

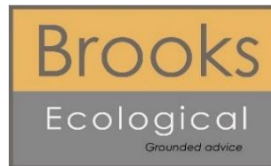
Bat Activity Survey
Westgate, Cleckheaton

Strata Homes Ltd.

Report Reference: ER-4666-04
21/09/2021

Report Title:	Bat Activity Survey Westgate, Cleckheaton
Report Reference:	ER-4666-04
Written by:	Christopher Shaw BSc (Hons) MCIEEM Senior Ecologist
Technical Review:	Sam Kitching BSc (Hons) MCIEEM Senior Ecologist
QA:	Dominic Greenwood BSc Graduate Ecologist
Approved for Issue:	Sam Kitching BSc (Hons) MCIEEM Senior Ecologist
Date:	21/09/2021

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Unit A, 1 Station Road, Guiseley,
Leeds, LS20 8BX
01943 884451
admin@brooks-ecological.co.uk
www.brooks-ecological.co.uk
Registered in England Number 5351418



Summary Statement

Survey has shown the Site to attract only low levels of bat activity, with foraging restricted to individual, or low numbers of bats (max. 2) at any one time, in any given part of the Site. Common pipistrelle is the species most encountered, with foraging activity scattered indiscriminately throughout the Site. Other species (Noctule and Soprano Pipistrelle) were recorded irregularly and at very low levels.

The Site is not considered to be of significant importance to any local bat populations, either in terms of foraging or commuting.

The proposals should therefore seek to enhance the Site for this group, through creation areas of higher value bat habitat. This would be best placed along the Sites southern boundary. A sensitive lighting plan should be designed to show how light spill will be minimised/ avoided on newly created habitat.

Introduction

1. Brooks Ecological was commissioned by Strata Homes Ltd. to carry out detailed Bat Activity Survey at the proposed development Site at Westgate, Cleckheaton.
2. These surveys are required to provide evidence of the baseline use of the Site by the local bat population, which in turn will then enable mitigation and enhancement strategies to be devised to support a planning application.
3. The scope of the survey has been devised based on an assessment of the habitats present, the results of previous activity surveys and in accordance with current best practice guidelines (Bat Conservation Trust, 2016).

Figure 1 Site location plan



Method

4. Survey and assessment was directed by Christopher Shaw BSc (Hons) MCIEM. Chris is registered to use the Class Survey Licence WML CL18 (Bat Survey Level 2). He is an active member of the West Yorkshire Bat Group and West Yorkshire Bat Care Scheme.
5. The objective of the survey was to collect up to date information on the Site's use by local bat populations, so that an accurate assessment of the potential impacts of development could be made.
6. A transect and remote monitoring survey was carried out during the main spring, summer and autumn periods, to collect the following data (Bat Conservation Trust, 2016):
 - The assemblage of bat species using the site;
 - The relative frequency with which the site is used by different species;
 - The nature of activity for different bat species, for example foraging, commuting and roosting.

Survey Conditions

7. Survey conditions are summarised below:

Table 1 Survey Conditions

Survey	Date	Weather	Invertebrate Activity
Spring/ early summer	16.06.2021	15°C. Dry. Light breeze (B1). Partial cloud cover.	Moderate
Summer	03.08.2021	17°C. Dry. Light breeze (B1). 15% cloud cover.	Good
Autumn	02.09.2021	14-15°C. Dry. Overcast. Light breeze. .	Good

Transects

8. Transects began around sunset and continued up to two hours after when all bats were thought to have emerged, and thus were actively foraging and commuting.
9. The transects were walked by a team of two surveyors, equipped with a heterodyne detector as well as a Titley Scientific Anabat Express, used to

track the transect route and aid species identification. Notes taken during the survey were then used to produce the activity 'heat map' seen in the below figures.

10. Blue shades on the heat map correspond with low activity defined by up to 2 individuals intermittently recorded, yellow tones indicate more prolonged spells of activity by 2 -5 individuals whilst red tones indicate higher and consistent activity levels of 5 or more bats.



