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#### 1.0. Introduction

A large detached residential house and garden, adjacent to the River Tame, was subject to a predeterminative bat survey at Yew House, Old Hall Drive, Elford, Tamworth, B79 9BZ. This constitutes a survey in relation to the potential for presence of bat and bird species and roost sites, in relation to a planning proposal, refer to planning application for full details. The brief of the survey was as follows;

- An External/Internal evaluation of the buildings for utilization signs by bat and bird species.
- To determine whether any buildings and trees within the site had potential for use by bats for roosting or as a place of shelter, with consequent implication for development work with respect to Schedule 5 of the *Wildlife and Countryside Act 1981 and the conservation (Natural Habitats & cr.)* Regulations (and subsequent amendments).
- To determine the presence of any roosts within the site.
- To determine any use of the buildings concerned by bird species
- To make an overall assessment of the value of the site as foraging, feeding and commuting areas.
- To make recommendations for the development work to take place including any mitigation/ compensation required.

#### 1.1. Background

#### Bats and the Law

Prior to August 2007, all bat species in the UK were fully protected under the *Wildlife and Countryside Act 1981* (as amended) through an inclusion in Schedule 5. The amendment of the *Conservation (Natural Habitats) Regulations 1994,* in August 2007 now is the regulatory protection mechanism. In addition there are obligations within the Conservation of Species and Habitat Regulations (2010), revised 2017 and National Planning Policy Framework (2019) which replaced the former Planning Policy Statement 9 (PPS 9). In England, Scotland, Wales and Ireland all bat species are fully protected by the Conservation (Natural Habitats, &c.) Regulations, which defines 'European protected species of animals' (EPS). This gives protection to bats and their roosts.

The Regulations have slightly different amendments in the different countries.

Under the regulations it is an offence to-

- a) Deliberately or recklessly to capture, injure, or kill a EPS.
- b) Deliberately or recklessly
  - i. To harass a wild animal or group of wild animals of a EPS.
  - ii. To disturb while it is occupying a place of shelter (roosts).
  - iii. To disturb while it is rearing its young or caring for its young.
  - iv. To obstruct access to a breeding site or resting place, or otherwise deny the animal use of that site or resting place.
  - v. To disturb a EPS in a manner that is, or circumstances which are likely to significantly affect the local distribution or abundance of the species.
  - vi. To disturb a EPS in a manner that is, or circumstances which are likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for young.

In this interpretation, a bat roost is "any structure or place which any bat uses for shelter or protection". As bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

# **Planning and Development**

All British bat species and their roosts are protected under the Wildlife and Countryside Act 1981, through inclusion on Schedule 5. They are also protected under the Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2.

The Act and Regulations include provisions making it illegal to:

- Intentionally or deliberately kill, injure or capture bats.
- Deliberately disturb bats.
- Damage, destroy or obstruct access to a roost.

Local Planning Authorities consult the Government's guidance notes, National Planning Policy Framework (2021) and the Conservation of Species Habitat Regulations (2010), updated 2017 in England, and equivalents in Scotland and Wales, before making a planning decision where there may be protected species on a site. 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. If bats use the site, appropriate Statutory Nature Conservation Organization (English Nature, Scottish Natural Heritage or the Countryside Council for Wales) must be consulted before any work is carried out. Where necessary, a bat expert should visit and assess the site.

If planning permission is being sought from the local authority, any observations of bats should be reported to them and they can be reminded of their obligations within the National Planning Policy Framework (2021). The presence of bats will rarely prevent the general approval of a development, although it may be possible to incorporate mitigation to maintain habitats for bats.

Developers need to be aware that:

- Assessment of current use, likely effects and mitigation or habitat enhancement should be incorporated into development proposals at an early stage.
- Where changes in land use could affect bats, the implications to bats should be considered and advice sought.
- When considering planning applications, authorities are required to take account of protected species, including all bats, and their habitats.

Bat feeding habitats can be some distance from their roost sites, therefore, bats seen in flight may roost nearby or some miles away. Bats use a range of sites for roosting, including buildings and trees. Signs of roosts, which are visible from the outside, include bats emerging from the roost (timing varies from before sunset to up to about an hour after) and bat droppings on surfaces near emergence points.

# 1.2. Site Location

Yew House, Old Hall Drive, Elford, Tamworth, B79 9BZ

All parts of the site and buildings were available for access. The site is shown below.



(c) Google maps 2021.

