SF3339 | Roughbirchworth Lane, Oxspring

BAT TRANSECT SURVEYS

July 2022 | For Planning

SMEEDEN FOREMAN

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Quality Assurance

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CONTENTS

EXECUTIVE SUMMARY 2
1.0 INTRODUCTION 3
2.0 SITE DESCRIPTION 4
3.0 LEGISLATION AND STATUS 5
4.0 BASELINE INFORMATION 7
4.1 Existing Records Data 6
4.2 Previous Survey Data 7
4.3 Additional Survey Data 9
5.0 IMPLICATIONS/RECOMMENDATIONS 15
5.1 Implications 15
5.2 Recommendations 15
6.0 CONCLUSIONS 16
7.0 REFERENCES 17

LIST OF FIGURES

Figure 01: Proposed Development *(Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services).* 3
Figure 02: Aerial view of site location 4
Figure 03: Bat Activity Plan (19 June 2020) 12
Figure 04: Bat Activity Plan (01 June 2022) 13

LIST OF TABLES

Table 01: Static data from May 2021 (Whitcher Wildlife Limited). 8
Table 02: Static data from October 2021 (Whitcher Wildlife Limited). 8
Table 03: Survey specifics: Transects 11
Table 04: Static data from June 2020. 11
Table 05: Static data from May/June 2022. 13
Table 06: Bat species by percantage. 14
Table 07: Bat species by number (average per night). 14
Table 08:Valuing the site in respect to foraging and commuting bats (Wray et al 2010). 14

APPENDICES

Appendix 01: Local Planning Authority comments (dated 27.04.2022) 18

EXECUTIVE SUMMARY

Smeeden Foreman Limited has been commissioned by PB Planning on behalf of Jason Frudd to undertake bat transect surveys at a site off Roughbirchworth Lane, Oxspring (approx. central grid reference SE27162-02085).

Further survey with respect to foraging and commuting bats was requested by the Biodiversity Officer at Barnsley District Council to support a planning submission for the site (Planning reference number 2020/1387).

The proposed development comprises of seven residential units with associated parking and access.

Previous reports for the site have included a desk study of existing records for bats, a habitat survey to assess the suitability of the site to support bats and two bat transect surveys. This report will reference the findings of the previous reports and include additional bat transect information.

Existing records - Eight confirmed species of bat recorded within the search area. Species included common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmeaus*), daubenton's (*Myotis daubentonii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus)*, Leisler's (*Nyctalus leisleri*), Natterer's (*Myotis nattereri*) and Whiskered (*Myotis mystacinus*). Records include a roost (dating 2007) within a house referred to as Millstones adjacent to the site, a common pipistrelle day roost located 95m to the north (Mill Farmhouse, 2019) and a common pipistrelle maternity roost located 250m south-west within Oxspring Primary School (2019).

Habitat assessment - Offsite/adjacent habitats offer moderate to high value foraging (River Don to the north, woodland to the west) with the onsite dominant habitat of poor semi-improved grassland offering low foraging value.

Foraging/commuting use by bats– Principal use of the site was found to be along the River Don to the north of the site where foraging activity occurred throughout the surveys. Low levels of commuting/foraging were identified to the western boundary of the site, along the edge of the adjacent woodland. Species noted were predominantly common and soprano pipistrelle with Myotis bats and a low of number of noctules.

Impacts and mitigation - Impacts on foraging/commuting bats are anticipated to be negligible due to the retention of all trees, the set back of the development from the river by between 8 to 30m, additional tree planting, inclusion of wildflower grassland and the provision of an appropriate lighting scheme which will avoid/minimise illumination of the river corridor, its associated buffer and woodland edge habitats.

1.0 INTRODUCTION

1.1.1 Smeeden Foreman Limited has been commissioned by PB Planning on behalf of Jason Frudd to undertake bat transect surveys at a site off Roughbirchworth Lane, Oxspring (approx. central grid reference SE27162-02085) hereafter referred to as the 'site'.

1.1.2 Further survey with respect to foraging and commuting bats was requested by the Biodiversity Officer at Barnsley District Council to support a planning submission for the site (Planning reference number 2020/1387).

1.1.3 The proposed development comprises of seven residential units with associated parking and access (refer to *Figure 01: Proposed Development, Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services*).

1.1.4 Previous reports for the site have included a desk study of existing records for bats, a habitat survey to assess the suitability of the site to support bats and two bat transect surveys.

1.1.5 This report will reference the findings of the previous reports and include the following additional survey information:-

- Transect survey: June 2020.
- Transect survey: May 2022 .

1.1.6 A review of the above information will be made to identify any features used by bats which may be affected by the proposed development. Where potential impacts are identified the need for mitigation measures, protected species licensing or further surveys will be discussed.

