Wincote, Oxfordshire: Bat Survey Report

Prepared for Squire and Partners
by
Land Use Consultants

June 2011

2 INTRODUCTION

AIMS

2.1 Squire and Partners propose to redevelop the land at Wincote, Steeple Aston in Oxfordshire. To inform this Land Use Consultants (LUC) undertook a Phase 1 Habitat Survey in January 2011. Following this LUC was appointed undertake an assessment of the use of the proposed site and its surrounds by bats to inform the scheme design and a planning application. This report identifies potential bat related constraints, appropriate mitigation measures and opportunities for enhancement.

BACKGROUND

2.2 The 1.6 ha Wincote site was originally a working orchard and the buildings on the site were cottages to house employees. Over the years the buildings have been extended and have lost some of their original character and the orchard has been eroded so that now only a few apple trees remain on the land.

2.3 The site lies on the west edge of Steeple Aston. The site location is shown in **Figure 2.1**.

Figure 2.1: Site location, red boundary (extract source: Squire and Partners)

Figure 2.2: Proposed scheme (Source; Squire and Partners)

3 LEGAL AND POLICY REQUIREMENTS

3.1 Statutory nature conservation sites and protected species are a *material consideration* in the UK planning process[1]. Where planning permission is not required, for example, on proposals for external repair to structures, consideration of protected species remains necessary given their protection under UK statute.

3.2 The **Conservation of Habitats and Species Regulations 2010** transpose the requirements of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations enable the designation of European Protected Species (EPS) (listed on Annex IV of the EC Habitats Directive) which are assigned a greater level of protection than under national legislation.

3.3 The **Wildlife and Countryside Act 1981 (as amended)** forms the key piece of UK legislation relating to the protection of habitats and species. The 1981 Act was strengthened by the **Countryside and Rights of Way Act (2000)**, for example, by increasing the protection of selected reptile species.

3.4 The **UK and Oxfordshire Biodiversity Action Plans (BAP)** target habitats and species of high ecological interest or of conservation concern and list actions required to conserve and enhance them within the UK and London respectively. The Government has a duty to ensure that parties take reasonable practicable steps to further the conservation of BAP-listed species under Section 41 of the **Natural Environment and Rural Communities Bill 2006**[2]. In addition, the 2006 Act places a Biodiversity Duty on public authorities who *"must, in exercising* [their] *functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity"* (Section 40 (1)).

3.5 **Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation 2005** and accompanying DEFRA Circular 01/2005 seek to ensure all planning policies and decisions maintain and enhance, restore or add to biodiversity and geological conservation interests, with the intention that harm to these resources shall be prevented.

3.6 **The Cherwell Local Plan** was adopted in 1996. The Local plan will eventually be replaced by the Local Development Framework but in the interim saved policies in the Local Plan should be considered as the key statement of planning policy. This includes:

C2 *Development which would adversely affect any species protected by Schedule 1, Schedule 5 and Schedule 8 of the 1981 Wildlife and Countryside Act, and by the E.C. Habitats Directive 1992 will not normally be permitted.*

---

[1] **ODPM (2005)** Planning Policy Statement 9: Biodiversity and Geological Conservation, ODPM, London

[2] The NERC Act refers to "species of principle importance for the conservation of biodiversity", which translates to BAP habitats and species occurring in England.

4 METHODOLOGY

4.1 The surveys were undertaken by Peter Stronach (Natural England Licence no. 20103602) and David Parsons (Natural England Licence no. 20104442) of The Wildlife Survey Unit Ltd.

4.2 All surveys were undertaken in line with best practice guidance provided by the Bat Conservation Trust's publication Bat Surveys – Good Practice Guidelines (BCT, 2007) and the Joint Nature Conservation Committee's publication Bat Worker's Manual (JNCC, 2004).

Bat Inspection Survey

4.3 The inspection survey of Wincote was undertaken on the 3rd February 2011. The presence and absence of the following evidence was recorded:

- Bat droppings;
- Corpses of young or adult bats;
- Scratch marks;
- Urine staining;
- Grease marks;
- Clean/cobweb free gaps around potential roost locations; and
- Sound of bats in a roost.

4.4 The following equipment was used during the surveys:

- Clulite CB1 high-powered torch;
- Video Endoscope;
- 3.8m Telescopic Ladder;
- Binoculars; and
- Digital Camera.

Bat Emergence and Re-entry Survey

4.5 Evening emergence and dawn re-entry surveys involved surveyors watching possible egress and entry points around dusk and dawn. The surveyors used bat detectors to record bat echolocation calls which were later subjected to computer analysis, where this was considered necessary.

