

**Pitchers Barn,
Wheeler End
Preliminary Bat Survey**

On Behalf of:
Shaun Andrews

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1. Executive Summary

- 1.1 Pitchers Barn is located in the village of Wheeler End, within the Wycombe district of the county of Buckinghamshire (Central Grid Reference SU 80726 93276).
- 1.2 Plans have been put forward to convert two barns, known together as Pitchers Barn, which lie to the east of the Denham Farmhouse. Therefore, a preliminary bat survey has been requested by the local planning authority to inform the planning decision.
- 1.3 This Preliminary Bat Survey aims to provide an assessment of the barns and their roof spaces in order to identify the presence or absence of bats or whether further surveys are required to do so.
- 1.4 The field survey was undertaken on 30th July 2021 by an experienced Ecologist with a Natural England roost visitors bat licence (Class Licence Registration Number 2016-13769-CLS-CLS). The building was assessed for roost potential and evidence of bats.
- 1.5 The barn lies 8m to the east of the farmhouse and is a large brick and concrete block walled barn with a twin pitch roof. Abutting the barn on the eastern side is a steel framed Dutch barn.
- 1.6 No signs of bats were found within the barns, both barn roofs were steel framed and open to the floor with the barn used as a store room and the Dutch barn used as a store and workshop, with disused grain silos within.
- 1.7 Pitchers Barns were assessed as having negligible potential for roosting bats and no further surveys are required.
- 1.8 No other protected species are believed to be present.
- 1.9 Recommendations for enhancements have been made to help fulfil some of the aims of the NPPF.

2. Introduction

Background

- 2.1 Pitches Barn is located off of Bullocks Farm Lane in the village of Wheeler End, which lies within the Wycombe District of the county of Buckinghamshire (Central Grid Reference SU 80726 93276).
- 2.2 The farm complex is made up of several buildings of traditional and modern construction.
- 2.3 Plans have now been put forward to develop Pitches Barn, a set of two barns that are located 8m to the east of the main farmhouse. Therefore, the local Planning Authority have requested a Preliminary Bat Survey to inform their planning decision.
- 2.4 Shaun Andrews commissioned 4 Acre Ecology Limited on 10th July 2021 to undertake a Preliminary Bat Survey of Pitches Barn to allow this report to be written.

Aims and Objectives

- 2.5 The aim of the survey was to determine whether bats used or were likely to use Pitches Barn to roost in, or if further surveys were required to do so. The objective is to support a successful application for planning permission, whilst maintaining the conservation status of bats within the local area.

3. Methodology

Desk Study

- 3.1 A data search was commissioned from the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC) for bat species within 2km of the site. Biological Records Centres hold information regarding statutory designated sites, local nature reserves, sites of conservation interest, records of protected species and other species of conservation concern. However, this data cannot be considered fully comprehensive and therefore the absence of data, in response to a data search, does not imply that a species, important habitat or designation does not exist within that search area.
- 3.2 The Multi-Agency Geographical Information for the Countryside (MAGIC) website was consulted to determine if there were any sites designated for bats within 5km of the site boundary, or any designated sites within 2km and what European Protected Species licences had been issued in the area.

Field Survey

- 3.3 An external and internal inspection of the building was made by a Natural England Licensed bat surveyor (Class Licence Registration number 2016-13769-CLS-LS). The exterior of the buildings was searched for evidence of bats, looking for grease stains in external crevices and searching for droppings on windows sills, windows, walls and ledges and on the ground below potential entrance/exit areas to the roof or walls.
- 3.4 The interior roof space of the barn was searched using high powered torches for evidence of bats. This evidence includes sightings, dead bats, feeding remains, smell, droppings and grease marks at entry/exit points. The potential of the building as a bat roost was judged and any signs of bats or features offering roost potential were noted.
- 3.5 The site was also appraised for other protected species.

