Elite Ecology

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Upper Grange Farm,
Markfield

Preliminary Ecological Appraisal

December 2024

01782 308418

www.eliteecology.co.uk
admin@eliteecology.co.uk

Part of Harmil Environmental Ltd
Company Reg Number: 11310919
Company VAT Number: 320559225

The New Barn, Suites 2/3, Shellow Lane,
Gawsworth, Cheshire, CW12 2FQ

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Prepared For	Mr. and Mrs. Gooden		
Author	Miss Abigail Willems		
Approved (1st Checker)	Mr. Marek Fraczek		
Approved (2nd Checker)	Mr. Richard Millington		
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0. Executive Summary

This report has been prepared at the request of the proprietors Mr. and Mrs. Gooden. It relates to the proposed re-development works at Upper Grange Farm, 1A Ratby Lane, Markfield, Leicestershire, LE67 9RJ (Central OS Grid Reference: SK 49129 09142). This survey effort involved both a desktop study and field survey being undertaken.

Proposed plans include the relocation of the hydrotherapy pool, conversion of the wooden sheds into an enclosed storage space and garage, and the construction of a self-build residential dwelling. This development would result in both the permanent and temporary loss and/or alteration of some of the habitats located on site.

Leicestershire and Rutland Environmental Records Centre (LRERC) was commissioned to carry out an ecological data search of all protected species and sites recorded within a 2km radius of the site. No records lay on the proposed re-development site itself, although a number of records are present in close proximity. Please see **Section 3** for a review of the records revealed.

The preliminary ecological appraisal survey revealed multiple habitats on site. The UKHab Habitat Plan, habitat codes and target notes for the site are located within **Appendix D**. The following habitats were recorded on site and in the surrounding area (in primary habitat code alphabetical order):

- **g4 16 – Modified Grassland**
- **h2b 11 – Non-native Hedgerow**
- **h3h – Mixed Scrub**
- **u1b – Developed Land; Sealed Surface**
- **u1b5 – Buildings**
- **u1c – Artificial Unsealed; Unvegetated Surface**
- **u1e – Built Linear Features**
- **w1g 33 – Line of Trees**

Designated Sites:
No designated sites that were revealed by the ecological data search provided by LRERC fell on the proposed re-development site itself. Therefore, the proposed re-development will have no impact upon any local designated sites as the works are due to remain within the site boundary.

Habitats:
Priority Habitats: No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

Species:
Amphibians: The grassland and hedgerows on site have limited potential to support terrestrial phase amphibians for foraging and commuting, whilst the numerous log piles near the centre of the site may be used as refugia. Therefore, a herptile method statement is required to ensure that no harm during the construction phase occurs.

Badgers (*Meles meles*): Although no badger setts were observed on or immediately off site at the time of the survey, activity patterns of this species can change over a short time. It is therefore recommended that an update badger survey is undertaken if works do not commence within six months of the survey date (18th of March 2025). Additionally, during construction works, excavations should be left closed overnight, or a mammal ladder installed. The ladder needs to be of a size suitable for badgers and can be constructed out of a piece of wood/timber.

Bats: The site is deemed to be of some potential to foraging bats due to the presence of mature hedgerows and trees, and low expected levels of light. In addition to this, **B3** has a **low** potential to support roosting bats. As such, it is recommended that at least **one** bat survey is carried out on **B3**. This must be completed in optimal weather conditions during the optimal survey months of mid-May to August. Two surveyors will be required for **B3** to cover all areas of the building that are likely for bats to emerge or enter from.

Due to the low likelihood of crevice dwelling bats roosting, it is recommended that the scheme incorporates three integrated eco bat boxes (or similar) on appropriate elevations (these are shown in **Figures 5** and **6**).

In addition to this, due to the presence of suitable bat foraging/commuting habitats on site within the wider landscape, and to limit the potential impacts of artificial light on commuting/foraging bats within the wider landscape, a sensitive lighting plan is required for the proposed development. This lighting plan must be in accordance with the provisions set out by the Institute of Lighting Professionals and Bat Conservation Trust: Guidance Note 08/23: Bats and Artificial Lighting at Night and must comply with the following general guidance: Any artificial lighting installed on site during construction and post-development must face downwards to limit the spill of artificial light onto the wider landscape. It is also recommended that all external artificial lighting post-development is sensored (such as PIR sensored) and is only triggered by large bodies (so that moths or other small objects do not cause the lights to turn on). It is also recommended that this lighting plan incorporates 'dark zones' around bat foraging/commuting habitats within the wider landscape. These measures will minimise the negative impacts artificial light could have upon foraging and commuting bats in the area. More information regarding bats and artificial light can be found in **Appendix G.**

Birds: Due to there being suitable bird nesting habitat within the site, any vegetation clearance works should be undertaken outside of the bird breeding season (March to August). If vegetation is required to be removed during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than twenty-four hours before these are to be removed. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to all active bird nests under the Wildlife and Countryside Act 1981.

Hedgehogs (*Erinaceus europaeus*): It is recommended that precautionary measures are incorporated if construction works are undertaken during the active hedgehog season of mid-March to October. This will also include provisions for hedgehogs to escape from all trenches dug into the ground, by creating slopes or providing ramps at the end of each working day. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off.

In addition, precautions should be in place to avoid accidental killing/injury of hedgehogs during vegetation clearance of the site:

- Contractors made aware of the potential presence of hedgehogs within the dense vegetation.
- During vegetation clearance, vegetation should be initially lowered to a height of 20cm, followed by an inspection for hedgehogs. Once the area is deemed to be clear of hedgehogs, then the rest of the vegetation can be removed.
- Should any non-hibernating hedgehogs be discovered on site, they should be picked up (with a gloved hand) and relocated off site, away from the working areas. They should be placed under suitable dense vegetation.
- If any hibernating hedgehogs are discovered during the works (i.e., located during the hedgehog hibernation season of November to mid-March) they must be re-covered, and works must temporarily cease in that area. Site contractors should contact an ecologist, who will visit site to ensure that suitable replacement refugia (e.g., leaf litter pile or accumulation of material most resembling what the hedgehog has been found in) can be constructed in an undisturbed part of the site that will remain unaffected for the rest of the winter. The ecologist, wearing suitable thick gloves, will then carefully translocate the specimen to the hibernacula. If there is any doubt over translocating the hedgehog to a different part of the site, or if it appears to be harmed or underweight, the ecologist will take it into care and contact the local wildlife hospital for advice.

Reptiles: Due to the potential presence of low numbers of dispersing reptiles on site, including the possible use of log piles as refugia, a herptile method statement is recommended to be devised and adhered to during the scheme of works to ensure the development does not negatively impact reptiles.

Site Enhancements:

For the proposed site enhancements, please see **Section 5.4** of this report.

Biodiversity Net Gain:

The project is a self-build development it is exempt from the 10% net gain as mandated by DEFRA as it meets all of the self-build exemption requirements as set out by government guidance on exempt developments.

Contents

1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr and Mrs Gooden. It relates to the proposed re-development works at Upper Grange Farm, 1A Ratby Lane, Markfield, Leicestershire, LE67 9RJ (Central OS Grid Reference: SK 49129 09142). This survey effort involved both a desktop study and field survey being undertaken.

The main purpose of this assessment was to identify the broad habitats (as defined by the UK Habitat Classification, UKHab) and the flora species present within the survey area, with any further evidence of protected species usage and/or features of potential ecological interest also included. The field survey was carried out on the 18th of September 2024 by **Mr. Matthew Cotterill:** PG Dip, Ecologist Natural England Bat Survey Licence Number: 2019-43981-CLS-CLS Bat Survey Level 1. Newt Licence Number: 2016-20073-CLS-CLS and **Miss Abigail Willems:** BSc (Hons) Assistant Ecologist.

1.2 Site Description and Works

The site is located in a semi-rural setting within Markfield, a large village in both the National Forest and Charnwood Forest and in the Hinckley and Bosworth district of the ceremonial county of Leicestershire.

The site measures approximately 0.23ha and contains a number of habitats. These are buildings, built linear features, hedgerows, modified grassland, sealed and unsealed surface, and scattered trees. Additional information, target notes, and secondary codes can be found in **Section 4.1**. The habitats on site could have the potential to support a number of protected species. The photographs of the site are found within **Appendix E**.

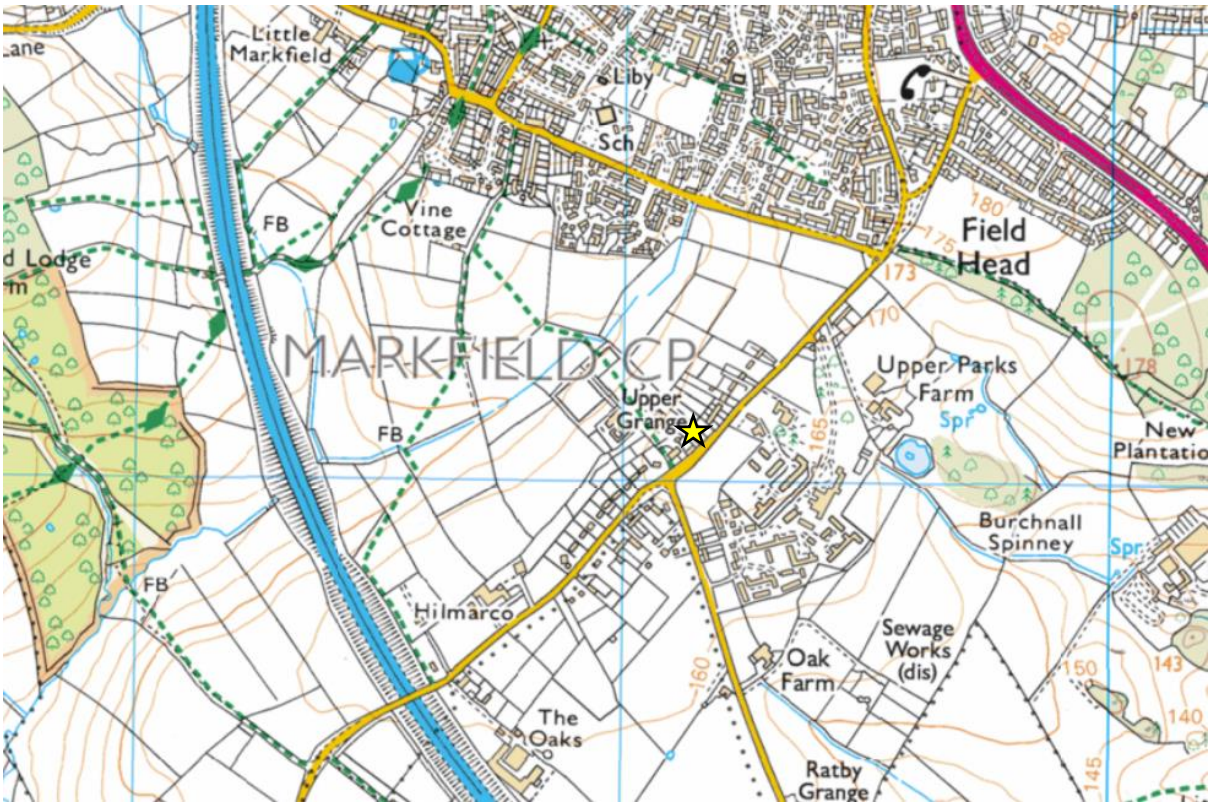
Within the wider landscape further habitats are present. These come in the form of arable land, buildings, hedgerows, modified grassland, scattered trees, standing water, and woodland. This shows that the habitats in the area surrounding the site have the potential to support protected species.

Proposed plans include the relocation of the hydrotherapy pool, conversion of the wooden sheds into an enclosed storage space and garage, and the construction of a self-build residential dwelling. This development would result in both the permanent and temporary loss and/or alteration of some of the habitats located on site.

Figure 1: An aerial map showing the approximate boundary of the site Upper Grange Farm, Markfield (as shown by the red outline) and the three buildings on site, **B1**, **B2**, & **B3**.

Figure 2: An aerial map showing the site at Upper Grange Farm, Markfield (as shown by the yellow star) in relation to some of the local landscape.

