HYBRID ECOLOGY LTD
joined up thinking

Bat Survey:

Potash Farm, Holbrook, Suffolk

On behalf of:

English Architectural

Prepared by:
Gemma Holmes BSc (Hons) ACIEEM

Report version:
Version 1:
October 2023

Summary

Hybrid Ecology Ltd. was instructed by English Architectural to carry out a bat survey at Potash Farm, Holbrook, Suffolk. The survey was required to support a planning application to demolish a barn and build a replacement property. This will form part of a wider planning application which includes conversion/works to several other farm buildings on the site. This survey follows a Preliminary Ecological Appraisal (PEA) carried out by Hybrid Ecology in May 2023. This report covers bat surveys on B1. All other buildings had negligible bat roost suitability and required no further survey.

In accordance with the Bat Conservation Trust's Good Practice Guidelines (BCT, 2016) the survey initially took the form of an updated Preliminary Roost Assessment (PRA) which was carried out as part of the PEA in May 2023. Following the PRA, three dusk surveys were carried out between June and August 2023.

Several bat roosts were identified. A total of two brown long-eared *Plecotus auritus*, one barbastelle *Barbastellus barbastellus* one common pipistrelle *Pipistrellus pipistrellus,* and one soprano pipistrelle *Pipistrellus pygmaeus* were identified in the barn across the three surveys.

The numbers of bats found roosting are indicative of non-breeding roosts and are therefore of low conservation significance. Barbastelle is considered to be a rare bat in Suffolk. Barbastelle, brown long-eared and soprano pipistrelle are Priority Species.

Barn demolition will result in the destruction of several bat roosts and is likely to trigger an offence (killing, injury, roost destruction, disturbance) under wildlife legislation in the absence of mitigation. Therefore, for work to proceed legally, a derogation licence/European Protected Species Mitigation Licence (EPSM) will be required from Natural England. This licence will enable work that would otherwise be unlawful. No work is permitted to start until the EPSM licence has been granted. The licence can be applied for once planning permission has been granted and is likely to form a condition of planning consent. Surveys must be undertaken in the most recent survey season to be accepted by Natural England, otherwise updated surveys will be required.

Ecological supervision will be required throughout the demolition/soft strip process, and compensatory roost provision will be needed. There is a range of available artificial roosts that could include raised ridge tiles, bat boxes integrated into walls and externally mounted boxes on buildings and trees.

In addition to bat boxes, the site will be enhanced for bats by strengthening the northern boundary hedgerow, and providing a new hedgerow along the western aspect, which will provide additional connectivity and supplement foraging habitat.

Provided the recommendations in this report are followed, there is no reason that this development would impact the Favourable Conservation Status of the species concerned. Furthermore, the development provides an opportunity to improve the environment for roosting bats by providing permanent roosting opportunities.

Table of Contents

1.0 Introduction

Personnel

1.1 This report has been prepared by Gemma Holmes; Consultant Ecologist at Hybrid Ecology Ltd. Gemma is a qualified ecologist with 16 years' experience in professional survey work and is an Associate member of the Chartered Institute of Ecology and Environmental Management. Gemma holds a level 2 licence to survey for bats in the UK (Licence number 2016-27305-CLS-CLS).

1.2 All surveys were undertaken by a team of competent, experienced and licenced surveyors in compliance with the BCT Guidelines (2016). Surveyor details are below:

- Gemma Holmes, lead surveyor and project manager. 16 years' experience and level 2 bat licence (reference 2016-27305-CLS-CLS).
- Anthony Owers, assistant surveyor, 16 years' experience and level 1 bat licence (reference 2021-55145-CLS-CLS).
- Oliver Coyne, assistant surveyor, 8 years' experience and level 1 bat licence (reference 2022-10349-CL17-BAT).
- John Coyne, assistant surveyor. 5 years experience.

Purpose

1.3 Bats (all species) are legally protected under the Conservation of Habitats and Species Regulations (2019, EU Exit) and Wildlife and Countryside Act (1981, as amended) from killing, injury, disturbance, roost destruction and roost obstruction. Building work can result in the destruction of/disturbance to bat roosts and trigger offences under the above legislation, in the absence of appropriate controls.

1.4 The purpose of the survey was to identify and characterise bat roosts so that mitigation/licensing can be prescribed and give the Local Planning Authority confidence that all legal biodiversity duties have been met by the applicant.

