



**Bat Emergence Survey
Greenside Mills, Skelmanthorpe**

Report reference: R-2586-02
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Summary Statement

Emergence surveys indicate likely absence of roosting bats. Proposals can proceed with minimal risk of impacts on bats or their roosts.

Introduction

1. Subsequent to the recommendations made in Brooks Ecological's Preliminary Ecological Appraisal (R-2586-02) detailed bat survey was commissioned at Greenside Mills, Saville Street, Skelmanthorpe, grid ref: SE 233 109.

Box 1 *Legal background*

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and the Conservation of Habitats and Species Regulations 2010. Under these Acts it is an offence among others, to recklessly kill, injure or disturb bats. It is also an offence to destroy or obstruct a roost even if bats are not in occupancy at the time of the action.

There are no defences against contravention of the Conservation of Habitats and Species Regulations 2010 which means that it is important for detailed and well designed bat surveys to be carried out, prior to carrying out activities that may impact upon bat roosts such as demolition of buildings or removal of trees.

Where bats are found within a potential development site, a license from Natural England may need to be secured if works that could otherwise contravene legislation are to be carried out. These licences are only issued where Natural England is satisfied that works are unavoidable and would not have a negative impact on the favourable conservation status of bats. A Natural England license requires that the potential development site has full planning permission and that bats were a material consideration of the planning permission.

Box 2 *Bat roosts*

Bats roost in buildings and trees in different locations depending upon time of year and environmental factors such as position of the sun, proximity to heat sources and feeding grounds. The following types are commonly referred to:

Transitional roosts:

Bats frequently gather early in the season (March to April) before dispersing to summer roosts. Bats can be found in high numbers in these roosts for a very short period. Transitional roosts can also be found shortly before hibernation in August to October when bats (depending upon species) can gather in roosts not used earlier in the season.

Maternity roosts:

These are among the most important roosts and are normally occupied from May to August. Depending on the species involved, some maternity roosts can contain a very significant proportion of the local population.

Summer (non-breeding) roosts

Small groups of non-breeding female and male bats can gather in these roosts or bats from a local population may choose to roost individually. There are normally a large number of suitable locations for summer non-breeding roosts and these may be routinely used or used only on an occasional basis. Irregularly used summer roosts can be very hard to find without unreasonable survey effort.

Mating roosts

Around September bats will gather in roost to mate; these are often in different locations than summer or breeding roosts.

Hibernation roosts

As bats in hibernation roosts are highly vulnerable to disturbance and bats can be present in large numbers these are considered to be among the most important bat roosts. Many species of bats roost in large and nationally important hibernation roosts associated with underground sites, many of which are well known and protected. However, the most common bat in the UK (the common pipistrelle) is largely unaccounted for in winter but thought to disperse and roost individually or in small groups in thermally stable cracks and crevices in thick walls or trees.

Local Status

- The application site is within the natural range of species of bats listed in Table 1.

Table 1 Bat species recorded within 100km of the application site

Species	National status
Pipistrelles (<i>Pipistrellus pipistrellus</i> and <i>P. pygmaeus</i>)	widespread/common
Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>)	widespread/rare
Noctule (<i>Nyctalus noctula</i>)	widespread/frequent
Leisler's (<i>Nyctalus leisleri</i>)	widespread/rare
Brown long-eared (<i>Plecotus auritus</i>)	widespread/common
Natterer's (<i>Myotis nattereri</i>)	widespread/frequent
Daubenton's (<i>Myotis daubentonii</i>)	widespread/common
Whiskered/Brandt's (<i>Myotis mystacinus</i> and <i>M. brandtii</i>)	widespread/scarce
Alcathoe's (<i>Myotis alcathoe</i>)	local/unknown
Serotine (<i>Eptesicus serotinus</i>)	south restricted/uncommon

Method

- Brooks Ecological specialise in bat surveys ranging from individual buildings through to complex sites requiring numerous visits with large teams. In terms of the survey effort, number of personnel required and number of visits required to be able to properly evaluate the building(s) use by bats we refer to the Bat Conservation Trust, Survey Good Practice Guidelines (2016). However, these guidelines are not prescriptive and we approach each site individually as required using our professional judgement and significant experience base.
- In this case, 3 visits with a team of up to 7 surveyors, was deemed necessary to fully evaluate the potential use of the site for roosting. The surveys were carried out on the 18th May, 15th June and 14th July 2016 with surveyors positioned around the building to cover all aspects where bats could potentially emerge, and to establish activity levels around the site.
- The surveyors, using heterodyne detectors, were in place at least half an hour before dusk and left once all species of bat would be expected to have left a roost and patterns of activity within the site had been appraised. Conditions and dates are summarised in table 2 below:

