Preliminary Ecological Appraisal
Outbuilding at the Old Bakehouse
Main Street
Flintham
Nottinghamshire
NGR SK74134 46036

Report prepared by:
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2015 – 10140 – CLS -CLS

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Non-Technical Summary

The site surveyed comprises an outbuilding in the grounds of The Old Bakehouse, Main Street, Flintham, Nottinghamshire, centred at NGR SK74134 46036. An external and internal inspection of the building was completed on 20th July 2023.

The defined survey area comprises an outbuilding in a large garden. The building is situated on the north western edge of the village of Flintham. There are gardens and houses to the south, east and west. To the north is open land containing a number of mature trees. Some of the gardens adjacent to the property have significant tree canopy cover.

The outbuilding is a single storey building of traditional brick construction with timber doors on the western side facing into the residential garden. The building is divided into two sections – one large storage area and storerooms at the southern end linked together and a separate storage room at the north end.

During the initial inspection two Brown Long-eared bats were seen hanging up in the apex of the enclose loft room at the southern end of the building where it is dark and there is no artificial lighting. ***The building was assumed to be an active roost.*** A significant number of bat droppings of varied age were found in this loft area. Very few droppings were found elsewhere despite the loft having an open doorway into the larger, central part of the building.

The dusk and dawn surveys completed have confirmed that two Brown Long-eared bats are using the loft space area as a day roost. The bats can access the central part of the building but appear to restrict themselves to flying within the smaller loft area, presumably due to the artificial lights in the remainder of the building. The confirmed roost location is above the south gable end wall with an access / egress to the exterior and the interior of the building under the roof edge. It is considered most likely that this is a post maternity day roost being used by an adult and pup based on the evidence.

During the activity surveys no evidence was found to confirm other parts of the building are being used by bats for roosting purposes. However, given that the bats can access other parts of the building interior, it is always possible that is particularly hot weather the top of the internal wall could be used for roosting and there is feeding debris present in webs under the wall top (see photograph in Appendix 1). This may be arachnid activity but could also indicate that one or both of the bats roosting use this location as an alternative.

No evidence of nesting activity was identified on or within the buildings surveyed. No evidence of any protected species or other significant wildlife was found anywhere within the garden areas or the driveway around the building. The garden comprises mown amenity lawns with shrub planted borders.

The development plan provided shows that partly enclosed loft area where the bats are roosting situated in the roof at the southern end of the building is proposed for conversion into a bedroom and en-suite bathroom. This work will impact the bat roost by removing this and the access into the building used by the bats over the top of the south gable end wall. A European Protected Species License will be required in order to carry out the conversion as shown.

The loss of the roost will require compensation in the form of an alternative roost to be provided elsewhere. In addition, the works would have to take place when the bats are absent from the building to ensure they are not disturbed. A detailed methodology and mitigation plan will be required for consideration by the Planning Authority which should incorporate:

- Provision of a new roost feature suitable for Brown Long-eared bats with the detailed specification and timing of installation of this feature.
- Timing of the conversion works to avoid the main bat activity season (i.e. not between 01 May and 30 September).
- A working method statement with a specification for works designed to avoid harming or disturbing any bats.

Role of a suitably licensed person to inspect the building before works commence and supervise and work to the roof and wall top areas.

An alternative option would be to redesign the conversion to avoid significant disturbance of the loft area where the roost is located. It has been established that the bats access the loft area via gaps along the south gable end roof edge and that the roost position has been identified as being on the top of the south gable end wall.

If a new conversion design could be prepared which provided a roosting space and enclosed loft area at the south end of the building which does not disturb the roof and south gable wall in any way, then it may be possible to convert the building without disturbing the roost location and retain this. Retention of the roost area would be the optimal way forward. If the works could be timed to avoid the period when the bats occupy the roost and can demonstrate that the roost will be retained, undisturbed, and that bats will still be able to access this unhindered, then it may be possible to carry out the conversion without the need for a European Protected Species License. A detailed working method will need to be prepared which clearly protects bats and retains the roost space and approved by the Planning Authority.

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1. Introduction

1.1 Site Description, Location and Survey Background

The site surveyed comprises an outbuilding in the grounds of The Old Bakehouse, Main Street, Flintham, Nottinghamshire, centred at NGR SK74134 46036. The location of the site is shown on the plan within **Figure 1** and an aerial photograph is provided to place the site into its environmental context in **Figure 2.**

Figure 1: Site Location

In order to facilitate an application to obtain permission to convert the outbuilding into a residential house the Applicant has requested a preliminary ecological appraisal survey should be completed. As the 'site' is a single outbuilding in the garden of a residential house, the appraisal concentrated on the potential presence of protected species. An external and internal inspection of the building was completed on 20th July 2023. A photographic record of the building is included within the report.

Date	Time	Location	Weather
20 July 2023	17.30 -18.30	The Old Bakehouse Main Street Flintham Notts NG23 5LA	Overcast sky with occasional clear breaks. Wind 8mph from the west. Temperature 17^0 C humidity 78% at 1020hPa.

1.2 Neighbouring Land Uses

The defined survey area comprises an outbuilding in a large garden. The building is situated on the north western edge of the village of Flintham. There are gardens and houses to the south, east and west. To the north is open land containing a number of mature trees. Some of the

gardens adjacent to the property have significant tree canopy cover. A contextual aerial photograph is provided below.

Figure 2: Site Contextual Aerial Photograph

2. Survey Context

This survey has been carried out to provide information in regard to the potential presence of protected species within the building and immediately adjacent garden area.

2.1 Protected Species

The survey covers an outbuilding which is in the garden of a residential house. It is being proposed for conversion. Taking in account the issue of 'proportionality', as referenced in the 2016 Bat Survey Guidelines and Clause 4.1.2 of BS42020 wherein "*professionals should take a proportionate approach to ensure the provision of information within the (planning) application is appropriate to the level of environmental risk it presents*," it was considered appropriate to initially review records of protected species for a 2km radius obtained from the National Biodiversity Network and MAGIC in the first instance.

Scientific Name	Common Name	Number of Records	Location
Bufo bufo	Common Toad	30	>1km away
Lissotriton vulgaris	Smooth Newt	30	>1km away
Rana temporaria	Common Frog	40	>1km away
Triturus cristatus	Great Crested Newt	1	>1km away
Anser anser	Greylag Goose	22	<1km
Falco columbarius	Merlin	4	>1km away
Turdus iliacus	Redwing	1	<0.5km
Turdus pilaris	Fieldfare	4	<0.5km
Tyto alba	Barn Owl	6	>1km away
Arvicola amphibius	European Water Vole	19	>1km away
Lutra lutra	Otter	1	>1km away
Meles meles	Badger	13	0.5km west
Chiroptera	Bat species	3	>1km away
Plecotus auritus	Brown Long-eared bat	1	>1km away
Pipistrellus pipistrellus	Pipistrelle	3	0.7km north west

The available records for protected species indicate that there are some significant records within 2km of the property being surveyed. There are roosts identified in the biological records for Pipistrelle and Brown Long-eared bats recorded in suitable properties within Syerston only 1km to the north and Inholmes only 750m to the north west of this property confirming this area is suitable for bats and can support roosting. There are records of Badger on the village edges approximately 500m from the property.

