

Preliminary Ecological Assessment

Land at Moonshine
Meadow, Cuckfield
Road, Ansty
West Sussex
RH17 5AL
NGR: TQ 28715 21501



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Sylvatica Ecology Ltd

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It should be borne in mind that the behaviour of animals can be unpredictable and may not conform to standard patterns recorded in scientific literature. Therefore, this report cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats, or that they will not occur in locations or habitats that appear unsuitable.

In order to minimise the likelihood of adverse effects on protected animal species over time, it is accepted good practice, in accordance with Natural England (NE) (formerly English Nature) guidance for ecological surveys to be repeated should works be deferred for over 12 - 18 months from the date of initial survey.

It is the duty of the landowner, developer and operations managers to act responsibly and to comply with current environmental legislation if protected species are suspected or found prior to, or during works.

The recommendations and information contained within this report are based on the information provided on the development works prior to the surveys being carried out. Should the development proposals change then the findings and recommendations contained within would potentially require revision.

The findings within this report do not constitute legal advice. Should this be required, then a suitably qualified professional practitioner should be contacted.

Approved by	Signed	Contact
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1 SUMMARY

- 1.1 This report presents the findings of a Preliminary Ecological Assessment survey at land at Moonshine Meadow, Cuckfield Road, Ansty, West Sussex, RH17 5AL, NGR: TQ 28715 21501. A planning application has been made for proposed construction of three chalet bungalow style detached dwellings with detached/ attached oak framed carports with associated parking.
- 1.2 The site is located within a relatively rural location, 2.0km to the northwest of the Burgess Hill suburbs. There are other residential properties, arable land, pasture and woodland present in the immediate surrounding area.
- 1.3 The development site is not subject to any statutory designations and the closest statutory designated sites are over 3.0km away (Bedelands Farm Local Nature Reserve). Given the small scale of the proposals it is not anticipated that there will be any impacts to this site or valuable habitat subject to best practice construction and pollution measures being adhered to during construction.
- 1.4 Biological records searches show protected species of bat, reptile, mammal and amphibian (including great crested newt) present within 2.0km of the site. However, the habitats present on site have limited potential to support these species and no further surveys are recommended for bat, reptile or mammal. A Habitat Suitability Index (HSI) Assessment for great crested newt (*Triturus cristatus*) is recommended for the pond 58m to the south of the site.
- 1.5 To help achieve a score of 10% or greater of biodiversity net gain, the detailed recommendations set out in section 7 of this report are to be followed. This includes replacing non-native hedgerow with diverse native hedgerow, developing this hedgerow where it already exists around the site perimeter into species-rich, higher condition hedgerow, and modifying existing fencing to create passing places for mammals onto adjacent land, ensuring continuity of access across the whole habitat mosaic of the site.
- 1.6 Improvements to the condition of the modified grassland margins currently present will enhance biodiversity, for example, by sowing wildflower seed with high pollen yield into the existing arable field margins to the west and planting shade-loving, pollen rich native species in the shaded margin on the west perimeter.
- 1.7 On or off-site land must be identified to replace the habitat parcel of modified grassland which would be lost if the proposed development takes place.

2 INTRODUCTION

2.1 This report presents the findings of a Preliminary Ecological Assessment survey of Land at Moonshine Meadow, Cuckfield Road, Ansty, West Sussex, RH17 5AL, NGR: TQ 28715 21501. A planning application has been made for proposed construction of three chalet bungalow style detached dwellings with detached/ attached oak framed carports with associated parking.

2.2 **Figure 1: Site Survey Location (Red Line Boundary)**



Site Location

2.3 The site is located within a relatively rural location approximately 4.0km southwest of Haywards Heath and 2.0km northwest of the Burgess Hill suburbs. The red line boundary is the perimeter of a fenced-off field, which borders residential properties immediately adjacent to the north and south. To the east of the site is a 'B' road (Cuckfield Road) and in the wider area to the east good quality semi-improved grassland and priority habitat deciduous and broad-leaved woodland, with a pond 58m to the south of the site. Immediately adjacent to the west is amenity grassland and 50m west is approx. 0.5ha of priority scrub.

Aim of this Study

2.4 The aim of this habitat survey was to assess the habitats present on and adjacent to the property and to evaluate the potential for protected species to be present. Recommendations on any further survey requirements, actions to preserve the habitats present and

enhancements have been made, as a result, of the findings of this habitat survey. These findings should be used within the design phase of the proposals, to minimise the impacts on biodiversity, through careful design and application of the ecological mitigation hierarchy for Biodiversity Net Gain (avoidance, minimisation, restoration and offsetting) to avoid negative effects where possible and to improve biodiversity by 10% for a minimum 30-year period. The survey findings then enable a prediction of the potential impacts of any ecological receptors present to be made in each specific case.