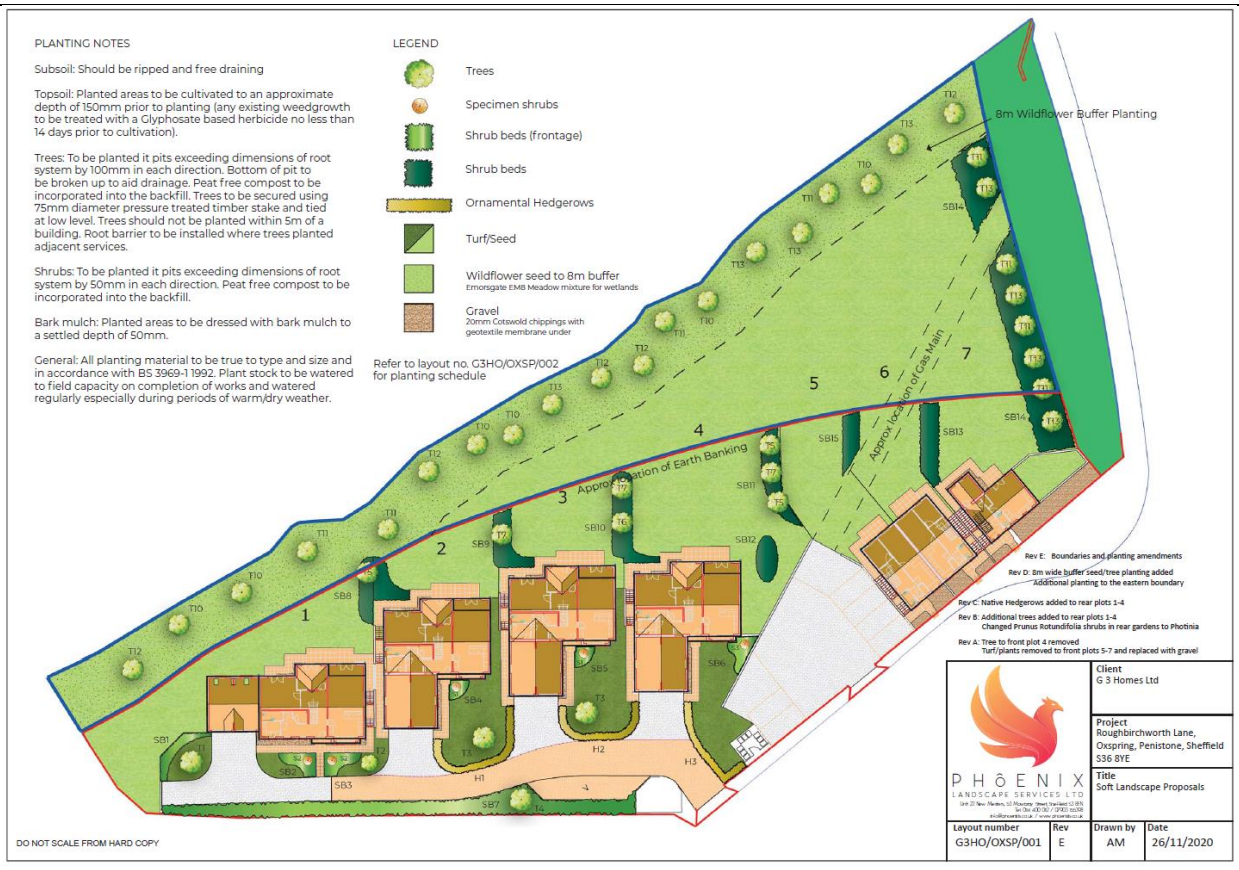


Figure 01: Proposed Development (*Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services)*

2.0 SITE DESCRIPTION

2.1.1 The site is located within the village of Oxspring, which lies approximately 7km south-west of Barnsley, South Yorkshire. Oxspring is a small residential village surrounded by open countryside. Refer to *Figure 02* below.

2.1.2 The proposed development site is approximately 0.46 hectares and is composed principally of species-poor semi-improved grassland and a line of young and semi-mature trees.

2.1.3 It is bound to the north by the River Don; to the west by a dry stone wall beyond which lies woodland comprising of mature/semi-mature broadleaved trees and a playground; to the south by a stone wall beyond which lies Roughbirchworth Lane; and to the east by a fence beyond which lies an embankment of grassland/tall herb vegetation adjacent to Bower Hill Road.



Figure 02: Aerial view of site location

3.0 LEGAL PROTECTION AND STATUS

3.1 LEGAL PROTECTION

3.1.1 Bats and their roosts are afforded full legal protection under both UK and European legislation. The Conservation (Natural Habitats & c.) Regulations 1994 (as amended, 2017) transpose the Habitats Directive into UK law, making it an offence to:

- deliberately disturb a bat;
- deliberately kill, injure or capture a bat;
- damage, destroy or obstruct access to a breeding site or resting place (note this applies to both deliberate and reckless actions).

3.1.2 The Wildlife and Countryside Act 1981 (as amended) (Schedule 5) makes it an offence to:

- intentionally kill, injure or take a bat ;
- damage, destroy or obstruct a bat roost *;
- disturb a bat at a roost *;
- possess or control a bat or any part thereof;
- sell, offer for sale, possess or transport for sale any bat or part thereof;
- set traps for catching, killing or injuring bats;
- possess articles for the purposes of committing offences against bats;

[*= intentional and reckless offences covered].

This protection applies whether bats are present within the roost at the time or not.

3.2 STATUS

National Biodiversity Action Plan

3.2.1 The UK Biodiversity Action Plan (UK BAP) identifies priority species and habitats which are those considered to be the most threatened and therefore most in need of conservation action. The lists were updated in 2007 to include 1150 species and 65 habitats.

