

BAT SURVEY

MAPLE AVENUE, SHILDON



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A. SUMMARY

E3 Ecology Ltd was commissioned to undertake a bat survey and ecological appraisal of seven buildings on Maple Avenue and Firtree, Shildon, where it is proposed to demolish the existing buildings and redevelop for residential purposes. A desk study was completed, including consultation with DEFRA's MAGIC website and the Environmental Records Information Centre North East (ERIC NE), and an external preliminary roost assessment and ecological appraisal was undertaken on 1st April 2021 in order to inform this survey report. Following the initial visit, dusk bat surveys were completed in June and July 2021.

The results of the desk study indicate that there are no internationally and nationally statutorily designated sites for bats within 2km. The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ); however the criteria requiring consultation with Natural England are not relevant to this development. There is a single record of a granted European Protected Species (EPS) mitigation licence for works affecting bats within 2km, located approximately 950m south-west of the site.

Maple Avenue and Firtree are situated in a predominantly residential area, with small gardens, patchy areas of hard standing and scattered trees associated with gardens and other amenity greenspaces. At the north of the site is an area of amenity grassland which is also to be developed. A quiet residential road is located immediately adjacent to the east of the site. Bat foraging and commuting opportunities in the surrounding area are limited to scattered and fragmented greenspaces and gardens. The site itself contains low suitability foraging and commuting opportunities, with small gardens and some scattered shrub and trees. Overall, the habitats in the local area are of low suitability for use by foraging/commuting bats.

The properties are all two-storey, semi-detached red brick buildings with pitched pantile interlocking roofs. Each has a small single-storey brick-built extension on the gable ends with flat felt roofs. The buildings are generally well sealed but all have potential roosting features including missing or slipped roof/ridge tiles, gaps in soffit boxes, missing verge mortar and lifting of lead flashing around chimneys. No external bat field signs were found and internal inspection was not completed. Overall, buildings are considered to be of low suitability for roosting bats with a low risk of hibernation use.

A dusk presence/absence survey of all seven buildings was undertaken in June 2021. A single roost was identified: a common pipistrelle emerged from beneath the guttering of building 2 (No. 22/24 Maple Ave). The identified roost is considered to be of local conservation value. Subsequently, a second dusk survey of building 2 was undertaken in July 2021. No roosts were identified and bat activity was low. No evidence of a maternity roost was recorded.

The buildings contain a small number of opportunities for nesting birds, although no evidence was recorded of such use. The patch of amenity grassland at the north of the site may provide suitable foraging habitat for hedgehog, and a pile of rubbish within an adjacent area of species-poor semi-improved grassland may provide suitable hedgehog refuge. Trees adjacent and within the grassland plots provide opportunities for nesting birds, but are considered of negligible to low suitability for roosting bats. No invasive species were recorded at the site during the survey.

The following potential impacts have been identified:

- The loss of a single proven common pipistrelle day roost and a small number of potential crevice roosting locations.

- Low residual risk of disturbing/harming bats during demolition, including hibernating bats if works to buildings commence during winter.
- Loss of a small area of low suitability bat foraging and commuting habitat.
- Increased lighting which could impact on bat foraging and commuting habitat within the adjacent area.
- Risk of harm/disturbance to nesting birds if building demolition is carried out during the bird breeding season (March – August inclusive).
- Loss of hedgehog foraging habitat.
- Risk of harm/disturbance to hedgehog.

A detailed avoidance, mitigation and compensation strategy is provided within this report. Key measures include:

- **Works to the Building 2 will not commence until a development licence is obtained from Natural England. Other buildings will be demolished to a precautionary method statement, where appropriate.**
- Works to building 2 will be undertaken in accordance with the approved licence method statement and the mitigation measures included in this document, which include:
 - An ecological induction for site managers and contractors
 - Pre-commencement inspection of confirmed and potential roosting areas by the ecologist
 - Sensitive dismantling of these roosting areas under ecological supervision, taking care not to harm bats in the process. If bats are found, they will be captured by hand, given a health check and transported to a pre-installed bat box by the supervising ecologist.
 - If bats cannot be safely captured, they will be excluded from the roost using standard exclusion devices. These will be fitted by, or under supervision of, the ecologist and will remain in place for a minimum of five consecutive nights of suitable weather, in accordance with the most up to date edition of the Bat Workers Manual.
- As good working practice, building 2 will be demolished outside bat hibernation period (November to end of February inclusive).
- The remaining buildings will be demolished under a precautionary bat method statement.
- In the event that bats are found during works, works will stop in that area and the ecological consultant will be contacted immediately. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat handler.
- Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see <https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf> - Chapter 10).
- Sensitive design of external lighting
- 6 bat roosting opportunities will be incorporated into the completed development (e.g. Vivara bat tube or similar).
- A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if vegetation clearance or building demolition is undertaken between March and August inclusive.
- Landscaping design to benefit bats and wildlife generally.
- Hedgehog friendly fencing will be used within the design.
- Works will be completed in accordance with a detailed method statement for hedgehog.