Figure 3: An OS map obtained from Bing showing the site at Upper Grange Farm, Markfield (as shown by the yellow star).



2. Survey Methodology

2.1 Desktop Survey

A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth, and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

The local records centre was contacted to provide data on all protected species and sites within 2km of the proposed development site. Leicestershire and Rutland Environmental Records Centre (LRERC) was the relevant local record centre for this project.

2.2 Field Survey

A Preliminary Ecological Appraisal (previously referred to as an Extended Phase 1 Habitat Survey) was carried out to map and describe the broad habitat types and notable features present on the surveyed site.

The classification of the habitats themselves was done using the definitions outlined in UK Habitat Classification (UKHAB) in *The UK Habitat Classification Version 2.0 (2023).*

As part of the field survey, the floral species will be identified and noted down. This will consider the dominant, abundant, frequent, occasional, and rare (DAFOR) species within each habitat on the survey site. The impacts of the proposed development scheme will be assessed by this report.

Each habitat will be assessed for the presence and/or the potential presence of protected species. The impacts of the proposed scheme of works on all potential protected species on site will be assessed. From this, either remedial action or recommended phase 2 presence/absence surveys will be devised.

Habitat Surveys can be carried out at any time of the year, with the optimal time period falling between the months of April through until September. This survey was carried out in September 2024, which is outside the optimal time period for flora surveys. Elite Ecology feels confident that this report reflects an accurate representation of the site's suitability for protected species to be present.

All sites surveyed by Elite Ecology will be run against the relevant Local Wildlife Site Criteria to assess whether or not they meet the required standards.

3. Desktop Survey Results

3.1 Statutory Sites

The ecological data received from LRERC revealed no statutory protected sites (e.g., LNR, SSSI, SPA, SAC or Ramsar) within the 2km radius of the site.

3.2 Non-statutory Sites

The ecological data received from LRERC confirmed the presence of thirty-three non-statutory protected sites within 2km of the site. These were in the form of historic Local Wildlife Sites (LWS). They are as follows:

Site Name	Designation	Approx. Distance (m)	Heading
Alder Spinney and Groby Slate Works and Brook	Historic LWS	1,660	SE
Bagworth, grassland	Historic LWS	1,540	SW
Bagworth, marsh grazed by cattle	Historic LWS	1,510	SW
Burchnall Spinney	Historic LWS	460	SE
Grassland	Historic LWS	1,220	NW
Grassland	Historic LWS	1,560	NW
Groby, quarry woodland SW of Leicester Rd	Historic LWS	975	E
Hedgerow	Historic LWS	565	SE
Hedgerow	Historic LWS	949	SW
Hedgerow	Historic LWS	1,380	SW
Hedgerow	Historic LWS	1,500	W
Hedgerow	Historic LWS	1,570	NE
Hedgerow	Historic LWS	1,920	SE
Hedgerow and grassland	Historic LWS	1,230	NW
Hedgerow and Tangle Trees Wood	Historic LWS	1,480	NE
Hedgerow and Woodland	Historic LWS	1,370	NE
Little John / Rocky Outcrop	Historic LWS	1,200	SE
Markfield Lane Roadside Verge	Historic LWS	735	SE
Markfield, A50/B587 junction, Whitwick Road verge (A)	Historic LWS	1,700	NW
Markfield, Roadside verge nature reserve	Historic LWS	1,750	NW
Markfield, S of Hill Lane industrial estate	Historic LWS	1,480	NW
Markfield, scrub	Historic LWS	377	E
Marsh	Historic LWS	610	W
Marsh	Historic LWS	1,840	NE
Mixed woodland	Historic LWS	975	SE
Pond	Historic LWS	1,540	N
Scrub	Historic LWS	1,920	NW
Semi-improved grassland	Historic LWS	423	NW
Semi-improved grassland	Historic LWS	792	SE
Semi-improved grassland	Historic LWS	1,000	NW
Semi-improved grassland	Historic LWS	1,730	NW
Shepherd's Hill Plantation	Historic LWS	1,420	SE
Whittington Rough	Historic LWS	1,350	SE

3.3 Woodland Sites

The information provided by LRERC revealed forty-eight Ancient & Semi-Natural Woodland (ASNW) sites within the 2km search radius. They are as follows:

Site Name	Designation	Approx. Distance (m)	Heading
Altar Stones	ASNW	1,860	NW
Bradgate House, Groby	ASNW	1,360	E
Bushy Field Wood	ASNW	1,940	NE
Bushy Field Wood	ASNW	1,960	NE
Bushy Field Wood	ASNW	1,980	NE
Carter's Rough	ASNW	1,750	SE
Choyce's Rough	ASNW	1,840	SE
Cliffe Hill Quarry	ASNW	1,830	NW
Cover Cloud Field – Neutral Grassland	ASNW	1,210	NE
Cover Cloud Hedgerows	ASNW	1,590	NE
Cover Cloud Wood	ASNW	1,280	NE
Field north of Leicester Road	ASNW	1,330	N
Fields south of Ulverscroft Wood	ASNW	1,520	N
Great Wood	ASNW	1,670	S
Heyday Hays Wood	ASNW	1,320	NE
Hill Hole Meadow	ASNW	1,300	NW
Hill Hole Quarry	ASNW	1,050	NW
Home Farm	ASNW	1,320	NE
Home Farm, Groby	ASNW	1,450	SE
John's Lee Wood	ASNW	1,800	NE
Lane End Farm Hedgerows	ASNW	1,810	NE
Lawn Wood and Old Wood	ASNW	1,240	E
Lower Grange Farm Hedge, Markfield	ASNW	337	N
Markfield Roadside Verge Nature Reserve 1	ASNW	1,850	NW
Markfield Roadside Verge Nature Reserve 2	ASNW	1,950	NW
Markfield Roadside Verge Nature Reserve 3	ASNW	1,980	NW
Markfield, Ash east of Ratby Lane	ASNW	100	SE
Markfield, Ash south of Croftway	ASNW	644	NW
Markfield, Cliffe Hill Rd verge	ASNW	1,950	NW
Markfield, Elliott's Lane hedge	ASNW	1,930	NW
Markfield, grassland by Stoney Farm	ASNW	1,440	NW
Markfield, Grassland off Leicester Rd	ASNW	1,090	NE
Markfield, land adj Cricket Ground	ASNW	1,500	NW
Markfield, land adj to Raunscliffe Farm	ASNW	1,460	NW
Markfield, oak at rear of Croftway	ASNW	619	NW
Markfield, Oak, land east of Ratby Lane	ASNW	195	SE
Markfield, Upper Grange Farm oaks	ASNW	155	SW
Markfield, veteran Horse Chestnut off Main St	ASNW	1,000	NW
Markfield, veteran willow W of Upper Grange Farm	ASNW	229	NW
Markfield, Vine Cottage track hedge	ASNW	509	NW
Markfield/Groby, Ratby Lane and Green Lane hedgerows	ASNW	523	NE

Newton Linford, Land off Markfield Lane	ASNW	1,230	NE
Raunscliffe	ASNW	1,730	NW
Stanton under Bardon, Fir Tree House Oaks	ASNW	1,800	W
Stinking Wood	ASNW	1,830	NE
Thornton Reservoir	ASNW	1,560	SW
Ulverscroft Valley	ASNW	1,850	NE
Ulverscroft Wood	ASNW	1,920	N

3.4 Regionally Important Geological Sites (RIGS)

The information provided by LRERC revealed six Regionally Important Geological Sites (RIGS) within the 2km search radius. They are as follows:

Site Name	Designation	Approx. Distance (m)	Heading
Altar Stones	RIGS	1,630	NW
Cliffe Hill Quarry	RIGS	1,780	NW
Groby Park	RIGS	840	SE
Groby Slate Quarry	RIGS	1,860	SE
Groby Upper Park	RIGS	285	E
Markfield Hill Hole Quarry	RIGS	1,080	NW

3.5 Species Records

3.5.1 Amphibians

Within the ecological data search provided by LRERC, five amphibian species were revealed within 2km of the survey site. These were common frog (*Rana temporaria*), common toad (*Bufo bufo*), great crested newt (*Triturus cristatus*), palmate newt (*Lissotriton helveticus*), and smooth newt (*Lissotriton vulgaris*). The closest record was of common frog which was located approximately 162m north-east of the site.

3.5.2 Birds

Within the ecological data set received by LRERC, fourteen bird species were revealed within 2km of the survey site. The closest record to the site was of fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*) recorded approximately 192m to the south-west of the site. A table with the collated bird species recorded can be found within **Appendix B**.

3.5.3 Bony Fish

Within the ecological data search provided by LRERC, no fish species were revealed within 2km of the survey site.

3.5.4 Crustaceans

Within the ecological data search provided by LRERC, one crustacean species was revealed within 2km of the survey site. This was of white-clawed crayfish (*Austropotamobius pallipes*), which was recorded approximately 1,304m north-west of the site.

3.5.5 **Flora**

Within the ecological data search provided by LRERC, one floral species has been revealed within 2km of the survey site. This was English bluebell (*Hyacinthoides non-scripta*), which was located approximately 586m north-east of the site.

3.5.6 **Fungi**

Within the ecological data search provided by LRERC, no fungal species were identified within 2km of the survey site.

3.5.7 **Invertebrates**

Within the ecological data search provided by LRERC, one invertebrate species has been identified within 2km of the survey site. This was of white-letter hairstreak (*Satyrium w-album*) which was recorded approximately 1,077m north-west from the site.

3.5.8 **Mammals**

Bats

Within the ecological data search provided by LRERC, eleven species of bat were revealed within 2km of the survey site.

The UKBAP species recorded in the search were brown long-eared (*Plecotus auritus*), noctule (*Nyctalus noctula*), and soprano pipistrelle (*Pipistrellus pygmaeus*) bats. The non-UKBAP species identified were Brandt's (*Myotis* brandtii), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's (*Myotis daubentonii*), Leisler's (*Nyctalus leisleri*), Nathusius pipistrelle (*Pipistrellus nathusii*), Natterer's (*Myotis nattereri*), serotine (*Eptesicus serotinus*), and whiskered (*Myotis mystacinus*) bats. In addition, there were some records of unidentified bat (Chiroptera indet.), unidentified *Myotis* sp., unidentified *Nyctalus* sp., and unidentified pipistrelle (*Pipistrellus* sp.) specimens.

The closest record to the survey site was of brown long-eared, common pipistrelle, myotis bat species, noctule, and soprano pipistrelle bats, which were all found approximately 192m south-west of the site.

Other Mammals

The ecological data search provided by LRERC revealed three other mammal species within the 2km search radius. These come in the form of Eurasian badger (*Meles meles*), European otter (*Lutra lutra*), and water vole (*Arvicola amphibius*).

The closest record to the survey site is of Eurasian badger located approximately 274m north-west from the site.

3.5.9 **Mollusc**

Within the ecological data search provided by LRERC, no mollusc species were identified within 2km of the survey site.

3.5.10 **Reptiles**

Within the ecological data search provided by LRERC, one reptile species was identified within 2km of the survey site. This was common lizard (*Zootoca vivipara*) which was found approximately 1,207m north-west of the survey site.

4. Field Survey

4.1 Habitats

The preliminary ecological appraisal survey revealed multiple habitats on site. The UKHab Habitat Plan, habitat codes and target notes for the site are located within **Appendix E**. The following habitats were recorded on site and in the surrounding area (in primary habitat code alphabetical order):

4.1.1 g4 – Modified Grassland

UKHab Secondary Code(s)	Description
16	Tall Forbs

Modified grassland runs along the northern most edge of the site, from the south-east to the north-west. In addition to this, there is a small patch of modified grass in front of the hydrotherapy pool building (**B3**) near the centre of the site. The northern most area of modified grass appears to have been left to grow or is grazed by livestock, whilst the small patch in the centre of the site is mown. As such there is some variation in sward height.