The potential for protected species to be present is assessed as follows:

Reptiles and Amphibians – The likelihood of reptiles being present is considered to be very low as the survey area comprises a building and well-maintained residential garden which will not be optimal habitat for reptiles . There are no records of common amphibians of species such as Great Crested Newt within 1km although common amphibians may be present in local garden ponds. The garden of the property contains no ponds or wetland habitat, and the surrounding gardens and houses are sub-optimal habitat for amphibians. The likelihood of reptiles or amphibians being present is considered to be very low.

Mammals – the records confirm there are Pipistrelle and Brown Long-eared bats in the area and the surrounding gardens and tree canopy cover along the edge of the village will be of significant interest to foraging bats, bringing these close to the building being surveyed. If the building has suitable features these may provide roost locations. The potential for other significant mammals noted in records such as Badger, is considered to be negligible as such species will not be present within the building or the small, well-maintained residential garden and there are no records of these species in the immediate vicinity.

Birds – There are Schedule 1 species in the surrounding area as well as others which may use buildings for nesting such as Swift and Swallow. If there are any suitable features within the building structure that are accessible certain bird species may use these for nesting.

During the survey of the building and surrounding garden area, observations and identification or signs of any species protected under the Habitat Regulations 2010 (originally Part 1 of the Wildlife and Countryside Act 1981) were noted. The objective of the survey is to identify and report any physical evidence of protected species, particularly bats using the building.

The inspector cannot be held responsible for any parts of the building structure that may have been inaccessible to the inspector due to services or structural restrictions, or any other restriction that could compromise the safety of the inspector or prevent unrestricted access. In this instance all parts of the building were accessed.

The client must accept that the inspector will remain impartial to all parties involved and the results of the survey may not be in the best interests of the client. The surveyor, Christopher Barker, is an experienced ecological surveyor holding Class Licenses for protected species issued by Natural England.

2.2 Legal Constraints and Assessment Methodology

A methodical inspection of the property was carried out to identify the habitat(s) present and to look for any evidence of protected species using the site and to identify any features with potential to provide significant shelter or foraging opportunities for these. The survey was carried out by Christopher Barker, an experienced ecological consultant and Chartered Environmentalist holding Class Licenses issued by Natural England.

The Conservation of Habitats and Species Regulations 2010 consolidates the various amendments that have been made to the Regulations. The original (1994) Regulations transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

“European protected species” are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2010. They are subject to the provisions of Regulation 41 of those Regulations. All European Protected Species are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

a. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species

b. Possess or control any live or dead specimens or any part of, or anything derived from these species

c. deliberately disturb wild animals of any such species

d. deliberately take or destroy the eggs of such an animal, or

e. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place

For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

a. to impair their ability—
i. to survive, to breed or reproduce, or to rear or nurture their young, or

ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or,

b. to affect significantly the local distribution or abundance of the species to which they belong.

Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works. In accordance with the requirements of the Regulations (2010), a licence can only be issued where the following requirements are satisfied:

i) The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'

ii) 'There is no satisfactory alternative'

iii|) The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, and specific consideration was given to bats, birds, badgers, amphibians and reptiles as described below.

Breeding Birds: All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The inspection of the site included a search of hedgerows, ground vegetation and tree canopies looking for evidence of active or former nests.

Bats: All species of Bat within the UK are protected under the Conservation of Habitat and Species Regulations 2010 (Habitat Regulations) that amended and incorporated the Wildlife and Countryside Act 1981. These regulations make it an offence to:

Intentionally kill, injure or take a bat [WCA section 9(1)]
Possess or control any live or dead specimen or anything derived from a bat [WCA section 9(2)]
Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat [WCA section 9(4)(a)]
Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose [WCA section 9(4)(a)]

Any building or significant trees present within the survey area have been assessed for their suitability to support roosting bats based on the presence of features such as holes, crevices, cracks, splits or loose bark. Potential bat roost locations in relation to buildings are described within this report (taken from Bat Survey Guidelines 2016) as:

Confirmed Roost – a structure with physical evidence confirming the presence of bats or bats visibly seen.
High – a structure with one or more potential roost features that are obviously suitable for use by a large number of bats on a regular basis and which is situated in an area of continuous high-quality foraging habitat suitable for bats;
Moderate – a structure with one or more potential roost features that could be used by bats, but which is unlikely to support a roost of high conservation status and which is in an area of connected habitat suitable for foraging by bats;
Low – a structure with one or more potential roost features that could be used by individual bats opportunistically. However, these potential roost features do not provide sufficient potential to be used by a larger number of bats or on a regular basis and the surrounding habitat is not of high value to foraging bats.

Negligible – a structure with negligible habitat features which is in a poor location making it highly unlikely roosting bats will be present.

Common Reptiles: All species of British reptile are protected by the Wildlife and Countryside Act 1981 (as amended). The common species (adder, grass snake, slow worm and common lizard) are only protected against intentional killing and injuring (but not taking).

The survey included a search of all areas adjacent to the buildings where suitable habitat for reptiles to shelter under or bask may be present, lifting rocks, bricks and other suitable features to search underneath. The surveyor also maintained a careful watch whilst moving across the garden to look for signs of reptiles moving to cover.

Great crested newts are afforded legal protection under European and UK law under the auspices of The Conservation (Natural Habitats &c.) (Amendment) Regulations which came into force on 21 August 2007, superseding the Habitat Regulations 1994. The 2007 amendments have increased the protection afforded to European Protected Species.

The law provides protection to adults, juveniles, efts (immature GCN) and eggs and it is an offence to intentionally or recklessly or as an incidental result of actions:

- Intentionally or deliberately capture, kill, or injure Great Crested Newts
- Intentionally or recklessly damage, destroy or obstruct access to any place used for shelter or protection (including resting or breeding places) whether occupied or not
- Deliberately, intentionally or recklessly disturb Great Crested Newts when in a place of shelter
- Possess a Great Crested Newt, or any part of it, unless acquired lawfully
- Sell, barter, exchange or transport or offer for sale Great Crested Newts or any part of them.

The survey included a search of any ponds and wetland areas within the site or immediate surrounding area nearby (where these features were present and accessible).

Invasive Species: Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.

A range of invasive non-native plant species are listed in Schedule 9 (Part 2) of the Wildlife and Countryside Act 1981, which makes it an offence to plant or cause these introduced invasive plants to grow in the wild, effectively making it illegal to spread the plants during development operations.

3 Survey Methodology

The initial ecological appraisal of this property was completed on the early evening of 20th July 2023 which is an optimal survey period for many protected species, particularly those associated with buildings such as roosting bats and nesting birds. An experienced surveyor can make reliable judgements about the quality and composition of habitats and their potential suitability for protected species.