3.2.2 Of the seventeen species of bat known to breed in Britain, seven are UK BAP priority species including barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*.

3.2.3 Of these species there are records of noctule, soprano pipistrelle and brown long-eared bats within 1km of the proposals site.

The Local Biodiversity Action Plan

3.2.1 The Barnsley Biodiversity Action Plan includes all relevant UKBAP priority species, species protected under the Wildlife and Countryside Act (1981) and those included on non-statutory red lists. It therefore includes all bat species found in the district.

The Local Bat Group (South Yorkshire Bat Group)

3.2.2 The South Yorkshire Bat Group web site provides the following information with respect to bat species within the area (https://www.sybatgroup.org.uk/bats-of-south-yorkshire). In the South Yorkshire area, eight species of bats are known to breed and hibernate. These being common and soprano pipistrelle bats, Daubenton's bat, brown long-eared bat, Natterer's bat, whiskered bat, noctule and Leisler's bat

(hibernation suspected). One species, Brandt's bat, is considered a probable breeder but its hibernation status is unknown.

3.2.3 The relative status of the species is provided in the following table (taken from the SYBG web site (https://www.sybatgroup.org.uk/bats-of-south-yorkshire).

Species	Relative Population Status in South Yorkshire
Common pipistrelle	Common
Soprano pipistrelle	Fairly common
Daubenton's bat	Fairly common
Brown long-eared bat	Locally distributed
Natterer's bat	Locally distributed
Whiskered bat	Uncommon
Noctule	Uncommon but widespread
Leisler's bat	Scarce
Brandt's bat	Very rare
Nathusius' pipistrelle	Very rare

4.0 BASELINE INFORMATION

4.1 EXISTING RECORDS DATA

4.1.1 Existing record data for bats within the vicinity (1km) of the site has been previously obtained from Sheffield Biological Records Centre and the South Yorkshire Bat Group by Absolute Ecology and Whitcher Wildlife Limited (refer to *Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring, February 2021,* produced by Absolute Ecology and *Bat Transect Survey, Roughbirchworth Lane, Oxspring Ref.No. 210543/Rev3, January 2022*, by Whitcher Wildlife Limited).

4.1.2 The Absolute Ecology report includes the following information:-

- ''Bats – eight confirmed species of bat recorded within the search area. All bat species are European and UK protected.
- SBRC provided eleven records of bats within the 1km search area. The records date from 2004 and 2019. Three of the records are for common pipistrelle (*Pipistrellus pipistrellus*) bats, two soprano pipistrelle (*Pipistrellus pygmeaus*), one daubenton's (*Myotis daubentonii*), three noctule *(Nyctalus noctula*) and two are unconfirmed species.
- SYBG provided 236 records of bats within the 1km search area. In addition to the aforementioned bat species, records for brown long-eared (*Plecotus auritus*), Leisler's (*Nyctalus leisleri*), Natterer's (*Myotis nattereri*) and Whiskered (*Myotis mystacinus*) were returned. Of the records, eight relate to the site/immediately adjacent habitat (using the six-figure grid reference provided). Of these eight, one is for a roost (dating 2007) within a house referred to as Millstones for an unidentified species of which a baby was taken into care. The other seven refer to the River Don and Daubenton's and common pipistrelle although no roost is stated to be present (records date 1991-2011).
- Other records of importance include a common pipistrelle day roost located 95m to the north (Mill Farmhouse) and a common pipistrelle maternity roost located 250m south-west within Oxspring Primary School. Both recorded in 2019.''

4.1.3 The Whitcher Wildlife Limited report includes the following information:-

- ''A data search was carried out with Sheffield Biological Records Centre for records of bats and bat roosts within 1km of the survey area.
- The data search returned records of Daubenton's, common pipistrelle, soprano pipistrelle and noctule bats within 1km of the survey area. None of the records applied directly to the survey area.
- A further data search was carried out with South Yorkshire Bat Group for their records of bats and bat roosts within 2km of the survey area.
- Their records include two Pipistrelle maternity roosts in the village of Oxspring, one in Oxspring School dated 2019 and one in Toolbar Close Oxspring dated 2003.
- Their records also include an abundance of bats around Romtickle Tunnel and Romtickle viaduct with a maximum count of 124 Daubenton's bats from 2014. This site lies approximately 1,25km southeast of the site along the River Don.''

4.2 PREVIOUS SURVEY DATA: HABITAT ASSESSMENT AND BAT TRANSECT SURVEYS MAY AND OCTOBER 2021

4.2.1 Existing ecological reports which have been submitted with respect to the site include the following: -

- *Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring*, February 2021, produced by Absolute Ecology
- *Bat Transect Survey, Roughbirchworth Lane, Oxspring Ref.No. 210543/Rev3*, January 2022, by Whitcher Wildlife Limited.