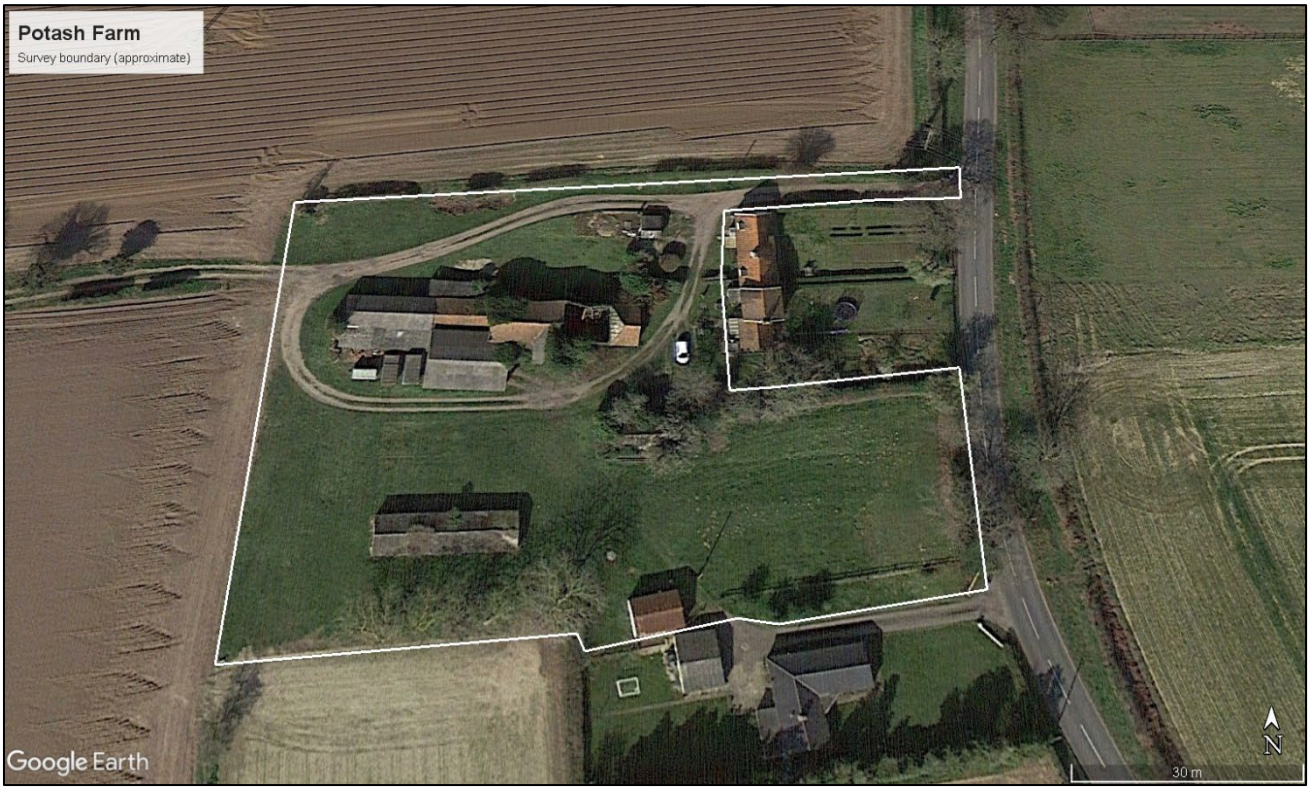
Limitations

1.5 Bats are transient and highly mobile, and there is a risk that bats could be missed during emergence surveys. Every effort has been made to locate bats including use of night-vision aids to pinpoint roosts accurately. As surveys were carried out fully in compliance with BCT Guidelines, there is no reason this data cannot be relied upon for planning purposes.

1.6 This report is valid for 12 months, after which bat use of the site may have changed to warrant a re-survey. Beyond 12 months, this report should not be used for planning submission purposes, nor should it be relied upon in any capacity.

