

Rue Hill Campsite, Cauldon Low

Preliminary Ecological Appraisal Report (PEAR)



Client:

Indigo Architecture Ltd.

Report Reference:

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PROJECT

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1 EXECUTIVE SUMMARY

1.1 Background

- i RammSanderson Ecology Ltd was instructed by Indigo Architecture Ltd. to carry out a Preliminary Ecological Appraisal of land off Rue Hill Road, Cauldon Low, Stoke-on-Trent, Staffordshire to inform site proposals. Site proposals included the construction of a campsite.
- ii The site formed an area of poor semi-improved grassland with scattered broadleaved trees and scatted scrub around the boundary of the site. Fencing also bordered the site.

Table 1: Summary of Ecological Features

Ecological Feature	Comment	Further Surveys Recommended	Avoidance	Mitigation	Compensation /Enhancement	Residual Impact
Designated Sites	Whilst the site is situated within the Impact Risk Zones of multiple nearby SSSI's, the proposals are not of a type that triggers the need for further impact appraisal or consultation with Natural England during determination of planning permission. Rue Hill LWS is adjacent and partially on site.	A pre-commencement survey of the part of LWS on site will be necessary if it is to be directly impacted.	High fencing to be erected surrounding the site. A footpath adjacent to the northern boundary will direct people away from the SSSI's, avoiding an increase in disturbance and recreational pressures. Avoid impacts to LWS.	High fencing to be erected surrounding the site. A Construction Environmental Management Plan (CEMP) is recommended to be conditioned and adhered to during the construction works to reduce the risk of and manage the impacts on the LWS.	TBC	Low to negligible if avoidance and mitigation measures can be followed.
Habitats	Habitats on site were mostly of low ecological value with trees and scrub being of higher value. An open mosaic habitat on previously developed land (OMH) Habitats of Principal Importance (HPI) (NERC Act, 2006) was located 33m south	No	High fencing to be erected surrounding the site.	Retention of trees on site.	N/A	Negligible

Ecological Feature	Comment	Further Surveys Recommended	Avoidance	Mitigation	Compensation /Enhancement	Residual Impact
	and a lowland calcareous grassland with OMH were located 45m north of the site.					
Great Crested Newt	A pond (P1) was located 13m east of the site, however this was dry and unsuitable for amphibians at the time of survey. Another pond (P2) was also located within 250m of the site but was located beyond a barrier for dispersal of GCN in the form of the nearby active quarry grounds. The site is of value for terrestrial phase amphibians.	No – ponds dry or beyond active quarry	N/A	Not required.	Habitat enhancements recommended.	Negligible
Bats	All trees on site were of negligible bat roosting potential. No buildings were located on site. Habitats on site were suitable for foraging and commuting bats.	No	No	Sensitive bat lighting strategy detailed within a CEMP. Recommended for the trees on site to be retained.	PMW	Negligible
Birds	Potential for works to disturb nesting birds.	No	Conduct works over winter outside breeding bird season	Nesting bird check by ecologist immediately prior to works if occurring March – September.	N/A	Negligible
Reptiles	Habitats on site suitable for reptiles.	None	Conduct works in spring summer to avoid hibernation season	Habitat manipulation to remove suitability – detailed in a CEMP	N/A	Negligible - provided CEMP is followed
Water Vole, Otter, White-clawed crayfish (WCC)	No suitable habitats for these species on site.	No	N/A	N/A	N/A	Negligible

Ecological Feature	Comment	Further Surveys Recommended	Avoidance	Mitigation	Compensation /Enhancement	Residual Impact
Terrestrial Invertebrates	Limited suitability for invertebrates on site.	None	N/A	N/A	N/A	N/A
Eels	No suitable habitats for these species on site.	No	N/A	N/A	N/A	Negligible
Fish	No suitable habitats for these species on site.	No	N/A	N/A	N/A	Negligible
Principal Species	Habitats on site are suitable for hedgehogs.	No	PMW	Precautionary Method of Works (PMW) recommend for hedgehogs.	N/A	Negligible
Invasive species	No invasive species on site.	N/A	N/A	N/A	N/A	Negligible
Biodiversity Net Gain	BIA not conducted for this site. LPA to be consulted on whether BIA may be required.	No	N/A	Likely enhancement and habitat creation to be recommended included new hedgerows around the site boundaries of the site, creating wildflower meadows on any grassland to be retained on site and replacing any trees to be lost on site and addition of more trees on site.	N/A	BIA not conducted for this site. LPA to be consulted on whether BIA may be required.

CONTENTS

1	EXECUTIVE SUMMARY	3
1.1	BACKGROUND	3
2	INTRODUCTION AND BACKGROUND	8
2.1	PURPOSE AND SCOPE OF THIS REPORT	8
2.2	ZONE OF INFLUENCE	8
2.3	SITE CONTEXT AND LOCATION	9
3	METHODOLOGY	11
3.1	PRELIMINARY APPRAISAL	11
3.2	DESK BASED ASSESSMENT	11
3.3	PHASE 1 HABITAT SURVEY	12
3.4	PROTECTED / PRIORITY SPECIES SCOPING ASSESSMENT	12
3.5	LIMITATIONS	12
3.6	ACCURATE LIFESPAN OF ECOLOGICAL DATA	12
4	RESULTS	13
4.1	SURVEYORS AND SURVEY CONDITIONS	13
4.2	DESK STUDY	13
4.3	PHASE 1 HABITAT SURVEY	24
4.4	PRELIMINARY PROTECTED / PRIORITY HABITATS ASSESSMENT	27
4.5	PRELIMINARY PROTECTED / PRIORITY SPECIES ASSESSMENT	28
5	DISCUSSION & RECOMMENDATIONS	33
5.1	PROTECTED / PRIORITY SPECIES AND HABITATS IMPACT APPRAISAL	33
6	ENHANCEMENTS	36

FIGURES

FIGURE 1: SITE LOCATION PLAN	10
FIGURE 2: PHASE 1 HABITAT PLAN	26
FIGURE 3: POND P1	29
FIGURE 4: WATERBODY LOCATION PLAN	30

TABLES

TABLE 1: SUMMARY OF ECOLOGICAL FEATURES	3
TABLE 2: CONSULTED RESOURCES	11
TABLE 3: SUMMARY OF CONDITIONS DURING SURVEY	13
TABLE 4: STATUTORY DESIGNATED SITES	13
TABLE 5: NON-STATUTORY DESIGNATED SITES	16
TABLE 6: HABITATS OF PRINCIPAL IMPORTANCE WITHIN 1KM OF THE SITE	19
TABLE 7: SUMMARY OF PROTECTED AND NOTABLE SPECIES RECORDS	20
TABLE 8: RESULTS OF SITE SURVEY	24
TABLE 9: ASSESSMENT OF LIKELIHOOD OF IMPACTS TO PROTECTED SPECIES/HABITATS	33

APPENDICES

APPENDIX 1: REFERENCES AND CONSULTED INDUSTRY GUIDANCE	38
APPENDIX 2: LEGISLATION AND PLANNING POLICY	39

2 INTRODUCTION AND BACKGROUND

2.1 Purpose and Scope of this Report

- i RammSanderson Ecology Ltd was commissioned by Indigo Architecture Ltd. to assess the potential for protected species and habitats to be present on the site of a proposed campsite to be located off Rue Hill Road, Cauldon Low, Stoke-on-Trent, Staffordshire. Site proposals included a proposed campsite.
- ii To complete an ecological assessment of the proposals, a desk-based assessment, Extended Phase 1 Habitat Survey, and a preliminary protected species assessment were carried out. Taken together, in common with the Chartered Institute of Ecology & Environmental Management's (CIEEM) 2017 publication this is termed as a Preliminary Ecological Appraisal (PEA). This assessment is considered preliminary until any required protected species, habitat or invasive species surveys can be completed.
- iii The study area was defined within the plans and descriptions provided by the client, as well as considering desk study data and applicable legislation (Appendix 2) as shown in the enclosed Site Location Plan (Figure 1) and Phase 1 Habitat plan (Appendix 3) plus a buffer zone extended to include the Zone of Influence (see section below) of the proposals (hereafter referred to as the "Site").
- iv This preliminary appraisal is based on a review of the development proposals provided by the Client, desk study data (third party information) and a survey of the Site. The aims of this report are to:
 - Classify the habitat types at the site based on standard Phase 1 Habitat survey methodology;
 - Evaluate any potential for protected or priority species/habitats to be present;
 - Identify any ecological constraints that may affect the scheme design;
 - Provide recommendations for any further surveys that might be required (for example to confirm presence / likely absence of protected species), which would need to be obtained for a subsequent EclA in order for a planning decision to be concurrent with current planning policy; and
 - Identify opportunities for ecological enhancement to provide net biodiversity gain in line with the National Planning Policy Framework (NPPF, 2021).
- v This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RammSanderson Ecology Ltd.
- vi The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Constraints and Opportunities Plan are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013).