Both the exterior and the interior of the outbuilding were inspected using torches a ladder and an endoscope. During the inspection of the site notes were made on the suitability of habitats for a range of protected species and any sightings or signs of protected species were recorded:

- Features suitable for roosting bats were noted, such as cracks and cavities within walls and around any timber structures, crevices and gaps behind tiles.
- The suitability of habitats was assessed for reptiles such as Grass snake (*Natrix natrix*) and amphibians (including great crested newts -*Triturus cristatus*).
- The suitability of site was assessed for nesting birds.

The desk study concluded that the most likely species to be present will be roosting bats and nesting birds based on the character and location of the area surveyed which was confirmed by the inspection of July 2023. The inspection included a search of the internal roof structures searching for evidence of bat activity and nesting birds. An initial appraisal of the external faces of the outbuilding was carried out using binoculars to assess potential features of interest. This was followed by a more detailed external and then internal inspection of the building.

The visual inspection initially comprised an assessment from all accessible sides using professional high-quality binoculars 10 x 25 magnification to establish if any access points for bats are present and identify any external indications such as stains, wearing around holes etc. that indicate the potential presence of these species. Floors, roof beam tops, doors, walls and the ground around the base of walls were inspected for signs of bat activity although evidence such as droppings may only be retained in covered and protected external areas.

If evidence of potential access points for bats has been identified, these features have been targeted for further detailed investigation at close quarters. Bats in particular may roost at any time of year in locations such as voids behind beams and tiles, fissures, knot holes, gaps between bricks, voids behind roofing felt etc. A potential bat roost site is to be inspected for overt evidence of bat presence and occupation. This could present as:

- Staining around a cavity, fissure, void or split caused by oils secreted by the bat into its fur
- Scratching on timbers and joists caused by the bat in the act of take off and landing
- Bat droppings and feeding debris in and around the access point or below the feeding roost
- Urine stains below a possible entrance site or within the entrance to a cavity. The urine also smells heavily of ammonia which is distinctively identifiable at close quarters
- Possible audible noises during daylight of bats chattering especially in hot weather
- Flies around entrance of possible roost which may be attracted to bat guano
- The lack of cobwebs around a possible entrance site may also suggest occupation, but of course does not directly confirm bat presence.

Any potential roost features with the evidence indicating the presence of bats that is not fully visible to the naked eye will then be subjected to a visual inspection using a torch or, if necessary, an Endoscopic Fiberscope with illumination as appropriate.

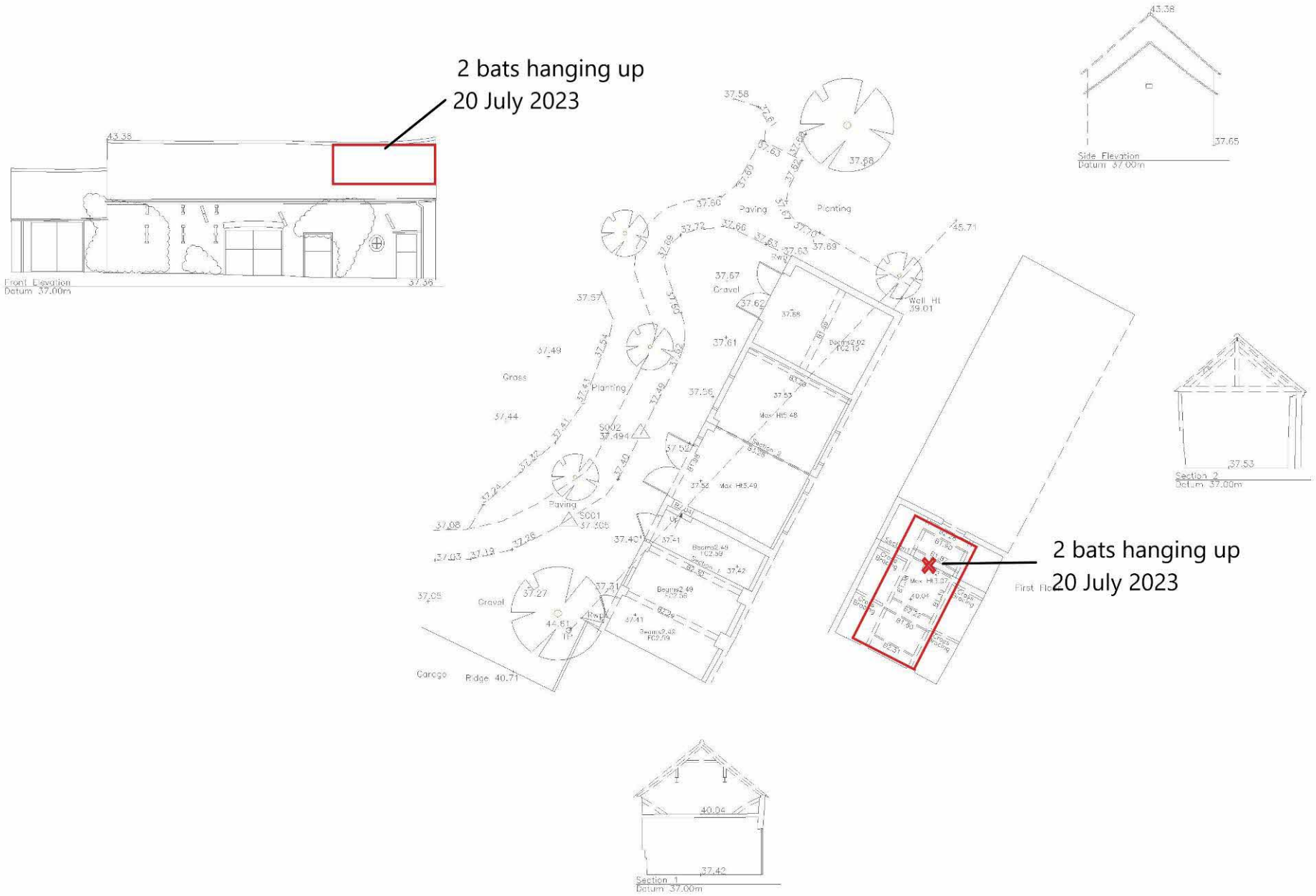


Figure 3 – Annotated Barn Plan and Elevation

4. Survey Findings

The survey covers an existing outbuilding in a residential garden. A detailed Phase 1 Habitat Survey is not required as the entire survey area inspected will be classed as ‘Buildings’ and ‘Amenity Garden’ and it does not contain any significant natural habitat areas. The survey therefore concentrated on the potential presence of protected species.

The outbuilding is a single storey building of traditional brick construction with timber doors on the western side facing into the residential garden. The building is divided into two sections – one large storage area and storerooms at the southern end linked together and a separate storage room at the north end.

