



Extended Phase 1 Ecological & Bat Roost Assessment

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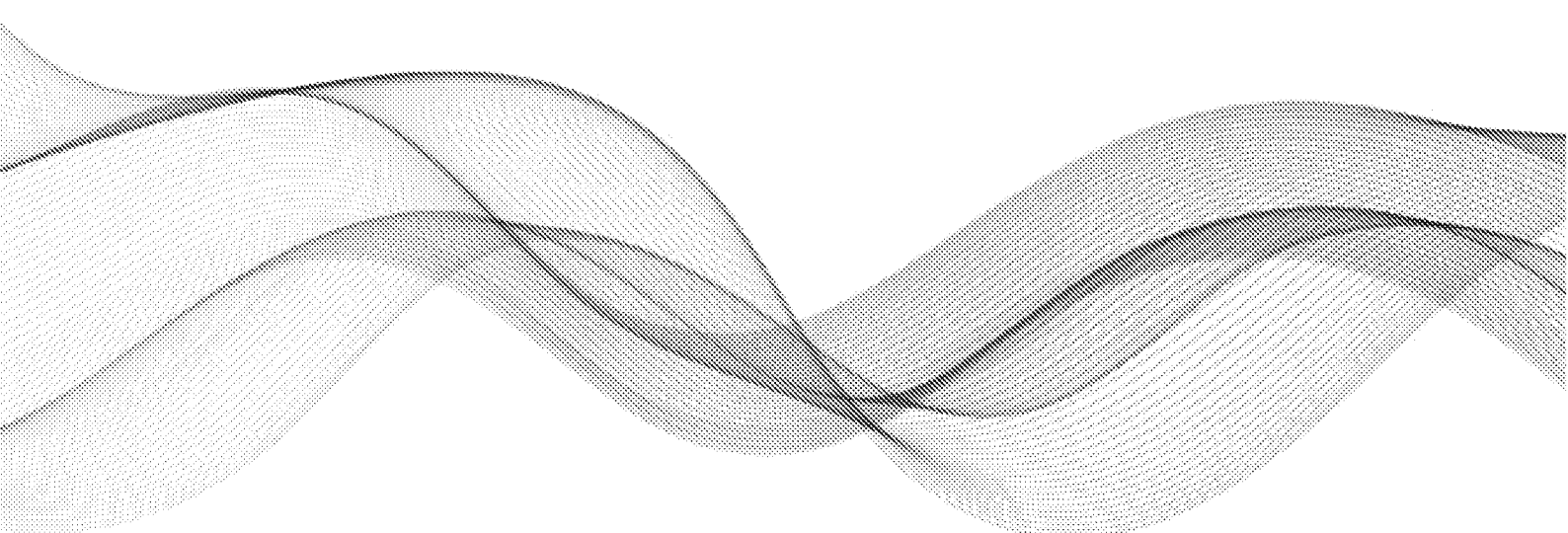
84 Barnham Road, Barnham, Bognor Regis, PO22 0ES

Prepared for

Smith Simmons

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Executive Summary	
Site Address	Barnham Road, Bognor Regis
Executive Summary	
This extended phase 1 ecological and bat roost assessment report has been prepared in order to support a planning application for the proposed construction of ten residential dwellings and their associated landscaping following the demolitions of the existing structures at 84 Barnham Road, Barnham. An extended phase 1 ecological assessment of the application site was undertaken on the 17th February 2022 by Katy Goddard of Phillips Ecology. The survey area comprised the existing structures and their immediate surrounds. A data search extended to a 1km radius for designated sites, priority habitats and protected species. The site is considered to support opportunities for protected and priority species including bats, hedgehogs and breeding birds. The house was considered to support moderate suitability for roosting bats. In order to confirm the presence/absence of roosting bats, characterise any identified bat roosts, assess the extent that they may be affected by the proposed development works and develop a proportionate and appropriate mitigation strategy, further survey work in accordance with Natural England standing advice and the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) was undertaken for the house. The recommended survey effort for structures with moderate roost suitability is two presence/absence surveys. Two presence/absence surveys comprising dusk emergence surveys were undertaken during May and June 2022. No bats were recorded roosting on site during the surveys. As such, there is considered to be no reasonable likelihood that bats will be present and affected by the proposed works. No further survey work is required. The garage, sheds and metal store are considered to support negligible suitability for roosting bats, and require no further survey work. With the implementation of precautionary construction avoidance measures, impacts on other protected species will be avoided.	

Table of Contents

1	Introduction	7
1.1	Report purpose	7
1.2	Description of proposal	7
1.3	Report Content	7
1.4	Scope of Assessment	7
1.5	Survey Area	7
1.6	Limitations	7
2	Data Search	8
2.1	Methodology	8
2.2	Limitations	8
2.3	Results	8
2.3.1	Statutory designated sites	8
2.3.2	Ancient Woodlands	8
2.3.3	Priority habitats	8
2.3.4	Protected species	9
3	Habitats	10
3.1	Methodology	10
3.2	Limitations	10
3.3	Existing Records	10
3.4	Results	10
3.4.1	Other tall herb and Fern - ruderal (C.3.1) and bare ground (J4)	10
3.4.1	Scattered Trees	10
3.4.3	Introduced Shrub (J1.4)	11
3.4.4	Boundaries (J2)	11
3.4.5	Buildings (J3.6)	11
3.4.6	Hard standing	12
4	Protected and Notable Species Assessment	13
5	Preliminary Bat Roost Assessment	14
5.1	Methodology	14
5.2	Survey Equipment	14
5.3	Limitations	14
5.4	Assessment Methodology	14
5.5	Results	15
5.5.1	Building Description Relevant to Bats	15
5.6	Assessment	19
6	Bat Emergence Surveys	20
6.1	Methodology	20
6.2	Surveyor/s	20
6.3	Survey Area	20
6.4	Survey Limitations	20
6.5	Survey Date	20
6.6	Survey Equipment	20
6.7	Weather conditions	21
6.8	Results	21
7	Badgers	22
7.1	Methodology	22
7.2	Limitations	22
7.3	Results	22
7.4	Assessment	22
8	Dormice	23

