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NATURAL PROGRESSION

Sunte House, Birchen House, Haywards Heath, West Sussex

Preliminary Ecological Appraisal Report

May 2024

Sunte House, Birchen Lane, Haywards Heath, West Sussex

Preliminary Ecological Appraisal Report

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Abbreviations

CHS	Conservation of Habitats and Species Regulations 2017 (as amended)
eDNA	Environmental DNA
EPS	European Protected Species
GCN	Great crested newt
HPI	Habitat of Principal Importance
HSI	Habitat Suitability Index
LNR	Local Nature Reserve
LWS	Local Wildlife Site
NERC	Natural Environment and Rural Communities Act 2006
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRF	Potential (bat) Roost Feature
SPA	Special Protection Area
SxBRC	Sussex Biological Records Centre
TN	Target Note
UKHab	UK Habitat Classification
WCA	Wildlife & Countryside Act 1981 (as amended)

0 Executive Summary

0.1 Introduction

0.1.1 A Preliminary Ecological Appraisal was undertaken for the site of a proposed renovation project at Sunte House, Birchen Lane, Haywards Heath, West Sussex. The report was prepared to inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the Application Site.

0.2 Results

- 0.2.1 There are three nationally important Local Nature Reserves within the desk study search area, along with one Local Wildlife Site. There are no internationally important wildlife sites within the desk study search area.
- 0.2.2 There are records of a range of protected or notable species in the locality, including amphibians, birds, fish, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with four Priority Habitats: Coastal and Floodplain Grazing Marsh, Wood-pasture and Parkland, Deciduous Woodland and Ancient Woodland. Deciduous Woodland is present within the survey area, as are two Ancient Trees.
- 0.2.3 The survey area lies to the north of Hayward Heath in the Mid Sussex District of West Sussex. The survey area comprises c.2.96ha of previously developed land, currently dominated by a large Grade II listed property with numerous outbuildings and substantial grounds that include a grassland field, lawns, woodland, hedgerows and ornamental planting. The wider landscape is characterised by extensive urban development to the east south and west with open countryside and large woodland blocks to the north. Four ponds lie within 500m of the survey area, which includes two within the survey area.

0.3 Evaluation

0.3.1 Table 0.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 0.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	None of the statutory or non-statutory wildlife sites within the desk-study search zone are likely to be affected by the Proposed Development, considering the size and scale of the proposal and its distance from the designated sites; the closest designation is c.500m north (Wickham Woods Local Wildlife Site).

Feature	Detail
Priority Habitats	The Lowland Mixed Deciduous Woodland and onsite native Hedgerows H1, H2 and H4 are Priority Habitats and provide habitat suitable for a range of protected species, including amphibians, nesting birds, invertebrates, bats, hazel dormouse and reptiles. It is currently anticipated that these habitats will be retained and protected during construction. Ancient Trees T36 and T85 are irreplaceable and of high intrinsic and ecological value and provide habitat for a range of species including bats, birds, invertebrates, plants and fungi. Both trees are expected to be retained and protected during construction and operation.
Other habitats	The Proposed Development site includes c.2.75ha of non-priority habitats including buildings, modified grassland, other mixed woodland, introduced shrub, individual trees and non-native hedgerow. Some losses are expected in these areas, depending on the extent and layout of the proposals; they are of relatively low ecological value but provide habitats suitable for a number of protected species (e.g. great crested newt, nesting birds, badger, roosting bats, hazel dormouse and reptiles).
Great crested newt (GCN)	Possible permanent loss of suitable terrestrial habitats (taller grassland, woodland, hedgerow, introduced shrub) and potential impact to aquatic habitats through new landscaping.
Birds (nesting)	Possible permanent loss of nesting habitats (woodland, hedgerows, introduced shrub, buildings).
Badger	Possible permanent loss of suitable habitats for foraging and sett excavation (grassland, woodland).
Bats (roosting)	Buildings B1, B4, B5, B7 and B9 were assessed as having <u>high suitability</u> to support roosting bats, buildings B2, B3 and B8 were of <u>moderate suitability</u> and B6 was of <u>low suitability</u> . Trees were not surveyed for roosting bat suitability but given their size, age and structure a number of trees are likely suitable, particularly Ancient Trees T36 and T85.
Bats (foraging / commuting)	Direct and indirect effects on high suitability habitats (woodland and ponds) and moderate suitability habitats (taller modified grassland, other mixed woodland) for foraging and commuting bats, including through increases in artificial light.
Hazel dormouse	Possible permanent loss of woodland habitat suitable for hazel dormouse.
Invasive non-native plants	Two non-native invasive species were recorded in the survey area, wall cotoneaster and common rhododendron, both being listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
Reptiles	Possible permanent losses of suitable habitats (taller modified grassland, woodland, hedgerow, introduced shrub).
<u>Opportunities:</u>	
Priority Habitats	The Hedgerow and Deciduous Woodland Priority Habitats within the survey area are of high intrinsic value and can provide a focus for ecological enhancement measures.
Habitat creation	Habitat creation and enhancement opportunities include wildflower buffer planting, hedgerow creation, habitat piles and bird / bat boxes.

0.4 Recommendations

- 0.4.1 Recommendations are made for further protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to enhance the ecology of the survey area post-construction; these are summarised in Table 0.2. It is intended that these recommendations should be considered during future changes to the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 0.2: Summary of recommendations

#	Summary of recommendations
Protected species surveys	
R1	Presence / absence surveys for GCN in ponds P1 and P2, undertaken using eDNA sampling techniques from mid-April to end June, or using conventional techniques from mid-March to mid-June.
R2	Ground-level tree assessment for roosting bats within woodland and individual trees, if removal is required, preferably during winter or spring.
R3	Presence / absence surveys for roosting bats within buildings B1, B2, B3, B4, B5, B6, B7, B8 and B9, undertaken between May and August.
R4	Presence / absence surveys for dormouse, undertaken between April and November, if clearance of woodland and hedgerows is required.
R5	Presence / absence surveys for reptiles, undertaken between April and September, if large areas of suitable habitat are to be removed.
R6	If any of the above species are present and affected by the proposals, a full Ecological Impact Assessment of the effects of the Proposed Development should be carried out.
Precautionary measures	
R7	Removal of nesting bird habitats (including vegetation and buildings) will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
R8	Badger's use of the landscape is dynamic and can change rapidly. A repeat badger survey should be undertaken prior to commencement of development works in order to determine if any new badger setts have established within the survey area. The survey area should include the construction zone plus a 30m buffer to ensure that disturbance to badgers occupying a sett does not occur during the works.
R9	Removal of small areas of suitable dormouse habitat (woodland and hedgerow) will be undertaken in accordance with a Non-Licensed Method Statement to reduce the risk of killing / injury to hazel dormouse. If larger areas are removed a full survey may be necessary.
R10	If small sections of suitable reptile habitat are to be removed the work will be undertaken during the reptile active season (broadly March / April to September / October) and in accordance with a Precautionary Working Method Statement to reduce the risk of killing/injury to reptiles.
Ecological protection measures	
R11	Lowland Mixed Deciduous Woodland priority habitat within the survey area is of high intrinsic ecological value and provides habitats suitable for a range of protected species, including

#	Summary of recommendations
	amphibians, nesting birds, invertebrates, badger, bats, hazel dormouse and reptiles. This habitat is expected to be retained and protected during construction and will also provide a focus for ecological enhancement measures.
R12	Trees T36 and T85 were classified as Ancient Trees and are of high intrinsic and ecological value and provide habitat for a variety of bats, birds, invertebrates, plants and fungi. Both trees are expected to be retained during construction and operation.
R13	Standard site procedures to prevent impacts on trees will be adhered to during construction.
R14	A method statement will be prepared to ensure adequate control measures are adopted to prevent the spread of invasive common rhododendron and wall cotoneaster during construction.
R15	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the woodlands, hedgerows or mature trees, especially the Ancient Trees T36 and T85.
R16	Small access gaps will be provisioned at the base of new fence boundaries to enable continued dispersal of small mammals across the site.
R17	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R18	Destruction of fox dens or rabbit warrens will be undertaken in accordance with the Mammals Act 1996 by a registered pest control company.
Ecological enhancement	
R19	The retained woodland will be enhanced through active management to improve structure and native species composition.
R20	Buffers of less intensively managed vegetation (e.g. coarse grasses and wildflowers) will be created within soft landscaped areas to maintain / enhance ecological connectivity.
R21	Hedgerow creation will use a range of native fruit, seed, nut and nectar-bearing shrub species appropriate to the location.
R22	The landscaping plans for the survey area will utilise plant species which encourage bats by providing additional food sources or roosting opportunities.
R23	Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland or woodland.
R24	The value of the survey area for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
R25	The value of the survey area for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.

0.5 Conclusions

- 0.5.1 The majority of the survey area is of moderate ecological value. Significant constraints to the Proposed Development were identified including Priority Habitats, and the potential presence of great crested newt, nesting birds, badger, roosting bats, foraging and commuting bats, hazel dormouse and reptiles. Further ecological surveys and impact assessment are required prior to submitting a planning application, to determine the value of the site for these species and to formulate a suitable mitigation strategy.