The following additional enhancement measures are recommended at this stage and may evolve following further survey in order to further enhance the site for biodiversity:

- Integrated bird boxes to be incorporated into the buildings
- Additional native tree planting within the design.

The Local Planning Authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation and enhancement proposals are incorporated into the planning documents.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

B. INTRODUCTION

E3 Ecology Ltd was commissioned by Livin in March 2021 to undertake a bat survey of a proposed development site at Maple Avenue and Firtree in Shildon, County Durham. The survey comprised a desk study, daytime external preliminary roost assessment and ecological appraisal. Presence/absence surveys for bats were subsequently undertaken in June and July 2021.

B.1 AUTHOR, SURVEYORS & QUALIFICATIONS

The author's professional qualifications and survey licences are detailed in the table below, as well as those of additional lead surveyors who completed survey work at the proposed development site:

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Jessica Wilson	Ecologist	BSc MSc ACIEEM	2019-40053-CLS-CLS (Bats)
Rosie Mackenzie	Graduate Ecologist	BSc MSc	-
Georgia Vessey	Graduate Ecologist	BSc	-

Further details of experience and qualifications are available at www.e3ecology.co.uk.

All surveyors have the knowledge, skills and experience identified within the relevant CIEEM Competencies for Species Survey guidance, or were under the supervision of a surveyor with the required competencies.

B.2 OBJECTIVES

The objectives of the assessment are to:

- To detail the results of the survey work of the buildings on site that has been undertaken for bats.
- To provide recommendations to be incorporated into the design for the site.

B.3 PROPOSED DEVELOPMENT SITE

The site is located on Maple Avenue and Firtree in Shildon, at an approximate central grid reference of NZ 23530 26256.

The figures below illustrate firstly the site boundary and secondly the broad habitats present on site and within an approximate 500m buffer zone.



FIGURE 1: SITE BOUNDARY
(Reproduced under licence from Google Earth Pro.)



FIGURE 2: SITE AND SETTING
(Reproduced under licence from Google Earth Pro.)

B.4 DEVELOPMENT PROPOSALS

It is proposed to demolish the existing buildings on site and redevelop the site with new residential dwellings. Development proposals are not currently available.

C. METHODOLOGY

C.1 SCOPE OF STUDY

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The scope has been determined based on the site's characteristics, the nature of the surrounding area, the development proposed at the time of reporting and the likely associated zone of influence. Consideration has been given to potential effects both during the construction and operational phases of the development.

For this site the survey area comprised the green line boundary as defined within the figure in Section B. The survey area considered potential roost sites within and adjacent to the survey area, which may be affected by the proposed development.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The level of survey effort employed at the site has taken account of the recommendations within the Bat Conservation Trust (BCT) Good Practice Survey Guidelines¹.

C.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps.

Following this, a data search was submitted to the local records centre in April 2021, requesting data relating to bats within 2km of site. In addition, a search was made of the MAGIC website² for any granted bat licences within 2km, and Special Protected Areas (SPAs) or Special Areas of Conservation (SACs) within 10km, where the development may have the potential to lead to indirect disturbance of these sites, and any relevant SSSI IRZ that indicates the development proposals could potentially have adverse impacts on protected sites.

C.3 PRELIMINARY ASSESSMENTS

C.3.1 FORAGING/COMMUTING HABITAT ASSESSMENT

The potential suitability of the habitats within the survey area and surrounding landscape in relation to commuting and foraging bats was classified as negligible, low, moderate or high, based on BCT guidelines and using the surveyor's professional judgement.

C.3.2 PRELIMINARY ROOST ASSESSMENT (BUILDINGS/STRUCTURES)

A daytime assessment was made of all structures affected by the proposed development, in order to evaluate their suitability to support bat roosts, and, where present, to record field signs of use by bats.

Buildings/structures were inspected externally where access was available. Binoculars were used to assist with the inspection for potential roosting features and bat field signs, such as droppings, feeding remains, grease/urine staining, corpses/skeletons or bats themselves.

¹ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

² Multi Agency Geographic Information for the Countryside (www.magic.gov.uk)

Where present, external features such as roof and ridge tiles, chimneys, soffits, fascia/barge boards, flashing, brick/stonework, windows and doors, were searched.

Structures were categorised as having negligible, low, moderate or high suitability to be used by roosting bats, based on guidelines provided by the Bat Conservation Trust³ and detailed within the table below.

TABLE 2: ASSESSMENT OF BAT ROOSTING SUITABILITY OF BUILDINGS/STRUCTURES & TREES (TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TAKEN FROM TABLE 4.1 OF BCT'S BAT SURVEY GUIDELINES)	
Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	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 and/or suitable surrounding habitat to be used by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A building/structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A building/structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Note that any comments within this report on the state or condition of buildings/structures relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures.

C.3.3 GROUND-LEVEL TREE ASSESSMENT

A ground-level assessment was carried out of trees likely to be affected by the proposed development, using binoculars and a high-powered torch. Trees were inspected and assessed for their potential to support roosting bats based on guidelines provided within the Bat Conservation Trust Bat Survey: Good Practice Guidelines⁴ and detailed within the table in section C3.2. Potential roosting features searched for, as described in the Bat Roosts in Trees⁵ handbook, are listed in the table below:

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

⁴ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

⁵ Bat Tree Habitat Key (2018) Bat Roosts in Trees.