Figure 1. Location plan

Figure 2. Survey boundary (approximate)



2.0 Legislation

Please refer to wildlife legislation here - Bats: protection and licences - GOV.UK (www.gov.uk) *The text below is a summary only and is not a legal interpretation.*

2.1 In the UK, all bat species and their roosts are legally protected, by both domestic and international legislation (Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and the Wildlife and Countryside Act, 1981 as amended). This means you may be committing a criminal offence if you:

- Deliberately take, injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Intentionally or recklessly obstruct access to a bat roost

2.2 A European Protected Species Mitigation Licence (EPSML) (or Bat Mitigation Class Licence for low impact projects) can be issued by Natural England for scientific and research purposes (including survey work). An EPS licence can also be issued by Natural England for the disturbance of an EPS in relation to a development. Licences can only be granted if there is no satisfactory alternative or if 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 and can only be obtained once planning permission has been granted.

3.0 Methodology

Desktop study

3.1 The immediate landscape was assessed for any significant bat-roosting and foraging habitats (woodland, water etc.) connecting to the site.

3.2 Multi-agency Geographical Information for the Countryside (MAGIC) was used to identify any European Protected Species licensing relevant to the site location.

Field survey: Preliminary Roost Assessment (buildings)

3.3 The site was initially visited on 5th April 2023 by Gemma Holmes, during which all buildings identified in Figure 2 were subject to internal/external inspections as part of the PEA.

3.4 A systematic internal and external search was carried out on all buildings on site, using Nature Hawke binoculars to identify potential or actual bat access points and roosting places. The search included the ground, particularly beneath potential access points, where accessible and loft space

3.5 The buildings were assigned a "roost suitability" based on features/evidence found, in accordance with Table 1.

Table 1. Bat roost potential of structures (BCT, 2016)

Suitability	Description of roosting habitats
Negligible	Negligible habitat features likely to be used by roosting bats
Low	A structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically, but do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats. A structure of sufficient size and age to contain PRFs but with none seen from the ground/using ladders or features seen with only very limited roosting potential.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (for roost type only).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

Bat presence/absence and roost characterisation surveys

3.6 Surveys were carried out by a team of four surveyors that were stationed in appropriate positions around and inside the building to cover all possible emergence locations – see Figure 3. All surveyors were equipped with Echo Meter Touch 2 Pro (professional grade) bat detectors, and Clu-lite torches with red filters. Gemma Holmes, Oliver Coyne and Anthony Owers also utilised thermal and infra-red cameras (night vision aids) which were running through the duration of surveys. All night-vision aids used have a wide field of view and appropriate frame rate for a bat survey application. All footage was reviewed following the survey utilising appropriate software.

3.7 Surveys were carried out by the team on 19th June, 31st July and 17th August 2023. Surveyors were mobile during surveys and entered buildings as appropriate during the survey period. This meant that bats emerging from external features and internal locations could be detected. At least one surveyor was always positioned inside the barn.

3.8 Surveys commenced 15-20 minutes prior to dusk and continued up to two hours after dusk. Each surveyor watched for any bats emerging/re-entering, foraging or commuting and made notes accordingly. Recordings were made and stored on the Echo Meter Touch 2 Pro/Ipad. Behaviour was recorded in 2-minute intervals, within which the number of "passes" were recorded. Levels of activity were broadly determined as follows:

- Low: 8 or less passes
- Moderate: 8 - 20 passes
- High: Over 20 passes

Figure 3. Surveyor positions

4.0 Results

Desktop study

4.1 Potash Farm is situated in a rural location approximately 1.2km north of Holbrook in Suffolk. The River Orwell is approximately 2.2km to the north-east. The site is completely surrounded by arable land. There are scattered trees along arable margins but habitat connectivity for foraging and commuting bats is otherwise poor.

Data records

4.2 As part of the PEA, local bat records were obtained from Suffolk Biological Information Service (SBIS). Several bat species were recorded within a 2km radius. They included Daubentons, Natterer's, Nathusius's pipistrelle, soprano pipistrelle, common pipistrelle, serotine, brown long-eared bat and barbastelle.

European Protected Species Mitigation Licences

4.3 The closest EPS licence has been granted on a site in Woolverstone, approximately 1.4km to the north-east. Details are provided in the screenshot (taken from the MAGIC website) below. This EPS licence relates to multiple bat species, including barbastelle and Natterer's bats. Given the close proximity, this could be relevant to this development, although habitat connectivity is relatively poor in this direction.