Remote Monitoring

11. To supplement data collected during the walked transect, static monitoring device/s (Wildlife Acoustic SM4) were deployed in a strategic location on-site prior to the start of the walked transect.
12. Data collected during the period of remote monitoring has been run through Kaleidoscope Pro software, which can identify bat calls down to species level (except for *Myotis*). Identification is generally correct when using this software; however, results are double checked to ensure accurate data analysis.
13. Every effort is made to split up *Myotis* calls down to species level. This is done by analysing calls on Analook software and looking at parameters such as inter-pulse interval, call duration, slope and maximum / minimum / peak call frequency. However, this can often be difficult when registrations are short in duration, faint or distorted by cluttered environments.

Limitations

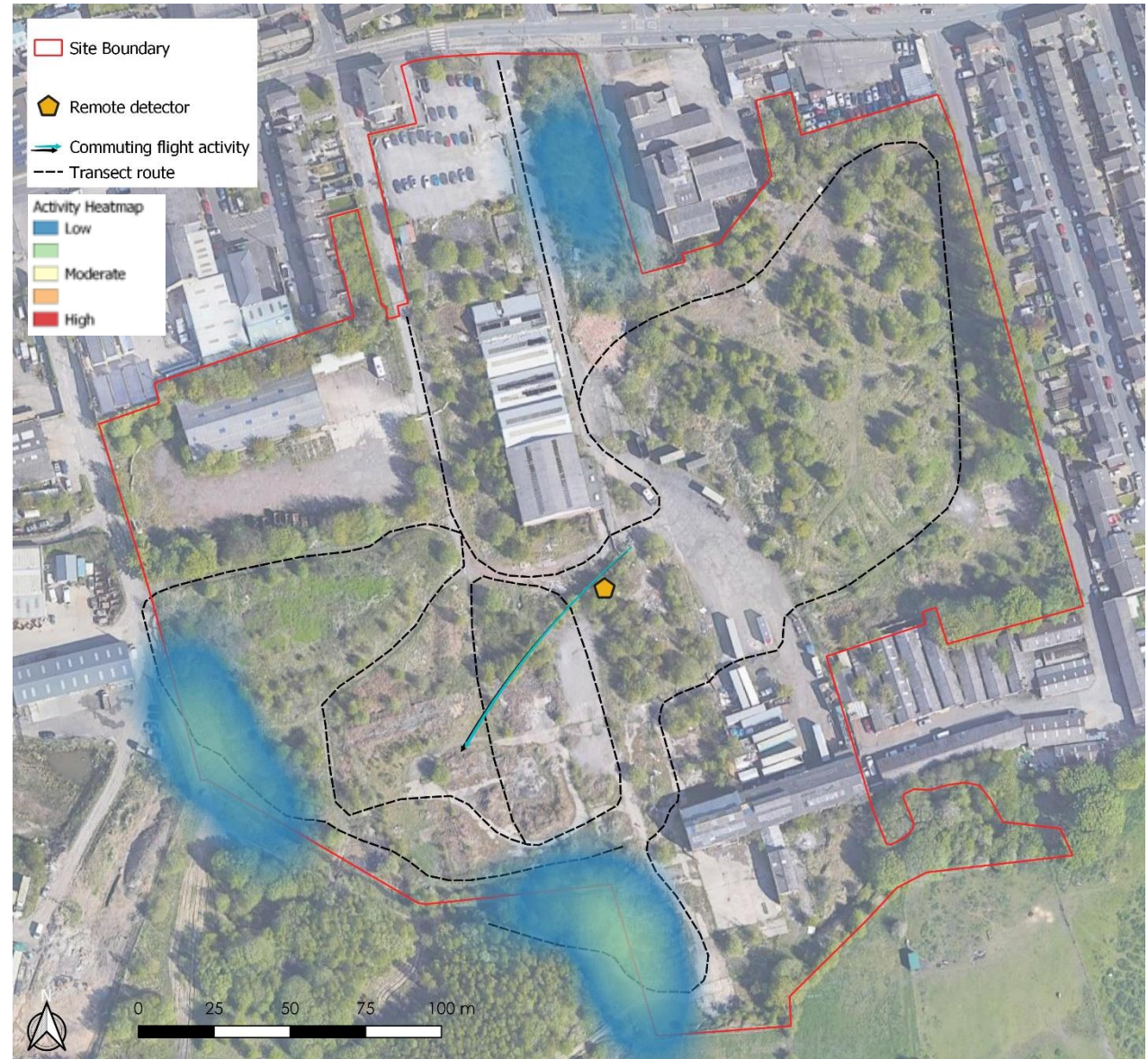
14. Static monitoring can only reliably provide information on what species of bat are regularly making use of a site. More detailed information on bat activity, such as frequency of bats, nature of activity (foraging, commuting, flight path), etc. can only be gleaned through walked transects.
15. The frequency of calls recorded can, to some extent, suggest whether activity on site is low, moderate or high, by comparing data collected with that of similar sites that have been surveyed.
16. A single registration can account for up to 15 seconds of continuous bat call. Large batches of registrations can be interpreted in several different ways, i.e. a single bat foraging continuously for only an hour can result in many hundreds of registrations being logged; similarly, many hundreds of bats commuting quickly past the detector can result in the same number of registrations.

