BAT SURVEY REPORT

STAFFORDSHIRE FARMERS SITE
CHEADLE ROAD, CHEDDLETON

SEPTEMBER 2016

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1. NON-TECHNICAL SUMMARY

Eyebright Ecology was commissioned Sammons Architectural Ltd on behalf of John Pointon & Sons to undertake bat surveys of buildings at Staffordshire Farmers Site, Cheadle Road, Cheddleton, ST13 7BW. The surveys were required to inform a planning application for new dwellings on the site.

A preliminary roost assessment of the four buildings present on site was undertaken, which involved an internal and external building inspection on 19 August 2016. No evidence of bats was found during the building inspections.

Building 1 and 2 (House and offices) were assessed to have moderate potential for bats. A dusk emergence and dawn re-entry bat survey were undertaken of each building on separate occasions on 28 and 29 August 2016, and 11 September 2016.

The surveys were led by an experienced ecologist who is a full member of the Chartered Institute of Ecology & Environmental Management (CIEEM) and holds a current Natural England bat licence.

A *Myotis* species of bat appeared to emerge from an area of tiles near to the chimney of the house (Building 2) on 28 August 2016.

A pipistrelle species of bat was observed to return to roost under a ridge tile of the offices (Building 1) on the dawn survey of 29 August 2016.

No bats were found emerging or returning to either building during the dusk and dawn surveys undertaken on 11 September 2016.

As bat roosts are present, a European Protected Species (EPS) licence from Natural England should be applied for once planning consent has been granted. The following is a summary of mitigation likely to be required, as detailed in the recommendations:

- Timing of any works that may affect roof of buildings to start between September and April;
- Bat boxes to be installed before works are undertaken to provide alternative roost sites
- Licensed bat worker to supervise any work to the roof; soft-strip of roof must be undertaken before demolition.
- Permanent replacement roosting opportunities suitable for *Myotis* species and pipistrelle bats should be provided in a new build, either within the roof or walls of a building.
- Sensitive lighting plan for any future development of the site.

2. INTRODUCTION

2.1 Background & Objectives

Eyebright Ecology was commissioned by Sammons Architectural Ltd on behalf of John Pointon & Sons, to undertake bat activity surveys of buildings at Staffordshire Farmers Site, Cheadle Road, Cheddleton, ST13 7BW (SJ967507). The surveys were required to inform a planning application for new dwellings on the site.

A preliminary roost assessment was undertaken on 19 August 2016 of the buildings on site. Following this, on separate occasions during August and September, a dusk emergence and dawn re-entry bat survey was undertaken of two buildings which were assessed to have moderate potential for roosting bats.

The surveys were led by an experienced and licensed ecologist who is a full member of the Chartered Institute of Ecology & Environmental Management (CIEEM) and holds a current Natural England bat licence.

Unless the client indicates to the contrary, information on the species found to be present on the site will be passed to the county biological records centre to update records held for the area.

2.2 Site Description

The site comprised an area of hardstanding, a large storage building, a two-storey house with wooden garage and a single storey office building. There were small areas of grassland by the buildings and scattered trees.

2.3 Relevant Legislation

All 18 British bat species and their roost sites are protected under the Wildlife and Countryside Act (WCA) 1981 as amended and are included in Schedule 2 of the Conservation of Habitats and Species (Amendment) Regulations 2012. Combined, this legislation means that it is illegal to:

- Deliberately or intentionally kill, injure or take a bat.
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not)
- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

3. METHODOLOGY

3.1 Preliminary Roost Assessment

An internal and external building inspection of all buildings on site was undertaken by Eleanor Weir (Natural England bat licence number 2015-12689-CLS-CLS) accompanied by Carl Capewell (assistant ecologist) on 19 August 2016.

A powerful torch and binoculars were used during the search for evidence of bats which includes droppings, urine stains, feeding remains, staining and individual bats. Potential roost sites and access points were also recorded.

An assessment of the buildings for potential to support a bat roost was undertaken.

3.2 Dusk and Dawn Bat Activity Surveys

A dusk emergence survey of the house (Building 1) was undertaken on 28 August 2016 with two surveyors. A dawn re-entry survey of this building was undertaken on 11 September 2016 with two surveyors.

A dawn re-entry survey of the offices (Building 2) was undertaken on 29 August 2016 with two surveyors. A dusk emergence survey of this building was undertaken on 11 September 2016 with two surveyors.