The exterior brickwork to the building is in excellent condition throughout with no gaps, cracks or holes visible. However, there are ventilation holes directly into the central storage area from both the eastern and western sides and there is also a large circular open window on the west facing side of the building into the ground floor storage room. These features will allow direct access into the southern and central parts of the building which are internally linked by open doorways.

The property has white timber doors and frames along the western face, two double timber doors and one singe door. These do not appear particularly closely fitting. There are no windows. The storeroom at the northern end of the building has the same footprint but a lower roof which is separated from the main roof as shown in the photograph below.

The eastern side of the building faces directly onto the adjacent residential garden and access to this was obtained to inspect this side of the building. The east facing roof is in excellent condition as is the brickwork on this side. All of the vent holes in the brick wall on the eastern side of the building appear to be heavily cobwebbed and one is almost completely covered by shrub growth.

The pitched roof comprises modern pantiles which appear quite closely fitting. There are no broken, slipped or missing tiles and there do not appear to be any significantly lifted on either of the two roof areas. All of the ridge tiles are in place. The roof edges have guttering very close to the tile edge but there are gaps under the roof tiles where these extend over the wall tops. The exposed north facing roof edges are both effectively sealed with cement render. However the roof edge on the south gable end has some gaps visible between the render and the tile that could allow bats access. The ridge tile cement render appears in place with no gaps of holes.

Overall ,the roof is in excellent condition but there are some gaps around the roof edges and along the south gable end. The open window on the west side and the open ventilation slots in the brickwork on the eastern side will allow direct access into the interior of the central and southern sections of the building. The northern section appears effectively sealed.

North gable end of building

South end of building

View of western side

View of eastern side

View of eastern side

Centre of western side

View of doors along west side

View of main central double doors

The interior of the building was inspected. The central section of the building is open to the roof apex with no enclosed loft area. This area is open and has artificial lighting. The exposed brickwork is in excellent condition and the wall tops are exposed. The floor is bare concrete throughout providing a good survey surface and the room is used for some general storage.

The timber roof beams are fully exposed and the tops of the horizontal support beams could be accessed via ladder and inspected. The underside of the pithed roof is lined with bituminous felt which hides the underside of the tiles. ***Four scattered, segmented bat droppings were found on the floor of this part of the building.***

There is an open door into the ground floor storage room off the larger main room and this small store room has a fairly low ceiling, the roof joists and brickwork also being exposed. The brickwork is in excellent condition with no holes, cracks of cavities and the ceiling beams also appear to be in good condition with no obvious features being found in or behind these where bats could hide away to roost, The floor is concrete and large flags. This ground floor room has artificial lighting and is used for general storage purposes. No evidence of any bat or bird activity was found in this room.


Main central storage room


Ground floor store at south end of building


Underside of roof main storage room


Roof over south end of building

There is an enclosed loft area directly above the ground floor room at the southern end of the building. This has an open doorway into the main barn and was obviously designed to be accessed for storage purposes. There are no windows or vent spaces in the brickwork for this loft room and it is dark with no artificial lighting. This area has a boarded timber floor and there are a large number of scattered droppings on this of mixed age. There was very little evidence of any feeding debris mixed in. The underside of the tiled roof is lined with bituminous felt but there are some open folds and overlaps in this which would allow access through the lining by bats.

During the inspection of this part of the building ***two Brown Long-eared bat were seen by the surveyor hanging up at the start of the survey (5.45pm). It is concluded from the presence of the bats and the evidence of droppings within his section of the building that this loft room is a confirmed roost.***

No evidence of any nesting bird activity was found in this part of the building or anywhere within the main storage room or smaller ground floor storage room.

Bat droppings of mixed age – loft room

Two Brown Long-eared bats roosting

The smaller storage room at the northern end of the building was also inspected. The ground floor storage area is accessed via tightly fitting white timber door on the west side. There are no vent holes or windows in the brickwork and the storage area has a concrete floor and artificial lighting. There is a small enclose loft space above the storage room which was accessed and this is heavily cobwebbed throughout. There is a small vent hole in the brickwork to the north gable end of the building but based on the lack of any droppings within the enclosed loft area and the dense cobwebs across the ventilation hole, that this space is not being used by roosting bats or nesting birds.

Having confirmed that there is a Brown Long-eared bat day roost in the loft room at the southern end of the building and that any bats within this part of the building structure can easy access the main storage room and even the smaller ground floor storage room via open internal doorways, further activity surveys are recommended to confirm the type of roost that is present and the number of bats using this.

Stage 2 Activity Surveys:

The full details of the dusk and dawn surveys completed are provided in the survey records within **Appendix 1** and this appendix also contain photographs and plans showing the bat activity identified. The time and conditions of the surveys are summarised in the table below.

Date of Survey	Survey Time	Temperature and weather	Survey conditions
24th July 2023	20.45 – 23.00	Clear with occasional cloud. 15 ^{O}C at 21.00. Breeze 8mph from the south west. Humidity 75% at 1016hPa.	Excellent conditions for bat emergence and foraging. Sunset at 21.02.
17th August 2023	20.30 – 232.45	Clear sky. 16 ^{o}C, breeze 9mph from the west. Humidity 69% at 1025hPa	Excellent conditions for bat emergence and foraging. Sunset at 20.42.
13th September 2023	04.30 – 06.30	Clear sky. Rain the previous day until 8pm after which it cleared for the evening and night. Temperature 12^{o}C at 04.30. Humidity 88% at 1021hPa Breeze 9mph from the north west	Suitable surveying conditions for bat foraging and returning to roost. Sunrise 06.29.

During the activity surveys carried out each surveyor was equipped with an Echometer detector and, in addition night vision equipment was also used by two of the surveyors (Nightfox Corsac 3 X HD binocular and Sigweis 10mag infra-red camera). Immediately prior to the dusk surveys and also following the dawn survey the buildings were externally reinspected looking for any fresh evidence of bat activity ad any bats hanging up in the loft room area.

The survey rationale for all three surveys was as follows:

Surveyor 1 – (A Holden) positioned to the north side of the building to watch the exposed north gable roof edge and doors and vents along the north western side of the building. Activity in the garden could be monitored from this point.

Surveyor 2 – (L MacDonald) positioned to watch the south gable end of the building where there are gaps along the roof edge and also the open circular window on the south west side of the building.

Surveyor 3 – (C Barker) positioned inside the building at the entrance to the enclose loft space area to watch for bat emergence and flight within the building interior and assess where the roosting location and access / egress points are.

Plans showing the location of the individual surveyors are provided in **Appendix 1**. As the bats were initially found hanging up in the loft room at the southern end of the building and there are no doors or windows anywhere on the eastern of western sides of this structure, it was concluded that the most likely access / egress would be via the door into the larger storage room and out via windows / vents, or that the bats would access / egress via the gaps along the south gable end. It was therefore decided the best option would be to place a surveyor with night vision equipment within the loft interior near to the door to identify the emergence point within the loft interior and roost egress out of the building.