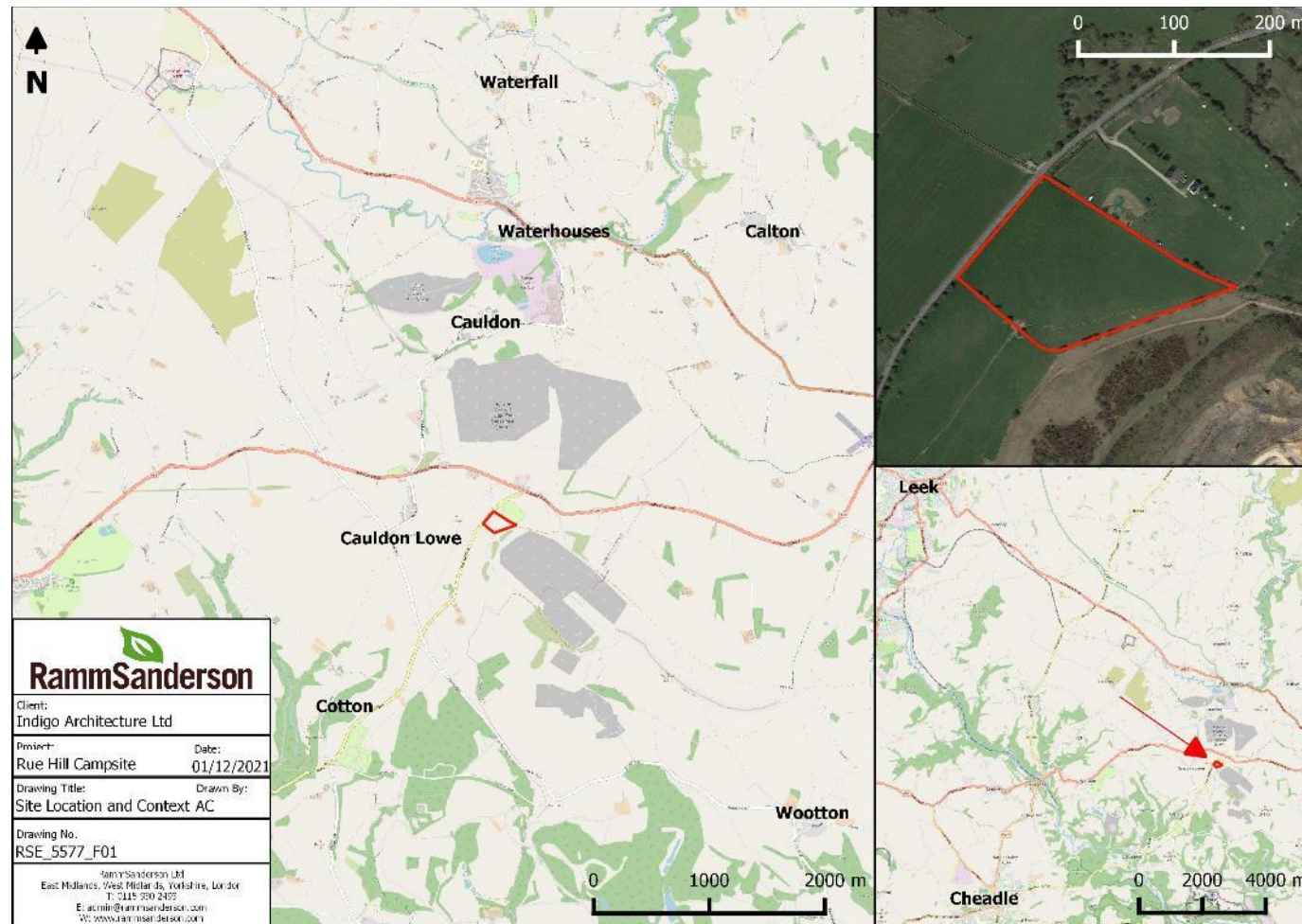
2.2 Zone of Influence

- i The Zone of Influence (Zol) is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the development proposals in relation to individual species ecological requirements indicated in best practice guidelines.
- ii In relation to great crested newts (GCN), the Zol is considered to be up to 500m from the site boundaries, as this is the distance that Natural England would require to be considered in relation to GCN licensing.
- iii As bats are highly mobile species, the Zol for these can be 5km from a site wherein high-quality habitat will be impacted by proposals.
- iv For designated sites, the Zone of Influence can be >10km from the site and this is termed the Impact Risk Zone (IRZ). Where sites occur within an IRZ the requirement for a Habitat's Regulations Assessment or Environmental Impact Assessment may be triggered.
- v

2.3 Site Context and Location

- i The site is located off Rue Hill Road, Cauldon Low, Stoke-on-Trent, Staffordshire (grid reference SK 07972 47696). Rue Hill Road is located west of the site with agricultural land to the east, north and south of the site. Within the wider landscape, JCB Keven Quarry was located to the south, Ruel Hill Campsite was located to the north with agricultural land on the east and west.

Figure 1: Site Location Plan



3 METHODOLOGY

3.1 Preliminary Appraisal

- i The preliminary ecological appraisal is based on the standard best practice methodology provided by the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). The assessment identifies sites, habitats, species and other ecological features that are of value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Local Biodiversity Action Plans. Based upon this, recommendations for further, more detailed surveys are made as appropriate to confirm presence / likely absence of a protected species.
- ii In identifying constraints, the review considers the Client's Site proposals and any subsequent recommendations made are proportionate / appropriate to the site and have considered the Mitigation Hierarchy as identified below:
 - **Avoid:** Provide advice on how the development may proceed by avoiding impacts to any species or sites by either consideration of site design or identification of an alternative option.
 - **Mitigate:** Where avoidance cannot be implemented mitigation proposals are put forward to minimise impacts to species or sites as a result of the proposals. Mitigation put forward is proportionate to the site.
 - **Compensate:** Where avoidance cannot be achieved any mitigation strategy will consider the requirements for site compensatory measures.
 - **Enhance:** The assessment refers to planning policy guidance (e.g. NPPF) to relate the ecological value of the site and identify appropriate and proportionate ecological enhancement in line with both national and local policy.

3.2 Desk Based Assessment

- i Data regarding statutory and non-statutory designated sites, plus any records of protected or Priority species and habitats was requested from the local ecological records centre and online resources, details of which are provided in Table 2 below.

Table 2: Consulted resources

Consultee/Resource	Data Sought	Search Radius from Boundary
Staffordshire Ecological Record	Non-Statutory Site Designations	2km
	Protected/Principal Species Records	2km
www.magic.gov.uk ^{1 2}	Statutory Site Designations (Impact Risk Zones)	20km
	Habitats of Principal Importance (NERC Act, 2006)	1km
	European Protected Species Licences	5km

¹ Multi Agency Geographic Information for the Countryside Interactive GIS Map.

² MAGIC resource was reviewed on the 09/11/2021

NB: Desk study data is third party controlled data, purchased or consulted for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.3 Phase 1 Habitat Survey

- i An extended Phase 1 Habitat Survey of the site was completed to identify habitats present. All habitats within the site boundary were described and mapped following standard Phase 1 Habitat Survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species.
- ii Nomenclature follows Stace (Stace, 2010) for vascular plant species and the DAFOR scale for relative abundance was used in the field to determine dominant plants within habitats and communities (D = dominant, A = abundant, F = frequent, O = occasional and R = rare).

3.4 Protected / Priority Species Scoping Assessment

- i The habitats on site were assessed for their suitability for supporting any legally protected or Priority species that would be affected by the proposed development. This includes invasive non-native plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

3.5 Limitations

- i It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.
- ii The survey was completed during the period of October to April which is generally considered less efficient than the survey being completed during the spring or summer, and it is possible that some plant species have been missed by the field survey. However, in view of the ecological character of the habitats recorded it is considered that the survey is adequate to make a robust assessment of habitats present and the sites likely nature conservation significance.

3.6 Accurate lifespan of ecological data

- i The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 18 months from the date of survey, notwithstanding any considerable changes to the site conditions, the presence of mobile species such as bats, otters or where species/county specific guidance dictates otherwise (CIEEM, 2019).

4 RESULTS

4.1 Surveyors and Survey Conditions

- i The survey was carried out by Athina Constantinou BSc (Hons) MSc ACIEEM. Athina has been a professional ecologist for the past five years and is appropriately experienced and qualified to undertake this type of survey. The survey was completed during suboptimal time of year for floristic surveys as detailed in the table below. A discussion of this limitation is provided above.

Table 3: Summary of conditions during survey

Abiotic Factor	Survey 1
Survey type	PEA
Date completed	18/11/2021
Temperature (°C)	10
Wind speed (Beaufort Scale)	3
Cloud cover (Oktas Scale)	8
Precipitation	0

4.2 Desk Study

- i A total of 19 statutory designated sites were recorded within the search area, the details of which are summarised in the table below. The site lies within the Impact Risk Zones (IRZ) for Rue Hill SSSI and Caldon Dales SSSI.

Table 4: Statutory Designated Sites

Site Name	Designation	Location	Brief Description
Rue Hill	SSSI ³	45m N	This site is designated for calcareous grassland. The varied plant life sustains a correspondingly rich insect fauna. Among the butterflies that occur the dark green fritillary <i>Argynnis aglaja</i> is very localised in Staffordshire. Three nationally rare ground beetles have also been recorded.
Hoften's Croft Meadows	LNR ⁴	0.69km W	A wide range of herbs and grasses can be found on the site including Field woodrush, Meadow saxifrage, Lady's smock, Water avens, Lesser celandine, Knapweed and Pignut. The most important area is down the banks by the stream where the flora is particularly rich and varied. These areas are of such quality that the site is designated as a County Site of Biological Interest.