4.2.2 The Preliminary Ecological Appraisal (PEA) undertaken by Absolute Ecology included the following information with respect to the potential use of the site by foraging and commuting bats: -

- ''Offsite/adjacent habitats offer moderate – high value foraging (River Don to the north, woodland to the west) with the onsite dominant habitat of poor semi-improved grassland offering low foraging value. However, the current plans show that no linear features such as tree lines or drystone walling are to be removed or fragmented due to the development.
- Measures will need to be in place to protect offsite/adjacent foraging habitats, during and post development.
- Particular consideration should be given to potential light spill that can affect the foraging and commuting strategy of many species and should be avoided onto the trees along the northern boundary, adjacent river and woodland should not exceed 200 lumens (150 watts). The lighting plan should be designed in line with 'Bats and artificial lighting in the UK' https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?mtime=20181113114229.
- Where possible, any security lighting should be on a timer setting and faced down to prevent spillage onto nearby habitats. Height of any lighting columns around the development should not exceed eight meters to further reduce any ecological impact of light pollution. Low-pressure sodium lamps (SOX) fitted with hoods are recommended to direct light below the horizontal plane to minimize upward light spill.
- It is encouraged that any landscaping relating to the proposed development should encompass native tree and shrub species to encourage foraging potential for species. No plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 should be planted during any landscaping within this development. For further details of Schedule 9 plants visit the Defra website: www.defra.gov.uk/wildlife-pets/non-native.''

4.2.3 Subsequently two transect surveys were undertaken by Whitcher Wildlife in May and October 2021 to assess the use of the site by foraging and commuting bats. The bat transect report included the following results: -

- May 2021: walked transect (24th) – constant foraging along the River Don by predominantly common pipistrelle with some soprano pipistrelle, no activity elsewhere on site.
- May 2021: static recorder adjacent to the River Don (24th- 28th) – summary of results included in Table 01. Predominantly common pipistrelle with soprano pipistrelle, *Myotis* sp., and noctule in lower numbers.
- October 2021: walked transect (20th) – very low levels of activity with single passes of common and soprano pipistrelle on the western and southern boundaries and one instance of foraging along the river by soprano pipistrelle.

- October 2021: static recorder adjacent to the River Don (20th- 26th) – summary of results included in *Table 02*. Predominantly common pipistrelle and soprano pipistrelle with *Myotis* sp., and noctule in lower numbers.
- The evaluation of the survey results were as follows, refer to sections 4.8, 4.9 and 4.22 of the report by Whitcher Wildlife Limited: -
  - The survey results were deemed to represent a low level of bat activity confined to common species of bats, predominantly pipistrelles.
  - The tree line and River Don along the northern site boundary were identified to be a relatively important foraging and commuting corridor for several bat species, but as this will remain unaffected by the proposals, the development was judged to have a low impact on foraging bats.
  - The impact on foraging and commuting bats will be negated by the retention of existing trees along the river, inclusion of an 8m buffer from the river, native tree planting and provision of a sympathetic lighting scheme which will not illuminate the river corridor.

Table 01: Static data from May 2021 (Whitcher Wildlife Limited).

Date	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
24th May to 25th May.	24	0	145	9	178
25th May to 26th May.	8	3	491	18	520
26th May to 27th May.	8	7	106	18	139
27th May to 28th May.	1	16	12	16	50
28th May to 29th May.	3	3	12	7	25
Total	44	29	766	69	908
Calls/Hour	1.10	0.73	19.15	1.73	22.70

Table 02: Static data from October 2021 (Whitcher Wildlife Limited).

Date	Myotis	Noctule	Common Pipistrelle	Soprano Pipistrelle	Total.
20th to 21st October.			3	1	4
21st to 22nd October.					0
22nd to 23rd October.	1		2	12	15
23rd to 24th October.			4		4
24th to 25th October.		2	1		3
25th to 26th October.		7	2	1	10
26th to 27th October.			21	3	24
Total	1	9	33	17	60
Calls/Hour	0.01	1.07	0.39	0.20	0.71

4.3 ADDITIONAL SURVEY DATA: BAT TRANSECT SURVEYS JUNE 2020 AND MAY 2022

4.3.1 The bat transect data provided above in section 4.2 was not accepted by Barnsley Borough Council's Biodiversity Officer as it was not considered to be in line with the Bat Conservation Trust Bat Survey Guidelines (2016) as follows: -

- As habitats on site were assessed to be of moderate to high suitability for foraging/commuting bats, the survey guidelines would require seven transect surveys to be undertaken through out the survey season from April to October.
- Temperatures at the start of the survey were 9°C and 8°C whilst the guidelines require temperatures to be above 10°C.

4.3.2 The Local Planning Authority (LPA) therefore requested that additional transect surveys of the site were undertaken to confirm and expand the findings of the previous report. However, it was agreed that a full season of seven surveys was not required due to the limited impact of the development on the river corridor (email dated 27 April 2022, see Appendix 01). The river corridor constitutes the area of highest bat suitability, however, potential impacts on it are limited due to the development being set back from it by some 8-30m.

4.3.3 Additional bat transect data from two visits within the period May to August has therefore been provided within this report as follows:-

- Existing transect data from June 2020; site survey undertaken by Smeeden Foreman for an alternative client (data included with permission of the previous client).
- Additional transect survey undertaken in May 2022.

Methodology

4.3.4 Bat activity transect surveys were undertaken to verify the use of the site by foraging and commuting bats with the methodology based on guidance outlined within the Bat Conservation Trust's 'Bat Surveys: Good Practice Guidelines 2016'. A new May survey and existing June transect data have been detailed below to verify the findings provided by the previous surveys outlined in section 4.2.