8.1	Methodology	23
8.2	Limitations	23
8.3	Results	23
8.4	Assessment	23
9	Hedgehogs	24
9.1	Methodology	24
9.2	Limitations	24
9.3	Results	24
9.4	Assessment	24
10	Reptiles	25
10.1	Methodology	25
10.2	Limitations	25
10.3	Results	25
10.4	Assessment	25
11	Great Crested Newts	26
11.1	Methodology	26
11.2	Limitations	26
11.3	Results	26
11.4	Assessment	26
12	Birds	27
12.1	Methodology	27
12.2	Limitations	27
12.3	Results	27
12.4	Assessment	27
13	Discussion and Assessment of Impacts	28
13.1	Relevant Legislation and Policy	28
13.2	Designated sites	28
13.3	Habitats	28
13.4	Bats	28
13.5	Badgers	29
13.6	Hazel dormouse	29
13.7	Hedgehog	29
13.8	Reptiles	29
13.9	Great crested newts	29
13.10	Birds	29
14	Requirement for further surveys	30
14.1	Designated Sites	30
14.2	Habitats	30
14.3	Bats	30
14.4	Badgers	30
14.5	Hazel Dormice	30
14.6	Hedgehog	30
14.7	Reptiles	30
14.8	Great Crested Newts	31
14.9	Birds	31
15	Mitigation recommendations	32
15.1	Habitats	32
15.2	Bats	32
15.3	Badgers	32
15.4	Hedgehogs	32
15.5	Reptiles	33

15.6	Birds	33
16	Enhancements	34
17	Conclusion	35
18	References	36

APPENDICES

Appendix I	Site Location Plan
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1 Introduction

1.1 Report purpose

This report has been prepared in order to present the extended phase 1 ecological and bat roost assessment for the proposed construction of ten residential dwellings and their associated landscaping following the demolition of the existing structures at 84 Barnham Road, Barnham (central grid reference: SU 95763 04577).

1.2 Description of proposal

The current proposals comprise the demolition of the existing structures and the construction of ten replacement dwellings with associated landscaping. The existing access to the site will remain.

1.3 Report Content

Studio Lack Architecture Ltd are preparing a planning application on behalf of the Applicant for the demolition and replacement of the existing structures at 84 Barnham Road. Phillips Ecology have been instructed by the applicant to undertake an ecological assessment to support this application, which is to be submitted to Arun District Council.

1.4 Scope of Assessment

An extended phase 1 ecological assessment was carried out on the 17th February 2022. The survey comprised a field survey and desktop study in order to identify notable or protected sites, habitats or species potentially affected by the proposal under consideration.

1.5 Survey Area

The survey area comprised the existing structures and their immediate surrounds. A data search extended to a 1km radius for designated sites, priority habitats and protected species.

1.6 Limitations

Limitations which are specific to each phase of the assessment are given in the relevant sections, below.

2 Data Search

2.1 Methodology

A desk-based assessment was undertaken by Phillips Ecology on the 1st March 2022 with Multi-Agency Geographic Information for the Countryside (MAGIC). The MAGIC database was consulted for records of statutory designated sites, priority habitats and protected species for the development site and a 1km radius.

2.2 Limitations

The data search results are bound by the following statement contained within MAGICs general disclaimer: "The materials contained on this website are of a general, informational, nature. We have used reasonable endeavours to ensure the accuracy and completeness of the contents of the pages on this site but the information does not constitute advice and must not be relied on as such."

2.3 Results

2.3.1 Statutory designated sites

There are no statutory designated sites located within a 1km radius of the application site.

2.3.2 Ancient Woodlands

Three compartments of non-statutory ancient woodland are located within a 1km radius of the application site. These are detailed in Table 1, below.

Woodland Name	Approx. distance and direction from the site	Reason for designation
Unnamed compartment	0.3km NE	This 0.75ha site is designated for its ancient and semi-natural woodland.
Unnamed compartment	0.5km ENE	This 1.07ha site is designated for its ancient and semi-natural woodland.
Unnamed compartment	1.0km NE	This 1.54ha site is designated for its ancient and semi-natural woodland.

2.3.3 Priority habitats

The data search revealed the following priority habitats within 1km of the application site:

- Broadleaved woodland; and
- Traditional orchard.

2.3.4 Protected species

The data search revealed a single record of a protected species licence being granted within a 1km radius of the site, the details are as follows;

- Bat: Common pipistrelle *Pipistrellus pipistrellus* – 2016 – 0.5km NW.

3 Habitats

3.1 Methodology

A field survey was carried out on the 17th February 2022 by Katy Goddard (a level 1 bat licence holder) of Phillips Ecology. During the survey, all broad habitat types were identified, and a list was compiled of characteristic plant species within each habitat type. These habitats are described below in accordance with Phase 1 habitat terminology.

3.2 Limitations

The habitat survey was carried out during February which is outside the optimal period for recording vascular plant species. Whilst certain species would not have been evident if present, it was possible to identify vegetation to effectively classify habitat types in accordance with Phase 1 habitat terminology.

3.3 Existing Records

The data search revealed that priority habitats associated with the local landscape within 1km of the site comprise broadleaved woodland and traditional orchard.

3.4 Results

The following Phase 1 habitat types were recorded within the application site.

3.4.1 Other tall herb and Fern - ruderal (C.3.1) and bare ground (J4)

Tall ruderal vegetation is establishing within the flower beds which have been left bare within the site (Figure 1). The species present include common nettle *Urtica dioica*, speedwell, ground ivy *Glechoma hederacea*, thistle *Cirsium* spp. and bedstraw *Galium* spp.. Self-seeded ash *Fraxinus excelsior* is also present. Further bare ground has been recently created through vegetation removal around the front lawn (Figure 2).