TABLE 3: POTENTIAL ROOSTING FEATURES FOUND IN TREES

DISEASE & DECAY FEATURES	DAMAGE FEATURES	ASSOCIATION FEATURES	OTHER FEATURES
Woodpecker holes Squirrel holes Knot holes Pruning cuts Tear-outs Wounds Cankers Compression forks Butt rots	Lightning strikes Hazard beams Subsidence cracks Shearing cracks Transverse snaps Welds Lifting bark Desiccation fissures Frost cracks	Fluting Ivy	Bat boxes Bird nest boxes

Based on the number and quality of features present, trees were assessed as negligible, low, moderate or high suitability to support roosting bats.

C.3.4 SURVEY EQUIPMENT

- High-powered torch
- Binoculars
- Digital camera

C.3.5 SURVEY DATES & ENVIRONMENTAL CONDITIONS

The table below details the environmental conditions during the preliminary assessment survey.

TABLE 4: PRELIMINARY ASSESSMENT SURVEY CONDITIONS

Date	Temperature (°C)	Cloud Cover (%)	Precipitation	Wind Conditions (Beaufort scale)
01/04/2021	6	100	Dry	2

C.4 DETAILED SURVEY METHODOLOGY

C.4.1 DUSK EMERGENCE ACTIVITY SURVEY

C.4.1.1 SURVEY EFFORT

The level of survey effort employed has taken account of the guidance provided by the Bat Conservation Trust (BCT)⁶ and summarised within the table below.

TABLE 5: RECOMMENDED NUMBER AND TIMING OF PRESENCE/ABSENCE SURVEY VISITS REQUIRED TO PROVIDE CONFIDENCE IN NEGATIVE PRELIMINARY ROOST ASSESSMENT RESULTS (FROM TABLE 7.1 AND TABLE 7.3 BCT GUIDELINES)

	Low Roost Suitability*	Moderate Roost Suitability	High Roost Suitability
Recommended minimum number of survey visits for	One survey visit. One dusk emergence or dawn re-entry survey (structures).	Two separate survey visits. One dusk emergence and a separate dawn re-entry	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry

⁶ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

presence/absence survey to give confidence in a negative result	For trees with low roost suitability, no further surveys required.	survey.	survey. The third visit could be either dusk or dawn.
Recommended timings for presence/absence surveys	May to August	May to September with at least one of the surveys between May and August	May to September with at least two of the surveys between May and August
<p>* If a structure is classified as having low suitability for bats an ecologist should make a professional judgement on how to proceed based on all of the evidence available. If sufficient areas of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden), then further surveys may not be appropriate.</p> <p>Note: Where a roost is confirmed as being present, further surveys may be required to fully characterise the roost</p>			

The recommendations provided above are guidelines and it is recognised by BCT that *'the number of visits could be adjusted (up or down) if necessary by the ecologist, bearing in mind the site-specific circumstances'*.

The buildings were classed of low suitability and a single survey of all seven buildings was undertaken in accordance with guidance. A roost was found in building 2 during this survey, therefore a second survey was undertaken focussing on building 2 to characterise this roost.

Details of dates, timings, weather, and surveyor numbers and names are provided in the results section.

C.4.1.2 SURVEY METHODS

Activity surveys were undertaken in suitably mild conditions when bats are active. Surveyor locations sought to box-in the site and give a good degree of confidence as to whether bats were flying into or out of the survey area.

Light levels were recorded at 5 minute intervals, using a light meter, located in an open area and directed upwards to ensure a standard baseline. Light levels generally provide a more reliable indicator of the likely times for bat emergence than minutes past sunset and this approach is recommended by BCT⁷. There is significant variation in emergence times, but hundreds of surveys by E3 in northern England over recent years have indicated that pipistrelles are likely to start emerging around 70 lux, noctule at a similar level or earlier, *Myotis* bats generally start to emerge below 10 lux, with most *Myotis* activity and brown long-eared emergence below 2lux. Bats are rarely recorded above 150 lux, and as light levels go below 0.5 lux bat activity in the vicinity of the roosts tends to decrease as bats disperse across the wider countryside. Bat emergence will start at higher light levels when there is good cover close to the roost. For example *Myotis* bats have been recorded emerging in light conditions above 50 lux when there is a short flight line from the roost site to dense woodland. If a species is recorded when light levels are close to expected emergence light levels, then the likelihood that a roost is nearby is greatly increased.

Surveyors were positioned to ensure coverage of all high-risk areas of the site, including any potential flight-lines from structures within the site to adjacent cover such as woodland blocks. If bats were recorded within the site before bats were seen in the wider area, or seen flying into the site, it is assumed that roosts are present within the site.

⁷ http://www.bats.org.uk/pages/recording_light_level_data.html

All surveyors used both Batbox Duet bat detectors to listen for bats and Anabat Express detectors, at each surveyor location, to record and better identify bat species. Listening through earphones to both heterodyne and frequency division signals helps ensure that all bat species were detected⁸, whilst recording all bat activity using the Express removes the risk of surveyor error in timings and species ID.

