

Bat, Breeding Bird and Barn Owl Survey

Centre Farm, Battersby

June 2019



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Status	Date	Checked by:
First draft	09-07-2019	Giles Manners CEnv MCIEEM
Revisions		

Sites:

Centre Farm,
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Dates:

Scoping survey: 26th September 2018
Visual inspection of farmhouse roof void: 2nd October 2018.
Emergence survey 1: 5th June 2019
Emergence survey 2: 10th June 2019

Client's agent:

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Planning Authority:

North York Moors National Park Authority

Our ref:

2018-593

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1 Summary

A bat, breeding bird and barn owl scoping survey has been undertaken on a range of traditional and modern farm buildings at Centre Farm in Battersby. A building inspection in September 2018 found moderate risk bat roost habitat within the traditional buildings on site, in the form of lifted roof tiles, masonry crevices, and eaves access to lined roofs. Emergence surveys were therefore carried out in June 2019. During the emergence surveys, dispersed and mostly solitary day roosts of common pipistrelle bats were identified within buildings (1, 2 and 7). There are no maternity roosts on site, the maximum count from one location was two individuals and overall bat activity across the site during the emergence surveys was low.

As proposed work will result in the loss and modification of bat roosts and likely disturbance to bats, a European Protected Species Licence (EPSL) will be obtained before works begin to Building 1, 2 or 7. A full method statement will be required for the EPSL, which will be applied for after planning permission has been granted. A further emergence survey of the site will be required to inform the licence application.

The impact of the renovation on the species will be minimal at all levels (site, local, and regional) as roosts of this type have low conservation significance due to the low number and common species of bat present. An outline method statement is provided within this report. Loss of crevice roosting habitat will be mitigated for through the installation of three long-lasting, professional quality bat boxes on the renovated buildings.

With the exception of 1,2 and 7, buildings on site provide negligible or very low risk habitat. Emergence surveys of all areas of low risk potential bat roost habitat revealed no evidence of bat use. The presence of bat roosts within these buildings can therefore be ruled out without any requirement for further survey work.

Evidence of past nesting by birds, including barn swallows, was found inside several buildings. We recommend that a check should be made immediately prior to work for the presence of any nesting birds in areas to be worked on. If any active nests are found, then work to those areas should be delayed until after the bird breeding season or once any chicks have fledged. We also recommend that an open sided structure, such as timber framed lean-to store be created or retained within the development to provide replacement nesting habitat for swallows.

Signs of occasional barn owl roosting were found within Building 2 and 8. A barn owl box and suitable nesting platform are present within Building 2 but no evidence of past nesting by owls was found. A full inspection of all potential barn owl nesting habitat will be made prior to works, to ensure that the level of usage has not changed. Should any signs of nesting be found, works will avoid the barn owl breeding season (between 1st March and 31st August inclusive). Section 9 sets out a method statement to minimise disturbance to barn owl during works. Replacement provision for barn owls will be included as part of the development.

2 Introduction

MAB Environment and Ecology Ltd was commissioned by Carter Jonas LLP to undertake a bat, breeding bird and barn owl scoping survey at Centre Farm, Battersby, to accompany a planning application for renovation and conversion of the buildings.

The site is located in the village of Battersby, North York Moors (Central grid reference: NZ596076). The location of the site is shown on Figure 1, below.

The report was written by Emma Telfer Grad CIEEM of MAB Environment and Ecology Ltd.

The report's primary objective is to provide an impact assessment for the development on bats, define any necessary mitigation proposals, and to assess the requirement for a Protected Species Licence. A secondary objective is to assess potential impact on breeding birds.

