



**BJ Collins**  
PROTECTED SPECIES SURVEYORS

BAT EMERGENCE AND ACTIVITY SURVEYS  
OF  
BUILDINGS AND LAND ASSOCIATED WITH  
HALL FARM  
FLAWBOROUGH  
NOTTINGHAMSHIRE

A report to:

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## SUMMARY

This report has been prepared by BJ Collins Protected Species Surveyors Limited. The report provides the results of follow-up bat emergence and activity surveys of the site located at Flawborough Hall Farm on Main Street, in the village of Flawborough, Nottinghamshire. NG13 9PA.

A previous preliminary ecological appraisal, preliminary roost assessment for bats and activity and emergence surveys were undertaken to the site in October 2019 by B J Collins Protected Species Surveyors Limited. The preliminary roost assessment identified Building 3 to be of moderate potential for roosting. Activity and emergence surveys identified that the interior of the barn was being utilised as a day roost by an individual, or small numbers of, Brown long eared bat(s) and that the wall plate on the eastern gable is being used by as a day roost by a small number of Common pipistrelles bats, as were a few features on the southern elevation of the same building.

The redevelopment of this building will damage and disturb bat roosts and therefore for the works to remain lawful, they will need to be covered by a European Protected Species Derogation Licence (EPS).

The objective of the follow-up bat emergence and activity surveys, undertaken by B J Collins PSS Ltd in May 2021, was to provide further evidence with regards to previously identified roosting bat species within the building.

During two emergence surveys in May 2021, no bats were found to roost within the building during the 2021 surveys.

However, as a roost was located within the structure in 2019 it remains a 'roost' under legislation. Natural England advise that a bat roost remains legally protected for a period of five years of bats being absent.

The status of the roosts on site is such that the redevelopment can be carried out under a Low Impact Class Licence (CL21). In support of an application to register the site under this licence planning permission must be granted and all conditions relevant to wildlife must be discharged, a review of planning permission reference 20/00833/FUL shows this to be fully addressed.

Note that if there are any delays to the commencement of development, the licence application must be supported by emergence and activity surveys in the active season (May to September) within which the development commences.

Therefore, so long as the site is registered before May 2022 the current emergence and activity surveys described within this report are sufficient to apply for an EPS licence. If works are delayed beyond May 2020 further emergence and activity surveys will be required in support.

This report includes details of a mitigation strategy sufficient to address the requirements of the CL21 Low-Impact Class Licence.

Further to the above, buildings which support bats cannot be underlined using any modern roofing membrane and external lighting proposed must be in compliance with best practice.

# 1 INTRODUCTION

## 1.1 Survey Site

This report has been prepared by BJ Collins – Protected Species Surveyors Limited for Mr & Mrs Hawthorne. The report provides the results of follow-up bat emergence and activity surveys of the buildings and land at Hall Farm, located in Flawborough, Nottinghamshire, NG13 9PA. The survey building is centred upon the Ordnance Survey grid reference SK 78278 42909.

The proposal is to redevelop the existing barn for residential purposes.

A previous ecology survey of buildings and land at the Hall Farm, including preliminary roost appraisal for bat species, and emergence and activity surveys were undertaken in 2019 by this consultancy.

The initial survey identified signs of roosting bats associated with a barn (Building 3). Two subsequent emergence and activity surveys in the same season located day roosting by Common pipistrelle and Brown long-eared bat.

The objective of the 2021 follow-up bat emergence and activity surveys, undertaken by BJ Collins PSS Ltd in May and June 2021, was to provide sufficient survey information to support of the application for a European Protected Species Derogation Licence to ensure that proposed redevelopment of the building remains lawful.

The legislation with regards to the protected species relevant to the site is listed below.

## 1.2 Legislation applicable to bats

All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

The legislation makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat. It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

Under Section see Regulation 55(9) of the Regulations licences can only be issued if Natural England is satisfied that:

- There is no satisfactory alternative to the work specification and
- The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural England aim to process EPS licence applications within 35 working days of receipt and Low Impact Class licenses are typically registered within 14 working days of receipt.

## 2 SITE DESCRIPTION

### 2.1 Site Location

The survey building (Building 3 on Figure 2) is located at Hall Farm in village Flawborough, in the Nottinghamshire countryside. The building is immediately surrounded by farm buildings and hardstanding. Native hedgerows are present along the site boundaries. These are considered a valuable feature to foraging and commuting bats in the area.