4.6 Two survey positions were used;

- to the East of the building covering the eastern gable, south face and north face;
- to the West of the building covering the western gable and southern face.

4.7 **Table 4.1** lists the date and type of survey.

Table 4.1: Dates and type of survey

Date	Survey type	Timings
10th May 2011	Emergence survey	15 minutes before dusk till 1.5hrs after dusk.
11th May 2011	Re-entry survey	1.5hrs before dawn till dawn
23rd May 2011	Emergence survey	15 minutes before dusk till 1.5hrs after dusk

4.8 The equipment used during these surveys included

- Petterson D240X (time expansion and heterodyne bat detector);
- Anabat SD1 static bat detector;
- Edirol R-09 digital recorder;
- Batsound v3.31 (sound analysis software);
- Analook v3.5M (sound analysis software);
- Bats of Britain and Ireland: Echolocation Calls, Sound Analysis and Species Identification (Russ and Sowler 2010).

5 RESULTS

Bat Inspection Survey

5.2 The main building at Wincote is a two storey stone built farmhouse with a slate roof.

5.3 The loft space in the main building is split into two sections, both very similar in character and construction. Both are supported on wooden a-frame trusses, with insulation used as cladding underneath the roof and the slate tiles. No evidence of bats was found in either loft.

5.4 The west section was approximately 1.5m high and was heavily cobwebbed throughout the airspace, indicating very little could have flown within it in recently. There was one large wasp nests and widespread mouse droppings and mice feeding remains. There was a single modern water tank in this section.

5.5 The east section was of the same construction with half the loft space at very low level of approximately 1m. Within this section there was a large old water tank. Ceiling lights from beneath created a small amount of artificial light within the loft space, the only other light came from a hole adjacent to the chimney breast at the far easternmost gable. There was widespread evidence of mice and a Jackdaw's nest in the north west corner.

5.6 On the exterior of the roof, facing south, there were numerous gaps and crevices through the slate roof allowing potential access for bats into the cavity behind. There were also many sections of rendering missing from beneath the ridgetile providing another potential roosting location with gaps also present on the roof above the reception room, under lead flashing and tiles. Other possible entrance points included;

- the west face of the roof where wood has rotted away allowing access into the void behind. There is heavy ivy growth up the northern half of this face;
- the south face of the roof where there were numerous gaps running along the join between the wall and the roof.
- gaps on the west facing gable where wood has rotted.
- The section of the building that has a flat roof has a wooden soffit on its eastern edge with several gaps between the wall and the wood. On one of these gaps a single pipistrelle type dropping was caught in cobwebs.
- On the east face of the main building there were several gaps present where wood had rotted creating a gap.

5.7 A cellar structure beneath the house was accessed alongside the west face of the main building (see **Figure 5.1**). The ceiling is a mixture of material including metal, wood, plaster, rendering and polystyrene tiles. Within this structure a single brown long-eared *Plecotus auritus* and two Natterer's *Myotis natteri* were found hibernating. The structure is relatively small and roughly square in shape, with a blocked off set of stone steps at one end. The bats were hibernating within cavities of the wall at a height of approximately 1.5m.

There were 20-30 medium sized bat droppings scattered over the floor of the cellar.

5.8 Affixed to the main building were two outhouses and a greenhouse. In the outhouse directly adjacent to the house, two Pipistrelle sp. type droppings were found on the back wall. No other evidence was present. The two adjacent outbuildings have a wooden panelled roof with corrugated asbestos material on top. The adjacent greenhouse had no evidence of bats within it.

5.9 Three outbuildings were found to the east of the main building, one large wooden building and two wooden sheds. All were flat roofed with no loft spaces present. No evidence of bats was found in these buildings. There were no areas of potential for roosts with no access points or cavities present.

Bat Emergence and Re-entry Survey

5.10 During the dawn re-entry and dusk emergence surveys, the following species were recorded with the following activity:

- Common Pipistrelle – Recorded commuting past the site and feeding;
- Soprano Pipistrelle – A single individual emerged from a roost location on the southern gable on the evening of the 10th. The presumed same individual roosted on the western gable in a crevice next to a timber purlin on the morning of the 11th. On the evening of the 23rd a single individual emerged from the same crevice on the western gable end.

Valuation of Bat Roost

5.11 There is currently a brown long-eared and Natterer's hibernation roost present in the cellar, and a soprano pipistrelle roost present on the south face and western gable of the main building. **Tables 5.1** and **5.2** below detail the rarity status of each of the 17 British species and the relevant geographic frame of reference valuing roosts of different types.