3 METHODOLOGY

Ecological Survey

- 3.1 A preliminary ecological survey walkover was carried out at the site on the 24th of July 2024. The habitats were assessed in accordance with BS 42020 Biodiversity – Code of Practice for Planning and Development and broadly followed the ‘Extended Phase 1’ methodology as set out in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Baseline Ecological Assessment and the Handbook for Phase 1 Habitat Survey. This method of survey provides information on the habitats in the survey area and assesses the potential for legally protected species to occur on or adjacent to the site. The habitats were classified according to the UK Habitat Classification system (Butcher *et al.* 2023).
- 3.2 Any faunal species identified during the survey were noted. Any evidence for the presence of, or potential for, protected species was also noted. In particular: amphibians, bats, reptiles, mammals, and birds were included.
- 3.3 A search was carried out for evidence of the presence of invasive plants listed on Schedule 9 of the Wildlife and Countryside Act 1981 which are subject to strict legal control. The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats.
- 3.4 An assessment of the potential of the property to support roosting and foraging bats was made and categorised according to **Table 1** (BCT 2023a).

Table 1: Bat Roost and Foraging Potential of Buildings and Trees (BCT 2023a)

Category	Roosting Habitat	Commuting and Foraging Habitat
Known Roost	Evidence of bat present (e.g.) droppings, live or dead bats and/ or desk study results	N/A
High/ PRF-M	Building or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitats.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Moderate/ PRF-M	Building or tree with one or more potential roosting features that could be used by several bats due to their size, shelter, protection, conditions and surrounding habitats, but unlikely to support a roost of high conservation concern.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low/ PRF-I	Building or tree with one of more potential roost features that could be used by individual bats opportunistically. However, these	Habitat that could be used by small numbers of commuting bats for example, a fragmented hedgerow or un-vegetated stream, but isolated, i.e.

	potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/ or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats. (<i>i.e.</i> unlikely to be suitable for maternity or hibernation)	not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Negligible	Building or tree with no potential to support any bats	Negligible habitat features on site likely to be used by commuting or foraging bats

Designated Sites and Biological Records

- 3.6 A 2.0km radius biological records search was carried out using the National Biodiversity Network. This checked for protected and notable species records within 2.0km of the application site.
- 3.7 Records of internationally designated statutory sites within 5.0km of the Site and nationally designated sites within 2.0km of the Site were searched for using the Multi-Agency Geographic Information for the Countryside website (MAGIC) <http://www.magic.gov.uk>.
- 3.8 MAGIC was also searched for previously granted Natural England licence applications, which may give an indication of the presence of protected species in the local area.
- 3.9 A search of OS maps was conducted to identify any ponds and other water bodies within 500m, and a Great Crested Newt (GCN) Risk Assessment calculation was made for the site.

Habitat Mapping and Condition Assessment Methods

- 3.10 Each specific habitat was assessed according to the condition assessment characteristics on the Statutory Biodiversity Net Gain Metric 4.0 Technical Annex 1. This provides specific criteria for each habitat classification utilising the United Kingdom Habitat Classification System. The mapping was carried out using Google Earth. Habitat areas and pond distances from site were calculated using MAGIC.

Qualification of Author

- 3.11 The survey work and reporting has been led by Laura Barry BA (Hons), MSc, Qualifying Member of CIEEM. Laura trained under the CIEEM Early Career Development Programme to undertake UK Hab and Phase 1 ecological survey work and Preliminary Ecological Assessment (PEA) at

locations throughout the United Kingdom. She trained in bat ecology with Surrey Wildlife Trust and is working in the field for her bat Class 1 licence, currently conducting trapping, box checking and emergence surveys throughout London, Buckinghamshire, Sussex and the Southeast of England. Laura trained with Frog Life to conduct great crested newt, smooth and palmate newt surveys, and in her former profession of Countryside Ranger trained in and regularly conducted surveys for mammals and reptiles, as well as regular bird and butterfly transects, in addition to leading practical habitat management of sites to improve biodiversity outcomes.

4 RESULTS

- 4.1 This section describes the habitats identified during the habitat survey. All the plant species names follow the nomenclature of Stace 1997; a map detailing the locations of the habitats described can be found in Appendix A, habitat condition assessments in Appendix B, and photographs of the property taken at the time of the survey can be found in Appendix C. A summary of the protected species and habitats legislation for England and Wales can be found in Appendix D.

Designated Sites

- 4.2 There are no nationally statutory designated sites within 2.0km of the site and no internationally protected statutory designated sites within 5.0km of the proposed development.

Biological Records Search

- 4.3 Within 2.0km of the proposed development there were records for three species of bat held by the NBN atlas database.

4.4 **Table 2: Bat Records within 2.0km radius**

Latin Name	Common Name	Number of Records
<i>Myotis daubentonii</i>	Daubenton's	4
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	1
<i>Plecotus sp.</i>	Long eared	1

- 4.5 Daubenton's was the most abundantly recorded bat species, with common pipistrelle and long-eared bat species also present.

4.6 **Table 3: Amphibian and Reptile Record**

Latin Name	Common Name	Number of Records
<i>Natrix helvetica</i>	Grass snake	4
<i>Zootoca vivipara</i>	Common lizard	2
<i>Anguis fragilis</i>	Slow-worm	1
<i>Podarcis muralis</i>	Wall lizard	1
<i>Triturus cristatus</i>	Great crested newt	15
<i>Lithobates catesbeianus</i>	American bullfrog	10
<i>Bufo bufo</i>	Common toad	5
<i>Lissotriton vulgaris</i>	Smooth newt	3
<i>Rana temporaria</i>	Common frog	3
<i>Lissotriton helveticus</i>	Palmate newt	2

4.7 There were four reptile species present within the search radius including three native species: slow worm, grass snake, common lizard, as well as wall lizard (Invasive Non-Native Species). there were six species of amphibian present including five native species: common toad, common frog, palmate newt, great crested newt and smooth newt, and American bullfrog (INNS).