The dusk survey commenced 15 minutes before sunset and continued for 2 hours. Dawn survey commenced 1.5 hours before sunrise and continued until 15 minutes after sunrise.

The surveyors used a Batbox Griffin / Batbox Duet and an Anabat Walkabout, with recording devices, in order to record and identify any bats heard. Bat calls were analysed where necessary using BatSound 4.2. General bat activity on site (foraging, commuting) was also recorded.

The weather conditions for the surveys are shown in Table 1 below.

Date	Survey Timing	Sunset/ Sunrise	Start / End of Survey	Temperature	Wind (Beaufort Scale)	Cloud cover	Rain
28.8.16	Dusk	20:07	Start	17°C	3	75%	Dry
			End	16°C	2	60%	Dry
29.8.16	Dawn	06:18	Start	14°C	2	100%	Light intermittent rain 04:50-05:15. Heavy shower 05:15-05:20
			End	13°C	2	100%	Dry
11.9.16	Dawn	06:36	Start	10°C	1	0%	0

Date	Survey Timing	Sunset/ Sunrise	Start / End of Survey	Temperature	Wind (Beaufort Scale)	Cloud cover	Rain
			End	8.4°C	1	0%	0
11.9.16	Dusk	19:32	Start	13°C	2	15%	0
			End	11°C	1	0%	0

3.3 Personnel

The building inspection and August dusk and dawn surveys were led by Eleanor Weir, an experienced ecologist who has held a Natural England bat licence for 12 years and is a full member of CIEEM. On 11 September for dusk and dawn surveys, the lead surveyor was Dave Allen, an ecologist who has been undertaking bat activity surveys for 5 years and is working towards gaining his bat licence. Eleanor and Dave were accompanied on all surveys by Carl Capewell, an assistant ecologist who has been gaining experience of bat surveys over the last year and is a graduate member of CIEEM.

3.4 Survey Constraints

The August dawn survey experienced some periods of un-forecast light rain, with a brief heavier shower. As there was regular bat activity throughout the survey, it is concluded that the rain did not appear to negatively affect bat activity and the survey was satisfactory.

The second dawn survey was cool, with an un-forecast dip to 6°C before dawn. Temperatures mostly stayed above 8°C which is recommended as minimum temperature for bat surveys. However, bat activity was much lower in this survey than the previous dawn survey, so the cooler temperatures may have caused bats to return to roosts earlier than usual.

Bats may use many different roost sites through the seasons, and dusk and dawn surveys undertaken at any time during the main activity season of May to September are likely to be a 'snap-shot' of the overall picture. Surveys between May and mid-August should determine whether a maternity roost is present, as well as regularly used non-breeding summer roosts. Surveys in late-August and September may find summer roosts or transitional roosts, but will not necessarily confirm presence or absence of maternity roosts as some species disperse from their maternity roosts from mid-August onwards.

Myotis bats are difficult to be sure of species from echolocation call alone, as their call parameters can overlap, depending on the habitat they are flying in. In respect of this site, *Myotis* species are likely to be one of the following: Whiskered *Myotis mystacinus*, Brandt's *Myotis brandtii* or Natterer's *Myotis nattereri* bat.

4. RESULTS

4.1 Preliminary Roost Assessment

There were four buildings on site which were inspected for evidence of bats on 19 August 2016, and assessed for roost potential.

Building 1 was a two-storey house which was occupied at the time of survey. The house was constructed of stone with a pitched clay tile roof. The roof space was insulated at roof level, with thick fibreglass insulation between the rafters, creating a warm and draught-free roof space. Consequently, there were few potential access points noted into the roof space. The floor was relatively clean and the ridge was heavily cobwebbed. No evidence of bats was found inside the roof space. Externally, the ridge appeared well sealed. There were several gaps noted under lifted tiles on the south and north sides of the roof. No evidence of bats was found externally. The building was assessed to have **Moderate** potential for roosting bats.

Building 2 was a single storey building split into three office units which a stepped roof line suggesting there was not a continuous roof space present. The west end of the building could be accessed, and this was a boiler room which was open to the roof showing a breathable membrane was present below tiles. No evidence of bats was found in this area. The other two units were not accessible for inspection inside and it is not known if roof spaces were present in those areas of the building. Externally the building had several gaps under ridge tiles and tiles on both the north and south side of the building. No evidence of bats was found externally. The building was assessed to have **Moderate** potential for roosting bats.