Table 5.1: Rarity of British Bat species within England (Wray, S. *et al*, 2007)

Rarity within range	
Rarest (under 10,000)	Greater Mouse-eared Bechstein's Barbastelle Greater Horseshoe Grey Long-eared
Rarer (10,000 – 100,000)	Lesser Horseshoe Whiskered/Brandt's Serotine Leisler's Nathusius' Pipistrelle
Common (over 100,000)	Natterer's Daubenton's

	Noctule Brown Long-eared Common Pipistrelle Soprano Pipistrelle

Table 5.2: Valuation of bat roosts according to roost type and geographic terms of reference (Wray, S. et *al*, 2007)

Geographic frame of reference	Roost types
Local (Parish or District)	Feeding perches Individual bats of common species Small numbers of common species (not maternity sites) Mating sites of common species
County	Feeding perches of rarer/rarest species Small numbers of rarer/rarest species (not maternity sites) Hibernation sites for small numbers of common/rarer species Maternity sites of common species
Regional	Large swarming sites Mating sites for rarer/rarest species Maternity sites of rarer species Significant hibernation sites for rarer/rarest species or all species assemblages
National	Sites meeting SSSI guidelines Maternity sites of rarest species
International	SAC sites

5.12 The hibernation roost present would therefore be valued of County importance as it is a hibernation site holding small numbers of two common species. The soprano pipistrelle roosts are of Local value as they are roosts of a probable single individual of a common species.

6 MITIGATION AND ENHANCEMENT

Legal and Policy Requirements

6.2 All British species of bat are listed on the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is an offence to deliberately kill, damage, take (Section 9(1)) a bat; to intentionally or recklessly disturb a bat whilst it occupies a place of shelter or protection (Section 9(4)(b)); or to deliberately or recklessly damage, destroy or obstruct access to a bat roost (Section 9(4)(c)). Given the strict nature of these offences, there is an obligation on the developer and owner of a site to consider the presence of bats.

6.3 All British bats are listed on the Conservation of Habitats and Species Regulations 2010, Schedule 2. Regulation 41 strengthens the protection of bats under the 1981 Act against deliberate capture or killing (Regulation 41(1) (a)), deliberate disturbance (Regulation 41(1) (b))3[1] and damage or destruction of a resting place (Regulation 41(1) (d)).

6.4 A bat roost is defined as any structure or place which is used for shelter or protection, irrespective of whether or not bats are resident. Buildings and trees may be used by bats for a number of different purposes throughout the year including resting, sleeping, breeding, raising young and hibernating. Use depends on bat age, sex, condition and species as well as the external factors of season and weather conditions. A roost used during one season is therefore protected throughout the year and any proposed works that may result in disturbance to bats, and loss, obstruction of or damage to a roost are licensable.

6.5 Development works that may cause killing or injury of bats or that would result in the damage, loss or disturbance of a bat roost would require a Natural England (NE) Mitigation Licence. Licensed works require evidence regarding the need for the development, that the works entailing detrimental impacts are unavoidable, as well as appropriate mitigation, which may include seasonal constraints and provision of alternative habitat and/or roosting structures. A NE Mitigation Licence application can only be submitted on completion of surveys, receipt of planning consent and completion of any conditions or agreements of relevance to wildlife. The application typically takes six weeks to process, after which mitigation could commence. The licence is typically held by the land owner or developer who has a legal obligation to deliver the mitigation measures detailed within the licence, with non-delivery constituting an offence. An experienced bat worker would be named within the licence who would usually assist the applicant in the development and delivery of the mitigation proposals (within the 'Method Statement' section of the application). A licence application also includes a 'Reasoned Statement' section which details the planning case for the licence and would usually be prepared by the applicant in consultation with a planner or lawyer.

6.6 All UK species of bat are also listed on the UK BAP. Under the NERC Act, 2006 the Government has a duty to ensure that parties take reasonable practicable steps to further the conservation of these listed species.

Figure 5.1: Existing Basement Plan (Source Squire and Partners)

Avoidance and Mitigation Measures

6.7 English Nature's (now Natural England) *'Bat Mitigation Guidelines'* (the 'Guidelines') was published in 2004 to assist those involved with land-use planning and development operations where bats are known or suspected to occur.

6.8 The Guidelines refers to two distinct components of a mitigation strategy designed to offset the predicted impacts of a development proposal on bats:

- Mitigation refers to measures taken to reduce adverse impacts, such as the redesign of a scheme's layout (including retention of existing roof spaces used by bats), or alteration to the proposed timings of works.
- Compensation refers to measures taken to off-set significant adverse impacts, for example, habitat creation (as in the creation of new roof spaces, for example) or habitat enhancement.