1 Introduction

1.1 Purpose of this Report

- 1.1.1 This report presents a Preliminary Ecological Appraisal (PEA) for the site of a proposed renovation project at Sunte House, Birchen Lane, Haywards Heath, West Sussex (Grid Reference: TQ 33387 25562). The report has been prepared to inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the Application Site.

1.2 Objectives and Approach of the Study

- 1.2.1 The objectives of the PEA were to:
- ▶ Identify features present on or adjacent to the Application Site which are ecologically significant and which may act as constraints or opportunities to the Proposed Development;
 - ▶ Consider the need for further ecological surveys which may be necessary; and
 - ▶ Make preliminary recommendations for the protection of important ecological features, to avoid or mitigate ecological impacts, and to enhance the Application Site for wildlife following construction.
- 1.2.2 The approach to establishing the ecological baseline found within this report has been achieved through:
- ▶ A desk study involving a review of statutory and non-statutory nature conservation sites, and records of habitats and species from the local area;
 - ▶ An extended UK Habitat Classification (UKHab) survey identifying the main habitats on and adjacent to the Application Site, and the presence of, or potential for, protected and / or notable species; and
 - ▶ A PEA of the effects of development proposals with respect to the nature conservation value of the site.

1.3 Survey Area

- 1.3.1 The Application Site boundary is expected to be the same as the survey area boundary.
- 1.3.2 The survey area lies to the north of the town of Hayward Heath in the Mid Sussex District of West Sussex. The survey area comprises c.2.96ha of previously developed land, currently dominated by a large Grade II listed property with numerous outbuildings and substantial grounds that include a grassland field, lawns, woodland, hedgerows and ornamental planting.

- 1.3.3 The survey area is bound to the north and east by residential properties, to the south by grassland fields and to the west by a strip of mature woodland. The extent of the survey area is outlined in red on Figure 1.1.
- 1.3.4 The wider landscape is characterised by extensive urban development to the east south and west with open countryside and large woodland blocks to the north. Four ponds lie within 500m of the survey area, which includes two within the survey area.

1.4 Proposed Construction Activities

- 1.4.1 The survey area was surveyed in order to assess its suitability for a number of renovation / remodelling projects. The scope of proposed works is still being developed, but may include extensions to the main house, conversions of the outbuildings, the construction of a new pool house, works to the pond and some relandscaping of the grounds. No indicative or proposed layout plans were available at the time of writing.

Sunte House, Haywards Heath

 Survey area

Figure 1.1: Survey area



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Ordnance Survey 0100031673

Scale (at A4): 1:4,000 Created by: EM
Date: Apr 2024 Reviewed by: NP
Drawing number:
UE0664ECOARB-SunteHouse_240402:Site location



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2 Survey Methodology

2.1 Desk Study

2.1.1 A desk-based study was undertaken to examine published information and biological records from within the search area (survey area centroid plus 1km). This was extended to 2km for records of bats and nationally designated sites, and to 5km for internationally designated sites. The desk study established the presence of designated sites of nature conservation interest, or records of protected / notable habitats / species within the Application Site and its surrounding area. This information was collected from the following sources:

- ▶ The 'MAGIC' (Multi-agency Geographic Information for the Countryside) website: www.magic.gov.uk; and
- ▶ Sussex Biological Records Centre (SxBRC).

2.2 Preliminary Ecological Appraisal

2.2.1 The PEA (compliant to British Standard BS42020:2013) is based on a survey of the site undertaken on Tuesday 9 April 2024 by an experienced ecologist. Weather conditions were cool (c.8°C), with a moderate breeze (Beaufort Scale 4), 100% cloud cover and short periods of light rain.

2.2.2 Within the survey area every parcel of land was classified, recorded and mapped using standard colour codes, in accordance with the habitat types specified within the methodology for UKHab survey (UKHab Ltd, 2023). This allows rapid visual assessment of the extent and distribution of different habitat types. The UKHab System comprises a five-level Primary Habitat Hierarchy and a list of Secondary Codes. Each recorded habitat parcel is allocated a single Primary Habitat Code. Secondary Codes are associated with habitat parcels, where it is relevant to the whole parcel. UKHab guidance recommends that secondary codes are added to habitat parcels to:

- ▶ confirm the identity of habitat mosaic and complexes,
- ▶ add information about habitat origin and modifications; and
- ▶ add information on environmental context, management and land use in a consistent manner.

2.2.3 The divergence from this methodology is in relation to individual trees, whereby these features are recorded and mapped separately from the baseline habitat that they sit within.

2.2.4 No Minimum Mapping Unit (MMU) has been applied to the survey area and professional judgement has been used to define notable habitat parcels. Target notes were used to provide supplementary information on features which are of particular interest, significant to specific construction proposals, too small to map or to provide additional details, for example relating to species composition and structure.

- 2.2.5 This basic methodology was extended to provide more detail in relation to habitats with potential to support rare or protected fauna, as described by the Chartered Institute of Ecology and Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017b). The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins (ed.), 2023). Where a species/group is not specifically evaluated, this indicates that no habitat of potential value for the species was identified during the survey.

Scope of the survey

- 2.2.6 The buffer zone for the desk study was set at 1km from the centre of the survey area (2km for bats and national sites / 5km for international sites) – a distance within which any notable ecological features likely to be affected by the Proposed Development would be identified.
- 2.2.7 All habitats within the survey area as indicated on Figure 1.1 were included in order to identify any ecological constraints that would be likely to apply to the scheme from within this zone. Adjacent habitats were also surveyed where appropriate in order to identify constraints falling outside of the Application Site and to place the survey area in its ecological context.

Evaluation criteria

- 2.2.8 Important ecological features were evaluated to the extent possible under the survey methods used, and in relation to a geographical frame of reference, i.e. international / European value being most important, then national, regional, metropolitan / county / district / borough, and lastly local (based on CIEEM, 2018).
- 2.2.9 Value judgements are based on various characteristics that contribute to the importance of ecological features. These include site designations (such as Sites of Special Scientific Interest, or for undesignated features, the extent, naturalness, conservation status (local or national importance and so on), and quality of the ecological resource. Quality can refer to habitats (for instance if they are particularly diverse, are a good example of a specific habitat type, or provide for the requirements of important species or assemblages), other features (such as connectivity provided by wildlife corridors or mosaics of habitats) or the richness and abundance of species populations or assemblages.

2.3 Habitat Suitability Index

- 2.3.1 The Habitat Suitability Index (HSI; Oldham et al, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newt (GCN) *Triturus cristatus*. The HSI incorporates ten suitability indices which are considered to affect GCN distribution. These are:
- ▶ Location (in Britain);
 - ▶ Pond area;
 - ▶ Desiccation rate (years out of ten that pond dries);
 - ▶ Water quality (subjective assessment);

- ▶ Percentage of pond shaded (% of pond margin shaded 1m from the bank);
- ▶ Number of waterfowl;
- ▶ Fish population (subjective assessment);
- ▶ Number of ponds within 1km;
- ▶ Terrestrial habitat quality; and
- ▶ Percentage macrophyte cover.

2.3.2 The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham et al, 2000) to identify the probability of a pond supporting great crested newt, as detailed in Table 2.1.

Table 2.1: Habitat quality of a pond for great crested newt in relation to HSI score

Habitat Quality	HSI Score
Poor	Below 0.5
Below Average	0.5 – 0.59
Average	0.6 – 0.69
Good	0.7 – 0.79
Exceptional	Above 0.8

2.3.3 The HSI gives an indication of whether a pond is suitable for breeding GCN, however, it should be noted that a low score does not preclude the possibility that GCN are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

2.4 Daytime Bat Walkover

2.4.1 Buildings within the survey area were subject to an external and where possible internal inspection for potential bat roost features (subject to safe access). All observable features potentially suitable for bats were noted and the overall suitability of the structure for roosting bats was classified with reference to Table 2.2.

Preliminary Roost Assessment

2.4.2 External building inspections from ground-level focused on access points and potential roosting features (PRF) such as lifted lead flashing, broken, lifted or missing roof or ridge tiles, cracks in the render or gaps between exterior cladding and weatherboards, soffits or fascias. The internal inspection included a search for live animals and other signs that give an indication of past or present occupancy. In the case of bats, typical indicators include droppings (which are characteristic and are often indicative of species), signs of fur oil staining, urine splashing, characteristic odours, and accumulations of discarded prey remains. It also assessed the overall

suitability of the structure for roosting bats focusing particularly on the interior roof spaces and cellars (subject to safe access). The objective was to establish whether each feature was of negligible, low, moderate or high roosting bat suitability, or a confirmed roost based on the presence of bats or their droppings.