Site Check Results

Site Check Report Report generated on Thu Sep 14 2023
You selected the location: Centroid Grid Ref: TM17793870
The following features have been found in your search area:

Granted European Protected Species Applications (England)

Case reference of granted application	2018-33889-EPS-MIT
Species group to which licence relates	Bat
Species on the licence	BARB,BLE,C-PIP,NATT,S-PIP
Site county of licence	Suffolk
Licence Start Date	03/05/2018
Licence End Date	30/04/2028
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	N
Does licence allow damage of a resting place	Y
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Preliminary Roost Assessment

Photographs are provided in Figure 4.

4.4 The subject building comprises a traditional Essex Barn that is collapsing on the eastern aspect. Half of the roof is missing and the building is exposed to prevailing weather as a result. Walls are rendered and the remaining roof is covered with peg tiles. Dense ivy covers the northern aspect. There is a smaller log shed on the eastern aspect. There is a mezzanine level to the west of the barn which is accessible via a staircase.

4.5 Adjoining the main threshing barn are several single-storey rooms which have a mix of peg tiled and asbestos roofs and brick walls that are often clad with weatherboards. There are various lean-to structures to the north and south. Adjoining the southern aspect is a large modern agricultural barn with steel frame and asbestos roof.

4.6 The traditional sections of the barn contained various void and crevice roosting opportunities in and around the timber frame and under roof tiles. Bat droppings were identified in several locations in the open section to the east. The threshing barn and adjoining rooms are suitable for crevice and void-dwelling species, including barbastelle.

4.7 There was no evidence to suggest the barn supports a maternity roost (e.g. large accumulations of droppings) and the exposure to prevailing weather/fluctuating temperatures inside are unlikely to be conducive to hibernating bats over the winter months.

4.8 The barn is expected to support small numbers of bat species over the summer months. To identify the species and status of any roost, and to ensure the development delivers appropriate mitigation, the PEA recommended further surveys.

4.9 The BCT Guidelines (3rd Edition, 2016) suggest that for a building with high bat roost suitability (i.e. a structure with several potential roosting opportunities) three surveys (at dusk or dawn) should be undertaken between May and August inclusive.

4.10 Remaining buildings on the site were found to have negligible bat roost suitability – no evidence was found and there is no reason to conduct further surveys.

4.11 There are no trees on/bordering the site with potential roost features. The walnut trees to the south-west lack potential roost features but are suitable for installation of bat boxes – discussed in later sections of this report.

Figure 4. Photographs

a) Northern aspect.

b) Northern aspect showing missing roof.

c) B1, mezzanine level. Scattered bat droppings found on the floor.

d) Eastern aspect with collapsed roof.

e) B1, bat dropping found on stairs leading up to mezzanine.

f) Walnut trees – suitable for bat boxes.

5.0 Presence/absence and roost characterisation survey results

The weather conditions and survey data are provided in Table 2 and Table 3.

Table 2. Weather conditions

Date	Sunrise time	Start Time	End Time	Temperature (°C)		Wind (mph)	Rain	Cloud Cover %
				Max	Min			
19th June	21:20	21:00	22:50	20	20	5	None	80%
31st July	20:48	20:28	22:18	17	17	8	None	20%
19th August	20:17	20:00	21:47	18	15	4	None	10%

Table 3. Bat survey results

Date	Surveyor	Summary	Emergence/re-entry?
19th June	S1	First bat: 22:26 (common pipistrelle) Last bat: 22:49 (common pipistrelle) **Summary of activity**: No emergence. No activity until 22:26, then continuous foraging by single bat around northern aspect.	**No**
	S2	First bat: 21:38 (noctule) Last bat: 22:48 (common pipistrelle) **Summary of activity**: Low levels of activity. One common pipistrelle seen flying out of damaged roof to east at 21:49. One brown long-eared bat seen at the ridge in middle section of barn at 21:50. Barbastelle heard at 22:38 (suspected roosting in barn). Low levels of foraging by common pipistrelle around eastern aspect. Noctule heard frequently.	**One brown long-eared and one common pipistrelle.**
	S3	First bat: 21:40 (noctule) Last bat: 22:45 brown long eared) **Summary of activity**: No emergence. Low levels of foraging activity by noctule recorded throughout. Noctule seen flying over the site towards oak trees to the west.	**No**