Spring Results

Walkover Transect

17. An approximate route walked by the surveyor is shown in the figure opposite. At least two laps of the Site were completed.
18. Bat activity was relatively low overall, with foraging recorded in only three locations.
19. The first contact was made at 22:14, when two soprano pipistrelles were observed foraging over the drain to the south. By the second lap, at 22:50, only one of these bats remained.
20. At 22:17 a single common pipistrelle was seen commuting through the centre of the Site from northeast to southwest. Five minutes later, this bat (assumed the same), was recorded foraging over the southwest boundary. This was observed in the same location on the second lap at 22:53.
21. Then at 22:32, a single soprano pipistrelle was observed foraging over scrub vegetation to the north. This was only seen once.

Figure 2 Summary of bat activity observed during walked transect



Spring Results

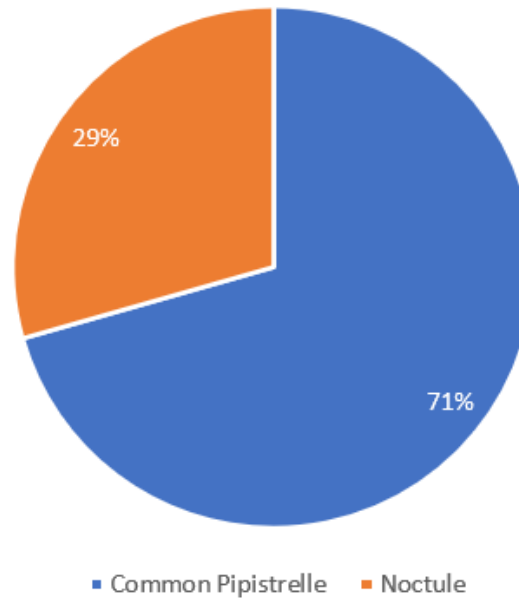
Remote Monitoring

22. A single remote detector (Song Meter SM4BAT FS) was deployed in a central location, as shown in Figure 3, above. This was left to run for 5 consecutive nights, from the 16th to the 20th June 2021.
23. Activity throughout this period of monitoring can be considered very low, with less than 10 registrations logged per night.
24. Only two species of bat were recorded during this period; these being common pipistrelle and noctule, which logged an average of 5 and 2 registrations per night, respectively.
25. In both cases, the activity recorded is likely to reflect a single, or low number of individuals, passing quickly over the detector each evening, with no evidence of sustained foraging.

Table 2 Total number of registrations logged for each bat species, per day across the spring/ early summer period.

Species	16 th	17 th	18 th	19 th	20 th
Common Pipistrelle	6	6	7	4	1
Noctule	3	3	1	1	2

Figure 3 Proportion of each bat species recorded during spring/ early summer monitoring.