Table 2.2: Potential suitability of structures for roosting bats (after Collins, J (ed.), 2023)

Suitability	Roosting habitats
None	No habitat features on site likely to be used by any roosting bats at any time of year (i.e. a complete absence of crevices / suitable shelter at all ground / underground levels).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these 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.e. unlikely to be suitable for maternity and not a classic cool / stable hibernation site, but could be used by individual hibernating bats).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity or hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure 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 habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool / stable hibernation site.
Confirmed roost	Bats or unequivocal evidence of bats found, i.e. bat droppings. Suitability categories are irrespective of the presence of a roost. Accordingly, if a roost is confirmed then the categorisation still stands and 'confirmed roost' should be added.

Suitability of Trees

- 2.4.3 The categorisation specified for buildings described above is not suitable for the classification of trees. As such, Table 2.3 provides assessment categories to inform the need for subsequent survey effort.

Table 2.3: Potential suitability of trees for roosting bats (after Collins, J (ed), 2023)

Suitability	Roosting habitats
None	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

2.5 Limitations

- 2.5.1 Biological records gathered during the desk study can provide an indication of the likely presence of a species on or adjacent to a site, however, the absence of records for protected species does not equate to evidence of their absence from the locality. Data search accuracy is variable and records are often georeferenced to the nearest 1km grid square.
- 2.5.2 Time of year when the survey was carried out and other variations will influence the results of the survey. Botanical species vary considerably in their flowering, seeding and fruiting periods, and surveys outside of these periods can confound accurate species identification. Where this is the case plants have been identified to lowest possible taxonomic group, normally genus. The possibility nonetheless exists for other species to be present within the survey area which were not recorded or otherwise indicated by the survey. Ornamental species are not included in botanical listings.
- 2.5.3 The survey reported herein was carried out in early spring, prior to flowering for many botanical species. However, diagnostic vegetative characteristics are often still discernible and the timing of the survey is not considered to be a significant limitation to meeting the report objectives.
- 2.5.4 There were no difficulties in gaining access to habitats within the survey area and assess protected species suitability. However, the adjacent residential gardens to the north, east could not be surveyed for signs of species such as badger *Meles meles* due to access restrictions. In addition, the off-site ponds (P3 and P4) could not be assessed for amphibian suitability as they lay on private land.
- 2.5.5 Internal access was gained to each of the buildings, however the loft space of B5 (Cottage) was not inspected due to health and safety concerns with the damaged ceiling and damaged asbestos panels.
- 2.5.6 This report aims to provide general advice on the ecological constraints associated with development proposals for the survey area and includes recommendations for further survey where appropriate. Where impacts are likely or further ecological surveys are recommended, a more detailed Ecological Impact Assessment (EclA) of the effects of the Proposed Development should be carried out based on the results of recommended surveys. The EclA will include detailed advice on ecological avoidance, mitigation, enhancement and/or compensation measures. This is in line with the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017a, 2017b, 2018).
- 2.5.7 The details of this report will remain valid for a period of 18 months from the date of the survey (April 2024), after which the validity of this assessment should be reviewed to determine whether further updates are necessary (CIEEM, 2019). Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the Application Site boundary or the Proposed Development upon which this report was based.
- 2.5.8 See Appendix VI for general Legal and Technical Limitations which apply to this document.

2.6 Personnel

- 2.6.1 The survey was carried out by Dan Maude BSc (Hons) MRes, a Senior Ecologist with three-years' professional consultancy experience in ecological field survey for a range of sites and development projects. Dan was assisted by Joe Dale BSc (Hons) MSc, an Assistant Ecologist with two years' survey experience. The report was extensively reviewed by Nick Pincombe BA (Hons) MSc CEnv MIEMA MCIEEM, Director of Urban Edge Environmental Consulting, who has nineteen years' experience in leading survey and impact assessment teams for a wide range of ecology and environmental planning projects. Nick holds Natural England Class Licences to survey for bats (WML-CL18) and great crested newt (WMLCL08).

3 Results

3.1 Desk Study

Statutory and non-statutory site designations

- 3.1.1 There are three nationally important Local Nature Reserves (LNR) within the desk study search area, along with one Local Wildlife Site (LWS). There are no internationally important wildlife sites within the desk study search area. The information provided by SxBRC regarding these sites is presented in Table 3.1, while Figure 3.1 and Figure 3.2 show their locations in relation to the survey area.

Table 3.1: Nature conservation sites within the desk study search area

Site name	Location*	Description
National statutory sites		
Scrase Valley LNR	c.1.3km south-east	Habitats include marshland, woodland and grassland. There are several locally and nationally rare plants within the reserve such as marsh cinquefoil <i>Potentilla palustris</i> , meadow thistle <i>Cirsium dissectum</i> and marsh speedwell <i>Veronica scutellata</i> . Along the banks of the stream purple toothwort <i>Lathraea clandestina</i> has been recorded which is only present on a handful of sites within Sussex.
Blunts and Paiges Wood LNR	c.1.6km south-west	The site has been a nature reserve since 1967 and the woodland dates to at least the eighteenth century. The woodland is comprised of oak <i>Quercus spp.</i> , hornbeam <i>Caprinus betulus</i> , birch <i>Betula spp.</i> , hazel <i>Corylus avellana</i> and alder <i>Alnus spp.</i> It is important for species such as hazel dormice <i>Muscardinus avellanarius</i> , bats and glow worms <i>Lampyrus noctiluca</i> . Coppicing is carried out to maintain the biodiversity.
Eastern Road LNR	c.1.8km east	The site has a mosaic of woodland, scrub, rough grassland and wetland. There is a diverse range of plants, insects and birds. The old and new wetland areas support healthy populations of frogs, newts and aquatic insects such as dragonflies.
Non-statutory sites		
Wickham Woods LWS	c.500m north	This site is a deciduous woodland adjacent to Haywards Heath Golf Course on the northern outskirts of Haywards Heath. It consists of coppice with a rich ground flora. There are some wet flushes and a pond. Some areas of the woodland have been planted up as plantations.