### **1.3.** General Site Description and Status

The site comprises a detached residential house, with a free standing detached garage and garden laid mainly to lawn. The house is constructed of brick, with a clay tile roof and open type soffits. It has integral dormer windows to the front and rear. The doors and windows are UPVC and the house was constructed approximately 30years ago.

The garden lies adjacent to the River Tame and is part of the functional floodplain. There are a small number of mature willows along the riverside. Within the garden are a small number of mature trees, including Cypress *Cupressus*, Beech *Fagus sylvestris*, Oak *Quercus robur* and Whitebeam *Sorbus aria*. The majority of the garden is a mown improved grassland dominated by Perennial ryegrass *Lolium perenne*.

# 1.3.1. Immediate Surrounding Area and wider Landscape Context in Relation to Bats

The site is located in an residential area of Elford. The character is of large detached houses with large conjoined gardens along the River Tame. The surrounding landscape is arable, with large fields, with very few trees or hedges and is of low quality for bat roosting, with only the trees along the River Tame remaining as natural refuges remaining, heavy agro-chemical usage and consequently low levels of insect prey. See satellite image below.



(c) Google maps 2021.

A Natural England 'Magic' data search (shown below) reveals that the site lies within a SSSI Impact Zone of the River Mease SSSI and a Nitrate Sensitive Zone, these factors should be considered within any development on the site.

# Statutory Protected Nature Conservation Sites in Vicinity

These include Sites of Special Scientific Interest, National and Local Nature Reserves, Special Areas of Concern. The nearest statutory protected sites are the River Mease SSSI which lies approximately 2.5km North East of the site. See image below.



(c) Crown Copyright and database rights 2021. Ordnance Survey 100022861.

# 1.4. Bat Ecology (a Summary)

# Where do bats build roosts?

Different species of bat prefer different places; some creep into tiny spaces, cracks and crevices. Only occasionally do they hang free or are easily visible.

Outside they may roost:

- Under weather boarding or hanging tiles
- Above soffits and behind fascia and barrage boarding
- Between window frame and wall brickwork
- In gaps behind cladding tiles or wood
- Between underfelt and boards or tiles
- Inside cavity walls

Inside roof spaces they may roost

- Along the ridge beam
- Around the gable end
- Around the chimney breast

#### Looking for the evidence

Bats do not make nests or cause structural damage. The most obvious sign of their presence is droppings.

- Bat droppings consist largely of insect remains and crumble easily between your fingers to a powder of semi-shiny fragments.
- Rodent droppings are smooth and plastic, quickly becoming hard. They cannot be crumbled.
- Bat droppings do not present any known health hazards.
- Droppings may not always be readily visible in a loft.
- Large accumulations may reflect use over a number of years rather than large numbers of bats at any one time.

#### When do bats use buildings?

Bats use buildings at any time, but are most often found in houses between May and August.

- Mother bats have only one baby a year, suckling it for several weeks. The mothers gather in maternity roosts to have their young in summer, and this is the time they are most likely to be seen using buildings.
- The bats move away when the young can fly and feed themselves, and have usually left by September.
- Immature individuals, adult males and non- breeding females will occupy a variety of roosts, individually or in small groups, at any time of year.
- Disturbance or the use of chemicals at maternity roosts in houses can have a major impact on bat populations gathered from a wide area.
- Bats do roost in houses in winter, usually individually, but are difficult to see.

### Which bats use buildings?

All UK species have been recorded in houses, but some very rarely. Pipistrelles and Long-eared bats are the species most usually found.

# **Pipistrelle bats**

There are three different species of Pipistrelle; the common Pipistrelle, Soprano Pipistrelle and the rarer Nathusius' Pipistrelle. They sometimes use houses as maternity roosts, choosing confined spaces. These are usually on the outside of buildings, such as under the soffits or behind barge boards or hanging tiles, where the bats can rarely be seen.

#### Brown long-eared bats

This species mostly prefers older houses with large roof spaces. Small clusters may be seen at junctions of roof timbers or under the ridge. It is the bat most frequently seen inside lofts, small numbers may stay longer than the other species.

# **1.5 Description of Works**

No plans were available, it is understood to involve the demolition of the existing building and replacement with a new residential unit. Refer to Planning Application for full details.

# **1.6 Bat Species Records**

In relation to bat species the following were recorded from freely available web-based data (and in places, the authors own records) presented here with the approximate distances of the nearest record. In addition, a number of Ecological survey reports within the area have been interrogated for protected species records. All records are post-2010 unless otherwise stated.