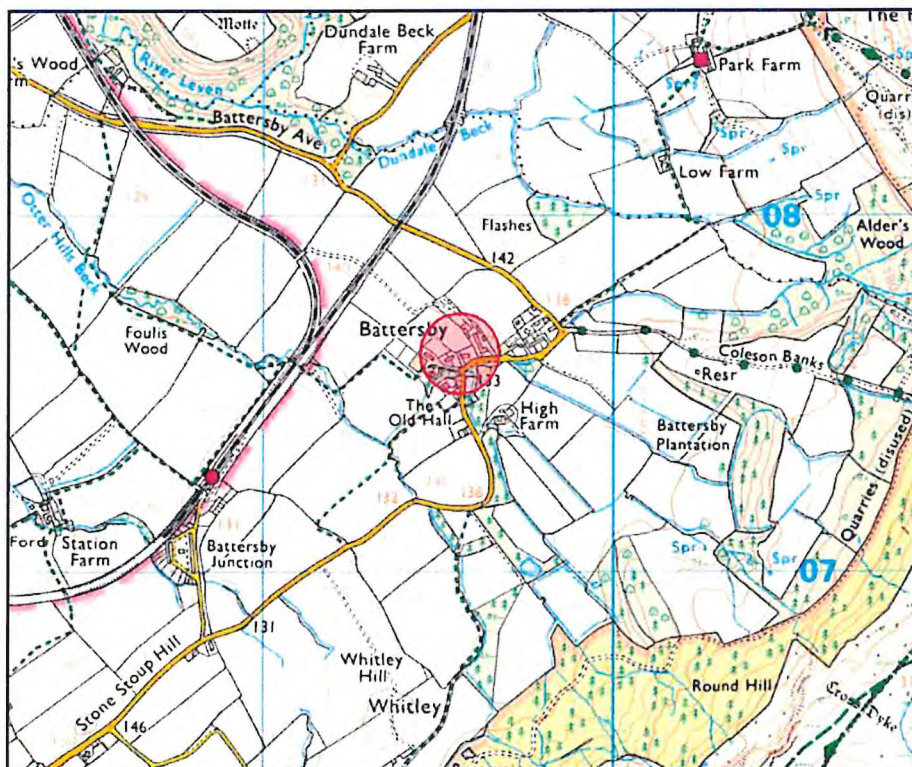


Figure 1: Site location.

3 Methodology

3.1 Desktop study

3.1.1 Bat roost records for a 2km radius around the site were commissioned from the North Yorkshire Bat Group (NYBG).

3.1.2 Aerial imagery from Google Earth and 'MAGIC' government website were used to assess the location of the site and the surrounding habitat for value to bats. This includes proximity of the site to good bat foraging habitat such as woodland and water bodies and if the site is linked to such habitats by linear features like hedgerows, woodland edges or rivers which bats use to commute around the environment.

3.2 Field survey

3.2.1 The site was surveyed by Emma Telfer (ET) Grad CIEEM who has worked as an ecologist for MAB since 2014. She holds a Class Survey Licence WML-A34 (Bat Survey Level 2) registration number 2016-20709-CLS-CLS. Emma has received BCT training in surveying for bats and bat ecology and is also a trainee volunteer bat roost visitor. She also holds a Class Survey Licence for great crested newts WML CL08 (Level 1) registration number 2016-19422-CLS-CLS. The surveys were carried out in accordance with the Bat Conservation Trust, Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).

3.2.2 The interior and exterior of the buildings were inspected during the day using halogen torches (500,000 candle power), binoculars, ladders, and a flexible endoscope (a Sea Snake LCD inspection scope). All normal signs of bat use were looked for, including bats, bat droppings, feeding waste, entry and exit holes, grease marks, dead bats, and the sounds / smells of bat roosts.

3.2.3 The buildings were assessed for their degree of potential to support roosting bats. This includes assessing the building design, materials and condition.

Colour code	Bat roost potential.	Roosting habitats	Commuting and foraging habitats
	Confirmed	Signs of roosting bats present (e.g. entry / exit points, accumulated bat droppings, visible bats).	
Red	High risk	A structure or tree 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.	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>
Amber	Moderate risk	A structure or tree 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 (with respect to roost type only-the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as a line of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
Yellow	Low risk	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites 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 (i.e. Unlikely to be suitable for maternity or hibernation)	<p>Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but isolated, i.e. Not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable but isolated habitat that could only be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Green	Very low risk	All potential bat roost habitat <i>comprehensively</i> inspected and found to be clear of past or present bat usage.	
Grey	Negligible risk	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

Table 1: Guidelines for assessing the suitability of proposed development sites for bats. Adapted from BCT Bat surveys for Professional Ecologists, Good Practice Guidelines 2016.

3.2.4 All signs of breeding bird activity and barn owl (*Tyto alba*) activity were looked for. Signs looked for included white droppings, often vertical down walls or beams; active nests and nesting materials; (birds flying into and out of barns: generally, summer only); bird feathers, particularly swift (*Apus apus*), swallow (*Hirundo rustica*) and house martin (*Delichon urbica*), bird corpses, feeding waste (including pellets), and the sound/smell of birds.

4 Constraints

The surveys were constrained by season: maternity roosts will have disbanded by the time of the September survey and bat activity survey methodology is not available.

5 Site Description

The site comprises a farmhouse and a range of traditional and modern agricultural buildings. All buildings are described more fully within section 6.2.



Figure 2: Buildings included within the scope of the survey.