* Approximate distance and bearing from the survey area

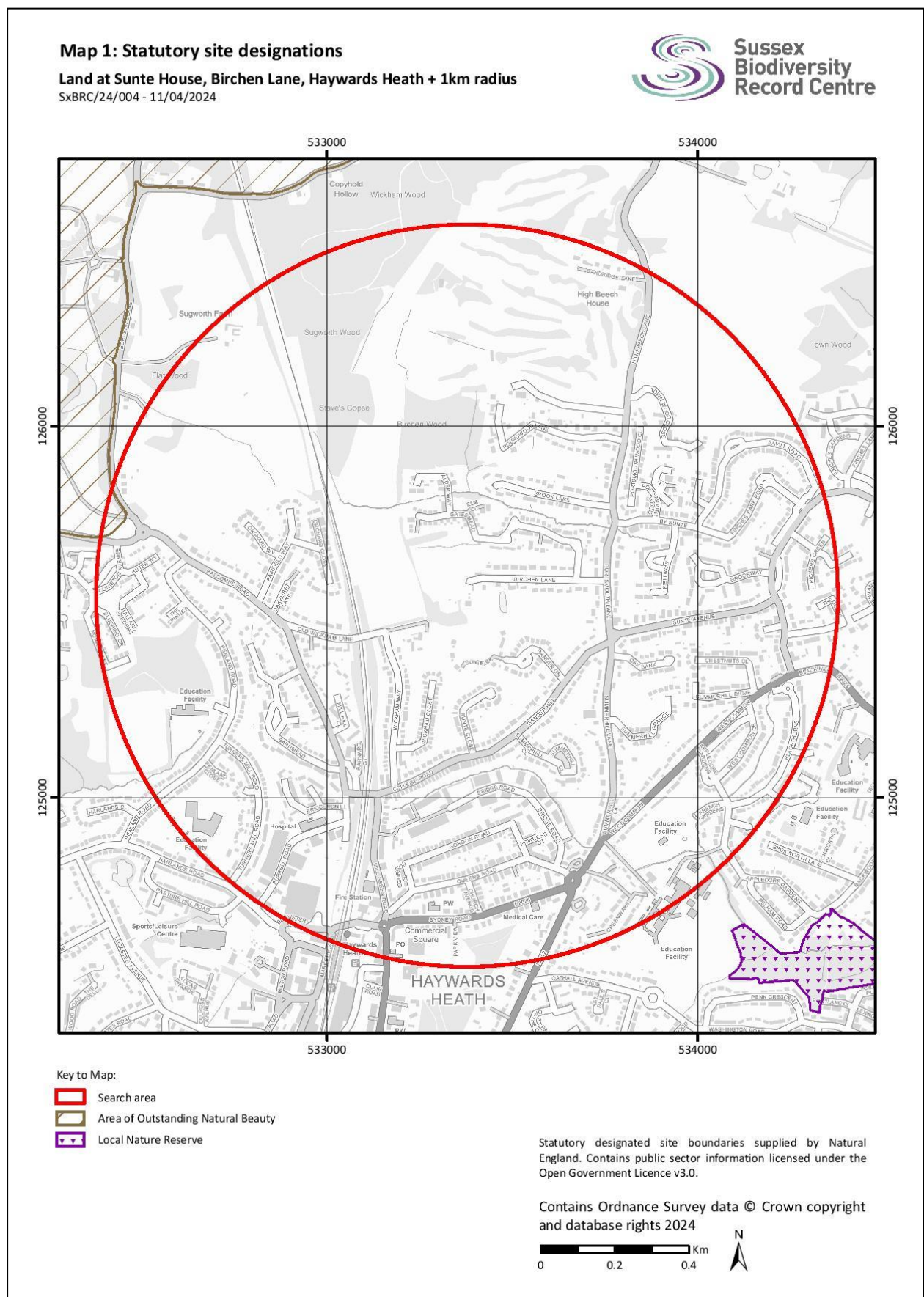


Figure 3.1: Statutory nature conservation sites within 1km of the survey area

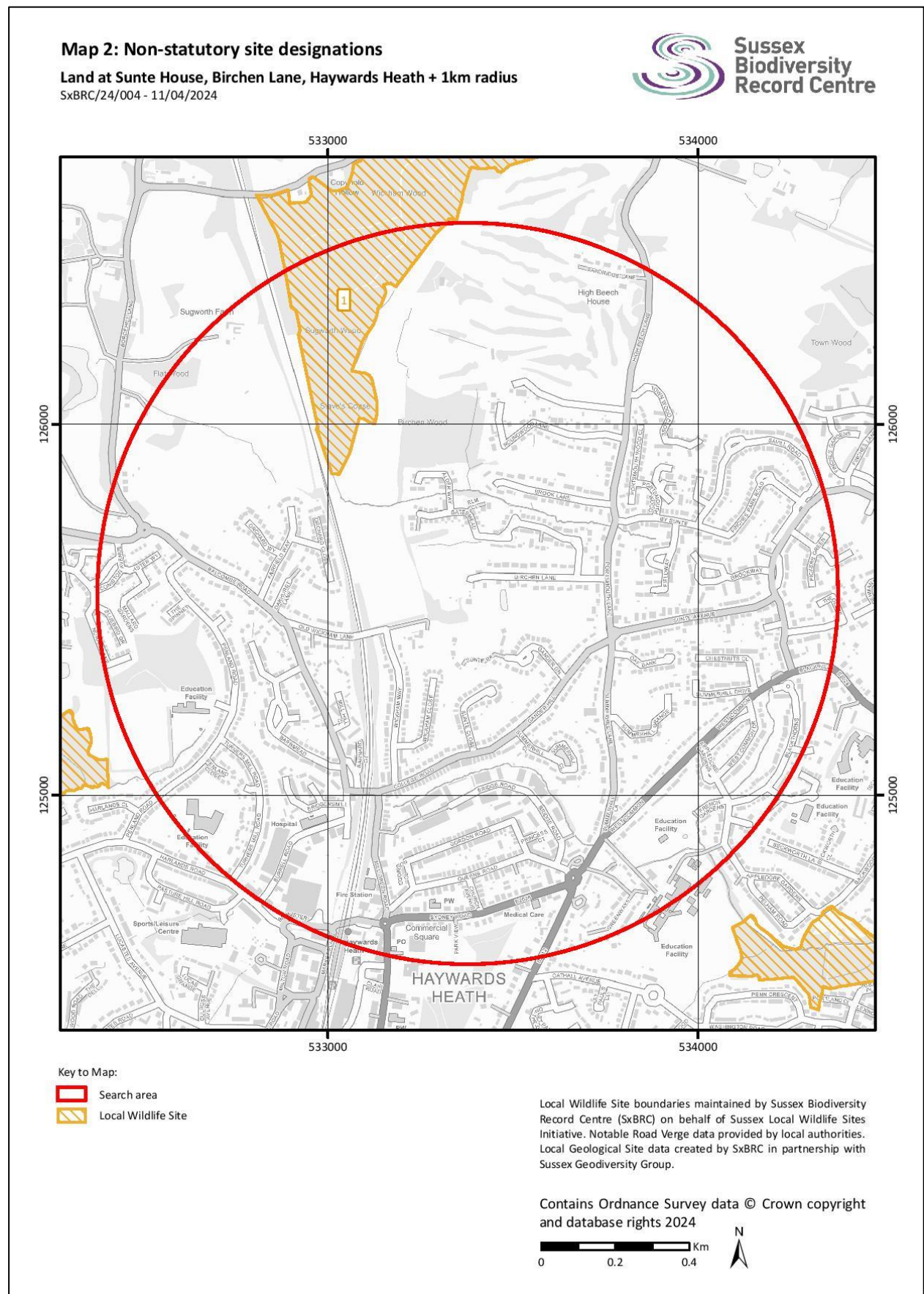


Figure 3.2: Non-statutory nature conservation sites within the desk study search area

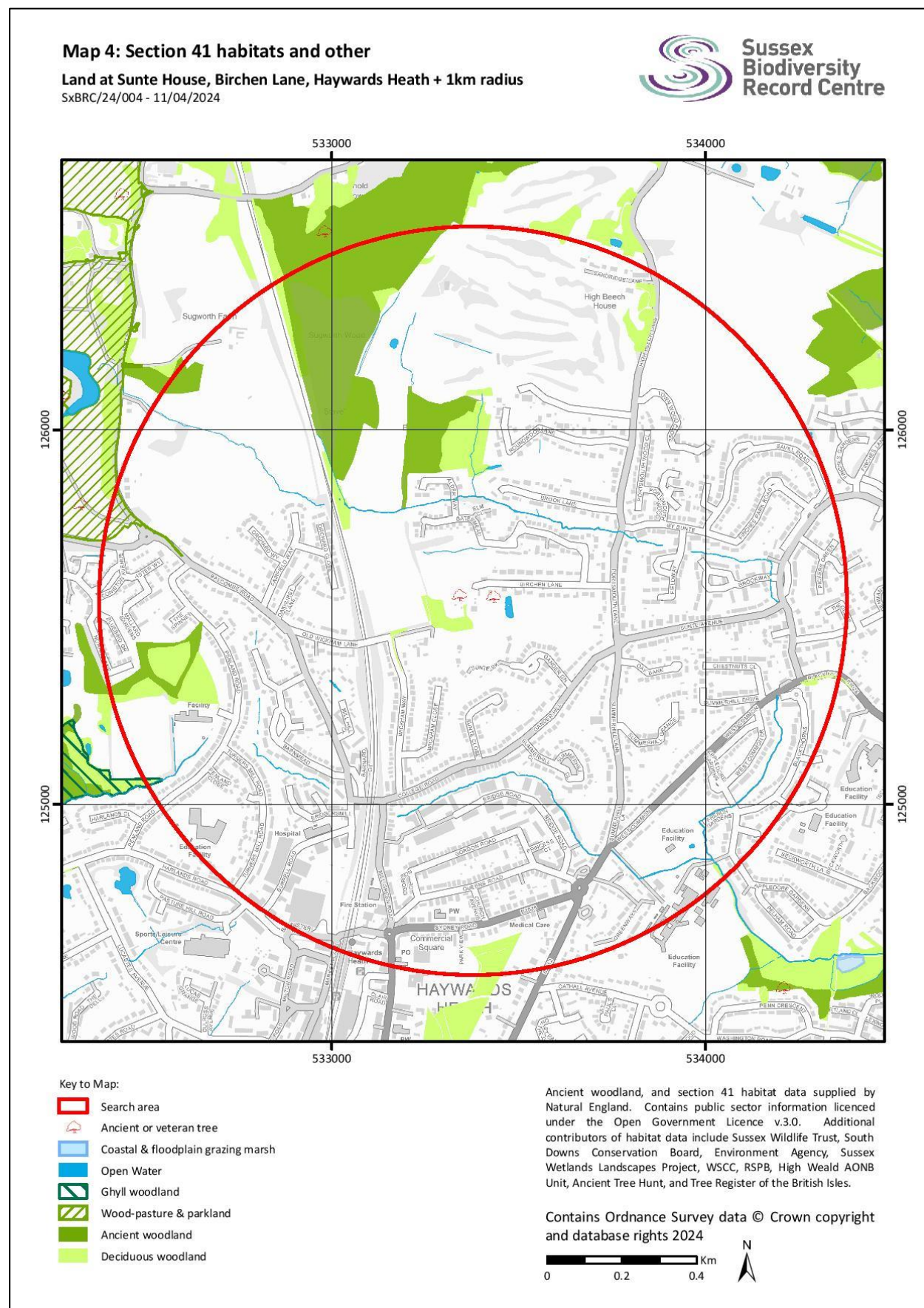


Figure 3.3: Priority Habitats within the desk study search area

Priority Habitats

- 3.1.2 Priority Habitats include those listed on local Biodiversity Action Plans and Habitats of Principal Importance (HPI) listed under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC). SxBRC and a search of the MAGIC database returned the following data on priority and other habitats within the desk study search area: Coastal and Floodplain Grazing Marsh, Wood-pasture and Parkland, Deciduous Woodland and Ancient Woodland. Deciduous Woodland is present within the survey area, as are two Ancient Trees; see Figure 3.3.

Records of protected, rare and notable species

- 3.1.3 Biological records were obtained from SxBRC for the desk study search area and are summarised in Table 3.2.

