed structure in G allowed survey access.

The hedge adjacent to D2 is partly within the 25 m buffer, but was not searched below the Blackthorn canopy. If there were any setts here they would not have any tunnels extending below the wet ground into the application site.

No signs of Badger were identified, and no mammal burrows at all required investigation.

Bats: See separate Bat Potential report presented as Appendix 1.

Pine Marten: Pine Marten, formerly ± restricted to a few areas in the west of the province, have been aggressively re-establishing their range to the east in recent years.

The NBN atlas (<https://species.nbnatlas.org/species/NHMSYS0000080190>) has a record from mapped in the proximity of the quarry, but this is a mis-transcription as the actual record was from Rossmacaffery Road to the south-west of Lisnaskea village. It is possible they may occur around the application site, particularly in Mullaghcapple Wood, but the proposed extension provides poor habitat for them.

Breeding Birds: All structural vegetation could provide nesting opportunities for passerines. A single nest in Ivy was identified on tree 27 (bird species unknown).

Newts: No potential breeding ponds occur on site or in range, and the habitats on site are not suitable terrestrial habitats for newts.

Lizard: The site is beyond the range of Lizard within Northern Ireland as reported in Farren et al. (2010). They are mainly associated with heathland, bog and coastal habitats, which are not present on this site. The NBN atlas (<https://species.nbnatlas.org/species/NHMSYS0001706186>) And Farren et al., both show Lizard records from the Slieve Beagh area to the east.

Invertebrates: The open soil habitats of Compartment C1 may provide habitat for specialist burrowing invertebrates. Such open habitat is plentiful in the wider site. No other important invertebrate habitats were noted.

4. Potential Ecological Constraints and Recommendations

For recommendations relating to potential bat use, refer to the Bat Roost Potential (BRP) survey report.

Protected sites

Shared Environmental Service (SES) if consulted, will determine the requirement for a Habitat Regulation Assessment (HRA) to test for potentially significant impacts upon the designation features of Upper Lough Erne SAC as listed in section 3.2.

The only potential impact pathways are via potentially deleterious inputs into the Drumgallon River when settlement ponds are pumped, or via groundwater. Careful management is already in place to avoid that possibility and no past incidents have occurred. Extraction from the proposed extension does not add to the existing risk that is already being addressed.

If SES are not consulted, in the absence of a determination, it is recommended that an HRA will not be required.

Similarly the Upper Lough Erne ASSI would not be subject to any greater risk.

The LWS and long-established woodland on the opposite side of the quarry would be little impacted by the working of the proposed extension area.

Protected habitats

Outside designated sites, habitats that fall within the remit of PPS2 are protected against operations requiring planning permission.

Policy NH 5 of PPS2 covers the Planners responsibilities with respect to ‘habitats, species or features of natural heritage importance’. Specifically it requires that Planning permission not be granted for a development proposal which is likely to result in the unacceptable adverse impact on or damage to a range of protected habitats. A development proposal which is likely to result in an unacceptable adverse impact on, or damage to a listed habitat

‘may only be permitted where the benefits of the proposed development outweigh the value of the habitat, species or feature’, in which case ‘appropriate mitigation and/or compensatory measures will be required’

As public bodies, council’s also have a general duty under Wildlife and Natural Environment Act (NI) to protect biodiversity.

The hedges at Compartments A, B, E, H and I fall within the definition of the Northern Ireland Biodiversity Strategy Priority Habitat *Hedgerows*.

It seems all of these hedges could be retained if the proposal is enacted. If so, this should be shown in the application.

Compartment D1 is too small, and does not have a well enough developed wetland component in the ground-flora to be considered a Northern Ireland Biodiversity Strategy Priority Habitat Wet woodland. It is beyond the application boundary and not likely to be adversely impacted by the proposal. It may receive more runoff, and initially less nutrient-rich run-off from the adjacent input slope – this would not be an adverse impact.

Trees

With the exception of isolated Ash tree at 6, the trees on site are in the boundary hedges. These are overwhelmingly of Ash (*Fraxinus excelsior*), with the exception of the boundary at Compartment H, exclusively so.

Not all are currently showing symptoms of Ash die-back, but many are, and some are severely impacted. The prognosis is poor for these plants.