Table 1 Survey summary

Date of Survey	Temperature Start/End	Weather	Invertebrate activity
18.05.16	12°C / 11°C	Clear sky, still, dry	Moderate
15.06.16	13°C / 12°C	100% cloud, light rain	Moderate

14.07.16	15°C / 14°C	20% cloud, still, dry	Low
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6. To supplement data collected from these surveys, a static monitoring device (Anabat Express) was deployed in a strategic location, this being an area of scrub in the east of the site. This was left to run for 14 nights. Two additional devices were also installed around the site during the 1st emergence survey; to assist surveyors in covering all aspects of the Site.
7. The data collected during the period of remote monitoring was run through the Kaleidoscope Pro software package, which is able to identify bat calls down to species level (with the exception of myotis). Identification is generally correct when using this software; however, results are double checked to ensure accurate data analysis.
8. Surveys were directed by Rob Weston BSc (Hons) MSc MIEEM. Rob has many years' experience of carrying out bat surveys in a professional capacity and is registered to use the new Class Survey Licence WML CL18 (Bat Survey Level 2). He is a member of the West Yorkshire Bat Group, the Bat Conservation Trust and runs training in bat surveys for student ecologists.

Results

Survey 1– 18th May 2016

9. The first bat seen was a common pipistrelle at 21:17, 11 minutes after sunset. This was seen to arrive on site from the south and continued to forage in front of building 8 (as shown on figure 1). Over the next minute, this individual was joined by 3 more common pipistrelles; all arriving from the south/ southeast. These bats continued to forage over the yard, with occasional passes made over building 9, before leaving the Site to the west at 21:49.
10. During this time, occasional contacts were made with bats in other areas of the site. A single pipistrelle was seen commuting north to south across the site, and foraging by one common pipistrelle was observed between buildings 1, 2 and 5.
11. Two remote monitoring devices were also deployed around the site (detailed in figure 1) to assist surveyors with covering all aspects of the site. Four brief calls were recorded on Device 1, all of which were noctule logged between 22:08 – 22:09. Given that this is over an hour after sunset, these are likely to be bats passing high over the Site and are not thought to have emerged. No bats were recorded on device 2.
12. During the survey, no bats were seen to emerge from the surveyed buildings.

Survey 2– 15th June 2016

13. Bat activity was similar to that of the previous survey. The first bat of the night was a common pipistrelle seen at 21:48, 10 minutes after sunset. This appeared from the south, commuting north through the site. Five further common pipistrelle bats appeared in close succession, all from the south, continuing north.
14. At 21:54, a common pipistrelle was observed entering the site from the east, flying towards building 7, briefly foraging before returning back. This behaviour was repeated at 21:57.
15. Another common pipistrelle at 22:07 was recorded, appearing above building 9, continuing eastwards. Whilst its arrival was not seen, given the length of time after sunset, it is not thought to have emerged from any of the buildings, and instead was thought to have been commuting low over the buildings.
16. Throughout the survey, occasional contact of foraging bats was made between buildings 2 and 5 - thought to be of bats entering the site briefly from the railway line.
17. At no point were any bats seen or suspected to emerge from the surveyed buildings.

Survey 3– 14th July 2016

18. Activity was slightly less than previous surveys, but similar in character. The first bat of the night was a common pipistrelle, seen as 21:34, 1 minute after sunset. The bat appeared from the south, commuting high over the site in a northeast direction.
19. At 21:41, a second common pipistrelle appeared from the south, and began to forage in the yard to the front of building 8. This was joined at 21:50, by a third common pipistrelle.
20. Throughout the survey, occasional contact was made with foraging bats on the edge of the site. These were noted between building 2 and 5, close to the railway line, and in the central north section of the site.
21. At no point were any bats seen or suspected to emerge from the surveyed buildings.