³ SSSI – Site of Specific Scientific Interest

⁴ LNR – Local Nature Reserve

Caldon Dales	SSSI	1km NE	Caldon Dales is a steep-sided dry valley on the southern edge of the Carboniferous Limestone dome of south Derbyshire and north Staffordshire. Its importance lies in the local combination of unimproved, traditionally managed calcareous and neutral grassland. Though the grassland invertebrates have not been assessed an indication of site quality is afforded by a vigorous population of <i>cystus forrester</i> <i>Adscita geryon</i> , a nationally uncommon day flying moth.
Caldon Low	SSSI	1.36km N	This site is designated for geological purposes.
Cauldon Railway Cutting	SSSI	1.8km NW	This site is designated for geological purposes.
Bath Pasture	SSSI	2km SW	The site is a large, floristically rich unimproved acid grassland, with both dry and wet communities well represented. This primary, acid grassland, interest is complemented by a number of other semi-natural habitats including wet neutral grassland, swamp, scrub and woodland. Bath Pasture supports over 100 species of higher plants, including several which are uncommon or rare in Staffordshire. A former linear pond, now infilled with tall fen vegetation, divides the site into two contrasting areas. The dry grassland is interspersed with a mosaic of wetter ground arising from springs and groundwater seepage.
Brownend Quarry	SSSI	2.5km NE	Geological feature, overgrowing with vegetation
Hamps and Manifold Valleys	SSSI	2.6km NE	This site is designated for extensive ancient semi-natural woodlands, scrub communities and grasslands. The site also supports an outstanding assemblage of nationally rare and locally uncommon plants together with important invertebrate communities, most notably of ground beetles, butterflies and moths.
Swineholes Wood and Black Heath	SSSI	2.7km NW	Dwarf shrub habitat
Stanton Pastures & Cuckoo-cliff Valley	SSSI	3km E	Neutral grassland habitats, calcareous grassland and broadleaved woodland
Churnet Valley	SSSI	3.7km W	Units of fen and marshland, broadleaved woodland, neutral grassland.
Peak District Dales	SAC ⁵	3.79km NE	Annex I habitats that are a primary reason for selection of this site included semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) and <i>Tilio-Acerion</i> forests of slopes, screes and ravines. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site included

⁵SAC - Special Area of Conservation

			European dry heaths, Calaminarian grasslands of the <i>Violetalia calaminariae</i>, alkaline fens, calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>) and calcareous rocky slopes with chasmophytic vegetation. Annex II species that are a primary reason for selection of this site included white-clawed (or Atlantic stream) crayfish <i>Austropotamobius pallipes</i>. Annex II species present as a qualifying feature, but not a primary reason for site selection included brook lamprey <i>Lampetra planeri</i> and bullhead <i>Cottus gobio</i>.
Whiston Eaves	SSSI	4km SW	Units of Neutral Grassland
Dimmings Dale & The Ranger	SSSI	4.8km SW	Mixed and Broadleaved woodland with Dwarf Shrub.
South Pennine Moors	SAC	11.42km N	Annex I habitats that are a primary reason for selection of this site included European dry heaths, blanket bogs and old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site included northern Atlantic wet heaths with <i>Erica tetralix</i> and transition mires and quaking bogs.
Peak District Moors	SPA ⁶	11.42km N	Qualifying Features for this site included: Merlin - <i>Falco columbarius</i>; (Breeding) European golden plover - <i>Pluvialis apricaria</i>; (Breeding) Short-eared owl - <i>Asio flammeus</i>; (Breeding)
Bees Nest & Green Clay Pits	SAC	17km NE	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site included semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>). Annex II species that are a primary reason for selection of this site included Great crested newts <i>Triturus cristatus</i>.
Midland Meres & Mosses - Phase 1	Ramsar	19.7km SW	Criteria for designation included: Ramsar criterion 1 The site comprises a diverse range of habitats from open water to raised bog. Ramsar criterion 2 Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).

⁶SPA – Special Protection Area

West Midlands Mosses SAC 19.7km SW Annex I habitats that are a primary reason for selection of this site included natural dystrophic lakes and ponds and transition mires and quaking bogs.

i 35 non-statutorily designated sites were also identified within the search radius, details of which are provided in the table below.

Table 5: Non-Statutory Designated Sites

Site Name	Designation	Location	Brief Description
Ribdon Bank	LWS ⁷	Onsite	Unimproved calcareous grazing pasture.
Wardlow Quarry bund	LWS	100m SE	An area of species-rich calcareous grassland and scrub which has formed on the Wardlow Quarry bund.
Ribden Quarry (north)	LWS	0.2km SW	Cattle-grazed old limestone quarry workings and associated spoil mounds. These mounds retain the typical limestone spoil mound flora typical of a number of sites in the general area.
Lawrence House (west of)	LWS	0.3km NW	A calcareous grassland site which was historically quarry workings. The NVC community CG2 is present on the top of the old spoil mounds. Several county rarities are present including Frog Orchid, Carlisle Thistle and Wild Thyme.
Lawrence House	LWS	0.4km NW	Predominantly an area of unimproved calcareous grassland grazed by rabbits, together with a small area of poor semi-improved grassland.
Red House Farm (south of)	LWS	0.4km NE	Grassland site supporting Lowland Calcareous Grassland on historical spoil mounds of a similar quality to the adjacent Rue Hill SSSI.
Ramshorn Moor, Threelows Hollow, Sullymoor	SINC ⁸	0.6km SE	This site consists mainly of improved fields. The best field is central to the site, where old mine shafts are situated. It has been improved, but because of its uneven nature there are grassy banks and wetter hollows that still contain some variety.
Hofton's Cross Meadow	LWS	1km NW	Semi-improved neutral grassland, much of which is managed as a hay meadow, together with a strip of marginal vegetation adjacent to the stream. The general public have full access to the site, which appears to be well used.
Rue Hill	LWS	1km NE	Area of pasture enclosing old limestone quarry workings and grassed over spoil mounds. Although the area is heavily grazed by cattle, the spoil mounds retain most of the usual limestone flora resembling CG2 NVC community.

⁷ LWS – Local Wildlife Site

⁸ SINC – Site of Importance for Nature Conservation

Ashtree Lodge Pastures, Hofton's Cross, Windy Harbour	LWS	1.2km NW	Damp unimproved pasture containing a very diverse flush. The site is grazed by horses and the sward is quite short.
The Parks, Windy Harbour	LWS	1.2km NW	Species-rich marshy grassland, with sections of semi-improved neutral grassland, standing water and a small stand of marginal vegetation.
Rue Hill	LWS	1.2km NE	A disused quarry with species-rich calcareous grassland which has grown rank in parts, there are also scrubby areas and rock outcrops.
The Walk	LWS	1.3km SE	A large area of unimproved calcareous meadows with semi-improved areas of both neutral and calcareous grassland, some marshy grassland, semi-natural and mixed plantation broadleaved woodland.
Cotton College (meadows adjacent to)	LWS	1.4km SW	6 diverse neutral grassland meadows, with marshy grassland in parts and some dry-stone walls. Some of the fields were previously used for sporting activities. The site is adjacent to Cotton Dell SSSI.
Moorlands Farm	LWS	1.4km SW	A site with three fields which supports the priority habitat 'Lowland Meadow'.
Ramshorn Common	LWS	1.6km SW	The common is made up of semi-natural woodland with an acidic ground layer with smaller pockets of remnant heath and marshy grassland. Towards the north, the grassland becomes more improved with low diversity and many more agricultural species.
Dale Farm (north of)	LWS	1.6km NE	Diverse calcicolous community on extensive area of steep bank. Some fields are separated by stone walls, there is also scrub, tall ruderal habitats and scattered broadleaved trees.
Honeyholes Spoil	LWS	1.7km NW	Limestone spoil heaps with several very rare, rare or uncommon species.
Yew Tree Verges	LWS	1.7km NW	The hedge and associated bank on the northern side of the minor road through Caldton which support species-rich semi-improved neutral grassland and a number of different hedgerow canopy species.
Caldon Dale (grassland surrounding)	LWS	1.7km NE	Six fields supporting a range of grassland types including semi-improved calcareous and neutral grasslands, in parts hawthorn scrub is scattered across the fields. Several of the plant species present are uncommon or rare in Staffordshire.
Newhouse Farm (north-east of)	LWS	1.8km NW	Two fields, both of exhibiting plant communities indicative of neutral conditions overall, though Field 2 shows a central band of acidic flora, particularly on the gentle slopes and within the scrub.
Moorend Strip	LWS	1.8km NW	Two pastures with unimproved neutral grassland and flushed areas within the vicinity of a stream boasting an array of wetland species.
Sycamore Farm	SINC	1.8km SE	A selection of habitats that include; species-rich semi-improved neutral grassland, standing water with a range of macrophytes, running water and a species-rich hedgerow.