Species (Latin Name)	Common Name	Approximate distance of nearest
		record from the survey site (km)
Pipistrellus pipistrellus	Common pipistrelle	Within 1 km
Plecotus auritus	Brown long-eared bat	Within 1 km
Pipistrellus pygmaeus	Soprano pipistrelle	Within 3 km
Myotis nattereri	Natterer's bat	Within 5 km
Myotis mystacinus	Whiskered bat	Within 5 km
Myotis daubentonii	Daubenton's bat	Within 1 km

# **Great Crested Newts**

Species (Latin Name)	Common Name	Approximate distance of nearest
		record from the survey site (km)
Triturus cristatus	Great Crest Newt	Within 3 km

# **European Protected Species Licence Applications**

Data on European Protected Species Licenses granted in the local area, reveals that licenses have been issued within 3 km of the site for three species of bat. There are three species of bat recorded within 1km of the site. Great Crested Newts are recorded within 3 km.



# Interpretation of available biological data.

There are no designated sites on or directly adjacent to the site. The development is unlikely to impact on those at further distances.

In terms of protected species, three European protected bat species are found within 1 km of the site. Great Crested Newts are found within 3 km of the site.

## 2.0. Methodology

The survey consisted of two elements:

- A day-time visual external assessment of the buildings and their potential in relation to use by bats as roosts.
- A day-time visual internal assessment of the buildings and their potential in relation to use by bats as roosts

## 2.1. Personnel

The survey was conducted by Dr Louise Sutherland MIALE and Dr. Stefan Bodnar MCIEEM, an experienced ecologist with over 15 years experience of bat surveys.

# 2.2. Visual External Assessment

The external building inspection (from the ground using binoculars) focused particularly on roof areas, soffits, areas of wall with cracks and apertures, window surrounds and the overall structure of the buildings including any features such as crevices or cavities that may be suitable for bats to roost in. Evidence of roosting such as droppings or staining around entrances was also recorded. Where appropriate gaps and cavities were checked using an endoscope. The date of site visit was the 12<sup>th</sup> January 2022.

Methods of survey used have been based on those outlined in Joint Nature Conservation Committee's Bat Workers Manual (Mitchell-Jones & McLeish, 2004), The Good Survey Guidelines, BCT (2016), and English Nature's Bat Mitigation Guidelines (Mitchell-Jones, 2004).

# 2.3. Visual Internal Assessment

The internal roof space of the building concerned was inspected using ladders to gain access to the loft space. The interior spaces present within the building, that bats might access were fully surveyed, and suitable features checked with an endoscope. The date of site visit was the 12<sup>th</sup> of January 2022.

# 3.0. Results

# 3.1. External and Internal Visual Assessment

The assessment was carried out using the guidance provided within the publication: Bat Surveys for Professional Ecologists (3<sup>rd</sup> Edition), BCT (2016), which states:

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.			
Suitability	Description Roosting habitats	Commuting and foraging habitats	
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging 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 <sup>a</sup> and/or suitable surrounding habitat to be used on a	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.	
	be suitable for maternity or hibernation <sup>b</sup> ). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. <sup>c</sup>	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 /	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>2</sup> 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).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	
		Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.	
High /	A 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 <sup>a</sup> and surrounding 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.	
		High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree- lined watercourses and grazed parkland.	
		Site is close to and connected to known roosts.	

<sup>a</sup> For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

<sup>b</sup> Evidence from the Netherlands shows mass swarning 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 larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

<sup>c</sup> This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

The site comprises a detached residential house, with a free standing detached garage and garden laid mainly to lawn. The house is constructed of brick, with a clay tile roof and open type soffits. It has integral dormer windows to the front and rear. The doors and windows are UPVC and the house was constructed approximately 30years ago. The house has been well maintained and is young, there are no visible gaps, cracks or raised tiles which could provide access for bats. The internal roofspace was not inspected. After inspection it was classified as negligible bat access and negligible bat roost potential.

There is also a detached, single storey, garage building, constructed of brick, with a clay tile roof and open type soffits. The house has been well maintained and is of recent construction, there are no visible gaps, cracks or raised tiles which could provide access for bats. It has no internal roofspace. There are no signs of mice, birds or bats. After inspection it was classified as negligible bat access and negligible bat roost potential.