Date	Surveyor	Summary	Emergence/re-entry?
	S4	First bat: 21:35 (noctule) Last bat: 22:44 (brown long eared) **Summary of activity**: Four species recorded foraging inside barn – brown long eared, barbastelle, common pipistrelle and soprano pipistrelle. Activity concentrated where roof is missing. Brown long eared bat seen foraging inside the eastern aspect of the barn between 21:53 and 21:58 (suspected emergence from room to west).	**One brown long-eared.**
31st July	S1	First bat: 21:06 (common pipistrelle) Last bat: 22:16 (common pipistrelle) **Summary of activity**: One brown long-eared bat seen emerging from eastern aspect of wood-shed to the east of the barn at 21:33. Suspected to have emerged from a room to the west. Continuous foraging by individual soprano pipistrelle and common pipistrelle around north-eastern aspect throughout survey.	**One brown long-eared.**
	S2	First bat: 21:31 (common pipistrelle) Last bat: 21:54 (soprano pipistrelle) **Summary of activity**: No emergence. Very low levels of occasional foraging activity by individual common pipistrelle and soprano pipistrelle around southern aspect of barn.	**No**
	S3	First bat: 21:11 (noctule) Last bat: 22:07 (common pipistrelle) **Summary of activity**: No emergence. Noctule seen foraging over barn between 21:11 and 21:27. Up to two bats. Individual common pipistrelle and soprano pipistrelle heard foraging around barn between 21:32 and 22:07.	**No**
	S4	First bat: 21:06 (soprano pipistrelle) Last bat: 21:42 (barbastelle) **Summary of activity**: One soprano pipistrelle emerged from eastern aspect at 21:06. One common pipistrelle emerged from eastern aspect at 21:07. One brown long-eared emerged from eastern aspect at 21:12. Barbastelle heard at 21:42.	**One soprano pipistrelle, one common pipistrelle, one brown long-eared.**

Date	Surveyor	Summary	Emergence/re-entry?
19th August	S1	First bat: 20:33 (soprano pipistrelle) Last bat: 21:07 (brown long-eared) **Summary of activity**: One soprano pipistrelle seen emerging from eastern aspect at 20:33. Low levels of foraging activity by individual soprano pipistrelle and brown long-eared bats around north-eastern aspect between 20:33 and 21:07.	**One soprano pipistrelle**
	S2	First bat: 20:35 (noctule) Last bat: 21:45 (soprano pipistrelle) **Summary of activity**: Brown long-eared bat seen in main barn at 20:57.	**No**
	S3	First bat: 20:32 (soprano pipistrelle) Last bat: 21:35 (myotis sp.) **Summary of activity**: No emergence. Barbastelle seen flying through gap in partition wall at 20:40. Brown long-eared seen flying through gap in wall at 20:47. Both roosting at western end.	**No**
	S4	First bat: 20:38 (noctule) Last bat: 20:46 (brown long-eared) **Summary of activity**: One barbastelle emerged from a crevice behind roof timber at 20:40. One brown long-eared bat emerged from the western aspect of the barn at 20:46.	**One barbastelle, one brown long-eared.**

6.0 Discussion

A summary of the roost identified their locations and characteristics are provided in Table 4. Roost locations are shown in Figure 5. Photographs of bat roosts are provided in Figure 6.

Table 4. Bat roost details

Roost	Number of bats	Roost location	Feature Type	Roost Type	Conservation significance
Brown long-eared	1	In western room, western end at ridge.	Void	Non-breeding, occasional summer roost.	Low
Brown long-eared	1	In middle room at ridge.	Void	Non-breeding, occasional summer roost.	Low
Common pipistrelle	1	Behind roof timber at mezzanine level.	Crevice	Non-breeding, occasional summer roost.	Low
Soprano pipistrelle	1	Behind roof timber at mezzanine level.	Crevice	Non-breeding, occasional summer roost.	Low
Barbastelle	1	In western room, between supporting rafter and asbestos roof.	Crevice	Non-breeding, occasional summer roost.	Low - moderate

6.1 All roosts comprise of low numbers of bats. Field evidence indicates they are non-breeding and therefore of low conservation significance in accordance with the Bat Mitigation Guidelines (2004). Common pipistrelle, soprano pipistrelle and brown long-eared bats are common and widespread, and routinely use buildings to roost in. Barbastelle is considered a rare bat in Suffolk. Soprano pipistrelle, brown long-eared and barbastelle are Priority Species (NERC Act, 2006), all planning authorities are required to conserve and protect such species in their decision-making.