4. Legislation and Planning Policy

- 4.1 There are a number of tiers of legislation protecting wildlife in England and Wales. The highest tier is for those species protected by European Legislation, such as the Dormouse, Great Crested Newt, Otter and all species of bat. These are known as European Protected Species (EPS), which gain their protection from the Conservation of Habitats and Species Regulations (Habitat Regulations) 2017, whereby under section 43 it is an offence to;
- deliberately capture, injure or kill an EPS
 - deliberately disturb or take/destroy the eggs of an EPS
 - damage or destroy a breeding site or resting place of an EPS
- 4.2 They are also protected under the Wildlife and Countryside Act (WCA) 1981 and amendments, including the Countryside and Rights of Way Act (CRoW) 2000. Under the WCA it is an offence to:
- intentionally or recklessly kill, injure or take from the wild or possess all or any part of a bat;
 - intentionally or recklessly damage or destroy any structure or place which a bat uses for shelter or protection, or disturb a bat while it is occupying such a place; or
 - obstruct access to any structure or place which a bat uses for shelter or protection.
- 4.3 The Natural Environment and Rural Communities Act 2006 (NERC) made provision about bodies concerned with the natural environment and rural communities and in connection with wildlife, sites of special scientific interest, National Parks and the Broads. Section 41 established a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. This is known as the UK Biodiversity Action Plan (BAP) list.
- 4.4 The National Planning Policy Framework (NPPF) published in March 2012 states that "in assessing and determining development proposals, local planning authorities should apply the presumption in favour of sustainable development" and "opportunities to incorporate biodiversity in and around developments should be encouraged".
- 4.5 The National Planning Policy Framework (NPPF) updated in July 2018 states that Planning policies and decisions should contribute to and enhance the natural and local environment by:

- 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.

4.6 To protect and enhance biodiversity and geodiversity, plans should:

- 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 biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- 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.

5. Results

Desk Study

- 5.1 No protected sites designated for bats were identified within 5 km of the site. There are two nationally protected sites within 2km of the site; Widdenton Park Wood SSSI lies 1.5km south-east and Bolter End Sand Pit SSSI lies 1.5km south-west of the site. There are five areas of ancient woodland within 2km of the site, which are; 250m south-east, 574m east, 618m north-east, 1.3km west and 1.6km west.
- 5.2 BMERC holds 25 records of bats within 2km of the site covering at least 6 species; Bat (6), Brown Long-eared (3), Daubenton's (1), Long-eared sp. (1), Myotis (2), Natterer's (1), Noctule (2), Pipistrelle (6) and Soprano Pipistrelle (3).
- 5.3 There have been five European Protected Species Licences (EPSL) issued for bats within 5km of the site covering three species; Brown Long-eared, Common Pipistrelle, and Soprano Pipistrelle. One licence was issued for a maternity roost 4.8km west of the site.

Field Survey

- 5.4 The survey was carried out on 30th July 2021. Weather conditions were; light rain with a strong wind 100% cloud cover with an air temperature of 14^o centigrade.

Local Context

- 5.5 Pitches Barn is situated on the eastern side of the village of Wheeler End in a predominantly rural area. Wheeler Common lies to the south-west with the Denham Wood ancient woodland to the south-east. In the wider landscape the barn is surrounded by intensively farmed agricultural fields with areas of woodland.
- 5.6 There is a recently created wildlife pond 120m west of the barns.

External Description

- 5.7 The western barn is a solid brick and concrete block walled building with a twin pitched corrugated asbestos roof. The walls are brick for the lower 2m, with concrete block for 3m above this up to the eaves. There is a closed corrugated tin sliding door on the north side.
- 5.8 The abutting Dutch barn on the eastern side of the western barn, is a steel framed building with corrugated tin walls along with a corrugated tin sliding door on the north side. The roof is corrugated tin and at the eastern end on the south side of the Dutch barn is a small lean-to extension.
- 5.9 Russian Vine coverers both roofs on the south and western sides of the barns.

Internal description

- 5.10 Both barns are open to a concrete floor 7m below the apex. The western barn has a roof structure of 4 steel A frame beams with thin steel pole king post like supports and no roof lining, the barn is 7m high, 7m wide and 9m long. The Dutch barn is 7m high, 7m wide and 13m long, the roof being formed of a steel frame supporting the corrugated sheets (See Figure 2).
- 5.11 The barn is used as a store and workshop. The Dutch barn has caravans stored at the eastern half, with four 4m high brick former grain silos in the western half.
- 5.12 No signs of bats were found in or around the barns.

Fauna Species

- 5.13 Dunnock and Wood Pigeon were observed and there is a wildlife pond to the east of the barns. However, no bird's nests were identified in or around the barns during the survey.