Within the wider surrounding area, the landscape is dominated by agricultural fields and grassland fields, with small areas of mature trees around the survey site. These mature trees offer a good foraging opportunity for bats within the area.



Figure 1 – Aerial view of Hall Farm and surrounding landscape, courtesy of Google Earth.



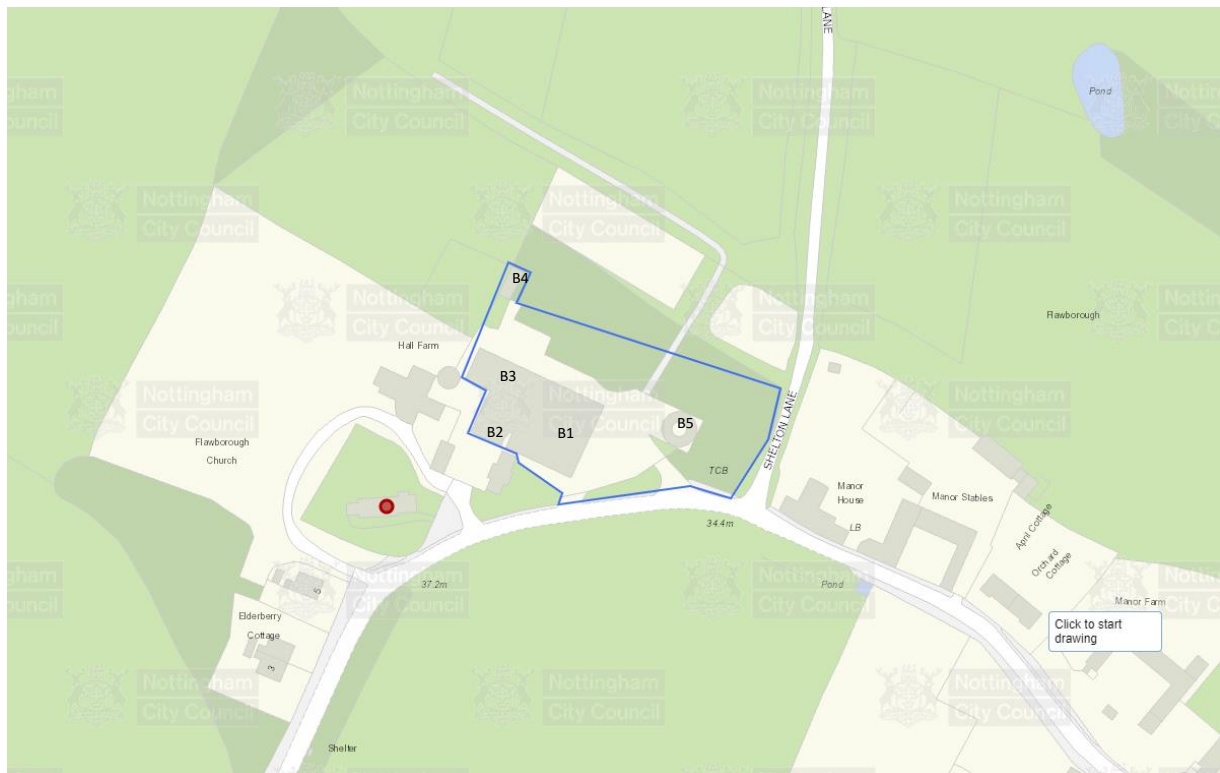


Figure 2 - Location of the buildings, annotated as per this report, and site courtesy of Nottinghamshire Insight Mapping, enclosed within the blue line.

## 2.2 Description of the survey building

Building 3 is a two-storey traditional barn; it is of solid brick construction and covered with a pantile roof, with occasional roof lights on a timber purlin and rafter frame. The building is a two-storey construction with wall vents in the first-floor section.



Photograph 1 – Building 3, two-storey solid brick barn.

### 3 SURVEY METHODOLOGY

#### 3.1 Bat emergence and activity surveys

In order to provide sufficient information to comply with national best practice guidance and therefore permit registration under an EPS licence, two bat emergence and activity surveys were undertaken. The first survey was completed on the 17<sup>th</sup> of May 2021, with the second taking place on the 3<sup>rd</sup> of June 2021.