Timings for observations of key bat activity such as emergence, first records of each species and commuting routes were recorded using radio-wave synchronised clocks. All data were recorded using the Anabat Express for future reference and to allow confirmation of species identification through call analysis (using Analook software), and to capture brief echolocation calls that could not be reliably identified in the field⁹. Field survey recorded numbers of bats detected, feeding activity, flight paths, species (as far as is practicable), and social calls.

A total of 16 person-nights work was undertaken.

C.4.1.3 SURVEY EQUIPMENT

- Duet bat detectors
- Anabat Expresses
- Light meter

C.4.2 DATA ANALYSIS

All bat calls were analysed using Analook with calls identified to species where possible, referencing call parameters as detailed within Russ (2012)¹⁰ and Middleton et al (2014)¹¹.

Species from the *Myotis* genus of bats produce frequency modulated calls with overlapping call parameters and cannot be reliably distinguished to species level on call alone. As such, within this report, *Myotis* calls are identified as '*Myotis ?species*', with the most likely species identified through an assessment of a combination of call slope, loudness, frequency range, habitat and, where the bat was observed in flight, flight characteristics. Where insufficient information is available, calls are simply identified as '*Myotis sp.*'.

Bats from the pipistrelle genus also produce calls with overlapping parameters and the call criteria used to differentiate between species of this genus, based on peak frequencies, are detailed within the table below.

Species	Call Peak Frequency Range (KHz)
Common pipistrelle	>42 and <49
Soprano pipistrelle	≥51
Nathusius' pipistrelle	<40
Common or soprano pipistrelle ('50KHz pip')	≥49 and <51
Common or Nathusius' pipistrelle ('40KHz pip')	≥40 and ≤42

Similarly, bats of the *Nyctalus* genus produce calls with overlapping call parameters. Where calls are obtained in an open environment, the two *Nyctalus* species found in this region can

⁸ Listening to frequency division calls as well as heterodyne significantly increases the detection rate of *Nyctalus* species

⁹ Reviewing data recorded by surveyors using Duet detectors and the Anabat data indicated that reliable *Myotis* records increased through Anabat use, particularly once conditions were too dark for visual cues to assist in identification, when there was a lot of bat activity, and with bats in clutter. It also reduces errors where pipistrelles in clutter can be mis-identified as *Myotis* bats.

¹⁰ Russ, J. (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing

¹¹ Middleton, N., Froud, A. and French, K. (2014) Social Calls of the Bats of Britain and Ireland. Pelagic Publishing

be differentiated and calls will be identified as noctule or Leisler's bat. Where there is doubt, calls are noted as *Nyctalus sp.*.

Within this report, for all species, if the species name is given without qualification, the record was of good quality and fell within recognised parameters with no potential overlap with other species present in the region. If there is a degree of uncertainty this is indicated by a question mark, e.g. ?brown long-eared. If identification to species is not practicable, then where possible calls are identified to genus.

C.5 SURVEY CONSTRAINTS

Trees were only assessed from ground level and from within the site. Furthermore, tree assessments may sometimes need to be undertaken in summer, while in full leaf, which may obscure potential roosting features during the assessment of bat roosting potential. However, the trees were assessed, where possible, from various angles on site using good quality binoculars and professional judgement was used based on the tree characteristics to supplement the assessment. Where trees could not be confidently assessed, further survey has been recommended.

Access to the back gardens was not possible, nor was access inside the properties so assessment of building suitability was based on external features only.

The survey completed at the site will provide reasonably typical data for the season in which it was undertaken. Assessment of the bat use of the site at other times of year and the potential impacts of the proposed development is based on professional judgement. This is an approach supported by the Bat Conservation Trust Good Practice Guidelines¹².

C.6 ASSESSMENT OF VALUE

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment¹³, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

TABLE 7: ECOLOGICAL RECEPTOR VALUATION	
Level of Value	Examples
International	An internationally designated site or candidate site.

¹² Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

¹³ Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

TABLE 7: ECOLOGICAL RECEPTOR VALUATION

Level of Value	Examples
	<p>A site meeting criteria for international designation.</p> <p>The site is of functional importance* to a species population with internationally important numbers (i.e. >1% of the biogeographic population)</p>
National	<p>A nationally designated site.</p> <p>The site is of functional importance* to a species population with nationally important numbers (i.e. >1% of the national population)</p>
Regional	<p>The site is of functional importance* to a species population with regionally important numbers (i.e. >1% of the regional population)</p>
County	<p>A Local Wildlife Site (LWS) or equivalent, designated at a County level</p> <p>The site is of functional importance* to a species population of county value (i.e. >1% of the county population)</p>
District	<p>A Local Wildlife Site (LWS) or equivalent, designated at a District level</p> <p>The site is of functional importance* to a species population of district value (i.e. >1% of the district population)</p>
Parish	<p>A species population considered to appreciably enrich the nature conservation resource within the context of the parish.</p> <p>Local Nature Reserves</p>
Local	<p>A species population that contributes to local biodiversity but are not exceptional in the context of the parish.</p>
Low	<p>Habitats that are unexceptional and common to the local area.</p>

* Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population'

D. RESULTS

D.1 DESKTOP STUDY

D.1.1 PRE-EXISTING INFORMATION

D.1.1.1 ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY

The most recent aerial photograph of the site (2018) indicates that habitats on site are dominated by residential housing surrounded by gardens and patchy areas of hard standing and scattered trees. At the north of the site is an area of grassland and to the south west of this is a small group of trees. Historic imagery suggests that a building used to be present on the area of grassland to the north and was demolished at some point between 2009 and 2014. The remainder of the site has remained largely unchanged since 2001.