6. Discussion

- 6.1 There are no sites designated for bats within 5km of the site. There are five protected species licences issued for bats within 5km of the site, one of which is for a maternity roost 4.8km west of the site. This is sufficiently far enough away to be un-associated with the site.
- 6.2 The local records centre holds 25 records of bats within 2km of the site, covering at least six species. This represents a poor reflection of the species present, probably the result of a lack of recording in the area and there is likely to be a greater number and species present than these records indicate.
- 6.3 The immediate structure of the surrounding area, with the houses in the village of Wheeler End with mature gardens along with the woodland on Wheeler Common and the Denham Wood ancient woodland 250m south-east of the site will all offer good commuting, foraging and roosting habitat for bats. However, the wider landscape is one of extensive arable fields with few hedgerows, which offers only moderate potential commuting and foraging habitat for bats.
- 6.4 No signs of bats were found in or around the two barns. Internally there were no scattered droppings found, indicating that light testing bats, such as Brown Long-eared, are not present as they fly within the space before emerging and if present droppings would be found (Entwistle and Smith 2008).
- 6.5 The unlined steel frame roof structure with asbestos roof and corrugated tin roof does not offer roosting habitat for bats as there are no crevices or joints for bats to roost in or under.
- 6.6 In addition, there were no gaps in the solid brick and concrete block walls of the barn where crevice dwelling bats could roost without their droppings being found by the surveyor. The single skin corrugated tin walls and roof of the Dutch barn also would be too warm in the summer and too cold in the winter for bats to roost and hibernate (Jones and Racy 2008).
- 6.7 Therefore, Pitcher's barn is assessed as having negligible potential for roosting bats and no further surveys area required.
- 6.8 The trees and hedge to the south of the barn offer nesting habitat for birds, as does the Russian vine growing across the barns. All nesting birds are protected and should there be any works to the trees, hedge or the removal of the Russian vine, then this should be undertaken, outside of the bird nesting season of March to August.
- 6.9 If this is not possible an experienced ecologist will inspect the barns for nests before it is converted. If nests are found they will remain intact with enough undisturbed surrounding habitat to avoid disturbance and left until the young have fledged. After this the nests can be removed and the work continued.

- 6.10 There is a wildlife pond to the east of the barn. This pond is not affected by the development of the barn however, it would be prudent to place materials on pallets to avoid creating habitat for amphibians.
- 6.11 The conversion works will only effect hard standing and current buildings, therefore no other notable or protected species have been identified or are thought to be present on the site.

7. Further Surveys, Recommendations and Enhancements

Further Surveys

7.1 No Further survey are required.

Recommendations

- 7.2 Any hedge and tree works, or removal of the Russian vine, will be carried out outside the bird nesting period, which is March to August. If this is not possible an ecologist will check the habitat to be removed for active birds' nests. If nests are found they will be left in place, with suitable surrounding habitat (e.g., 5m of surrounding hedgerow) until the birds have fledged before its removal.
- 7.3 Materials will be stored on pallets or tarpaulin sheeting to prevent the creation of habitat suitable for amphibians and reptiles to shelter in.
- 7.4 If amphibians are found then work should stop and the ecologist will attend site to ensure that no harm comes to any reptiles and that the work can continue within the law.
- 7.5 Any exterior lighting of Pitchers barn should be low lux downlighters 3 lux maximum at ground level. Any security lighting should use motion sensors, be angled down as sharply as possible to light the immediate area and be 70w maximum.

Enhancements

- 7.6 Any planting should be of native species and include night-flowering species to attract insects for bats to feed on.
- 7.7 Bird boxes, including Sparrow terraces Tit boxes and nest boxes for Blackbirds could be placed on suitable farm buildings or suitable surrounding trees to enhance the site for nesting birds.