Figure 1 Bat emergence drawing- Survey 1

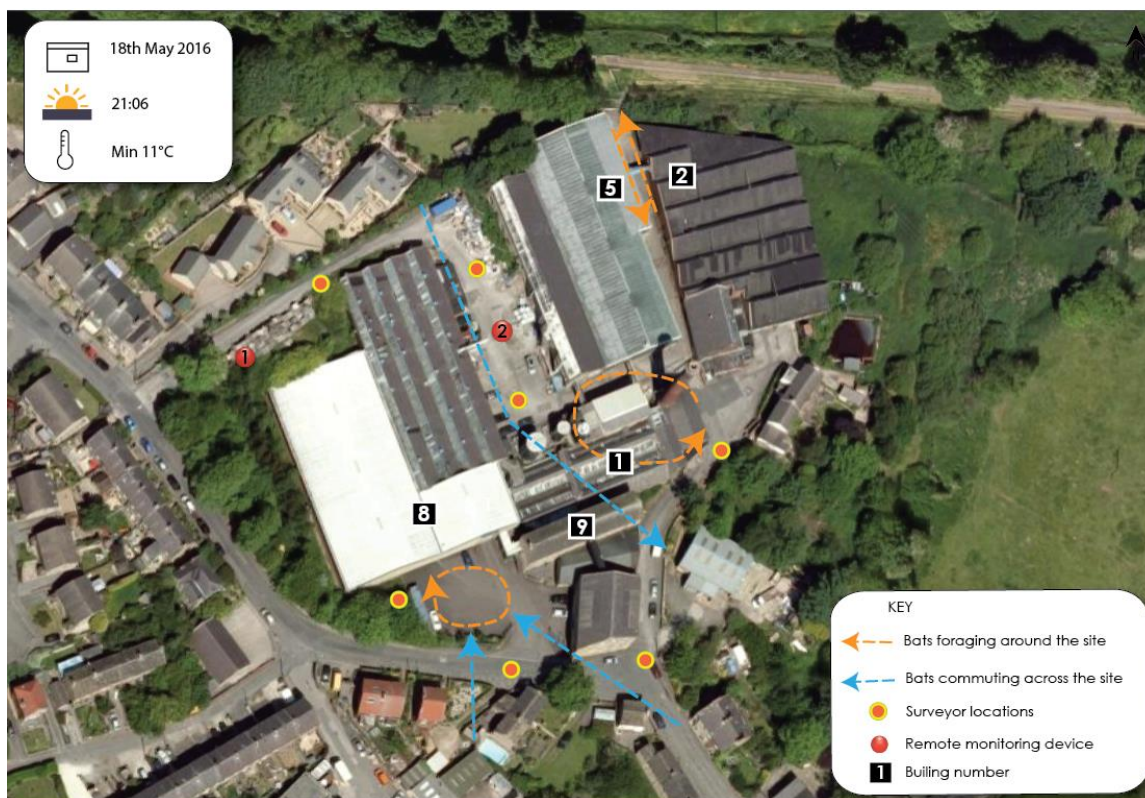


Figure 2 Bat emergence drawing - Survey 2