Dale Lane (south of)	LWS	1.8km NE	Four fields supporting species-rich unimproved calcareous, neutral and semi-improved neutral grasslands of the NVC communities CG2 and MG5.
Hayes Gate Farm	LWS	1.9km SW	A hay meadow cut annually followed by aftermath grazing by horses. The sward is mainly comprised of fine-leaved grasses with common bent and sweet-vernal grass abundant throughout the grassland.
Cauldon (west of)	SINC	1.9km NW	A small pasture with a wet flush by a stream.
Weaver Cottages (east of)	LWS	1.9km NE	Species-rich calcareous grassland with limestone outcrops. Creeping Thistle has spread across much of the site.
Dale Tor (north-west of)		1.9km NE	Unimproved lower slopes of field, with typical calcicolous grassland community.
Windy Harbour	LWS	2k NW	Species rich verges either side of the lane from corner cottage to Hill Dean.
Broomyshaw (east of)	LWS	2km NW	Includes small wet flushes by the stream and dry sloping banks above.
Middlehills Farm (west of)	LWS	2km N	Two fields, primarily semi-improved neutral grassland, although Field 2 contains an area of calcareous grassland. The species found, many of which are uncommon in Staffordshire, denote the site has considerable nature conservation value.
Weaver Hills Farm (west of)	LWS	2km SE	A field with predominantly species-poor neutral grassland but retaining interest in wetter areas in the eastern part of the field and calcareous flora around rocky outcrops.
Middlehills Farm (east of), Milk Hill	LWS	2km NE	Steep slopes on the west side of Milk Hill with some limestone outcrops and some scrub present. Most interest seem to be in the southern part of the field where there is much Meadow Saxifrage
Milk Hill	LWS	2km NE	A series of 3 adjacent sub-sites, consisting of species-rich unimproved calcareous grassland, with rocky limestone outcrops to the north & south of the site, and an ancient tumulus centrally located.
Huddale	LWS	2km NE	A bank on the southern edge of a poor semi-improved field with a diverse, calcareous flora.

- ii There are 85 Habitats of Principal Importance under Section 41 of the NERC Act, 2006 located within a 1km radius of the site. These are shown in a table below, with the distance and direction of the closest habitats in regard to the site referenced. The closest is a parcel of Open mosaic habitats on previously developed land (OMH) located 33m south of the site boundary.

Table 6: Habitats of Principal Importance within 1km of the Site

Habitat	Quantity	Closest Habitat - Distance to Site	Closest Habitat - Direction to Site
Open mosaic habitats on previously developed land (OMH)	10	33m	South
Lowland calcareous grassland	40	45m	North
Good quality semi-improved grassland	12	237m	Northwest
Deciduous woodland	8	0.4km	East
Broadleaved woodland	5	0.31km	East
Shrub Woodland	1	0.7km	Southeast
Lowland meadows	9	0.7km	West

- iii Records of previous European Protected Species Licences (EPSL) were discovered within a 5km search area around the site. This included:
- Two records of Great Crested Newts *Triturus cristatus*, with the closest being 1km southeast and allowing the impact, damage and destruction of a breeding site, as well as the damage and destruction of a resting place, between 2016 and 2023.
 - A Great Crested Newt Class Survey Licence Return was also returned with GCN presence confirmed in 2017 located 190m south of the site.

- ii Protected species records were received from Staffordshire EcoRecord. A summary of the records considered most relevant to the site and/or proposed development are provided in Table 7. Full species records are available to view upon request.

Table 7: Summary of Protected and Notable Species Records

Common Name	Scientific Name	Records	Conservation Status
Amphibians			
Common toad	<i>Bufo bufo</i>	1 record 440m ENE	NERC, Partial Protection under WCA
Great crested newts	<i>Triturus cristatus</i>	28 records, closest 0.6km SSW	EPS ⁹ , NERC ¹⁰ , WCA (5) ¹¹
Mammal			
Brown hare	<i>Lepus europaeus</i>	23 records, closest 190m SSW	NERC
European hedgehog	<i>Erinaceus europaeus</i>	5 records, closest 280m N	NERC
Polecat	<i>Mustela putorius</i>	2 records, closest 0.75km SSE	NERC
Noctule bat	<i>Nyctalus noctula</i>	6 records, closest 1km WSW	WCA5 EPS NERC
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	12 records, closest 1km WSW	EPS, WCA
Unidentified Myotis bat	<i>Myotis sp.</i>	2 records, closest 1.6km SW	WCA5 EPS
Brown long-eared bat	<i>Plecotus auritus</i>	18 records, closest 1.65km SSW	EPS, WCA, NERC
Birds			
Spotted flycatcher	<i>Muscicapa striata</i>	4 records, closest 180m N	BoCCRed ¹³ , NERC
Redstart	<i>Phoenicurus phoenicurus</i>	12 records, closest 180m N	BoCC4 Amber
Lapwing	<i>Vanellus vanellus</i>	19 records, closest 0.6km S	BoCCRed, NERC

⁹ EPS – European Protected Species - protected by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

¹⁰ NERC – Species of Principle Importance under Section 41 of the Natural Environment Rural Communities Act (2006) Species of Principal Conservation Importance; UKBAP & LBAP

¹¹ WCA (5) – Schedule 5 protected species - Wildlife & Countryside Act (1981)

¹² PBA – Protection of Badgers Act 1992

¹³ BoCC – Birds of Conservation Concern - split in to three categories of conservation importance - Red, Amber and Green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green

Common Name	Scientific Name	Records	Conservation Status
Bullfinch	<i>Pyrrhula pyrrhula</i>	8 records, closest 0.6km S	BoCCAmber, NERC
House sparrow	<i>Passer domesticus</i>	4 records, closest 0.6km S	BoCCRed, NERC
Kestrel	<i>Falco tinnunculus</i>	23 records, closest 0.6km S	BoCCAmber
Woodcock	<i>Scolopax rusticola</i>	1 record 0.6km S	BoCCRed
Dunnock	<i>Prunella modularis</i>	8 records, closest 0.6km S	BoCCAmber
Fieldfare	<i>Turdus pilaris</i>	18 records, closest 0.6km S	BoCCRed, WCA (1)
Hobby	<i>Falco subbuteo</i>	2 records, closest 0.6km S	BoCCGreen, WCA (1)
Spotted flycatcher	<i>Muscicapa striata</i>	4 records, closest 180m N	BoCCRed, NERC
Lesser redpoll	<i>Acanthis cabaret</i>	3 records, closest 0.6km S	BoCCRed, NERC
Linnet	<i>Linaria cannabina</i>	33 records, closest 0.6km S	BoCCRed, NERC
Peregrine	<i>Falco peregrinus</i>	51 records, closest 0.6km S	WCA1
Red kite	<i>Milvus milvus</i>	8 records, closest 0.6km S	WCA1
Reed bunting	<i>Emberiza schoeniclus</i>	4 records, closest 0.6km S	BoCCAmber, NERC
Willow warbler	<i>Phylloscopus trochilus</i>	8 records, closest 0.6km S	BoCCAmber
Barn owl	<i>Tyto alba</i>	14 records, closest 0.7km NW	BoCCGreen, WCA (1)
Grey wagtail	<i>Motacilla cinerea</i>	4 records, closest 0.9km ENE	BoCCRed
Little Ringed Plover	<i>Charadrius dubius</i>	1 record 0.9km WNW	WCA1
Mallard	<i>Anas platyrhynchos</i>	5 records, closest 0.9km ENE	BoCCAmber
Oystercatcher	<i>Haematopus ostralegus</i>	1 record 0.9km WNW	BoCCAmber
Pochard	<i>Aythya ferina</i>	1 record 0.9km WNW	BoCCRed
Shelduck	<i>Tadorna tadorna</i>	2 records, closest 0.9km WNW	BoCCAmber
Skylark	<i>Alauda arvensis</i>	40 records, closest 0.9km WNW	BoCCRed, NERC
Snipe	<i>Gallinago gallinago</i>	7 records, closest 0.9km WNW	BoCCAmber
Song thrush	<i>Turdus philomelos</i>	7 records, closest 0.9km ENE	BoCCRed, NERC
Mistle thrush	<i>Turdus viscivorus</i>	2 records, closest 1km SW	BoCCRed
Curlew	<i>Numenius arquata</i>	6 records, closest 1.5km NW	BoCCRed, NERC
Ring ouzel	<i>Turdus torquatus</i>	1 record 1.5km NW	BoCCRed, NERC

Common Name	Scientific Name	Records	Conservation Status
Swift	<i>Apus apus</i>	1 record 1.5km NW	BoCCAmber
Whinchat	<i>Saxicola rubetra</i>	1 record 1.5km NW	BoCCRed
Redwing	<i>Turdus iliacus</i>	10 records, closest 1.5km NE	BoCCRed, WCA (1)
Stock dove	<i>Columba oenas</i>	6 records, closest 1.85km SE	BoCCAmber
Tawny owl	<i>Strix aluco</i>	2 records, closest 1.85km SE	BoCCAmber
Willow tit	<i>Poecile montanus</i>	1 record 1.85km W	BoCCRed, NERC
Yellow-Legged Gull	<i>Larus michahellis</i>	3 records, closest 1.85km SE	BoCC4 Amber
Yellowhammer	<i>Emberiza citrinella</i>	2 records, closest 1.85km SE	BoCCRed, NERC
Starling	<i>Sturnus vulgaris</i>	9 records, closest 1.85km SE	BoCCRed, NERC
Snow Bunting	<i>Plectrophenax nivalis</i>	2 records, closest 1.85km SE	BoCC4 Amber WCA1
Pink-footed goose	<i>Anser brachyrhynchus</i>	4 records, closest 1.85km SE	BoCCAmber
Merlin	<i>Falco columbarius</i>	4 records, closest 1.85km SE	BoCC4 Red WCA1
Meadow pipit	<i>Anthus pratensis</i>	27 records, closest 1.85km SE	BoCCAmber
Golden plover	<i>Pluvialis apricaria</i>	2 records, closest 1.85km SE	BoCCGreen
Greylag Goose	<i>Anser anser</i>	2 records, closest 1.85km SE	BoCC4 Amber WCA1
Mute Swan	<i>Cygnus olor</i>	1 record 1.85km W	BoCC4 Amber
Osprey	<i>Pandion haliaetus</i>	2 records, closest 1.85km W	BoCCAmber, WCA (1)
Lesser black-backed gull	<i>Larus fuscus</i>	19 records, closest 1.85km SE	BoCCAmber
Kingfisher	<i>Alcedo atthis</i>	2 records, closest 1.85km SE	BoCCAmber, WCA (1)
Herring gull	<i>Larus argentatus</i>	9 records, closest 1.85km SE	BoCCRed, NERC
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1 record 1.85km SE	BoCCAmber
Reptile			
Grass snake	<i>Natrix natrix</i>	2 records, closest 1.75km ESE	Partial protection under WCA, NERC
Terrestrial Invertebrates			
Small heath	<i>Coenonympha pamphilus</i>	77 records, closest 100m ENE	NERC
Chalk carpet	<i>Scotopteryx bipunctaria</i>	3 records, closest 180m N	NERC