Table 3.2: Records of protected, rare & notable species within the desk study search area

Group	Species	Designation
Amphibians	Great crested newt	Habs.Dir.2&4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Common toad <i>Bufo bufo</i>	WCA Sch.5 part, NERC s41
	Palmate newt <i>Lissotriton helveticus</i> , Smooth newt <i>Lissotriton vulgaris</i> , Common frog <i>Rana temporaria</i>	WCA Sch.5 part
Birds (note: species may appear more than once)	Kingfisher <i>Alcedo atthis</i> , Hen harrier <i>Circus cyaneus</i> , Little egret <i>Egretta garzetta</i> , Peregrine <i>Falco peregrinus</i> , Mediterranean gull <i>Larus melanocephalus</i> , Red kite <i>Milvus milvus</i> , Osprey <i>Pandion haliaetus</i> , Shag <i>Phalacrocorax aristotelis</i>	Birds Dir.1
	Kingfisher, Hen harrier, Peregrine, Brambling <i>Fringilla montifringilla</i> , Mediterranean gull, Common crossbill <i>Loxia curvirostra</i> , Hobby <i>Falco subbuteo</i> , Red kite, Osprey, Black redstart <i>Phoenicurus ochruros</i> , Firecrest <i>Regulus ignicapillus</i> , Green sandpiper <i>Tringa ochropus</i> , Redwing <i>Turdus iliacus</i> , Fieldfare <i>Turdus pilaris</i> , Barn owl <i>Tyto alba</i>	WCA Sch.1
	Lesser redpoll <i>Acanthis cabaret</i> , Hen harrier, Cuckoo <i>Cuculus canorus</i> , Hawfinch <i>Coccothraustes coccothraustes</i> , Yellowhammer <i>Emberiza citrinella</i> , Reed bunting <i>Emberiza schoeniclus</i> , Corn bunting <i>Emberiza calandra</i> , Lesser spotted woodpecker <i>Dendrocopos minor</i> , Dunnock <i>Prunella modularis</i> , Herring gull <i>Larus argentatus</i> , Linnet <i>Linaria cannabina</i> , Spotted flycatcher <i>Muscicapa striata</i> , Curlew <i>Numenius arquata</i> , House sparrow <i>Passer domesticus</i> , Tree sparrow <i>Passer montanus</i> , Wood warbler <i>Phylloscopus sibilatrix</i> , Marsh tit <i>Poecile palustris</i> , Bullfinch <i>Pyrrhula pyrrhula</i> , Turtle dove <i>Streptopelia turtur</i> , Starling <i>Sturnus vulgaris</i> , Song thrush <i>Turdus philomelos</i> , Ring ouzel <i>Turdus torquatus</i> , Lapwing <i>Vanellus vanellus</i>	NERC s41
	Lesser redpoll, Hen harrier, Cuckoo, Hawfinch, Lesser spotted woodpecker, Corn bunting, Yellowhammer, Herring gull, Linnet, Nightingale <i>Luscinia megarhynchos</i> , Spotted flycatcher, House	RL

Group	Species	Designation
	sparrow, Tree sparrow, Shag, Wood warbler, Marsh tit, Woodcock <i>Scolopax rusticola</i> , Turtle dove, Starling, Redwing, Fieldfare, Ring ouzel, Mistle thrush <i>Turdus viscivorus</i> , Song thrush, Lapwing, Swift <i>Apus apus</i> , House Martin <i>Delichon urbicum</i> , Greenfinch <i>Chloris chloris</i>	
	Greylag goose <i>Anser anser</i> , Mallard <i>Anas platyrhynchos</i> , Meadow pipit <i>Anthus pratensis</i> , Black-headed gull <i>Chroicocephalus ridibundus</i> , Stock dove <i>Columba oenas</i> , Reed bunting, Kestrel <i>Falco tinnunculus</i> , Snipe <i>Gallinago gallinago</i> , Common gull <i>Larus canus</i> , Lesser black-backed gull <i>Larus fuscus</i> , Mediterranean gull, Osprey, Willow warbler <i>Phylloscopus trochilus</i> , Bullfinch, Tawny owl <i>Strix aluco</i> , Green sandpiper, Wood pigeon <i>Columba palumbus</i> , Moorhen <i>Gallinula chloropus</i> , Sparrowhawk <i>Accipiter nisus</i> , Rook <i>Corvus frugilegus</i> , Common whitethroat <i>Curruca communis</i> , Wren <i>Troglodytes troglodytes</i> , Black redstart, Grey wagtail <i>Motacilla cinerea</i>	AL
Fish	European eel <i>Anguilla Anguilla</i>	NERC s41
Invertebrates	Purple emperor <i>Apatura iris</i> , Chalk hill blue <i>Polyommatus coridon</i>	WCA Sch.5 part
	Wall <i>Lasiommata megera</i> , White admiral <i>Limenitis Camilla</i> , Cinnabar <i>Tyria jacobaeae</i>	NERC s41
Mammals (terrestrial)	Noctule <i>Nyctalus noctula</i> , Hazel dormouse, Soprano pipistrelle <i>Pipistrellus pygmaeus</i> , Brown long-eared <i>Plecotus auritus</i>	Habs.Dir.4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Serotine <i>Eptesicus serotinus</i> , Daubenton's bat <i>Myotis daubentonii</i> , Brandt's bat / Whiskered <i>Myotis brandtii</i> / <i>mystacinus</i> , Natterer's bat <i>Myotis nattereri</i> , Nathusius' pipistrelle <i>Pipistrellus nathusii</i> Common pipistrelle <i>Pipistrellus pipistrellus</i>	Habs.Dir.4, CHS Sch.2, WCA Sch.5 full
	Red squirrel <i>Sciurus vulgaris</i>	WCA Sch.5 full, NERC s41
	Hedgehog <i>Erinaceus europaeus</i>	NERC s41
Plants	Bluebell <i>Hyacinthoides non-scripta</i>	WCA Sch.8
	Cornflower <i>Centaurea cyanus</i> , Chamomile <i>Chamaemelum nobile</i> ,	NERC s41
Reptiles (terrestrial)	Slow worm <i>Anguis fragilis</i> , Grass snake <i>Natrix helvetica</i> , Common lizard <i>Zootoca vivipara</i>	WCA Sch.5 part, NERC s41

Birds.Dir.1 Wild Birds Directive 2009/147/EC Annex 1

Habs.Dir.2/4 Habitats Directive 92/43/EEC Annex 2 or 4

CHS Sch.X Conservation of Habitats & Species Regulations 2017 Schedules 2 (EPS animals) or 5 (EPS plants)

WCA s1 / Sch.X Wildlife and Countryside Act 1981 Section 1 / Schedules 1, 5 (fully or partially protected), 6 or 8

NERC s41 Natural Environment & Rural Communities Act 2006 Section 41 Species of Principal Importance

RL / AL Red/Amber Listed (IUCN or Birds of Conservation Concern 5 (Stanbury et al., 2021))

3.2 Habitats

3.2.1 The following UKHab habitats were identified within or adjacent to the survey area and are shown on the UKHab habitats plan at Appendix I. The habitats are described below broadly in the order of their extent, and Table 3.3 provides the area / length of each habitat type recorded within the survey area.

Table 3.3: Area / Lengths of habitat types recorded within the survey area

Habitat type*	Measurement
Area habitats	
Modified grassland	1.44ha
Other mixed woodland	0.58ha
Other developed land	0.36ha
Lowland mixed deciduous woodland	0.21ha
Introduced shrub	0.14ha
Buildings	0.09ha
Ponds	0.09ha
Ponds 46	7.4m ²
Other neutral grassland 16, 81	0.06ha
Individual trees	n/a
Linear habitats	
Native hedgerows	283m
Non-native and ornamental hedgerow	105m

*secondary codes listed where relevant: 16 – tall forbs; 46 – ornamental lake or pond; 81 – ruderal / ephemeral

Modified grassland

3.2.2 The north-west of the survey area comprised a large grassland horse paddock (MG1) that was fenced at the boundaries. The sward was tussocky, relatively tall (c.20-30cm), did not appear regularly managed and was dominated by grasses with a low species richness. Species included cock's foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* which were abundant, along with occasional common sorrel *Rumex acetosa*, docks *Rumex spp.*, red dead nettle *Lamium purpureum*, false oatgrass *Arrhenatherum elatius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, sweet vernal-grass *Anthoxanthum odoratum*, and rarely occurring dandelions *Taraxacum spp.*, smaller cat's tail *Phleum bertolonii*, and meadow buttercup *Ranunculus acris*.

3.2.3 A large, shortly mown manicured lawn was present directly east of the Main House (MG2). The lawn was regularly managed to maintain a short, neat structure and it had a low species richness. Species included abundant mosses with red fescue *Festuca rubra* and Yorkshire fog, with occasional yarrow *Achillea millefolium*, mouse-ear hawkweed *Pilosella officinarum*, white clover *Trifolium repens* and field wood-rush *Luzula campestris*. Similar patches of shortly mown grassland flanked the southern entrance gates but species richness in these areas was moderately

higher and also included frequent crocus *Crocus spp.*, occasional lesser celandine *Ficaria verna*, germander speedwell *Veronica chamaedrys*. A single common spotted orchid *Dactylorhiza fuchsia* was recorded.