4.8 **Table 4: Terrestrial and Riparian Mammal Records**

Latin Name	Common Name	Number of Records
<i>Erinaceus europaeus</i>	Hedgehog	20
<i>Meles meles</i>	Eurasian badger	6
<i>Neomys fodiens</i>	Eurasian water shrew	2
<i>Sorex Araneus</i>	Eurasian common shrew	1
<i>Arvicola amphibius</i>	European water vole	1
<i>Muscardinus avellanarius</i>	Hazel dormouse	1
<i>Neovison vison</i>	American mink	1

4.9 There were 20 records of hedgehog within the 2.0km historical search radius, six of Eurasian badger, two Eurasian water shrew, one Eurasian common shrew, one European water vole and 1 hazel dormouse, in addition to one American mink (INNS).

4.10 **Table 5: Natural England Granted Mitigation Licences**

Licence Number	Distance and Direction	Species	Type	Date	NGR
2016-25605-EPS-MIT-2	1.2km to the south	Great crested newt	Damage and destruction of a resting place	16/03/2017 to 31/12/2022	TQ 2871 2028
2020-44929-EPS-MIT	800m to the north	Common pipistrelle, soprano pipistrelle and brown long-eared bat	Destruction of a resting place	01/03/2020 to 30/04/2026	TQ 2890 2221
EPSM2009-984	1.6km to the southeast	Great crested newt	Destruction of a resting place	01/02/2010 to 31/12/2011	TQ 2958 2021
2014-2981-EPS-MIT	1.5km to the east	Soprano pipistrelle	Damage of a breeding site	19/02/2014 to 01/08/2017	TQ 3021 2080

4.11 There were four granted Natural England mitigation licences within the 2.0km search radius; two for bats and two for great crested newts. The bat species licenced were for the destruction of a resting place for common pipistrelle, soprano pipistrelle and brown long-eared bat, with a single licence for the damage of the breeding site for soprano pipistrelle. The two great crested newt licences were for the damage/ destruction of a resting place for this species.

4.12 **Table 6: Ponds within 500m of Site**

Pond Number	Distance from Site	NGR
2024-MM-PN-1	110m to the east	TQ 28927 21433
2024-MM-PN-2	58m to the south	TQ 28716 21396
2024-MM-PN-3	192m to the southeast	TQ 28845 21316
2024-MM-PN-4	251m to the southeast	TQ 28819 21238
2024-MM-PN-5	157m to the north	TQ 28846 21667
2024-MM-PN-6	340m to the northeast	TQ 29041 21674
2024-MM-PN-7	200m to the northwest	TQ 28544 21690

2024-MM-PN-8	297m to the west	TQ 28400 21561
2024-MM-PN-9	252m to the west	TQ 28428 21538
2024-MM-PN-10	324m to the southwest	TQ 28365 21427
2024-MM-PN-11	366m to the west	TQ 28321 21561

- 4.13 There were 11 ponds within 500m of the site, all over 100m away, except pond 2024-MM-PN-2, which was 58m to the south of the site.

Summary of Habitats Present on Site

- 4.14 The site survey area consisted of modified grassland, scattered trees, native and non-native hedgerow, neutral grassland and one building (B1 Appendix C). The hedgerows were on the north and western boundaries and most of the site was lawn which, with its regular mowing was assessed as modified grassland (Appendix A). The east and south perimeter are enclosed within a two-metre-high wooden fence, which is dug into the ground on the east side, chicken wire extends from the base of the fence on the south border and into the ground.

Habitat Types

- 4.15 ***Modified Grassland (0.25ha g4, habitat parcel 1)*** – This habitat area comprised lawn that appeared regularly mown and had a short sward. Most of the area was grass dominated with low amounts of herb species. Species noted included rye-grass (*Lolium spp.*) dandelion (*Taraxacum officinale*), daisy (*Bellis perennis*), ribwort plantain (*Plantago lanceolata*), self-heal (*Prunella vulgaris*), brown knapweed (*centaurea jacea*) and common sorrel (*Rumex acetosa*). There was some management damage to this habitat from a smouldering bonfire to the west and holes dug into the ground on the east, in addition to bare patches of earth along the west boundary, beneath the shade of the overhanging hornbeam (*Carpinus betulus*) trees outside the red line boundary.
- 4.16 ***Urban Building (0.006ha, u1b5)*** – This habitat consists of a single building on the northwest corner of the site. It appeared to be a shed or utility hut.
- 4.17 ***Other Neutral Grassland (0.018ha, g3c, habitat parcel 2)*** –The raised earth bank on the eastern boundary contained longer sward (1-2m high) and was more species-rich than the modified grassland short-sward lawn over most of the site, with patches of under-utilised bare ground adjacent to the border fence, under the overhanging hornbeam trees. Species noted included: common ragwort (*Jacobaea vulgaris*), bent grass (*Agrostis spec.*), burdock (*Arctium spec.*), greater plantain (*Plantago major*), broad-leaved dock (*Rumex obtusifolius*), ryegrasses (*Lolium spp.*), square-stemmed willowherb (*Epilobium tetragonum*), birds foot trefoil (*Lotus*