This habitat is dominated by white clover (*Trifolium repens*), with abundantly occurring perennial rye grass (*Lolium perenne*). Frequently occurring species include false oat-grass (*Arrhenatherum elatius*), and occasionally occurring species include creeping buttercup (*Ranunculus repens*) and Yorkshire fog (*Holcus lanatus*). Rare species occurring in this habitat include bristly oxtongue (*Helminthotheca echioide*), broadleaf plantain (*Plantago major*), broadleaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale*), golden ragwort (*Packera aurea*), meadow buttercup (*Ranunculus acris*), purple toadflax (*Linaria purpurea*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), self-heal (*Prunella vulgaris*), smooth cat's ear (*Hypochaeris glabra*), and spear thistle (*Cirsium vulgare*).

Within this habitat is the secondary habitat tall forbs. This habitat was found within the field to the north of the site in two patches – one at the north-western most point of the field, and the other on along the north-east edge of the site towards the mid-point of the field. This habitat contains abundant broad-leaved dock and rare bramble (*Rubus fruticosus*), foxglove (*Digitalis purpurea*), nettle (*Urtica dioica*), and smallflower hairy willowherb (*Epilobium parviflorum*).

Overall, this habitat has been deemed to have the potential to support a wide variety of protected species in foraging and commuting.

4.1.2 **h2b – Non-native Hedgerow**

UKHab Secondary Code(s)	Description
11	Hedgerow with Trees

Along the south-west border of the driveway leading in from the road is a hedgerow with trees. This continues along the south-west edge of the shed **B2**. This habitat is dominated by garden privet (*Ligustrum ovalifolium*), has occasional hawthorn (*Crataegus monogyna*), ivy (*Hedera helix*), and sycamore (*Acer pseudoplatanus*), and rarely present ash (*Fraxinus excelsior*), elder (*Sambucus nigra*), grey willow (*Salix cinerea*), and Spanish boxwood (*Buxus balearica*).

4.1.3 **h3 - Scrub**

Behind **B3**, within the modified grassland there are patches of scrub. These include abundant dogwood (*Cornus sanguinea*), with occasional bramble and elder (*Sambucus nigra*).

This habitat is deemed to have the potential to provide commuting, refugia, and foraging opportunities for protected species.

4.1.4 **u1b – Developed Land; Sealed Surface**

This habitat is present along the south-east arm of the property in the form of a paved driveway. It stretches from the road (Ratby Lane) north-west towards the buildings **B2** and **B3** where it provides some space for parking. This habitat has been deemed to have no ecological significance.

4.1.5 **u1b5 – Buildings**

B1

External Inspection

B1 is a single-storey open-sided shed used for storage, located in the west of the site. It is attached to **B2** on its south-eastern side. Its walls are made from solid wood, and it has no windows or doors. The roof is made of corrugated metal and is sloped. There were no features identified during the survey that had the potential to support roosting bats. In addition, no physical evidence of externally nesting birds or roosting bats was identified on **B1**.

Internal Inspection

Internally, **B1** has timber beams supporting the roof. In terms of lighting, it has both artificial lighting running along the ceiling, as well as natural light coming in from the open side on the north-east face.

There were no signs of bat or bird inhabitation inside of **B1**, with some spider webs also present.

Overall, considering the exterior and interior of the building, **B1** has been deemed to have **negligible** roosting potential for birds, and **negligible** roosting potential for bats.

B2

External inspection

Similarly to **B1**, **B2** is also a wooden storage shed with a sloped metal roof and an open side facing the north-east. Out of both buildings, **B2** is positioned further south-east than **B1**. There were no features identified during the survey that had the potential to support roosting bats. In addition, no physical evidence of externally nesting birds or roosting bats was identified on **B1**.

Internal inspection

Internally, **B2** has timber beams supporting the roof. In terms of lighting, it has both artificial lighting running along the ceiling as well as natural light coming in from the open side on the north-east face. There is also some ivy growing along the back wall of the interior.

There were no signs of bat or bird inhabitation inside of **B2** , with some spider webs also present.

Overall, considering the exterior and interior of the building, **B2** has been deemed to have **negligible** nesting potential for birds, and **negligible** roosting potential for bats.

B3

External Inspection

This building is located in the centre of the surveyed site and is mainly commercial, and is in use as a hydrotherapy pool for dogs. It is made from brick and has both solid and cavity type walls. Along the south-west and north-west elevations of this building are artificial lighting. The windows and doors of **B3** are uPVC, and its roof is gable and is made from corrugated metal. Towards the south-east edge of the building is an attached lean-to which is made from plastic and glass and functions as a conservatory. In addition to these features, **B3** also has guttering, drainpipes, fasciae, barge boards, and vents.

In terms of potential roosting features (PRFs), **B3** has two gaps under the fasciae on the north-east elevation, and one gap under the fasciae on the south-west elevation. The fascia is metal, and it unlikely to have the correct thermal stability required for bats, as this is likely to be too cold in winter, and too warm in the summer. At the south-east elevation there is a gap along the bargeboard, but again this is made of metal and the thermal conditions will vary as stated above. Finally, at the north-western elevation, there is a gap in the brickwork that a roosting bat may utilise. The features present are only likely to support crevice dwelling bats, such as the common pipistrelle (*Pipistrellus pipistrellus*), and void dwelling bats are not likely to be present.

Internal Inspection

Internally, this building is in constant commercial use as a hydrotherapy pool. There is no separate void space as the whole building only contains one floor. As such, **B3** experiences high anthropogenic disturbance and is unlikely to have bats or birds roosting internally.

Considering both the interior and exterior of this building, it has been deemed to have **negligible** nesting potential for birds, and **low** potential for roosting bats due to a number of external PRFs.

Summary of Building Inspection

Due to the amount of potential ingress/egress points and suitable roosting features, the structures of **B1**-**B3** at Upper Grange Farm, Markfield were deemed as having the following bat and bird potentials. It should be noted that no further bat activity surveys are required for these buildings as they are not set to be affected by the works.

Building Reference	Bat Potential	Bird Potential	Number of bat activity surveys required	Number of surveyors required
B1	**Negligible**	**Negligible**	0	N/A
B2	**Negligible**	**Negligible**	0	N/A
B3	**Low**	**Negligible**	1	2

Table 1: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

Table 7.2. Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
One survey visit. One dusk emergence survey[a] (structures). No further surveys required (trees).	Two separate dusk emergence survey visits[b].	Three separate dusk emergence survey visits[b].

a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see para 5.2.44). In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more.

4.1.6 **u1c – Artificial Unsealed; Unvegetated Surface**

This habitat is present in the immediate surrounds to **B3** and the south-east edges of **B2** and contains sparse vegetation. This includes the following rarely occurring vegetation: coltsfoot (*Tussilago farfara*), couch grass (*Elymus repens*), dandelion (*Taraxacum officinale*), garden currant (*Ribes rubrum*), greater willowherb (*Epilobium hirsutum*), herb Robert (*Geranium robertianum*), milk thistle (*Silybum marianum*), nettle (*Urtica dioica*), rough meadowgrass (*Poa trivialis L*), tufted grass (*Deschampsia cespitosa*), white clover (*Trifolium repens*), and Yorkshire fog (*Holcus lanatus*).

4.1.7 **u1e – Built Linear Features**

UKHab Secondary Code(s)	Description
612	Fence

This habitat includes a wooden mechanical gate at the entrance to the property in the far south-east of the site, and wooden fencing which runs along the boundary of the whole site apart from the south-west mid-section of the property where the tarmac continues to the west off-site. As these features are unlikely to prevent any protected species from accessing the site, these habitats have been deemed to have no ecological significance.

4.1.8 **w1g – Other Broadleaved Woodland**

UKHab Secondary Code(s)	Description
33	Line of trees

A line of trees is present within the field in the north of the site. It runs along the north-west edge and contains the following species: abundantly occurring ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), occasionally occurring blackthorn (*Prunus spinoas*), crab apple (*Malus sylvestris*), elder (*Sambucus nigra*), and holly (*Ilex aquifolium*), and rarely occurring dog rose (*Rosa canina*).

Target Notes

4.1.9 **Log Piles**

Throughout the site there are several log piles and one log store. There are two log piles located at the front and four located at the rear of the hydrotherapy pool. The log store is present along the south-east elevation of the hydrotherapy pool next to the conservatory. Some of these piles appear to have been left for quite some time due to the aged appearance of the wood. As such it can be inferred that they are not often disturbed, and may act as refugia for several species, including amphibians, hedgehogs (*Erinaceus europaeus*), reptiles, and invertebrates.

4.2 Species

The preliminary ecological appraisal survey revealed that the habitats that have been outlined for the proposed development area do contain protected species potential. The following assessment has also considered the adjacent habitats and connectivity to the wider landscape.

4.2.1 Amphibians

The hedgerows and grassland on site have the potential to support terrestrial phase amphibians for foraging and commuting, whilst the multiple log piles scattered near the centre of the site may be used as refugia. However, the log piles are regularly disturbed, and the grassland is of a short sward height, thus reducing the potential for them to be present.

In addition to this, a total of four ponds and a ditch are located within 500m of the site (designated **P1**, **P2**, **P3**, **P4**, and **D1**). **P2** and **P3** are located approximately 143m and 136m respectively south-west of the site and are deemed to have good connectivity to the site. **P1** is located further away at approximately 431m north-west of the site. **P4** is the largest of the ponds within a 500m radius and is located approximately 405m south-east of the site. It has a physical barrier between it and the site in the form of Ratby Lane, hence the connectivity to the site is reduced. Finally, there is a ditch (**D1**) that runs south-west to north-east through the 500m radius. It is located approximately 166m north-west of the site and has good connectivity. Connectivity to the site is also impacted by the local land use, in that an active kennels, cattery and dog rehabilitation centre are present, thus increasing the risk of pet predation whilst commuting to the site. Please see **Figure 4** for a visual representation.

Overall, this site is deemed to be of **low** potential to support amphibians, and further precautionary measures are required (please see **Section 5.3** for additional information).

Figure 4: An aerial map of the site at Upper Grange Farm, Markfield (outlined in red) in relation to nearby ponds (**P1**, **P2**, **P3**, & **P4**) and ditch (**D1**) within a 500m buffer zone (yellow border). These pond and ditch locations have been identified using Ordinance Survey data and satellite imagery.

4.2.2 Badgers (*Meles meles*)

Although no setts were found on site or immediately off site during the survey visit, the habitats on site and in the surrounding area are suitable for commuting and foraging. For these reasons, the site's potential to support badgers has been deemed **low**, and further precautionary measures are required (please see **Section 5.3** for additional information).

4.2.3 Bats

The on-site habitats are deemed to contain the potential to support foraging and commuting bats, namely the hedgerows and line of trees. In addition to this, **B1** and **B2** have **negligible** potential to support roosting bats, whilst **B3** has **low** potential to support roosting bats due to a number of PRFs. Overall, the site is deemed to be of **moderate** potential to support foraging and commuting bats, and **low** potential to support roosting bats. As such, further precautionary measures are required (please see **Section 5.3** for additional information).

4.2.4 **Birds**

For birds on site, the hedgerows and trees may provide nesting and foraging habitats, and the grassland may provide some limited foraging habitat. Overall, the site is deemed to be of **high** potential to support birds, and further precautionary measures are required (please see **Section 5.3** for additional information).

4.2.5 **Hedgehogs (*Erinaceus europaeus*)**

The site is likely in use by hedgehogs for commuting and foraging purposes. Hedgehogs may also be nesting or hibernating within the hedgerows and the log piles on site. Overall, the site is deemed to be of **low** potential to support hedgehogs and further precautionary measures are required (please see **Section 5.3** for additional information).

4.2.6 **Invertebrates**

The habitats on site (such as the hedgerows and the log piles) have potential to support good assemblages of invertebrate species. However, it is not expected to support rare or protected invertebrate species due to the relatively common floral composition and habitat distinctiveness. Overall, the site is deemed to be of **low** potential to support rare or protected invertebrate species, and no further actions are required.

4.2.7 **Reptiles**

The habitats on site have the potential to support a low number of dispersing reptiles, and the log piles may be used as basking areas and/or hibernacula. The habitats on site also have suitable connectivity to other suitable reptile habitat in the wider landscape. However, the site lacks the required levels of cover, area, and topographic features to be expected to support a significant sustained population of reptiles. Overall, the site is deemed to be of **low** potential to support reptiles and further precautionary measures are required (please see **Section 5.3** for additional information).