The surveys were completed by deploying two bat ecologists, comprising experienced and licenced bat workers and assistant bat workers. The surveyors used a range of equipment including one Anabat Scout full spectrum bat detector and recording units, two Echometer Touch 2 Pro full spectrum detector coupled with a phone, and one Anabat walkabout bat detector. Night vision cameras supported by infrared floodlighting were used to focus upon potential bat roosting features. Ambient temperature was measured with an ETI Hygro-Therm hygrometer.

The surveys commenced prior to sunset, which was at 21:00 and 21:21 hours respectively, and lasted for 100 minutes each.

All bat activity detected by the surveyors was documented.

#### 3.2 Survey constraints

There were no significant constraints to the survey effort. The surveyors were able to access all areas of the school.

A survey was also carried out on 2<sup>nd</sup> of June; however, this was terminated due to rain. As such, a replacement survey was carried out on 3<sup>rd</sup> June. This is the survey that contributed to the results below.

#### 3.3 Weather conditions

The weather data for the emergence and activity surveys are listed in Table 1 below.

Date	Sunset	Temperature (°C)		Cloud Cover (%)		Wind (Beaufort)	
		Start	End	Start	End	Start	End
17/05/2021	21:00	11.4	7	40	0	2	1
02/06/2021	21:20	17	15	100	100	1	1
03/06/2021	21:21	18	17	90	100	1	1

Table 1: Weather data for the emergence and activity surveys.

#### 3.4 Personnel

The emergence and activity survey on the 17<sup>th</sup> of May was led by Mr B J Collins MSc MCIEEM, Bat Licence: 2015-13152-CLS-CLS and BLICL Registered Consultant (RC110) supported by Mr N Clayton (Natural England class license 2020-49905-CLS-CLS). The emergence and activity survey on the 26<sup>th</sup> of May was led by Mr J Parker, positioned at north-western elevation, and Mrs K Higham, positioned on the north-eastern elevation.

## 4 SURVEY RESULTS

### 4.1 Emergence and Activity Surveys

#### 17<sup>th</sup> of May 2021 – Emergence and Activity Survey

For the first emergence and activity survey, two bat ecologists were deployed positioned around the survey building to ensure all elevations were under observation simultaneously, as well as identifying bats that approach the barn from outside the survey area.

A total of 30 observations of bat activity were documented by the two surveyors. NO emergences were recorded by the surveyors.

The first bat, a Common Pipistrelle, was first recorded at 21:15 hours by the surveyor at the south-eastern corner of the building. The bat appeared from west and flew east towards the surveyor and then back westwards.

Bats of this species were the most abundant during the survey, recorded multiple times throughout the survey by both surveyors. The bats were recorded mostly commuting along the southern edge of the building.

Other species recorded during the survey consisted of two passes by Soprano pipistrelle (*Pipistrellus pygmaeus*).

A full table of results can be found in Appendix 1.

#### 26<sup>th</sup> of May 2021 – Emergence and Activity survey

For the second emergence and activity survey, two bat ecologists were deployed positioned around the survey building to ensure all elevations with identified bat roosting features were under observation simultaneously, as well as identifying bats that approach the dwelling from outside the survey area.

A total of 13 observations of bat activity were documented by the two surveyors. No bat emergences were observed by either of the surveyors.

Bat activity comprised of Common pipistrelles foraging and commuting in the area. The activity included mostly foraging along the north-eastern elevation.

Other species recorded during the survey consisted of one pass by Noctule bat (*Nyctalus noctula*).

A full table of results can be found in Appendix 1.



## 5 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Bats

The previous preliminary bat roost assessment determined that The Threshing Barn (B3) was of moderate bat roosting potential as per the National Best Practice Guidelines (Collins, 2016).

During the emergence and activity surveys in 2019 (Collins, 2019) two species of bat were found to utilise the building as a day roost. During the first survey on 26th August 2019 surveyors recorded five Common pipistrelles (*Pipistrellus pipistrellus*) emerging from the eastern gable end of the barn, and a single Brown long-eared bat (*Plecotus auritus*) emerging out of the cart door in the north elevation of the barn.

During this follow-up bat emergence and activity surveys in 2021, no bats were recorded emerging from the building.

However, bats and particular Pipistrelle species regularly swap roost sites and therefore under Natural England guidance this roost is considered to remain viable and therefore legally protected.

To that end, the redevelopment of this barn will lead to the loss, damage and disturbance to the bat roosts identified.