Common Name	Scientific Name	Records	Conservation Status
Wall	<i>Lasiommata megera</i>	17 records, closest 180m N	NERC
Broom moth	<i>Ceramica pisi</i>	1 record 285m S	NERC
Common carder bee	<i>Bombus pascuorum</i>	4 records, closest 285m S	NERC
Red-tailed (Hill) cuckoo bee	<i>Bombus rupestris</i>	1 record 285m S	NERC
Large red tailed bumble bee	<i>Bombus lapidarius</i>	4 records, closest 285m S	NERC
Cinnabar	<i>Tyria jacobaeae</i>	6 records, closest 285m S	NERC
Early bumble bee	<i>Bombus pratorum</i>	2 records, closest 285m S	NERC
Latticed heath	<i>Chiasmia clathrata</i>	26 records, closest 280m N	NERC
Tree bumblebee	<i>Bombus hypnorum</i>	3 records, closest 410m NW	NERC
Willughby's leafcutter bee	<i>Megachile willughbiella</i>	1 record 440m ENE	NERC
Dingy skipper	<i>Erynnis tages</i>	48 records, closest 490m NE	NERC
Shaded broad-bar	<i>Scotopteryx chenopodiata</i>	1 record 0.50km NW	NERC
Common wasp	<i>Vespula vulgaris</i>	1 record 0.50km NW	NERC
Grey-patched Mining Bee	<i>Andrena nitida</i>	1 record 1.30km ENE	NERC
Red Wasp	<i>Vespula rufa</i>	1 record 1.5km NNW	NERC
Orange-tailed mining bee	<i>Andrena haemorrhoa</i>	1 record 1.5km NNW	NERC
Small blue	<i>Cupido minimus</i>	1 record 1.6km NNW	NERC
Hornet	<i>Vespa crabro</i>	1 record 1.7km SW	NERC

4.3 Phase 1 Habitat Survey

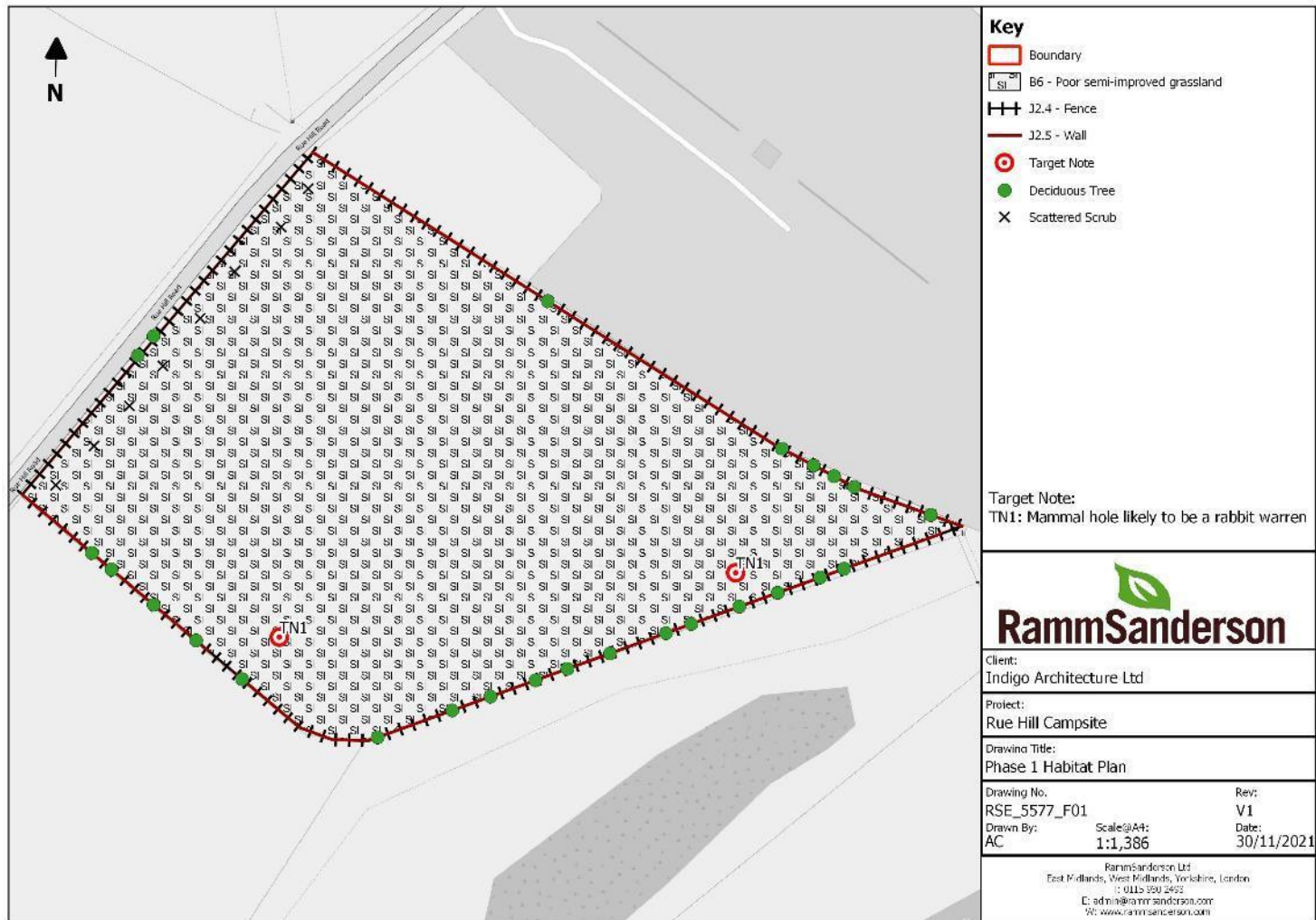
- i The survey area included scrub, broadleaved scattered trees, broadleaved plantation woodland, standing water, bare ground, fencing and a wall. Full habitat descriptions and photos are provided below. For a Phase 1 Habitat Survey Plan refer to the figure below.
- ii Habitat types detailed below are listed in order of the JNCC (2010) Handbook. The species list provided in this report reflect only those taxa observed during the survey.

Table 8: Results of Site Survey

Habitat	Description	Area (m ²)	Proportion of site (%)	Length (m)	Ecological Importance & Outcome of Proposal	Photograph
A2.2 Scattered Scrub	Scattered scrub was located near the west boundary of the site. This included bramble (<i>Rubus fruticosus</i>) and common nettle (<i>Urtica dioica</i>) occasionally occurring.	-	<1	-	Of low overall ecological value. Site proposals are currently unknown.	-
A3.1 Broadleaved Scattered Trees	Scattered broadleaved trees were located on the boundaries of the site. These included hawthorns (<i>Crataegus monogyna</i>), ash (<i>Fraxinus excelsior</i>) saplings and holly (<i>Ilex aquifolium</i>) frequently occurring.	-	<1	-	Of low overall ecological value. Site proposals are currently unknown.	
B6 Poor Semi Improved grassland	The majority of the site was covered by poor semi improved grassland of 10cm-30cm sward length. This was dominated by perennial rye grass (<i>Lolium perenne</i>) with cock's foot (<i>Dactylis glomerata</i>), common dandelion (<i>Taraxacum officinale</i>) and clover sp. (<i>Trifolium</i> sp.). Herb Robert (<i>Geranium robertianum</i>), spear thistle (<i>Cirsium vulgare</i>), ribwort plantain (<i>Plantago lanceolata</i>) and creeping buttercup (<i>Ranunculus repens</i>) occurred occasionally	26,240	100%	-	Of low ecological value. Site proposals are currently unknown.	