4.3.5 A single transect route was walked around the perimeter of the site, incorporating accessible habitats that were considered important for bats, including the river corridor to the north and the woodland edge to the western boundary. The surveyor was equipped with an Anabat Express detector to record and identify bat calls via later sonogram analysis and a heterodyne Batbox Duet to identify and record activity during the transect. The surveys were carried out by and/or under the supervision of licenced bat worker Catherine White (bat licence ref. 2016-24337-CLS-CLS).

4.3.6 A remote detector was deployed for 4/6 consecutive nights per survey month; 19-22 June 2020 and 25-31 May 2022, to record bat activity on site over a number of nights. A Titley Anabat Express detector was used, located adjacent to the River Don, anticipated to be a favourable location for commuting and foraging bats and comparable to results from the previous surveys.

4.3.7 Refer to *Figure 03 and 04* for the transect route and patterns of bat activity noted during the transect surveys. *Table 03* below includes information on the timing and conditions of the transect surveys.

Table 03: Survey specifics: Transects

Date	Start time	Finish time	Sunset/ Sunrise	Temp. (start-end)	Cloud cover	Wind speed	Rain	Humidity
19/06/20	21:39	23:39	21:39	13-11°C	40-20%	9-20mph	0%	80-84%
01/06/22	21:25	23:25	21:25	11-9°C	<5%	3-9mph	0%	79-86%

19 June 2020: Walked Transect Results

4.3.8 During the walked transect bat activity was noted on site from 21:52 until the end of the survey. Species were predominantly common pipistrelle (10-15 records) with soprano pipistrelle (up to 5 records) and *Myotis* species (up to 5 records) noted to use the site for both foraging and commuting. Both commuting and foraging activity was concentrated along the river corridor (A) with some use of the woodland edge to the west (B) and a single record adjacent to Roughbirchworth Lane to the south (C). Refer to *Figure 03* for activity locations A-C.

June 2020 Remote Detector Results

4.3.9 The remote detector was deployed adjacent to the River Don, approximately 100m upstream from the site, as the survey was being undertaken concurrent with a survey of an alternative site located approximately 100m upstream. It was left for 4 consecutive nights to detect variations in bat activity.

4.3.10 The species detected over the four night period were generally in line with those identified from the walked transect with an additional low number of noctule bat calls. The majority of the activity was found to be common and other pipistrelle, with *Myostis* species and a low number of noctule. See summary of results in *Table 04*.

Limitations

4.3.11 The location of the static recorder (approximately 100m upstream of the current site boundary) is not considered to be a significant limitation due its closeness and comparability in respect to habitat provided by the river corridor in this area. Bat use would be anticipated to be slightly higher for the recording location, if any different from that at the site, due to the presence of gardens with low level lighting immediately north of the site compared to no development adjacent to the static location used.

4.3.12 An additional fifth nights data was not recorded due to an equipment malfunction, however this is not considered to significantly affect the overall conclusions as the data is generally in line with that obtained over a longer period.

Table 04: Static data from June 2020.

Date:June 2020	20-21	21-22	22-23	23-24	**TOTAL**	**Ave.per night**	**% of total**
Species							
Myotis sp.	41	30	43	25	139	35	3.35
Noctule	5	4	0	0	9	2	0.2
Common pipistrelle	268	364	494	996	2122	530	51
Soprano pipistrelle	141	8	55	72	276	69	6.65
Pipistrelle	668	124	600	216	1608	402	38.8
Total	1123	530	1192	1309	**4154**	1038	-