As the hedges will be retained, so will the trees. They will have roots spreading into the application site that are vulnerable to damage.

The Alder of the Compartment H boundary appear not to have been profoundly impacted by the cutting or deepening of a ditch at the hedge base – damaged roots are not obvious in the ditch bank. Additional storage of till overburden will not further compromise them.

The Ash of Compartment I have suffered a little more root damage, but generally not of roots > 5cm Ø. Similarly additional storage of till overburden in Compartment C1 will not further compromise them.

The Compartment B Ash are generally semi-mature and appear not to have been impacted by the over-deepening of the roots extending into C1 due to fill material being placed directly alongside the hedge. Additional storage of till overburden in Compartment C1 will not further compromise them either.

The Compartment E trees (trees 7 to 20) are generally more mature than the Compartment B trees. Ideally a Root Protection Area should be designated alongside them. This is normally 12 x the dbh for single stemmed trees (from BS5837 Trees in Relation to Design, Demolition and Construction). In practise this would mean a 4.0 m strip along the embankment base that is not stripped, not used as a quarry track and in which a new drainage ditch is not excavated.

If the trees succumb to Ash die-back, then this would no longer be prerequisite.

Protected Plants

Primrose (*Primula vulgaris*) scattered along the Compartment I boundary. It is listed in Schedule 8, part 2 of the Northern Ireland under the Wildlife (NI) Order, 1985.

This does not imply rarity, but makes it illegal for third parties to uproot Primroses, and under 14.2 makes it illegal to sell wild collected Primroses or advertise wild collected Primroses for sale. Not an issue here.

Breeding Birds

Protection of nests in the breeding season, whether occupied or under construction, is a legal requirement under the Wildlife Order (NI). The breeding season extends from 1st March to 31st August.

There appears to be no requirement for clearance of structural vegetation to enact the proposed works, but in general where removal or flailing of hedges is required, it should be undertaken outside these dates to eliminate the risk of illegally disturbing nests.

Reinstatement

The area currently beyond the quarry ownership is outwith the overarching re-instatement plan that was put forward in 2009 which shows high value habitats being created over the decommissioned site.

It is understood that if the overburden storage is approved, the likely condition is that the area will be topsoiled, re-seeded and returned to the current owner in a condition for resumption of intensive agricultural management. This would be a like-for-like outcome.

Reference:

Farren, A., Prodöhl, P. A., Laming, P. and Reid N. (2010)
Distribution of the common lizard (*Zootocavivipara*) and landscape favourability for the species in Northern Ireland. *Amphibia-Reptilia* 31: 387-394.

Appendix 1 – Bat Use Potential and Bat Roost Potential

The potential use of the site by bat species was a part of the PEA survey, but on NIEA's advice, it is reported separately.

The aims of this appendix are:

1. To evaluate the likely bat productivity and use of the site and the local area.
2. To evaluate structures on the survey site in relation to connectivity of potential bat foraging and commuting corridors in the local area.
3. To evaluate the potential for structures on site to host bat roosts through allocation to standard BRP classes as defined by the Bat Conservation Trust (Collins, 2016).
4. To advise on how the site design can take the potential use by bats into account, thus reducing the likelihood of the planning application failing or being held up at the consultation stage.
5. The identification of any additional bat surveys that DAERA/NED may require to enable them to complete their assessment the pending planning application.

A.1 Bats in Northern Ireland

There are eight known species of bat in Northern Ireland (compared to the fourteen species found in Great Britain):

Brown Long-eared Bat (*Plecotus auritus*)
Common Pipistrelle (*Pipistrellus pipistrellus*)
Soprano Pipistrelle (*Pipistrellus pygmaeus*)
Nathusius' Pipistrelle (*Pipistrellus nathusii*)
Daubenton's Bat (*Myotis daubentonii*)
Natterers's Bat (*Myotis nattereri*)
Whiskered Bat (*Myotis mystacinus*)
Leisler's Bat (*Nyctalus leisleri*)

All our bats feed on insects and forage especially over habitats where insects may be abundant. This often includes linear structural features that may be productive themselves, or may accumulate flying insects in certain wind conditions. They may also use the network of hedgerows and other structural vegetation to navigate around their territories.