8. Figures

Figure 1: Building Plan

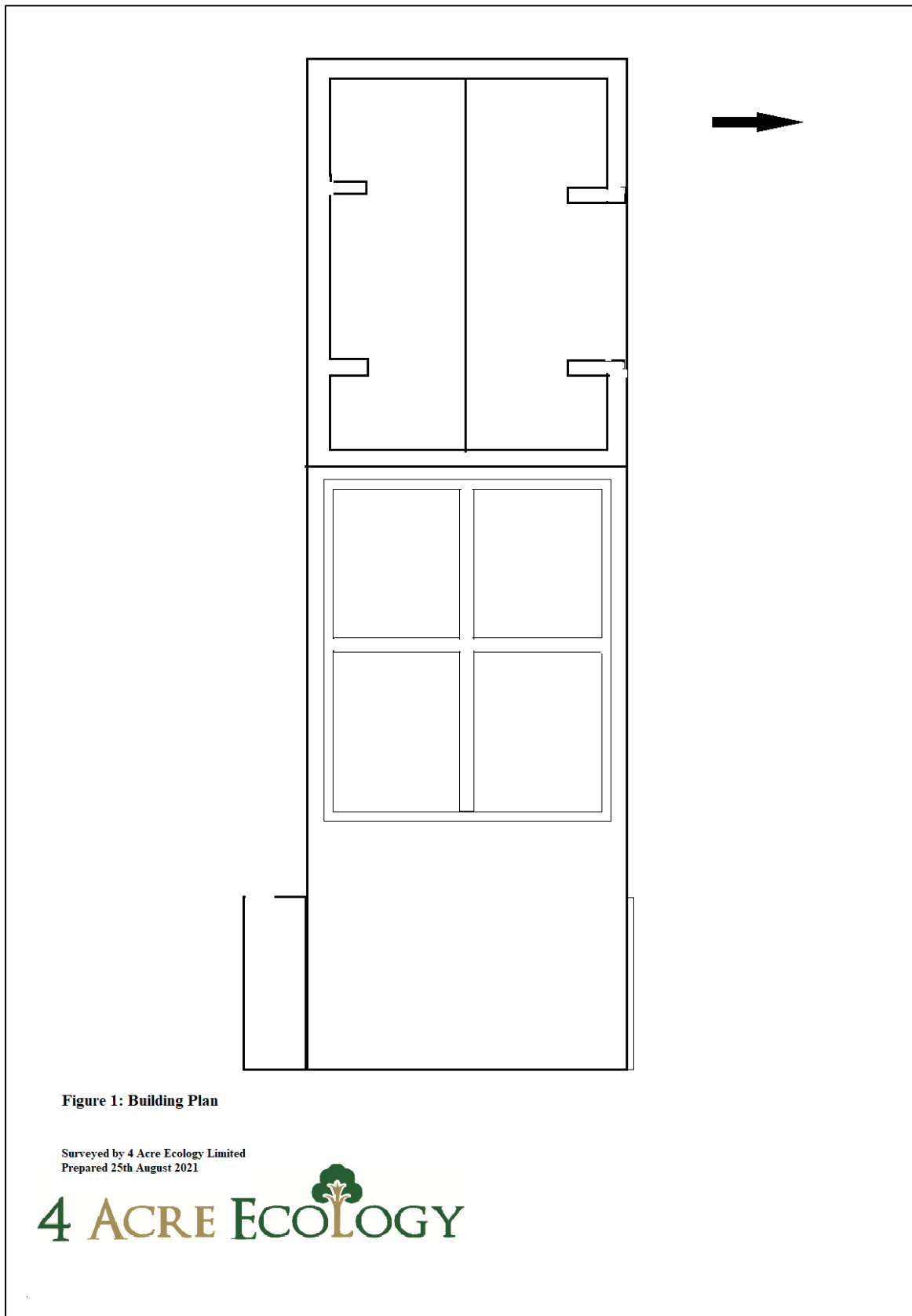


Figure 2: Images



1. Pitchers barn from the north-east



2. Pitchers Barn from the north-west



3. Pitchers barn from the south



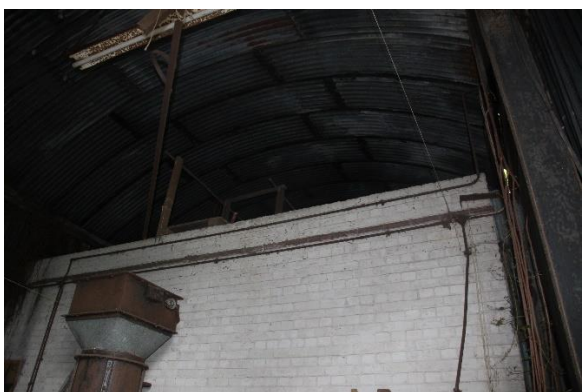
4. Internal space of western barn looking west



5. Internal space of western barn looking east



6. Internal space of Dutch barn looking south-west



7. Internal space of Dutch barn looking east at silos



8. Internal view of one of the silos from above

9. References

Bat Conservation Trust, 2016: *Bat Surveys by Professional Ecologist: Good Practice Guidelines Third Edition*. Bat Conservation Trust, London