Summer Results

Walkover Transect

26. An approximate route walked by the surveyor is shown in the figure opposite. At least two laps of the Site were completed.
27. All bat's contacts were attributed to solitary common pipistrelle, which were seen foraging in various locations throughout the Site.
28. There was no recognisable pattern to this activity, with no specific habitat feature or area of habitat attracting notably greater levels of foraging.
29. Bats were only recorded foraging in any one location on one of the two laps, indicating that foraging was relatively brief, with bats quickly moving on.
30. The bat activity observed during this transect can be considered be low.

Figure 4 Summary of bat activity observed during walked transect



Summer Results

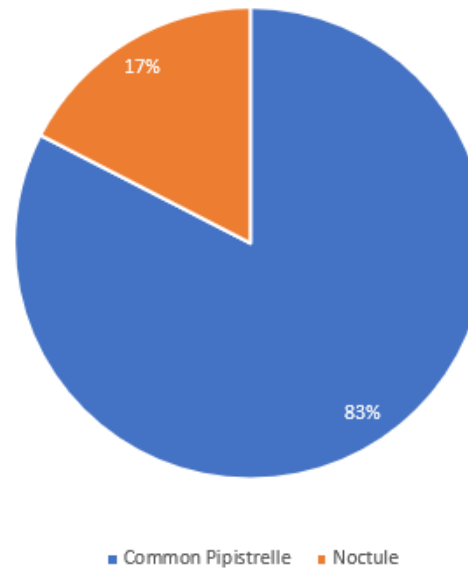
Remote Monitoring

31. A single remote detector (Song Meter SM4BAT FS) was deployed in the same location as before, as shown in Figure 5. This was left to run for 5 consecutive nights, from the 3rd to 7th August 2021.
32. Activity recorded during this period was very similar to that seen in spring, all be it at slightly increased levels.
33. As before, only two species of bat were recorded, these again being common pipistrelle and noctule.
34. Activity was slightly greater than in spring, but can still be considered very low overall, with an average of 54 and 11 registrations being logged each night for common pipistrelle and noctule, respectively.
35. This data supports the results of the walked transect and is likely to reflect brief foraging passes by solitary, or low numbers of bats.

Table 3 Total number of registrations logged for each bat species, per day across the spring period.

Species	3rd	4th	5th	6th	7th
Common Pipistrelle	55	36	108	46	25
Noctule	34	10	7	6	0

Figure 5 Proportion of each bat species recorded during summer monitoring.