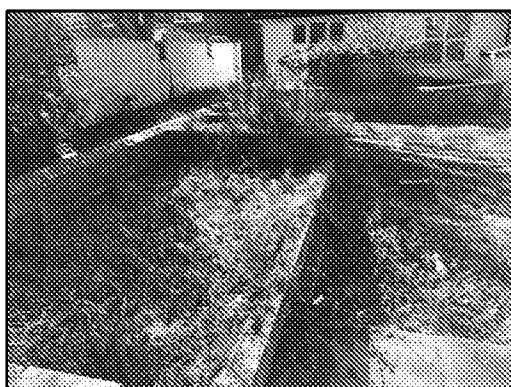


Figure 1 – flower bed in the rear garden with last season's tall ruderal vegetation



Figure 2 – recently created bare ground at the southern end of the site

3.4.2 Poor semi-improved grassland (J1.2)

Both the front and rear garden support large areas of managed lawn which are mown to a short sward (Figure 3). The front lawn has recently been disturbed with vehicle/machinery tread marks present (Figure

4). Herbaceous species were recorded including ribwort plantain *Plantago lanceolata*, daisy *Bellis perennis*, lords-and-ladies *Arum maculatum*, wood avens *Geum urbanum*, primrose *Primula vulgaris*, yarrow *Achillea millefolium*, creeping buttercup *Ranunculus repens*, cat's-ear *Hypochaeris radicata*, groundsel *Senecio vulgaris* and cranesbill *Geranium* spp.. Crocus plants are emerging on the front lawn.

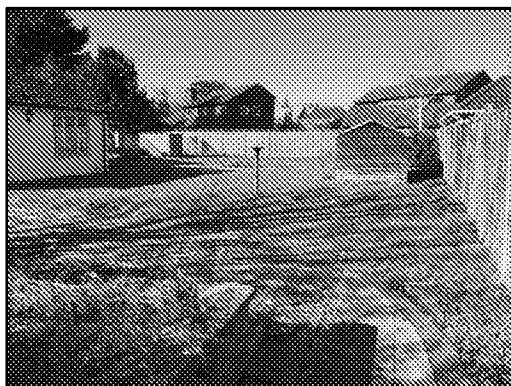


Figure 3 – grassland in the rear garden



Figure 4 – recently disturbed grassland in the front garden

3.4.3 Introduced Shrub (J1.4)

Ornamental planting is present with scattered shrubs and plants, including *Rosa* spp., holly *Ilex aquifolium*, firethorn *Pyracantha* spp. and bay *Laurus nobilis*.

3.4.4 Boundaries (J2)

Wooden panel fencing (J2.4) encloses the entire site, with the exception of the driveway entrance, with additional boundary features also present. The majority of the fencing is in good condition, however panels are missing or broken in the southern corner.

The northernmost end of the south-eastern elevation is also enclosed by a brick wall and metal post and rail fencing, with a sycamore *Acer pseudopatanus* tree and a fruit tree. Inside the more southerly section of the south-eastern boundary is a line of trees (Figure 5) including oak *Quercus robur*, silver birch *Betula pendula*, cherry *Prunus* spp., hawthorn *Craetagus monogyna*, cherry laurel *Prunus laurocerasus*, elder *Sambucus nigra* and *Leylandii*. A single beech *Fagus sylvatica* tree is present inside the south-western fence line.

A defunct hedgerow runs along the more southerly section of the north-western fence line (Figure 6). The species present include bay, holly, cherry laurel, Japanese photinia *Photinia glabra*, garden privet *Ligustrum ovafolium*, elder, hazel *Corylus avellana* box honeysuckle *Lonicera nitida* and ivy. The understorey includes ivy, lords-and-ladies, stinking iris *Iris foetidissima* and *Heliohorus*.



Figure 5 – tree line and fence along the eastern boundary



Figure 6 – defunct hedgerow and fence along the western boundary

The application site contains five built structures: the house, the garage and the three outbuildings including two sheds and a small metal store. These structures are described further in section 5.

3.4.6 Hard standing

Access to the site is via a long tarmac driveway which widens into a paved parking area towards the house (see Figure 6, above). Paved patio also surrounds the house (Figure 7). A small area of wooden decking is present on the patio to the east of the house.



Figure 7 – paved patio between the house and garage

4 Protected and Notable Species Assessment

The scope of works, data search and habitat assessment have informed the scope of the protected and notable species assessment. On this basis, the following protected and priority species have been considered further within this report:

- Bats;
- Hedgehogs;
- Hazel dormice;
- Badgers;
- Birds;
- Reptiles; and
- Great Crested Newts.

The surveyed site has been assessed for its potential to support the above- named protected species based upon the criteria in Table 2.

Table 2 Protected Species Grading Criteria

Grading criteria	Justification
Negligible	Site is entirely unsuitable for species. Presence of species highly unlikely.
Low	Minimal suitable habitat present or, if present, highly degraded/fragmented. Minimal linkage to suitable habitat beyond site. Presence of species unlikely.
Moderate	Presence of some suitable habitat features for species. Surveyed site within/close to known range or known occurrence but factors such as isolation/fragmentation may reduce potential. Presence of species is more likely than not.
High	Presence of optimal habitat features for species. Surveyed site within known range/close to known occurrence. Excellent connectivity to optimal habitat. No justification for discounting presence of species.
Confirmed presence	Species confirmed on site through direct sighting, presence of field signs (e.g. scat, hair, prints, nest, eggs, habitation etc.) or through desk-based assessment.

5 Preliminary Bat Roost Assessment

5.1 Methodology

The survey did not depart from the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) which states that "A preliminary roost inspection survey is a detailed inspection of the exterior and interior of a structure to look for features that bats could use for entry/exit and roosting and to search for signs of bats".

The external features of the built structures which will be modified by the proposed works in such a way that bats or their roosts could be impacted (directly or indirectly) if present, were systematically inspected in detail to compile information on potential and actual bat access points and roosting places such as lifted or broken tiles, loose brickwork and open eaves. This included a thorough search for evidence of bat activity such as bat droppings, urine splashes and fur staining.

The interiors of the built structures were inspected, where access was gained, in order to identify potential or actual access points and roosting places and to record any evidence of bat activity or bats themselves.

5.2 Survey Equipment

Survey equipment comprised:

- High-powered torch;
- Ladders;
- Camera; and
- Binoculars.

5.3 Limitations

The view of the roof was restricted due to the size and structure of the building. The internal spaces of the house, garage and rear shed were not accessible at the time of the survey. No other limitations were encountered during the course of the survey. Despite these limitations, it is still considered that a robust assessment of the building's suitability for roosting bats has been undertaken. However, an internal inspection of the house, garage and rear shed is required to finalise the assessment.