corniculatus), bramble (*Rubus fruticosus*), creeping thistle (*Cirsium arvense*), yorkshire fog (*Holcus lanatus*), wood dock (*Rumex sanguineus*), pendulous sedge (*Carex pendula*), cotoneaster (*Cotoneaster horizontalis*), bristly oxtongue (*Helminthotheca echioides*), common knapweed (*Centaurea nigra*), common evening-primrose (*Oenothera biennis*), and box honeysuckle (*Lonicera nitida*).

- 4.18 **Individual Trees** – There were a number of native trees present within the site. These included two pedunculate oak saplings (*Quercus robur*), one mature hawthorn (*Crataegus monogyna*) and two young beech saplings to the northeast of the site and three young Scots pine (*Pinus sylvestris*) in the south section of the site, as well as mature *Q. robur* and hornbeam (*Carpinus betulus*) outside the red line boundary on the north and east boundary respectively.
- 4.19 **Native Hedgerow (17m in length, h2a, habitat parcel 3)**- The northerly section of the western side of the site comprised a section of sparse native hedgerow that was dominated by hawthorn (*Crataegus monogyna*), with blackthorn (*Prunus spinosa*) also present. Due to its height, width, gaps between woody species and disturbed ground at the base it was considered to have poor condition. Surrounding the hedgerow with an approximate 0.5m margin to either side were forbs, which were observed to support grasshoppers, butterflies and bees. Forbs present included ox-eye daisy (*Leucanthemum vulgare*), wood sage (*Teucrium scorodonia*), and creeping buttercup (*Ranunculus repens*).
- 4.20 **Non-native Hedgerow (35m in length)**- A section of non-native hedgerow was present on the northern boundary. This hedgerow was dominated by cherry laurel (*Prunus laurocerasus*, 85%) with a lower shrub layer of bramble (*R. fruticosus*, 15%). Forbs in the grass layer included fleabane (*Erigeron annuus*) and a male-fern (*Dryopteris filix-mas*).

5 POTENTIAL FOR PROTECTED SPECIES

Birds

- 5.1 Common bird species were seen around the site including swallow (*Hirundo rustica*), common buzzard (*Buteo buteo*) and goldfinch (*Carduelis carduelis*). The hedge and trees along the north and east boundary all provided suitable nesting opportunities for common bird species.

Bats

- 5.2 There was one building present within the site, and lines of oak and hornbeam north and east, respectively, of the red line boundary, which were assessed from the ground for potential to support roosting bats. There is a risk the noise, light and structural changes from proposed

developments within the red line boundary could impact any bats that may be present, so the descriptions for the building and possible tree habitat are provided below to enable avoidance of disturbance.

Building 1- Wooden shed

- 5.3 Located at what 3 words location ///protest.stubble.rave (See Appendix C) this building was a wooden shed with felt roof. There was no access to the inside of the building at the time of the survey. From the outside the timber and felt roof didn't appear to present protected roosting space for bats. No evidence of roosting bats was found during the external survey of the building. This building was assessed as having **negligible potential** to support roosting bats in accordance with the survey guidance due to the lack of suitable features which could be used by roosting bats.
- 5.4 There were several mature *oak* trees present outside the red line boundary, running along the north edge of the site, and a row of mature *hornbeam* on the east edge of the property, also outside the red line boundary. The canopy and understory provided a continuous habitat for commuting, with patches of loosened bark on the mature *oak* in the north-west corner (Target Note 2, Appendix A) with potential to be used by a small number of roosting bats. It was assessed as PRF-I.
- 5.5 The majority of the habitat present on site was of limited value to roosting and foraging bats consisting of short sward modified grassland. The mature trees and treelines and the broadleaf woodland outside the redline boundary to the east of the site may provide roosting and commuting habitat for bats. The bat foraging habitat can be considered as low value bat foraging habitat.

Reptiles and Amphibians

- 5.6 There were records of reptile and amphibian within the 2.0km search radius. However, the site provides limited potential to support common individual reptiles lacking edge habitat and containing majority short sward, rather than the longer sward preferred for refuge and commuting.
- 5.7 There were 15 records of great crested newt within the 2.0km search radius with the closest record in 2017 approximately 500m to the southeast of the site boundary. The majority of the site supports habitat which is of limited habitat for great crested newts. The short sward which predominates provides little cover for terrestrial newts, with only the denser vegetation and earth bank to the east border providing deadwood and underground tunnels (Target notes T2, T4, Appendix C) as potential places of refuge.

5.8 **Table 7: Natural England great crested newt (*T. Cristatus*) risk assessment**

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.5
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
Maximum:		0.5
Rapid risk assessment result:	AMBER: OFFENCE LIKELY	

5.9

The Natural England great crested newt (*T.cristatus*) risk assessment of the site is “Amber: offence likely”, indicating that the proposed development activities at Moonshine Meadows are of such a type, scale and location that it likely an offence would be committed unless re-design takes place of location, layout, timing, methods or duration in order to avoid impacts.