Roosts:

Bats use several different types of roosts at different times of the year and bats may return to the same roost year after year.

Bats are generally active between the months of March to late September when they generally sleep by day in roosts and feed during the night, thus they emerge from their day roosts at nightfall and return again shortly before dawn.

All our bats hibernate during the winter. Surviving winter hibernation on stored fat reserves, depends upon conservation of energy and disturbance of bats in their hibernation roosts may result in the utilisation of energy reserves to a life-threatening degree.

Bat roosts may be located in cracks or holes in trees, caves, souterrains and other underground passages, in tunnels, beneath bridges and often in buildings - not necessarily in old, or unoccupied ones.

There is a definite advantage to be had for nursery colonies to roost in heated buildings, hibernating bats require colder roost sites so that they can slow down their metabolism.

In March, large numbers of female bats begin to group together to form maternity colonies in maternity roosts which may serve a large area. At other times of the year bats normally roost singly or in smaller groups. Male bats especially roost singly or in small numbers during the breeding season.

The summer colonies disperse in September/October. Hibernation colonies are normally located in an alternative site.

Around three quarters of British bat species are known to roost in trees, but most trees do not offer roosting opportunities. Features of trees that may provide suitable places for roosting bats, such as rot holes, fissures, loose plates of bark or dense mats of Ivy clear of the stem, are generally associated with large mature trees.

Where a colony of bats has occupied a site for even a short period, discrete evidence in the form of droppings and urine stains may remain for weeks or even years.

Summary of roost types (after Bat Conservation Trust).

Roost Type	Description
Maternity	Female bats roosting collectively in order to breed. The single pups are able to fly at \pm 4 weeks and are weaned at \pm 6 weeks.
Satellite	Breeding females may have alternative roosts close to the main nursery colony.
Mating	All our bats are polygynous. Males of some species occupy Mating aka Harem roosts from which they attract females.
Night	Sites away from the main roost used to rest during the night.
Day	Individuals or small groups of males use several sites in which to rest during the day, often having several sites which they switch between.
Feeding	Used by individuals or small groups throughout the season.
Transitional	Individuals or groups use these sites for a short period post or pre- hibernation.
Hibernation	Roosts used for hibernating over the winter.

A.2 Survey method

Foraging & Commuting Potential (FCP)

The habitats and vegetated features within and surrounding the application site were assessed for their potential use by foraging and commuting bats.

This was carried out both during the site visit and also by viewing satellite imagery of the site in its local context and considering its inter-connectivity to other vegetated features in the wider area likely to be used by bats. The site, and features within the site were assigned to Foraging & Commuting Potential classes as follows

FCP	Description
0: Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
1: Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but not very well connected to the surrounding landscape. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
2: Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
3: High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland. Site is close to and connected to known roosts.

Bat Roost Potential (BRP)

The likelihood of roosting bats being present at any time within trees or other potential roost structures was assessed following the Bat Conservation Trust Guidelines (Collins, 2016) by the identification of Potential Roost Features (PRF's) which may be suitable either as roosting sites for bats or allow access to a Potential Roost Features, and on the basis of this evidence, combined with the predicted level of activity.

Trees:

All large trees potentially impacted by a proposed development and included in the Preliminary Ecological Appraisal (PEA) tree inventory were individually assessed and assigned to Bat Root Potential classes on the basis of potential roost features as follows:

BRP	Description
0: Negligible	Trees without loose bark, fissures and rot holes, and without dense mature Ivy cover. Generally young to semi-mature specimens, or larger specimens that it is clear, from ground level do not have PRF's.
1: Low	Trees with very limited loose bark, fissures, rot holes dense mature Ivy cover, but the tree is of a size and age that it is not clear, from ground level that they do not have PRF's.
2: Moderate	Trees with e.g. loose bark, deep fissures or splits and rot holes, or with dense thick-stemmed Ivy that seem likely to present potential at least for use by single bats, habitat but unlikely to support a roost of high conservation status.
3: High	Trees with multiple, highly suitable features that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Where larger stands of trees were surveyed rather than individual tree locations mapped the presence/abundance of BRP group 2: Moderate trees was noted.

Buildings and other structures

No buildings or other structures would be impacted by the proposal.