5.4 Assessment Methodology

The suitability of the buildings for supporting bat roosts will be assessed against the guidelines within Table 3 which have been adapted from the BCT Good Practice Guidelines.

Table 3 Suitability of Roosting Habitats

Suitability	Description of Roosting Habitats
Negligible	Structure has no reasonable likelihood of supporting roosting bats i.e. no suitable roosting features present.
Low	A structure which could be used opportunistically by individual bats i.e. one or more potential roost sites which do not provide sufficient space, shelter, protection, appropriate conditions (e.g. temperature, light, humidity) and/or

	suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.
Moderate	A structure which could be used by bats but is not likely to support a roost of high conservation status (e.g. maternity roost). This structure would support features which exhibit suitable size, shelter, protection, conditions and surrounding habitat for roosting bats.
High	A structure which is obviously suitable for supporting larger numbers of bats, on a regular basis and for longer periods of time.

5.5 Results

5.5.1 Building Description Relevant to Bats

The application site contains five built structures: the house, the garage and the three outbuildings, including two sheds and a small metal store.

5.5.1.1 The House

The main section of the house comprises a two-storey brick-built structure which rises to a multi-pitched and hipped design roof clad with clay roof, ridge and hip tiles (Figure 8). The house is oriented south-west to north-east. A brick-built chimney extends from the westernmost ridge. The south-western elevation supports two ground floor bay windows, clad with breathable membrane only. A wooden trellis porch clad with corrugated plastic roofing sheets is present between the bay windows. A recessed porch is present on the north-western elevation.

A single-storey brick-built structure which rises to a multi-pitched and hipped design roof clad with interlocking concrete pantiles extends from the eastern elevations (Figure 9). Plastic comb fillers are present under the bottom course of tiles. A slatted tower extends from the southernmost ridge of the single-storey section of the house. Multiple metal ventilation pipes extend from the roof faces. A gable end shelter supported by timber pillars extends from the north-western elevation (Figure 10). The shelter supports wooden cladding and barge boards. The roof supports a moderate covering of moss.

The roofs extend beyond the wall plate and the eaves are enclosed with wooden underboards. Lead flashing covers the joins between the different sections of the house. The windows are set in uPVC frames and no gaps are present between them and the surrounding brickwork, which is rendered and painted.



Figure 8 – south-western elevation of the main section of the house

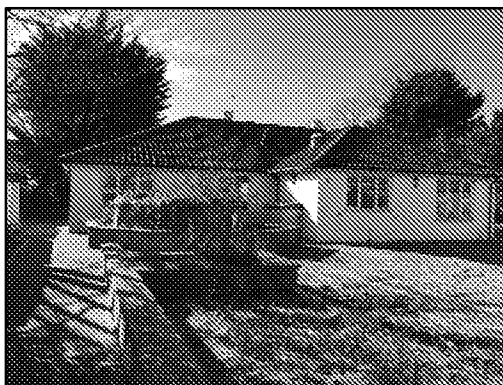


Figure 9 – north-eastern elevation of the single-storey section of the house

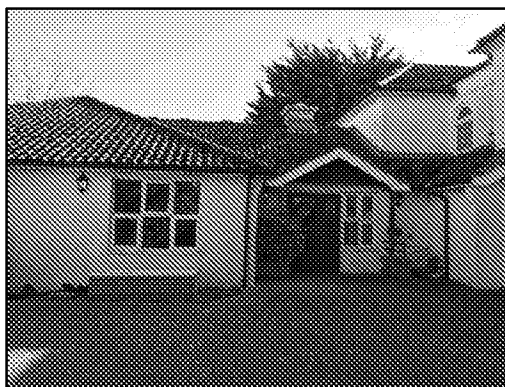


Figure 10 – north-western elevation of the single-storey section

An account of suitable access/egress features and recorded evidence of bat activity is given in table 4.

Table 4 The house recorded features and activity

	Suitability	Evidence
Exterior	The following suitable access/egress and roosting features were recorded externally during the survey: - Lifted roof tiles, on both sections of the house. - Gaps under hip tiles (Figure 11). - Gaps under the last course of roof tiles on the main section of the house. - Lifted tiles and lead flashing around the westernmost metal chimney. - Gap under the base of the slatted tower (Figure 12).	No evidence of roosting activity was recorded on the external elevations of the building during the survey. On closer inspection, the gaps under the lifted roof tiles on the single-storey section of the house were found to be filled with moss, cobwebbing and/or debris. The proximity of the guttering prohibits a suitable access/egress flight path to/from the gaps under the last course of roof tiles.
Interior	N/A	N/A



Figure 11 – gaps under hip tiles



Figure 12 – gap under the base of the stalled tower

5.5.1.2 The Garage

The garage comprises a brick-built structure which rises to a pitched and gable end design roof clad with interlocking concrete pan tiles and ridge tiles (Figure 13). The garage is oriented north-east to south-west. The roof extends beyond the wall plate and the eaves are enclosed with plastic soffit boxes and barge boards. At the gable ends the last tile in each row is embedded in mortar. The north-eastern elevation supports a set of double wooden doors while the north-western elevation supports a single wooden door.

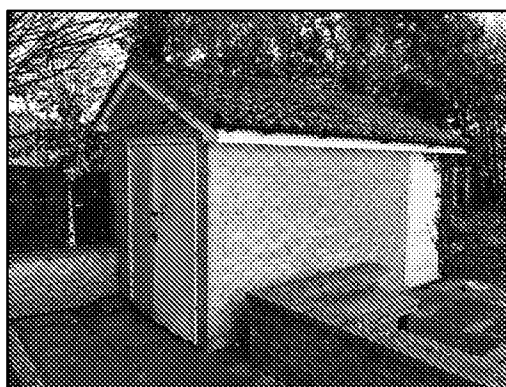


Figure 13 – western elevation of the garage

An account of suitable access/egress features and recorded evidence of bat activity is given in table 5.