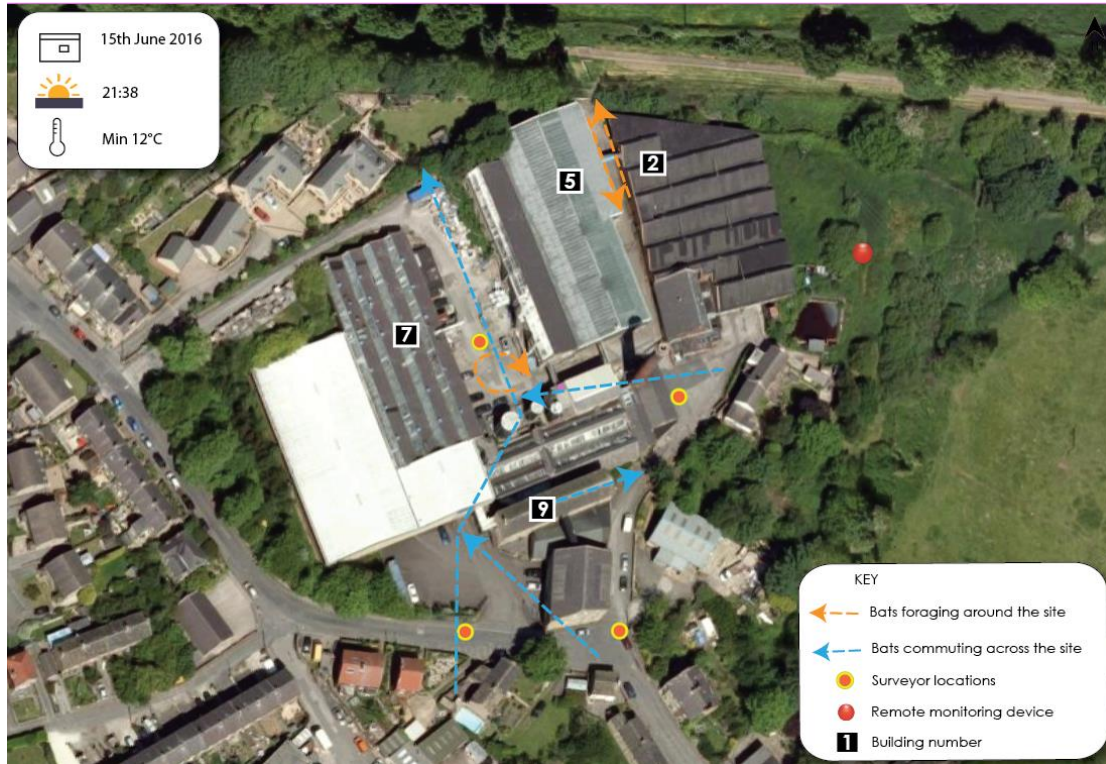
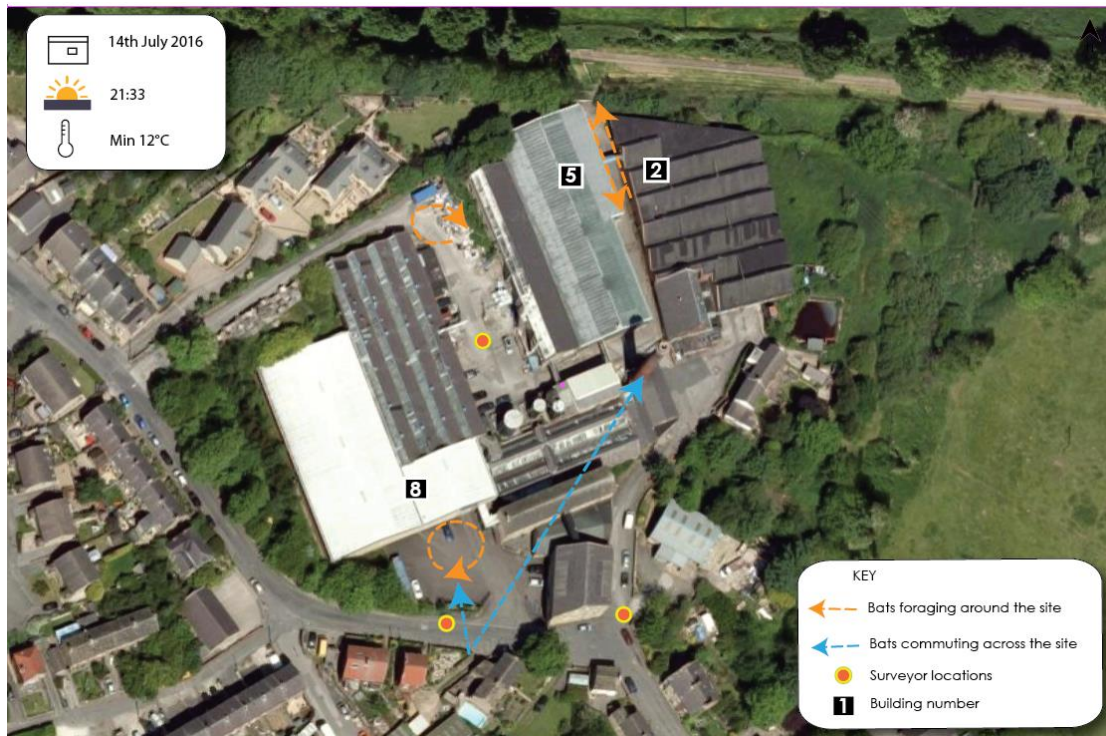
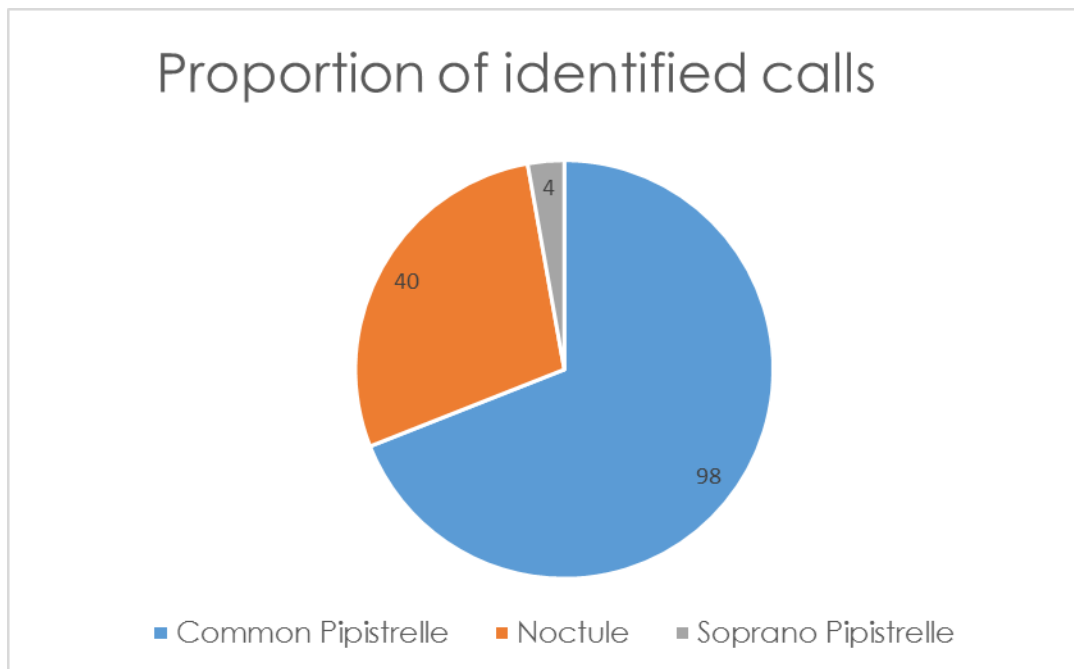