Figure 5. Bat roost locations

Figure 6. Photographs of roosts

a) Barbastelle roost behind rafter

b) Brown long-eared roost

Roosting bats

6.2 As the proposal involves demolition, the roosts detailed in Table 4 will be impacted. The buildings collectively support day/non-breeding roosts of brown long-eared (maximum x2), barbastelle (x1) common pipistrelle (x1) and soprano pipistrelle (x1), in different locations. Some of the roosts are used occasionally, which is typical of pipistrelle sp. and barbastelle bats during summer months.

6.3 The repeat building inspections suggest that maternity roosts are not present in the surveyed buildings, with a general lack of accumulations of bat droppings, urine splashes and fur rubbing/staining on timbers.

6.4 The barn comprises several rooms with a partial loft (mezzanine), and all buildings have numerous small crevice type roosting features - beneath raised peg tiles and around roof timbers - which bats could use at any time during the active season (approximately mid-May – September). The potential for use by hibernating bats is low overall.

Mitigation

6.5 Works to convert the buildings into new accommodation will need to be carried out under licence to avoid an offence under the relevant legislation. As there are several species roosting including barbastelle, the project would need to be registered under a standard derogation licence from Natural England. Information on EPS licences can be found here: Bats: apply for a mitigation licence (A13) - GOV.UK (www.gov.uk)

6.6 Building work will be undertaken between September/October or March/April (assuming nesting birds are absent) when bats are active but least vulnerable.

6.7 Upon receipt of a mitigation licence, and to avoid direct harm to any bats which may be present in and around the roof spaces, all works to remove the roofing materials and external cladding must be carried out by hand and supervised by the licence holder or accredited agent. The underside of each tile must be checked for bats prior to discarding, and all timbers must be carefully taken away from the rafters.

6.8 It will be necessary to provide alternative roosting habitat for bats both during conversion works and post-construction. 2 x Greenwoods crevice bat boxes, one Greenwoods hollow bat box, and one Vincent Pro bat box (specifically for barbastelle) will be provided on a nearby tree, post or building to provide an alternative roosting location for bats whilst the works are carried out, and for any bats requiring relocation during the works (see Appendix 2 for details of all mitigation features described in this report). The walnut trees to the south of the site would be suitable for bat boxes.

6.9 A range of potential roosting crevices will be incorporated within the new buildings to replace the range of features currently used by the bats. The following features would provide suitable alternative roosting opportunities, and will require incorporation into/onto the converted dwellings:

- At least two raised ridge tiles
- At least two crevice style bat boxes for pipistrelle
- At least one Vincent Pro box for barbastelle

6.10 All such features must be located away from sources of artificial lighting, at around eave height or above, as close as possible to the existing roosts, and ideally as close as possible to vegetated boundary features (new or existing). Boxes should ideally face south, south-east or south-west.

Foraging bats

6.11 Small numbers of bats use the site for foraging purposes. To enhance the site for foraging bats, the northern hedgerow will be strengthened through infill planting and a new hedgerow will be planted along the western boundary.

6.12 To avoid disturbance to foraging bats, and as general best practice, all external lighting on the site should be minimal, directed to the ground and preferably on motion-activated timers. The advice provided in The Bat Conservation Trust's Artificial Lighting Guidelines (2018) should be followed. In summary:

- New bat roost features on buildings and trees will not be illuminated.
- LED luminaires will be used where possible (No UV elements: Metal halide, fluorescent sources should not be used).
- A warm white spectrum (ideally <2700Kelvin) will be used to reduce the blue light component.
- Peak wavelengths higher than 550nm should be used to avoid the component of light most disturbing to bats (Stone, 2012).
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered (where this is feasible and meets safety standards).
- Column heights will be as low as functionally feasible to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used (See ILP 2011).
- Luminaires will be mounted on the horizontal to avoid upward tilt.
- Any external security lighting will be set on motion-sensors - sensitive to large moving objects only, and short (<1 minute) timers.
- All external lighting will be kept to the minimal feasible level and be directed downward: Baffles, hoods or louvres can be used to reduce light spill and directed only to where needed.

6.13 If the recommendations of this report are followed, the proposals are unlikely to result in any adverse impact upon foraging or commuting bats.