Limitations:

No bat activity survey was conducted – a principal aim of the work was to assess the requirement for bat emergence/return or activity surveys.

A.3 The Site and its locality

Bats would feed along the treelines in the local area, particularly along Mullaghcapple Wood, and over the flower-rich grasslands within unworked areas in the quarry pit, including the overburden storage areas once revegetated. Wet habitats in the base, including temporary pools as well as the sump pond, may add to the productivity of flying insect prey items.

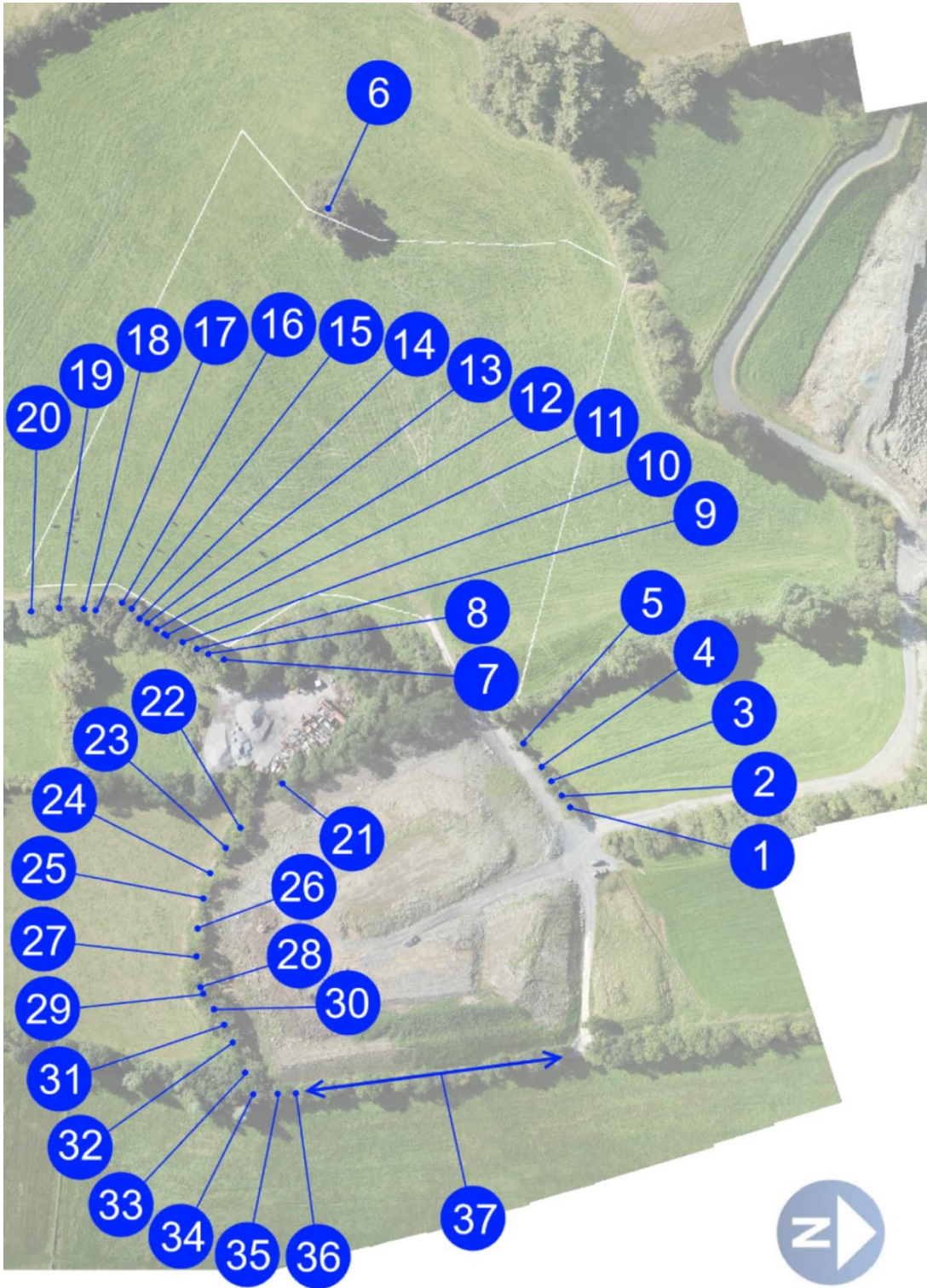
The grasslands in the surrounding farmland are highly improved and unlikely to be productive for bats. Despite field enlargement, there remains a good connected network of tall hedges in the local area.