Figure 3 Bat emergence drawing - survey 3



Static monitoring

22. A remote monitoring device were deployed in an area of scrub to the east of the site. The device recorded for 14 consecutive nights, starting on the 15th June 2016, and its location is shown on figure 2. During this period, bats were only recorded during 2 of the nights. Within which 3 species of bats were recorded in low numbers- common pipistrelle as well as occasional soprano pipistrelle and noctule.
23. Monitoring suggests that the site is not of high value for foraging bats. Given the nature of the recordings, it is likely that bats are using the railway line along the northern boundary to travel to higher value habitat and occasionally entering this area to forage briefly.



Evaluation and recommendations

24. Following emergence survey work it is concluded that the mill buildings are unlikely to support roosting bats and that further survey effort is not required in support of this conclusion.
25. Results are consistent with common pipistrelle bats commuting or foraging through the Site, having emerged from nearby roost in housing (such as the known roost just to the south), with occasional visits / fly-pasts by other species (soprano pipistrelle and noctule).
26. Low levels of activity were recorded in the area of scrub in the east of the site, indicating that the site is of little importance to local populations of bats, other than for use for occasional foraging. However, proposals should avoid lighting along the northern boundary of the site- so as to avoid impacting on the railway line's function as a wildlife corridor.
27. The proposed development presents minimal risk of impacting on bats or their roosts.

General advice

28. Even where surveys have been carried out which demonstrate absence of roosting, site workers should always be aware that bats can move into buildings previously found not to support them. On this basis work should proceed with care and if a bat is found during the proposed development, works should stop immediately and a professional ecologist and/or the bat helpline (on 0845 1300 228 Bat Conservation Trust) should be contacted. The local office of Natural England should also be contacted to seek advice.
29. The UK government's guidance on nature conservation in relation to development (NPPF) makes it clear that opportunities should be sought through their planning system to use development as an opportunity to enhance sites for wildlife where possible. Proposals for the renovation could incorporate areas that could be attractive to roosting bats, such as adapted roof tiles and ridges which can be cheaply and easily incorporated into new buildings.
30. Any post development proposed for the site should have a sympathetic lighting plan which demonstrates that light spill will be minimised since illumination of these areas could prejudice their use by bats. Impacts can be minimised by implementing the following (Stone, E.L. (2013):
 - Use of narrow spectrum lights with no UV or warm white light;
 - Direct lighting downwards;
 - Use of low level lighting (e.g. 2m high lighting columns);

- Use of hoods and cowls to direct lighting onto required areas and not onto adjacent habitats;
- Restrict hours of light.

References

Bat Conservation Trust (2016) Bat Surveys For Professional Ecologists – Good Practice Guidelines

English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.

JNCC (2004) The Bat Workers Manual. 3rd Edition.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System
<http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

Conservation of Habitats and Species Regulations 2010

Stone, E.L. (2013) Bats and Lighting. Overview of current evidence and mitigation