Countryside and Rights of Way Act 2000. Available on-line at:
<http://www.legislation.gov.uk/ukpga/2000/37/contents> accessed 14/11/10

The Conservation of Habitats and Species Regulations 2017. Available on-line at:
<http://www.legislation.gov.uk/ukxi/2017/1012/contents/made>. Accessed on 10/01/2019

English Nature, 2004: *Bat Mitigation Guidelines*. English Nature, Peterborough

Entwistle A.C. & Swift S.M. 2008: *Brown Long-eared Bats*. Pp 364-370 of; *Mammals of the British Isles Handbook, 4th edition*. Mammal Society, Southampton

JNCC, 2004: *Bat Workers Manual 3rd Edition*. JNCC, Peterborough.

Jones G. & Racey P.A., 2008: *Common and Soprano Pipistrelles*. Pp 343-351 of; *Mammals of the British Isles Handbook, 4th edition*. Mammal Society, Southampton.

MAGIC, 2021. Available on-line at: <http://magic.defra.gov.uk/website/magic/>. Accessed on 24/08/2021

Natural England, 2010: *Ten 'Handy Hints' for obtaining a bat mitigation licence at first Submission*. Available at: http://www.naturalengland.org.uk/Images/bat-handy-hints_tcm6-15663.pdf. Accessed on 22/3/12.#

National Planning Policy Framework, 2018. Available online at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740441/National_Planning_Policy_Framework_web_accessible_version.pdf. Accessed on 10/01/2019.

Waring, S. D., Essah, E. A., Gunnell, K. & Bonser R. H. C, 2013: *Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roofing Membranes in the United Kingdom*. Architecture & Environment. AE 2013, 1(1):1-13. Sci-know Publications Ltd.

Wildlife and Countryside Act 1981 (and amendments). Available on-line at:
<http://www.legislation.gov.uk/ukpga/1981/69/contents>. Accessed on 14/11/10

Appendix 1: Information on British Bats

There are 18 species of bat in the UK (17 of which are known to be breeding here). They range from the tiny **Pipistrelle**, weighing in at around 5g (less than a £1 coin), to our biggest bat, the **Noctule**, which is still smaller than the palm of your hand.

All British bats eat insects exclusively, a **Pipistrelle** bat eating as many as 3,000 midges in one night, while **Long-eared** bats eat moths and **Noctule** or **Greater Horseshoes** also eat larger beetles.

The **Alcothoe** bat is the latest addition to the UK bat family, only being confirmed as a resident species in 2010 due to its similarity to the **Whiskered** and **Brandt's** bat species.

The **Daubenton's** bat is known as the 'water bat', as they fish insects from the water's surface with their large feet or tail. In England and Wales the majority of known summer colonies are in humid, more or less underground sites near water. These may be tunnels or bridges over canals and rivers, or in caves, mines and cellars. They are only occasionally found in buildings, usually old stone structures such as moated castles and waterworks.

Bats do not build nests, but use small spaces to shelter and rest in during the day, or hibernate in during winter. These places are known as roosts. There are a variety of different types of roost, from winter hibernation roosts, spring and autumn transitory roosts to summer maternity roosts. However, not all bats will roost within buildings, with the following being those most likely to:

Pipistrelle bats (both Common and Soprano species) are the most common bats in this country. They prefer to roost in very confined spaces around the outside of buildings, typically behind hanging tiles, soffits and barge boards, under roofing felt or in cavity walls. They do not usually enter roof spaces, although well-established large colonies in older buildings may do so.

Brown Long-eared bats are the third most commonly occurring species, after the two **Pipistrelle** species. They roost singly or in small groups among the roof timbers at the apex, particularly around ridge ends and chimneys, and in crevices in ridge tiles. These medium sized bats spend more time inside the roof space than many other bats, and are generally very quiet inside the roost, not leaving until after dark.

The **Serotine** bat, one of the largest bat species in the UK, is almost exclusively found roosting in houses across southern England and Wales. Rarer than **Pipistrelles** and **Brown Long-eared** bats, **Serotines** usually roost in crevices around chimneys and in cavity walls. Their favoured prey is large beetles, which they find over farmland and grassland.

Horseshoe bats, probably the most unusual looking of the UK's bats, are sometimes found roosting in houses in south-western England and Wales. **Greater** and **Lesser Horseshoe** bats hang free in the roost from their feet.

(Find further details from the Bat Conservation Trust Website at: www.bats.org.uk)