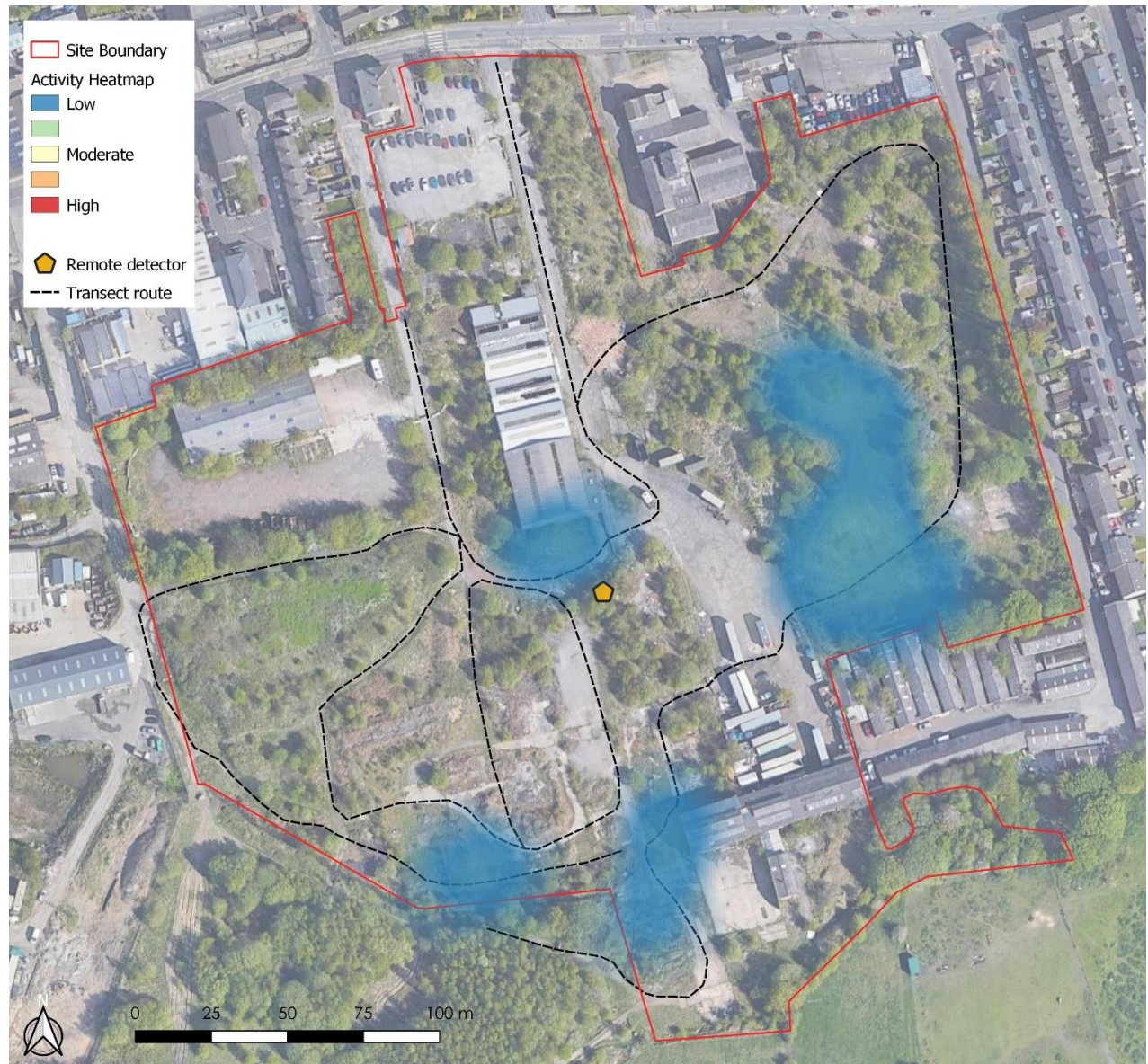


Autumn Results

Walkover Transect

36. A similar transect to that walked in summer was repeated here, with surveyors walking at least two laps of the Site.
37. Activity was slightly reduced compared to summer, and again, all contacts were made by solitary common pipistrelle.
38. As before, there was no recognisable pattern to this activity, with no specific habitat feature or area of habitat attracting notably greater levels of foraging.
39. Bats were only recorded foraging in any one location on one of the two laps, indicating that foraging was relatively brief, with bats quickly moving on.
40. The bat activity observed during this transect can be considered be low.