Aerial photography shows that the general land use in the surrounding area is predominantly residential with patches of amenity grassland. A railway line with vegetated banks is located approximately 230m to the west of site at its closest point.

D.1.1.2 MAGIC WEBSITE¹⁴

PROTECTED SITES

There are no internationally and nationally statutorily designated sites for bats within 2km.

The site falls within a SSSI impact risk zone for which this type of development does not require the Local Planning Authority to consult with Natural England on the application.

SPECIES

There is a single record of a granted European Protected Species (EPS) mitigation licence for works affecting bats within 2km, located approximately 950m south-west of the site.

D.1.1.3 LOCAL KNOWLEDGE

A resident of one of the buildings reported seeing foraging bats in the west of site.

D.1.2 CONSULTATION

D.1.2.1 LOCAL RECORDS CENTRE

The local records centre has been contacted for records of bats in the local area and provided the below records.

Species	No. of records	Nearest Distance (m) where provided	Most recent record
Bats	2	237	2019
Common Pipistrelle	5	532	26/07/2018
Natterer's Bat	1	1566	02/09/2012
Soprano Pipistrelle	1	1566	02/09/2012

Full data sets are available on request.

¹⁴ MAGIC Website: www.magic.gov.uk

D.2 PRELIMINARY ROOST ASSESSMENT

D.2.1 HABITATS

FORAGING HABITATS & COMMUTING ROUTES

There are some limited opportunities on site for foraging bats within gardens associated with the buildings. The surrounding area comprises mostly residential housing with small gardens and scattered trees along roadsides which may provide foraging opportunities and commuting routes between fragmented greenspaces.



SHELTERED FLIGHT AREAS

There are limited sheltered flight areas for foul weather foraging or light sampling on site.

ALTERNATIVE ROOST LOCATIONS

There are numerous alternative similar roosting opportunities in the neighbouring properties.



D.2.2 BUILDINGS/STRUCTURES

The location of each structure referenced is illustrated within the figure below, with descriptions detailed below.

Where recorded, field signs that confirm bat use are in bold.



FIGURE 3: BUILDING LOCATIONS
(Reproduced under licence from Google Earth Pro.)

BUILDING 1 –NUMBERS 26 AND 28 MAPLE AVE

External

- Two-storey brick-built residential dwelling with small single-storey, flat felt roof extensions on gable ends with uPVC tightly sealed fascia
- Pitched pantile roof with concrete ridge tiles – suitable gaps for roosting bats present
- Single brick chimney with lead flashing – well sealed
- Timber boxed soffit/fascia – well sealed
- Red brick constructed walls – well sealed
- uPVC windows and doors – well sealed to surrounding brickwork
- No external field signs of bats recorded



BUILDING 2 – NUMBERS 22 AND 24 MAPLE AVE

External

- Same construction as Building 1
- Roof has suitable gaps for roosting bats present, including missing mortar at verge, collapsed tiles at gable eaves and some gaps in ridge tiles
- Lifted lead flashing around chimney
- Timber soffit/fascia boards
- Walls well sealed
- Doors and windows well sealed
- Extension tightly sealed
- No external field signs of bats recorded





BUILDING 3 – NUMBERS 18 AND 20 MAPLE AVE

External

- Same construction as Buildings 1
- Unoccupied
- Roof – occasional gaps, missing roof tile on number 18
- Lifted lead flashing around chimney
- Timber soffit/fascia boards tightly sealed
- Walls well sealed
- Doors well sealed
- Broken top-floor window on number 18
- Extension tightly sealed
- No external field signs of bats recorded



BUILDING 4 – NUMBERS 15 AND 16 FIRTREE

External

- Similar construction to above, but with interlocking roof tiles
- Roof generally well sealed with some gaps in ridge tiles
- Chimney flashing, soffit/fascia boards, brick walls, doors and windows tightly sealed
- Extension tightly sealed
- No external field signs of bats recorded



BUILDING 5 – NUMBERS 13 AND 14 FIRTREE

External

- Same construction as Building 4
- Roof generally well sealed with some missing verge mortar
- Chimney flashing tightly sealed
- Gap behind soffit
- Walls tightly sealed
- Gap behind fascia on extension of number 13
- Doors and windows tightly sealed
- Extension well sealed
- No external field signs of bats recorded