Therefore, for the redevelopment to remain lawful, the work to the barn will require a European Protected Species Licence (EPS). The conservation statuses of the roosts identified are such that the redevelopment could be registered under the CL21 Bat Low-Impact Class Licence.

In order to qualify for an EPS licence (EPS), planning permission has to have been granted and all conditions relating to wildlife must be discharged. Furthermore, the redevelopment of the barn will need to comprise a method statement to ensure animals are not harmed at the time of works and that permanent provision is provided for the species within the structure in the long-term.

Finally, if there is a delay in submitting for the EPS licence beyond May 2020 then further emergence and activity surveys will be required. Surveys from the most recent active season of the date of the licence submission are a prerequisite of licence applications.

#### Precautionary working actions

Once the EPS licence has been awarded, actions will be required to ensure that any animals roosting within are not harmed at commencement of the development or by specific development activities. This will require that all roof ridge tiles and tiles from off of the verges and gable apexes must be removed by soft demolition. This will entail the hand removal of the tiles with care and caution under the supervision of a licensed bat ecologist.

Once the principal roost features have been exposed and removed, the contractors should be made aware as to the potential to discover bats in alternative features, albeit less likely after the soft demolition has been completed. To facilitate this there is a procedure included within Appendix 1 of this report; this should be issued to the contractors.

#### Temporary bat roost provision

Temporary bat roost provision should be provided for the duration of the development project, with the boxes retained at the end of the building works. In this instance it is recommended that 2 sets of 3 timber bat boxes (6 boxes in total) be installed onto trees selected by the bat ecologist on the north-west boundary of the development area.