During the two dusk surveys completed at total of 182 bat passes were recorded as detailed in the table below. Both Common and Soprano Pipistrelle bats appeared in the garden area around 15 minutes after sunset which is fairly early. The majority of the passes were by solitary Common Pipistrelle.

Species	**Dusk Sunset 21.02**	**First pass**	**Dusk Sunset 20.42**	**First pass**	**Roosting**
Common Pipistrelle	71	20.47	41	20.58	No
Soprano Pipistrelle	13	20.51	22	20.57	No
Noctule	15	20.47	14	20.35	No
Leislers	-	-	1	21.02	No
Brown Long-eared	3	21.50	2	21.39	**YES**
Total	**102**		**80**		

During the dawn survey at total of 26 bat passes were recorded as detailed in the table below.

Species	**Dusk Sunrise**	**Last pass**			**Roosting**
Common Pipistrelle	16	05.48			No
Soprano Pipistrelle	5	05.32			No
Leislers	3	05.12			No
Brown Long-eared	2	05.38			**YES**
Total	**26**				

The surveys have confirmed that two Brown Long eared bats are roosting within the building surveyed. Two bats were seen hanging up on 20th July during the stage 1 inspection. Two bats were seen flying within the loft area interior during the dusk survey of 26th July and again during the dusk survey of 17th August. On both activity surveys the bats were Brown Long-eared and the roost location appeared to be at the south gable end of the building. The bats appeared to emerge into the loft space from the top of the south gable end wall and then leave the loft area over the gable end wall to emerge outside of the building.

During the dawn survey no bat was seen flying within the loft interior. However, two Brown Long-eared bats were seen to enter the south gable end wall, crawling under the roof edge close to the apex of the roof. These bats did not emerge within the building interior and from this it is concluded that the bats both roosted on top of the south gable end wall under the roof tiles.

During the dawn survey inspection feeding debris in the form of moth and butterfly wings was noted on the interior dividing wall close to the loft room entrance for the first time. It is possible this is activity by arachnids as the were no bat droppings mixed in and the wings were caught in webs. The use of this wall by roosting bats cannot be ruled out in the future as there are significant gaps along the top of the brickwork under the roof tiles. It is proven that bats can enter the loft area from the top of the south gable end wall so there is every reason to anticipate that other suitable features within the loft area, such as the top of the central dividing wall, could also be used when weather conditions dictated.

5. Conclusion and Assessment

Having completed an inspection of the outbuilding at The Old Bakehouse, Main Street, Flintham in July 2023 and followed this with a series of dusk and dawn activity surveys the following conclusions are reached:

1. The outbuilding is a single storey brick building of traditional construction internally divided into three parts. At the southern end of the building there is a dark loft room which is joined to the rest of the building by an open doorway. The building is situated close to the edge of the village in a residential area and the surrounding gardens provide significant canopy cover. The location is likely to be of quite high potential interest to bats. There are some features on the building exterior such as open windows, open roof edges and missing roof cement render in addition to the partly enclose loft within the building interior which may be of interest to roosting bats.

2. During the initial inspection two Brown Long-eared bats were seen hanging up in the apex of the enclose loft room at the southern end of the building where it is dark and there is no artificial lighting. ***The building was assumed to be an active roost.*** A significant number of bat droppings of varied age were found in this loft area. Very few droppings were found elsewhere despite the loft having an open doorway into the larger, central part of the building.

3. The dusk and dawn surveys completed have confirmed that two Brown Long-eared bats are using the loft space area as a day roost. The bats can access the central part of the building but appear to restrict themselves to flying within the smaller loft area, presumably due to the artificial lights in the remainder of the building. The confirmed roost location is above the south gable end wall with an access / egress to the exterior and the interior of the building under the roof edge. It is considered most likely that this is a post maternity day roost being used by an adult and pup based on the evidence.

4. During the activity surveys no evidence was found to confirm other parts of the building are being used by bats for roosting purposes. However, given that the bats can access other parts of the building interior, it is always possible that is particularly hot weather the top of the internal

wall could be used for roosting and there is feeding debris present in webs under the wall top (see photograph in Appendix 1). This may be arachnid activity but could also indicate that one or both of the bats roosting use this location as an alternative.

5. No evidence of nesting activity was identified on or within the buildings surveyed.

6. No evidence of any protected species or other significant wildlife was found anywhere within the garden areas or the driveway around the building. The garden comprises mown amenity lawns with shrub planted borders.

Assessment:
A conceptual development plan has been provided by the Architect and is copied below as figure 5 below.

Figure 5 – Conceptual Development Plan.

The plan provided shows that partly enclosed loft area where the bats are roosting situated in the roof at the southern end of the building is proposed for conversion into a bedroom and en-suite bathroom. This work will impact the bat roost by removing this and the access into the building used by the bats over the top of the south gable end wall. A European Protected Species License will be required in order to carry out the conversion as shown within Figure 5 above.

The loss of the roost will require compensation in the form of an alternative roost to be provided elsewhere. In addition, the works would have to take place when the bats are absent from the building to ensure they are not disturbed. A detailed methodology and mitigation plan will be required which should incorporate

- Provision of a new roost feature suitable for Brown Long-eared bats with the detailed specification and timing of installation of this feature.
- Timing of the conversion works to avoid the main bat activity season (i.e. not between 01 May and 30 September).
- A working method statement with a specification for works designed to avoid harming or disturbing any bats.
- Role of a suitably licensed person to inspect the building before works commence and supervise and work to the roof and wall top areas.

An alternative option would be to redesign the conversion to avoid significant disturbance of the loft area where the roost is located. It has been established that the bats access the loft area via gaps along the south gable end roof edge and that the roost position has been identified as being on the top of the south gable end wall.

If a new conversion design could be prepared which provided a roosting space and enclosed loft area at the south end of the building which does not disturb the roof and south gable wall in any way, then it may be possible to convert the building without disturbing the roost location and retain this. Retention of the roost area would be the optimal way forward. If the works could be timed to avoid the period when the bats occupy the roost and can demonstrate that the roost will be retained, undisturbed, and that bats will still be able to access this unhindered, then it may be possible to carry out the conversion without the need for a European Protected Species License. A detailed working method will need to be prepared which clearly protects bats and retains the roost space and approved by the Planning Authority.

Christopher Barker CEnv ACIEEM
2015 – 10140 – CLS - CLS

Appendix 1: Bat Activity Survey Records

Date of Survey	Survey Time	Temperature and weather	Comments
24th July 2023	20.45 – 23.00	Clear with occasional cloud. 15 ^{O}C at 21.00. Breeze 8mph from the south west. Humidity 75% at 1016hPa.	Excellent conditions for bat emergence and foraging. Sunset at 21.02.

Flight / Forage activity: Detectors confirmed presence of Common and Soprano Pipistrelle, Brown Long-eared and Noctule bats foraging within the garden around the building under observation.