In addition, there is a garden building, constructed of wood with a flat mineral felt roof. It is intact with no cavity wall and no internal roofspace. There are no signs of bats and after inspection it was classified as negligible bat access and negligible bat roost potential.

### **Overall Assessment:**

After inspection the buildings were categorised as negligible access potential and negligible bat roost potential. No further bat surveys are recommended.

One of the one site trees, a riverside willow has low bat roost potential. If it is to be affected, it will require at least one bat emergence survey within the bats active season by a suitably qualified ecologist.

However, due to the site's riverside location, any on-site lighting should be carefully chosen to ensure it is low lux, cowled (directed downwards to prevent light splay), and used on timers or motion sensors to minimize the impact on local bat populations within the adjacent woodland.

See images Appendix 1

#### 3.2 Birds

No bird nests were recorded on or inside the buildings.

#### 3.3 Habitats on Site

The garden lies adjacent to the River Tame and is part of the functional floodplain. There are a small number of mature willows along the riverside. Within the garden are a small number of mature trees, including Cypress *Cupressus*, Beech *Fagus sylvestris*, Oak *Quercus robur* and Whitebeam *Sorbus aria*. The majority of the garden is a mown improved grassland dominated by Perennial ryegrass *Lolium perenne*.

There are no signs of invasive non-native species such as Japanese knotweed Reynoutria japonica on site.

Overall, the site has low ecological value with very low suitability for reptiles and Great Crested Newts. The presence of Great Crested Newts is considered unlikely, as there are no suitable terrestrial or aquatic habitats on site, and no records of newts within 3km of the site. No further surveys are recommended in relation to this species.

Similarly, the terrestrial habitat is of very low suitability for reptiles and there are no records of reptiles within 2km proximity of the site. The presence of reptiles is assessed as highly unlikely, and the level of risk does not justify further survey in respect of these species. Therefore, no further surveys are recommended.

To reduce risk to reptiles or amphibians, it is recommended appropriate precautions should be taken during development. These include;

- If Great Crested Newts are discovered at any time during processes involved with the development, work should cease immediately and the advice of a licensed ecologist sought.
- All site staff involved with site clearance and construction works are to be made aware of the potential for encountering Great Crested Newts and reptiles through a tool kit talk and the

appropriate measures to be taken if great crested newts are encountered.

- Keep duration of groundworks as short as possible.
- Undertake during the day works that might only affect newts above ground.
- Backfill trenches and other excavations before nightfall, or leave a ramp to allow newts to easily exit.
- Raise stored materials (that might act as temporary resting places) off the ground, e.g. on pallets.
- Ensuring storage of piles of materials and excavated earth on the site should be kept to a minimum.
- Storing piles of materials and excavated earth away from the field boundaries to deter reptiles from using them for temporary cover.

# 4.0. Conclusions

- It is important that this proposed development should demonstrate Net Biodiversity Gain, in accordance with National Planning Policy Framework 2021.
- The survey determined that the buildings have negligible bat access potential, and negligible roost opportunities for bats.
- No further bat surveys are recommended.
- One on site tree has low bat roost potential.
- No bird nests were found.
- There is no requirement for mitigation for loss of bat roosting opportunity, however, as a basic biodiversity enhancement, two bat boxes are recommended on the new building, However, it may be more suitable to the vernacular of the proposed property, for the new building to be enhanced for use by roosting bats by allowing bats crawling access into bat bricks incorporated into the structure of the building.
- There is no requirement for mitigation for loss of bird nesting opportunity, however, as a basic biodiversity enhancement, 3 hole nesting bird boxes are recommended on the new building. The boxes should be sited 4-5m from the ground, on a north facing wall.
- Biodiversity enhancements focused along the River Tame are recommended for this site.

### 5.0. Mitigation/Compensation

# It is important that this proposed development should demonstrate Net Biodiversity Gain, in accordance with National Planning Policy Framework 2021.

This site will require a **Biodiversity Net Gain Plan which includes a** baseline assessment of what is currently present on a site, an estimation how proposed designs will add to that level, and latterly supported by post-construction evidence that a biodiversity gain has been delivered. Measurement of pre and post-construction biodiversity levels will be based on DEFRA's 'Biodiversity Metric 2.0' in terms of its Distinctiveness, Condition, Significance and Connectivity.

In relation to the National Planning Framework (2021) there is not likely to be requirement for Mitigation/ Compensation measures for loss of bat roost opportunity. However, as a basic biodiversity enhancement, a bat box is recommended on each new building.