Building 3 was a large storage warehouse with brick walls and a corrugated asbestos / concrete roof. The building appeared regularly used for storage at the time of the survey. There were windows along both sides of the building, and two of the windows on the west side were unglazed allowing potential flight access inside the building. There was a suspended ceiling creating a smaller room at the north end of the building. The building was very light and airy inside, and there were no crevices noted which could support a bat roost either internally or externally. No evidence of bats was found inside or outside of the building. The building was assessed to have **Negligible** potential for roosting bats.

Building 4 was a small wooden shed / garage which had a flat corrugated asbestos /concrete roof. The building was covered in ivy and surrounded by scrub, and was completely full of stored items so access inside was difficult. No uncluttered roosting crevices were observed. The building was assessed to have **Negligible** potential for roosting bats.

Dusk emergence and dawn re-entry surveys of the house and offices was recommended.

Figure 1 (Appendix 1) shows a plan of the building locations. Section 4.3 show photographs of the buildings (Plates 1 - 5).

4.2 Dusk and Dawn Activity Surveys

Building 1 - House

The dusk emergence survey of the house undertaken on 28 August 2016 recorded a *Myotis* species of bat which appeared to emerge from near to the western chimney as it flew from this direction of the roof at 51 minutes after sunset. The other surveyor did not record the bat, suggesting it did not fly over the top of the roof but more likely emerged. Bat activity was occasional during this survey, despite suitable conditions, and was limited to occasional passes of commuting common pipistrelles *Pipistrellus pipistrellus*.

The dawn re-entry survey undertaken on 11 September 2016 found no bats returning to the house. There was very low bat activity recorded during this survey, possibly due to the drop in temperature overnight. A single pass of a common pipistrelle was recorded during the survey.

No bats were seen to emerge or fly from the direction of the house during the surveys of the adjacent office.

Building 2 - Offices

A dawn survey of the office building was undertaken on 29 August 2016. A pipistrelle species (echolocating at 50 Khz so either common pipistrelle or soprano pipistrelle *Pipistrellus pygmaeus*) was recorded flying around the eastern end of the office building before returning to roost via a gap under a ridge tile on the eastern end of the building at 34 minutes before sunrise.

General bat activity during the survey was limited to occasional common pipistrelles foraging and commuting through the site and a *Myotis* species which commuted over the office building.

No bats were seen to emerge or fly from the direction of the offices during the surveys of the adjacent house.

A summary figure of the bat surveys is shown in Appendix 1, Figure 2 and raw data tables are included in Appendix 2.

4.3 Photographs

Plate 1: South aspect of the house (Building 1) and offices (Building 2) showing bat roost locations

Plate 2: North and east aspect of house which was well lit by sodium lighting at night

Plate 3: South side of office building showing stepped roof line

Plate 4: View inside warehouse (Building 3) showing lack of suitable roost features and assessment of ‘Negligible’ potential for roosting bats.

Plate 5: Wooden garage / shed (Building 4) filled with stored items and covered with ivy and cluttered with scrub and trees.

5. DISCUSSION & RECOMMENDATIONS

5.1 Summary of Findings

The house (Building 1) appeared to support a roost for a *Myotis* species of bat. The offices (Building 2) were found to support a roost for a pipistrelle species of bat (either common or soprano pipistrelle).

Two individual roosting bats were recorded in the August surveys, but no roosting bats were present during the September surveys. It is concluded Building 1 and 2 are most likely to support non-breeding roosts for small numbers of bats during summer months.

5.2 Potential Impacts of Works

The exact plans for the site are not known, but if demolition or work to the house or offices is planned, without mitigation there would likely be the following impacts;

Two roosts for two species of bat will be lost if the buildings are demolished. Assuming the roosts are non-breeding roosts for small numbers of bats, without mitigation this loss would have a minor negative impact at a site level.

If mitigation is not applied, bats could potentially be harmed or killed during works.

5.3 Recommendations

Bat Licensing

The roosts present within the offices and house are protected even when bats are not present. A European Protected Species (EPS) licence will be required from Natural England prior to any works to the buildings. The licence sets out the mitigation which describes in detail how the works would be undertaken to avoid harming bats and to replace the roost sites present. The EPS licence application process can take up to eight weeks from submission. The applicant is responsible for the mitigation being undertaken as agreed; a licensed Ecologist is also named on the application to guide and advise the developer/contractors during the works.