6 Results

6.1 Desktop study

The site is located in an area of moderate quality bat foraging habitat. The location is rural, surrounded primarily permanent pasture, arable farmland and small patches of woodland. Linear woodland adjoining the south of the site connects it to Battersby Plantation, a large area of mixed conifer and deciduous woodland. The wider landscape is exposed moorland and upland heathland, at a high altitude, which provides few roosting and foraging opportunities for bats.

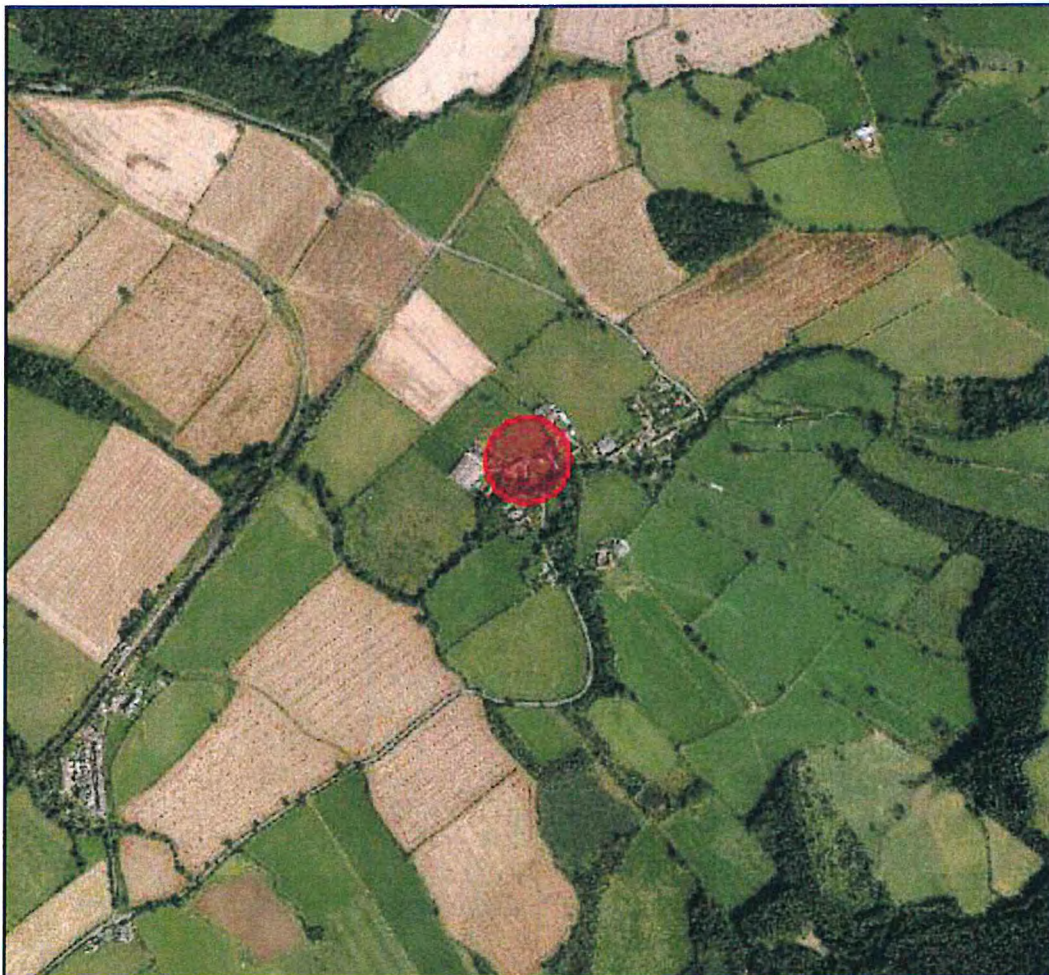


Figure 3 - Aerial view of surrounding landscape

6.1.2 Bat Group records

The North Yorkshire Bat Group (NYBG) record search revealed no existing records relating to the site, and the closest roost record is over 1.2km away. There is a record of a large common pipistrelle maternity roost (100 bats), approximately 1.8km south-west of the site. There are very few records of bat activity (day roost/in flight) within a 2km radius of the site. Full records are provided below.