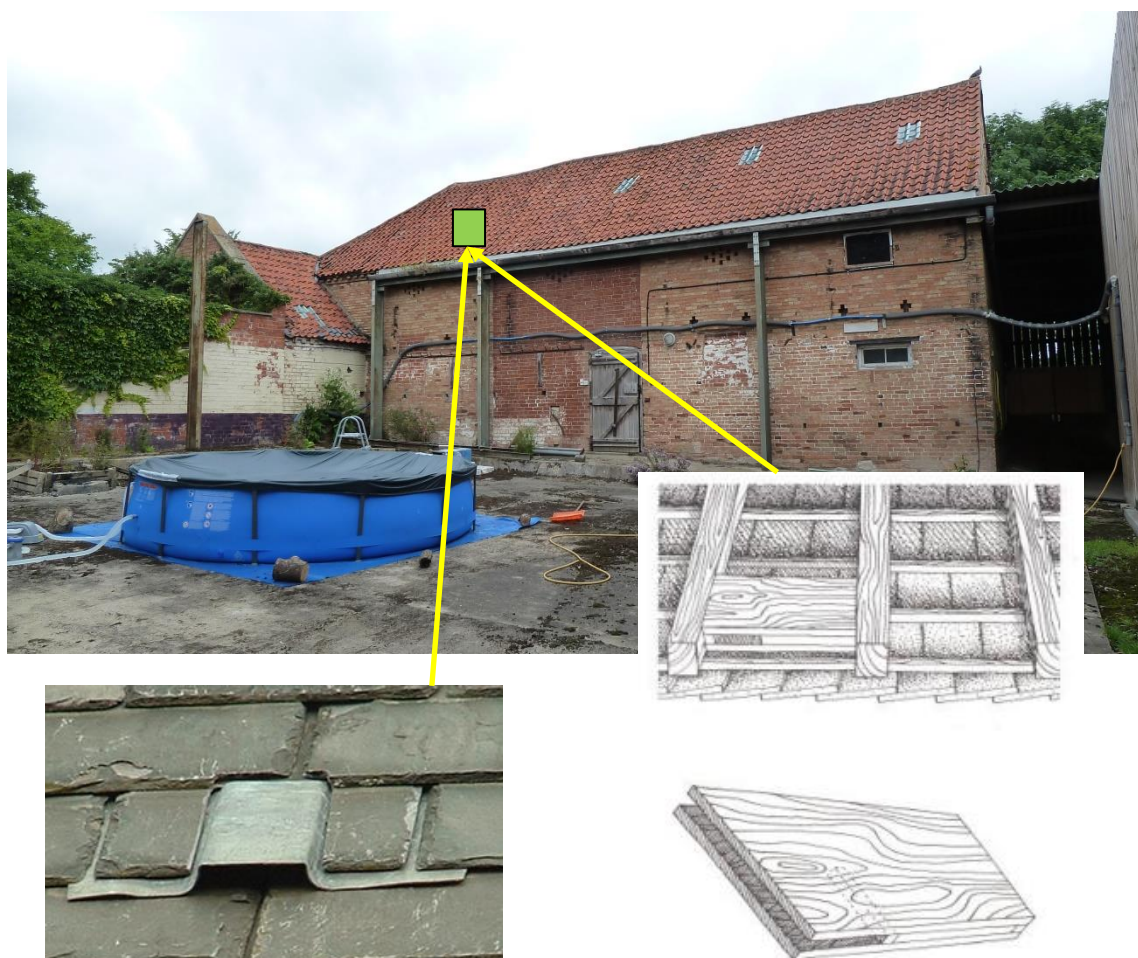
#### Permanent Roost Provisions

Permanent roost provision must be installed sufficient to provide for the habitat which will be lost. In this

instance, the mitigation required will be that which is specified under the Bat Low-Impact Class Licence. This is a requirement for like for like replacement of habitat and permanent roost features to replace habitat lost.

Two options will be utilised during the redevelopment of the brick built two-storey barn, Building 3. The first is to install a timber bat box underneath the roof tiles on the southern elevation of the roof covering. The design proposal is bespoke fitted around the gaps between the roof rafters, and will be a constructed from rough sawn timber. To assure this a sample of the timber proposed should be sent to the ecologist for approval.

The boxes are fitted between the rafters and with the roof underlining material cut around, then covered with the roof tiles. There is a slot at the base of the tiles and box to allow access to the box. This is via a standard lead bat access tile. The specification of these is indicated in figure 3, below.



**Figure 3 - example installation for the proposed new bat box under the new roof covering of Building 3.**

The second alternative roost provision is that of a bat tube.

An enclosed bat tube is to be installed within the exterior wall at the eastern gable end of the new dwelling such that the access slot to the box sits flush with the wall to allow a bat to land below and crawl up to the box. An example of an installed Habitat box is provided in Figure 4.

Other makes and finishes of enclosed bat tubes are available from building materials suppliers, including from frequent building supplies company Ibstock brick.



Figure 4 - example installation for the proposed new bat tube including both specifications and types available and the ideal locations within the barn conversions. The unit to the left is from Ibstock brick, the unit to the right is a habibat unit available from NHBS.

### Breathable Roofing Membranes

Scientific investigations (Waring *et al.*, 2013) into bats roosting against breathable roofing membranes have found that bats become entangled in the loose fibres of the membrane resulting in death. The species most commonly affected are the pipistrelle bats which often gain access to the space underneath roof tiles and above the modern membranes. ALL modern roofing membranes represent a threat to bats roosting in this way.

Consequently, under the terms of all protected species licences, the two-storey barn (Building 3) cannot incorporate a modern roofing membrane. Underlining must therefore be by traditional bitumen type linings, or alternatively sarking boards.

### Light Pollution Control

Exterior lighting has been shown to negatively impact upon emergence times and foraging opportunities for bats thereby reducing their fitness and ability to survive (Stone, Jones & Harris, 2009).

It is therefore important that the east and south elevations, which will support the newly installed bat tube and bat box, along with the western boundary of the development area and trees identified for retention to retain bat access to and from the barn, remain unlit at night-time to allow bats to safely access and use these features.

Lighting should be installed in accordance with the Institute of Lighting Professionals best practice documents.

## 6 REFERENCES

Collins, J. (ed) (2016) ***Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3<sup>rd</sup> Edition***, Bat Conservation Trust, London.

Collins, B.J. (2021) **Ecology Survey of Buildings and Land associated with Hall Farm, Flawborough, Nottinghamshire**. Report prepared for Flawborough Farms.