6.9 The Guidelines set out the conservation significance of different types of bat roost and the scope of mitigation and compensation which would be required for each.

6.10 The Guidelines also set out requirements for mitigation/compensation according to the conservation significance of different roost types. For a hibernation roost of species such as those found within the existing building at Wincote, the guidelines for proportionate mitigation and compensation require the following:

- timing constraints to construction
- more or less like-for-like replacement of roost sites. Overall there will be no net loss in high potential bat roosting habitat within the Site.
- phasing to ensure that bats are not left without a roost and are given time to find a replacement
- post-construction monitoring of newly created roost sites for use by bats, preferably for two years post-construction, due to the high conservation significance of maternity roosts for bat populations.

6.11 A bat mitigation strategy for the proposed project therefore needs to meet all of the above criteria as far as possible in order to mitigate effectively for the effects on bats and maximise the likelihood of modified and new areas being used by bats.

6.12 Another important theme within the Guidelines is the importance of maintaining **connectivity** within and between bat roosting and foraging areas by retaining (or providing) linear features such as woodland edges, paths or hedgerows, waterbodies, etc. retreats

New roosts

6.13 It will not be possible to retain the existing bat roosts as they are within the footprint of the proposed building. In line with the Guidelines proportionate replacement roosts are proposed. **Figure 6.1** gives an indicative location of theses replacement roosts. Two separate roosts will be built into the retaining wall that separates the more formal west half of the site from the more naturalistic east. They will be formed of a rectangular concrete structure submerged underground with a single

grilled entrance point. The dimension of these replacement roost will be similar to that of the existing roost, which measures approximately 2 x 3m with a height of 2m.

6.14 **Figure 6.2** is taken from the JNCC Bat Workers Manual and will be used as a guide for a design of these new roost sites. The aim will be to provide a wide range of environmental conditions using the cooling effects of the ground at the bottom and the warming effects of the sun at the top. Bat boxes and bat bricks will be placed throughout the replacement roosts to ensure suitable roosting habitat is provided. Further design details will be provided in the Natural England licence application.

Bat Boxes

6.15 Due to the high conservation value of the existing bat roosts at the Site, bat boxes cannot provide appropriate mitigation for the predicted redevelopment effects on bats. However, in combination with provision of new roosts described above, they may be useful in providing alternative sites for roosting, particularly during the construction period.

6.16 A variety of bat boxes will be provided for the range of bat species known to use the Site currently or historically. These boxes will be erected on suitable trees throughout the surrounding woodland prior to commencement of the redevelopment work. Bat boxes will also be designed into many of the new buildings across the site as shown in Squire and Partners drawing numbers B1_E_W_G200_001, B1_E_N_G200_001 and B3_E_AL_G200_001.

Lighting

6.17 It is known that pipistrelle bats (at least) are using the existing lighting on the Site for feeding purposes. However, some species (including brown long-eared bats) are known to avoid lit areas when foraging. Therefore, mitigation will be required for changes in the location and type of lighting. To this end, there will be no additional lighting on the currently east half of the site.

6.18 The remainder of the Site lighting will be efficiently directed and with lux levels maintained as low as possible.

Project phasing

6.19 Where roost spaces are to be lost, the redevelopment work will be phased to ensure that sufficient alternative roost sites are available in advance.

6.20 Work on buildings where there is a confirmed bat roost will not start during the hibernation season (early November to late March) or breeding season (mid May to late August).

6.21 These design details will be included at the Natural England licence application stage.

Habitat enhancement and creation

Connectivity

6.22 Substantial woodland/scrub buffers will be retained around the site boundary in the east of the site.

Waterbody

6.23 A lake will be created in the east of the site. This will include native marginal planting to enhance foraging opportunities for bats by encouraging a diversity of insects.