Planning permission must be granted before an EPS licence can be applied for. The licence cannot be applied for in advance of 12 weeks before works are due to commence. If there is any delay which results in survey data being at least 18 months old when applying for the licence, Natural England will require updated surveys to be completed. An updated walkover survey / building inspection is also required within the 3 months prior to the licence application being submitted. It is also possible that Natural England will request a repeat dusk / dawn survey between May and early August to confirm presence or absence of a maternity roost.

Bat Mitigation

The following mitigation measures are likely to be required by Natural England to gain a successful licence application:

- Any work which is due to affect the house or offices to be undertaken between September and April when bats are least likely to be present.

- Bats should be provided with suitable alternative roosts during the works; it is recommended that two bat boxes are installed on nearby trees or buildings (e.g. Schwegler 2F).

- The roof of the house and offices should be soft-stripped by hand prior to any demolition, under supervision of a licensed bat worker to ensure tile removal proceeds sensitively and to transfer any bats found to the bat boxes.

- Permanent replacement roosting opportunities suitable for *Myotis* species and pipistrelle bats should be provided in a new build. These could be:

    - Creating a small gap (20mm x 30 mm) under ridge tiles or end tiles of either a house or garage, to allow bats to roost between the underfelt and tiles (in which case traditional bitumen felt Type 1F must be used);

    - Incorporating at least two bat boxes into a south or west facing gable wall (e.g. Schwegler 2FR bat tube).

- Any lighting planned for the development will need to be approved by Natural England. Some species of *Myotis* bat are particularly sensitive to artificial lighting. Security lighting will need to avoid illuminating the roof / access points and any other lighting will need to be limited and of sensitive design (e.g. low wattage, downward pointing, timed motion sensors).

6. REFERENCES

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

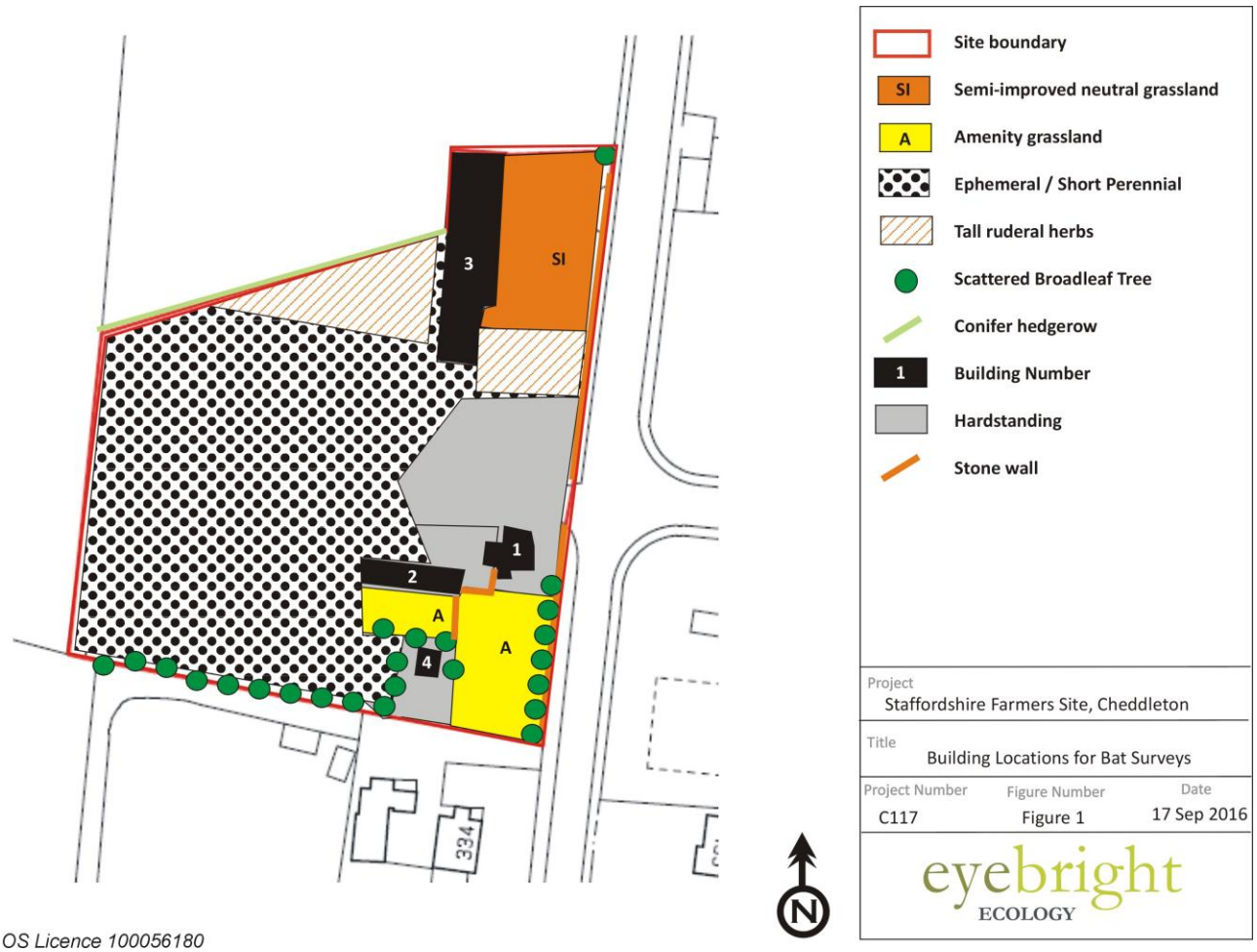
Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Mitchell-Jones, A.J. & McLeish, A.P. [Eds.] (2004). *The Bat Workers Manual* (3rd edition). Joint Nature Conservancy Council, Peterborough.