There is no requirement for mitigation for loss of bird nesting opportunity, however, as a basic biodiversity enhancement, three hole nesting bird boxes are recommended on each new building. The boxes should be sited 4-5m from the ground, on a north facing wall.

It is recommended that the new building is enhanced for use by roosting bats by allowing bats crawling access into various external crevices suitable for use by them as roosts. Such locations could include:

- Narrow voids behind bargeboards or fascias;
- Intermittent or running voids between ridge tiles and underlying roof timbers;
- Tight voids between roof slates/tiles and underlying membrane or boarding;
- Narrow voids behind wooden cladding on exterior walls;
- Deep crevices or voids within brick, stone or block work (eg cavity blocks or commercially available 'bat bricks');
- Other similar locations.

It should be noted when creating roost features for bats, that:

a) Crevice-dwelling bats tend to favour crawling access points of around 15-20 mm high and at least 50 mm wide, like to land on a surface (eg wall or roof face) and crawl up from there into any gaps provided, and like to be able to fly or easily drop or launch themselves out of roost access points;

b) Any such potential roosting locations provided for bats (including night roosts) and likely flight lines to and from them, are protected from excessive exposure to artificial lighting;

c) Care should be taken to ensure that any bats using provision made for them will not come into contact with breathable roofing membranes which they are liable to shred and subsequently become entangled within.

Other opportunities for ecological enhancement lie in the following main areas:

- 1. Supplementary planting with native tree and plant species along the River Tame, native willows *Salix sp.*, are recommended along the River.
- 2. Introduction of bat and bird friendly native planting schemes, hibernacula, and wildflower hedgerow edge mix seeding.
- 3. Bird and bat boxes incorporated within or on the new buildings or other built fabric, in particular should be included.
- 4. Selection of wildlife-friendly shrub/planting species as part of the terrestrial landscaping scheme within the development. The specification should include 4 elements of landscaping details selected from a palette of species beneficial to wildlife (further information can be found in Appendix 4):
- 5. Planting of native deciduous specimen tree species.
- 6. Wildflower seeding areas, use of flowering lawn seed mixes.
- 7. Use of FSC certified timber.
- 8. No use of peat on site.
- 9. Orientation of new building to ensure passive solar gain, inclusion of high specification insulation on new building to minimize need for additional heating.
- 10. Achievement of carbon neutral building and incorporation of renewable energy generation into new building.

# Procedures for emergencies: Protected species

Note 1: If bats are discovered at any time during processes involved with the development, work should cease immediately and the advice of a licensed ecologist sought.

# 6.0. References

Bats in Roofs. A guide for surveyors. English Nature, Peterborough, Mitchell-Jones, A.J. (2004).

Bat Mitigation Guidelines. English Nature, Peterborough, Mitchell-Jones, A.J.& Mcleish, A.P. (Eds)(2004).

Bat workers Manual, 3<sup>rd</sup> Edn. Joint Nature Conservation committee, Peterborough.

Bat Survey guidelines (2016), Bat Conservation Trust

# **APPENDIX 1: SITE IMAGES**



























# APPENDIX 2: EXAMPLES OF BAT BOXES AND BRICKS SUITABLE FOR BUILDINGS



Schwegler 1FR can be installed within brick masonry just leaving the entrance and can be rendered over.



Ibstock Enclosed Bat Box B is designed specifically for the pipistrelle bat.



Schwegler WI integral Summer & Winter Bat Box.



Schwegler 2FR Bat Tube is the same design as the 1FR but with holes in the sides. Multiple tubes to be placed next to each other to form a much larger roost.



Schwegler 27 wall can be installed within brick masonry. It can be rendered over.



Schwegler 1FQ wall-mounted bat box.



Schwegler 1FE Bat Access Panel can be surfacemounted or integrated. The open back enables bats access through exterior walls.



Ibstock Bat Box with Engraved Motif C is designed specifically for the pipistrelle bat and is available in all brick colours.



Ibstock Free Access Bat Box allows bats to access the cavity wall of the building.



Modified bricks for creating bat access points. A standard brick is shown top left. Purpose made bat bricks can also be used.



Norfolk Bat Brick allows bats to access the cavity wall of the building. The slits are the perfect size for Natterer's bat, Daubenton's bat, Brandt's bat and Brown long-eared.



Marshall's Bat Access Brick

(Also available in stone) allows bats access into the cavity wall of the building.