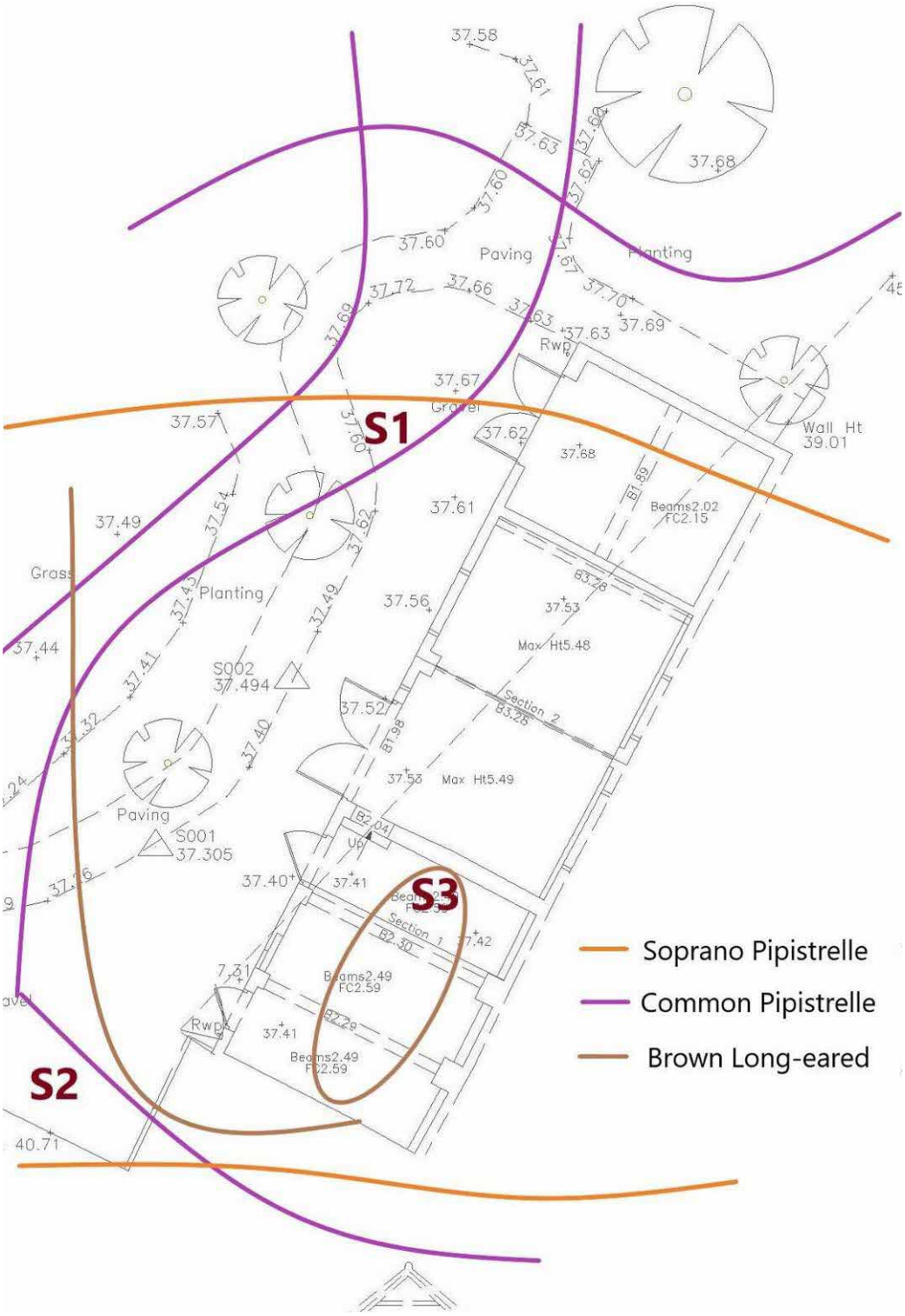
Species	S1 bat passes	S2 bat passes	S3 bat passes		
Common Pipistrelle	29	33	9		
Soprano Pipistrelle	5	6	2		
Noctule	6	5	4		
Brown Long-eared	-	1	2*		
Total	**40**	**45**	**17**		

Roosting Activity – 2 Brown Long-eared bats confirmed in loft area

Surveyor S1 (A holden) positioned at the north west end of the building. Infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden throughout the survey period buy activity was of low intensity and only one bat was seen at any one time. The first Common Pipistrelle pass was at 20.53 passing to the west of the building. The first Soprano Pipistrelle pass was at 20.58 also to the west of the building. Noctule were picked up from 20.47 but not seen. No activity by either Plecotus or Myotid species was picked up in this survey position.

Surveyor S2 (L Macdonald) positioned at the southern end of the building to watch the south gable end roof edge and the open circular window and doors along the south western side of the building. Night vision equipment was used at this point to watch the south gable end after dark. Infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden throughout the survey period buy activity was of low intensity and only one bat was seen at any one time. The first Common Pipistrelle pass was at 20.47 passing to the south of the building. The first Soprano Pipistrelle pass was at 20.51 the west of the building. Noctule were picked up from 20.47 but not seen. **One Brown Long eared bat was seen to emerge from near the apex of the south gable end under the roof edge at 21.50** but no other bats were seen to emerge from the building. No activity by Myotid species was picked up in this survey position.

Surveyor S3 (C Barker) positioned inside the building with a clear view into the enclose loft room and doorway into this area. This survey position relied entirely on night vision equipment. Passes by Common Pipistrelle, Soprano Pipistrelle and Noctule bats were picked up from outside of the building but none of these bats entered the building or were seen flying within it. At 21.11 a single Brown Long -eared bat emerged into the enclosed loft area from the somewhere close to the south gable end and flew circuits inside the loft before hanging up. This bat stayed within the enclosed loft area and did not fly into the larger main storage room area. At 21.27 two Brown Long-eared bats were seen flying for a period of time inside the loft area. Neither entered the larger storage room. Both bats left the loft space from somewhere close to the south gable end roof edge between 21.46 and 21.50. The latter emergence was also seen by surveyor S2 but the first was not picked up. Identifiacation of these bats is based on visual assessment in flight from close range and views when hanging up. S2 did not pic p a single echolocation call from either of the two ats within the building interior.



Survey and Activity Plan 24/07/2023 Old Bakehouse, Flintham

Date of Survey	Survey Time	Temperature and weather	Comments
17th August 2023	20.30 – 232.45	Clear sky. 16 °C, breeze 9mph from the west. Humidity 69% at 1025hPa	Excellent conditions for bat emergence and foraging. Sunset at 20.42.

Flight / Forage activity: Detectors confirmed presence of Common and Soprano Pipistrelle, Brown Long-eared, Noctule and Leislers bats foraging within the garden around the buildings under observation.