- 3.2.4 Less managed strips of modified grassland with a greater species richness extended alongside the western edge of the central road and to the south of the horse paddock (MG3). These grasslands had a taller structure (c.20cm) and included abundant cock's foot and perennial ryegrass *Lolium perenne*, with frequent crocus, occasional false oat-grass, and rarely occurring lord's and ladies *Arum maculatum*, creeping cinquefoil *Potentilla reptans*, dandelion, cuckoo flower *Cardamine pratensis* and fritillaries *Fritillaria*.
- 3.2.5 A final patch of modified grassland surrounded the tennis court and kitchen garden which was shortly mown and dominated by perennial ryegrass with a low species richness (MG4).

Other mixed woodland

- 3.2.6 Small patches of other mixed woodland were present along the southern boundary and north-eastern boundary. These woodland patches contained mature native and non-native trees including Scot's pine *Pinus sylvestris*, cherry *Prunus avium*, pedunculate oak *Quercus robur*, holm oak *Quercus ilex*, yew *Taxus baccata*, beech *Fagus sylvatica*, silver birch *Betula pendula*, sycamore *Acer pseudoplatanus*, London plane *Platanus × acerifolia* and hazel *Corylus avellana*. The understorey was comprised predominantly of planted non-native shrubs and appeared managed. Understorey species included common rhododendron *Rhododendron ponticum*, magnolia *Magnolia spp.*, dogwood *Cornus sanguinea*, camellia *Camellia spp.*, Portugal laurel *Prunus lusitanica*, Japanese maple *Acer palmatum*, firethorn *Pyracantha spp.*, bay *Laurus nobilis* and holly *Ilex aquifolium*. The woodlands at the southern boundary had regularly trodden footpaths and the ground flora included garlic mustard *Alliaria petiolata*, pendulous sedge *Carex pendula*, lord's and ladies, herb Robert *Geranium robertianum*, ivy *Hedera helix*, and Ancient Woodland indicator species such as bluebell, wood anemone *Anemone nemrosa* and ramsons *Allium ursinum*.

Other developed land

- 3.2.7 A vehicle access road ran through the centre of the survey area and there were stone walkways and patios leading to various areas of the grounds. There was a tennis court to the west and large concrete yard between the buildings to the east.

Lowland mixed deciduous woodland

- 3.2.8 The woodland at the western boundary, that continued offsite, was of higher quality and contained mature specimens of pedunculate oak with a relatively dense understorey of hawthorn *Crataegus monogyna* and holly. Ancient Woodland indicator species were present in the field layer including bluebell, wood anemone, butcher's broom *Ruscus aculeatus* and ramsons.

Introduced shrub

- 3.2.9 Ornamental planting was common across the survey area and included a range of non-native species and native cultivars. Planted areas included the edges of the other mixed woodland,

kitchen garden, perimeters of the central road and borders of the buildings. The majority of the introduced shrubs were well maintained with species including viburnum *Viburnum spp.*, Oregon grape *mahonia spp.*, cherry laurel *Prunus laurocerasus*, spotted laurel *Aucuba japonica*, barberry *Berberis spp.*, common rhododendron, New Zealand flax *Phormium tenax*, magnolia, rose *Rosa spp.* and wall cotoneaster *Cotoneaster horizontalis*.

- 3.2.10 Common rhododendron, present throughout the other mixed woodland, and wall cotoneaster (shown as TN1) are invasive non-native species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Buildings

- 3.2.11 The survey area contained nine buildings (B1-B9) and four structures (S1-S4) which were comprised of a range of sizes and construction materials. A description of each building and structure is located within the PRA of buildings at Table 3.3

Ponds

- 3.2.12 There were two ornamental ponds within the survey area (P1 and P2). P1 was a relatively large waterbody (c.800m²) at the eastern boundary of the survey area and to the east end of the large garden lawn. P1 had a narrow fringe of marginal vegetation at the western edge and was bound by ornamental plants and a footpath at the eastern edge and there was a small, vegetated island and bridge at the centre.
- 3.2.13 Pond P2 was an ornamental stone pond that lay directly east of the main house within the patio. P2 had a stone water fountain at the centre with macrophytes below the water level. A population of smooth newts were recorded within P2.

Other neutral grassland

- 3.2.14 A small patch of other neutral grassland lay at the north-eastern corner of the survey area and to the rear of the Barn (B9). The grassland was dominated by tall forbs such as hogweed *Heracleum sphondylium*, garlic mustard and common nettle with ephemeral / ruderal plants including cleavers *Galium aparine*, dandelion and forget-me-not *Myosotis spp.* Other grassland plants included occasional red dead nettle, cock's foot, ribwort plantain *Plantago lanceolata*, pendulous sedge and lord's and ladies.

Individual trees

- 3.2.15 The survey area contained many individual trees that ranged from small, ornamental species to very large natives. Of note was a very large pedunculate oak (T36) at the northern edge of the large lawn and a second very large pedunculate oak (T85) at the southern edge of the horse paddock. Both T36 and T85 were recorded as Ancient Trees in the desk study data. Other native individual tree species included alder *Alnus spp.*, cherry, yew, ash *Fraxinus excelsior* and common lime *Tilia × europaea*.

Hedgerows

- 3.2.16 There were four hedgerows at the survey area boundaries. H1 was a newly planted native hedgerow at the northern boundary of the horse paddock. The hedgerow comprised distinct small shrubs, many of which had plastic collars, that had yet to merge into a fully formed and dense hedge. Species included hazel, cherry, hornbeam, hawthorn and silver birch. H1 was c.3-5m high, 1m wide and 142m long.
- 3.2.17 H2 was a native hedgerow at the eastern boundary of the survey area. The hedgerow comprised holly and yew that were cut infrequently but still maintained in a neat shape. H2 was c.3m high, 2m wide and 92m long.
- 3.2.18 H3 was an ornamental hedgerow at the eastern edge of the southern boundary that ran along the edge of the other mixed woodland. The hedge was heavily manged to maintain a neat shape and comprised camelia and yew in distinct sections. H3 was c.4-5m high, 2m wide and 71m long.
- 3.2.19 H4 was a native hedgerow that formed the western edge of the southern boundary and ran along the edge of the other mixed woodland. The was similar in structure to H3 and was maintained in a neat shape but comprised predominantly of yew with occasional holly. H4 measured c.3m high, 1.5m wide and 50m long.
- 3.2.20 H5 was an ornamental hedge comprised entirely of hornbeam that ran along the northern edge of the tennis court. H5 measured c.4m tall, 1.5m wide and 34m long.



Modified grassland MG1 – view looking north-west



Modified grassland MG2 – lawn at east of survey area, view looking east



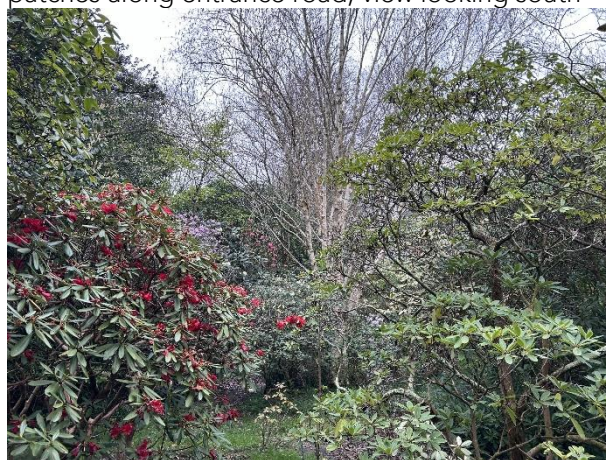
Modified grassland MG2 – Short grassland patches at entrance, view looking east



Modified grassland MG3 – Less managed grassland patches along entrance road, view looking south



Other mixed woodland – internal structure, view looking east



Other mixed woodland – internal structure, view looking west



Lowland mixed deciduous woodland – western boundary, view looking south-west



Other developed land - central road, view looking south



Introduced shrub – patches common across the survey area



Introduced shrub – adjacent to B2 and B3



Pond P1 – view looking south-east



Pond P2 – ornamental pond



Other neutral grassland with tall forbs and ephemeral / ruderal – view looking north



Other neutral grassland with tall forbs and ephemeral / ruderal – view looking west



Individual trees – common across survey area
(Ancient tree T36)



Individual trees – common across survey area
(Ancient tree T85 in background)



Hedgerow H1 – view looking west



Hedgerow H2 – view looking north



Hedgerow H3 – view looking west



Hedgerow H4 – view looking west



Hedgerow H5 – view looking west

3.3 Daytime Bat Walkover

3.3.1 Trees were not surveyed for roosting bat suitability however a number of PRFs were noted on mature trees including Ancient Trees T36 and T85.