Terrestrial and Riparian Mammals

5.10 Specific location records of badger (*Meles meles*) are always confidential. No badger setts were found within the site or immediate perimeter, although the mixture of woodland and fields across the road to the east of the site could provide the mixture of woodland and grassland for suitable badger habitat. Two small mammal tunnels and one mammal push-through under the west gate were identified(T2, T3, Appendix C).

5.11 Records of hedgehog were present within the 2.0km search area and the habitat present within the development site had potential foraging opportunities from the lawn and longer sward. The site had limited potential to support hedgehogs due to the lack of edge habitat and connectivity preferred for commuting.

5.12 Only one record of dormice was found within the 2.0km search radius and none within the last twenty years. The partial native hedge on site was too sparse and lacked connectivity to provide a suitable habitat. The site is therefore unlikely to be used by dormice.

Invasive and Non-Native Species (INNS)

5.13 Rockspray cotoneaster (*Cotoneaster horizontalis*) was noted during the survey, in the longer sward other neutral grassland to the southeast section of the site.

6 DISCUSSION AND RECOMMENDATIONS

Designated Sites and Habitats

- 6.1 There are no statutory designated sites within 2.0km of the site. As the proposals are small scale and given the distance from any designated and valuable habitats it is not anticipated that the proposals will result in any impact to these areas. However, standard best practice pollution prevention measures should be followed during the construction process as a precaution.

Birds

- 6.2 Breeding birds are protected, making it an offence to intentionally (or recklessly) kill, injure or take any wild bird, and to take, damage or destroy the nest of any wild bird while that nest is in use or being built, or take or destroy an egg of any wild bird. As a result, any vegetation clearance or demolition should avoid the breeding season (March to August inclusive). Nests are protected throughout the year, not just within the specified nesting season.
- 6.3 If this were not possible, a suitably experienced ecologist would be required to check areas of vegetation or the buildings immediately prior to works being carried out (within 24hrs). If birds were found to be breeding at this time in these locations, clearance works would not be permitted to proceed until the young had fledged the nest and at least a 10m works exclusion zone be placed around the nest. If any vegetation is cleared outside of the bird nesting season, then all resultant brash should be removed from site to ensure that it does not provide suitable nesting habitat.

Roosting Bats

- 6.4 The potential presence of bat roosts within a proposed development site must be considered as all eighteen of the UK's bat species are protected under Section 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). The WCA states that '*a person is guilty of an offence if intentionally or recklessly they disturb [a bat] while it is occupying a structure or place which it uses for shelter or protection; or he obstructs access to any structure or place which [a bat] uses for shelter or protection*'.
- 6.5 The building B1, was not found to contain any suitable features which could be utilised by roosting bats and no further surveys are recommended.
- 6.6 The *mature oak trees* outside the red line border to the north and east respectively may have some suitability to support individual bats and are assessed as PRF-I. The recommendations below have been made to prevent any disturbance to bats that may forage or roost in the adjacent woodland to the east during the proposed on site development.

Bats and Lighting

6.7 Bat species have been recorded within the 2.0km historical records search and the habitats present onsite and in the immediate surroundings can be considered as having low (onsite) to moderate (offsite) foraging habitat. Any lighting installed as a result of this development will conform to the specifications which are outlined within BCT Guidance Note (2023b). This will reduce any light pollution that could impact nocturnal activity of bat species, some of which are extremely sensitive to light pollution. By following the below lighting plan, the residual impact of the scheme to the surrounding landscape will be reduced, include light spill to the perimeter trees outside the redline:

- *All luminaries will lack UV elements; metal halide and fluorescent sources will be avoided,*
- *A warm white light spectrum on external lighting will be adopted (<2700kelvin) to reduce the blue light component,*
- *LED luminaries will be used where a sharp cut off is required to avoid light spill into adjacent habitat,*
- *External luminaries will feature wavelengths higher than 550nm to avoid the component of light most disturbing to bats,*
- *Column heights of external lighting will be limited,*
- *Luminaries will be mounted on the horizontal plane, with no upwards tilt,*
- *Security lighting will be set on motion sensors and on short timers (<1min).*

Terrestrial Mammals

6.8 Hedgehog have seen their number decline significantly over the last 13 years by around 66%. There were 20 records for hedgehog within 2.0km. The habitats present on site were of low value to hedgehogs due to the lack of hedges and edge habitat, however, they may access the site if they are present within the wider area if BNG improvements such as the planting of native hedgerows and creation of passing places beneath existing fences take place on site, as recommended.

6.9 During the construction phase any deep trenches or excavations should be covered overnight to ensure any animals including hedgehogs, do not become trapped. This measure would also be pertinent for all mammals, including badger.

6.10 Although a targeted small mammal survey was not carried out, the presence of desiccated rabbit droppings, two tunnels and a push-through path under the west fence suggest that small mammals are likely present on the site.