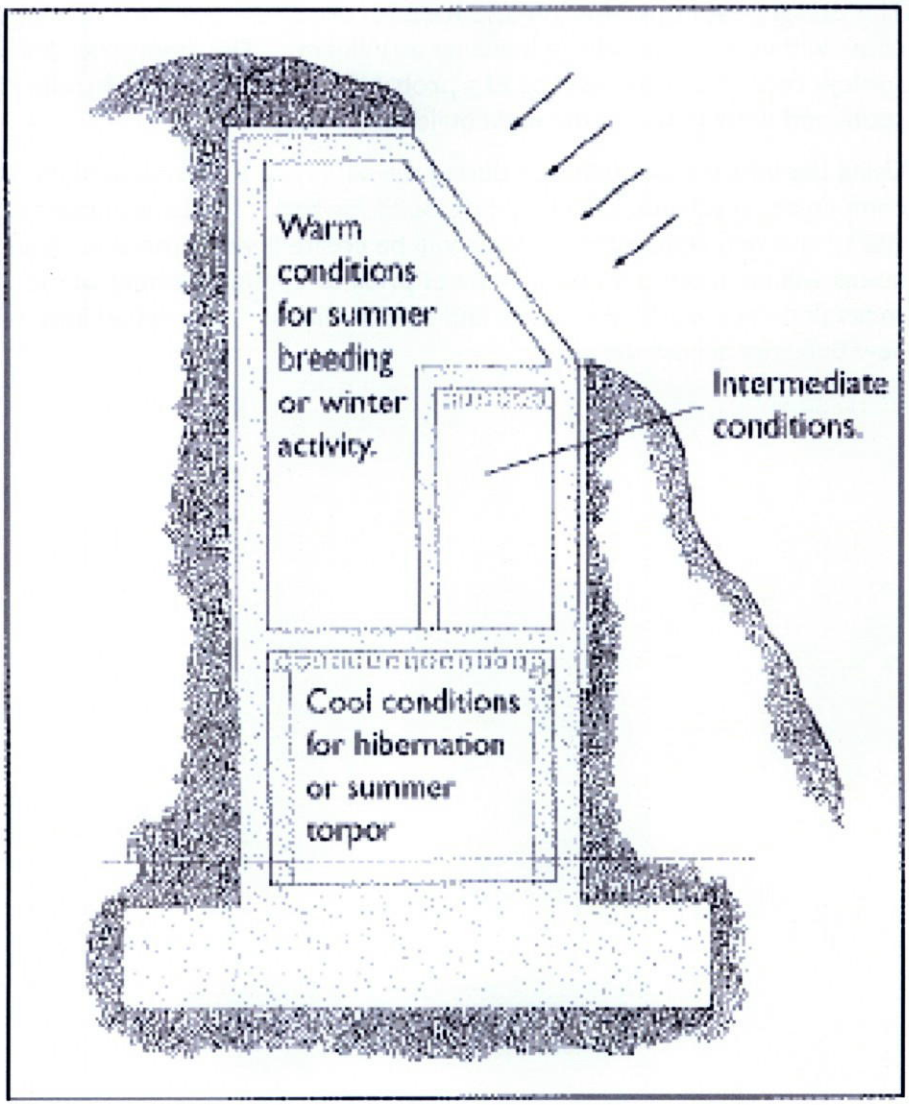
Bat-Friendly Planting

6.24 There are opportunities to incorporate bat-friendly species of annual and herbaceous perennials, trees and shrubs into the planting regime for the gardens and woodland edge/paths to encourage a diversity of insects and therefore enhance both overall biodiversity value of the Site and foraging potential for bats. Suitable species include:

- **Border flowers**: common evening-primrose *Oenethera biennis*, honesty *Lunaria annua*, bluebell *Hyacinthoides non-scripta*, corn marigold *Chrysanthemum segetum*, *Echinacea* spp., St John's wort *Hypericum* spp., red valerian *Centranthus ruber*, and primrose *Primula vulgaris*.
- **Herbs**: lavender *Lavandula* spp., lemon balm *Melissa officinalis*, thyme *Thymus* spp., rosemary *Rosemarinus* spp., marjoram *Origanum* spp., and fennel *Foeniculum vulgare*.
- **Trees, shrubs and climbers**: dog rose *Rosa canina*, oak *Quercus* sp., gorse *Ulex* sp., honeysuckle *Lonicera periclymenum*, jasmine *Jasminum* spp., and hornbeam *Carpinus betulus*.

Figure 6.1: Location of replacement hibernation roosts (Source Squire and Partners)

Figure 6.2: Schematic drawing of artificial hibernation roost site (Source JNCC)



7 SUMMARY

7.1 The daylight bat inspection surveys have recorded the presence of a hibernation roost within the cellar of the buildings at Wincote. The emergence and re-entry surveys recorded the presence of a probable single soprano pipistrelle roosting in the south and west gables of the main building.

7.2 Using the information gathered during the surveys a proportionate mitigation and compensation scheme has been developed for bats. The hibernation roost will be closed and two replacement roosts will be created within the site. A series of bat boxes will be erected on suitable trees prior to commencement of the redevelopment work. Bat boxes and bricks will also be designed into many of the new buildings across the site.

S:\5100\5178 Wincote Protected Species Surveys\B Project Working\5178_Wincote_Bat Report_DRAFT_110607.doc