Preliminary Roost Assessment

3.3.2 Table 3.4 provides a full assessment of the suitability of buildings on site for roosting bats.

Table 3.4: Preliminary Roost Assessment of buildings within the survey area

Preliminary Roost Assessment of buildings
B1: Main house
External description
The main house was a two-storey, Grade II listed property that was constructed of brick walls with a multi-hipped, slate tile roof in a broadly U-shape footprint. There were ornate timber soffits at the north, east, south and partial west elevations with bricked eaves at the remainder of the western elevation. The roof had three timber-framed, pitched dormer windows that had slate roofs and there were several tall, brick chimney stacks. There was a single inset wall at the northern elevation that was clad with clay hanging tiles and there were timber framed windows and doors across the building.
Internal description
The ground and first floor were well maintained liveable spaces. The roof void had mostly been converted into liveable space but there remained two small, undeveloped voids. Void V1 was at the north-west of the property and measure c.8m x 7m x 3m to the apex. V1 comprised exposed timber joists and rafters, well maintained bitumen sarking and insulation roll. There was a large water tank at the centre and a disused wasp nest at the northern eave. Void V2 was located at the centre of the northern elevation and was accessed through a small hatch in the wall of a recreation room. V2 was split into two sections with a raised, timber floored section at the entrance hatch that led to a lower, unboarded section. V2 measured c.5m x 5m x 2m to the apex. V2 was partially boarded with timber floorboards and had exposed timber rafters and beams, timber sarking and insulation roll. There was a narrow strip of faint natural light entering along the northern eave. A large basement was present that spanned the footprint of the main house. The basement was cool and damp but relatively well-lit from a small window and grate at the eastern aspect. There were

Preliminary Roost Assessment of buildings

unpainted brick walls and floor, with a loose-fitting Artex ceiling. A number of cavities were located across the basement but no access points to bats were identified.

Evidence of bats

Two potential bat dropping found in Void V2, one of which was crumbled to dust (a common characteristic of bat droppings).

Potential roost features (PRF)

Numerous lifted slate tiles across the roof with occasional missing tiles, particularly on the eastern aspect. Lifted lead flashing on the northern aspect and at the edges of dormer windows.

Numerous lifted hanging tiles at the northern elevation.

Gaps in the soffit box at the northern elevation.

Possible gap under the eastern dormer window on the southern elevation.

Lifted timber soffit on the western elevation.

Overall suitability for roosting bats

High suitability

B2: Dairy

External description

The Dairy was a small, single storey, brick built rectangular building that had a half-hipped roof structure clad with a combination of slate, flat and pan clay tiles. The roof tiles were loosely fitted, and many were lifted, missing or broken. There were timber framed windows at the western elevation and timber framed doors at the north and south elevations.

Internal description

The entire roof structure of the Dairy was open and was formed of a queen post roof structure, with exposed timber rafters, beams and purlins. There was no sarking, which exposed the roof tiles. The brick walls were roughly painted white and there was a concrete floor. A brick wall separated the building into two 'rooms' but the wall did not extend into the roof which was continuous. The building was bright from natural light that entered through the windows and several holes in the roof.

Evidence of bats

None

Potential roost features (PRF)

Frequent lifted, missing or broken roof tiles.

Holes in the roof where several tiles are missing.

Large gaps along the eaves that provide internal access.

Spaces under the rafters, purlins and timber trusses.

Overall suitability for roosting bats

Moderate suitability

B3: Log shed

External description

The Log shed was a small, square, brick-built, single storey building that had a pitched, clay tile roof with timber framed doors and windows on the western elevation. There was a timber soffit box on the western

Preliminary Roost Assessment of buildings

elevation, but the eastern eaves were fixed directly to a brick, garden wall. Both gables were clad with horizontal timber panels.

Internal description

The roof structure was exposed and comprised of timber joists, rafters and purlins with no sarking which exposed the tiles. There was a double skin of timber panelling on the wall portions of the gable ends, but the gable itself had only the single external skin of timber panels. The Log shed was divided into two sections with a brick wall at the centre – though this did not split the roof structure. The northern section stored garden tools and the southern section stored large, uncut logs. Natural light entered the Log shed through a large hole at the south-east corner.

Evidence of bats

None

Potential roost features (PRF)

Many lifted or missing roof and ridge tiles.
 Small hole at the northern end of the soffit box which provided access into it.
 Gaps along the eave of the eastern elevation.
 Loose timber panelling on the southern elevation including a large hole which provided internal access.
 Gaps behind timber rafters and purlins.
 Cavity between the double skinned timber panelled section of the gable ends.

Overall suitability for roosting bats

Moderate suitability

B4: Garage

External description

Single-storey, brick built, rectangular building with a pitched, clay tile roof and timber soffit boxes. There were large, timber garage doors at the western elevation and a timber framed lean-to with glass roof panels at the northern elevation. A timber external staircase led to an entrance door on the southern gable which provided access into the roof void.

Internal description

The ground floor was a well-maintained garage that contained a car along with other household and garden items. The roof void had timber panels across the rafters with exposed timber trusses and queen posts, unpainted timber floorboards and unpainted brick walls. Several of the timber roof panels were broken which revealed bitumen sarking over the roof tiles. The roof void was well lit from a window at the northern elevation.

Evidence of bats

None

Potential roost features (PRF)

Lifted, missing and broken roof and ridge tiles were common across the external roof structure.
 Both soffits had lifted away from the wall providing access into them and there were gaps into the soffits at the northern box ends.
 Narrows gaps from missing mortar between bricks on the gable ends.
 Large cavity between the roof tiles and the internal timber panelling.

Preliminary Roost Assessment of buildings	
<i>Overall suitability for roosting bats</i>	
High suitability	
B5: Cottage	
<i>External description</i>	
Small, T-shaped bungalow with brick walls and a cross-pitched roof clad with clay roof tiles. There were timber soffits boxes along the eaves of the northward extending section and timber framed windows and doors across the building. The roof had a small, brick chimney stack at the western edge with lead flashing where it joined the tiles.	
<i>Internal description</i>	
The ground floor was separated into a series of well-lit but poorly maintained rooms which showed significant signs of damp. The ceiling had partly collapsed. Access to the roof void was not attempted due to health and safety concerns with the structural integrity of the ceiling as well as the potential presence of asbestos.	
<i>Evidence of bats</i>	
None	
<i>Potential roost features (PRF)</i>	
Lifted roof and ridge tiles were ubiquitous across the roof structure. Damaged brickwork at the north-eastern corner.	
<i>Overall suitability for roosting bats</i>	
High suitability (precautionary basis due to restricted roof access)	
B6: Stables	
<i>External description</i>	
Single-storey, narrow building constructed of a stone base but appeared to have been partially rebuilt with breezeblock. The roof was pitched and clad with interlocking concrete roof tiles that sat tightly together. The ridge tiles had raised 'vent' sections. The eaves were exposed and open into the building. There were timber framed windows on the south and east aspect and the eastern elevation was clad with timber panelling. A series of timber shuttered windows ran along the northern elevation which were partly covered by introduced shrubs.	
<i>Internal description</i>	
There were exposed timber queen posts, rafters and beams but the purlins and tiles were covered within bitumen sarking that was torn in places. The brick walls were painted white and there was a concrete floor. There was significant natural light entering through the windows. Access into the building for bats could be gained at the eaves, timber shutters or through the vented ridge tiles but internal roosting opportunities were limited.	
<i>Evidence of bats</i>	
None	
<i>Potential roost features (PRF)</i>	
Exposed eaves that had large gaps leading into the building. Timber shutters provided internal access. Vented ridge tiles provided internal access.	

Preliminary Roost Assessment of buildings

Small gaps in the timber cladding on the eastern aspect.

The roof tiles were tightly fitted and much of the internal roosting space available had been occupied by nesting birds.

Overall suitability for roosting bats

Low suitability

B7: Cowshed

External description

Single-storey rectangular building with a brick base and gable walls but had been partially rebuilt with breezeblocks. The Cowshed was attached to the Cottage (B5) at the northern elevation and to the Byre (B8) at the southern elevation. There was a pitched, slate and clay tiled roof that was in very poor condition and there were exposed eaves and small timber framed windows and doors.

Internal description

Exposed timber trusses, joists, rafters and purlins with no sarking over the roof tiles. The walls were partially painted and there was a concrete floor. A timber partition wall split the building into two sections but did not split the roof area. The Cowshed continued into the Byre (B8) at the southern end through a partly open doorway. The building was relatively dark, though light did enter through the small windows and through large several holes in the roof. A large sheet of tarpaulin had been used to cover a collapsed section of roof at the northern end of the building.

Evidence of bats

None

Potential roost features (PRF)

Extensive lifted, missing or broken roof tiles across the entire roof.

Large holes in the roof from missing tiles.

Open eaves provided internal access.

Access through the connected Byre (B8)

Crevices behind timber joists, rafters, posts and purlins.

Overall suitability for roosting bats

High suitability

B8: Byre

External description

Timber framed lean-to that was mostly open fronted on the northern elevation with exposed timber posts and breezeblock walls. The lean-to was fixed to a high, brick garden wall and had a mono-pitched clay tile roof. Much of the roof was overgrown with bramble or covered in a dense carpet of moss.