References

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

Natural Environment and Rural Communities Act (NERC Act), 2006, as amended. Available at: http://www.legislation.gov.uk/ukpga/2006/16/contents

Appendix 1. Existing site plan

NOTE: All drawings to be read in conjunction with consultant structural engineers, mechanical and electrical consultants, acoustic engineers, energy consultants, specification, and detailed drawings. Drawing to be issued for the purposes shown within the drawing status box.

NOTE: Drawing to not be scale and written dimensions to be used only. Refer to drawing scale, paper size and scale bar.

Potash Farm

Open cart lodge (34sqm Footprint)

Single storey agricultural building (85sqm Footprint)

Single storey agricultural building (57sqm Footprint)

Historic timber framed threshing barn (159sqm Footprint)

Later pitched roof addition (33sqm Footprint)

Single storey agricultural lean-to (43sqm Footprint)

Lean-to

Agricultural Building Steel frame and blockwork building (118sqm Footprint)

1 Cottage

2 Cottage

Agricultural building (former WW2 building) (60sqm Footprint)

Outline of replacement dwelling garage approved B/08/01820

Agricultural building (former WW2 building) (124sqm Footprint)

Outline of replacement dwelling approved B/08/01820

Garage

Outbuilding

Potash Farm Bungalow

Location of previously approved new access B/08/01820

B1080

B1080 60mph Speed Limit

Latimer Cottage

Potash Farm

Potash Farm Bungalow

LOCATION PLAN

0 25 50 1:1250

0 2 4 6 8 10 1:200

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Client : English Architectural

Scale : 1:200 @ A1

Project : Potash Farm, Holbrook, Ipswich Suffolk, IP9 2PJ

Status : Planning

Rev : -

Drawing : Existing Site Plan

Dwg No : 2023-729-001

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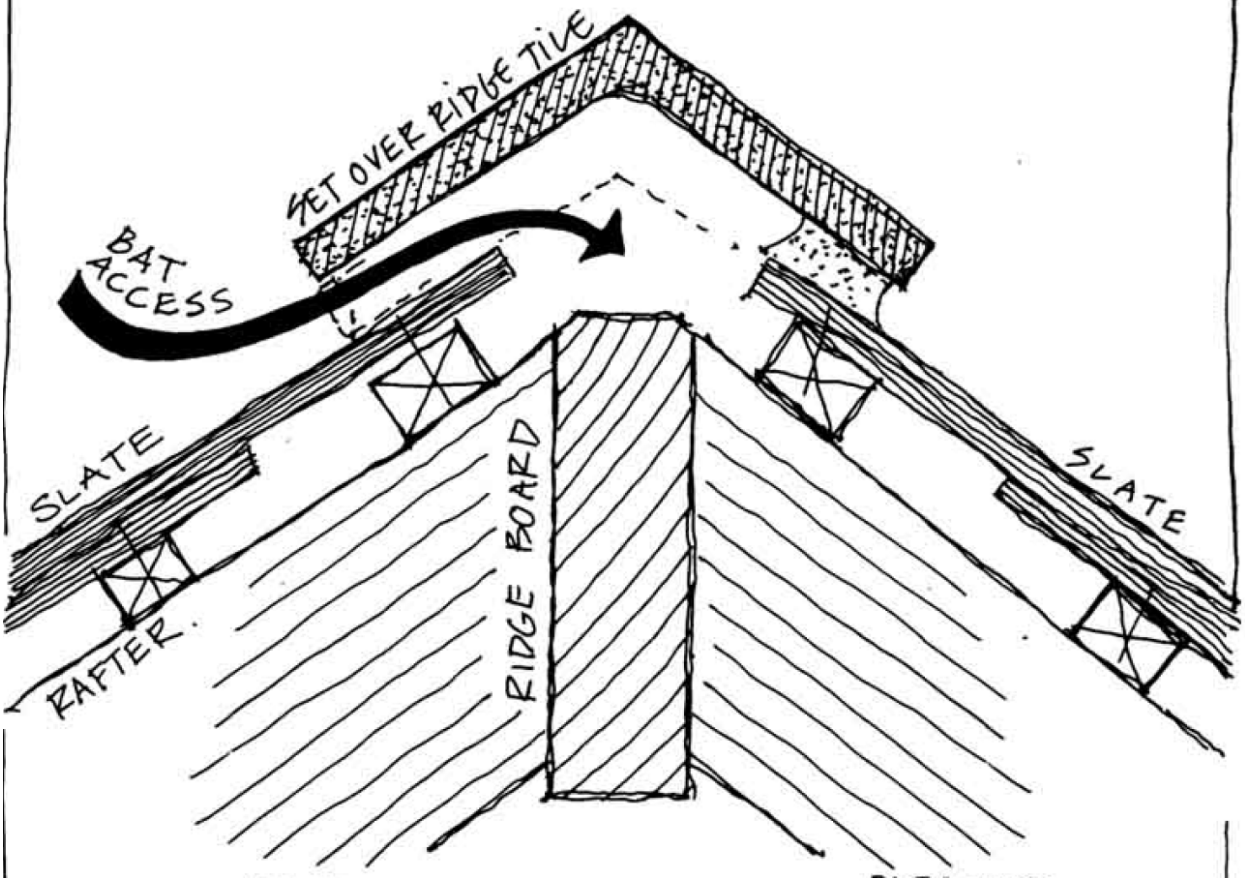
A**ppendix 2.** Artificial bat roosts