Table 5 The Garage recorded features and activity

	Suitability	Evidence
Exterior	The following suitable access/egress and roosting features were recorded externally during the survey: - Gaps under the last course of roof tiles on the main section of the house. - One missing ridge tile.	No evidence of roosting activity was recorded on the external elevations of the building during the survey. On closer inspection, the gaps under the last course of tiles were found to be filled with moss, cobwebbing and/or debris, as well as the guttering prohibiting a suitable access/egress flight path.

		Mortar is still present at the missing ridge tiles, blocking any potential gaps.
Interior	To be confirmed following internal inspection.	To be confirmed following internal inspection.

5.5.1.3 The Outbuildings

Three outbuildings, two wooden sheds and one metal store, are present on site.

The sheds comprise simple wooden-built structures which rise to a pitch and gable end design roofs clad with roofing felt on top of wooden boarding. The elevations are single skinned and clad with shiplap boarding. The smaller shed is situated in the rear garden and is in a poor condition with roofing felt and boards missing (Figure 14). The larger shed is situated in the front garden and is in a very poor condition with sections of the roof and elevations missing (Figure 15). Due to the design and condition of the sheds, they are considered to be wholly unsuitable for supporting roosting bats.

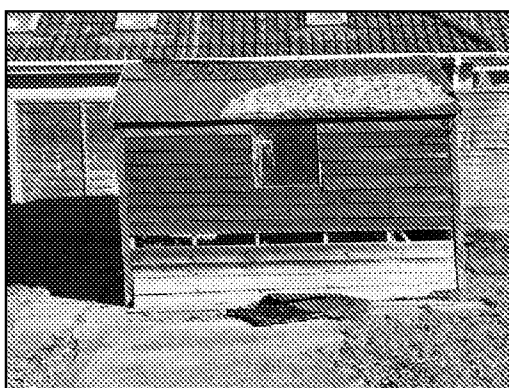


Figure 14 – south-western elevation of the rear shed

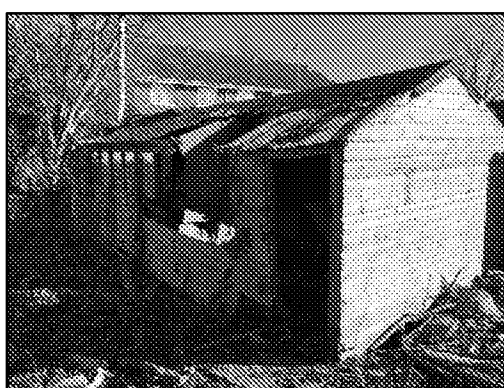


Figure 15 – southern elevations of the front shed

The metal store comprises a simple single-skinned metal structure which is open on one elevation (Figure 16). Due to the design of the structure, the store is considered wholly unsuitable for supporting roosting bats.



Figure 16 – metal store against the south-eastern elevation

5.6 Assessment

A summary assessment of roost suitability for the buildings on site in view of the criteria set out in Table 3 is given in Table 6 below.

Table 6 Summary Assessment of Suitability

Building reference	Assessment of suitability	Suitability category
The house	The house supports a number of suitable access/egress and roosting features but is not likely to support a roost of high conservation status (e.g. maternity roost).	Moderate (subject to internal inspection)
The garage	No suitable roosting features were recorded. No evidence of roosting activity was recorded.	Negligible (subject to internal inspection)
The rear shed	No suitable roosting features were recorded. No evidence of roosting activity was recorded.	Negligible (subject to internal inspection)
The front shed	No suitable roosting features were recorded. No evidence of roosting activity was recorded.	Negligible
The metal store	No suitable roosting features were recorded. No evidence of roosting activity was recorded.	Negligible

The tree lines and hedgerow within the site provide foraging and commuting opportunities for bats. They are somewhat connected to further linear habitats within the wider landscape. In the context of the wider landscape, the habitats within the footprint of the proposal are considered unexceptional for foraging and commuting bats. They are, nevertheless, suitable for commuting and foraging bats and it is likely that bats will commute and forage through the site as a compartment of their wider foraging range.

6 Bat Emergence Surveys

6.1 Methodology

The emergence surveys were undertaken in accordance Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Four surveyors were positioned in order to provide sufficient coverage of the house when stationary. In addition, infra-red illuminators and a night-vision video camera were used to improve visibility. All emergences, re-entries and general activity were recorded during the course of each survey. Recordings were later analysed using Sonobat bat call analysis software to confirm species identification.

6.2 Surveyor/s

The surveys were led by licenced bat surveyors Katy Goddard and Frankie King-Smith, with suitably experienced bat surveyors.

6.3 Survey Area

The survey area comprised all elevations of the existing house. This enabled survey coverage of all suitable access/egress and roosting features which were recorded during the preliminary bat roost assessment.

6.4 Survey Limitations

No limitations were encountered during the course of the surveys. A second dusk survey was deemed to be more appropriate for the site given that at this stage of the season, bats are more likely to return to roost at variable times and dawn surveys carried out by Phillips Ecology in previous weeks had given unreliable results despite being carried out in appropriate weather conditions. Given the potential for bats to return to roost earlier in the night and be missed during a dawn survey, and the good visibility levels for recording emerging bats during a dusk survey, two dusk emergence surveys were considered to be the best option for this site.

6.5 Survey Date

The date and timings of the emergence surveys are presented in Table 7. The emergence surveys commenced 15 minutes prior to sunset and continued for at least 1.5 hours.