Internal description

Most of the building was open fronted on the northern elevation with sealed walls on the eastern and southern elevation. The western elevation continued into the Cowshed (B7) through a partly open entrance way. There were exposed timber joists, posts rafters and purlins. Numerous bird nests were present where the roof joined the garden wall.

Evidence of bats

None

Preliminary Roost Assessment of buildings

Potential roost features (PRF)

Lifted, missing or broken roof tiles, though much of the roof was covered with dense moss.
 Open fronted northern aspect easily allowing internal access and internal access to B7.
 Crevices behind timber rafters and purlins.

Overall suitability for roosting bats

Moderate suitability

B9: Barn

External description

Traditional barn building that was constructed with a timber frame and clad with a single skin of horizontal timber panels. The Barn had a half-hipped roof with high sided walls on the northern, eastern and southern elevations. The western aspect had an inset, large, timber entrance door that sat between two 'lean-to' sections. The roof of the lean-to sections formed a continuation of the main roof but had separate internal areas and breeze block walls on the western aspect. There were small windows on the lean-tos and one window northern elevation of the main barn.

Internal description

There were high sided, single skinned timber walls and exposed queen posts, rafters and wall frames. Many of the timbers were original but a significant proportion had been recently replaced, particularly the rafters. There was relatively new and tightly fitting bitumen sarking between the rafters and roof tiles. The concrete floor had been recently painted grey. Natural light could enter through the large doors, if they were open, single window and through numerous gaps in the timber cladding and at the eaves. The lean-tos were of a similar style but had painted breezeblock walls.

Evidence of bats

None

Potential roost features (PRF)

Lifted, missing and broken tiles were frequent across the roof structure.
 The timber cladding was generally tight but there was some lifting, especially surrounding the entrance doors and lean-tos and at the eastern wall - some provided access gaps.
 Internal access could be gained at the eaves.
 Many crevices behind and at the joints of the internal timber frame.

Overall suitability for roosting bats

High suitability

S1: Outside dining shelter

External description

Timber framed outside shelter that was open sided on all aspects. Pitched clay tiled roof with tightly fitting tiles. The structure was built in a traditional style but appeared recently built.

Internal description

Open sided with exposed timber rafters, posts and purlins. All timbers and tiles were tightly fitted.

Evidence of bats

None

Preliminary Roost Assessment of buildings

Potential roost features (PRF)

None

Overall suitability for roosting bats

Negligible

S2: Timber shed

External description

Single skin, timber shed that was open fronted on the southern elevation and had a shallow, mono-pitched corrugated metal roof.

Internal description

Open front and used to store garden tools and machinery.

Evidence of bats

None

Potential roost features (PRF)

None

Overall suitability for roosting bats

Negligible



B1 Main House – southern aspect



B1 Main House – example of lifted tiles common across roof



B1 Main House –lifted soffit on northern aspect



B1 Main House –lifted soffit on western aspect



B1 Main House – lifted hanging tiles on northern aspect



B1 Main House – example of lifted lead flashing



B1 Main House – Void V1



B1 Main House – Void V2



B1 Main House – cellar



B1 Main House – cellar



B2 Dairy – north-western aspect



B2 Dairy – example of lifted and missing tiles common across roof



B2 Dairy – example of missing tiles common across roof



B2 Dairy – example of gaps at eaves



B2 Dairy – internal roof structure with crevices behind timbers



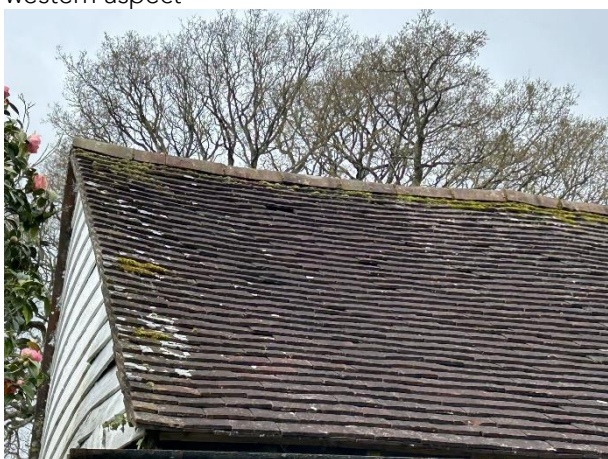
B3 Log shed – western aspect



B3 Log shed – lifted tiles and lifted ridge tile on western aspect



B3 Log shed – broken panelling on southern aspect



B3 Log shed – lifted missing and broken tiles on eastern aspect



B3 Log shed – internal roof structure with timber panelled external walls.



B4 Garage – south-west aspect



B4 Garage – lifted soffit box on western aspect



B4 Garage – lifted and missing roof and ridge tiles on western aspect



B4 Garage – gap at box end on north-eastern corner



B4 Garage – internal roof structure



B4 Garage – example of internal missing panelling



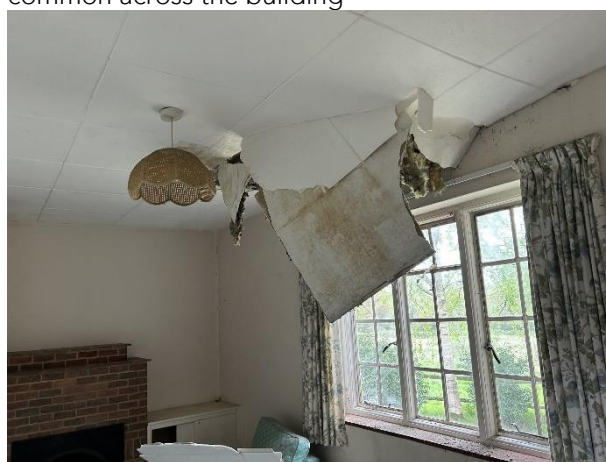
B5 Cottage – southern aspect



B5 Cottage – example of lifted or missing roof tiles common across the building



B5 Cottage – broken brick work at north-eastern corner



B5 Cottage – collapsed ceiling



B6 Stable – southern aspect



B6 Stable – vented ridge tiles and tightly fitted concrete tiles



B6 Stable – exposed, open eaves at southern aspect



B6 Stable – gaps in timber panelling at eastern aspect



B6 Stable – shutters and broken brickwork at northern aspect



B6 Stable – internal roof structure



B7 Cowshed – eastern aspect



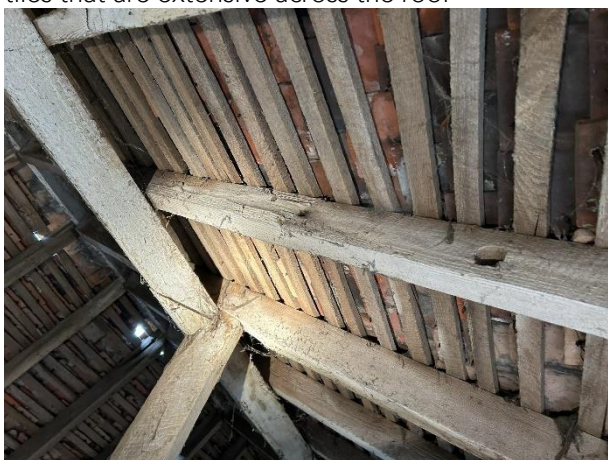
B7 Cowshed – example of missing, lifted or broken tiles that are extensive across the roof



B7 Cowshed – example of missing, lifted or broken tiles that are extensive across the roof



B7 Cowshed – internal roof structure



B7 Cowshed – example of crevices behind timbers



B8 Byre – northern aspect



B8 Byre – thick carpet of moss and vegetation



B8 Byre – example of lifted, missing and broken roof tiles



B8 Byre – internal roof structure with access door into B7



B8 Byre – internal roof structure with evidence of nesting birds



B9 Barn – western aspect



B9 Barn – example of lifted, missing or broken tiles common across the roof



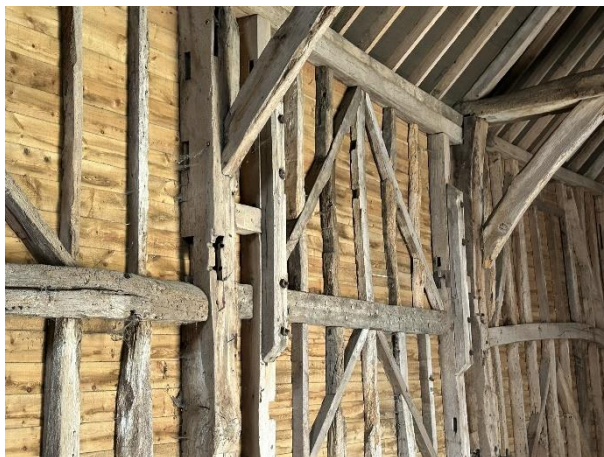
B9 Barn – example of lifted timber panels on southern aspect



B9 Barn – internal roof structure



B9 Barn – internal roof structure with crevices at timber joints



B9 Barn – internal roof structure with crevices at between timber frame



S1 – Outside dining shelter



S2 – Timber shed