Habitat	Description	Area (m ²)	Proportion of site (%)	Length (m)	Ecological Importance & Outcome of Proposal	Photograph
	around the site. Broadleaved dock (<i>Rumex obtusifolius</i>), common ragwort (<i>Jacobaea vulgaris</i>) were rarely occurring on site.					
Walls	Stone walls bordered the site on the north, east and south of the site.	-	-	545	Of no ecological value. Site proposals are currently unknown.	
Fencing	Metal fencing bordered the entirety of the site.	-	-	846	Of no ecological value. Site proposals are currently unknown.	-

Figure 2: Phase 1 Habitat Plan



4.4 Preliminary Protected / Priority Habitats Assessment

4.4.1 Statutorily and Non-Statutorily Designated Sites

- i The nearest LNR to the site was Hoften's Croft Meadows LNR located 0.7km west. Due to the distance between the LNR and the site, it is considered unlikely that this LNR is likely to be impacted by site proposals.
- ii A number of SSSI sites were located within 5km of the site. Rue Hill SSSI was the closest located 44m north of the site. Caldons Dales SSSI was located 1km north of the site and Caldons Low SSSI was located 1.36km north of the site. Caldons Low SSSI was designated for geological purposes. Rue Hill SSSI was designated for calcareous grassland as well as dark green fritillary *Argynnis aglaja* and three nationally rare ground beetles. Caldons Dales SSSI is designated for its combination of unimproved, traditionally managed calcareous and neutral grassland. The site is located within the Impact Risk Zone (IRZ) for Rue Hill SSSI and Caldons Dales SSSI. The site proposals that would trigger the LPA to consult with Natural England regarding the impacts on these sites include:

“Infrastructure: Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

Minerals, Oil & Gas: Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.

Air Pollution: Any development that could cause AIR POLLUTION or DUST either in its construction or operation (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores).

Combustion: All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

Waste: Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management.

Composting: Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.”
- iii Current site proposals include a proposed campsite. The habitats on site are not intrinsically connected to the designated habitats for these SSSI's. Furthermore, notable and protected terrestrial invertebrates are not likely to persist on site due to the suitable habitats on site being of limited extent for terrestrial invertebrates. To reduce any impacts on the SSSI's from the proposed campsite including air pollution and dust, it is recommended that high fencing is erected surrounding the site prior to works commencing. Also the footpath present along the northern site boundary will direct walkers away from the SSSI and mitigate impacts of recreational pressures on the SSSI from the realisation of the proposals.
- iv Peak District Dales SAC is located 3.7km northeast of the site and is classified for its semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*), *Tilio-Acerion* forests of slopes, screes and ravines, European dry heaths, calaminarian grasslands of the *Violetalia calaminariae*, alkaline fens, calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*), calcareous rocky slopes with chasmophytic vegetation, white-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*, brook lamprey *Lampetra planeri* and bullhead *Cottus gobio*.
- v None of these designated habitats and features are likely to be present on site therefore the site is not functionally linked to the European designated sites. It is therefore unlikely for these sites are to be impacted by site proposals. It is therefore unlikely that a Habitats Regulations Assessment (Shadow) would be necessary to assess the impacts of the proposals on this European Site.

- vi A number of LWS sites were located within 1km of the site. Ribdon Bank LWS was located on site and the surrounding areas to the site. This LWS was designated for unimproved calcareous grazing pasture. However, it is not considered that the habitats on site are designated as a LWS due to unimproved calcareous grazing pasture no longer being located on site and the habitats on site mostly including poor semi improved grassland dominated by Rye Grass. However, the immediate surrounding habitats to the site were also designated as an LWS. Therefore, a Construction Environmental Management Plan (CEMP) is recommended to reduce the impacts of site proposals on the LWS adjacent to the site and to increase the quality and diversity of the grassland on site long term.

4.4.2 Habitats

- vii The habitats on site were of limited ecological value with the majority being short sward poor semi-improved grassland. Scattered broadleaved trees and scattered scrub are of higher ecological value.
- viii No Habitats of Principal Importance (HPI) under Section 41 of the NERC Act, 2006 were located on site. However, a number of HPI's were located within 1km of the site with the closest being open mosaic habitats on previously developed land (OMH) located 33m south and lowland calcareous grassland with OMH located 45m north. Due to the distance between the site and the HPI habitats it is considered unlikely that the HPI's will be impacted by site proposals. However, to minimise any likely impacts including pollution, high fencing could be erected surrounding the site prior to works commencing.
- ix No protected or Priority plant species were observed, and all plant species encountered were common, widespread and characteristic of the common habitat types they represent.

4.4.3 Invasive Floral Species

- x No invasive species was located on site at the time of the survey.

4.5 Preliminary Protected / Priority Species Assessment

- i The potential for protected species to be present on site and impacted by the proposals is discussed under the headings below.

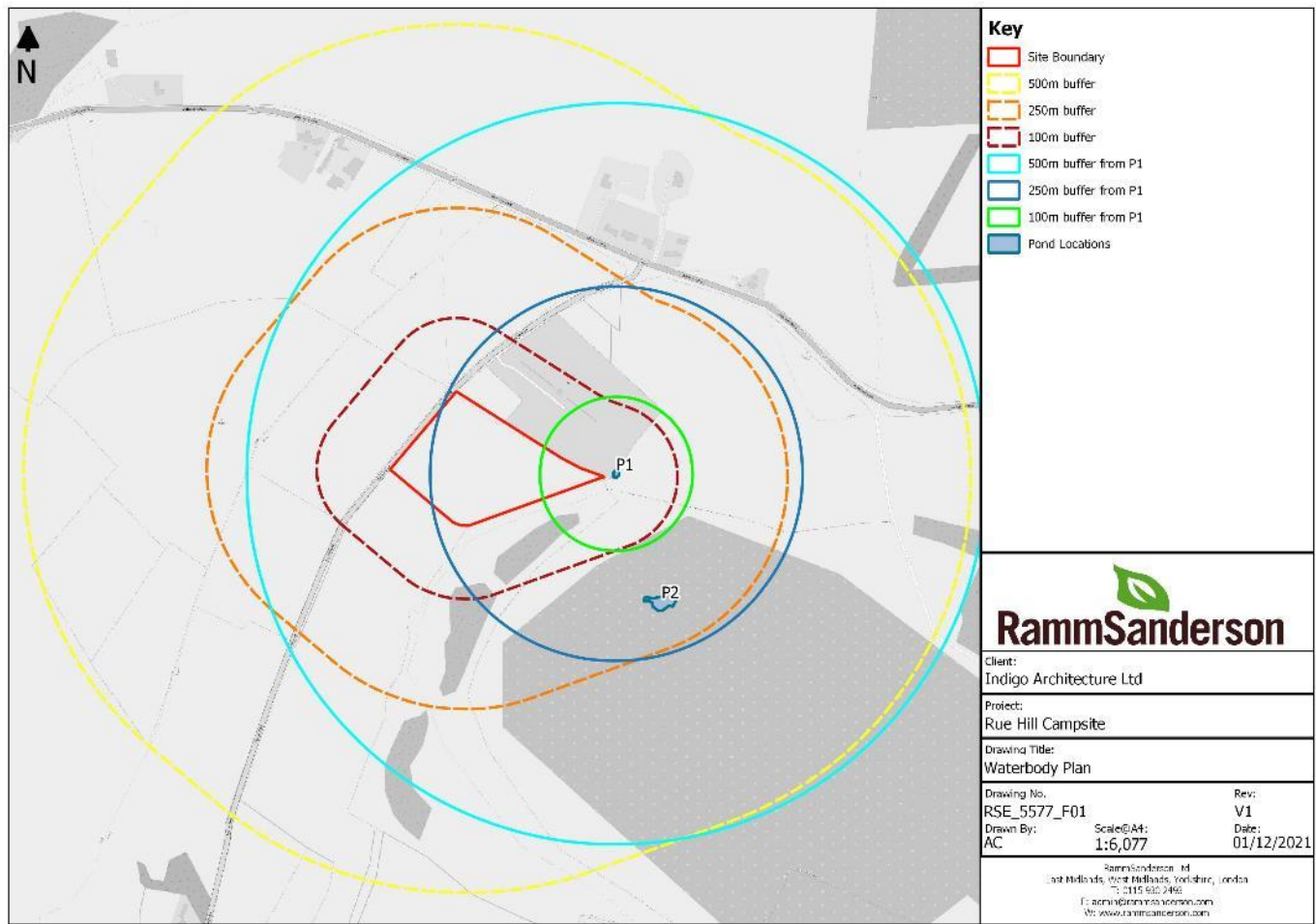
4.5.2 Great Crested Newt (GCN)

- ii There are no waterbodies located on site. However, a pond (P1) is located 13m east of the site. Another pond (P2) was also located within 250m of the site. P2 was located beyond a barrier for dispersal of GCN in the form of the nearby active quarry grounds. A Great Crested Newt Class Survey Licence Return was identified within the desk study for P2 which showed P2 to have a GCN population in 2017. A previous licence for GCN was also returned within the desk study located 1km south of the site. 28 GCN records were returned within the desk study with the closest record located 44m northeast of the site.
- iii The habitats on site had some suitability albeit limited for terrestrial phase GCN including a few scattered trees, poor semi improved grassland and a small area of scattered scrub. The stone walls on the site boundary were also suitable for hibernating GCN.
- iv P1 was dry (more akin to marshy grassland than a pond) and unsuitable for breeding amphibians and as the next nearest pond (P2) is beyond a significant barrier to dispersal in the form of an active quarry, no further surveys or mitigation are required for the species.
- v An H.S.I Assessment of P1 found it to be of Poor Suitability for Great Crested Newt (0.43).