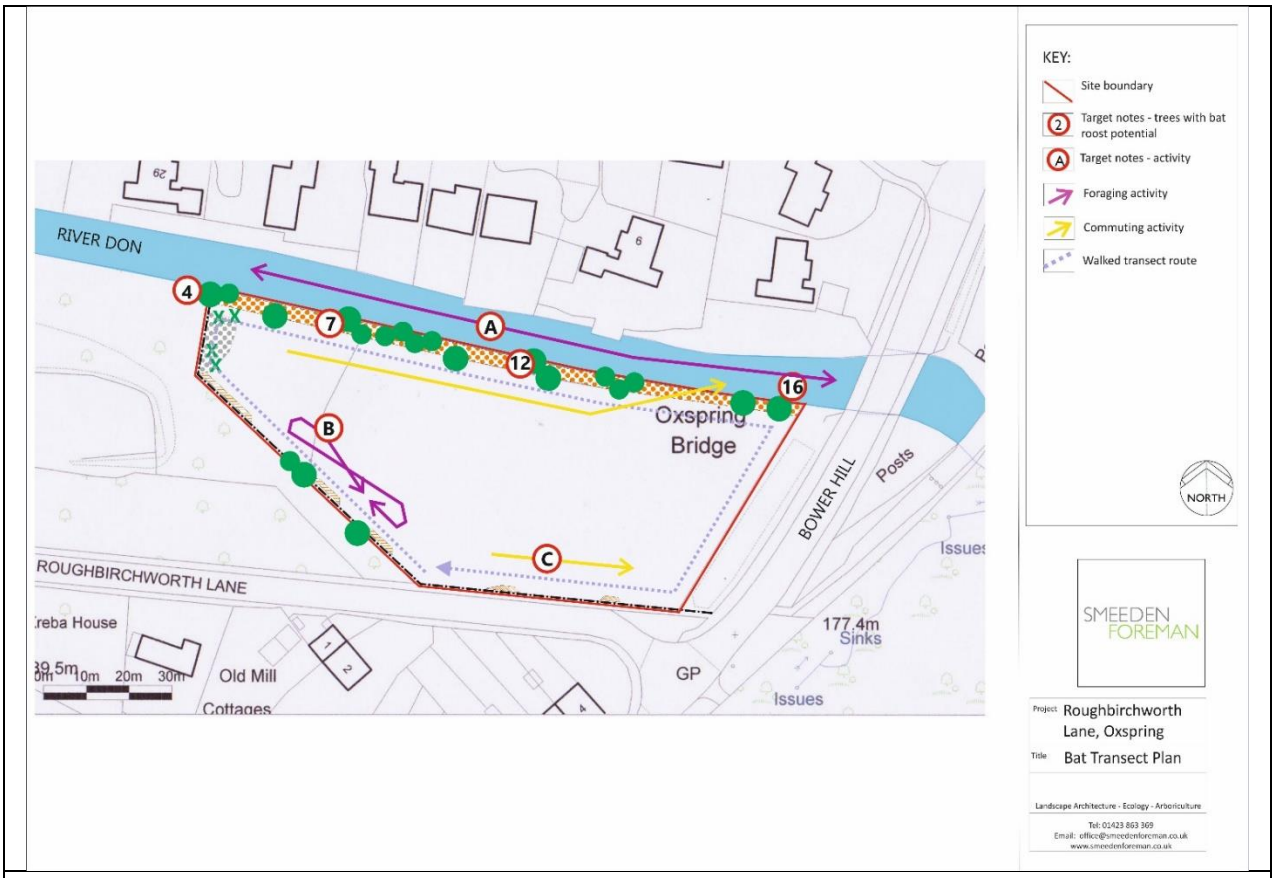


Figure 03: Bat activity plan: June 2020

01 June 2022: Walked Transect Results

4.3.13 During the walked transect bat activity was noted on site from 21:38 until the end of the survey. Species were predominantly common pipistrelle (20-25 records) with *Myotis* species (up to 10 records), soprano pipistrelle (up to 5 records) and noctule (up to 5 records) noted to use the site for both foraging and commuting. Both commuting and foraging activity was concentrated along the river corridor (A) with some use of the woodland edge to the west (B). No other activity was recorded. Refer to *Figure 04* for activity locations A-B.

May-June 2020 Remote Detector Results

4.3.14 The remote detector was deployed adjacent to the River Don, along the northern site boundary (see *Figure 04*). It was left for seven consecutive nights to detect variations in bat activity.

4.3.15 The species detected over the seven night period were generally in line with those identified from the walked transect with an additional low number of calls of noctule bats. The majority of the activity was found to be pipistrelle species with *Myotis* and low numbers of noctule. Summary of results included in *Table 05*.

Table 05: Static data from May/June 2022.

Date:May-June 2022	25-26	26-27	27-28	28-29	29-30	30-31	31-01	TOTAL	Ave.per night	% of total
Species										
Myotis sp.	22	10	14*	58	17	8	10	139	20	4.5
Noctule	8	1	1	0	1	0	1	12	1.7	0.4
Common pipistrelle	166	130	163	95	95	88	84	821	117.3	26.8
Soprano pipistrelle	169	151	158	116	184	139	184	1101	157	35.9
Pipistrelle	151	191	83	71	171	131	179	977	139	31.8
Unident.	7	2	6	1	2	0	1	19	3	0.6
Total	523	485	425	341	470	366	459	**3069**	438	-
*single call characteristic of Daubenton's bat.										