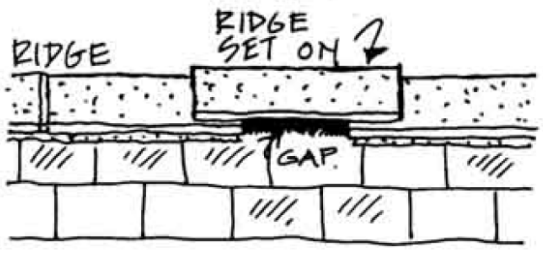
a) Gap beneath ridge tile of slate roof.

b) Gap beneath ridge tile of reclaimed clay pantile roof.

c) Made by Tudor Roof Tiles (www.tudorrooftiles.co.uk) this 'top tunnel' tile provides a tunnel to an entrance hole in the undertiles, allowing bats to crawl into a roost or along the ridge beam where a cavity has been created.

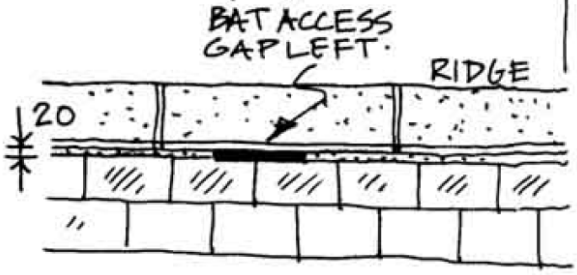
RIDGE TILE ACCESS DETAIL 4A





~ OPTION A ~

ROOF RIDGE SET ON TOP OF GENERAL RIDGE TILES TO FORM BAT ACCESS GAP.



~ OPTION B ~

MAINTAIN 20mm MORTAR GAP. & LEAVE A SECTION OUT.

ENGLISH NATURE

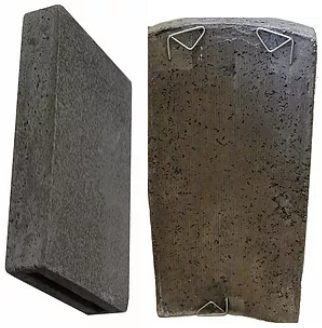
d) Habibat 003 Built in Bat Box faced with red brick. Dimensions 44 x 21.5 x 10.2 cm plus facing bricks. Self cleaning.

e) Schwegler 1FR Bat Tube, to be integrated into building wall, and either bricked in or rendered. Self cleaning. Dimensions: 47.5 x 20 x 12cm.

f) Beaumaris woodstone bat box.

g) Vincent Pro bat box for barbastelle (available: https://www.wildcare.co.uk/vincent-pro-bat-box-10651.html).

SINGLE CREVICE BAT BOX



£36

Individually Handmade - Specifications are in CM and approximate.
External: 43 high x 21.5 wide x 6.8 deep.
Internal: 41 x 16.5 x 1.8 crevices @ 1.
Made with small groups of crevice dwelling bat species in mind, such as pipistrelles. Approx. 4.75kg

TWO CREVICE BAT BOX

£48

Individually Handmade - Specifications are in CM and approximate.
External: 43 high x 21.5 wide x 6.8 deep.
Internal: 41 x 16.5 x 1.8 crevices @ 2.
Made with small groups of crevice dwelling bat species in mind, such as pipistrelles. Approx. 6.75kg

h) Bat boxes for trees [Home | Greenwood's Ecohabitats (greenwoodsecohabitats.co.uk)]