Species	S1 bat passes	S2 bat passes	S3 bat passes		
Common Pipistrelle	14	19	8		
Soprano Pipistrelle	8	11	3		
Noctule	6	6	2		
Leislers	1				
Brown Long-eared	-		2*		
Total	**29**	**28**	**15**		

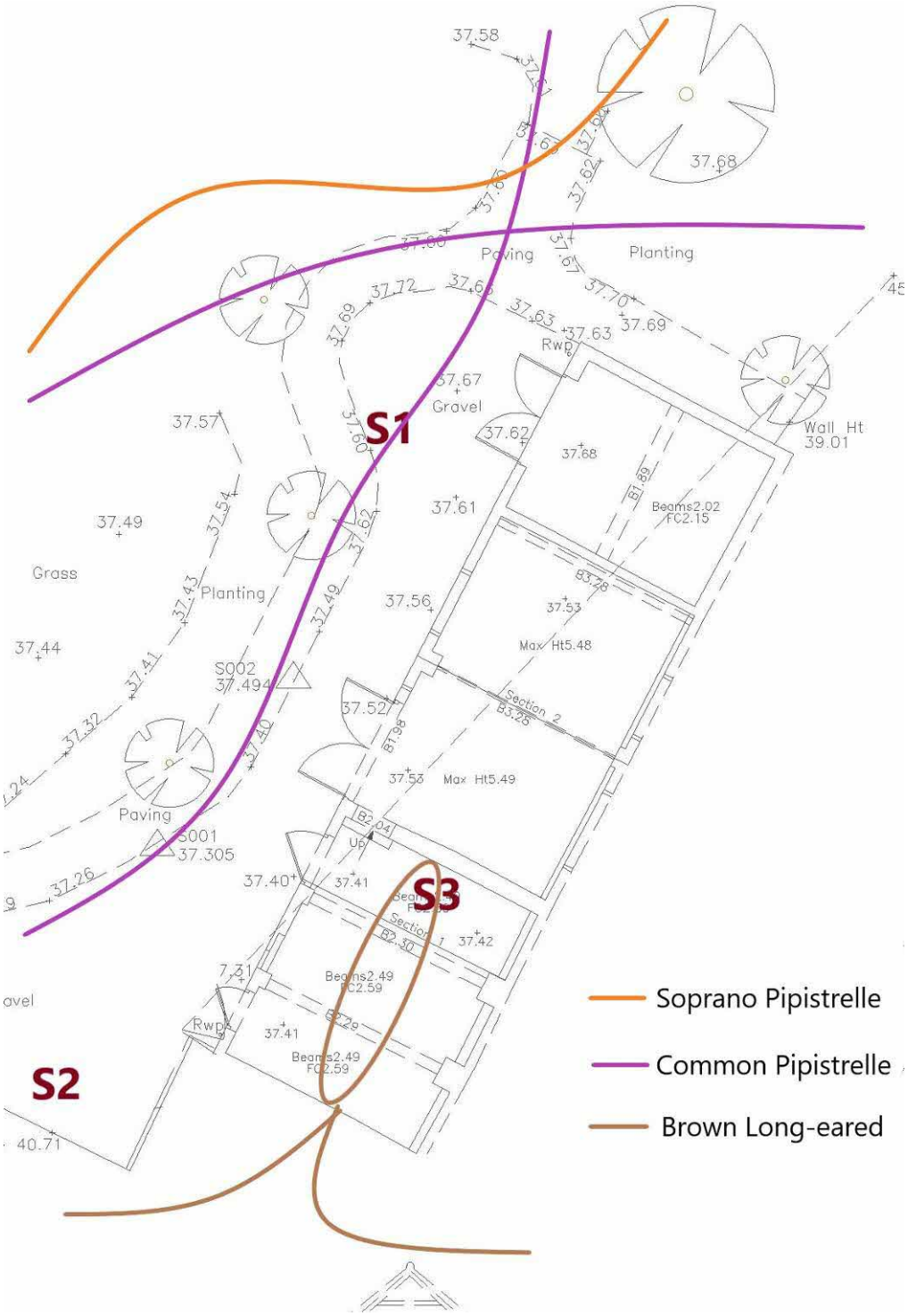
Roosting Activity – 2 Brown Long-eared bats confirmed in loft area

Surveyor S1 (A holden) positioned at the north west end of the building. Infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden throughout the survey period buy activity was once again of low intensity and only one bat was seen at any one time. The first Common Pipistrelle pass was at 20.57 passing to the north of the building. The first Soprano Pipistrelle pass was at 20.52 to the west of the building. Noctule were picked up from 20.35 but not seen and one Leislers was picked up at 21.02. No activity by either Plecotus or Myotid species was picked up in this survey position.

Surveyor S2 (L Macdonald) positioned at the southern end of the building to watch the south gable end roof edge and the open circular window and doors along the south western side of the building. Night vision equipment was used at this point to watch the south gable end after dark. Infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden throughout the survey period buy activity was of low intensity and only one bat was seen at any one time. The first Common Pipistrelle pass was at 20.58 passing to the south of the building. The first Soprano Pipistrelle pass was at 20.57 also passing to the west of the building. Noctule were picked up from 20.35 but not seen. During this survey no Brown Long-eared bats were seen to leave the building but one pass was picked up at 21.39. No activity by Myotid species was picked up in this survey position.

Surveyor S3 (C Barker) positioned inside the building within the loft area close to the open doorway into the larger storage room with a clear view of the length of the loft and using night vision equipment. Passes by Common Pipistrelle, Soprano Pipistrelle and Noctule bats were picked up from outside of the building but none of these bats entered the building or were seen flying within it.

At 21.09 a single Brown Long -eared bat emerged into the enclosed loft area from above the south gable end wall. This was quickly joined by another from the same position at 21.11 and both bats flew and hung up within the enclose loft area. Surprisingly neither of these bats made any attempt to fly into the larger open barn area. ***At 21.39 both bats left the barn via an exit over the edge of the south gable end wall.*** No other bats emerged into the interior of the building for the remainder of the survey period.



Survey and Activity Plan 17/08/2023 Old Bakehouse, Flintham

Date of Survey	Survey Time	Temperature and weather	Comments
13th September 2023	04.30 – 06.30	Clear sky. Rain the previous day until 8pm after which it cleared for the evening and night. Temperature 12°C at 04.30. Humidity 88% at 1021hPa Breeze 9mph from the north west	Suitable surveying conditions for bat foraging and returning to roost. Sunrise 06.29.

Flight / Forage activity: Detectors confirmed presence of Common and Soprano Pipistrelle, Brown Long-eared and Leislers bats foraging within the garden around the buildings under observation.

Species	S1 bat passes	S2 bat passes	S3 bat passes		
Common Pipistrelle	7	8	1		
Soprano Pipistrelle	1	2	2		
Noctule	-	-	-		
Leislers	1	1	1		
Brown Long-eared	-	2	-		
Total	**9**	**13**	**4**		

Roosting Activity – 2 Brown Long-eared bats confirmed in loft area

Surveyor S1 (A holden) positioned at the north west end of the building. Very infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden during the survey period. Individual bats were mostly flying to the west over the survey period. The last Common Pipistrelle pass was at 05.48 passing to the north of the building flying east. The only Soprano Pipistrelle pass was at 05.32 to the north west of the building. No Noctule were picked up but one Leislers was picked up at 05.12. No activity by either Plecotus or Myotid species was picked up in this survey position.