- 6.11 Under the Wild Mammals (Protection) Act 1996 it is an offence to intentionally inflict unnecessary suffering on any wild mammal, with Natural England providing guidance in relation to management options for rabbits and other wild mammals. Any development within the red line boundary, and impacts to the wider site, must act in accordance with the 'Regulatory Guidance, Best Practice and Information' on Natural England's website, and in partnership with a trained ecologist to ensure compliance.
- 6.12 To enhance the site for hedgehog post-development the planting of native shrubs and hedgerows and the provision of gaps of at least 15cm by 15cm under any new fences (and in existing fences) or alternatively the use of hedgerows, rather than or complementary to, fences will ensure this species has access to the site and can use the site for foraging, commuting to adjacent sites and shelter. Removal of the chicken wire at the base of the boundary fences (Appendix C) and cutting of pass-through gaps into the base of the border fences will enable commuting and connectivity of habitat.

Dormice

- 6.13 It is considered highly unlikely that dormice are present within the development site given the poor-quality habitat present and lack of hedgerows to support a population of dormice. In addition, there were no records of dormouse held within the 2.0km of the site in the last 20 years. No further surveys or mitigation measures are therefore recommended.

Great Crested Newt

- 6.14 The great crested newt receives full protection under the Wildlife and Countryside Act 1982 (as amended). This prohibits the intentional or reckless killing, injuring or taking (capture, etc); possession; intentional or accidental disturbance whilst occupying a 'place used for shelter or protection' and intentional or reckless destruction of these places; sale, barter, exchange, transporting for sale and advertising to sell or buy.
- 6.15 The habitats present on site were of limited value for great crested newts with minimal areas of longer sward grassland to provide suitable cover for roosting great crested newts. There were records of great crested newts recorded within 2.0km of the proposed development, but none in the last six years.
- 6.16 The pond 58m to the south yet to be assessed to identify whether it is in a suitable condition to support great crested newts, if they are present in the wider area. Given the proximity of the site to this pond, it is recommended that a Habitat Suitability Index (HSI) Assessment is undertaken in line with ARGUK guidance. Any further surveys such as a presence/likely

absence survey/mitigation measures and recommendations – such as redesign of the development location, layout, methods, duration or timing and reviewed and updated GCN risk assessment - would be informed by the survey findings.

Reptiles

- 6.17 The habitats present on site were of limited suitability to support a population of reptiles and no further surveys are recommended to be undertaken.

7 RECOMMENDATIONS FOR BIODIVERSITY ENHANCEMENT AND NETGAIN

- 7.1 Development plans should maximise opportunities for enhancement, in order to, achieve a 10% net increase in biodiversity for a minimum 30-year period. The measures outlined below provide the means to achieve this enhancement.
- 7.2 West Sussex's Local Nature Recovery Strategy (LNRS, Section 8) prioritises increased biodiversity through expanding and connecting wildlife rich areas, planting trees and restoring grasslands, while the West Sussex Pollinator action plan promotes the protection and enhancement of pollinator habitat.
- 7.3 To help achieve a score of 10% or greater of biodiversity net gain, and in line with the West Sussex LNRS for connectivity, planting of species-rich native hedgerow is recommended around the perimeter of the site.
- 7.4 Species may include: hawthorn (*Crataegus monogyna*), blackthorn (*prunus spinosa*), hazel (*Corylus avellana*), field maple (*Acer campestre*), with consideration to be given to the planting of native standards such as oak (*Quercus spp.*), elm (*Ulmus spp.*) and ash (*Fraxinus excelsior*), interwoven with climbers like traveller's joy (*Clematis vitalba*) and honeysuckle (*Lonicera periclymenum*).
- 7.5 On the current site the existing native hedge on the northwest border could be extended around the whole site perimeter, replacing the cherry laurel hedge to the north, replacing or complementing the artificial fencing, which surrounds the site perimeter to the east, south and north (Appendix C) with species-rich, native hedgerow.
- 7.6 To maximise biodiversity impact, if it is decided that some of these hedges will be planted perpendicular to existing fencing, rather than replacing it, it is recommended that artificial 'passing places' are cut into the existing fence barriers, at ground level, of a size and accessibility to enable mammals to have unimpeded access to move safely through a

connected mosaic of habitats across the whole site and, ideally, access and egress to the mixed woodland to the east and land the south and east. It would benefit habitat connectivity of the ecosystem if the artificial fencing were replaced by native hedgerow or, at the least, passing places were constructed for mammals to enable connectivity to the woodland on the adjacent property.

7.7 The hedgerow planting would, ideally, conform to the following criteria once the specific length of time for suitable management has passed (5 to 10 years):

- *Height and Width: Greater than 1.5m average height and width along entire length,*
- *Gap – Hedge Base: Gap between ground and base of canopy less than 0.5m for greater than 90% of the length,*
- *Gap – Hedge Canopy: Gaps make up less than 10% of total length, and no canopy gaps of greater than 5m.*
- *Ground Level Vegetation: greater than 1m of undisturbed ground with perennial herbaceous vegetation for greater than 90% of the total length. These would be measured from the outer edge of the hedgerow and would be present on, at least, one side of the hedgerow,*
- *Nutrient Enrichment: Plant species indicative of nutrient enrichment comprise less than 20% of the area of undisturbed ground,*
- *Invasive Species: Greater than 90% of the hedgerow and undisturbed ground is free of invasive species and recently introduced species.*
- *Current Damage: Greater than 90% of the hedgerow or undisturbed ground is free of damage caused by human activities.*

7.8 As part of the scheme, it is recommended to install bird boxes on the *Q. robur* and *C. betulus* trees on the north and east borders of the property. These would provide an ecological enhancement by providing suitable roosting and nesting locations for these protected species. These bird boxes could also be installed as in-built boxes in the new development. The location of the boxes should avoid high levels of sunlight during the summer months and be located away from any building windows and doors.