The site in context

Overall the site was considered to have a ‘Moderate’ Foraging & Commuting Potential (FCP)

A.4 Trees



Map 2 – Inventoried trees

No.	Spp.	DBH cm	BRP	Condition/notes
1	<i>Ash (Fraxinus excelsior)</i>	32	1	Ivy covered. Borderline BRP2
2	<i>Ash (Fraxinus excelsior)</i>	To 24	0	Multi-stemmed from 104 cm Ø base
3	<i>Ash (Fraxinus excelsior)</i>	To 24	0	Multi-stemmed from 51 cm Ø base
4	<i>Ash (Fraxinus excelsior)</i>	To 28	0	Multi-stemmed from 39 cm Ø base
5	<i>Ash (Fraxinus excelsior)</i>	14	0	Impacted by Ash die-back
6	<i>Ash (Fraxinus excelsior)</i>	86	1	Barely impacted by Ash die-back
7	<i>Ash (Fraxinus excelsior)</i>	33	0	Behind container. Impacted by Ash die-back
8	<i>Ash (Fraxinus excelsior)</i>	To 62	1	2 stemmed from 90 cm Ø base
9	<i>Ash (Fraxinus excelsior)</i>	35	1	
10	<i>Ash (Fraxinus excelsior)</i>	36	1	
11	3 x <i>Ash (Fraxinus excelsior)</i>	55 25 33	1 1 1	Severely impacted by Ash die-back
12	<i>Ash (Fraxinus excelsior)</i>	25	0	Impacted by Ash die-back
13	<i>Ash (Fraxinus excelsior)</i>	To 43	2	3-stemmed, low breaking. 2 stems are snags; rot holes and loose bark
14	<i>Ash (Fraxinus excelsior)</i>	33	1	
15	<i>Ash (Fraxinus excelsior)</i>	33	0	
16	<i>Ash (Fraxinus excelsior)</i>	43	0	
17	<i>Ash (Fraxinus excelsior)</i>	To 42	1	1 dead leader, the other with severe Ash die-back. Borderline BRP2
18	<i>Ash (Fraxinus excelsior)</i>	To 35	1	2-stems. Impacted by Ash die-back
19	<i>Ash (Fraxinus excelsior)</i>	To 22	0	2-stems. Impacted by Ash die-back
20	<i>Ash (Fraxinus excelsior)</i>	To 48	1	2-stems. Much Ivy. Borderline BRP 2
21	<i>Common Alder (Alnus glutinosa)</i>	To 34	0	3-stems – the only large stems in H
22	<i>Ash (Fraxinus excelsior)</i>	28	1	Dark damage
23	<i>Ash (Fraxinus excelsior)</i>	30	1	Bark damage
24	<i>Ash (Fraxinus excelsior)</i>	30	2	Small tree with loose bark
25	<i>Ash (Fraxinus excelsior)</i>	31	1	Severely impacted by Ash die-back
26	<i>Ash (Fraxinus excelsior)</i>	33	1	Severely impacted by Ash die-back Borderline BRP 2
27	<i>Ash (Fraxinus excelsior)</i>	39	1	Borderline BRP 2 (Ivy)
28	<i>Ash (Fraxinus excelsior)</i>	36	1	
29	<i>Ash (Fraxinus excelsior)</i>	30	1	
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31	<i>Common Alder (Alnus glutinosa)</i>	39	1	
32	<i>Ash (Fraxinus excelsior)</i>	22	0	
33	<i>Ash (Fraxinus excelsior)</i>	18	0	
34	<i>Ash (Fraxinus excelsior)</i>	60	1	Borderline BRP 2 (Loose bark)
35	<i>Ash (Fraxinus excelsior)</i>	To 22	0	Multi-stemmed from 98 cm base
36	<i>Ash (Fraxinus excelsior)</i>	43	2	Dense Ivy mat