BUILDING 6 – NUMBERS 11 AND 12 FIRTREE

External

- Same construction as Buildings 4 and 5
- Roof – generally well sealed with some missing verge mortar and gaps in ridge tiles
- Some lifting of chimney flashing
- Soffit/fascia boards tightly sealed
- Walls tightly sealed
- Doors and windows tightly sealed
- Extension well sealed
- No external field signs of bats recorded



BUILDING 7 – NUMBERS 9 AND 10 FIRTREE

External

- Same construction as Buildings 4,5 and 6
- Roof has occasional gaps with some missing verge mortar on number 9, and a broken ridge tile on number 10
- Some lifting of chimney flashing
- Walls tightly sealed
- Soffit/fascia well sealed
- Doors and windows tightly sealed
- Extension well sealed
- No external field signs of bats recorded



D.2.3 TREES

There are three semi-mature sycamore trees within the site boundary. No potential roosting features were observed within the trees and they are therefore considered of negligible to low suitability to support roosting bats.

D.3 OVERVIEW OF SITE SUITABILITY

TABLE 8: OVERVIEW OF HABITATS AND SETTING ¹⁵				
	NEGLIGIBLE	LOW	MODERATE	HIGH
HABITATS AND COVER WITHIN 200M	City Centre	Open, exposed arable or pasture with no hedges, amenity grassland, or relatively built up	Hedges and trees linking site to wider countryside, mature linked gardens	Excellent cover with mature trees/ woodland and/or good hedges
HABITATS WITHIN 1KM	City Centre	Little tree cover, few hedges, arable dominated, scattered green spaces	Semi-natural habitats e.g. trees, hedgerows	Good network of woods, wetland and hedges
ALTERNATIVE ROOSTS WITHIN 1KM	City centre	Numerous alternative roosting opportunities of a similar nature	A number of similar buildings in the local area	Few alternative buildings and site of good quality for roosts
SETTING	Inner city	Urban with little green space	Built development with green-space, wetland, trees	Rural Lowland with woodland and trees.
DISTANCE TO WATER/ MARSH	>1km	500m-1000m	200m-500m	<200m
DISTANCE TO WOODLAND/ SCRUB	>1km	500m-1000m	200m-500m	<200m
COMMUTING ROUTES	Isolated by development, major roads, large scale agriculture	No direct potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways

TABLE 9: OVERVIEW OF BUILDING/STRUCTURES ²				
	NEGLIGIBLE	LOW	MODERATE	HIGH
AGE (APPROX.)	Modern	Post 1940's	1900-1940	Pre 20 th C
BUILDING/ COMPLEX TYPE	Industrial complex of modern design	Single, small building	Several smaller buildings, larger single structures	Traditional farm buildings, large country house, large hospital/school
BUILDING - STOREYS	N/A	Single storey	Multiple storeys	Multiple storeys with large roof voids
STONE/BRICK WORK	No detectable crevices	Well pointed, limited or superficial gaps	Some cracks and crevices	Poor condition, many deep crevices, thick walls
ROOF VOID	No access			
ROOF COVERING	Modern sheet materials, tightly sealed	Good condition or very open, not weatherproof, modern sheet materials, very well sealed roof tiles	Some potential access routes e.g. raised, slipped or missing slates or tiles, low number of gaps in bedding/end mortar	Numerous gaps, not too open, e.g. uneven stone slates, many gaps in mortar
ADDITIONAL FEATURES	None	Very limited features with potential access	Some features with low number of potential access points	Numerous or good quality gaps in features such as hanging tiles,

¹⁵ Building and habitat risk assessment technique audited in a research project with York University which compared the risk assessment scoring with the results of detailed field assessment for over 100 sites. Statistically significant associations were found between habitat setting and building features and the presence of absence of different bat species. For example habitat connections and nearby woodland were significant for brown long-eared bats and the presence of species-rich grassland is important for many species.

				cladding, barge boards, soffits
EXTERNAL LIGHTING	Extensive security lights covering much of the site	Widespread areas above 2 lux at night	Intermittent lights of low intensity	Minimal
BUILDING USE	Very noisy, dusty	Regular use	Intermittent use	Disused

Overall, the site is situated in an area of low suitability for bats.

The buildings are considered to be of low suitability for roosting bats.

D.4 ACTIVITY SURVEYS

D.4.1 DUSK EMERGENCE SURVEYS

Date	Start	End	Sunset	Sunset Temp (°C)	End Temp (°C)	Cloud %	Precipitation	Wind (Force)
14.06.21	21:29	23:14	21:44	12	10	5-10	Dry	F3-2
26.07.21	21:04	22:49	21:19	17	15	80	Dry	F0

Date	Lead Surveyor	Assistant surveyors
14.06.21	R Mackenzie,	A Craighead, A Crolla, V Cassidy, L Graham, R Grant Mcleod, M Guraliuc, G Iacob, M Iley, L Bruntjen, E McCarthy, O O'Doherty, K Moore, D Mear
26.07.21	G Vessey	P Kennington

14th June 2021

The survey was undertaken in mild (12°C) dry weather and the wind was moderate (F3) at the beginning of the survey, but reduced during the survey. The first bat was heard at 22:08, 24 minutes after sunset (~19lux). A common pipistrelle day roost was identified to the front of building 2 with a single bat emerging from beneath the guttering above the central windows at 22:28 (~1.8lux), 29 minutes after sunset. Only common pipistrelle bats were recorded with most foraging between the houses and in the rear gardens.