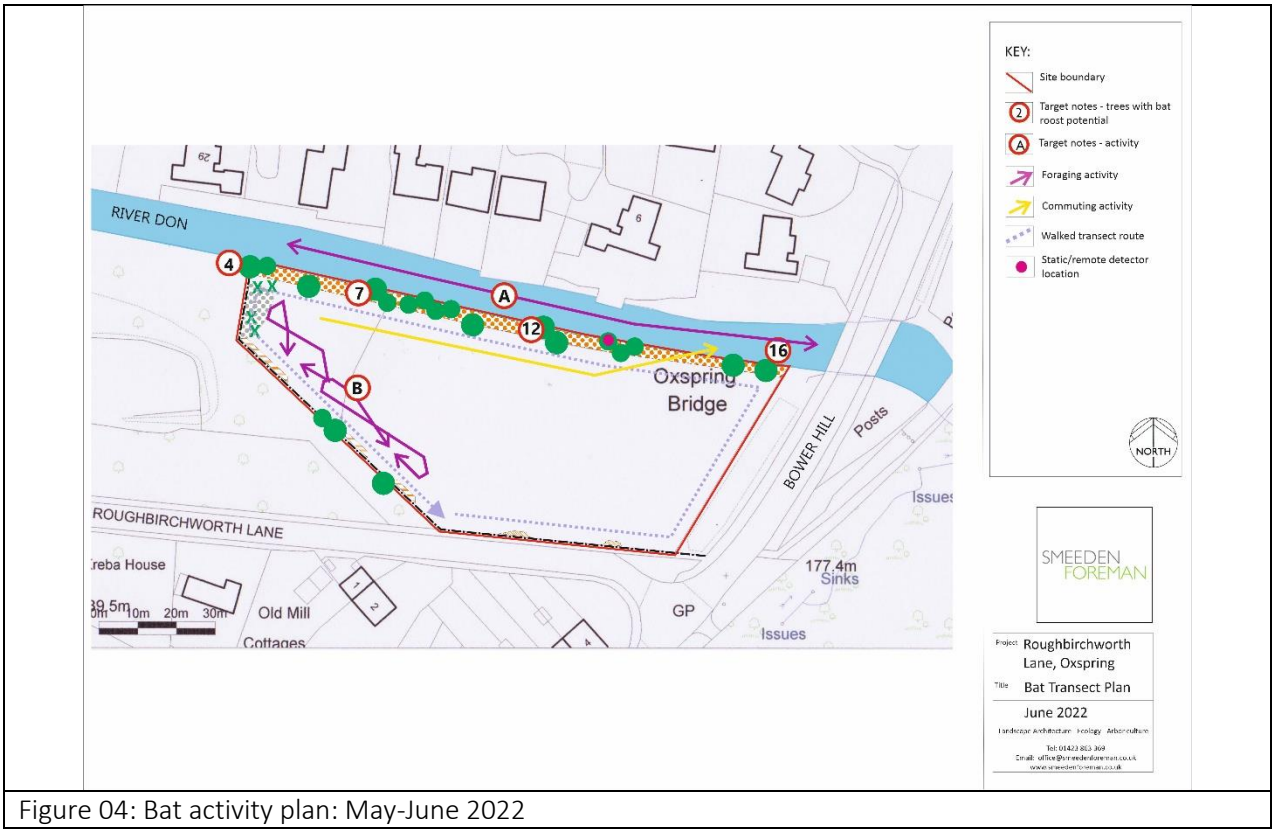


Figure 04: Bat activity plan: May-June 2022

Summary

4.3.16 The bat species found using the site were consistent throughout all four surveys undertaken, being common pipistrelle, soprano pipistrelle, *Myotis* species and noctule bats.

4.3.17 Although total numbers varied, the proportion of individuals of different species were fairly consistent between all the surveys (see *Table 06*). Actual numbers of bats

expressed as calls per night varied between surveys with higher numbers for all species except Noctule in June 2020 (see *Table 07*). The higher use could be a result of the recording location, slightly upstream of the site (see section 4.3.11). Average passes per night for all species were slightly lower in May and October 2021 which were undertaken during slightly cooler weather periods and/or late season.

Table 06: Bat species by percentage

	June 2020	May 2021	Oct 2021	May-June 2022
Species				
Myotis sp.	3.35%	5%	2%	4.5%
Noctule	0.2%	3%	15%	0.4%
Pipistrelle	96.45%	92%	83%	95.1%

Table 07: Bat species by number (average per night)

	June 2020	May 2021	Oct 2021	May-June 2022
Species				
Myotis sp.	35	8.8	0.14	20
Noctule	2	5.8	1.2	1.7
Pipistrelle	1001	167	7.1	416.3

4.3.18 The activity patterns identified from the walked transect were consistent from spring and summer transects (May and June) with a relatively high level of use along the river corridor, a low level of use adjacent to the woodland edge to the west and negligible use of the remaining areas of the site. The autumn transect (October) identified very low levels of use throughout the site.

4.3.19 The species present are considered to constitute common (pipistrelle species) and rarer (*Myotis* and noctule) bat species. Use of the valuation system proposed by Wray et al. indicates that the site, with the majority of activity occurring along the river corridor, sits at the upper end of importance at a district level (ref *Table 08* for foraging and commuting bats, with a score of 11-20 indicating District level value, refer to Wray et al. 2010).

Table 08: Valuing the site in respect to foraging and commuting bats (ref Wray et al 2010)

	Number of bats	Roosts/potential roosts nearby	Linear features habitat characteristics	Score
Commuting				
Myotis sp. (5)	Individual (5)	Not known (4)	Complex network including mature features and rivers/streams (5)	19
Noctule (5)	Individual (5)	Not known (4)		19
Pipistrelle sp. (2)	Small numbers (10)	Small number (3)		20
Foraging				
Myotis sp. (5)	Individual (5)	Not known (4)	Woodland block and mixed agriculture with small villages (4)	18
Noctule (5)	Individual (5)	Not known (4)		18
Pipistrelle sp. (2)	Small numbers (10)	Small number (3)		19

5.0 IMPLICATIONS/RECOMMENDATIONS

5.1 IMPLICATIONS

5.1.1 All the surveys found the use of the site predominantly by pipistrelle species (common and soprano), with *Myotis* and a low number of noctule bats. Activity was principally foraging along the river corridor with a low level of use identified along the woodland edge to the west of the site.

5.1.2 Development of the site has the potential to impact the river corridor which provides habitat for foraging and commuting bats which has been valued at District level being used predominantly by common species with a low number of rarer bat species.

5.1.3 Potential impacts from the development could include removal of trees, illumination of the features used by bats and increased disturbance from noise or activity.