37	<i>Ash (Fraxinus excelsior)</i>	16	0	Compartment B south
	<i>Ash (Fraxinus excelsior)</i>	19	0	
	<i>Ash (Fraxinus excelsior)</i>	18	0	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	20	0	
	<i>Ash (Fraxinus excelsior)</i>	22	0	
	<i>Ash (Fraxinus excelsior)</i>	20	1	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	32	1	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	16	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	59	0	Borderline BRP 2 (Ivy)
	<i>Ash (Fraxinus excelsior)</i>	26	1	Impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	14	1	
	<i>Ash (Fraxinus excelsior)</i>	31	1	
	<i>Ash (Fraxinus excelsior)</i>	19	0	
	<i>Ash (Fraxinus excelsior)</i>	28	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	25	1	
	<i>Ash (Fraxinus excelsior)</i>	24	1	
	<i>Ash (Fraxinus excelsior)</i>	75	1	
	<i>Ash (Fraxinus excelsior)</i>	32	1	Severely impacted by Ash die-back
	<i>Ash (Fraxinus excelsior)</i>	34	1	
<i>Ash (Fraxinus excelsior)</i>	26	1		
<i>Ash (Fraxinus excelsior)</i>	To 22	1	Compartment B north	

1 DBH = stem diameter at 1.3m from the ground (breast height)

2 BRP = Bat Roost Potential as per Bat Conservation Trust 2016 Good Practice guidelines

Under the BCT guidelines, trees with BRP 2 (Moderate) or more require emergence/return surveys if they are predicted to be impacted (see Appendix 1 BRP report).



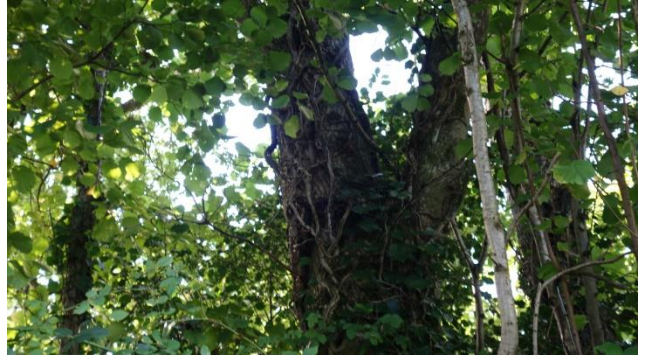
1



6



13



20



24



26



27



29



30



31



34



36



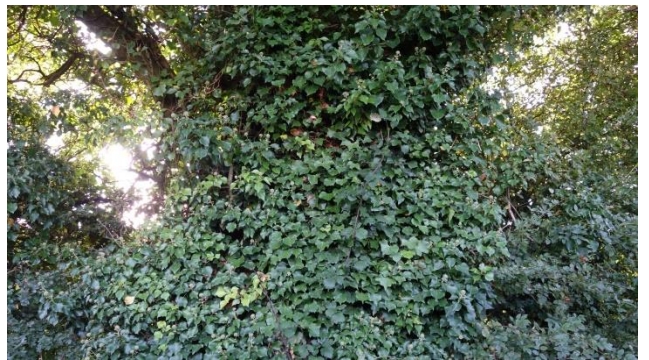
37.6



37.7



37.9



37.17

A.5 Recommendations

Potential for roosting in trees

Trees 13, 24 and 36 have a BRP of 2 'Moderate'. If they were to be removed, then in accordance with the BCT's 2016 guidelines, there would be a requirement for a bat emergence return survey to investigate the actual use of the trees by bats.

The BCT guidelines also recommend that 'where there are low suitability PRFs (sic Potential Roost Features), precautionary measures may be appropriate during felling or pruning activities'. This is not a default requirement and here applies to trees 1, 17, 20, 26, 27, 28, 29, 30, 31, 34, 37.6, 37.7 and 37.9. If any of these are removed, once felled, they should be left intact on site for 24 hours to permit any bats within them to escape, prior to removal of the tree from the area.

It is not anticipated that there would be any tree removal required to facilitate the proposed works. It is not anticipated that tree surgery or Ivy removal would be a part of the works programme.

Tree continuity

Retain the tree lines if possible.

Reference:

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). The Bat Conservation Trust.