The figure below provides a summary of the results of dusk emergence survey. More detailed data is available on request.



FIGURE 3: DUSK EMERGENCE SURVEY RESULTS

26th July 2021

The survey was undertaken in mild (17°C) dry weather. This survey focused on building 2, where a day roost was identified during the previous survey. No roosts were identified during this survey. Bat activity was low, with the first bat, a common pipistrelle, seen at 21:50 (~5 lux) commuting in the garden west of building 2 from north to south. A noctule was seen commuting overhead from west to east at 21:51.



FIGURE 4: DUSK EMERGENCE SURVEY RESULTS

D.5 ADDITIONAL SPECIES GROUPS

The habitats present within the survey area are illustrated within the figure below. At the north of the site are small areas of amenity and semi-improved grassland, bordered on the south and western edges by a low wall with timber and net fencing on top. This area may provide suitable habitat for hedgehog, and trees adjacent to this plot to the north may provide opportunities for nesting birds. Adjacent to this patch of amenity grassland to the south-west is an area of species-poor semi-improved grassland with three small sycamore trees. These trees are considered of negligible to low suitability for roosting bats, but may provide opportunities for nesting birds. Several bird species were recorded in these trees during the survey, including wood pigeon, blackbird, chaffinch, song thrush, goldfinch and magpie. In the north west corner of this area is a pile of rubbish which could provide refuge for hedgehogs (target note 1). According to aerial photography and the MAGIC website, there are no ponds within 500m of the site so great crested newts are not expected to be impacted by the proposed development. No invasive species were recorded at the site during the survey.





FIGURE 4: HABITAT MAP

E. SITE ASSESSMENT

E.1 ASSESSMENT OF SURVEY FINDINGS

Survey has confirmed that building 2 (22/24 Maple Ave) is used as a day roost for an individual common pipistrelle bat and is considered of local value. Overall, bat activity on the site was low-moderate.

The buildings are considered to have a low risk of hibernation use but no evidence of a maternity roost was recorded.

There are a small number of opportunities for nesting birds to use the buildings during the breeding season and hedgehog may be present on site.

E.2 POPULATION SIZE CLASS ASSESSMENT

Based on the surveys building 2 is used intermittently by a single common pipistrelle bat as a day roost.

F. IMPACT ASSESSMENT

The likely effects of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed below. Impacts have been considered in both the construction phase and operational phase of the development.

F.1 DIRECT DEVELOPMENT IMPACTS

- The loss of a single common pipistrelle day roost and a small number of potential crevice roosting opportunities.
- Disturbance or harm to a small number of bats that may be using the buildings at the time of proposed works, potentially including hibernating bats if works are undertaken during the winter.
- Loss of bat foraging and commuting habitats.
- Risk of harm/disturbance to nesting birds if building demolition is carried out during the bird breeding season (March – August inclusive).
- Loss of hedgehog foraging habitat.
- Risk of harm/disturbance to hedgehog.

F.2 INDIRECT IMPACTS ON LOCAL POPULATIONS

- Increased lighting which could impact on bat foraging and commuting habitat within the adjacent area.

G. RECOMMENDATIONS

G.1 FURTHER SURVEY

If development does not happen within 12 months of the last survey, an updating survey will be required, ideally to be undertaken between May and August. A Natural England licence will be required for demolition of building 2 and this will require an updating site visit within the 3 months prior to the application. If this is after May 2022, this should be in the form of a presence/absence survey.

G.2 AVOIDANCE, MITIGATION AND COMPENSATION STRATEGY

G.2.1 SITE DESIGN

- External lighting that may reduce bat use of new potential roost sites will be avoided. High intensity security lights will be avoided as far as practical, and any lighting in areas identified as being important for bats will be low level (2m) and low lumen. Light spillage to areas used by foraging or commuting bats should be less than 2 lux. No lighting will be installed along the flyways between the roosts and adjacent trees and foraging areas. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.
- Landscape planting is to include plants bearing flowers, nectar and fruits which are attractive to invertebrates, thereby helping to maintain the food resource for bats and wildlife generally.
- Close boarded fences will be avoided, or at least one 13cm x 13cm gap will be provided in each fence between abutting gardens and in fences between gardens and landscaped areas, to allow hedgehogs to forage and commute across the site.

G.2.2 TIMING OF WORKS

- A pre-commencement check for nesting birds will be undertaken by a suitably experienced ornithologist if vegetation clearance is undertaken between March and August inclusive.
- **Works to the Building 2 will not commence until a development licence is obtained from Natural England. Other buildings will be demolished to a precautionary method statement, where appropriate.**
- As good working practice, building 2 will be demolished outside bat hibernation period (November to end of February inclusive).

