

Preliminary Ecological Appraisal

Land adjacent to 10 Lark Rise
Newton Poppleford
Devon
EX10 0DH



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Surveyor & Licence N°:	Dominic Sheldon	Bats: 2016-20473-CLS-CLS (CL-18) Dormouse: 2015-18348-CLS-CLS Badger: CL35/0067	

CONTENTS

Introduction	4
Survey Methods	6
Survey Results	9
Discussion.....	18
Recommendations	27
References.....	30
Appendices	30

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1.1 Introduction

It is proposed to develop land adjacent to 10 Lark Rise, Newton Poppleford, Exeter, Devon, EX10 0DH, as a single-home dwelling, standalone garage with associated landscaping, services and infrastructure.

1.2 Survey Results

The survey area comprised artificial unvegetated unsealed surface (*U1c*), other coniferous woodland (*w2c*, *secondary codes 206 felled, 510 bare ground*), bramble scrub (*h3d*), other native hedgerow (*h2a6*, *secondary code 111 hedge bank*) and an associated fenced boundary. The site measured approximately 0.2 Ha.

The dense bramble scrub and native hedgerow were considered to be of high ecological value. The site is also supports a very large main badger sett of some antiquity. The site is considered to have potential to provide habitat for bats, birds, amphibians (potentially including great crested newt), dormice, hedgehog and reptiles.

1.3 Impacts

In the absence of mitigation, the proposal is anticipated to have a significant negative effect upon badger. It is understood that the coniferous plantation component of the site (already felled) and the bramble scrub component of the site will be lost as a result of the proposed development and that the hedgerow habitats will be retained. It is understood that there will be short-term, downward-facing PIR artificial lighting included within the proposal.

1.4 Recommendations for Avoidance/Mitigation of Ecological Impacts

Full and detailed plans have been finalised for the site. In addition to the detailed mitigation recommended for badgers, general avoidance, mitigation, compensation/enhancement measures are recommended within Section 6.

- The construction of a new badger sett located above ground in the far northern part of the site will need to be undertaken comprised of a new sett consisting of five entrances and five chambers;
- Once full planning has been achieved, the exclusion of the existing badger sett will need to be undertaken under licence from Natural England detailing suitable mitigation and timings of works (Note: works on badger setts can only be undertaken from the 1st July to 30th November each year);

- A minimum 10 m protection buffer zone from the base of the new replacement badger sett entrance must be implemented to ensure no badgers are harmed/injured during the works (see Appendix 2);
- Consideration must be given to hedgerow root protection areas (RPAs), ensuring the installation of hedgerow/tree protection fencing to prevent direct damage. Compaction and disturbance of root protection zones should be avoided to prevent deterioration of individual shrubs (see Appendix 2), and;
- Any excavations or pipework, which are to remain open overnight, should be fenced or covered to prevent potential entrapment and/ or injury of species such as hedgehog or badger.

1.5 Compensation & Enhancement Measures

To increase the opportunities for wildlife on site the development will need to include the following:

- One habitat feature consisting of branches/brush and/or grass cuttings 2 m², located on the eastern edge of the site adjacent to suitable habitat within undisturbed area/s of the site (Appendix 4);
- Two built-in bat roosting provisions – positioned accessibly on nearby trees, proposed at a minimum height of 3 m (Appendix 6);
- Two built-in bird nesting provisions – positioned accessibly on nearby trees, proposed at a minimum height of 3 m (Appendix 5);
- Two built-in invertebrate provisions – positioned in a sunny location on nearby trees, proposed at a minimum height of 1 m (Appendix 7).

1.6 Conclusion

The site supports badgers and has the potential to support invertebrates, amphibians (potentially including great crested newt in its terrestrial phase), reptiles, foraging bats, nesting birds and dormice.

In the absence of mitigation, the proposal represents a negative ecological impact at a site level through the permanent removal of the coniferous woodland component of the site as well as direct impacts to badgers and potential impacts to the RPA of the retained trees/hedgerows.

Through implementation of ecological mitigation, compensation and enhancement measures, the proposal has the potential to represent a neutral impact at a site level.

2.1 Proposals

It is proposed to develop land adjacent to 10 Lark Rise, Newton Poppleford, Exeter, Devon, EX10 0DH, as a single-home dwelling, standalone garage with associated landscaping, services and infrastructure.

2.2 Survey Objectives

The Preliminary Ecological Appraisal (PEA) was undertaken to consider and assess the perceived ecological impacts associated with the proposal, including any perceived impacts to:

- Legally protected species or species of conservation concern;
- Legally protected habitats or habitats of conservation concern;
- Any statutory or non-statutory sites of conservation interest; and,
- Opportunities to provide biodiversity enhancement(s).

2.3 Site Description

The survey site comprised of an area of artificial unvegetated unsealed surface (*U1c*), other coniferous woodland (*w2c*, secondary codes 206 felled, 510 bare ground), bramble scrub (*h3d*), other native hedgerow (*h2a6*, secondary code 111 hedge bank) and an associated fenced boundary. The site was located on the northern edge of the village of Newton Poppleford, East Devon, bordering a private garden to the east, a smallholding to the west, Four Elms Fruit Farm to the north and the residential properties of Newton Poppleford to the south. The wider surrounding landscape comprised the rural arable and pasture farmland woodland and residential areas (see Figure 1).



Figure 1. The survey site outlined in red

3.1 Preliminary Ecological Appraisal

3.1.1 Scope of the Assessment

The zone of influence covers the extent of the site, the site boundaries and areas directly adjacent to the site. The assessment considers designated sites, habitats, and species of importance for biodiversity conservation and protected species.

3.1.2 Desk Study

An ecological desk study was undertaken for the site and its surroundings, including:

- Ecological data purchased from Devon Biological Records Centre (DBRC); and,
- Review of the Government's mapping website MAGIC (www.magic.gov.uk).

DBRC

Data from DBRC included a search of the survey area, and all areas within 1 km of the proposed survey area boundary, which included details of statutory and non-statutory sites designated for nature conservation or interest, together with records pertaining to protected species and habitats and/or species and habitats of conservation concern.

MAGIC

Review of the DEFRA MAGIC website included a search of:

- International & European designated sites (Natura 2000 sites) – within the survey area and within 10 km of the survey area boundaries;
- Statutory sites (e.g. Sites of Special Scientific Interest (SSSIs)) within 1km of the survey area boundaries;
- Non-statutory sites (e.g. Local Wildlife Sites (LWS)) designated for wildlife conservation within a 1 km radius of the site;
- Priority habitats – within the survey area and within 1 km of the survey area boundaries; and,
- European protected species license (EPSL) records issued by Natural England since 2009 – within the survey area and within 4 km of the survey area boundaries.

3.2 Field Survey

The field survey comprised of a walkover assessment of all areas of the site using the UK Habitat Classification System methodology (UKHab, 2022). This is a standard technique designed for classifying and mapping British habitats. An indicative list of observed plant species was compiled (using the nomenclature of Stace, 2010) with the common name used in the main body of the report, and both the common and scientific names provided within Appendix 3.

Each habitat was assigned the appropriate alphanumeric code followed by any relevant secondary codes in accordance with UK Habitat Category Definitions V1-1 (Butcher et. al., 2020). These codes are shown on the UK Habitat Classification Map (Appendix 1). Apart from buildings, habitat areas below the minimum mappable unit of 25 m² will be denoted by target notes and secondary codes. Target notes are used to indicate specific features, important habitats and/or field signs.

The site survey was undertaken on 8th January and 6th February 2024 by Dominic Sheldon. All areas within the site were surveyed and assessed for indicators of ecological value, including the presence or signs of any protected or rare habitats and species. The environmental conditions for which are presented below in Table 1.

3.3 Badger Survey

A badger walkover survey was undertaken of the site and the surrounding boundaries and habitats on the 8th January and 6th February 2024 searching and recording evidence of mammal burrows, foraging signs, and pathways.

Where setts were observed, their status and the level of activity were noted. Sett status can be broadly classified as:

Main sett – Sett within a badger territory that appears to be the largest (usually with at least five holes) and the most well used, with much activity in the vicinity, is categorised as the main sett. Main setts always have active badger runs leading away from them and are normally marked by latrines. Social groups have one main sett, which is the most important sett in the territory. It is used throughout the year and is the main breeding sett.

Annexe sett – Setts are categorised as annexe setts where they are assumed to form part of the main sett area but where the sett is unlikely to be linked by an underground

passage to the main sett either due to a barrier (e.g. separated by a watercourse or ditch) or by distance. Annexe setts are normally linked to the main sett by a well-used path and lie within 150m of a main sett entrance.

Subsidiary sett – Setts that offer an alternative sett complex to the main sett are categorised as subsidiary setts. Subsidiary setts are normally, at least, 50m from the main sett and are not always obviously linked by a well-used path to the main sett (unlike annexe setts). Subsidiary setts often exhibit moderate levels of activity, are larger than outlier setts but smaller than main setts. Subsidiary setts are often marked by latrines.

Outlier sett – These setts often comprise just one or two entrances. They are used infrequently and can be found at the boundaries of a badger social group's territory.

4.1 Desk Study

4.1.1 Internationally Designated Sites of Nature Conservation

Statutory Sites of Nature Conservation Interest (International Importance)

Three internationally designated sites were identified within 10 km. This includes:

- East Devon Pebblebed Heaths Species Area of Conservation (SAC). Located approximately 880 m to the west of the site, the site is designated for the Annex I habitats:
 - Northern Atlantic wet heaths with *Erica tetralix*, The wet element occupies the lower-lying areas and includes good examples of M16 *Erica tetralix* – *Sphagnum compactum* wet heath. Among the 21 breeding dragonfly species is the Annex II species 1044 Southern damselfly *Coenagrion mercuriale*. There is also an important assemblage of birds, including European nightjar *Caprimulgus europaeus*, Eurasian hobby *Falco subbuteo* and Dartford warbler *Sylvia undata*; and,
 - European dry heath habitat with representative examples of H4 *Ulex gallii* – *Agrostis curtisii* heath, characterised by the presence of heather *Calluna vulgaris*, bell heather *Erica cinerea*, western gorse *Ulex gallii*, bristle bent *Agrostis curtisii*, purple moor-grass *Molinia caerulea*, cross-leaved heath *E. tetralix* and tormentil *Potentilla erecta*; and,
 - Annex II species southern damselfly *Coenagrion mercuriale* in the south-west of its range in England. These populations occur in wet flushes within the site.
- East Devon heaths Special Protection Areas (SPA), located approximately 2.9 km to the south-west of the site. This site is designated for its ornithological interest. The East Devon heaths SPA is utilised by at least 1% of the GB population of two species listed on Annex I of the Birds Directive (79/409/EEC) Dartford warbler *Sylvia undata* and nightjar *Caprimulgus europaeus*.

- Sidmouth to West Bay SAC, located approximately 5.1 km to the south-east of the site. The site is designated for its Annex I habitats:
 - Vegetated sea cliffs of the Atlantic and Baltic Coasts that supports calcareous grassland and scrub on detached chalk blocks and extensive self-sown woodland dominated by ash *Fraxinus excelsior* or sycamore *Acer pseudoplatanus*;
 - Tilio-Acerion forests of slopes, screes and ravines, that supports a mosaic of habitats makes this site rich in invertebrates, especially bees and wasps, such as *Ectemnius ruficornis*, *Andrena simillima* and *Nomada fulvicornis*. The woodland has a hazel *Corylus avellana* understorey and a ground-flora dominated by ivy *Hedera helix* (with numerous ivy broomrape *Orobanche hederæ*); and,
 - Annual vegetation of drift lines that supports the NVC habitat types SD2 *Honkenya peploides* – *Cakile maritima* strandline community and SD3 *Matricaria maritima* – *Galium aparine* strandline community on stony substrates as well as MC6 *Atriplex prostrata* – *Beta vulgaris* ssp.

4.1.2 Nationally Designated Sites of Nature Conservation Interest.

Two nationally designated sites for nature conservation were identified within 1 km of the site. This includes:

- East Devon Pebblebed Heaths Site of Special Scientific Interest (SSSI) is located approximately 945 m to the west of the site. The site is designated as it is the largest block of lowland heath in Devon. It is a nationally important representative of the inland Atlantic-climate, lowland heathlands of Britain and north-west Europe. A significant feature of the site is the diversity of heathland types and associated communities supporting a wide range of birds and invertebrate species; and,
- Pebblebed Heaths National Nature Reserve (NNR), located approximately 945 m to the west of the site is designated for its diversity of heathland-associated plant and animal communities that reflect the varied topography, geology, hydrology and water chemistry of the area.

4.1.3 Non-statutory Local Designated Sites of Nature Conservation

Two non-statutory designated sites were identified within 1 km. This included:

- Otter Valley Bottom Unconfirmed Wildlife Site (UWS), located approximately 215 m to the east of the site designated for its floodplain grazing marsh; and,
- Harpford Wood Plantation on Ancient Woodland Site (PAWS), located approximately 915 m to the east of the site, designated for its ancient replanted woodland habitat.

4.1.4 Priority Habitats

The desk study identified included an area of traditional orchard, coastal flood plain and grazing marsh and areas of deciduous woodland as Habitats of Principal Importance (HPI) within and surrounding the site. The nearest HPI was a deciduous woodland located approximately 24 m to the east of the site.

4.1.5 European Protected Species Licences (EPSL)

Three EPS licenses were issued within 4 km of the site. This includes licences for bats and dormouse:

- Dormouse: five EPSLs was granted for this species in 2017, the closest of which was located approximately 620 m to the southwest of the site; and,
- Bats: seven EPSLs were granted, the closest of which was located approximately 340 m to the south o the site, comprising a 2018 licence allowing the destruction of a resting place for bat species including brown long-eared, common pipistrelle, soprano pipistrelle, grey long-eared bat and serotine.

4.1.6 Protected Species

DBRC holds 80 records for bat species within 2 km of the site, comprising:

- 12 records of western barbastelle, comprised of two roosts and 10 field records;
- One roost record of serotine;
- Ten records of unidentified bats from the Myotis genus, including a single roost record;
- Six records of noctule, all being field observations;
- Two field records of unidentified Pipistrelle species;
- One field record of Nathusius's pipistrelle;
- Six records of common pipistrelle, four of which were roost records, including one maternity roost;

- Four records for soprano pipistrelle, including two roosts;
- Nine records for unidentified bats from the *Plecotus* genus, including three roost records;
- Five records for brown long-eared bat, four of which were for roost records;
- A single record for grey long-eared bat comprising a single roost record;
- Six records for greater horseshoe bat, comprised of three roosting records; and,
- Eleven records for lesser horseshoe bat, including four records of roosts.

Other protected species returned from DBRC included a single record for beaver and two records for common toad and one for common frog, four records for Eurasian badger, nine records for Eurasian otter, two records for hazel dormouse, four records for slow worm and multiple records for NERC listed invertebrate and bird species.

4.1.7 Consultation Zones

Great Crested Newt

The desk study identified that the survey site is located within a great crested newt consultation zone. Such zones extend for 5 km from existing and historical great crested newt recordings. In this instance, the consultation zones extend from a great crested newt record located approximately 2 km to the southeast of the site.

Beer Quarry & Caves SAC

Newton Poppleford is located outside of the consultation zones identified for greater horseshoe, lesser horseshoe and Bechstein's bats associated with Berr Quarry & Caves SAC.

4.2 Field Survey

Table 1. Environmental conditions on 8th January and 6th February 2024

Temperature (°C)	Wind Speed (Beaufort Scale)	Cloud cover (%)	Precipitation	Sunset time
4	2	0	0	N/A
14	1	100	0	N/A

Constraints on the survey:

The survey was undertaken in winter, which may preclude summer annual botanical species. However botanical diversity was considered sufficient to classify and assess the habitats present.

The survey area comprised of an area of artificial unvegetated unsealed surface (*U1c*), other coniferous woodland (*w2c*, secondary codes 206 felled, 510 bare ground), bramble scrub (*h3d*) and other native hedgerow (*h2a6*, secondary code 111 hedge bank) and an associated fenced boundary. The site measured approximately 0.2 Ha. An annotated habitat map is provided in Appendix 1.

Artificial Unvegetated Unsealed Surface (*U1c*)

This habitat was confined to the western part of the site and comprised a compacted gravel substrate (see Figure 2 below). The site is currently utilised for parking for the vehicular access at the far western side of the site.



Figure 2. The artificial unvegetated unsealed surface located within the site.

Coniferous Woodland (*w2c*)

This habitat former the majority if the site habitats. The coniferous woodland was felled at the time of the visit with the brash having been chipped / removed and the stems cut and stacked. The tree species was considered to be Norway spruce, although this is unconfirmed).

The felling of the woodland had revealed a bare ground substrate amongst the majority of the site, located underneath the former tree canopies (see Figure 4 below). Patches of successional cock's foot had developed since felling in some areas.



Figure 3. The felled coniferous woodland located within the site.



Figure 3. The felled coniferous woodland located within the site.

Bramble Scrub (h3d)

This habitat was located along the north-western site boundary and measured up to 2.5 m high and 3 m wide.

Other Native Hedgerow (h2a6)

This habitat is confined to the southern and eastern site boundaries. The hedgerow is set upon an old Devon bank (secondary code 111-hedge bank) and measured approximately 5 m tall x 2 m wide. The hedgerow species were comprised of predominantly hazel with some bramble and hawthorn.

The north-western site boundary was comprised of a stock fence with an associated public footpath giving pedestrian access from the village (to the south) to land further to the north of the site.

4.3 Badger Survey

A badger sett was identified within the site. This comprised a large main sett with 27 sett entrance holes (see Appendix 1 for locations and 4 – 9 for example pictures), 24 of which were located within the site boundary, and three of which were located within/directly adjacent to the public footpath that borders the north-western site boundary of the site.

In terms of sett entrance category, the badger setts recorded comprised:

- Category A: Six sett entrances
- Category B: Eight sett entrances
- Category C: Fourteen sett entrances



Figure 4: View of a Category A sett entrance located within the site



Figure 5: View of a Category C sett entrance with associated spoil heap



Figure 6: View of a Category C sett entrance



Figure 7: View of a Category B sett entrance



Figure 8: View of a Category C sett entrance located directly adjacent to the site within the area occupied by the public footpath



Figure 9: View of a Category A sett entrance located within the dense scrub on site

One bisected tunnel and chamber was also recorded on site with a large hole having been excavated historically, which contains a side of a chamber at one end and a badger tunnel at the other.

Half of these entrances appeared active and old badger pathways were recorded within close proximity. Additionally, it is considered that badger/s are likely to frequent the entire site and neighbouring areas when dispersing and/or foraging.

5.1 Proposed Development

It is proposed to develop the site into a single-home dwelling with associated landscaping, services and infrastructure.

5.2 Impacts of Proposed Development

The proposed development will result in:

- Permanent removal of the coniferous plantation woodland and dense scrub habitat within the site (it is understood that no hedgerow habitat will be lost to make way for site access);
- Loss of the main badger sett to make way for the proposed development;
- Construction of a replacement main badger sett within the northern part of the site, with appropriate buffering and protection;
- The closure of the existing main badger sett under licence from Natural England once full planning has been obtained; and,
- Construction, landscaping and post-construction use of the site will result in increased human activity and lighting within the site.

5.3 Desk Study

5.3.1 Statutory & Non-Statutory Designated Sites for Nature Conservation

Three internationally designated sites were identified within 10 km of the site. This includes the East Devon Pebblebed Heaths SAC (located approximately 945 m to the west of the site), East Devon heaths SPA (located approximately 2.9 km to the south-west of the site) and Sidmouth to West Bay SAC, located approximately 5.1 km to the south-east of the site.

The internationally designated sites for nature conservation, namely the East Devon Pebblebed Heaths SAC and East Devon Heaths SPA and Sidmouth to West Bay SAC, all located within 10 km the site are considered unlikely to be impacted by the proposed development as the scope of the single home development, the distance of the site from the internationally designated sites and the habitat types present on site mean that none of these sites are considered likely to be either directly or indirectly impacted by the proposed development.

5.3.2 Nationally Designated Sites of Nature Conservation Interest.

Two nationally designated sites for nature conservation were identified within 1 km of the site. This includes the East Devon Pebblebed Heaths SSSI, East Devon Pebblebed Heaths SSSI and Pebblebed Heaths National Nature Reserve (NNR), which are located approximately 945 m to the west of the site. These sites are designated for their heathland and associated species assemblage interest.

None of these habitats are found on site. As such, due to the scale of the development, intervening distance, and character of the designated site no perceived direct impacts are identified.

5.3.3 Non-statutory Designated Sites

There are two non-statutory designated sites designated for their habitats in the form of floodplain grazing marsh and ancient replanted woodland habitat, including;

- Otter Valley Bottom Unconfirmed Wildlife Site (UWS), located approximately 215 m to the east of the site; and;
- Harpford Wood Plantation on Ancient Woodland Site (PAWS), located approximately 915 m to the east of the site.

Due to the scale of the development, intervening distance, and character of the designated site no perceived direct impacts are identified.

5.3.4 Priority Habitats

Multiple Habitat of Principal Importance (HPI)'s was identified within 1 km of the site, including an area of traditional orchard, coastal flood plain and grazing marsh and areas of deciduous woodland. The nearest HPI was a deciduous woodland located approximately 24 m to the east of the site. Due to the character of this habitat, the small scale and duration of the proposed works, it is considered unlikely that the works will negatively impact this HPI in any way.

5.4 Species Assessment

5.4.1 Amphibians

Great crested newt

The desk study identified that the site is located within a great crested newt consultation zone. The desk study also identified that no EPSLs, no positive returns from pond surveys and no class survey license returns were granted for great crested newt within 4 km of the site.

The presence of great crested newt is associated with the presence of a pond/s, which form an ideal aquatic breeding habitat, therefore great crested newts have relatively 'localised' distributions of approximately 1km around a known breeding pond.

The surrounding landscape is largely dominated by pasture, woodland and floodplains. No ponds were identified within 1 km of the site. The nearest pond is located approximately 1.2 km to the south-west of the site. The artificial unvegetated unsealed surface, other coniferous woodland (*secondary codes - 206 felled, 510 bare ground*), bramble scrub and other native hedgerow and associated fenced boundary are considered to provide limited terrestrial habitat. Therefore, it is considered extremely unlikely that great crested newts utilise the site habitats during their terrestrial phase.

Common & widespread amphibian species

Common amphibians are less dependent on ponds as breeding habitat; therefore, it is possible that they may utilise the hedgebank base habitat and are considered likely to be present onsite in low numbers.

Common toad is listed upon the UK Biodiversity Action Plan (UK BAP) and must be considered through the planning process. This and further species of amphibian may be considered through the Natural Environment & Rural Communities Act (NERC) 2006, with public bodies, including LPAs, minded ensuring due regard to the conservation of biodiversity of such species. Such considerations may seek to protect, re-establish, or create habitat suitable for amphibians, post-development.

Subject to precautions for reptiles, precautionary measures will be required to ensure that common amphibians are not harmed during the works, including sensitive timing, and methods for habitat removal.

5.4.2 Badger

A badger sett was identified within the site which included a large main sett with 27 entrance holes (SY 08484 89971 approx.) focussed on the north-eastern part of the site. In terms of category / activity levels, this comprised six category A sett entrances, eight category B sett entrances and 14 category C sett entrances.

Half of these entrances appeared active and multiple mammal pathways were recorded within the site and a large number of badger latrines were also recorded on site. Additionally, it is considered that badger/s are likely to frequent all of the site when dispersing and/or foraging.

The main badger sett is located mostly within the site boundary, but four sett entrances are located within the PROW, located to the north-west of the site. The badgers have constructed a sett in this location for a number of reasons, namely the relatively low level of historical disturbance and human activity within the immediate site itself, the gently sloping ground that provides a drier hydrology when compared to the low-lying topography of the immediate surrounding area to the south, the likely presence of a good local food source/foraging within the local landscape and the relatively easy digging of the sandy substrate that forms the local geology.

The main sett is considered highly likely to be used by badgers for the raising of young and over-wintering purposes. Sett A is considered to be in that particular location due to the reasons outlined above, and, its location to adjacent to suitable (and alternate) foraging resources.

Badgers are protected by the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended), Schedule 6. Under the Wildlife and Countryside Act, it is illegal to intentionally kill, capture, injure or ill-treat any badger.

Badgers are neither rare, nor endangered; they are a widespread and common species in Britain. Between the national surveys of badgers carried out in the 1980s and 1990s, it was concluded that there had been an increase in both the number of social groups of badgers and the numbers of badgers within a social group (Wilson *et al.* 1997). Usually (but not always), there is only one main sett per territorial social group of badgers, so distinguishing main setts from other types of sett enables the surveyor to count the number of social groups in an area. In rural areas, the spacing between the

main setts is a function of the productivity of the area (in terms of food resources), together with the availability of sites for constructing large setts.

Badgers are omnivorous, taking a very wide range of invertebrates, plants, fruits and scavenged material, although in many areas of Britain, a large proportion of their diet comprises earthworms, taken from short grassland. They forage individually in different parts of their range according to the season, local weather conditions and random events (road casualties, discarded food).

Foraging for the badger social group appears to be focussed within the fruit farm to the north and the areas of the large gardens located to the east and west of the site, as well as the suburban landscape directly to the south of the site.

Four Elms Fruit Farm, part of which is located to the north of the site, is understood to have been part of a cull zone (*pers comm*) within the last few years. It was previously known by the author that this farm, in particular areas directly neighbouring the site to the north, north-east and north-west historically supported a large and expansive badger population with a large number of sett entrances in active use as of 2013. During the 2023 survey of the site, none of these sett entrances were any longer extant. The badger social group now appears to be focussed within the site, with only the three setts entrances located within the public footpath being located outside of the site boundary.

It is understood that the positioning of the proposed dwelling and associated landscaping / infrastructure will impact either directly or indirectly the majority of the existing badger setts entrances on (and directly adjacent to) the site.

As such, it is recommended that the entirety of the main sett is closed under licence from Natural England once full planning permission has been obtained. Works on badger setts are timed to take place between 1st July and 30th November to avoid impacts to the rearing of young and overwintering, when the badgers are most vulnerable.

After full planning has been achieved, but prior to the application of a licence, a new replacement sett is to be constructed in the far northern part of the site. The badgers will then be recorded as having found the sett before the licence can be applied for.

The replacement sett would have to comprise 10 chambers and three sett entrances and be set above ground level with at least 1 m of soil overburden over the sett chambers. The new sett would be appropriately buffered by scrub planting from the new proposed development. Further design and layout materials would be set out within the Badger Licence Method Statement utilised to apply for the licence if full planning is achieved.

A minimum 10 m buffer around the new badger sett entrances must be adhered to with no groundworks or plant allowed to come within 10 m of any new sett entrances, thereby preventing and potential injury or death through collapse of underground tunnels or chambers during the construction process.

Precautionary measures will need to be employed to ensure no badgers are harmed or injured during the construction period of the development.

5.4.3 Bats

Dispersing & Foraging Bats

The native hedgerow provides foraging and dispersal habitat for bats in conjunction with suitable habitats in the wider landscape.

As a signatory to the Bonn Convention (Agreement on the Conservation of Bats in Europe) the UK has committed to protecting bat habitats, which necessitates the identification and protection from damage or disturbance of feeding areas and commuting routes. Accordingly, mitigation and compensation measures will be required for bat species.

It is understood that the unvegetated unsealed surface, other coniferous woodland and limited bramble scrub will be removed (with the other native hedgerow retained) and internal lighting will be introduced as part of the proposals. Therefore, measures (including a sensitive lighting plan), detailed within Section 6 will be required to ensure that dispersing and foraging bats are not negatively impacted by the proposal.

With the implementation of mitigation and compensation measures, it is considered that the proposal will have a neutral impact on bats.

Bat Roosting

There were no potential roosting features identified within the on-site hedgerow shrubs, however, potential roosting features may be present within the surrounding off-site trees adjacent to the site boundary.

As a signatory to the Bonn Convention (Agreement on the Conservation of Bats in Europe) the UK has committed to protecting bat habitats, which necessitates the identification and protection from damage or disturbance of feeding areas and commuting routes.

Limited short-term PIR downward-facing artificial lighting, located adjacent to doorways, is proposed for the development. As such, a sensitive lighting plan will be required to avoid illuminating retained trees, retained and created habitats, and any areas beyond the site.

As such, it is considered unlikely that bat species will be negatively impacted by the works, however some ecological enhancements have been detailed in Section 6.

5.4.4 Birds

Multiple species of bird were recorded within 2 km of the site. The other native hedgerow and limited dense bramble scrub provides suitable nesting and foraging habitat. The bare ground left by the felling of the conifer plantation will provide limited foraging habitat.

All birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). Accordingly, mitigation and compensation measures will be required for bird species.

It is understood that the artificial unvegetated unsealed surface, other coniferous woodland (felled therefore comprising bare ground) and limited area of bramble scrub will be removed to facilitate the development and the other native hedgerow will be retained. Therefore, it is considered likely that nesting birds may be impacted by the development. Mitigation will therefore include the inclusion of a number of inbuilt bird boxes within the proposed development to mitigate for the loss of bramble scrub nesting habitat

Enhancement measures have been included within Section 6 to increase the opportunities for nesting birds on site.

5.4.5 Dormice

The desk study identified five EPSLs were granted within 4km of the site, allowing the destruction of habitat for dormouse. Two records for dormouse were also returned by the DBRC data search from within 2 km of the site. Suitable habitat, in the form of the other native hedgerow exist on site. This hedgerow is connected to other hedgerows and woodlands outside of the site. As such, it is considered that dormice are likely to be present within the hedgerow habitat on site.

Dormice are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010. This makes it illegal to:

- Intentionally kill, injure, take, possess, sell or disturb a dormouse; and,
- Intentionally or recklessly damage, destroy or obstruct their place of shelter or protection (i.e. dormouse habitat).

Due to the nature of the works, avoiding any impacts to the hedgerow on site, it is considered unlikely that dormice will be negatively impacted by the works. However some habitat protection measures and ecological enhancements have been detailed in Section 6.

5.4.6 Hedgehog

The hedgerow base habitat are considered suitable habitat for hedgehog. The site may therefore likely to provide limited foraging and sheltering habitat for hedgehog.

Hedgehog are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006) with public bodies, including LPAs, minded ensuring due regard to the conservation of biodiversity of such species. Such considerations may seek to protect, re-establish or create habitat suitable for hedgehog post development.

Precautionary measures will need to be employed to ensure no hedgehogs are harmed or injured during the construction period of the development.

5.4.7 Reptiles

The hedgerow base, bare ground area created by the felling of the coniferous plantation woodland and scrub base edge have the potential to support reptile species such as slow worm and possibly grass snake.

Reptiles are protected against intentional killing and injury under the Wildlife and Countryside Act 1981 (as amended). Natural England states that activities such as site investigations and movements of machinery may breach this legislation by causing death or injury to reptiles (English Nature, 2004).

Precautionary measures will be required to ensure that reptiles are not harmed during the works, including sensitive timing and the introduction of habitat management preventing colonisation of the proposed working areas.

6.1 Ecological Impacts

It is proposed to develop the site into a single-home dwelling with associated landscaping, services and infrastructure. Further survey, the form of an updated badger survey will be required after full planning has been achieved and prior to the license application to undertake the works to the existing badger sett. The felled coniferous woodland habitat, unvegetated unsealed surface and dense scrub habitat will be lost as a result of the proposed development, while the other native hedgerow will be retained as part of the proposed development. It is understood that there will be no additional external artificial lighting included within the proposal.

6.2 Recommendations for Avoidance/Mitigation of Ecological Impacts

- Post-planning, a new replacement badger sett comprising six chambers and three entrances) will be constructed in order to provide alternative shelter/overwintering provision for badgers;
- Suitable buffer scrub planting comprising a 2 m wide dense blackthorn hedgerow must be planted to shield the proposed mitigation sett from the proposed dwelling;
- The existing sett on site will then be closed under licence from Natural England between the badger working period 1st July to 30th November;
- A minimum 10 m protection buffer around the nearest [to the development footprint] newly created badger each badger sett entrance must be adhered to to ensure no badgers are harmed/injured during the works (see Appendix 2);
- Consideration must be given to hedgerow root protection areas (RPAs), ensuring proper buffering to prevent direct damage. Compaction and disturbance of root protection zones should be avoided to prevent deterioration of individual trees or shrubs;
- Maintain the site ground vegetation as a short sward to prevent colonisation by reptile and amphibian species to ensure that these species stay away from the development footprint. These areas will then be maintained to a short sward prior to and during construction;
- Any excavations or pipework, which are to remain open overnight, should be fenced or covered to prevent potential entrapment and/ or injury of species such as hedgehog or badger.

6.3 Compensation & Enhancement Measures

The National Planning Policy Framework outlines the Government's commitment to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Therefore, in order to increase the opportunities for wildlife on site the development will need to include the following:

- One habitat feature consisting of branches/brush and/or grass cuttings 2 m², placed in areas most suitable for reptile and amphibian species, within undisturbed area/s of the site (Appendix 4);
- Two built-in bat roosting provisions – positioned on the southern aspect of the proposed building at a minimum height of 3 m (Appendix 6);
- Two built-in bird nesting provisions – positioned on the northern aspect of the proposed building at a minimum height of 3 m (Appendix 5);
- Planting of a new native hedgerow along the north-western site boundary;
- Planting of six fruit trees within the proposed landscaping within the site to provide habitat for invertebrate species and badger; and,
- Two built-in invertebrate provisions – positioned on the southern aspect of the proposed building, proposed at a minimum height of 1 m (Appendix 7).

6.4 Conclusion

The site supports badgers and has the potential to support invertebrates, amphibians (potentially including great crested newt in its terrestrial phase), reptiles, foraging bats, nesting birds and dormice.

In the absence of mitigation, the proposal represents a negative ecological impact at a site level through the permanent removal of the coniferous woodland component of the site as well as direct impacts to badgers and potential impacts to the RPA of the retained trees/hedgerows.

Through implementation of ecological mitigation, compensation and enhancement measures, the proposal has the potential to represent a neutral impact at a site level.

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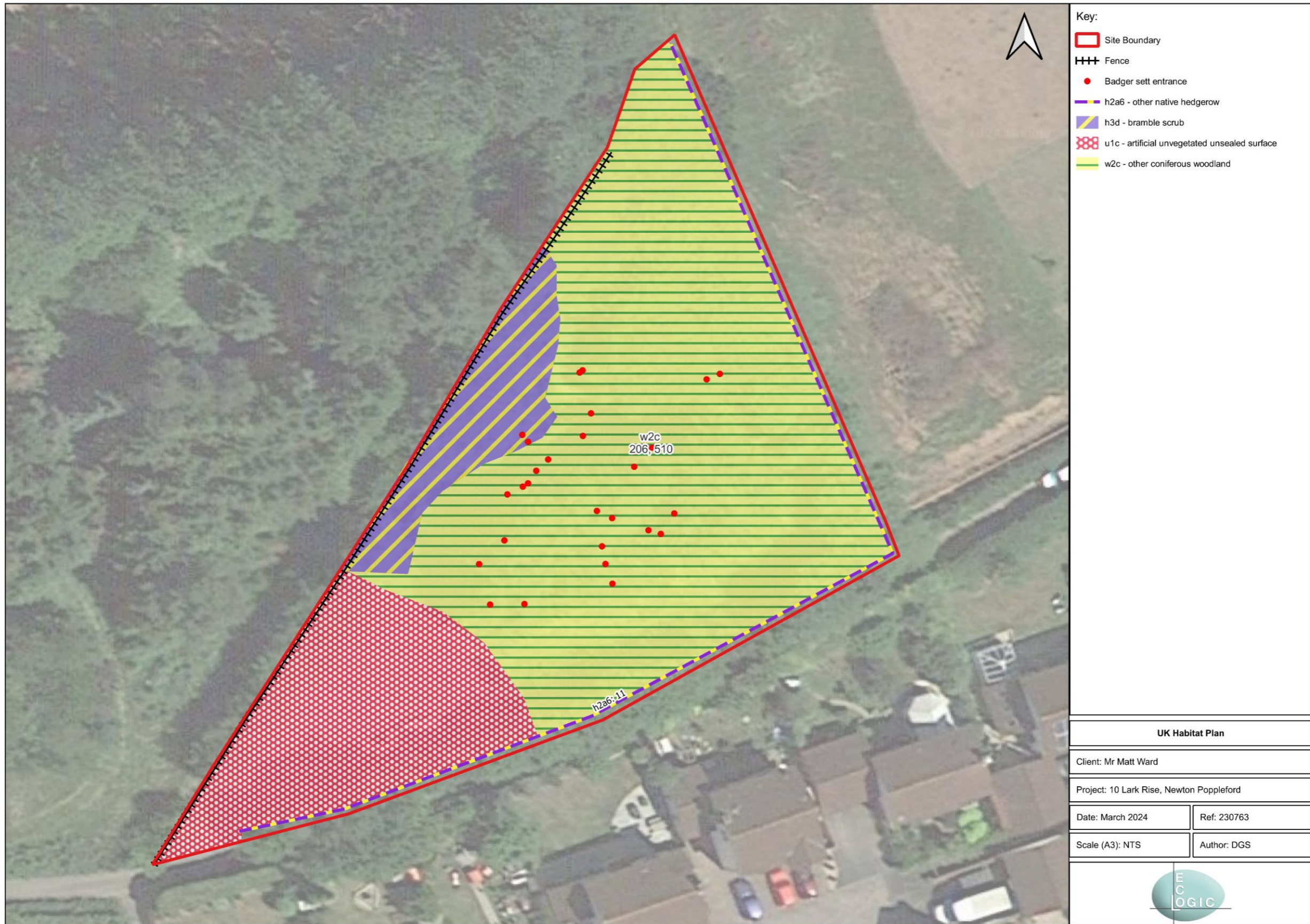
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APPENDICES

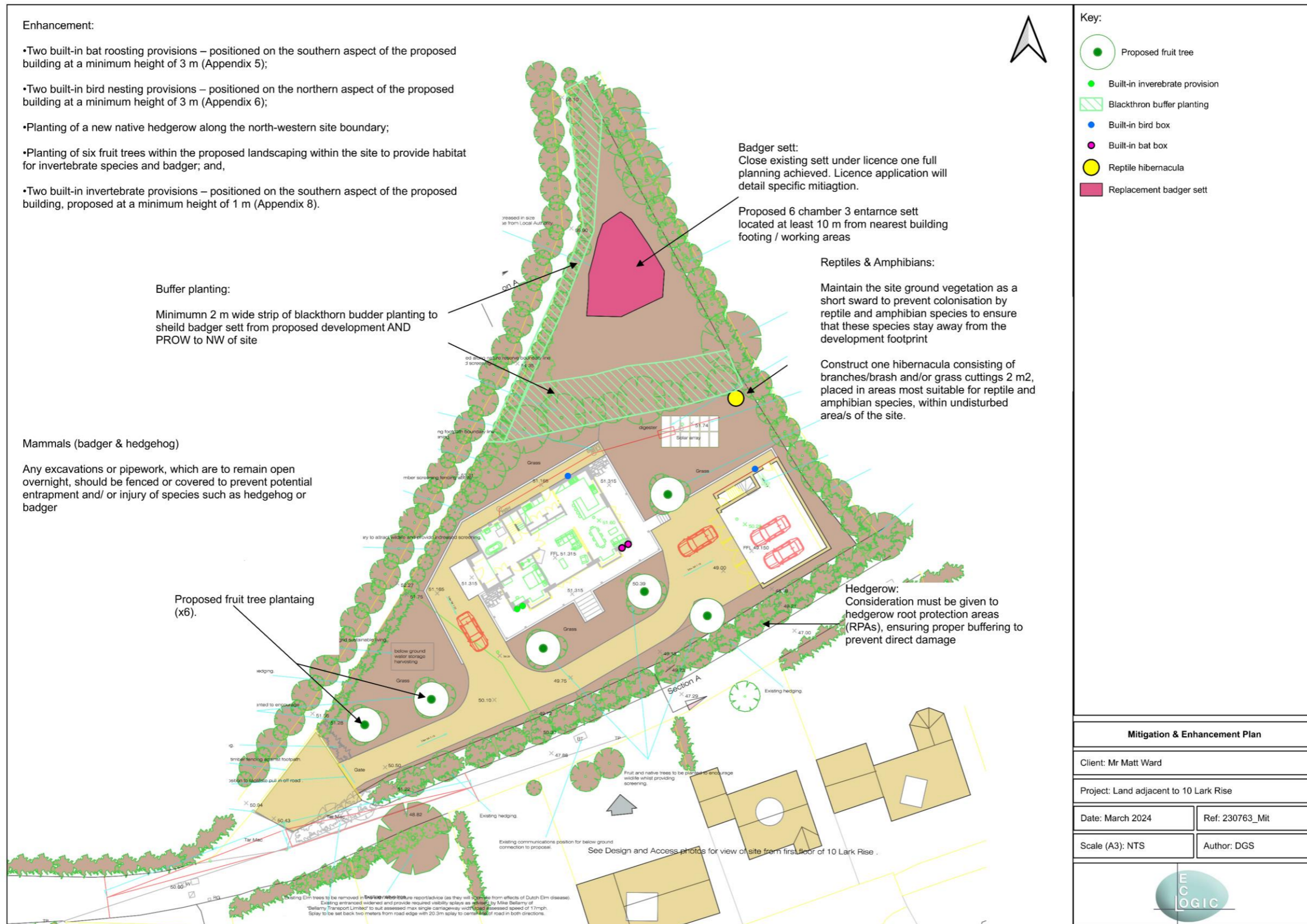
- Appendix 1: UK Habitat Map
- Appendix 2: Mitigation & Enhancement Plan
- Appendix 3: List of Scientific Names
- Appendix 4: Examples of Habitat Features
- Appendix 5: Examples of Nesting Bird Provisions
- Appendix 6: Examples of Bat Roosting Provisions
- Appendix 7: Examples of Invertebrate Provisions



Key:

- Site Boundary
- Fence
- Badger sett entrance
- h2a6 - other native hedgerow
- h3d - bramble scrub
- u1c - artificial unvegetated unsealed surface
- w2c - other coniferous woodland

UK Habitat Plan	
Client: Mr Matt Ward	
Project: 10 Lark Rise, Newton Popleford	
Date: March 2024	Ref: 230763
Scale (A3): NTS	Author: DGS
	



Common Name	Scientific Name
Plants	
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Cocks foot	<i>Dactylis glomerata</i>
Common bent	<i>Agrostis stolonifera</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Common nettle	<i>Urtica dioica</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping thistle	<i>Cirsium arvense</i>
Doves-foot cranesbill	<i>Geranium molle</i>
Foxglove	<i>Digitalis purpurea</i>
Hedge bedstraw	<i>Galium mollugo</i>
Pignut	<i>Conopodium majus</i>
Ragwort	<i>Jacobaea vulgaris</i>
Sheep's fescue	<i>Festuca ovina</i>
Spear thistle	<i>Cirsium vulgare</i>
Thin spiked sedge	<i>Carex strigosa</i>
Tufted hair grass	<i>Deschampsia cespitosa</i>
White clover	<i>Trifolium repens</i>
Wood sedge	<i>Carex sylvatica</i>
Yarrow	<i>Achillea millefolium</i>
Trees	
Alder	<i>Alnus glutinosa</i>
Bramble	<i>Rubus</i>
Hawthorn	<i>Crataegus</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera</i>
Silver birch	<i>Betula pendula</i>
White willow	<i>Salix alba</i>
Mammals	
Badger	<i>Meles meles</i>
Brown long eared bat	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Dormouse	<i>Muscardinus avellanarius</i>
Hedgehog	<i>Erinaceus europaeus</i>
Lesser horseshoe	<i>Rhinolophus hipposideros</i>
Noctule	<i>Noctalus nyctalus</i>
Barbastelle	<i>Barbastella barbastellus</i>
Reptiles	
Grass snake	<i>Natrix Helvetica</i>
Slow worm	<i>Anguis fragilis</i>
Amphibians	
Common frog	<i>Rana temporaria</i>
Common toad	<i>Bufo bufo</i>
Great crested newt	<i>Triturus cristatus</i>
Palmate newt	<i>Lissotriton helveticus</i>
Smooth newt	<i>Lissotriton vulgaris</i>

Habitat Pile

Size: 2-8 m long x 1-1.5 m high

Materials: Logs, brash, bramble cuttings, grass cuttings

Location: Create in marginal habitats adjacent to both low, open vegetation and dense vegetation

Creation:

- A mixture of materials, shapes and sizes should be used to increase complexity of the structure.
- The central core of the structure should be compacted, and the outer layers laid loosely on top

Management:

- Add additional material to the habitat pile as it decomposes.
- Consider partially burying, anchoring or securing with wire if located on a site with high public access



Stag Beetle Provision

Size: 0.5 - 1 m wide x 0.5 - 1 m high

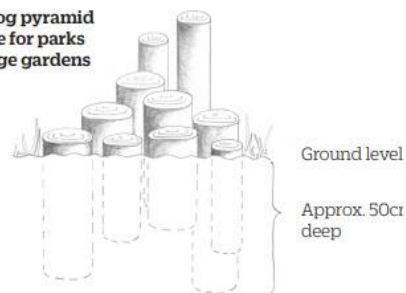
Materials: Logs / deadwood

Location: Create in marginal habitats adjacent to both low, open vegetation and dense vegetation

Creation:

- Dig a hole approximately 500 mm deep;
- Position different length logs upright within the hole in a pyramid formation;
- Back fill with earth.

Large log pyramid suitable for parks and large gardens



WoodStone Build in Open Nest Box

Suitable for: robins, wrens and blackbirds.

Material: Woodstone

Height: 180 mm

Width: 220 mm

Depth: 180 mm

Weight: 4.2kg

Position: Within external walls, at a minimum height of 2 m

**Vivara Pro Estelle House Sparrow Terrace**

Suitable for: House sparrows and individual blue & great tits

Material: Woodstone

Height: 210 mm

Width: 290 mm

Depth: 160 mm

Weight: 7.5 kg

Position: Within external walls, at a minimum height of 2 m

**Schwegler Brick Nest Box (Type 24)**

Suitable for: House sparrows, great tits, blue tits and nuthatches

Material: Woodcrete

Height: 235 mm

Width: 180 mm

Depth: 180 mm

Weight: 2.8 kg

Position: Within external walls, at a minimum height of 2 m



Type 24

Segovia Build-In Woodstone Bat Box

Material: Woodcrete

Width: 210 mm

Height: 500 mm

Depth: 170 mm

Entrance Width: 160 mm

Entrance Height: 25 mm

Position: Built into external wall, below eaves or at a minimum height of 3 m with the entrance face at the front, remaining exposed and visible. The sides can be removed and multiple boxes placed next to each other to create a larger roosting space



Vivara Pro Woodstone Bat Tube

Material: Woodstone

Width: 160 mm

Height: 400 mm

Depth: 220 mm

Entrance Width: 150 mm

Entrance Depth: 20 mm

Weight: 6 kg

Position: Within external walls in place of a standard block on a southerly aspect, beneath eaves or at a minimum height of 3 m



Green & Blue Bat Block

Material: Cast concrete (75% waste materials from Cornish China Clay Industry)

Width: 215 mm

Height: 440 mm

Depth: 120 mm

Position: Within external walls in place of a standard block on a southerly aspect, beneath eaves or at a minimum height of 3 m



Woodstone Insect Block

Suitable for bees, lacewings and ladybirds.

Material: Woodstone

Height: 270 mm

Width: 185 mm

Depth: 90 mm

Position: Site in a southerly facing location, adjacent to garden or boundary habitats at a minimum height of 2 m.

**Green & Blue Bee Brick**

Suitable for non-swarming solitary bees such as mason bees and leaf cutter bees.

Material: Concrete (75% waste materials from Cornish China Clay Industry)

Height: 215 mm

Width: 105 mm

Depth: 65 mm

Position: Within external wall in a southerly facing location, adjacent to garden/boundary habitats at a minimum height of 2 m.