5.2 RECOMMENDATIONS

5.2.1 Actions to avoid/minimise potential impacts on foraging and commuting bats would include retention and enhancement of riverside vegetation, avoidance of disturbance by noise or activity and the avoidance of illuminating features used by bats. These recommendations have been incorporated within the scheme as follows:

- The proposed development area will be set back from the river with a buffer of between 8 and 30m between the rear garden fences and the top of the bank.
- All the existing trees along the riverbank will be retained.
- New tree planting of native species and wildflower seeding will be included between the development and the river.
- A sympathetic lighting scheme will be implemented, designed to avoid illuminating the river corridor and minimising illumination of the woodland edge to the west of the site as described below.

5.2.2 Any new lighting will be appropriately designed including directional and low wattage luminaires to avoid illuminating the river corridor, including the 8-30m buffer, and minimise light levels adjacent to the woodland to the western boundary. Reference will be made to the Bat Conservation Trust publications '*Artificial Lighting and Wildlife*' (2014) and '*Bats and Artificial Lighting in the UK*' (2018) which includes the following guidelines:

- Using warm white, narrow spectrum lights with little or no UV;
- Low wattage (eg 20W);
- Directional lighting with near full horizontal cut off, mounted at a low height;
- Avoid column lighting but, where required, minimum height columns at maximum spacing.

6.0 CONCLUSIONS

6.1.1 The additional surveys undertaken by Smeeden Foreman found similar relative levels of activity by the same species of bat as those identified during previous surveys. The site is used predominantly by pipistrelle species (common and soprano), with *Myotis* and noctule bats. Activity on site is principally foraging along the river corridor with a low level of use identified along the woodland edge to the west of the site.

6.1.2 The development will be sited away from the river corridor with a buffer zone of 8-30m between the top of the bank and the rear garden boundaries. All trees along the riverbank will be retained with additional tree planting further reducing potential disturbance from noise and activity. The inclusion of wildflower grassland would also enhance the foraging of the grassland area. Lighting will be designed to avoid illuminating the river corridor, and associated buffer, and minimise illumination of the woodland edge to the wets of the site.

6.1.3 The proposed development has been designed to avoid potential impacts upon the use of the river such that it's value to foraging and commuting bats will be maintained.

6.1.4 Impacts on foraging/commuting bats are anticipated to be negligible due to the retention of all trees, the buffer from the river, planting of new trees, inclusion of wildflower grassland and no or low levels of lighting.

6.1.5 With species and relative levels of use consistent over all surveys (May, June, October) and years (2020, 2021 and 2022) it is considered unlikely that additional surveys within intervening months would provide significantly different results or significantly change the level of impact of the proposals upon foraging/commuting bats, particularly taking into consideration the avoidance of impact through the provision of a significant buffer between the proposed development and the river, additional tree planting, inclusion of wildflower grassland and the proposed lighting scheme.

7.0 REFERENCES

Bat Conservation Trust (2014) Artificial lighting and wildlife: Interim Guidance: Recommendations to help minimise the impact artificial lighting. Bat Conservation Trust, London.

Bat Conservation Trust and Institution of Lighting Professionals (2018). *Bats and Artificial Lighting in the UK* – Bats and the built environment series. [Available from: www.bats.org.uk]

Campbell J (2022) Bat Transect Survey, Roughbirchworth Lane, Oxspring Ref.No. 210543/Rev3, January 2022, by Whitcher Wildlife Limited.

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). Bat Conservation Trust, London.

Conservation (Natural Habitats, &c.) Regulations 2017 (S. I 1012) [accessible at http://www.opsi.gov.uk]

Staton H (2021). Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring, February 2021, produced by Absolute Ecology.

UKBAP (2012) UK Biodiversity Action Plan [accessible at: http://jncc.defra.gov.uk].

Wildlife and Countryside Act (1981). H.M.S.O., London.

Wray S, Wells D, Long E, Mitchell-Jones T (2010) Valuing Bats in Ecological Impact Assessment. In Practice, CIEEM.

APPENDICES

Appendix 01: Local Planning Authority comments (dated 27.04.2022)

From: Lawrence , Katie (PLANNING ECOLOGIST) <KatieLawrence@barnsley.gov.uk>
Sent: 27 April 2022 14:23
To: Paul Butler <paul.butler@pbplanning.co.uk>; Andrew , Hannah (SENIOR PLANNING OFFICER) <HannahAndrew@barnsley.gov.uk>
Subject: RE: 2020/1387 Roughbirchworth Lane, Oxspring - Response to Ecology Comments

Hi Paul

As per my email sent on the 14th April (attached) further bat transect surveys were recommended within our latest consultation response. The site has been identified as being of moderate to high suitability for foraging and commuting bats, which we agree with. Transect surveys undertaken so far include a visit in May and October, whereas the bat survey guidance recommends a site visit to be carried out once a month during the active season (April – October). As the site boundary has changed and the majority of the site has moved away from the river we would accept a reduced survey effort, with an additional two transect surveys undertaken within optimum survey conditions during the peak active period (May – August) to ensure we have more robust survey information available to inform the application and an appropriate level of mitigation is proposed.

Kind regards

Katie Lawrence
Planning Ecologist
Planning Policy, Regeneration & Culture Service,
Place Directorate, Barnsley Metropolitan Borough Council
Tel: (01226) 774703