4.3 Potential Impacts of the Works

Based upon the results from the desktop survey, field survey, and using a degree of academic supposition, the unmitigated development impacts have been summarised as follows:

Species	Impact & Justification	
	Construction Phase	Operational Phase
Amphibians	**Low** Minor risk of death and/or injury of foraging/commuting amphibians on site during construction, caused by the potential digging of deep trenches and/or excavations.	**Negligible** Little to no adverse impacts to amphibians during the operational phase of development.
Badgers	**Low** Minor risk of death and/or injury of foraging/commuting badgers on site during construction, caused by the potential digging of deep trenches and/or excavations. Minor risk of damage/disturbance to any new badger setts during the construction phase that may have become established immediately off site after the most recent ecological survey visit.	**Negligible** Little to no adverse impacts to badgers during the operational phase of the development.
Bats	**Unknown** Possible destruction and/or disturbance to bat roost(s) and/or individual bat(s) during construction. Possible disturbance and/or fragmentation effects caused by poor luminaire design during construction.	**Unknown** Possible loss of bat roost(s) during the operational phase of the development. Possible disturbance and/or fragmentation effects caused by poor luminaire design during the operational phase of the development, based on the provided plans.
Birds	**Negligible** Little to no risk of destruction and/or disturbance of active bird nest(s) during construction.	**Negligible** Little to no adverse impacts to birds during the operational phase of the development.
Flora	**Negligible** Little to no risk of adverse effects to protected flora during construction.	**Negligible** Little to no adverse impacts to protected flora during the operational phase of the development.
Hedgehogs	**Moderate** Moderate risk of death and/or injury of foraging/commuting hedgehogs on site during construction caused by the potential digging of deep trenches and/or excavations, and the potential presence of pipework on the ground. Moderate risk of death, injury and/or disturbance of nesting/hibernating hedgehogs during construction.	**Moderate** Loss of hibernacula opportunities e.g. removal of log piles
Invertebrates	**Moderate** Moderate risk of adverse effects to non-protected invertebrates utilising log piles during construction.	**Moderate** Little to no risk of adverse effects to non-protected invertebrates during the operational phase of the development.
Reptiles	**Unknown** Risk of death and/or injury of reptiles on site during construction phase caused by workers, materials, plant, vehicles and/or machinery. Risk of adverse effect to reptiles utilising logs as hibernacula during construction.	**Negligible** Little to no risk of adverse effects to reptiles during the operation phase of the development.

5. Recommendations

5.1 Designated Sites

No designated sites that were revealed by the ecological data search provided by LRERC fell on, or adjacent to, the proposed re-development site itself. Therefore, the proposed re-development will have no impact upon any local designated sites as the works are due to remain within the site boundary.

5.2 Habitats

5.2.1 Priority Habitats

No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

5.3 Species

The site was found to contain the potential to support protected and/or rare species. Therefore, the following recommendations are required for the site:

5.3.1 Amphibians (including great crested newts)

The grassland and hedgerows on site have limited potential to support terrestrial phase amphibians for foraging and commuting, whilst the numerous log piles near the centre of the site may be used as refugia. Therefore, a herptile method statement is required to ensure that no harm during the construction phase occurs.

5.3.2 Badgers (*Meles meles*)

Although no badger setts were observed on or immediately off site at the time of the survey, activity patterns of this species can change over a short time. It is therefore recommended that an update badger survey is undertaken if works do not commence within six months of the survey date (18th of September 2024).

Badger surveys can be undertaken at any time of year, and to allow sufficient time to obtain a Natural England badger mitigation licence (should a sett be discovered on or immediately off site) the survey should be scheduled three months prior to the commencement of works.

Additionally, during construction works, excavations should be left closed overnight, or a mammal ladder installed. The ladder needs to be of a size suitable for badgers and can be constructed out of a piece of wood/timber.

5.3.3 **Bats**

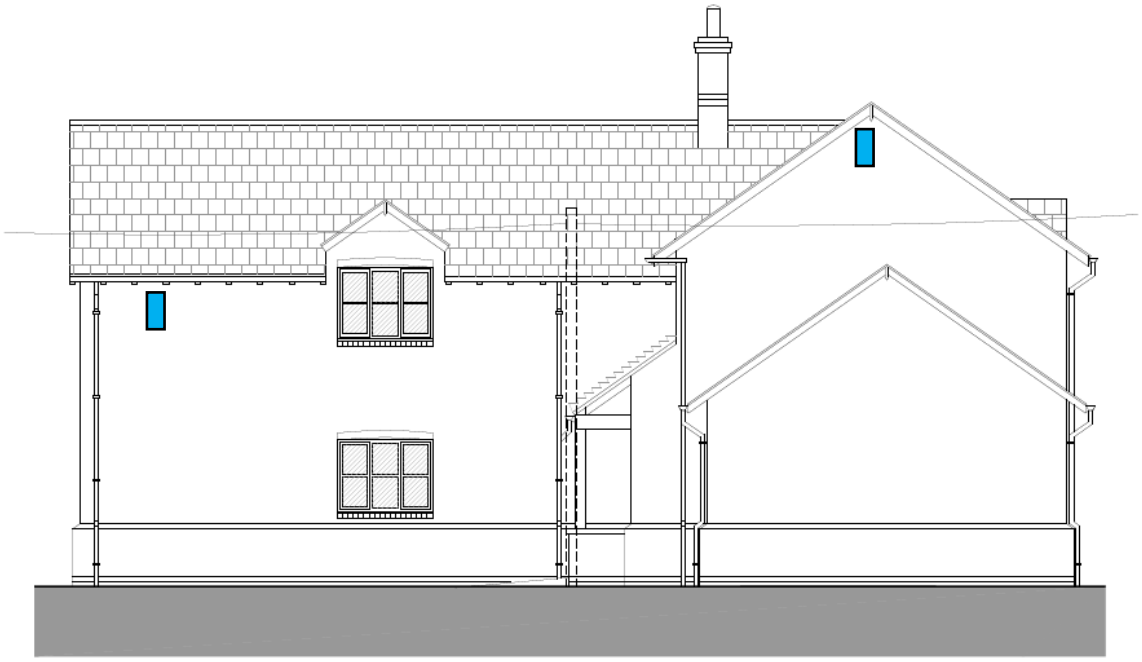
The site is deemed to be of some potential to foraging bats due to the presence of mature hedgerows and trees, and low expected levels of light. In addition to this, **B3** has a **low** potential to support roosting bats. As such, it is recommended that at least **one** bat survey is carried out on **B3**. This must be completed in optimal weather conditions during the optimal survey months of mid-May to August. Two surveyors will be required for **B3** to cover all areas of the building that are likely for bats to emerge or enter from.

Due to the low likelihood of crevice dwelling bats roosting, it is recommended that the scheme incorporates three integrated eco bat boxes (or similar) on appropriate elevations (these are shown in **Figures 5** and **6**).

Figure 5: Proposed site plan of the south-western elevations illustrating the location of the three integrated eco bat boxes, or similar (as shown by the blue shapes), at the site.

Elevation A As Proposed

Figure 6: Proposed site plan of the south-eastern elevations illustrating the location of the three integrated eco bat boxes, or similar (as shown by the blue shapes), at the site.



Elevation B As Proposed

In addition to this, due to the presence of suitable bat foraging/commuting habitats on site within the wider landscape, and to limit the potential impacts of artificial light on commuting/foraging bats within the wider landscape, a sensitive lighting plan is required for the proposed development. This lighting plan must be in accordance with the provisions set out by the Institute of Lighting Professionals and Bat Conservation Trust: Guidance Note 08/23: Bats and Artificial Lighting at Night and must comply with the following general guidance: Any artificial lighting installed on site during construction and post-development must face downwards to limit the spill of artificial light onto the wider landscape. It is also recommended that all external artificial lighting post-development is sensored (such as PIR sensored) and is only triggered by large bodies (so that moths or other small objects do not cause the lights to turn on). It is also recommended that this lighting plan incorporates 'dark zones' around bat foraging/commuting habitats within the wider landscape. These measures will minimise the negative impacts artificial light could have upon foraging and commuting bats in the area. More information regarding bats and artificial light can be found in **Appendix G.**

5.3.4 Birds

Due to there being suitable bird nesting habitat within the site, any vegetation clearance works should be undertaken outside of the bird breeding season (March to August). If vegetation is required to be removed during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than twenty-four hours before these are to be removed. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to all active bird nests under the Wildlife and Countryside Act 1981.

5.3.5 **Hedgehogs (*Erinaceus europaeus*)**

It is recommended that precautionary measures are incorporated if construction works are undertaken during the active hedgehog season of mid-March to October. This will also include provisions for hedgehogs to escape from all trenches dug into the ground, by creating slopes or providing ramps at the end of each working day. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off.

In addition, precautions should be in place to avoid accidental killing/injury of hedgehogs during vegetation clearance of the site:

- Contractors made aware of the potential presence of hedgehogs within the dense vegetation.
- During vegetation clearance, vegetation should be initially lowered to a height of 20cm, followed by an inspection for hedgehogs. Once the area is deemed to be clear of hedgehogs, then the rest of the vegetation can be removed.
- Should any non-hibernating hedgehogs be discovered on site, they should be picked up (with a gloved hand) and relocated off site, away from the working areas. They should be placed under suitable dense vegetation.
- If any hibernating hedgehogs are discovered during the works (i.e., located during the hedgehog hibernation season of November to mid-March) they must be re-covered, and works must temporarily cease in that area. Site contractors should contact an ecologist, who will visit site to ensure that suitable replacement refugia (e.g. leaf litter pile or accumulation of material most resembling what the hedgehog has been found in) can be constructed in an undisturbed part of the site that will remain unaffected for the rest of the winter. The ecologist, wearing suitable thick gloves, will then carefully translocate the specimen to the hibernacula. If there is any doubt over translocating the hedgehog to a different part of the site, or if it appears to be harmed or underweight, the ecologist will take it into care and contact the local wildlife hospital for advice.

5.3.6 **Reptiles**

Due to the potential presence of low numbers of dispersing reptiles on site, including the possible use of log piles as refugia, a herptile method statement is recommended to be devised and adhered to during the scheme of works to ensure the development does not negatively impact reptiles.

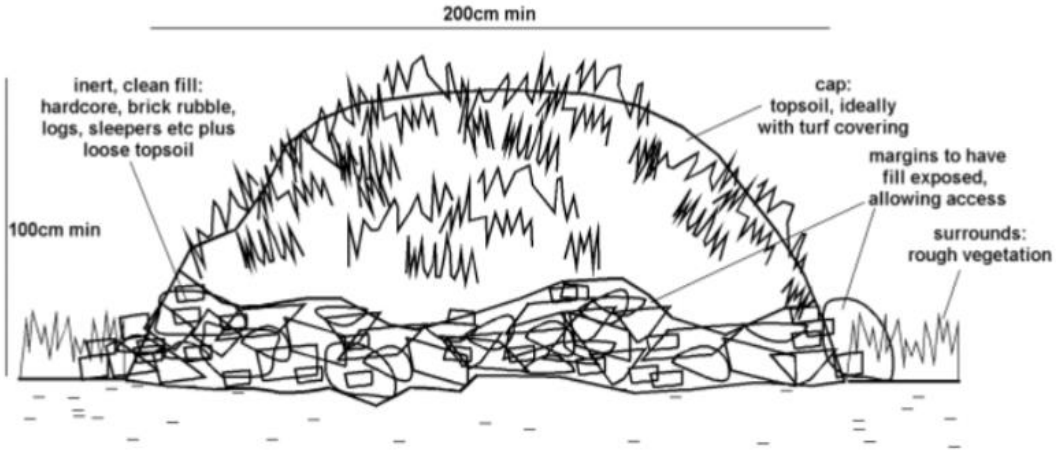
5.4 Site Enhancements

For the proposed development works, the following site enhancement measures could be incorporated into the site post-development. These measures are optional but are bespoke to the site surveyed for the enhancement of biodiversity. Once the options have been finalised, the locations of these features should be placed on a master plan.