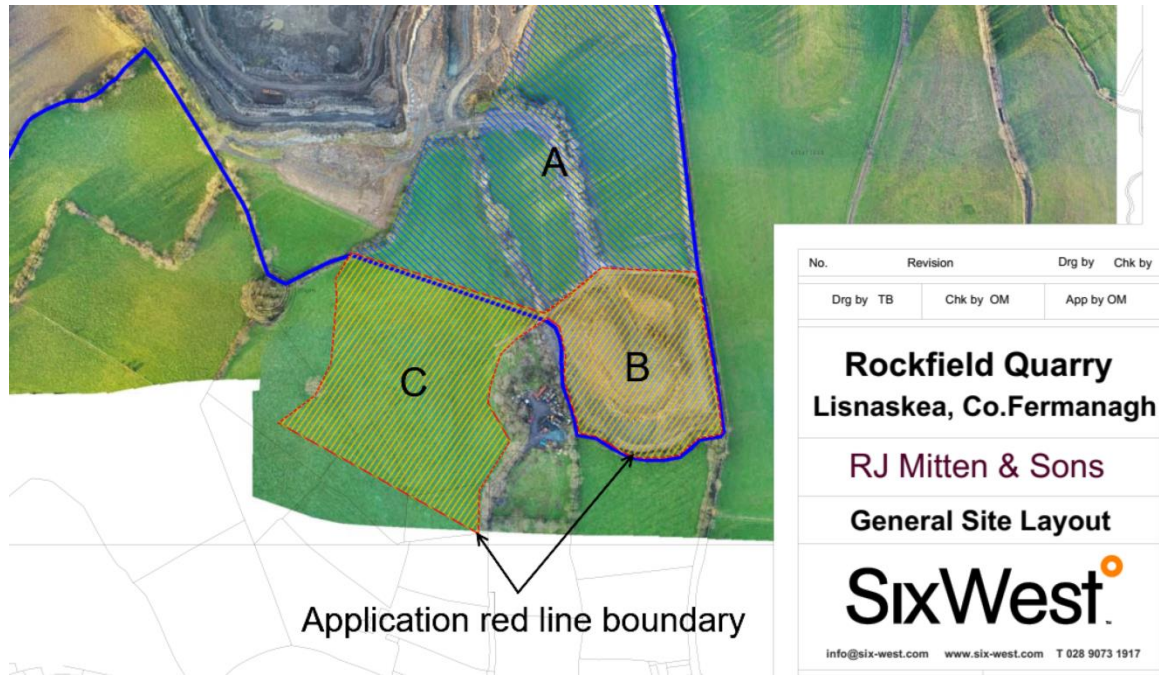
Appendix 1 – 2023 scheme update

The proposal overview at the time of the survey is depicted below where:

A = managed agricultural lands where extraction is consented under L/2009/1042/F

B = current consented overburden store where additional storage is planned.

C = proposed new location for a further overburden store.



Map A1

Areas B and C would both receive stripped overburden from A.

The updated proposal is that a part of Area A contiguous with Area C will also receive overburden for storage.

Area C was surveyed in 2022 and described as survey Compartment F. The new storage area was not included in the 2022 survey, but is clearly a part of the same vegetation unit with equivalent vegetation, see Map A2 below:



Map A1

The area is currently approved for extraction, but is now proposed to receive overburden.

This is a material change of use so a new planning consent will be required. All boundary vegetation is to remain, the only thing affected is approximately 1.7 ha of open grassland the same as that described for Compartment F - re-sown Italian Rye-grass in an intensively managed B:4 improved grassland. No rock faces would be impacted.

ADDITIONAL RECOMMENDATIONS:

An additional site visit to survey the area equivalent to Compartment C is not recommended as it would not provide any new data on the grassland area impacted.

The impact of substituting the extraction management for overburden storage is not a significant negative impact.

With the adjacent boundaries now being retained, it is recommended that the heavy fill does not extend fully to the edge to limit root damage.

No signs of Badger were identified in the survey areas of buffers in 2022. No cover is being removed from the boundaries of the new storage area.

Legal protection of Badgers and their setts remains regardless of the outcome of the planning application.

Shaun Wolfe-Murphy
24/09/2023