7.9 Where habitat parcel 1 of modified grassland (0.25ha g4) is to be affected under the proposed construction, an alternative area must be identified to offset the loss of the modified grassland proposed for development. The condition of the new area of modified grassland condition and biodiversity could be enhanced through a reduction in mowing regime and sowing of species rich native seed mixes. In addition, any planting as part of the landscaping scheme should look to include native species as part of the mix particularly with berry-bearing species and

flowering plants able to provide a nectar and pollen source for invertebrates at the start or end of the flowering season.

- 7.10 It is also recommended that improvements are made to the existing modified grassland on site, which contains patches of undeveloped land, in the shade underneath the *C.betulus* trees outside the east red line border. Additional shade-loving native herbaceous and grassland species could be planted into this area, complementing the diversity of species already present, replacing the (INNS) *C. horizontalis*, and providing a valuable nectar source for additional invertebrate species. Species might include agrimony (*Agrimonia eupatoria*), common dog violet (*Viola riviniana*), cuckoo flower (*Cardamine pratensis*), white dead-nettle (*Lamium album*) and wood anemone (*Anemone nemorosa*). These would enable an enhancement to a higher biodiversity habitat to be achieved.

8 REFERENCES

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APPENDIX A: PRELIMINARY ECOLOGICAL WALKOVER SURVEY HABITAT MAP



LEGEND

- Target notes
 - T1 - pedunculate oak PRF-I
 - T2 - mammal tunnels
 - T3 - mammal push-through
 - T4 - deadwood
- Red line boundary
- Modified grassland
- Other neutral grassland
- Native hedgerow
- Non-native hedgerow
- Building
- Large rural tree
- Medium rural tree
- Small rural tree

APPENDIX B: HABITAT DISTINCTIVENESS AND CONDITION ASSESSMENT

Habitat Type	Total Habitat Area (ha) or length (km)		Distinctiveness	Score	Habitat Condition	Condition Assessment Scoring
Native Hedgerow	17m long		N/A	4	Poor	1
	Species Present		hawthorn (<i>Crataegus monogyna</i>), blackthorn (<i>Prunus spinosa</i>)			
Non-Native Hedgerow	35m long		N/A	N/A	N/A	N/A
	Species Present		cherry laurel (<i>Prunus laurocerasus</i> , 85%) bramble (<i>R.fruticosus</i> , 15%)			
Modified Grassland	0.25ha		Low	6	Good	3
	Species Present	Rye-grasses (<i>Lolium spp.</i>) dandelion (<i>Taraxacum officinale</i>), daisy (<i>Bellis perennis</i>), ribwort plantain (<i>Plantago lanceolata</i>), self-heal (<i>Prunella vulgaris</i>), brown knapweed (<i>centaurea jacea</i>) and common sorrel (<i>Rumex acetosa</i>)				
Buildings and Hardstanding	0.006ha		N/A	N/A	N/A	N/A
Other Neutral Grassland	0.018ha		Medium	4	Moderate	2
	Species Present	common ragwort (<i>Jacobaea vulgaris</i>), bent grass (<i>Agrostic spec.</i>), burdock (<i>Arctium spec.</i>), greater plantain (<i>Plantago major</i>), broad-leaved doc (<i>Rumex obtusifolius</i>), ryegrasses (<i>Lolium spp.</i>), square-stemmed willowherb (<i>Epilobium tetragonum</i>), birds foot trefoil (<i>Lotus corniculatus</i>), bramble (<i>Rubus fruticosus</i>), creeping thistle (<i>Cirsium arvense</i>), yorkshire fog (<i>Holcus lanatus</i>), wood dock (<i>Rumex sanguineus</i>), pendulous sedge (<i>Carex pendula</i>), cotoneaster (<i>Cotoneaster horizontalis</i>), bristly oxtongue (<i>Helminthotheca echioides</i>), common knapweed (<i>Centaurea nigra</i>), common evening-primrose (<i>Oenothera biennis</i>), and box honeysuckle (<i>Lonicera nitida</i>).				