Table 7 Survey Dates and Timings

Survey type	Surveyed structures	Date	Start	Finish	Sunset/sunrise
Emergence	House	09/05/2022	20:20	22:05	20:35
Emergence	House	21/06/2022	21:06	22:52	21:22

6.6 Survey Equipment

Survey equipment comprised:

- Pettersson D240X bat detector

- Echometer Touch 2 Pro bat detector
- Canon XA11 (nightshot mode)
- Infrared illuminators

6.7 Weather conditions

Weather conditions during the surveys are provided in Table 8:

Table 8 Emergence Survey Weather Conditions

Survey	Date	Precipitation		Temperature		Wind		Cloud Cover	
		Start	Finish	Start	Finish	Start	Finish	Start	Finish
Emergence	09/05/2022	Nil	Nil	15.0°C	15.0°C	Bf 0	Bf 0	100%	100%
Emergence	21/06/2022	Nil	Nil	20.0°C	16.0°C	Bf 0	Bf 0	0%	0%

6.8 Results

Visit 1 – 9th May 2022 – Dusk Emergence Survey

During the dusk emergence survey carried out on the 9th May 2022, no bats were recorded emerging from the property. The first recorded bat was a common pipistrelle *Pipistrellus pipistrellus* bat which was recorded foraging within the front garden at 20:47. This was followed shortly afterwards at 20:53 by a soprano pipistrelle *Pipistrellus pygmaeus* which foraged within the same location for several minutes. These two species were recorded foraging throughout the site grounds in this manner at frequent intervals for the duration of the survey. At 21:31 a serotine *Eptesicus serotinus* commuted into the site from the east and then foraged within the site grounds for three minutes. A long-eared bat *Plecotus* species was recorded briefly in the distance at 21:52.

Visit 2 – 21st June 2022 – Dusk Emergence Survey

During the dusk emergence survey carried out on the 21st June 2022, no bats were recorded emerging from the property. The first recorded bat was a common pipistrelle bat which was recorded foraging within the front garden at 21:42. This species was recorded foraging throughout the site grounds in this manner at frequent intervals for the duration of the survey. Up to two common pipistrelles were recorded at any one time. A soprano pipistrelle was recorded at 21:53, 22:04 and 22:10 as it foraged through the site and particularly to the east, south and west of the property. At 22:36 a serotine was recorded as it briefly foraged through the site grounds.

7 Badgers

7.1 Methodology

The survey involved a detailed investigation of the site to identify evidence of badger residence, foraging or territorial activity. This includes badger setts, latrine sites, dung piles, well-used trails, prints and hairs. Particular emphasis was placed on locating badger setts, paths and signs of territorial activity such as dung piles and latrines.

7.2 Limitations

Limitations were not encountered during the course of the survey.

7.3 Results

No evidence of a badger sett or foraging activity was recorded within the application site, however, suitable habitat for the formation of a sett is present within the local area.

7.4 Assessment

Badger setts are considered to be absent from the application site, however, there is considered to be moderate potential for badgers to utilise foraging opportunities within and surrounding the site.

8 Dormice

8.1 Methodology

An assessment was made of the suitability of habitat on site to support hazel dormice. Key habitats are woodland, scrub and hedgerows, particularly where these offer dense vegetation within which to nest/hibernate and key resources such as hazel nuts, fruiting/nectar-rich plants (e.g. hawthorn, bramble) to provide a continuum of food resources throughout the active season and honeysuckle *Lonicera periclymenum* (for nesting material). Landscape-scale habitat linkages such as hedgerows are fundamental for dormouse presence where small scale or sub-optimal habitats are recorded within a site.

8.2 Limitations

Limitations were not encountered during the course of the survey.

8.3 Results

The grassland is considered to be wholly unsuitable for supporting dormice because it lacks resources required. While the tree line and hedgerow include some species suitable for dormice, they are isolated from suitable habitat within the wider landscape.

8.4 Assessment

There is considered to be negligible potential for dormice to occur on site.

9 Hedgehogs

9.1 Methodology

The site was assessed for its suitability to support hedgehogs based on the presence of favoured habitats such as woodland edges, hedgerows, grassland and suburban habitats.

Hedgehogs are most abundant within gardens, parks and amenity land close to or within human settlements. They are generally scarce in areas of coniferous woodland, marshes and moorland, probably because of a lack of suitable sites and materials for the construction of winter nests (Morris, 2006). Any evidence of hedgehog activity such as prints or droppings would be recorded.

9.2 Limitations

Low detections rates are associated with evidence of hedgehog activity; therefore, absence of evidence does not confirm the absence of hedgehogs. For this reason, the assessment of the likely presence/absence of hedgehogs has largely been informed by the species' local distribution and the habitats within the site and local area.

9.3 Results

The grassland and hedgerow within the site have the potential to support foraging hedgehog although no direct evidence was noted. The potential is increased by the connectivity to a network of residential gardens.

9.4 Assessment

There is considered to be high potential for hedgehog to occur on site.

10 Reptiles

10.1 Methodology

An assessment was made of the site's suitability to support reptile populations. Key habitat features for reptiles include: tussocky/patchy grassland; scrub edge; linear watercourses; ponds; compost heaps; brash piles and rubble/soil heaps. Linkage to suitable habitat within the surrounding landscape will increase the potential for reptiles to occur, although populations can occur within isolated/fragmented habitats even within urban areas.

10.2 Limitations

Limitations were not encountered during the course of the survey.

10.3 Results

The grassland on site is well managed and does not exhibit sufficient cover to support reptiles. However, the hedgerow on site does provide opportunities for common species of reptiles such as slow-worm *Anguis fragilis*. In addition, a brash pile is present in the southern corner of the site. The site is set within a landscape of similar mature gardens which support suitable reptile habitat.

10.4 Assessment

Due to the sites connectivity to suitable habitat, there is considered to be moderate potential for small numbers of common reptiles to occur on site.

11 Great Crested Newts

11.1 Methodology

Great crested newts are only present in their breeding ponds during the spring and early summer – for the rest of the year, they will be dispersed across the surrounding area, generally in grassland, scrub, woodland and hedgerows, although they may be found in gardens and brownfield sites. They can travel some distance from their breeding ponds, and as a general rule, developments within 500m of such a pond may have the potential to have an impact on GCN, although to a certain extent, this does depend on any intervening habitat or barriers to dispersal.

An assessment was made of any waterbodies and terrestrial habitat within the site for their suitability to support populations of amphibians. Suitable waterbodies will generally be characterised by the presence of good quality water, diverse macrophyte cover and an absence of fish. For the European-protected great crested newt, each waterbody is normally assessed using the Habitat Suitability Index (HSI) system (Oldham et al., 2000) and assigned a grading score between zero (poor suitability) and 1 (excellent suitability).

11.2 Limitations

The HSI for great crested newts is a measure of habitat suitability. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, in isolation, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not do so (Oldham et al., 2000).

11.3 Results

The application site does not support any freshwater waterbodies, nor were any identified within 500m of the application site. The majority of the site lacks suitable terrestrial habitat due to the management of the grassland, however the hedgerow provides some shelter opportunities.

11.4 Assessment

Given the lack of ponds within 500m of application site, there is considered to be negligible potential for great crested newts to occur on site.

12 Birds

12.1 Methodology

An assessment was made of the site's suitability to support breeding bird species. Nesting birds will utilise a broad range of habitats, including: built structures, trees, scrub, isolated shrubs, dense herbaceous vegetation (terrestrial and aquatic) and open grassland. All bird species and evidence of breeding activity (active or inactive) observed on site were recorded.

In addition, an assessment was made of the site's suitability to support over-wintering and migratory birds, particularly those associated with the adjacent designated sites, and intertidal habitats. The assessment included consideration of the wider sites suitability to support feeding and roosting birds.

12.2 Limitations

The survey was undertaken outside of the breeding bird season for many species of bird, therefore, the assessment relied upon the presence of suitable habitat and inactive nests.

12.3 Results

During the survey blackbird *Turdus merula*, blue tit *Cyanistes caeruleus* and wood pigeon *Columba palumbus* were recorded on site. The boundary vegetation habitats and structures within the site are considered to support nesting opportunities for bird species.

12.4 Assessment

Habitats which are considered to support nesting opportunities for various bird species are present within the site. Overall, the site is considered to support high potential for breeding birds.

13 Discussion and Assessment of Impacts

13.1 Relevant Legislation and Policy

Circular 06/2005 identifies that applicants should not be required to provide information on protected species unless there is a reasonable likelihood that they will be present and affected by the proposed development. The site is considered to support habitats with suitability and potential for protected species and these may be affected by the proposed development. Therefore, the proposal triggers 'reasonable likelihood' under the Circular.

The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (commonly referred to as the Habitats Regulations) may apply should protected species be confirmed on site.

In the case that a European protected species is found to be present and impacted by the proposal, the local planning authority will be required to engage with the Habitat Regulations. Permission will be granted unless:

- a) the development is likely to result in a breach of the Habitats Regulations, and
- b) is unlikely to be granted an EPS licence from Natural England to allow the development to proceed under a derogation from the law (under licence).

When considering whether Natural England would not be unlikely to grant a licence for the identified impact, the local planning authority must consider the three tests which are set out in the Habitat Regulations:

1. the consented operation must be for 'preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'; (Regulation 53(2)(e))
2. there must be 'no satisfactory alternative' (Regulation 53(9)(a)); and
3. the action authorised 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range' (Regulation 53(9)(b)).

Natural England will grant a licence if the development proposal is able to meet the three tests.

13.2 Designated sites

The proposal will not result in the direct loss of any designated sites. Nor will it result in the direct loss of any habitat that could be considered functionally linked supporting habitat for any designated site.

13.3 Habitats

The main habitats which will be lost are grassland, hardstanding, buildings and introduced shrubs. The vegetation to be removed is managed, easily replicable and of low botanical value, therefore it is considered that there will be no impact to habitats of ecological importance such as priority habitats as a result of their loss. However, the uncompensated removal of this vegetation would result in a net loss of biodiversity at the site which would be contrary to NPPF.

13.4 Bats

On the basis that the preliminary survey confirmed that the existing house supports moderate suitability for roosting bats there was considered to be a reasonable likelihood that bats will be present and affected by the proposed demolition.

However, no bats were recorded emerging from the property during the emergence surveys carried out during May and June 2022.

As such, there is considered to be no reasonable likelihood that bats will be present and affected by the proposed works.

The application site supports a small number of foraging common pipistrelle, soprano pipistrelle, serotine and long-eared bats which utilise the site as a compartment of a wider resource. Increasing lighting could impact this behaviour.

13.5 Badgers

The site supports moderate suitability for badger. Therefore, impacts to badgers could occur during construction if trenches are left open.

13.6 Hazel dormouse

The proposal will not result in the loss of habitat which is considered to support suitability for dormice. Therefore, no impacts on dormice are anticipated.

13.7 Hedgehog

Impacts on hedgehogs are likely to be associated with the loss of foraging habitat associated with the grassland, and during construction if trenches are left open.

13.8 Reptiles

The proposal will result in the temporary disturbance and loss of habitats which have potential to support low populations of common reptiles. Therefore, there is considered to be potential for impacts upon these species associated with the proposal.

13.9 Great crested newts

The proposal will not result in the loss of habitat which is considered to support potential for great crested newts. Therefore, no impacts on great crested newts are anticipated.

13.10 Birds

The proposal will result in the loss of suitable breeding bird habitat. The removal of this habitat has the potential to damage or destroy active bird nests if carried out during the breeding bird season which is generally seen as extending from March to the end of August, although may extend longer depending on local conditions. The proposal will also result in a net loss of bird nesting opportunities.

14 Requirement for further surveys

Further surveys are required where there is a reasonable likelihood that a protected species will be present and impacted by the proposed development. An assessment into the requirement for further surveys is presented below, however in summary, further surveys are considered necessary.

14.1 Designated Sites

No further surveys are considered necessary.

14.2 Habitats

No further surveys are considered necessary

14.3 Bats

In order to provide robust confirmation on the presence and status of bat roosts and the extent that they may be affected by the proposed development as required by Circular 06/2005, further survey work in accordance with Natural England's standing advice and the BCT Good Practice Guidelines was undertaken for the house.

In accordance with these guidelines, further survey effort took the form of dusk emergence presence/absence surveys undertaken during the bat active season. No further surveys in respect of roosting bats are considered necessary.

Given the scale of the proposal, further survey is considered unnecessary for understanding impacts on foraging and commuting bats subject to precautionary avoidance measures including a sensitive lighting scheme.

No further survey work is required for the garage, rear shed, front shed or metal store.

14.4 Badgers

Subject to the precautionary mitigation measures set out in Section 13, no further surveys are considered necessary.

14.5 Hazel Dormice

As impacts on dormice are not anticipated, no further recommendations relating to dormice are considered necessary.

14.6 Hedgehog

Subject to the precautionary mitigation measures set out in Section 14, no further surveys are considered necessary.

14.7 Reptiles

Subject to the precautionary mitigation measures set out in Section 14, no further surveys are considered necessary.

14.8 Great Crested Newts

As impacts on great crested newt are not anticipated, no further recommendations relating to great crested newts are considered necessary.

14.9 Birds

Subject to the precautionary mitigation measures set out in Section 14, no further surveys are considered necessary in respect of breeding birds.

15 Mitigation recommendations

15.1 Habitats

In order to ensure that the development does not result in a net loss of biodiversity as required by NPPF, the scheme must incorporate measures to compensate for the loss of existing habitat and provide an overall net gain. Biodiversity Metric Calculations will be carried out in order to provide measurable outcomes which demonstrate that the project will deliver quantifiable benefits to biodiversity compared to the baseline situation. Accurate measurements for the existing and proposed built and landscaped areas will be required to complete the metric calculations.

15.2 Bats

Advisory note:

In order to limit any effects on foraging and commuting bats, external lighting should be limited to only that which is absolutely necessary for safety purposes, both during the construction phase and once the proposals are complete. The following lighting measures are required:

- Construction works between March and October should be undertaken during daylight hours only to avoid disturbance to bats that may forage and commute through or near the site.
- Lighting to the completed development should be as low brightness as possible, kept at a low level and directed away from all boundaries. Lighting on sensors should not be so sensitive that foraging bats trigger them.

All lighting must follow the Bat Conservation Trusts and Institute of Lighting Professionals guidance on bats and artificial lighting (BCT, 2018).

15.3 Badgers

In order to avoid harm to badgers during the construction works, any trenches will either be covered at night or fitted with a soil or plank ramp to enable any badgers which fall in to leave on their own accord.

15.4 Hedgehogs

In order to avoid harm to hedgehogs during the construction works the following precautionary measures will be employed:

- Any trenches will either be covered at night or fitted with a soil or plank ramp to enable any hedgehogs that fall in to leave of their own accord.
- Any leaf litter, brash piles or garden waste piles will be dismantled by hand in a sensitive and careful manner.
- No bonfires will be made or lit on site.

To allow continued access to the remaining and newly created grassland, all fence boundaries between the ten properties and around the perimeter of the site should have hedgehog access points. These will comprise a hole cut out in the bottom of a fence panel, measuring 13cm by 13cm. One per boundary section would be appropriate.

15.5 Reptiles

There is limited potential for reptiles to be present and to be impacted by the development works given the nature of the proposed works. However, a precautionary approach to the site development is recommended, as follows:

- The grassland must be maintained to a short sward by mowing. If the site is allowed to become overgrown before works commence, further surveys will be required.
- All waste shall be placed directly into a skip so that rubble piles and therefore potential hibernation areas are not created in areas which will subsequently be disturbed by site works.
- Piles of loose sand or other granular materials into which reptiles could bury are not to be left around the site. All such materials will ideally be delivered in bags and kept in such bags until required for use. Bags should be stored on pallets. If it is essential that they are delivered loose, they should only be dug into by hand.
- The existing brash pile on site will be dismantled by hand.
- No bonfires will be made or lit on site.
- New shelter features in the form of two brash piles will be created within the existing hedgerow. The centre of the brash piles will be compacted whilst the outer layers will be laid loosely.

15.6 Birds

Care should be taken that the development does not disturb breeding birds. The bird nesting season is taken to be March to August, inclusive. Any removal of suitable nest habitat will either need to be undertaken outside of this period or else checked by an experienced ecologist to ensure that no nesting birds are present. If occupied nests are present then the nest must not be removed, and works around the nest can only recommence once the nest becomes unoccupied of its own accord.

The provision of alternative nesting opportunities is required. The installation of the following bird boxes would be sufficient:

- Five swift boxes on the northern elevations of the replacement dwellings, at least 5m above ground. The eastern and western elevations may also be suitable provided they are well shaded.
- Five open fronted nest boxes erected at eave height on the western elevation of the new dwellings away from any patio areas and external illuminations.

16 Enhancements

The delivery of biodiversity enhancement on development sites is promoted by the National Planning Policy Framework (NPPF) and Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006.

Where opportunities exist it is best practice to provide enhancement features which encourage greater biodiversity within development sites in accordance with the NPPF and Local Planning Authority's responsibilities under the NERC Act.

Opportunities for enhancement which are proportionate to the scale of the development include:

- The enhancement and extension of the existing hedgerow with the planting of additional native species along the length of the north-western boundary would deliver a valuable enhancement for the site. The following species mix will be utilised: blackthorn *Prunus spinosa* (25%), hawthorn *Crataegus monogyna* (25%), dog-rose *Rosa canina* (10%), elder *Sambucus nigra* (10%), field maple *Acer campestre* (10%), sea buckthorn *Hippophae rhamnoides* (10%) and wild privet *Ligustrum vulgare* (10%).
- Additional bat roost features, above what may be required as mitigation, in the form of four wooden Kent bat boxes erected at least 3m above ground and on the south-eastern or south-western elevation of mature trees within the wider site

17 Conclusion

The extended phase 1 ecological assessment confirmed that the site supports opportunities for a range of protected species including bats, hedgehogs and breeding birds.

The preliminary roost assessment confirmed that the house supports moderate suitability for roosting bats. Therefore, further survey effort was undertaken to confirm the presence/absence of roosts, characterise any bat roost/s, assess the extent bats may be affected by the proposed demolition works and devise an appropriate mitigation strategy to support the proposed works and address any breaches in the legislation. In accordance with Natural England standing advice and BCT Good Practice Guidelines, this took the form of two presence/absence surveys undertaken during May and June 2022.

These have confirmed that the house does not support roosting bats. As such, no mitigation is considered necessary.

No further survey work is required for the garage, rear shed, front shed or the metal store.

Precautionary mitigation measures have been recommended for other protected species. These include sensitive timing of the works, careful vegetation removal and sensitive lighting. Opportunities for ecological enhancement have been suggested for the site. Biodiversity Metric Calculations will be carried out in order to provide measurable outcomes which demonstrate that the project will deliver quantifiable benefits to biodiversity compared to the baseline situation.

18 References

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Appendix 1 – Proposed Site Plan