5.4.1 Amphibians

It is an option to include a minimum of two amphibian hibernacula into the design scheme of the site and constructed in suitable locations. In this instance, they should be constructed near the base of the hedgerow at the north border of the site. These are usually comprised of rubble, rock, log piles and earth banks. An example design for the hibernacula can be seen below within **Figure 7**.

Figure 7: A diagram illustrating the recommended hibernacula (GCN Mitigation Guidelines).



5.4.2 Bats

The site can be enhanced by installing a variety of bat boxes on mature trees or new buildings on site. It is recommended that bat boxes installed within new buildings are integrated into the external walls. This will enhance roosting opportunities for bats within the local landscape. Boxes can be ordered by contacting Elite Ecology at: admin@eliteecology.co.uk.

In addition, the site can be enhanced by introducing a bat friendly planting scheme in the soft landscaping plan. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Flowers for borders	Trees, shrubs & climbers
Aubretia	Bramble
Candytuft	Common alder
Cherry pie	Dogrose
Corncockle	Elder
Corn marigold	English oak
Corn poppy	Gorse
Echniacea	Guelder rose
English bluebell	Hawthorn
Evening primrose	Hazel
Field poppies	Honeysuckle (native)
Honesty	Hornbeam
Ice plant 'pink lady'	Ivy
Knapweed	Jasmine
Mallow	Pussy willow
Mexican aster	Rowan
Michaelmas daisy	Silver birch
Night-scented stock	**Herbs**
Ox-eye daisy	Angelica
Phacelia	Bergamot
Poached egg plant	Borage
Primrose	Coriander
Red campion	English marigolds
Red valerian	Fennel
Scabious	Feverfew
St. John's Wort	Hyssop

5.4.3 Birds

The site could be enhanced for birds by installing a variety of bird boxes on site. The following models and quantities are recommended:

- One Vivara Pro Woodstone House Sparrow Nest Box (or similar)
  - To ideally be integrated into the wall of a building, and situated as high as possible under the eaves, ideally facing north to east.

- Four Swift S Bricks (or similar)
  - To be installed into the brickwork of the buildings and situated as high as possible under the eaves.

- One Vivara Pro Woodstone Salamanca Nest Box 32mm (or similar)
  - To be installed 2.5 to 4m high on a suitable tree and ideally facing north to east.

- One Eco Barn Owl Nest Box (or similar)
  - To be installed on a mature poplar tree within the hedgerow at the north border of the site, facing north, and at least 4.5m high.

Boxes can be ordered by contacting Elite Ecology at: admin@eliteecology.co.uk.

5.4.4 Hedgehogs (*Erinaceus europaeus*)

The site could be enhanced for the local hedgehog population by installing at least one Eco Hedgehog Nest Box (or similar) in a suitable location on site. This will create more opportunities for hedgehogs within the local landscape. Boxes can be ordered by contacting Elite Ecology at: admin@eliteecology.co.uk.

5.4.5 Invertebrates

The site could be enhanced for the local invertebrate population by installing at least two bug hotels in suitable locations on site. In addition, mixed scrub planting in the field at the north of the site would also enhance This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

Boxes can be ordered by contacting Elite Ecology at: admin@eliteecology.co.uk.

5.5 Biodiversity Net Gain

The project is a self-build development it is exempt from the 10% net gain as mandated by DEFRA as it meets all the following conditions to qualify for exemption as set out by government guidance on exempt developments.

The conditions to qualify for exemption are that the development must:

- Consist of no more than nine dwellings.
- Be on a site that has an area no larger than 0.5 hectares.
- Consist exclusively of dwellings that are self-build or custom housebuilding as defined in section 1(A1) of the Self-build and Custom Housebuilding Act 2015.

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7. Appendices

Appendix A: Site Plans

Appendix B: Desktop Study Table

Appendix C: Desktop Study Maps

Appendix D: Phase 1 Habitat Map

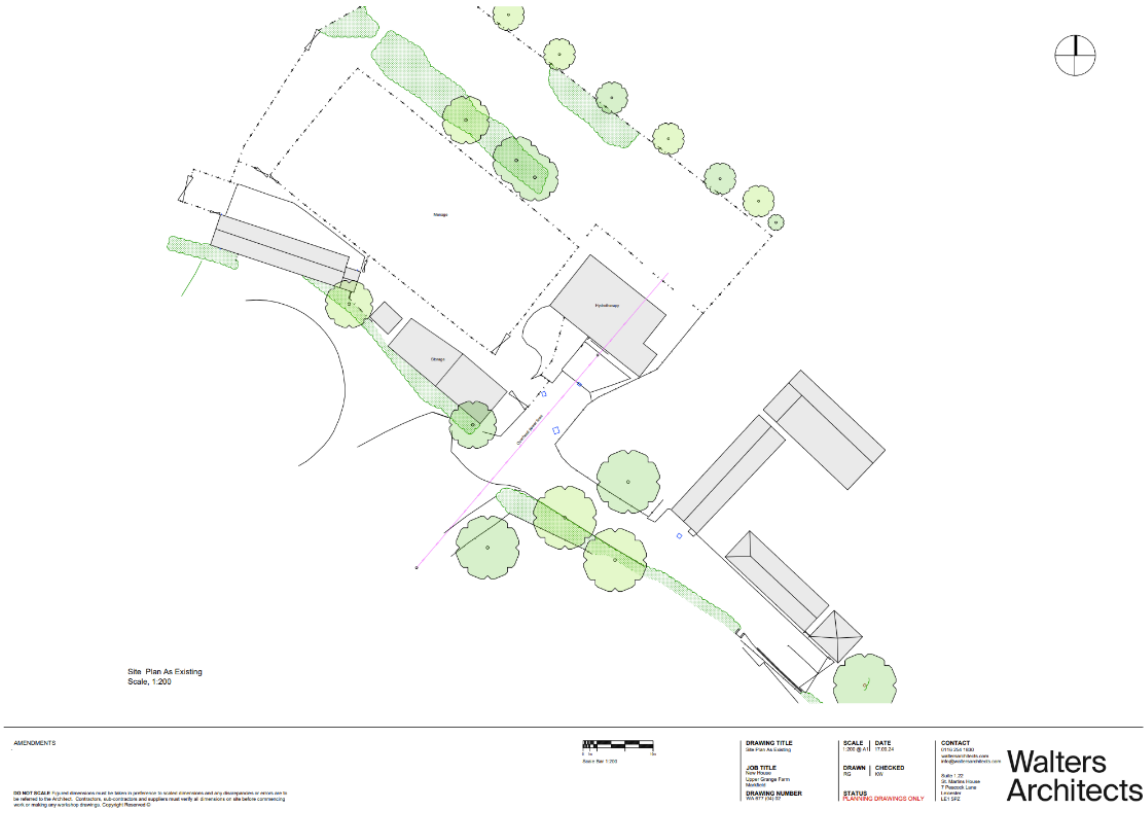
Appendix E: Site Photographs

Appendix F: Biodiversity Legislation and Policy

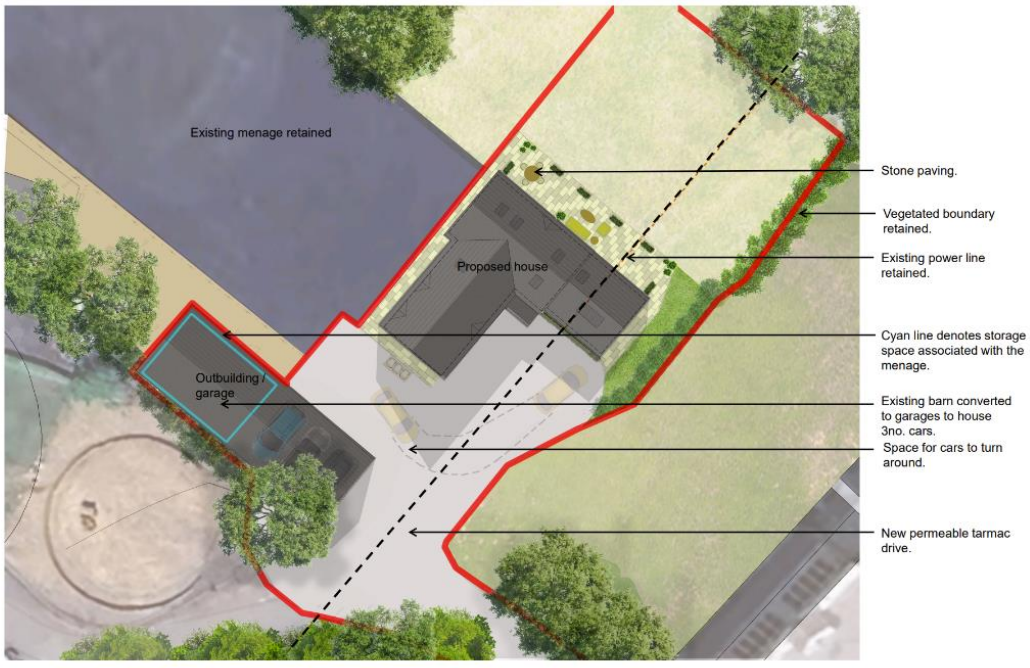
Appendix G: Bat and Artificial Light

Appendix A: Site Plans

Existing Site Plans:



Proposed Site Plans:

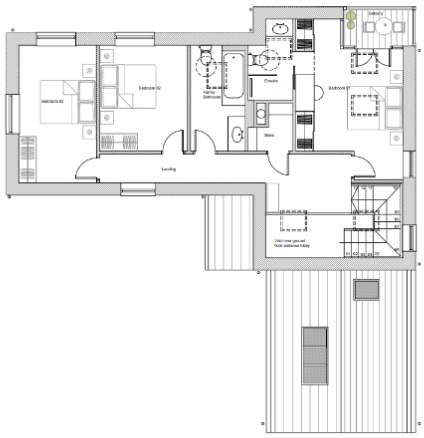


Proposed site Plan
Not to Scale

Walters
Architects

Ground and First Floor Site Plans:

Ground Floor Plan As Proposed
Scale 1:50



First Floor Plan As Proposed
Scale 1:50

AMENDMENTS

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DRAWING TITLE
Floor Plans As Proposed

JOB TITLE
New House
Upper Grange Farm
Markfield

DRAWING NUMBER
WA 677 (04) 05

SCALE | DATE
1:50@A1 | 17.05.24

DRAWN | CHECKED
RD | KW

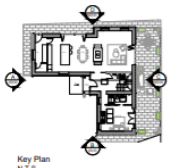
STATUS
PLANNING DRAWINGS ONLY

CONTACT
0116 264 1630
waltersarchitects.com
info@walterarchitects.com

Suite 1.22
St. Martins House
7 Peacock Lane
Leicester
LE1 5PZ

Walters Architects

Proposed Elevations:



Key Plan
N.T.S

Elevation A As Proposed
Scale 1:50

Elevation B As Proposed
Scale 1:50

Elevation C As Proposed
Scale 1:50

Elevation D As Proposed
Scale 1:50

AMENDMENTS

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DRAWING TITLE
Elevations As Proposed

JOB TITLE
New House
Upper Grange Farm
Markfield

DRAWING NUMBER
WA 677 (04) 06

SCALE | DATE
1:50@A1 | 17.05.24

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RD | KW

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CONTACT
0116 264 1630
walterarchitects.com
info@walterarchitects.com