APPENDIX C: PHOTOS OF THE SITE

Nb all photos are annotated with What3Words Locations (Section 8, References)

Plate 1: B1 building one



Plate 2: cherry laurel (*Prunus laurocerasus*) hedge



Plate 3: T1 pedunculate oak (*Quercus robur*)



Plate 4: T3 mammal push-through beneath gate, into adjacent field



Plate 5: hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) hedge



Plate 6: T4 deadwood log pile, north-west border



Plate 7: Management activities, smoking bonfire



Plate 8: under-utilised margin beneath hornbeam (*Carpinus betulus*)



Plate 9: chicken wire at base of fence



Plate 10: management activities



Plate 11: T2 mammal tunnel, earth bank



Plate 12: scots pine trees, south border



Plate 13: T4 deadwood habitat



Plate 14: individual trees, northeast corner



APPENDIX D: PROTECTED SPECIES AND DESIGNATED SITE LEGISLATION SUMMARY (ENGLAND AND WALES)

Species	Legislation (England & Wales)	Offences	Licensing procedures (England & Wales)
Bats European protected species	Conservation of Habitats and Species Regulations 2017	Deliberately ¹ capture, injure or kill a bat; deliberate disturbance ² of bats; or damage or destroy a breeding site or resting place used by a bat. [The protection of bat roosts is considered to apply regardless of whether bats are present.]	A Natural England (NE) licence in respect of development is required in England. European Protected Species: Mitigation Licensing- How to get a licence (NE 2010) Bat Mitigation Guidelines (English Nature 2004) Bat Workers Manual (JNCC 2004) BCT Survey Guidelines (2016)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Great Crested Newt European protected species	Conservation of Habitats and Species Regulations 2017	Deliberately ¹ capture, injure or kill a great crested newt; deliberate disturbance ² of a great crested newt; deliberately take or destroy its eggs; or damage or destroy a breeding site or resting place used by a great crested newt.	Licences issued for development by Natural England. European Protected Species: Mitigation Licensing- How to get a licence (NE 2010) Great Crested Newt Mitigation Guidelines (English Nature 2001)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.	Licences issued for science (survey), education and conservation by Natural England.
Dormice European protected species	Conservation of Habitats and Species Regulations 2017	Deliberately ¹ capture, injure or kill a dormouse; deliberate disturbance ² of dormouse; or damage or destroy a breeding site or resting place used by a dormouse.	A Natural England (NE) licence in respect of development is required in England. European Protected Species: Mitigation Licensing- How to get a licence (NE 2010)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.

Species	Legislation (England & Wales)	Offences	Licensing procedures (England & Wales)
Badger	Protection of Badgers Act 1992	Wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett. [It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.]	Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural England (NE). Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process. Licences are normally not granted from December to June inclusive because cubs may be present within setts. Badgers & Development (NE 2007)
Birds	Wildlife and Countryside Act 1981 (as amended) S.1	Intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; intentionally take or destroy the nest or eggs of any wild bird. [Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, and little ringed plover).] Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety.
Adder Common lizard Grass snake Slow worm	Wildlife and Countryside Act 1981 S.9(1) (part); S.9(5)	Intentionally kill or injure any common reptile species.	No licence is required in England. However, an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals.
Rabbits, foxes and other wild mammals	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see TAN43 April 2005 and TAN08 April 2005) as well as other wild mammals; see Natural England's website for the list of 'Regulatory Guidance, Best Practice and Information'.

Site Designation	Legislation (England & Wales)	Protection	Guidance
Site of Special Scientific Interest (SSSI)	Wildlife and Countryside Act 1981 (as amended)	It is an offence to carry out or permit to be carried out any potentially damaging operation. SSSIs are given protection through policies in the Local Development Plan.	Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 before undertaking operations likely to damage a SSSI. S.28G places a duty on all public bodies to further the conservation and enhancement of SSSIs. Planning Policy Statement 9: Biodiversity and Geological Conservation (ODPM 2005) for England or Technical Advice Note 5 in Wales.
Locally Designated Sites	There is no statutory designation for these	Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect these would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged.

Site Designation	Legislation (England & Wales)	Protection	Guidance
Special Area of Conservation (SAC) Special Protection Area (SPA) Wetland of International Importance (Ramsar site)	Conservation of Habitats and Species Regulations 2010 EC Directive on the conservation of natural habitats and of wild fauna and flora (92/42/EEC). EC Directive on the conservation of wild birds (79/409/EEC). Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (the Ramsar Convention).	Planning controls are effected through Part 2 of the Conservation of Habitats and Species regulations 2010 (Reg 21) and Part 6 (Regs 61-67). The legislation for the Site of Special Scientific Interest which will underpin each designation also applies. These sites are given protection through policies in the Local Development Plan.	Formal Appropriate Assessment is required before undertaking, or giving consent, permission or other authorisation for a plan or project which is likely to have a significant effect on such a site. Planning Policy Statement 9: Biodiversity and Geological Conservation (ODPM 2005) and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005) for England or Technical Advice Note 5 in Wales.
Site of Special Scientific Interest (SSSI)	Wildlife and Countryside Act 1981 (as amended)	It is an offence to carry out or permit to be carried out any potentially damaging operation. SSSIs are given protection through policies in the Local Development Plan.	Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 before undertaking operations likely to damage a SSSI. S.28G places a duty on all public bodies to further the conservation and enhancement of SSSIs. Planning Policy Statement 9: Biodiversity and Geological Conservation (ODPM 2005) for England or Technical Advice Note 5 in Wales.
Local Nature Reserve (LNR)	National Parks and Access to the Countryside Act 1949 S.21	LNRs are given protection through policies in the Local Development Plan.	LNRs are generally owned and managed by local authorities. Development proposals that would potentially affect a LNR would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Planning Policy Statement 9: Biodiversity and Geological Conservation (ODPM 2005) for England or Technical Advice Note 5 in Wales.
Locally Designated Sites	There is no statutory designation for these	Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect these would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged.