Florence House

Hereford

Preliminary Ecological Appraisal, Bat Survey and Protected Species Assessment

July 2017

W: www.acerecology.co.uk | E: enquiries@acerecology.co.uk T: 029 2065 0331

16 Wordsworth Avenue, Penarth, Vale of Glamorgan, CF64 2RL

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Florence House Preliminary Ecological Appraisal, Bat Roost and Protected Species Assessment				
Revision	Date	Prepared by	Checked by	Approved by
1.0	06 July 2017	Nia Howells Graduate Ecologist [redacted]	Alastair Krzyzosiak Ecologist [redacted] NE Licence No: 2016-23173-CLS-	Paul Hudson MCIEEM Principal Ecologist [redacted]
2.0	31 July 2017	Hal Starkie Ecologist [redacted] NE Licence No: 2016-24257-CLS-CLS	Paul Hudson MCIEEM Principal Ecologist [redacted]	Paul Hudson MCIEEM Principal Ecologist [redacted]

Summary

Site Location	This report presents the findings of a preliminary ecological appraisal, bat roost and protected species assessment of a small cottage (known as Florence House), and its associated grounds. The site is located at Staunton-on-Wye, Hereford, HR4 7NA. It lies within the boundary of Hereford Council (Ordnance Survey Grid Reference centred at: SO 3627 4529).
Survey Methodology	The bat survey comprised the following: • A preliminary bat roost assessment of the buildings searching for signs of bats; and • One dusk emergence survey of one of the buildings (the cottage). The protected species assessment was undertaken following standard methods and comprised a desk study, habitat survey and a survey of protected and notable species. The preliminary ecological appraisal identified the habitats on site.
Results	No signs of bats were found anywhere in or around the buildings during the preliminary roost assessment or the dusk emergence survey of the cottage. The site is located within an area providing high quality foraging and commuting habitat for bats. No habits or species of importance were recorded.
Results of Dusk Emergence Survey	No bats were observed emerging from the cottage during the dusk emergence survey.
Suitability of the Buildings to Support Roosting Bats Determined During Preliminary Roost Inspection	The cottage is assessed as having low suitability to support roosting bats. Sheds 1 and 2 are assessed as having negligible suitability to support roosting bats.
Evidence of Nesting Birds	One defunct bird's nest was recorded in the roof void of the cottage. It was unoccupied at the time of the survey. The species that had built the nest could not be determined.
Evidence of Other Protected Species	With the exceptions of bats (see above) and nesting birds within the trees the site is considered unlikely to support any other protected species.
Predicted Impacts of Development on Bats and Nesting Birds	Based on the conclusion that bats are unlikely to be using the buildings as a roost site, no negative impacts on bats are anticipated. Based on the conclusion that birds are not currently nesting in the buildings, no negative impacts on birds are anticipated.
Mitigation and Compensation of Proposed Impacts	No mitigation and compensation measures are required.
Licensing Requirements for Bats	None Required.
Required Actions	Detailed recommendations are given in Section 6 of this report. These include precautionary methods and guidance for action to take if bats are found during the works.

1 Introduction

1.1. Brief

This report presents the findings of a preliminary bat roost and ecological assessment of a small cottage (known as Florence House), and its associated grounds. The site is located at Staunton-on-Wye, Hereford, HR4 7NA. It lies within the boundary of Hereford Council (Ordnance Survey Grid Reference centred at: SO 3627 4529).

1.2. Site Description

The building lies on the western edge of the rural village of Staunton-on-Wye. The immediate surroundings comprise the village which is connected via narrow unlit country roads, farmsteads and agricultural fields bordered by hedgerows, which interlink small areas of woodland in the local landscape. There are numerous wet ditches and waterbodies near to the site.

The location of the building is shown on Plan 1: Location Plan.

1.3. Proposed Works

Detailed plans were not available at the time of writing. However, the building is proposed for demolition, to facilitate the redevelopment of the site to provide a new residential dwelling. Two small sheds will also be demolished. A hedge bordering the site is in the process of being removed. The existing garden will be landscaped following completion of the new build.

1.4. Legislation and Planning Policy

1.4.1. Bats

All UK species of bat are designated as 'European Protected Species'. Their breeding sites or resting places[1] (roosts) are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010.

Works affecting bats are subject to licensing procedures by Natural England (NE). The legal protection and licensing procedures are summarised in Appendix 1.

1.4.2. Nesting Birds

All wild British birds (whilst building nests, nesting and sitting on eggs) and their nests and eggs (with certain limited exceptions are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Some species, such as barn owls (*Tyto*

[1] Resting places are defined 'as areas that are essential to sustain an animal or group of animals when they are not active' (Anon 2007).

alba), are listed on Schedule 1 and have extra levels of protection, including protection from disturbance whilst nest building and disturbance of dependant young.

1.5. Survey Scope

The bat surveys comprised the following:

- A preliminary bat roost assessment which included a survey for nesting birds; and
- One dusk emergence survey of the cottage;

A preliminary ecological appraisal of the site was also undertaken which identified potential ecological constraints to the proposed development, assessed impacts including appropriate mitigation measures where necessary.

1.6. Reporting

The aims of the report are to:

- Outline the methodology used during the survey;
- Present a summary of the survey methods and results;
- Determine if birds are nesting on site;
- Determine if bats are roosting on site or have potential to roost on site, and if so, identify the species of bat, roosting location, roost type, numbers of bats present and the location of access points;
- Determine the need for further targeted surveys on site;
- Provide an interpretation of the findings, in relation to the potential impacts of the development;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Specify the legal and policy constraints relevant to bats and nesting birds which may affect the development; and
- Provide an indication of potential licensing requirements and mitigation, compensation and enhancement measures that may be required.

2. Methods

2.1. Desk Study

An assessment of the site and surrounding area, including existing habitats from maps and aerial photographs, was carried out. A Quantum Geographic Information System (QGIS) layer obtained from an NE dataset, was used to search for statutory and non-statutory nature conservation designated sites within 10km (for sites specifically designated for bats) and 2km for other designated sites. A 1km search was undertaken for Ancient Woodland Sites.

2.2. Field Study

2.2.1. Daytime Internal and External Inspection

A systematic search was made of the exterior and interior of the building and the two sheds looking for features that bats could use for entry/exiting and roosting[2]. In addition, a search was made for the presence of bats or evidence of bat use, such as their droppings, feeding remains, urine staining, scratch marks and the remains of dead bats. The survey was undertaken on 28th June 2017 by Alastair Krzyzosiak[3] (NE Licence No: 2016-23173-CLS-CLS), with the assistance of Nia Howells[4/5].

A high-powered torch (Clulite), an endoscope (Rigid Micro CA-300)[6], binoculars and a ladder were used, as appropriate during the survey. Temperature and humidity measurements were taken close to the ridge beam at the top of the roof void using a Mastech digital anemometer.

2.2.2. Assessment of Bat Roost Suitability

An assessment of the value of the site for bats (and any potential roost sites therein) was made, in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2016) (see Appendix 2A). The assessment was based on the relative abundance and quality of potential roost sites and the habitat features within both the site and the surrounding landscape suitable for roosting, foraging and commuting bats.

[2] Bats may utilise gaps as small as 8mm by 20mm (Bat Conservation Trust, Cluster flies leaflet).

[3] Alastair is employed as an ecologist with Acer Ecology Ltd. He graduated from Newcastle University with an MSc. in Ecological Consultancy and has two years' postgraduate experience in ecological consultancy. He holds English (NE Licence No: 2016-23173-CLS-CLS), Welsh (75630:OTH:CSAB:2017) and Scottish bat licences. Further details of his qualifications and experience can be found at http://bit.ly/2p3EDim.

[4] Nia graduated with a degree in Zoology (with a professional training year) from Cardiff University. She has surveyed bats and reptiles with Acer Ecology in 2013 and has undertaken a CIEEM professional development training course in 'Preliminary Ecological Appraisal – An applied approach'

[5] Nia followed the guidance given in section 1.22 of the Bat Surveys for Professional Ecologists (Collins, 2016) which states that an unlicensed surveyor is obliged to withdraw from a building when evidence of a roost is identified to avoid unlicensed disturbance.

[6] Alastair's licence does not permit the use of an endoscope. This work was undertaken with Alastair acting as an accredited agent under the licence of Paul Hudson (NE Licence No: 2015-16453-CLS-CLS).

2.3. Survey for Nesting Birds

A visual search was undertaken for active bird nests, as well as any signs which might indicate either past or current nesting, such as guano, singing birds, birds carrying nesting material, food items or faecal sacs and calling chicks.

2.4. Preliminary Ecological Appraisal

The survey was undertaken following standard methods as described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal 2012 guidelines, and the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee, 2010). The methodology utilised for the survey work comprised a desk study, habitat survey and a survey of protected and notable species.

2.4.1. Landscape Context

The site and wider landscape was assessed and characterised using aerial images and Ordnance Survey maps. The presence of off-site features and habitats, which add to the ecological value within the wider area were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 4 below.

2.4.2. Protected and Notable Species

During the survey, emphasis was placed on searching for evidence of, and habitats with, potential to support protected or notable species, especially species meeting any of the following criteria:

- Listed under the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife and Countryside Act 1981 (as amended);
- Listed under The Natural Environment and Rural Communities (NERC) Act 2006 Section 41 Habitats or Species of Principle Importance for Conservation of Biological Diversity in England;
- UK BAP priority species or Local BAP (LBAP) priority species;
- Nationally rare or nationally scarce species; and
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/ BTO Red or Amber Lists).

It should be noted that only those species with potential to be present on site are mentioned within this report.

2.4.3. Assessment of Ecological Value

The value of the habitats and features of the site have been provisionally evaluated and graded in accordance with a geographical frame of reference as detailed in *Guidelines for Ecological Impact Assessment in the United Kingdom* and Ireland (IEEM, 2016). The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and lastly, within the immediate zone of

influence of the site only. Brief descriptions of how Acer Ecology interprets these categories are set out in Appendix 3.

2.5. Dusk Emergence and Dawn Re-entry Surveys

The evening dusk emergence survey commenced approximately 30 minutes prior to sunset, and continued until it became too dark to see any emerging bats (approximately 1.5 to 2 hours after sunset).

Surveyors were positioned at viewpoints where they had good sight of all the elevations of the building, so that all potential roosting features could be observed to detect any bat emergence from or re-entry to the buildings. In addition, bat activity near the building was also recorded to help ascertain flight lines.

In accordance with section 2.6.1 of the Bat Conservation Trust's Bat Surveys for Professional Ecologists (Collins, 2016) the survey was undertaken during a night with a temperature above 10°C at sunset. The survey was also undertaken in the absence of strong wind.

2.6. Constraints

General Temporal Constraints

An ecological survey can only identify what was present on site at the time it was conducted, however, habitat usage by species can change over time.

Restricted Access

Not all parts of the building could be inspected. For example, the space between the roof and internal vaulted ceiling and the space behind the weather boards could not be accessed. Similarly, the areas between the roof tiles/sheeting and the roof lining were inaccessible.

Data Search

Considering the small size and nature of the development, the overall impact on biodiversity is likely to be localised and of low significance. In addition, no land will be lost and it is considered very unlikely that the development will have any impact outside the footprint of the works. The data search results are considered unlikely to impact on the decision-making process and so a Local Records Centre (LRC) data search has not been undertaken.

This approach is consistent with CIEEMs Guidelines for Accessing and Using Biodiversity Data (2016) which states that a single dwelling[7] demolition and rebuild may not require a Local Records Centre search required where: there is no requirement for any other preliminary survey (e.g. for habitats or other protected species) other than nesting birds or barn owls; and no trees likely to be used by roosting bats are to be affected (e.g. felling, pollarding, crown reduction, limb removal).

[7] A single dwelling/building may include adjoining structures (e.g. garages, lean-to structures) and small outbuildings (e.g. garden sheds)

3. Results

3.1. Desk Study

Statutory Sites (SACs or SSSIs) Designated for Bats within 10km

No SACs or SSSIs specially designated for bats lie within 10km of the site.

SSSIs or SACs within 2km

There are two SACs and SSSIs designated for their conservation value within a 2km search radius of the site. These are listed in order of proximity below:

- Monnington Scar SSSI which is located approximately distance 1.2km to the south-west of the proposed development site. This SSSI is designated for exposure of Red Marls sedimentary layer; and
- River Wye Special Area of Conservation SAC and Site of Special Scientific Interest (SSSI) is located approximately distance 1.25km to the south-west of the proposed development site. This SSSI is designated for its range of rare/threatened species and habitats. Its primary interest is the range of migratory fish, white clawed crayfish and otters. It has important riparian plant species such as water-crowfoot which supports a range of fish and invertebrates.

NNRs

No NNRs are present within 2km of the site.

3.2. Field Study - Bats

3.2.1. Ecological Context of Site

The site is located within an area providing high quality foraging and commuting habitat for bats. There are lines of trees, mature hedgerows, ditches, waterbodies and linked back gardens that form continuous habitat corridors on the site that connect to the wider landscape. These could be used by bats for commuting and foraging. Nearby farm buildings, residential dwellings and woodland are likely to provide opportunities for bat roosts.

There is no street lighting in the vicinity of the site. Artificial light is likely to be limited to spill from nearby properties. Levels of traffic are also likely to be very low due to the isolated location and low human population in the area.

3.2.2. Building Description from the Perspective of Bat Habitat

The table below summarises the key features of the building.

Table 1: Key Features of Building

Building Type	The building is a single storey timber framed cottage (Photo 1). Sections of wall are constructed with timber, bricks and wattle and daub. The upper floor consists of a converted loft. There is a lean-to extension on the eastern elevation with a near flat corrugated asbestos roof (Photo 2), a small open lean-to on the southern extension with a corrugated asbestos roof (Photo 2) and a corrugated iron coal store, also a lean-to construction, on the northern elevation (Photo 3)
Roof	The roof is pitched on a north-south axis. It is constructed from artificial slate on the western elevation (Photo 1) and corrugated asbestos sheets on the southern and eastern elevations (Photo 2). It has interlocking concrete ridge and hip tiles. Overall, the roof is in good condition. However, capping has fallen from two concrete ridge tiles on the eastern elevation (Photo 4). Edge tiles at the eaves are impeded by close-fitting guttering on all elevations.
Chimneys	There is a single chimney stack which is built as a separate structure to the rest of the building.
Soffits, Fascias, Bargeboards, Weatherboards	The asbestos soffit on the western elevation is well sealed but has two small gaps/crevices between the wall of the building and the soffit (Photo 1). There are various gaps along the bargeboard and under the weatherboards on the northern elevation (Photo 3). The timber fascia is generally in good condition.
Render	The southern and eastern elevations are rendered (Photo 2).
Roof Void	The roof void is approximately 2m high, 2m wide and 3.5m long. Rockwool insulation is present in the roof void to the eves (Photo 5). The roof is lined on the western side with bitumen but has no lining on the southern or eastern sides. Small amounts of light ingress are visible along the hips at the southern end of the building and on the eastern elevation along the eves. Moderate amounts of mouse droppings were scattered throughout and extensive cobwebbing was present (Photo 6). There is a gap of approximately 20cm between the external roof and the internal vaulted ceiling of the loft conversion (Photo 7). The space appears to run along the length of the building from the roof void at the southern end of the building to the gable end on the northern elevation. The void had a temperature of 19.1C with 71% humidity.

Table 2: Photos Showing the Building and its Features

Photo 1: Western elevation, gaps under fascia board

Photo 2: South-eastern elevation

Photo 3: North-eastern elevation and gaps behind weatherboard and bargeboard

Photo 4: Eastern elevation and missing ridge caps

Photo 5: Roof void

Photo 6: cobwebbing

Photo 7: Space between vaulted ceiling and roof

3.2.3. Garden Sheds

Shed 1

Shed 1 is timber framed with corrugated metal walls and roof. It has timber cladding on the western elevation. It is open to the outside through wide access points on the eastern and western elevations. The building is open to the elements and very draughty. No evidence of bats was recorded inside.

Shed 2

Shed 2 is also timber framed with corrugated metal walls and roof. The internal walls in one half of the shed are a more significant, single skin stone or brick construction. Shed 2 is well sealed to the outside with no access points or potential roost features. It has negligible potential to support roosting bats and is therefore not mentioned again in this report.

Table 3: Photos Showing the Garden Sheds

Photo 8: Shed 1

Photo 9: Shed 2 (right of image)

3.2.4. Evidence of Bats

No bats or signs of bats were found anywhere in either the interior spaces or external parts of the cottage or sheds during the preliminary bat roost assessment.

In addition, there were no signs of butterflies (such as small tortoiseshell (*Aglais urticae*) or peacock (*Aglais io*) butterflies, nor any moths (such as herald moth (*Scoliopteryx libatrix*)), all of which frequently occur in buildings used by bats.

Moderate numbers of mouse droppings were found in the roof void of the main house.

An active bee nest was recorded under the weather boards, above the lean-to on the northern elevation.

3.2.5. Potential Access Points and Roosting Locations for Bats

Potential Roosting Sites

The following potential roost sites and access points were noted during the internal and external inspection:

- Gaps under the bargeboards (Photo 10) and gaps under and between the weatherboards and external walls on the northern gable end of the cottage(Photo 11). The space behind the weatherboards and bargeboards appears to give access into the roof;
- Gap between soffit and external wall on western elevation of cottage (Photo 12). The soffits appear to be sealed so access into the roof void is unlikely. The spaces appear to be limited to crawl spaces only; and
- Gaps under ridge tiles with missing capping (photo 13).

Table 4: Photos Showing Potential Roost Sites

Photo 10: Northern Elevation

Photo 11: Northern Elevation

Photo 12: Western Elevation

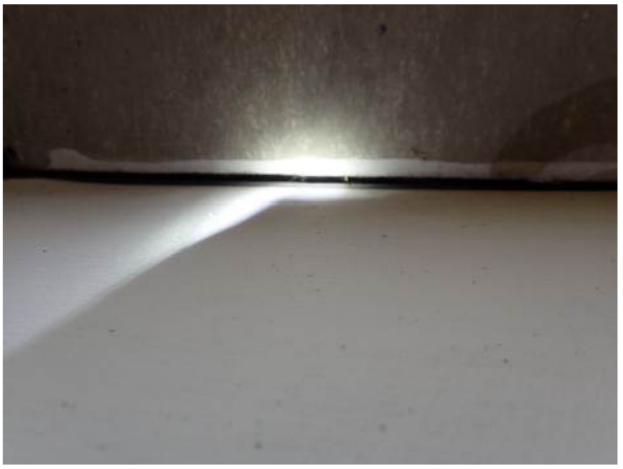


Photo 13: North-East elevation

3.2.6. Nesting Bird Survey

One defunct bird's nest was recorded in the roof void. It was unoccupied at the time of the survey. The species that had built the nest could not be determined.

3.3. Field Study - Preliminary Ecological Appraisal

The site consists of six elements detailed below. These comprise:

- Scattered Broadleaved Trees (A3.1) – Mostly small fruit trees such as apple (*Malus pumila*) and plumb (*Prunus domestica*) planted in the garden in areas of bare ground. One medium sized holly (*Ilex aquifolium*) tree had significant ivy (*Hedera helix*) cover;
- Improved Grassland (B4) – The majority of the site had a very short sward and had been recently weed killed so that most of the vegetation was dead. Grasses included perennial rye-grass (*Lolium perenne*) and annual meadow-grass (*Poa annua*). There were no areas of longer vegetation that could support protected species such as reptiles or great crested newt;
- Intact Hedge (J2) – Low (approximately 1m high) hedge between the western site boundary and the public road off site. Mainly consisting of holly with a single small hazel (*Corylus avellana*) and single small elder (*Sambucus nigra*);
- Intact Species-poor Hedgerow (J2.1.2) – Tall leylandii hedge (approximately 3m high by 1.5m wide) encircling the site on the northern, eastern and southern boundary's;
- Bare Ground (J3.4) - Patches of old flower beds. Some domestic planting such as hydrangea species and open areas of rough ground with common weeds such as dandelion (*Taraxacum officinale*). Some areas of hard standing adjacent to the cottage; and
- Building (J.3.6) – Cottage and two sheds (see descriptions in Section 3.)

3.3.1. Off-site Habitats

The wider environment around the survey area contains habitats of ecological interest, such as ponds, waterbodies, hedges and woodlands. However, given the small size of the development proposals and the limited ecological value of the survey area, it is considered highly unlikely that the off-site habitats will be affected by the demolition of Florence House and any associated works. There will be no effects on waterbodies within 500m of the development. These waterbodies and other habitats have therefore been excluded from this assessment.

3.4. Dusk Emergence and Dawn Re-entry Surveys

The dusk emergence survey was undertaken on 20th July 2017. There were two surveyors during the survey; Hal Starkie[8] and Nia Howells[9]. Both the surveyors were equipped with an Elekon Batlogger. The results of the survey is summarised in the table below:

Survey Number 1 Date: 20th July 2017 Sunset time: 21:23 Start time: 21:08 Finish time: 22:53 Cloud cover: 7/8 oktas Precipitation: None Wind[10]: 0 Sunset temp.: 14°C Surveyors: 2
Dusk Emergence: No bats were recorded emerging from the building.
Re-entry: No bat activity directly associated with the building was observed.
Foraging and Commuting: Low levels of bat activity of three species (common pipistrelle, soprano pipistrelle and brown long eared bat) were recorded during the survey. Bats were not observed foraging or commuting along any linear vegetation features within the site and no important foraging areas where identified.

[8] Hal graduated from the Manchester Metropolitan University with a 1st Class Hons. BSc. Wildlife Biology degree and is employed as an ecologist with Acer Ecology. He has three years' postgraduate experience of working in ecological consultancy and holds both English (NE Licence No: 2016-24257-CLS-CLS) and Welsh bat licences (NRW Licence No: 72059). He is a member of his local mammal, bat and plant groups and volunteers with the bat conservation trust in his spare time. Further details of his qualifications and experience can be found at https://uk.linkedin.com/in/hal-starkie-b083a4114.

[9] Nia is a Zoology graduate (with a professional training year) from Cardiff University. She has been involved in bat survey work with Acer Ecology since 2013.

[10] Estimated on site using the Beaufort scale

4. Evaluation

4.1. Summary of Preliminary Roost Inspection

The preliminary roost asessment found no evidence of bats roosting within the cottage or the sheds.

4.2. Assessment of Suitability of Building to Support Roosting Bats

The cottage was assessed was having low suitability for use by bats. Whereas shed 1 and shed 2 have been assessed as having negligible potential for use by bats. Full justification of the assessment can be found in the Appendix 2C. This assessment has been used to guide the number of dawn re-entry and emergence surveys required (see Appendix 2B).

4.3. Summary of Bat Surveys Undertaken

The preliminary roost assessment and dusk emergence survey found no evidence of bats roosting within the building.

4.4. Potential Hibernation Roosts

It is possible that the building could be used by crevice-dwelling hibernating bats, but this is considered unlikely[11] due to the following factors:

- The lack of direct evidence of bats found using the building during the preliminary roost inspection[12] and during the dusk emergence survey;
- The lack of underground or subterranean features;
- Much of the building fabric is exposed to the elements, and is likely to be subject to sub-zero conditions in winter;
- The southern and eastern pitches of the roof are corrugated asbestos;
- The walls of the building are generally well-mortared lacking deep penetrating crevices suitable for entry by bats;
- The building is likely to be subject to disturbance and environmental variations;
- The close-fitting nature of the roof timbers; and
- The building is in a relatively exposed position. The building is not shaded by any tall structures to the south (i.e. large trees/ buildings). They are therefore likely to be subject to direct sunlight throughout the winter months for much of the day and would therefore be unlikely to provide the stable, cool temperatures and humidity regime that would ordinarily be required by hibernating bats.

[11] Pipistrelle bats are sometimes found hibernating adjacent to their breeding roosts in secure locations such as cavity walls that have relatively stable temperatures. Other individuals disperse to roost in small numbers in more exposed locations such as around window frames. Often there are often no obvious external signs of their presence (JNCC, 2004). Because of the highly-exposed location of hibernation sites used by some individuals, it is very difficult to completely rule out hibernation use by this species in almost any building that has some very shallow crevices, openings or gaps.

[12] Due to the low levels of activity of bats in hibernation sites relatively few droppings are produced.

4.5. Birds – Interpretation of Nesting Bird Survey

Signs of an old bird's nest were found in the roof void.

4.6. Preliminary Ecological Appraisal

4.6.1. Assessment of Ecological Value of On-site Habitats

The habitats, features and species of the site have been provisionally evaluated and graded in accordance with the categories set out in Appendix 3. None of the habitats on the site are currently considered to be of international, national, regional, district, high local or local ecological value or important from a conservation perspective. The following points provide a summary of the habitats on site:

- Scattered Broadleaved Trees (A3.1) – The majority of the trees on site were relatively small with little or no potential to support breeding birds. The medium sized holly tree with ivy cover has potential to support breeding birds such as blackbirds (*Turdus merula*) which can nest in the ivy. However, no birds were seen to enter the tree during the survey and no nests were found in the tree;
- Improved Grassland - The improved grassland which covered the majority of the site is of negligible ecological value;
- Intact Hedge (J2) – Ecologically the most valuable feature on the site. However, in the context of the wider landscape, there are a large number of larger, better connected, more mature and more species rich hedgerows;
- Intact Species-poor Hedgerow (J2.1.2) – Very thick and dense leylandii hedge with low species diversity and negligible ecological value. The leylandii hedge was in the process of being removed at the time of survey. Only a few meters of hedge had been removed which has opened the end of the hedge, making it more accessible to birds for building nests inside the hedge. However, no nests were recorded in the hedge.
- Bare Ground (J3.4) – Negligible biodiversity value; and
- Building (J.3.6) – See analysis in previous sections.

4.6.2. Protected Species

With the exceptions of bats (see above) and nesting birds within the trees the site is considered unlikely to support any other protected species. The grassland is too short to be utilised by reptiles or amphibians and does not have the structural diversity these species require. Furthermore, there are no ecotones where habitats grade into each other creating small micro-habitats. The edges of the grassland, bare ground and bottoms of hedgerows have distinct boundaries with little or no vegetation. This greatly reduces the sites potential to be used by amphibians, reptiles and other species. The site is likely to be

visited intermittently by mammal species such as hedgehogs (*Erinaceus europaeus*) and foxes (*Vulpes vulpes*).

5. Impact Assessment

The potential impacts are based on the development proposals at the time of writing. This impact assessment may need to be reviewed and amended as necessary, in light of any alterations to the development proposals.

5.1. Potential impacts of development on bats

No negative indirect impacts on bats are anticipated. The survey concluded that bats are unlikely to be using the building for roosting; no regularly used bat commuting routes/foraging areas were observed and no bat species that are particularly light-sensitive (horseshoe bats, Natterer's bat (*Myotis nattereri*), long-eared bats (*Plecotus* species) etc. were recorded on site.

6. Required Actions

The implementation of these recommendations will ensure compliance with National Planning Policy Framework (2012) and help to avoid or minimise adverse impacts to the environment and protected species, mitigate and compensate for losses where damage is unavoidable and promote opportunities to enhance biodiversity.

6.1. Precautionary Measures for Bats and Birds

Given the lack of any evidence of any use by bats, it is highly unlikely that the development proposals will have any impact on bats or their roosts. No precautionary timing restrictions on works are necessary. However, it is not possible to rule out bat use entirely, and there is also a risk of an offence being committed if active birds' nests are present. The following recommendations are made to minimise risks to bats and birds:

- It will be clearly understood that in the event of any bats (or occupied birds' nests) being found, the contractor must halt works (if bats are encountered, the bat will be carefully covered over again), and appropriate advice will be obtained from a suitably qualified bat and bird consultant or Natural England and, if necessary, a bat development licence obtained before work can resume.
- Contractors will check for the possible presence of bats on the undersides of roofing tiles, sheet, ridge tiles, fascias, soffits and barge boards, wooden cladding etc. as they are lifted off. This is especially important at the outset of the works, since once the works have started, the disturbance is likely to drive any bats which are present away voluntarily.
- The services of an appropriately qualified and licensed ecological consultant will be available on an 'on-call' basis at all stages of the works to deal with any unexpected encounters with bats or nesting birds. Contact details of such will be held on site. Acer Ecology Ltd. will be happy to provide this support.

6.2. Ecological Enhancement for Bats

Ecological enhancements measures could be provided within the proposal and could include the retention of any unused areas of roof void in a suitable condition for use by roosting bats with suitable access points etc. Fascias, soffits and gutter-plates etc. could be left with small gaps beneath to allow access by bats behind them, and/or purpose-built bat roosting boxes could be installed, either on the exterior of the building or incorporated directly into the structure of the walls.

In addition, consideration could be given to using landscaping and garden design to provide habitat suitable for bats by encouraging night flying invertebrates. Plant species that provide a rich source of nectar should be used. Suitable species include flowering herbs such as lavender (*Lavendula* spp.), violets (*Viola* spp.); or shrubs such as flowering currant (*Ribes sanguineum*), privet (*Ligustrum vulgare*),

forsythia (*Forsythia* spp), dogwood (*Cornus sanguinea*), berberis (*Berberis* spp), pyracantha (*Pyracantha* sp) and ceanothus (*Ceanothus* sp).

6.3. Good Construction Practices for Badgers and Hedgehogs

In line with good practice, any open trenches and excavations associated with the development will either be closed at night or a means of escape provided (e.g. plank at no greater angle than 45º) to help any badgers or other trapped animals escape.

6.4. Hedgerows

The western hedgerow is proposed to be removed and replaced with a retaining wall. This work should be undertaken from September to February outside of the bird breeding season (March to August inclusive). Alternatively, if the removal of the hedgerow is to be carried out during the nesting bird season then a check for nesting birds by a suitably qualified ecologist immediately prior to removal must be undertaken. If any active nests are found these will be protected, along with an appropriate buffer zone of 5m, until the nesting is complete and the young have fledged[13].

6.5. Timing of Vegetation Clearance and Nesting Compensation – Nesting Birds

Clearance of hedgerows, will, wherever possible, be undertaken from September to February outside of the bird breeding season (March to August inclusive). Alternatively, any works undertaken from March to August should be subject to a check for nesting birds by a suitably qualified ecologist immediately prior to removal of such habitats. If any active nests are found these will be protected, along with an appropriate buffer zone of 5m, until the nesting is complete and the young have fledged.

In line with Planning Policy Wales 2016, the proposed works will include compensation measures for the loss of nesting habitat through the installation of at least 2 bird nest boxes, these can be installed within the fabric of the new bungalow (Appendix 4)

[13] Some bird species, especially raptors and owls remain dependent upon the nesting site after fledging and so depending upon the species the nest site may need to be protected for a period of time after fledging.

7. References

Anonymous (2007) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*. Final version, February 2007.

Collins, J (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* The Bat Conservation Trust, London.

Plan 1: Location Plan

Acer Ecology
Providing ecological solutions

Florence House
Hereford

Location Plan

Key

Site Location

Date: June 2017

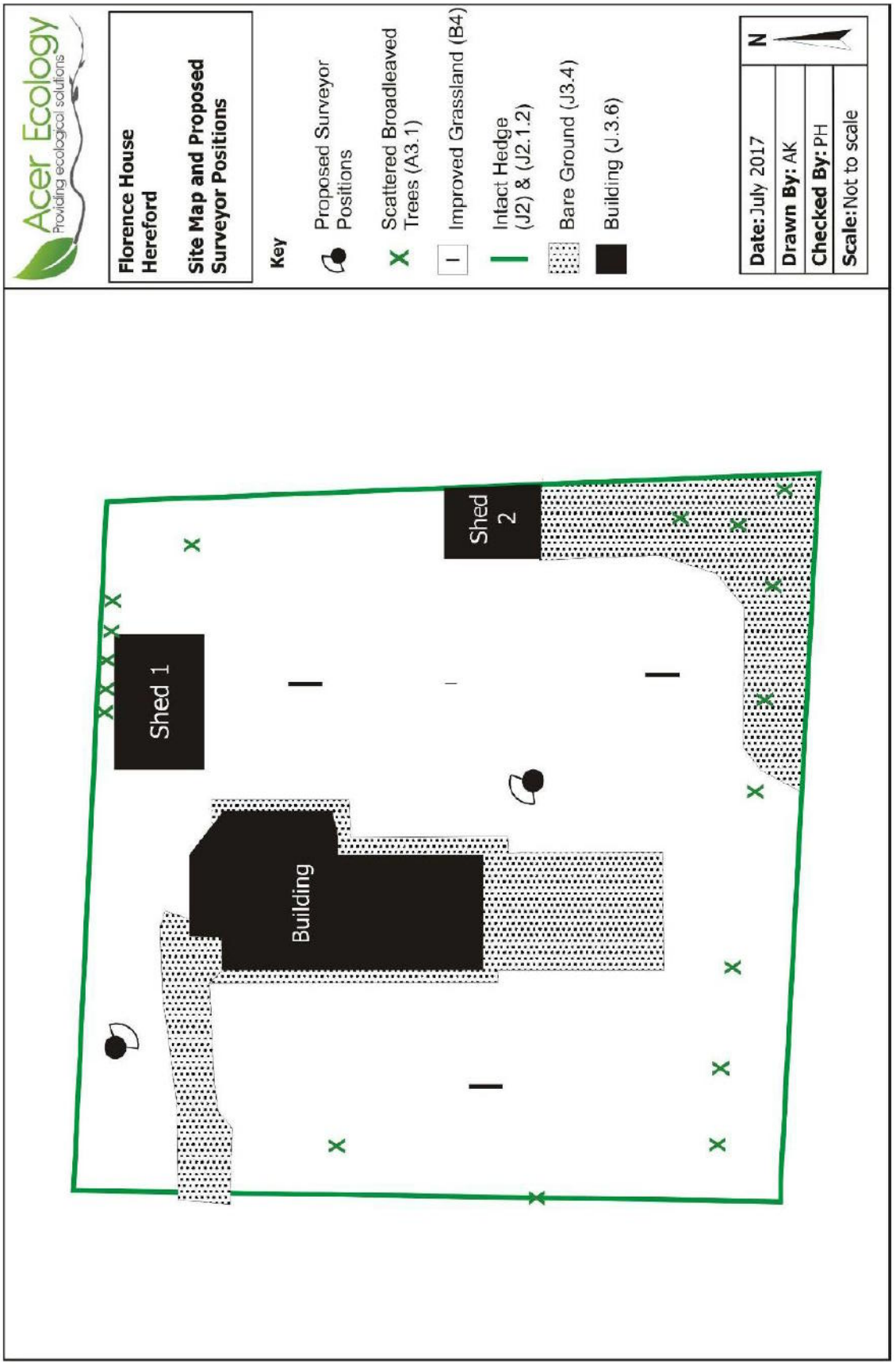
Drawn By: LM

Scale: N/S

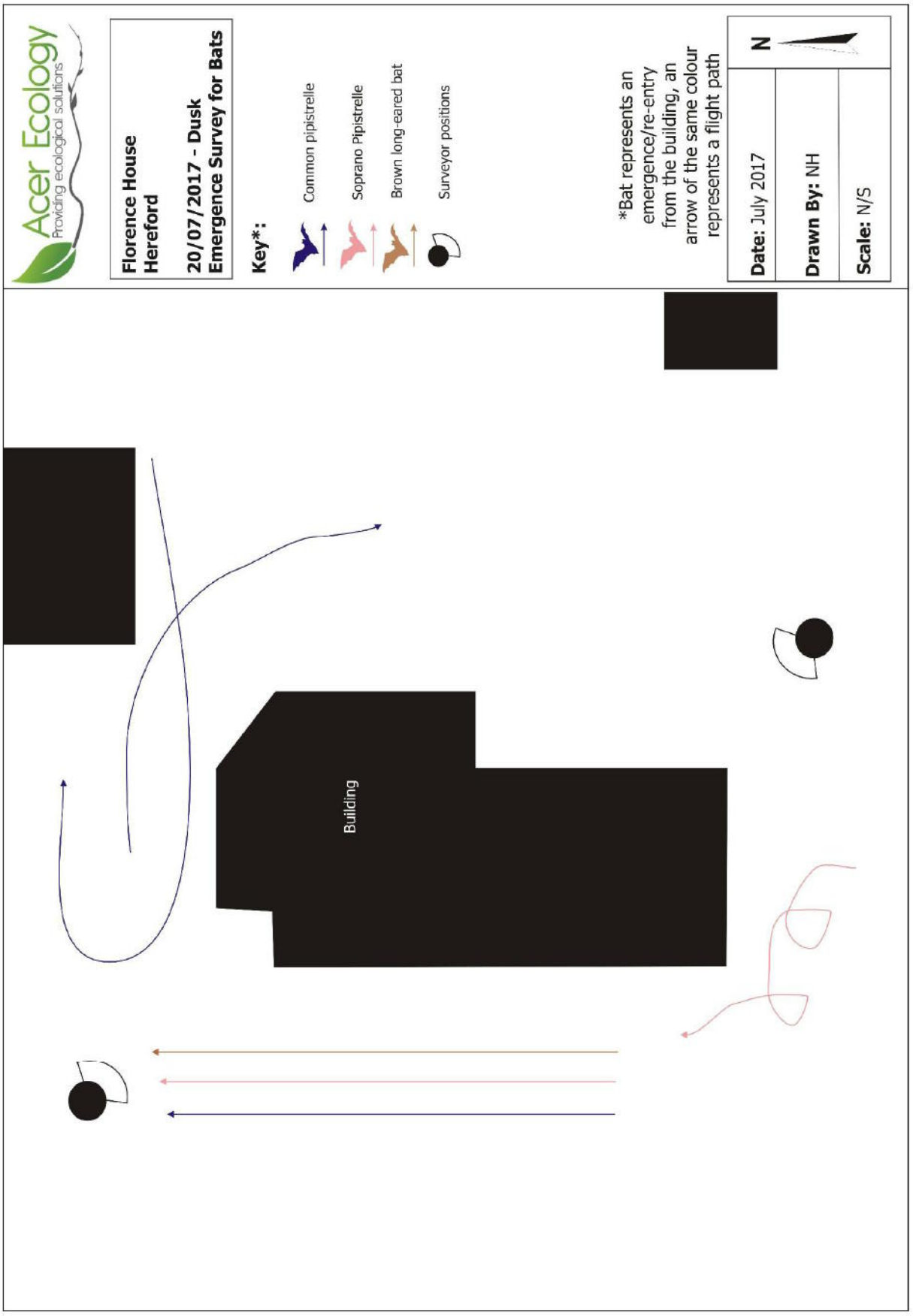
N

Imagery@2017 Google, Map data @2017 Google

Plan 2: Habitats and Vegetation and Proposed Surveyor Positions for Dusk Emergence or Dawn Re-entry Survey



Plan 3: Dusk Emergence Survey



Appendix 1: Bat Ecology and Legislation Protecting Bats and Their Roosts

Bat Ecology

There are 17 known breeding species of bat found in the UK, with additional species recorded as migrants or vagrants. All of them are small, nocturnal, flying, insectivorous mammals that are under conservation threat and many having undergone massive population declines over the last century. Some species, such as pipistrelle bats remain relatively common and widespread in the UK, while others, such as greater horseshoe bats, have an extremely restricted distribution.

Most bats will use a variety of roosts of different types throughout the year. The winter hibernation sites typically have cool, humid conditions with a stable microclimate and low levels of disturbance. Most British bats hibernate in caves or artificial structures that fulfil such requirements such as mines, tunnels and cellars. Bats emerge from hibernation around late March or early April and move into transition or intermediary roosts. Around early May, female bats gather in colonies to form summer or maternity roosts, and it is here where they will give birth between late May and early July. A colony may consist of many individuals (sometimes hundreds of bats) of mixed age and sex. Roosts may be in a variety of situations, including in tree-holes, caves, buildings and other secure crevices or internal spaces with appropriate stable temperatures and humidity. Bats may change roost locations many times during a year and colonies may split up and reform during this period. Males occupy solitary roosts in autumn, to which they attract females for mating.

Legislation

All British bat species and any place used for shelter or protection, or a breeding site or resting place (their roosts) are fully protected under the amended Wildlife and Countryside Act 1981 through inclusion in Schedule 5. The roosts are protected irrespective of whether bats are present at the time. All bats are 'European Protected Species' and fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats etc.) Regulations 1994, updated and consolidated by the Conservation of Habitats and Species Regulations 2010.

These pieces of legislation make it illegal to deliberately or recklessly:

- kill, injure or capture bats;
- disturb bats;
- damage, destroy, or obstruct access to bat roosts (including sites that are currently unoccupied);
- possess or transport a bat or any part of a bat unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

Disturbance is defined as that which is likely to impair bats ability:

- to survive, to breed or reproduce, or to rear or nurture their young;
- to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

Habitats Regulations Licensing

If a European Protected Species will be affected by a development, Natural England (NE) can issue licences under the Habitats Regulations to permit otherwise prohibited acts. Licences for certain activities can be granted providing "3 tests" are satisfied, that is:

1. the purposes of "preserving public health or safety, or for reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment";
2. there must be "no satisfactory alternative"; and,
3. the derogation is "not detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".

Licences are issued by NE, with NE assessing Test 3, and the Local Planning Authority assessing tests 1 & 2 (where proposals are not subject to planning, then NE alone will assess all three tests). Where Planning regulations apply, NE will only issue a licence after determination of the planning application.

The licence application will require the production of a detailed method statement, which sets out the activities to be carried out under the licence to minimise the risk of bats being harmed during construction works, and to ensure that bats will be conserved during the development of the site. This will need to detail the mitigation proposed (such as the replacement or compensation roost), the timescale and schedule of works, the number, size and locations of bat access points to be provided, the type of materials to be used (roofing material, roof lining, fascia's, soffits and bargeboards etc.), lighting proposals, action to be taken in the event bats are found during works and a post-development monitoring programme. The method statement will need to be accompanied by scaled plans and maps detailing the bat mitigation features. A cross-section of the access points and roost space is often required. The method statement must ensure that provision is made for new or continued roosting opportunities after the completion of development works. In some instances, a method statement is requested by the Local Planning Authority or Natural Resources Wales before the planning application is determined.

Natural Environment and Rural Communities (NERC) Act 2006 Under Section 40 of the Natural Environment and Rural Communities Act (2006), Local authorities have a duty to have regard to the conservation of biodiversity in exercising their functions. The duty affects all public authorities and aims to raise the profile and visibility of biodiversity, to clarify existing commitments regarding biodiversity, and to make it a natural and integral part of policy and decision making. Seven of the UK species of bat (soprano pipistrelle, barbastelle, Bechstein's, noctule, brown long-eared, lesser horseshoe and greater horseshoe bats) have been listed on the UK Biodiversity Action Plans (2007) as conservation priorities.

National Planning Policy Framework (2012)

The National Planning Policy Framework (2012) states that the presence of a protected species should be a material consideration when considering a development proposal which, if carried out, would be likely to result in harm to the species or its habitat.

Appendix 2A: Guidelines for Assessing Potential Suitability of Building for Bats

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	Commuting Habitat Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Foraging Habitat Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Commuting Habitat Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Foraging Habitat Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Commuting Habitat Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Foraging Habitat High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Proximity to Known Bat Roosts Site is close to and connected to known roosts.

Suitability	Description of Roosting Habitat
Negligible (Sheds)	Negligible habitat features on site likely to be used by roosting bats.
Low (*Cottage*)	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection appropriate conditions[14] 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) or hibernation[15].
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[16] (with respect to roost type only) the assessments in this table are made irrespective of 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.

[14] For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

[15] Evidence from the Netherlands, shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for large numbers of this species to be present during the autumn and winter in large buildings in highly urbanized environments.

[16] 'High roost status' is not defined within Collins, 2016. Acer Ecology Ltd. interpret maternity, hibernation, swarming sites, mating sites, and satellite roosts as being of 'high roost status' and exclude day roosts, night roosts, feeding roosts, transitional/occasional roosts from this definition. Pre-maternity/collecting roosts are not included within Collins, 2016 and will be assessed on an individual basis.

Appendix 2B: Minimum Number of Flight Surveys Required (Collins 2016)[17]

High Roost Suitability	Moderate Roost Suitability	Low Roost Suitability
Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. Surveys should be undertaken from May to September with at least two of the surveys from May to August.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey[18]. Surveys should be undertaken from May to September with at least one of the survey between May and August.	One survey visit. One dusk emergence or dawn re-entry survey (Survey period from May to August).

[17] Adapted from tables 7.1 and 7.3 of the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

[18] Multiple surveys should be spread out to sample as much of the survey period as possible. It is recommended that surveys are spaced at intervals of at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered only one visit.

Appendix 2C: Potential Summer Roosts

The Cottage

During the preliminary roost inspection, the cottage was assessed as having;

- Low suitability for use by crevice-dwelling bats (pipistrelle species and smaller *Myotis* species such as Brant's and whiskered bats) as the building contains relatively few suitable roosting features. These features could be used by individual bats opportunistically. However, these potential roost features are unlikely to provide enough space, shelter and protection to be used on a regular basis or by larger numbers of bats. The features are considered unlikely to be suitable for maternity use. No bat droppings were recorded, it is likely that they would be present in a roost of high conservation status or a roost containing larger numbers of bats;
- Low suitability for use by roof void-dwelling bats (long-eared species[19], large myotis bats such as Natterer's bat) for the reasons outlined above. Additionally, there was significant cobwebbing present in the roof void which would indicate that bats are not present. However, these bats could still roost in the building and use a nearby structure or a tree canopy to perform their social flight behaviour; and
- Negligible suitability for use by direct access species requiring a large access point and large roost space (lesser and greater horseshoe), as there are no suitable access points large enough for these species[20].

The building has been assessed as having low suitability for certain bat species (i.e. crevice-dwelling and roof-void dwelling bats), therefore it is this assessment that will guide the requirement for further surveys (see section 5).

Shed 1

During the preliminary roost inspection shed 1 was assessed as having no suitable roosting features for use by daytime roosting bats and very limited potential for use as a night roost or feeding perch. No droppings were found in the shed and no evidence of feeding remains were recorded. It is likely this evidence would have been present if the shed was being used as a feeding perch or temporary night roost. Therefore, Shed 1 has been assessed as having negligible suitability for use as a daytime roost and negligable-low potential to be used as a night-roost.

Shed 2

During the preliminary roost inspection shed 2 was assessed as having no access points or potential roost features. It has negligible potential to support roosting bats.

[19] It should be noted that in non-maternity roosts long-eared bats can make use of crevice features without gaining access into a roof void.

[20] Both species prefer larger openings (Schofield, 2008) but sometimes even smallish openings with a minimum diameter of 10cm (lesser horseshoe) can be sufficient (Reiter & Zahn, 2006).

Appendix 3: Definitions of Site Value

International Value

Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or non-designated sites meeting criteria for international designation. Sites supporting populations of internationally important species or habitats.

National Value

Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria (NCC 1989), National Nature Reserves (NNRs) or Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.

Regional Value

Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Site of Importance for Nature Conservation (SINC) criteria, but not meeting SSSI selection criteria. Sites supporting regionally significant areas of BAP habitats or large and viable populations Nationally Scarce species, or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.

County Value / District Value

Site identified as a Site of Importance to Nature Conservation (SINC) at the district level; meeting SWWSP 2004 published designation criteria, but falling short of SSSI designation criteria, whether designated as a SINC or not. Ancient woodlands and sites supporting regionally significant areas of UK BAP habitat. Large scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species (other than badger).

High Local

Habitats which just fail to meet Regional value criteria, but which appreciably enrich the ecological resource of the locality. Sites supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area. Moderate scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species.

Local Value

Old hedges, woodlands, ponds, significant areas of species-rich grassland, small scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species. Undesignated sites or features which appreciably enrich the habitat resource in the context of their immediate surroundings, parish or neighbourhood (e.g. a species-rich hedgerow). Rare or uncommon species may occur but are not restricted to the site or critically dependent upon it for their survival in the area.

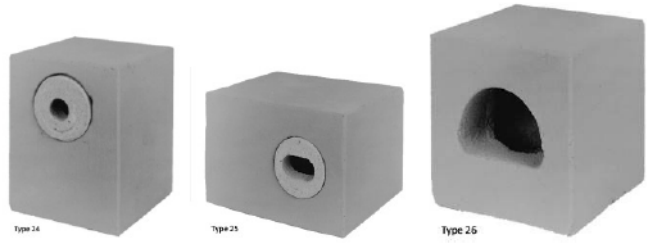
Site value (within the immediate zone of influence)

Low-grade and widespread habitats. Woodland plantations, structured planting, small areas of species-rich grassland and other species-rich habitats not included in the UK or Local BAP.

Negligible

No apparent nature conservation value.

Appendix 4: Schwegler Brick Nest Boxes



This range of brick nest boxes follows a highly successful design that has evolved over 40 years since Schwegler first started producing brick nest boxes for incorporation in buildings. The box dimensions correspond to those of standard, commercially available bricks used in modern European construction. These dimensions allow for a 1cm layer of mortar enabling the nesting blocks to be inserted in any wall without the need to cut adjoining bricks. The box can be installed flush with the outside wall and can be rendered or covered so that only the entrance hole is visible.

The interior of the box resembles a natural woodpecker hole, with the same shallow, oval depression in the floor. The box is manufactured from virtually the same material as Schwegler's tried and tested wood-concrete; an exceedingly durable, rot-proof and breathable natural material designed to mimic the properties of natural nest sites. Three designs of brick nest box are available.

Type 24

Features an upright box with removeable entrance hole at the top. With an entrance hole diameter of 32mm, this box is suitable for many small birds including great, blue, marsh, coal and crested tits, redstarts, nuthatch, tree and house sparrows.
Dimensions: height 23.5cm, width 18cm, depth = 18cm.
Weight = approx. 7.3kg.

Type 25

Features a wide box with removeable entrance hole at the right-hand side. With an entrance hole of 55 x 33mm this is the ideal box for attracting swifts.
Dimensions: height 18cm, width 26.5cm, depth 22cm.
Weight = approx. 8.8 kg.

Type 25A

Features a wide box with removeable entrance hole at the left-hand side. The Type 25A is based on the very successful Type 25, but features an enlarged breeding space with reduced overall depth of only 15cm. At inaccessible sites we recommend securing the removeable entrance hole insert with silicon or some other sealant to prevent it falling out. With an entrance hole of 55 x 33 mm the Type 25A is ideal for Common Swifts.
Dimensions: height = 18 cm, width = 32 cm, depth = 15 cm.
Weight = 4.5kg.

Type 26

Features an upright box with large open front. With a large open hole (110 x 80mm), this box will attract species that use open-fronted nest boxes, such as redstart, pied wagtail, spotted flycatchers and sometimes robin.

Dimensions: height 98cm, width 18cm, depth 18cm.

Weight = approx. 5.4