Species	Site	Gridref	Quantity	Date	Comment
Common Pipistrelle	Brackenburn, Ingleby Greenhow, Middlesbrough	NZ581065	100	11-Jul-01	Roost
Common Pipistrelle	Borough Green Farm, Low Easby	NZ587093	1	18-Jun-09	In flight
Common Pipistrelle	NZ587093	NZ587093	1	02-Jun-09	Dead bat
Brown Long-eared Bat	Bank Foot Farm, Bank Foot	NZ5806		03-Jul-86	
Pipistrelle species	Barn at Whitley Hill Farm, Ingleby Greenhow	NZ593064		01-May-13	Roost

6.2 Visual inspection

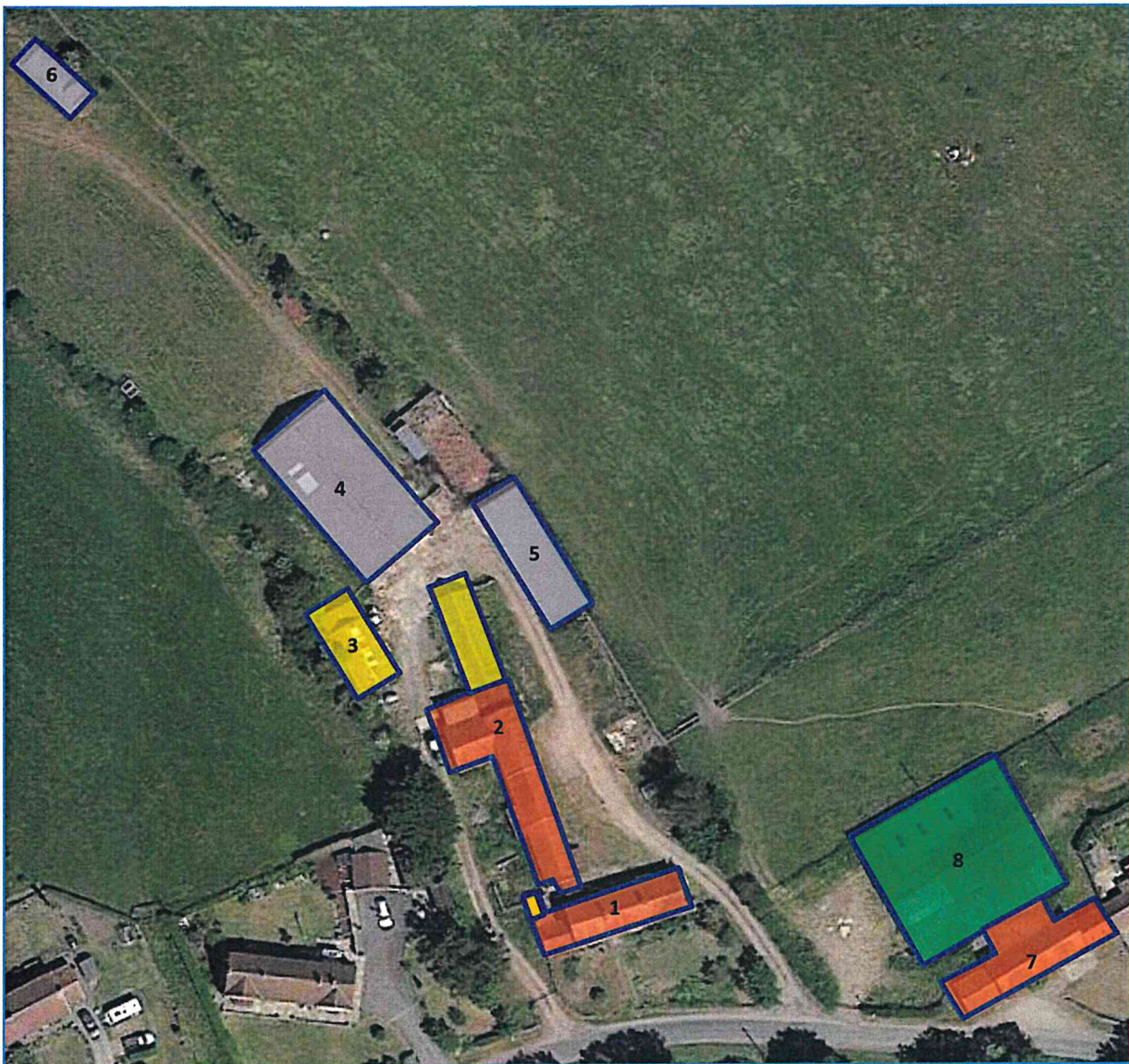


Figure 4: Scoping survey results and building reference numbers (see also detailed Figure 5: Building 1 and 2 and Figure 6: Building 7 and 8).