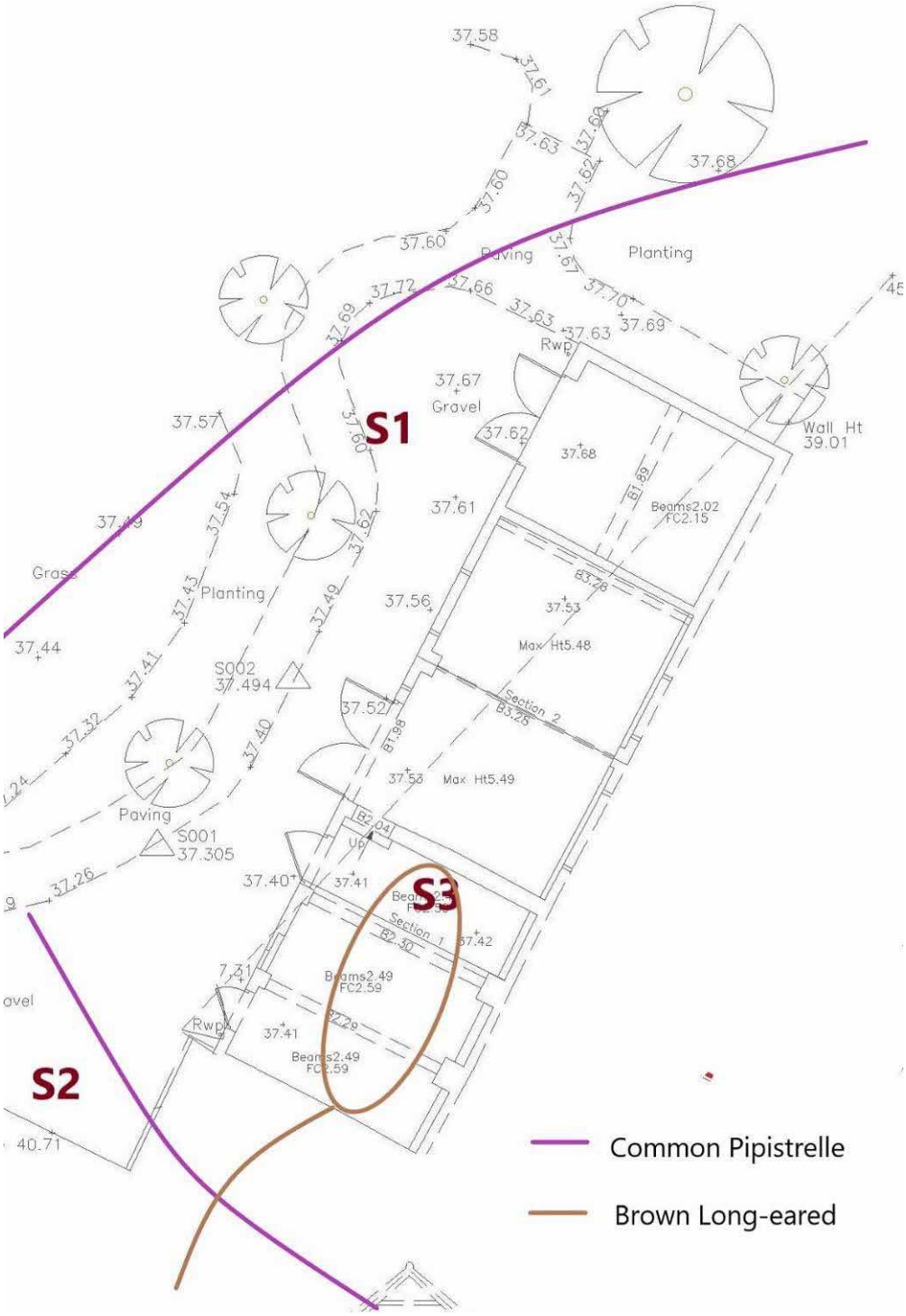
Surveyor S2 (L Macdonald) positioned at the southern end of the building to watch the south gable end roof edge and the open circular window and doors along the south western side of the building. Night vision equipment was at the beginning of the survey until it was light enough to see around 05.30. Infrequent passes by both Common and Soprano Pipistrelle around the outside of the building and within the nearby garden throughout the survey period. The last Common Pipistrelle pass was at 05.31 passing to the south of the building heading west. The last Soprano Pipistrelle pass was at 05.14 also passing to the south of the building heading west.

Two Brown Long-eared bats showed interest on the south gable end of the building doing repetitive approach flights. This started at 05.31 with a solitary bat but this was joined by a second at 05.34. Both flew together around the south end of the building until ***one entered under the edge tile near the apex of the south gable end at 05.37 with the second following shortly after at 05.38***. No activity by Myotid species was picked up in this survey position.

Surveyor S3 (C Barker) positioned inside the building within the loft area close to the open doorway into the larger storage room with a clear view of the length of the loft and using night vision equipment. Passes by Common Pipistrelle, Soprano Pipistrelle and Noctule bats were picked up from outside of the building but none of these bats entered the building or were seen flying within it.

No bats flew within any part of the building interior during the survey period. The two Brown Long—eared bats entering the south gable end roof edge did not emerge into the loft interior and therefore must have roosted on the top of the wall under the tile. This south facing gable end position is quite popular with many species of bat. It is clear that this is access from this into the interior of the building.

During this survey feeding debris o the form of moth wings was noted on the interior dividing wall close to the loft room entrance for the first time. It is possible this is activity by arachnids as the were no bat droppings mixed in and the wings were caught in webs. The use of this wall by roosting bats cannot be ruled out in the future as there are significant gaps along the top of the brickwork under the roof tiles.



Survey and Activity Plan 13/09/2023 Old Bakehouse, Flintham

24 July 2023

24 July 2023

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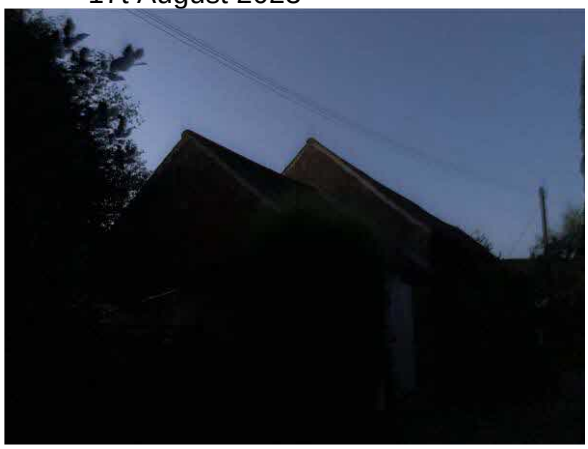

13 September 2023

Roost location access / egress

Feeding debris 13 September