Suite 1.22
St. Martins House
7 Peacock Lane
Leicester
LE1 5PZ

Walters Architects

Appendix B: Desktop Study Tables

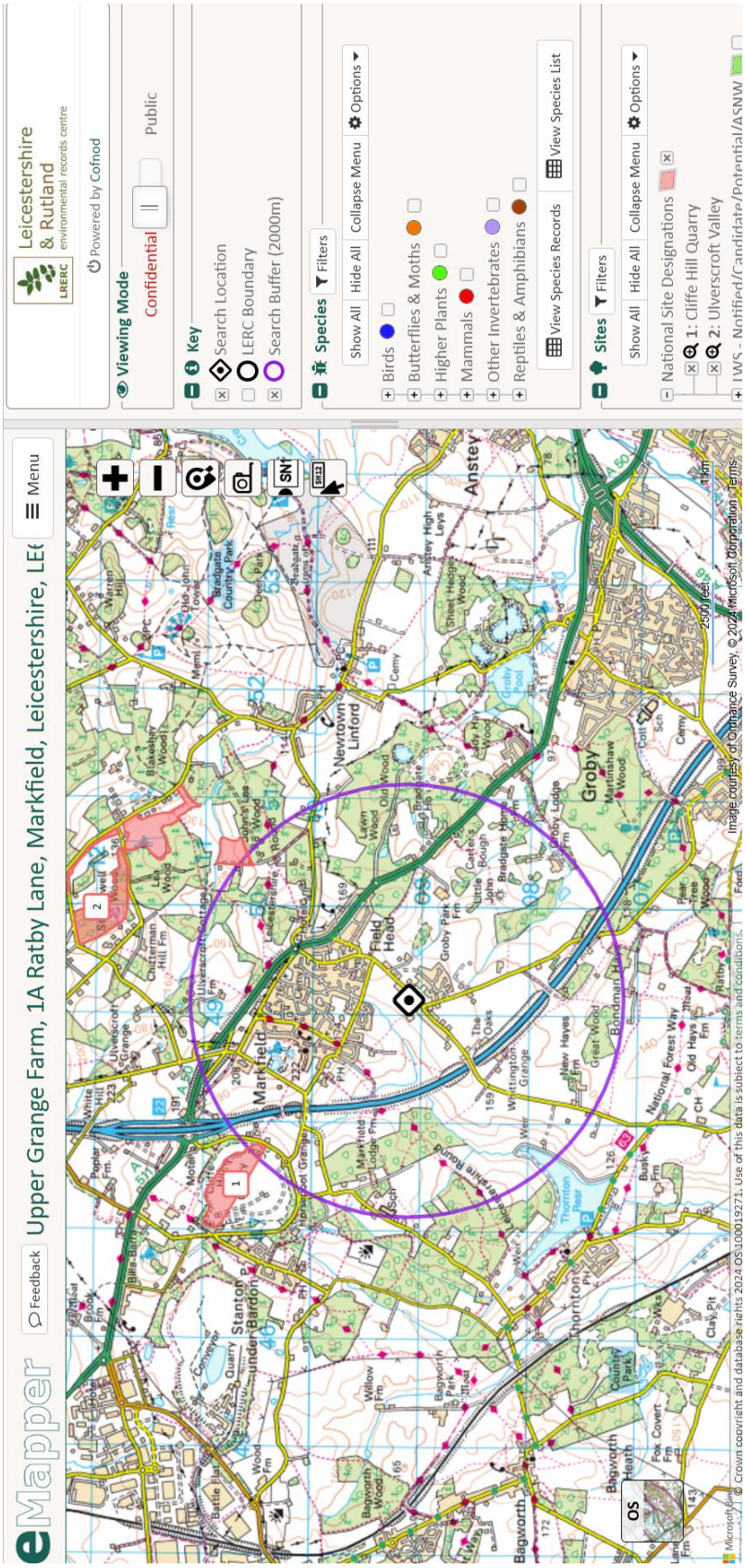
The results within the following table are a collation of the species identified within the desktop search, undertaken by Leicestershire and Rutland Environmental Records Centre (LRERC).

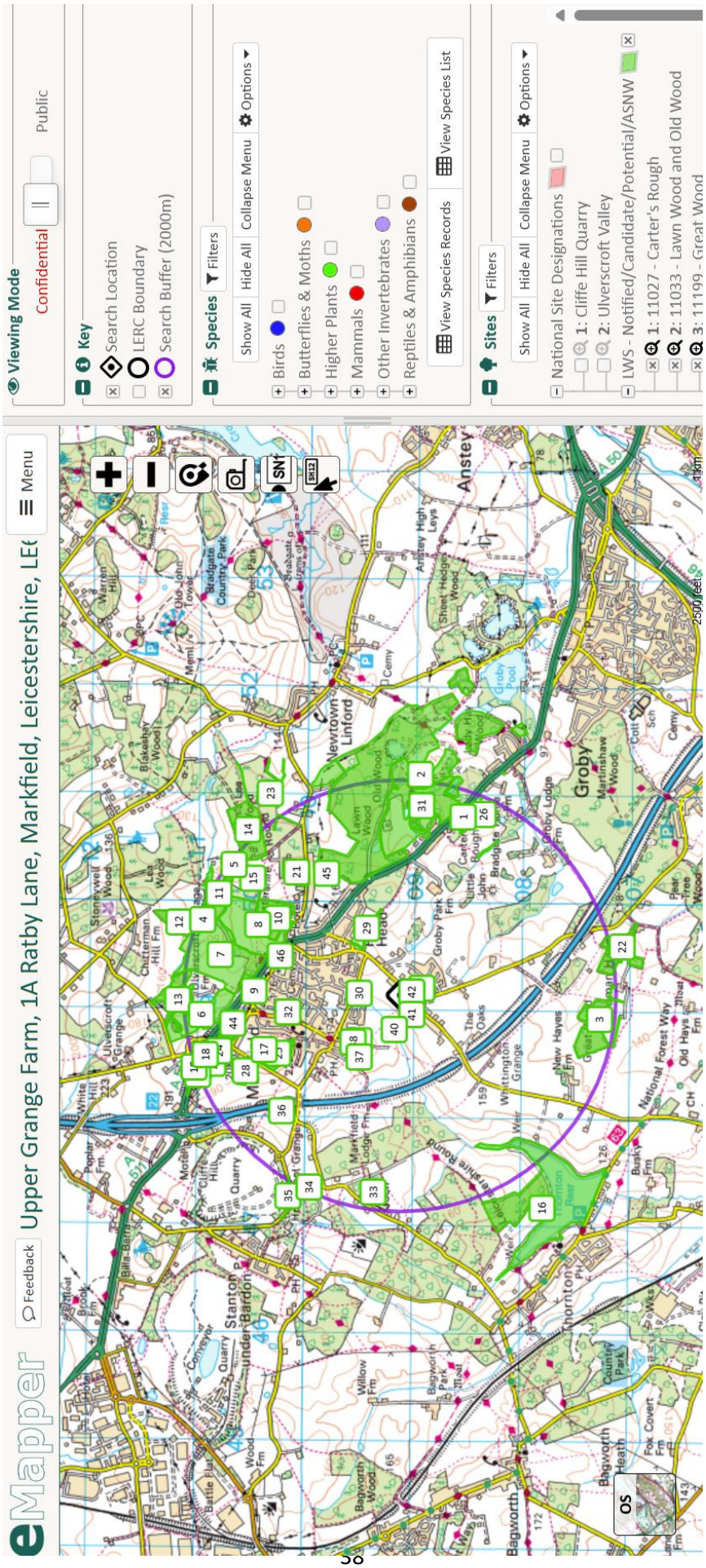
Amphibians	
Common Name	**Latin Name**
Common Frog	*Rana temporaria*
Common Toad	*Bufo bufo*
Great Crested Newt	*Triturus cristatus*
Palmate Newt	*Lissotriton helveticus*
Smooth Newt	*Lissotriton vulgaris*
Birds	
Common Name	**Latin Name**
Barn Owl	*Tyto alba*
Brambling	*Fringilla montifringilla*
Fieldfare	*Turdus pilaris*
Garganey	*Spatula querquedula*
Goldeneye	*Bucephala clangula*
Greylag Goose	*Anser anser*
Hobby	*Falco subbuteo*
Honey Buzzard	*Pernis apivorus*
Kingfisher	*Alcedo atthis*
Osprey	*Pandion haliaetus*
Peregrine	*Falco peregrinus*
Red Kite	*Milvus milvus*
Red-throated Diver	*Gavia stellata*
Redwing	*Turdus iliacus*
Crustaceans	
Common Name	**Latin Name**
White-clawed Freshwater Crayfish	*Austropotamobius pallipes*
Flora	
Common Name	**Latin Name**
Bluebell	*Hyacinthoides non-scripta*
Invertebrates	
Common Name	**Latin Name**

White-letter Hairstreak	*Satyriuym w-album*
Mammals	
Common Name	**Latin Name**
Bats	Chiroptera
Brandt's Bat	*Myotis brandtii*
Brown Long-eared Bat	*Plecotus auritus*
Common Pipistrelle	*Pipistrellus pipistrellus*
Daubenton's Bat	*Myotis daubentonii*
European Badger	*Meles meles*
European Otter	*Lutra lutra*
Leisler's Bat	*Nyctalus leisleri*
Myotis	*Myotis* sp.
Nathusius's Pipistrelle	*Pipistrellus nathusii*
Natterer's	*Myotis nattereri*
Noctule	*Nyctalus noctule*
Nyctalus	*Nyctalus* sp.
Pipistrellus	*Pipistrellus* sp.
Serotine	*Eptesicus serotinus*
Soprano Pipistrelle	*Pipistrellus pygmaeus*
Water Vole	*Arvicola amphibius*
Whiskered Bat	*Myotis mystacinus*
Reptiles	
Common Name	**Latin Name**
Common Lizard	*Zootoca vivipara*

Appendix C: Desktop Study Maps

These maps have been produced by LRERC. All rights regarding the maps belong to them.