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

## Appendix 1 – Emergence and Activity Survey Results

17<sup>th</sup> of May 2021

N°	Time	Species	Activity	Surveyor	Notes
1	21:31	Common Pipistrelle	Echolocation	B Collins	Not seen
2	21:32	Common Pipistrelle	Commute	B Collins	East to west
3	21:36	Common Pipistrelle	Echolocation	B Collins	Not seen, 8 passes in 2mins
4	21:38	Common Pipistrelle	Commute	B Collins	East to west
5	21:39	?	Commute	B Collins	East to west
6	21:42	Common Pipistrelle	Commute	B Collins	Around north-eastern corner of the barn
7	21:42	Common Pipistrelle	Echolocation	B Collins	Not seen
8	21:46	Common Pipistrelle	Commute	B Collins	South to north
9	21:48	Common Pipistrelle	Echolocation	B Collins	Not seen
10	21:52	Soprano Pipistrelle	Commute	B Collins	West to east
11	21:53	Common Pipistrelle	Echolocation	B Collins	Not seen
12	21:55	Common Pipistrelle	Echolocation	B Collins	Not seen
13	21:58	Common Pipistrelle	Echolocation	B Collins	Not seen
14	22:01	Soprano Pipistrelle	Commute	B Collins	West to east
15	22:14	Common Pipistrelle	Echolocation	B Collins	Not seen
16	22:15	Soprano Pipistrelle	Commute	B Collins	East to west
17	22:15	Common Pipistrelle	Echolocation	B Collins	Social calls
18	22:18	Common Pipistrelle	Commute	B Collins	West to east
19	22:29	Common Pipistrelle	Echolocation	B Collins	Not seen
1	21:16	Common Pipistrelle	Forage	N Clayton	West to east along the building and back
2	21:38	Common Pipistrelle	Commute	N Clayton	West to east along the building and back
3	21:43	Common Pipistrelle	Commute	N Clayton	South-east to north-west
4	21:46	Common Pipistrelle	Commute	N Clayton	North-east to south-west and loop back
5	21:55	Common Pipistrelle	Commute	N Clayton	North-east to south-west
6	21:56	Common Pipistrelle	Commute	N Clayton	West to east along the building and back
7	21:58	Common Pipistrelle	Commute	N Clayton	North-east to south-west
8	22:15	Common Pipistrelle	Commute	N Clayton	Not seen
9	22:17	Common Pipistrelle	Commute	N Clayton	Not seen
10	22:18	Common Pipistrelle	Commute	N Clayton	Not seen, two passes
11	22:19	Common Pipistrelle	Commute	N Clayton	Not seen



**26<sup>th</sup> of May 2021**

N°	Time	Species	Activity	Surveyor	Notes
1	21:55	Noctule	Forage	J Parker	Not seen
2	21:55	Common Pipistrelle	Commute	J Parker	Not seen
3	21:56	Common Pipistrelle	Forage	J Parker	
4	21:57	Common Pipistrelle	Echolocation	J Parker	Not seen
5	21:58	Common Pipistrelle	Commute	J Parker	Over top of the barn
6	22:05	Common Pipistrelle	Echolocation	J Parker	Not seen
7	22:12	Common Pipistrelle	Echolocation	J Parker	Not seen
8	22:45	Common Pipistrelle	Echolocation	J Parker	Not seen
9	22:46	Common Pipistrelle	Echolocation	J Parker	Not seen, 2 passes
1	21:55	Common Pipistrelle	Forage	K Higham	Between barn and trees, 3 passes
2	21:58	Common Pipistrelle	Forage	K Higham	At the other end of building
3	22:05	Common Pipistrelle	Forage	K Higham	Between barn and trees
4	22:13	Common Pipistrelle	Echolocation	K Higham	Heard not seen

## Appendix 2 – Procedure For If A Bat Is Found During Works

- If at any point in the works bats are discovered then contractors must stop work immediately and telephone BJ Collins Protected Species Surveyors Ltd on 01636 830058 or 07957 122217.
- B J Collins PSS Ltd will either provide advice over the telephone or will send an appropriately licensed bat worker to the site. Actions should then be taken following the advice given.
- Bats are a protected species and there should be no attempt to handle a bat if discovered. The bat should be covered with a light material (cloth) and the bat worker called out to carry out the rescue.
- Only when the bat ecologist is satisfied that the risk to bats is ceased will works recommence.
- Should it transpire that the operation being carried out is of more risk to bats than was originally thought, then works will be stopped until they can be supervised by an appropriately licensed bat worker, or alternatively a European protected species derogation licence is acquired.
- If a bat is found under a tile or within any other niche to the building fabric, works will stop immediately (as above). If the bat does not voluntarily fly out, then the aperture will be carefully covered over to protect the bat(s) from the elements, leaving a small gap for the bat to escape voluntarily. Any covering should be free from grease or other contaminants, and should not be a fibreglass-based material.