Figure 3: Pond P1



Figure 4: Waterbody Location Plan



4.5.3 Bats

Trees

- vi All the trees on site were assessed as having negligible bat roosting potential.

Foraging Habitat

- vii The habitats on site including the poor semi-improved grassland, scattered scrub and scattered trees were suitable for commuting and foraging bats. When assessed against criteria in best practice guidelines (Collins J., eds, 2016) the site was considered to offer low quality foraging and commuting habitat for bats. As such further transect activity surveys of the site is considered disproportionate for this site. Noctule (*Nyctalus noctule*), common pipistrelle (*Pipistrellus pipistrellus*) and brown long-eared bats (*Plecotus auritus*) were returned within the desk study. The closest bat record was located 1km southwest of the site.

Buildings

- viii No buildings were located on site.

4.5.4 Birds

- ix The scattered trees and scrub provide suitable habitat for nesting birds. A number of bird records were returned within the desk study with the closest including spotted flycatcher (*Muscicapa striata*) and redstart (*Phoenicurus phoenicurus*) located 180m north of the site. However, these species are not likely to persist on site and bird species likely to occur on site would be restricted to common garden species and do not provide scope for Schedule 1 bird species or notable populations of Birds of Conservation Concern (BoCC). Impacts are deemed unlikely to extend beyond the local level therefore further breeding bird surveys are considered disproportionate.

4.5.5 Reptiles

- x The site had some suitability for reptile species due to the poor semi-improved grassland, scattered scrub and trees. The stone walls on the site boundary were also suitable for hibernating reptiles. The site had good connectivity with surrounding habitats suitable for reptiles and therefore reptiles will be allowed to disperse freely during site works. Two grass snake records were returned within the desk study with the closest record located 1.75km southeast of the site. Therefore, further reptile surveys are considered disproportionate for this site.

4.5.6 Water Vole, Otter and White Clawed Crayfish

- xi There are no habitats suitable for these species on site. Furthermore, no records of these species were returned within the desk study. Therefore, these species are not likely to be using the site and no surveys or mitigation are recommended.

4.5.7

- xii

Terrestrial Invertebrates

- 4.5.8 A number of terrestrial invertebrate records were also returned within the desk study with the closest
xiii record of a small heath (*Coenonympha pamphilus*) located 100m northeast of the site. However, it was not considered likely that protected or notable invertebrate species are to persist on site due to the small extent of suitable habitats including the short sward poor semi-improved grassland and the scattered trees and scrub.

Other Priority Fauna Species

- 4.5.9 The habitats on site were suitable for hedgehogs *Erinaceus europaeus*. Five hedgehog records were
xiv also returned within the desk study with the closest record located 280m north of the site.
Due to a lack of suitable habitats, the site is not considered likely to support any other legally protected or
xv Priority species.

5 DISCUSSION & RECOMMENDATIONS

5.1 Protected / Priority Species and Habitats Impact Appraisal

i The potential for protected species or habitats to be present on site and impacted by the proposals is provided below.

Table 9: Assessment of Likelihood of Impacts to Protected Species/Habitats

Species/Habitat	Suitable Habitat on Site	Local Records	Likelihood of Impacts by Proposals	Mitigation	Further Survey
Designated sites	No – The site was located within the Impact Risk Zone (IRZ) for Rue Hill SSSI and Caldon Dales SSSI. A number of European designated sites were located within 20km of the site. Ribdon Bank LWS located on site and adjacent to the site. However, habitats on site are of low quality therefore it is considered that the habitats on site are not designated as an LWS.	Yes - within IRZ of Rue Hill SSSI and Caldon Dales SSSI	Possible – The air pollution and dusk were likely impacts on the designated features of these SSSI's Highly unlikely that the SAC, Ramsar and SPA sites are to be impacted by site proposals. No sHRA recommended.	Construction Environmental Management Plan (CEMP) is recommended to reduce the impacts of site proposals on the LWS adjacent to the site.	A pre-commencement update to inform the CEMP is recommended to check the Ribdon Bank LWS condition
Habitats	Habitats on site were of low ecological importance. The closest Habitats of Principal Importance (HPI) under Section 41 of the NERC Act, 2006 included open mosaic habitats on previously developed land (OMH) located 33m south and lowland calcareous grassland with OMH located 45m north.	Yes – on site	None – habitats unlikely to qualify as LWS now.	Minimal impacts proposed, CEMP recommended to reduce impacts of proposals on the grassland on site.	
Great crested newt	P1 [dry] is located 13m east of the site. P2 was also located within 250m of the site and was located beyond a barrier for dispersal of GCN in the form of the nearby active quarry grounds. Habitats on site suitable for terrestrial GCN.	Yes	Minimal disturbance.	N/A	

Species/Habitat	Suitable Habitat on Site	Local Records	Likelihood of Impacts by Proposals	Mitigation	Further Survey
Bat tree roosts	No – All trees on site were assessed as having negligible bat roosting potential.	Yes (within 1km)	Increased ambient lighting levels across the site.	Sensitive bat lighting strategy detailed within a CEMP and LEMP.	No
Bat building roosts	No – no buildings within works area	Yes (within 1km)	Increased ambient lighting levels across the site	Sensitive bat lighting strategy detailed within a CEMP and LEMP	No
Bat activity	Yes – scrub and trees form good quality bat foraging and commuting lines.	Yes (within 2km)	Low increased ambient lighting levels across the site can impact bats. Recommended that the trees on site are retained.	Sensitive bat lighting strategy detailed within a CEMP and LEMP	No – provided sensitive bat lighting strategy used
Birds	Yes – scrub and trees suitable for nesting birds	Yes (within 1km)	Habitats may need to be removed to facilitate proposals.	Avoid clearance in bird nesting season (March – September).	No
Reptiles	Yes – scrub, poor semi improved grassland and trees suitable for reptiles.	Yes	Could be injured during initial site set up, clearance and ground works	Use habitat manipulation to make works area unsuitable following methods set out in a CEMP.	No
Water vole	No – no suitable habitats for these species on site	No	N/A	N/A	N/A
Otter	No – no suitable habitats for these species on site	No	N/A	N/A	N/A

Species/Habitat	Suitable Habitat on Site	Local Records	Likelihood of Impacts by Proposals	Mitigation	Further Survey
Terrestrial invertebrates	Yes – grassland, trees and scrub suitable but unlikely for any notable or protected species to persist	No	Clearance of vegetation, but small scale of suitable habitats on site reduces impacts to minimal	N/A	No
Freshwater invertebrates	No – no suitable habitats for these species on site	No	N/A	N/A	N/A
Eels	No – no suitable habitats for these species on site	No	N/A	N/A	N/A
Fish	No – no suitable habitats for these species on site	No	N/A	N/A	N/A
Priority Species	Yes – habitats suitable for hedgehog	No	Resting places for these species unlikely to be affected	PMW to prevent injury to small mammals to be followed	No
Invasive species	No invasive species on site	No	N/A	N/A	N/A
Biodiversity	Yes – trees and scrub of higher ecological value	N/A	Trees and scrub to be removed	N/A	No – LPA to be consulted on whether BIA may be required.

6 ENHANCEMENTS

- i It is a requirement of the NPPF (2021) that developments provide a measurable net gain for biodiversity post development.

6.1.2 Native Planting

- ii Native planting within the existing poor semi-improved grassland on site will enhance the site and create wildflower meadows. It is recommended that a wildflower mix is used such as the N5 value long season meadow mix from Naturescape that will produce flowers from May to September. Once the wildflower meadow is established this will be easy to manage and will only require cutting once a year (recommended in June).
- iii Enhancing this habitat will increase the suitability for invertebrates, including lepidoptera and pollinators. This will, in turn provide an ample food source for insectivores such as bats and hedgehogs. Plant species that will encourage these species to site include field scabious *Knautia arvensis*, oxeye daisy *Leucanthemum vulgare*, meadows cranesbill *Geranium pratense* and birds-foot-trefoil *Lotus corniculatus*. All these species can be found within the N5 value long season meadow mix and are important foodplants for invertebrates.

6.1.3 Hedgerow Planting

- iv A hedgerow could be planted to on all boundaries of the site. A minimum of 6 species should be planted, which may include blackthorn (*Prunus spinosa*), field maple (*Acer campestre*), alder (*Alnus glutinosa*), common dogwood (*Cornus sanguinea*), hazel (*Corylus avellane*) and guelder rose (*Viburnum opulus*), Standard trees such as English oak (*Quercus robur*) and wild cherry (*Prunus avium*) can also be planted at 50m intervals.
- v Planting should be undertaken during early winter, providing the ground is not frozen. Planting up gaps can be done in conjunction with coppicing existing plants, to give new plants minimum competition. To further reduce competition and aid establishment of the planted-up sections, the bases of the plants would be kept weed free through spot treatment of herbicide for the first three years.