Figure 6 Summary of bat activity observed during walked transect



Autumn Results

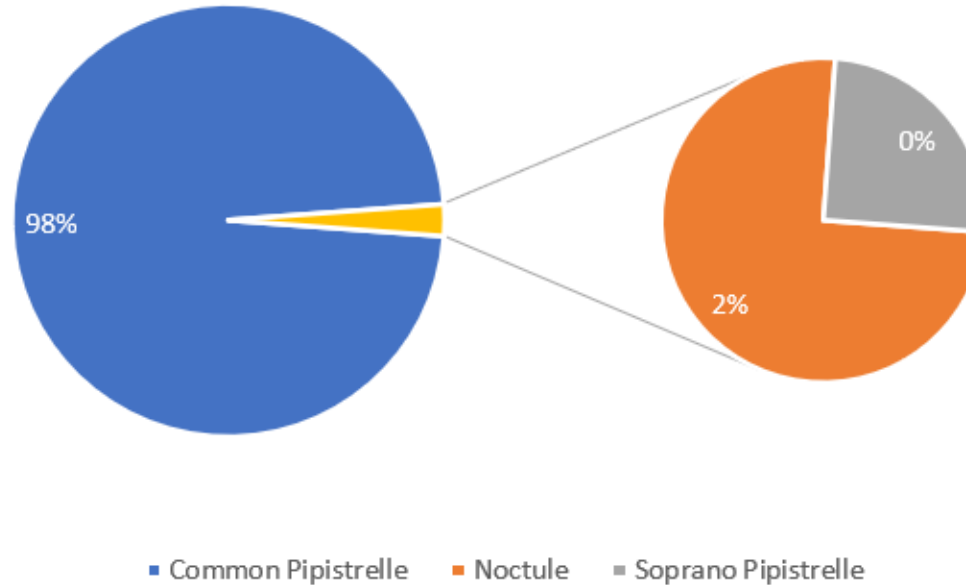
Remote Monitoring

41. A single remote detector (Song Meter SM4BAT FS) was deployed in the same location as before, as shown in Figure 7. This was initially deployed on the 2nd September 2021, but failed to record. The device was therefore redeployed on the 16th September 2021 and left to run for 5 consecutive nights
42. Activity was again very low, with only three common species of bat being recorded on Site.
43. As before, common pipistrelle made up the bulk of this activity (98%) and were recorded at similar low levels on each of the 5 nights, averaging 33 registrations per night. This supports the observations made during the walked transect and is likely to reflect irregular low-level foraging by a single common pipistrelle bat.
44. The other two species were both recorded on only one of the five nights (18th September) and are likely to reflect a brief commuting pass by a single individual of each species.

Table 4 Total number of registrations logged for each bat species, per day across the spring period.

Species	16 th Sept	17 th Sept	18 th Sept	19 th Sept	20 th Sept
Common Pipistrelle	29	34	48	38	17
Noctule	-	-	3	-	-
Soprano Pipistrelle	-	-	1	-	-

Figure 7 Proportion of each bat species recorded during autumn monitoring.



Evaluation

45. Evaluation of foraging and commuting habitat is made with reference to Wray *et al* (2010). This uses a scoring system to assess the Site's importance to bats against a geographic frame of reference.

Table 5 Scoring system for valuing commuting and foraging habitat

Geographic Frame of Reference	Score
International	>50
National	41-50
Regional	31-40
County	21-30
District, Local or Parish	11-20
Not Important	1-10

46. Using the above methodology, the Site is assessed as follows:

Foraging

47. Individual bats (5) of common species of bat (2). No roosts identified nearby (1). Industrial or other site without established vegetation (1).
48. Total of **9 points**. The Site is not important to bat populations as a foraging resource.

Commuting

49. Individuals (5) of common species of bat (2). No roosts identified nearby (1) Absence of (other) linear features (1).
50. Total of **9 points**. The Site is not important to bat populations as a commuting resource.

Conclusions

51. The Site has been subject to seasonal bat activity survey, covering the main Spring, Summer and Autumn periods of 2021, with transects and remote monitoring completed during optimal weather conditions.
52. Walked transects have recorded only low-levels of bat activity on Site, with foraging restricted to individual, or small numbers of bats (max. 2) in any given part of the Site. Common pipistrelle is the species most commonly encountered, with foraging activity scattered indiscriminately across the Site. Soprano pipistrelle and noctule are also recorded on Site, but on a more irregular basis.
53. Remote monitoring recorded similar low-level activity, by the same three bat species, with common pipistrelle (CP) making up the bulk of this activity.
54. Based on the evaluation presented in the previous section, the Site is not considered to be of importance to any local bat populations, either in terms of the provision of foraging resources or commuting routes.

Recommendations

55. There are currently no habitat features within the Site that are of significant value to any local bat populations. Proposals should therefore seek to enhance the Sites value to this group, through the creation of strong linear corridors, i.e. along the Site's southern boundary.
56. A sensitive lighting plan should be designed to show how light spill will be minimised / avoided on newly created habitat targeted at attracting bats.
57. Bat boxes could be installed within a number of suitable new builds, i.e. those fronting onto the southern boundary.

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