Russ, J. (2012). *British Bat Calls – A Guide To Species Identification.* Pelagic Publishing, Exeter.

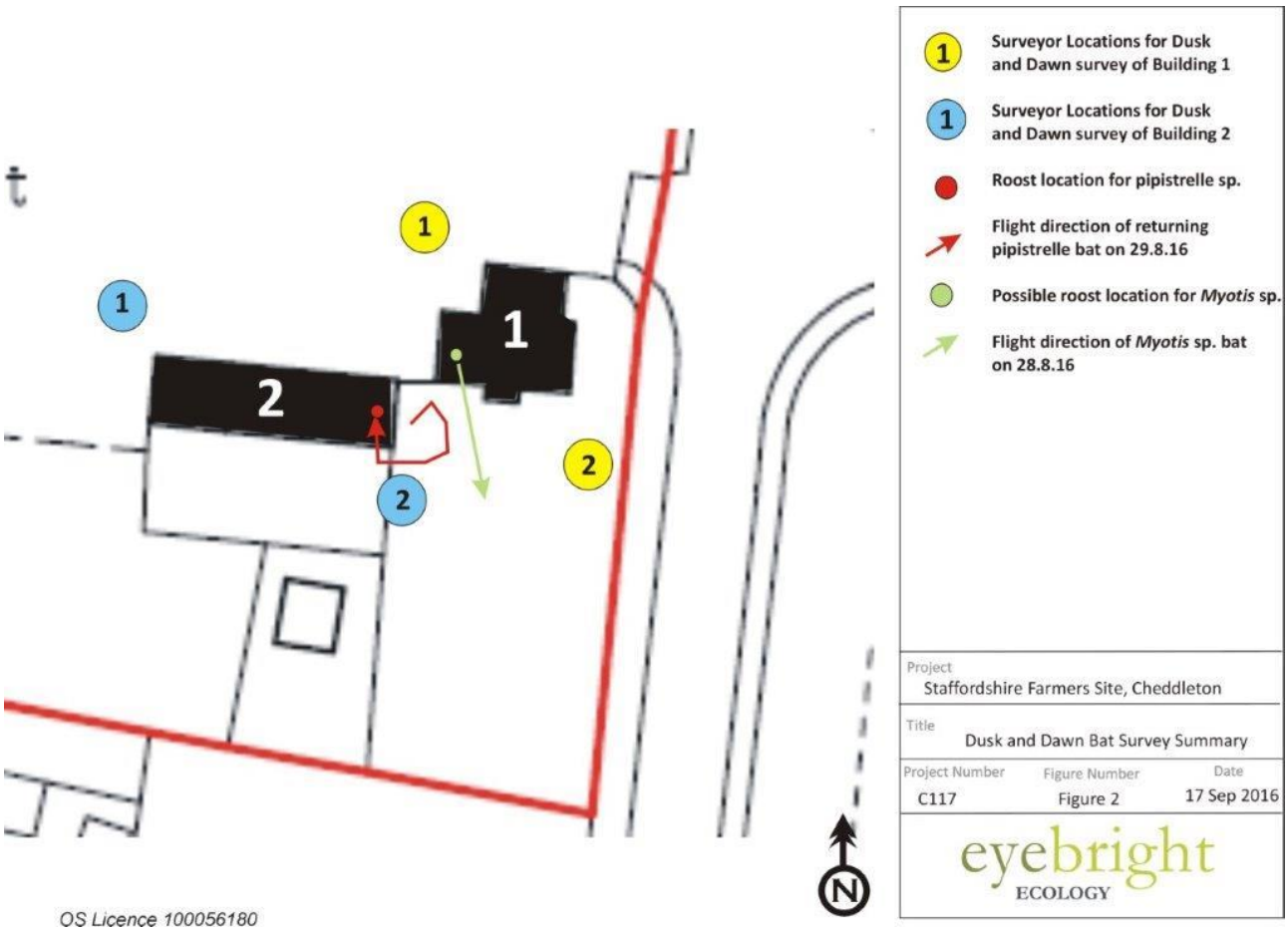
APPENDIX 1: Bat Survey Maps

Figure 1 Building Locations



OS Licence 100056180

Figure 2 Dusk and Dawn Bat Surveys



APPENDIX 2: Bat Survey Raw Data

Table 2: Dusk activity data 28h August 2016 (See Figure 2 for summary and surveyor locations)

Sunset Time: 20:07

Surveyor 1: Watching north and west aspects of Building 1

Time	Species / Numbers	Behaviour	Notes
20:52	Common pipistrelle	Foraging	Brief
21:04	Common pipistrelle	Commuting	Brief

Surveyor 2: Watching south and east aspects of Building 1

Time	Species / Numbers	Behaviour	Notes
20:31	Pipistrelle species	Commuting	Flying north through garden
20:32	Pipistrelle species	Commuting	Flying north through garden
20:34	Pipistrelle species	Commuting	Flying west through garden
20:35	Common pipistrelle	Commuting	In garden
20:37	Pipistrelle species	Foraging	
20:58	**Myotis species**	**Emerged?**	**Appeared to emerge from area around western chimney, flying away from the house at roof height**

Table 3: Dawn activity data 29th August 2016 (see Figure 2 for summary)

Sunrise Time: 06:18

Surveyor 1: Watching north and west aspects of Building 2

Time	Species / Numbers	Behaviour	Notes
04:48	Common pipistrelle	Foraging	Several passes

05:14	Myotis species	Commuting	Brief
05:19	Common pipistrelle	Commuting	Over offices
05:35	Common pipistrelle	Commuting	Brief, faint
05:39	**Common pipistrelle**	**Returned to roost**	**Seen 'swarming' around east end of offices – same bat that Surveyor 2 saw entering ridge tile.**

Surveyor 2: Watching south and east aspects of Building 2