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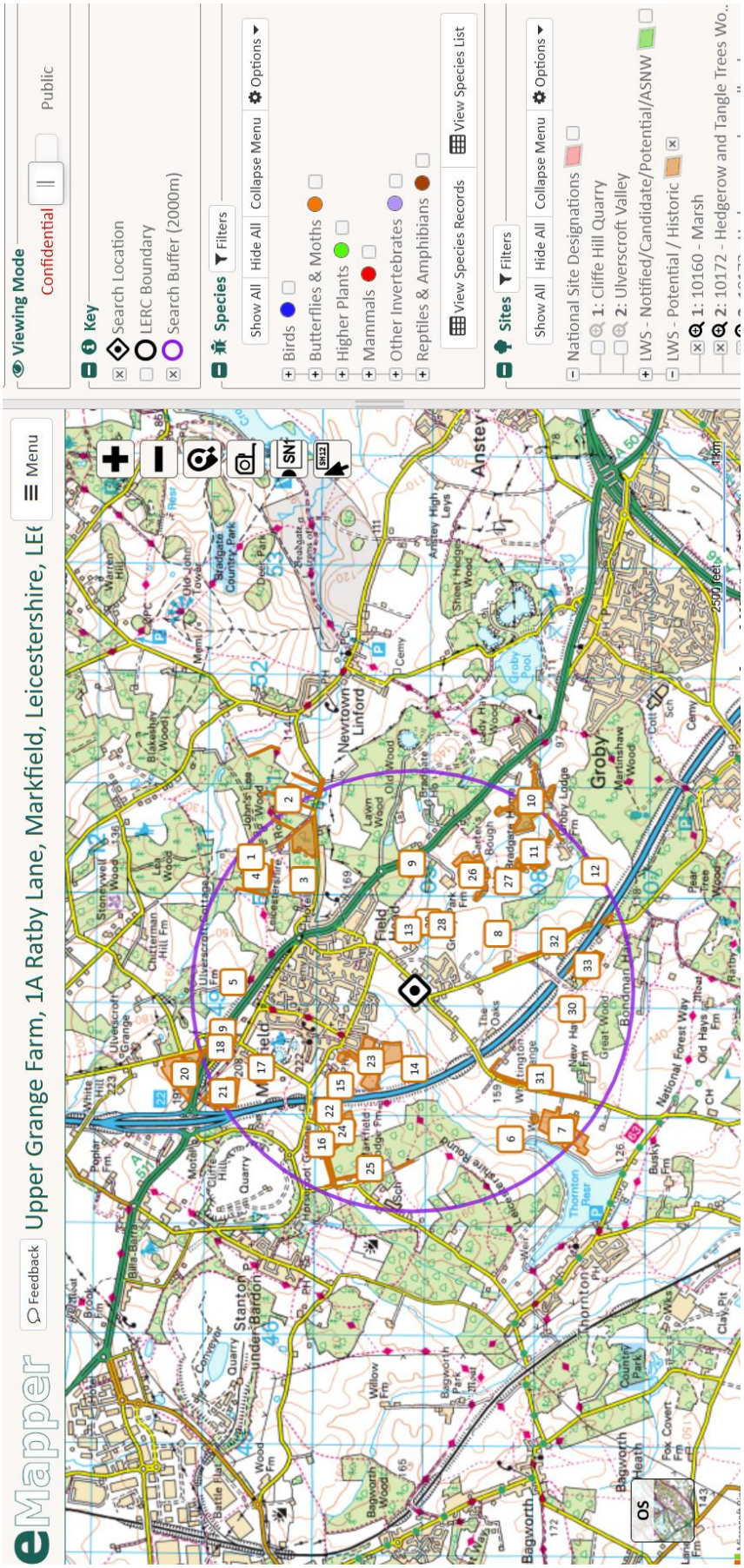
Options
Birds
Butterflies & Moths
Higher Plants
Mammals
Other Invertebrates
Reptiles & Amphibians
View Species Records
View Species List
Sites
National Site Designations
1: Cliffe Hill Quarry
2: Ulverscroft Valley
LWS - Notified/Candidate/Potential/ASNW
1: 11027 - Carter's Rough
2: 11033 - Lawn Wood and Old Wood
3: 11199 - Great Wood
Menu
Feedback
eMapper
Upper Grange Farm, 1A Ratby Lane, Markfield, Leicestershire, LE
Anstey
Groby
Markfield
Stanton under Bardon
Thornton
Bagworth
Newtown Linford
OS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Birds
Butterflies & Moths
Higher Plants
Mammals
Other Invertebrates
Reptiles & Amphibians
View Species List
View Species Records
Sites
National Site Designations
1: Cliffe Hill Quarry
2: Ulverscroft Valley
LWS - Notified/Candidate/Potential/ASNW
LWS - Potential / Historic
1: 10160 - Marsh
2: 10172 - Hedgerow and Tangle Trees Wo...
eMapper
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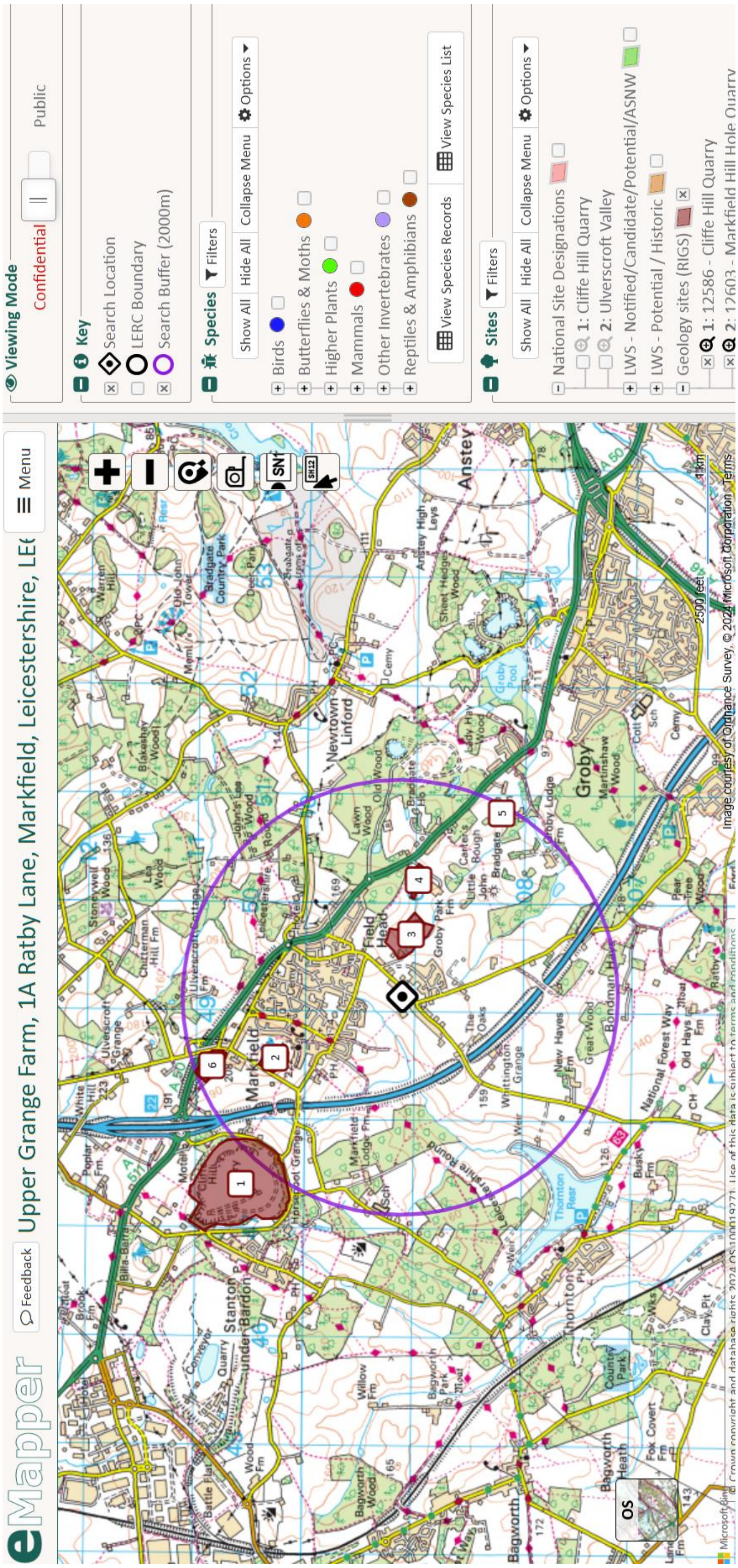
Groby
Anstey
Newtown Linford
Stanton under Bardon
Thornton
Bagworth
OS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Search Buffer (2000m)
Species
Filters
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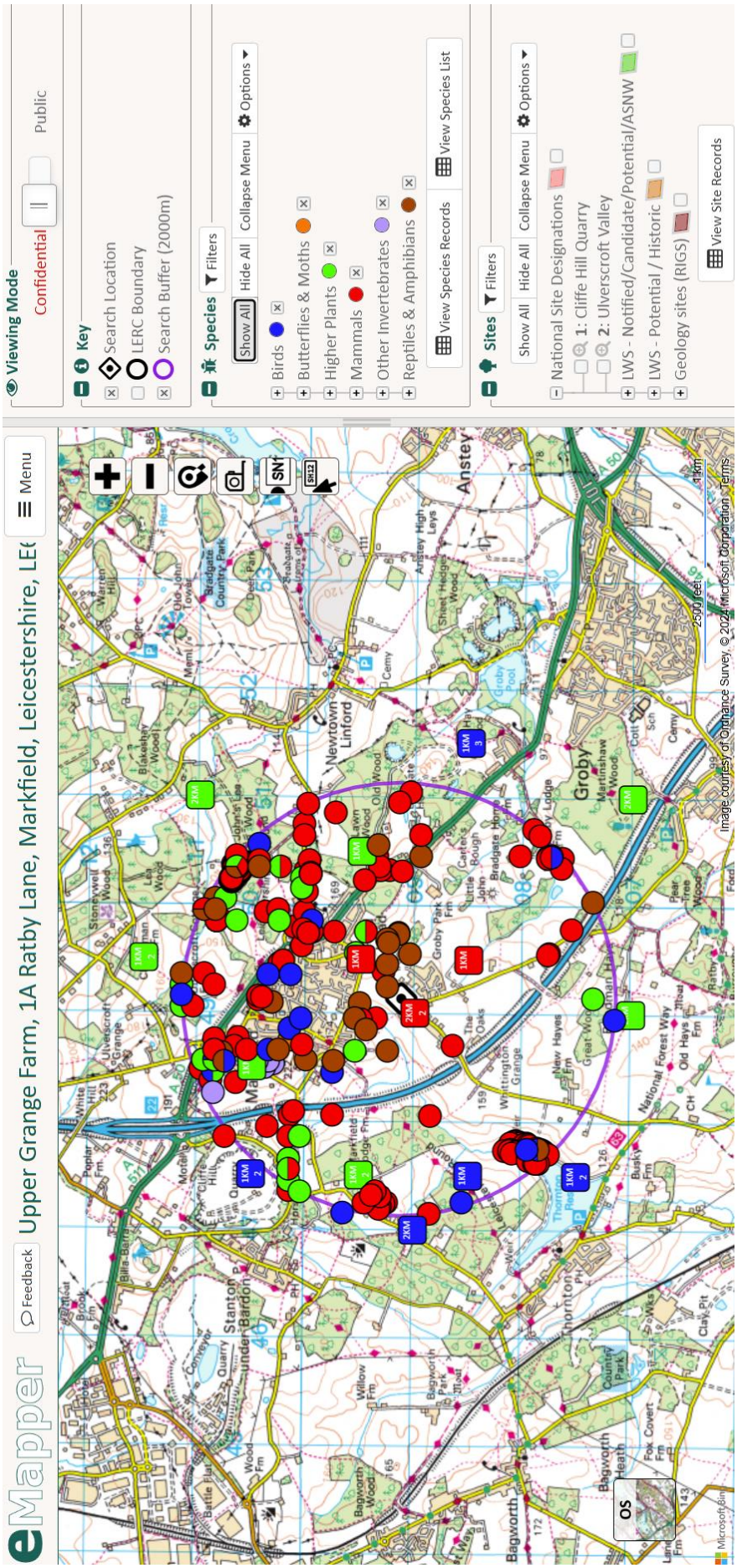
Options
Birds
Butterflies & Moths
Higher Plants
Mammals
Other Invertebrates
Reptiles & Amphibians
View Species Records
View Species List
Sites
National Site Designations
1: Cliffe Hill Quarry
2: Ulverscroft Valley
LWS - Notified/Candidate/Potential/ASNW
LWS - Potential / Historic
Geology sites (RIGS)
1: 12586 - Cliffe Hill Quarry
2: 12603 - Markfield Hill Hole Quarry
Markfield
Groby
Anstey
Newtown Linford
Stanton under Bardon
Bagworth
Field Head
Thornton Resr
Bradgate Country Park
Groby Pool
National Forest Way
2500 feet
1 km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Butterflies & Moths
Higher Plants
Mammals
Other Invertebrates
Reptiles & Amphibians
View Species Records
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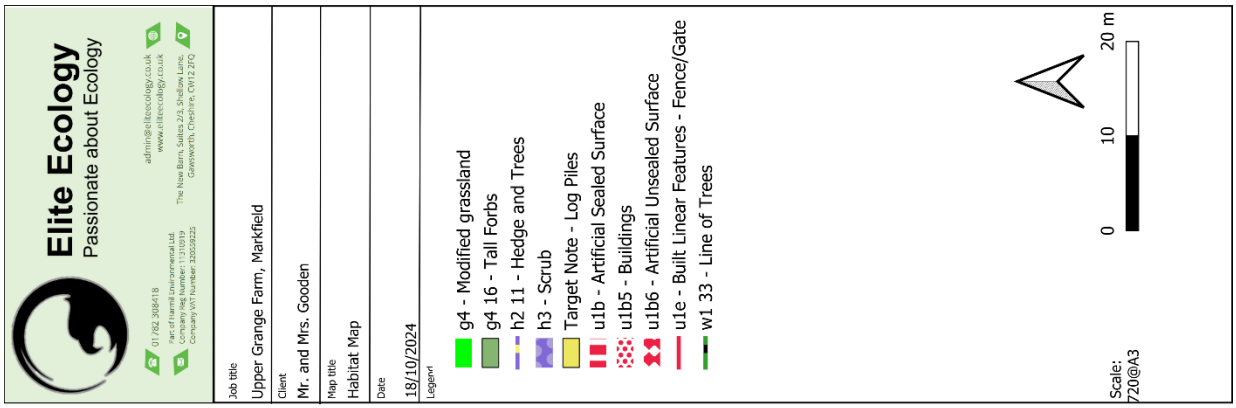
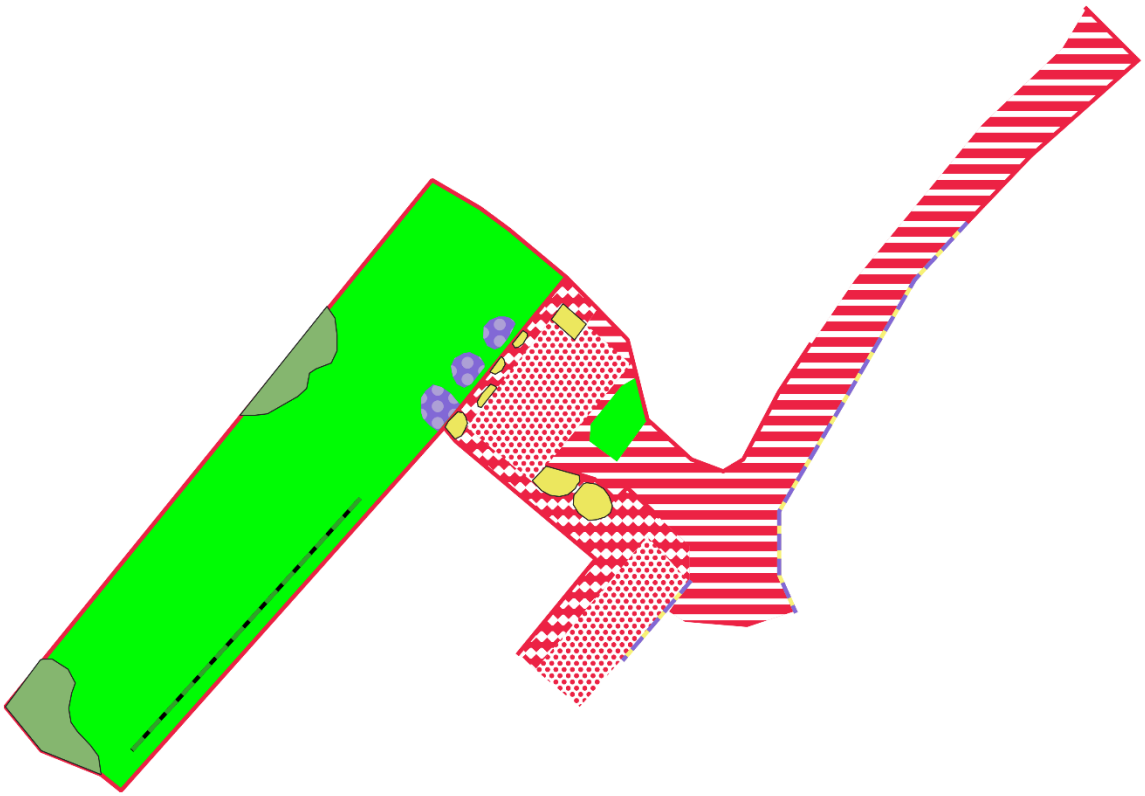
Options
National Site Designations
1: Cliffe Hill Quarry
2: Ulverscroft Valley
LWS - Notified/Candidate/Potential/ASNW
LWS - Potential / Historic
Geology sites (RIGS)
View Site Records
eMapper
Feedback
Upper Grange Farm, 1A Ratby Lane, Markfield, Leicestershire, LE
Menu
Image courtesy of Ordnance Survey, © 2024 Microsoft Corporation Terms
Microsoft