G.2.3 WORKING METHODS AND BEST PRACTICE

- Works to building 2 will be undertaken in accordance with the approved licence method statement and the mitigation measures included in this document, which include:
 - An ecological induction for site managers and contractors
 - Pre-commencement inspections of confirmed and potential roosting areas by the ecologist
 - Sensitive dismantling of these roosting areas under ecological supervision, taking care not to harm bats in the process. If bats are found, they will be captured by hand, given a health check and transported to a pre-installed bat box by the supervising ecologist.
 - If bats cannot be safely captured, they will be excluded from the roost using standard exclusion devices. These will be fitted by, or under supervision of, the ecologist and will remain in place for a minimum of five consecutive nights of

suitable weather, in accordance with the most up to date edition of the Bat Workers Manual.

- The remaining buildings will be demolished under a precautionary bat method statement.
- Works will be completed in accordance with a hedgehog method statement to minimise the risk of harm to this species.
- Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see <https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf> - Chapter 10).

G.3 COMPENSATION STRATEGY

- 6 bat roosting opportunities will be incorporated into the completed development (e.g Vivara bat tube or similar).

G.4 MONITORING

Given the results of the survey, no monitoring is proposed.

H. CONCLUSIONS

Provided that the recommendations in this report are implemented, it is anticipated that proposals may proceed with no significant impacts with regard to bats. The proposals provide an opportunity for ecological benefit through landscaping and bat and bird nest box provision, contributing to local and national conservation targets.

APPENDIX 1. LEGISLATION

NATIONAL PLANNING POLICY

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)¹⁶ relating to the natural environment:

TABLE 10: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	Paragraph
<p>Planning policies and decisions should contribute to and enhance the natural and local environment by:</p> <ul style="list-style-type: none"> a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate. 	170
<p>Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework¹⁷; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.</p>	171
<p>Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads¹⁸. The scale and extent of development within these designated areas should be limited. Planning permission should be refused for major development¹⁹ other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:</p> <ul style="list-style-type: none"> a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated. 	172
<p>Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 172), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.</p>	173
<p>To protect and enhance biodiversity and geodiversity, plans should:</p>	174

¹⁶ National Planning Policy Framework (February 2019), Department for Communities and Local Government,

¹⁷ Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

¹⁸ English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.

¹⁹ For the purposes of paragraphs 172 and 173, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

TABLE 10: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT

Statement	Paragraph
<p>a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity²⁰; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation²¹; and</p> <p>b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.</p>	
<p>When determining planning applications, local planning authorities should apply the following principles:</p> <p>a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;</p> <p>b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;</p> <p>c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons²² and a suitable compensation strategy exists; and</p> <p>d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.</p>	175
<p>The following should be given the same protection as habitats sites:</p> <p>a) potential Special Protection Areas and possible Special Areas of Conservation;</p> <p>b) listed or proposed Ramsar sites²³; and</p> <p>c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.</p>	176
<p>The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.</p>	177

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance²⁴ states:

- Planning authorities need to consider the potential impacts of development on protected and priority species, and the scope to avoid or mitigate any impacts when considering site allocations or planning applications. (para. 016)

²⁰ Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

²¹ Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

²² For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

²³ Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.

²⁴ Planning Practice Guidance: Natural Environment (www.planningguidance.communities.gov) Updated July 2019

- Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application consultation and the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. (para. 018)
- Even where an Environmental Impact Assessment is not needed, it might still be appropriate to undertake an ecological survey, for example, where protected species may be present or where biodiverse habitats may be lost. (para. 018)
- As with other supporting information, local planning authorities should require ecological surveys only where clearly justified. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. (para. 018)
- The National Planning Policy Framework encourages net gains for biodiversity to be sought through planning policies and decisions. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. (para. 022)

RELEVANT LEGISLATION

Within England all bat species are specially protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

As a result there is a requirement to consult with Natural England before undertaking any works that may disturb bats or their roost, and under the Conservation of Habitats and Species Regulations it is illegal to.

- Deliberately kill, injure or capture bats.
- Deliberately obstruct access to a bat roost.
- Damage or destroy a bat roost.
- Deliberately disturb bats; in particular any disturbance which is likely to impair their ability:
 - (i) to survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - (iii) to affect significantly the local distribution or abundance of the species to which they belong.

Under the Wildlife and Countryside Act (1981) the above offence of disturbing bats includes low level disturbance and as such under this act it is also an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a roost.
- Intentionally or recklessly obstruct access to a roost.

Under the above legal protection, only the offences under the Conservation of Habitats and Species Regulations 2017 (as amended) are strict liability offences; the remaining offences, under the Wildlife and Countryside Act (1981), are offences only where they are carried out "intentionally or recklessly".

Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of disturbing bats is extended to cover reckless damage or disturbance.

The Hedgerow Regulations 1997 provide for the conservation of important hedgerows and their constituent trees. The presence of a protected species such as bats is a relevant consideration when assessing whether a hedgerow is important and may influence a local planning authority's decision on whether to approve removal of such hedges.

PRIORITY SPECIES

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The following bat species are listed as national priority species: Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat. 'Bats' as a species group is also listed on the relevant local biodiversity action plan for this site.