Time	**Species / Numbers**	**Behaviour**	**Notes**
04:48	Pipistrelle species	Commuting	
05:37	Pipistrelle species x2	Commuting	
05:37	Soprano pipistrelle	Commuting	
05:39	Pipistrelle species	Commuting	
05:42	Pipistrelle species	Returned to roost	Bat flew around east end of offices for a while then entered a gap on the south side of the second to last ridge tile.

Table 4: Dawn activity data 11th September 2016 (see Figure 2 for summary)

Sunrise Time: 06:36

Surveyor 1: Watching north and west aspects of Building 1

Time	**Species / Numbers**	**Behaviour**	**Notes**
	NO BATS		

Surveyor 2: Watching south and east aspects of Building 1

Time	**Species / Numbers**	**Behaviour**	**Notes**
06:01	Common pipistrelle	Commuting	

Table 5: Dusk activity data 11th September 2016 (see Figure 2 for summary)

Sunset Time: 19:33

Surveyor 1: Watching north and west aspects of Building 2

Time	Species / Numbers	Behaviour	Notes
19:51	Common pipistrelle	Commuting	Flew from north of site to south
20:11	Unknown species	Commuting	Not heard
20:20	Soprano pipistrelle	Foraging	Brief
20:22	Soprano pipistrelle	Foraging	Brief
20:32	Soprano pipistrelle	Foraging	Brief
20:41	Myotis species	Foraging	Brief
20:48	Common pipistrelle	Foraging	Foraging in trees to south of site

Surveyor 2: Watching south and east aspects of Building 2

Time	Species / Numbers	Behaviour	Notes
19:51	Common pipistrelle	Commuting	
20:10	Pipistrelle species	Commuting	
20:21	Pipistrelle species	Commuting	
20:42	Pipistrelle species	Commuting	
20:45	Pipistrelle species	Commuting	
20:53	Pipistrelle species	Commuting	
20:59	Unknown	Possible social calls	No echolocation calls recorded