Appendix D: UKHab Habitat Plan





Appendix E: Site Photographs

Plate 1: View of the entry to the site – note the artificial sealed surface in the form of the driveway, and the hedge and trees in the distance on the left-hand side.

Plate 2: A close-up of the hedge and trees which borders the south-west of the driveway on site.

Plate 3: The south-east elevation of **B2** with a continuation of hedge and trees to the left. Note the change from artificial sealed to unsealed surface along the ground.

Plate 4: Image showing the south-west elevation of the hydrotherapy pool building **B3**. Note the surrounding artificial sealed surface, mown modified grassland, fencing, and log piles to the left of the frame. Artificial lighting on the building is circled in red.

Plate 5: A different angle of the south-west elevation of **B3**. This image illustrates more the extent of the log piles on this side of the building.

Plate 6: The north-west elevation of **B3.** Note the artificial unsealed surface running alongside the building.

Plate 7: The north-east elevation of **B3**. Note the artificial unsealed surface on which lay numerous log piles.

Plate 8: An image of the conservatory at the southern corner of **B3**.

Plate 9: The south-east elevation of **B3**, with conservatory in the fore, and log store in the back.

Plate 10: Side view of the log store located in the eastern most corner of **B3** (looking across the north-east elevation of the building).

Plate 11: A gap under the fasciae along the south-west elevation of **B3** (circled in red).

Plate 12: A gap under the bargeboard along the south-east elevation of **B3** above the conservatory (circled in red).

Plate 13: One of two gaps under the fasciae along the north-east elevation of **B3.**

Plate 14: Image showing a gap in the brickwork along the north-west elevation of **B3**, and the edge of some artificial lighting on the left-hand side.

Plate 15: The interior of **B3**, the hydrotherapy pool for dogs.

Plate 16: An image of the north-east elevation of **B1**, the wooden storage shed.

Plate 17: Image showing the north-west elevation of **B1**.

Plate 18: The interior of **B1**.

Plate 19: The north-east elevation of **B2**, the second wooden storage shed which is attached to **B1**.

Plate 20: The interior of **B2**, showing invading ivy.

Plate 21: Image of the field/ modified grassland present to the north of the site.

Plate 22: Patches of scrub present along the fence line along the south-west edge of the field.

Plate 23: A patch of tall forbs present near the middle of the northern edge of the field.

Plate 24: Another patch of tall forbs – this time located in the upper north-west corner of the field.

Plate 25: The line of trees running along the south-west edge of the field.

Appendix F: Biodiversity Legislation and Policy

General Legislation and Policy:

The framework of legislation and policy which underpins nature conservation in England. This is a material consideration in the planning process in England.

Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2010 as amended)

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation Regulations 1994 and the conservation of habitats and species regulations 2010 (and all their amendments). The Conservation of Habitats and Species Regulations 2017 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Conservation of Habitats and Species Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Conservation of Habitats and Species Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Wildlife and Countryside Act (WCA) 1981 (As amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats. & c.) Regulations 1994 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

The Countryside and Rights of Way (CRoW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs.

The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Biodiversity Action Plan

The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, is a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contains a list of priority habitats and species of conservation concern in the UK, and outlines biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats are also included. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP requires that conservation of biodiversity is addressed at a County level through the production of Local BAPs. These are complementary to the UKBAP, however are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. UKBAP and Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Staffordshire Biodiversity Action Plan

The Staffordshire Biodiversity Action Plan (SBAP) was implemented in 1998 in order to co-ordinate conservation efforts in delivering the UK BAP targets at a local level. The SBAP contains a list of habitats and species-specific action plans, assigning specific targets and addressing relevant policy and land management practices pertaining to each.

Planning Policy (England) and National Planning Policy Framework

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

Species Specific Legislation

This section contains a summary of legislation with relation to the species present or potentially present in the survey area. The reader should refer to the original legislation for definitive interpretation.

Nesting and Nest Building Birds

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

'Reckless' offences with regard to the disturbance of nesting wild birds included in Schedule 1 of the Wildlife and Countryside Act were added by the Countryside and Rights of Way Act 2000.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.

The reader is referred to the original legislation for the definitive interpretation.

Badger

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- dig for a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger; and
- interfere with a badger sett by:
- damaging a sett or any part thereof;
- destroying a sett;
- obstructing access to a sett;
- causing a dog to enter a sett; and
- disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger".

Bats

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2017
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

The published framework in 2018 replaces the previous Planning Policy Statement 9 and National Planning Policy (dated 2012).

Section 15: Conserving and enhancing the natural environment reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife. It also aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

Freshwater White-clawed Crayfish

The white-clawed crayfish is partially protected under Wildlife and Countryside Act 1981 (as amended). It is listed on schedule 5 and therefore afforded protection under Section 9 (1 and 5). Therefore, it is an offence to take white-clawed crayfish and to sell, or attempt to sell, any part of the species, alive or dead, or intend to buy or sell.

Great Crested Newt

The great crested newt (*Triturus cristatus*) is fully protected under a variety of legislation and conventions. These include:

- Bern Convention (Appendix II)
- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- Conservation of Habitats and Species Regulations 2017
- EU Habitats Directive (Annex II and IV)
- Nature Conservation (Scotland) Act 2004
- NERC Act 2006 (Section 41 England; Section 42 Wales)
- Wildlife and Countryside Act 1981 (as amended)

In addition to this, the great crested newt has been listed as a priority species on the UK Biodiversity Action Plan (UKBAP).

This legislation covers all aspects of newt life stages (eggs, efts and adult newts) and makes it illegal to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

Licenses can be obtained from Natural England (DEFRA) under the Conservation (Natural Habitats etc.) Regulations 1994, to permit activities for the purposes of:

- Regulation 44(2)(e): Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, or
- Regulation 44(2)(f): Preventing the spread of disease
- Regulation 44(2)(g): Preventing serious damage to any form of property or fisheries
  Or
- If there is no satisfactory alternative.

The above regulations allow people to carry out activities which would otherwise be illegal.

Hazel Dormouse

Hazel Dormouse and their habitats are protected by:

- Wildlife and Countryside Act 1981 (as amended)
- Countryside Rights of Way (CROW) 2000
- The Natural Environment and Rural Communities Act 2006
- Conservation of Habitat and Species Regulations 2017

These make it an offence to:

- Capture, injure or kill a Hazel Dormouse
- Disturb a Hazel Dormouse
- Damage or destroy breeding or nesting sites in use by Hazel Dormice
- Disturb a Dormouse whilst it is occupying a structure or place that they use for shelter or protection.
- Obstruct access to any structure or place that the Dormouse uses for shelter and protection.
- To possess or control any live or dead specimens.

Otter

Otters are fully protected by the European Habitats Directive (92/43/EEC) by being incorporated in annex II of the legislation. In addition to this, otters are listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take an otter.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by otters.
- To intentionally or recklessly disturb an otter whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell otters.

Reptiles

All six native reptiles within Great Britain are legally protected, with the extent of protection varying dependent upon their rarity and conservation importance.

Those that receive full protection under the Wildlife and Countryside Act 1981 (as amended) are the rare sand lizard and smooth snake. These species also receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (also referred to as the Habitats Directive). This means that they are protected from deliberate disturbance, killing, injury or capture and the habitat in which they live is also fully protected against damage or destruction. Any activity involving disturbance or damage to habitats utilised by sand lizards or smooth snakes would require a licence issued by the Department of the Environment, Food and Rural Affairs (DEFRA) following consultation with the statutory nature conservation organisation (Natural England).

The remaining four reptile species are ‘partially protected’ under the Wildlife and Countryside Act 1981 (as amended), with these species being slow-worm, common lizard, grass snake and adder. This means that these species are protected against intentional killing, injuring and against sale, but their habitat is not protected. In planning terms this means that the presence of these species is a material consideration and there is a requirement to ensure that any reptile interest is safeguarded. If a proposed development is likely to have an impact on these reptiles, then the statutory nature conservation organisation must be notified, particularly if capture and translocation is being proposed. In some parts of the UK, sites that support common reptile species such as common lizards and slow-worms can qualify as County Wildlife Sites. Sites of this designation may receive protection in planning policy.

Water Voles

Water Voles are fully protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take a water vole.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by water voles.
- To intentionally or recklessly disturb a water vole whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell water voles.

Non-Native Floral Species

It is an offence under schedule 9 of the Wildlife and Countryside Act 1981 (as amended) to plant or otherwise cause non-native flora to grow in the wild. This includes the transportation of earth that has previously had non-native species growing and includes the spread of the species.

All stands of non-native floral species need to be disposed of safely at a licenced landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

Appendix G: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotid bats (Myotis spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specify that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

- To introduce lighting curfews or use of PIR sensors.

  Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

- To consider no lighting solutions where possible.

  Options such as white lining, good signage and LED cats eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

- To use only high pressure sodium or warm white LED lamps where possible.

  High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

- To minimise the spread of light.

  The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

- To consider the height of the lighting column.

  While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

- To avoid reflective surfaces below lights.

  The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

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Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **2 years only** from the date of the last survey visit. If this report is submitted after the 2 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.