6.1.4 Native Tree Planting

- vi It is recommended that any trees that are removed will be replaced on a like for like basis, to limit the loss of biodiversity for the development. This will help the development to continue to support species such as roosting and foraging bats and nesting birds.
- vii Species such as silver birch (*Betula pendula*), rowan (*Sorbus aucuparia*) and whitebeam (*Sorbus aria*) would make attractive additions to the Site. In particular rowan will provide a valuable source of berries late into the winter months and provide an important food source for native and migratory bird species. Ash and elm should currently be avoided due to the prevalence of 'Ash die-back' and 'Dutch elm disease', as stocks of these species cannot be guaranteed to be free from these afflictions. The planting of fruit trees, such as crab apple (*Malus sylvestris*) and wild cherry (*Prunus avium*) would also provide a valuable foraging resource for terrestrial mammals, . The use of native species in tree planting is also encouraged as these can harbour a high diversity of invertebrates. For example, English oak trees have over 400 associated invertebrate species (Kennedy & Southwood, 1984). Other suggested planting of benefit to invertebrates includes:

- Willow (*Salix sp.*);
- Hawthorn (*Crataegus monogyna*);
- Blackthorn (*Prunus spinosa*);

- Hazel (*Corylus avellana*); and
- Birch (*Betula sp.*).

6.1.5 Bat and Bird Boxes

viii The trees and scrub on site offer potential habitats for roosting and foraging bats and birds. As such, it is recommended that the site is enhanced for these species through the incorporation of bat and bird boxes on retained trees. These should be placed at 3m and 1.5m respectively, facing south for additional warmth and with a clear entrance path. Recommended models include the Vivara Pro Woodstone Bat Box, and the Vivara Pro Seville 32mm bird box, suitable for a variety of common woodland bird species as found on the site.

APPENDIX 1: REFERENCES AND CONSULTED INDUSTRY GUIDANCE

- i Amphibian and Reptile Groups of the United Kingdom, 2010. 'ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index'. s.l.:s.n.
- ii Institution of Lighting Professionals and Bat Conservation Trust, 2018. 'Bats and Artificial Lighting in the UK – Bats and the Built Environment Series Guidance Note'. 08/18
- iii BS 42020:2013 'Biodiversity – Code of Practice for Planning and Development 2013: The British Standards Institution'.
- iv Chartered Institute of Ecology and Environmental Management (CIEEM), 2019. 'Advice Note: on the Lifespan of Ecological Report and Surveys'. Winchester: CIEEM.
- v Chartered Institute of Ecology and Environmental Management, 2018. 'Guidelines for Ecological Impact Assessment in the UK and Ireland'. Terrestrial, freshwater and Coastal. 2nd ed. Winchester: CIEEM.
- vi Chartered Institute of Ecology and Environmental Management, 2017. 'Guidelines for Preliminary Ecological Appraisal. 2nd ed. Winchester: CIEEM.
- vii Collins J eds. 2016. 'Bat Surveys: Good Practice Guidelines, 3rd Edition'. London: Bat Conservation Trust.
- viii Department of Communities & Local Government, 2021. 'National Planning Policy Framework', London: DCLG.
- ix Joint Nature Conservancy Council, 2010. 'Handbook for Phase 1 habitat survey'. Peterborough: JNCC.
- x Office of the Deputy Prime Minister, 06/2005. 'Government Circular: Biodiversity and Geological Conservation - Statutory Obligations and their impact within the planning system'. London: ODPM.

APPENDIX 2: LEGISLATION AND PLANNING POLICY

6.2 General & Regionally Specific Policies

- i. Articles of British legislation, policy guidance and both Local Biodiversity Action Plans (BAPs) and the NERC Act 2006 are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:
 - The National Planning Policy Framework (2021);
 - ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2021);
 - Local planning policies in Staffordshire Moorlands District Council.
 - The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
 - The Wildlife and Countryside Act 1981 (as amended);
 - EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
 - National Parks and Access to the Countryside Act 1949;
 - The Protection of Badgers Act 1992;
 - The Countryside and Rights of Way Act 2000;
 - The Hedgerow Regulations 1997;
 - The Natural Environment and Rural Communities (NERC) Act 2006; and
 - Local Biodiversity Action Plan for Staffordshire.

6.3 Bats and Great Crested Newts

- i. Great crested newt and species of British bats are fully protected within UK Law under *Wildlife and Countryside Act 1981* (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:
 - Intentional or reckless killing, injury, taking;
 - Damage to or destruction of or, obstruction of access to any place of shelter, breeding or rest;
 - Disturbance of an animal occupying a structure or place;
 - Possession or control (live or dead animals);
 - Selling, bartering or exchange of these species, or parts of.
- i. This law is reinforced by the UK's transposition of the EU Habitats Regulations under *The Conservation of Habitats & Species Amendments (EU Exit) Regulations 2019 (as amended)*. These Regulations also prohibit:
 - the deliberate killing, injuring or taking of great crested newt or bats;
 - the deliberate disturbance of any great crested newt or bat species in such a way as to be significantly likely to affect:
 - their ability to survive, hibernate, migrate, breed, or rear or nurture their young; or
 - the local distribution or abundance of that species.
 - damage or destruction of a breeding site or resting place;
 - the possession or transport of great crested newt or bats or any other part of.
- ii. Under certain circumstances a licence may be granted by Natural England to permit activities that would otherwise constitute an offence. In relation to development, a scheme must have full planning permission before a licence application can be made.
- iii. In addition, seven British bat species are listed as Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act, 2006. These are barbastelle (*Barbastellus barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*).
- iv. Under the National Planning Policy Framework 2021 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be

avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

6.4 Birds

- i The Wildlife and Countryside Act 1981 (as amended) is the Priority legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to recklessly or intentionally:
 - Kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take or destroy the egg of any wild bird.
- ii For birds listed on Schedule 1 of the Act, it is an offence to disturb any bird while it is building a nest, is at or near a nest with young; or disturb the dependant young of such a bird.
- iii Species listed in Annex 1 of the EU Birds Directive 1994 (e.g. barn owl) are required to have special conservation measures taken to preserve their habitats and sites to be classified as Special Protection Areas (SPAs) where appropriate.

6.5 Reptiles

- iv All reptile species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:
 - Reckless or intentional killing and injury;
 - Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species.
- i In addition to the above legislation, UK rare reptiles; sand lizards (*Lacerta agilis*) and smooth snakes (*Coronella austriaca*), are listed under The Conservation of Habitats & Species Amendments (EU Exit) Regulations 2019 (as amended). This makes it an offence to;
 - Capture, kill, injure and disturb;
 - Take or destroying eggs;
 - Damage or destroy breeding/resting places;
 - Obstruct access to resting places; and
 - Possess, advertise for sale, sell or transport for sale, live or dead (part or derivative).
- v Where these animals are confirmed as present on land that is to be affected by development guidance recommends that:
 - The animals should be protected from injury or killing during construction operations;
 - Mitigation should be provided to maintain the conservation status of the species locally;
 - Under the National Planning Policy Framework 2021 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

6.6 Water Vole

- vi Water voles (*Arvicola amphibius*) are protected under Schedule 5 Section 9 of the Wildlife & Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or capture a water vole, to intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or to disturb water voles while they are using such a place.

6.7 White-clawed Crayfish

- vii White-clawed crayfish (*Austropotamobius pallipes*) are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and under the Act it is an offence to intentionally take white-clawed crayfish from the wild and to sell them. This species is also protected under the Habitat Regulations, requiring the designation of Special Areas of Conservation to protect important populations of this species.

6.8 Otter

- viii The European otter (*Lutra lutra*) is the only native UK otter species. It is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. This law is reinforced by the UK's transposition of the EU Habitats Regulations under The Conservation of Habitats & Species Amendments (EU Exit) Regulations 2019 (as amended). Together, these Regulations make it an offence to:
- capture, kill, disturb or injure otters (on purpose or by not taking enough care)
 - damage or destroy a breeding or resting place (deliberately or by not taking enough care)
 - obstruct access to their resting or sheltering places (deliberately or by not taking enough care)
 - possess, sell, control or transport live or dead otters, or parts of otters
- ix A convicted offence could get an unlimited fine and up to 6 months in prison.

6.9 Badgers

- x Badgers (*Meles meles*) and their setts are protected by the Protection of Badgers Act 1992. This makes it an offence to:
- intentionally capture, kill or injure a badger;
 - damage, destroy or block access to their setts;
 - disturb badgers in setts;
 - treat a badger cruelly;
 - deliberately send or intentionally allow a dog into a sett; and
 - bait or dig for badgers.
- xi Case law for this species contains example prosecutions of imprisonment for six months and heavy fines.

6.10 Hedgehogs and Common Toads

- xii Under the NERC Act 2006, the hedgehog (*Erinaceus europaeus*) is categorised as a 'Species of Principal Importance' (SPI) for biodiversity. Furthermore, hedgehog is also a local biodiversity action plan species (LBAP) for Nottinghamshire. Listing as SPI reflects concerns that populations have suffered a rapid and sustained decline in the UK. As such, they are a material consideration during planning.

6.11 Hedgerows

- ii All native hedgerows (including species-poor ones) are listed under Section 41 of the NERC Act (2006) and are a Local Biodiversity Action Plan (LBAP) habitat. All native hedgerows are considered to be of high conservation value.
- iii The Hedgerow Regulations (1997) classifies a hedgerow as 'important' if it:
- Satisfies at least 1 of the criteria listed in Part II of Schedule 1
 - Has existed for 30 years or more
- iv Any person wishing to remove a hedgerow is required to submit a hedgerow removal notice to the LPA.
- v Items of Legislation that are pertinent regarding hedgerows include:
- Hedgerow Regulations 1997
 - The countryside Rights of Way Act 2000
 - Natural Environment and Rural Communities Act (NERC) 2006
 - Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation
 - The UK Biodiversity Action Plan (UK BAP).