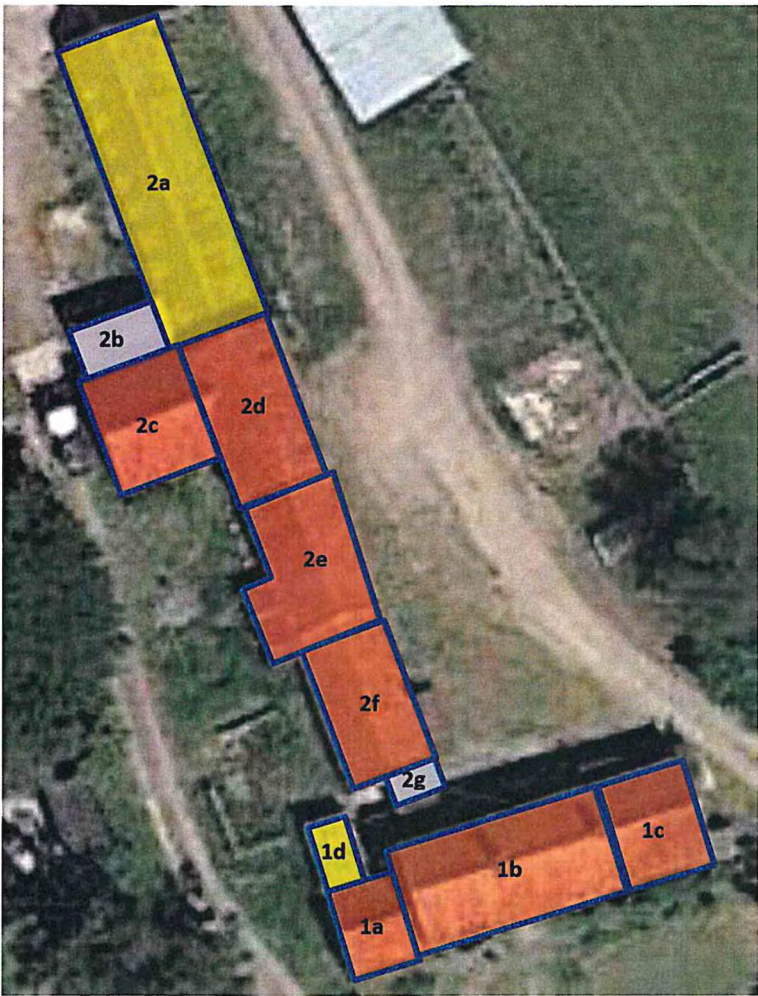






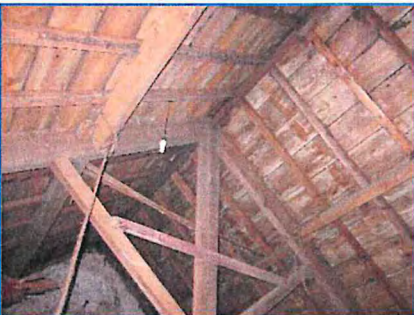




Figure 5: Building 1 and 2 detailed scoping survey results and building reference numbers.







Figure 6: Building 7 and 8 detailed scoping survey results and building reference numbers.



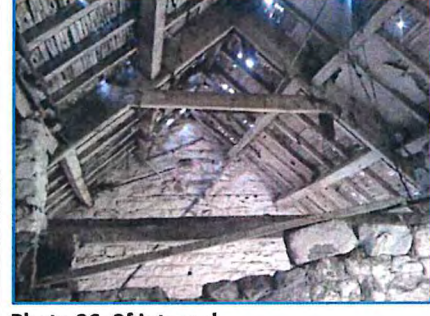
Building ref	Photographs		Description
1	 <p>Photo 1: Building 1 from north</p>		See below for details.
1a Moderate potential risk of bat roosts.	 <p>Photo 2: Exterior - 1a</p>	 <p>Photo 3: Internal roof – 1a</p>	<p>One storey stone barn attached to far roof under a stone ridge. Some gaps between tiles and visible crevices below/between courses of external and internal stonework.</p> <p>Internal void is open to roof. A bitumen membrane beneath roof tiles. The floor is damp timber. Roof is supported by traditional timber beams. Some beam crevices were visible. Internal roof beams are densely cobwebbed.</p>
1b Moderate potential risk of bat roosts.	 <p>Photo 4: Building 1b – south</p>	 <p>Photo 6: Building 1b north.</p>	<p>Two storey stone farmhouse. External walls are made of stone. Internal void inspected via a hatch. Fil has been laid across the floor joists. Timber is undisturbed. A bitumastic felt liner is beneath roof tiles. The roof is supported by traditional timber beams. Only minor beam crevices were visible. Internal roof beams are densely cobwebbed.</p>

	 <p>Photo 5: Building 1b – roof void.</p>	 <p>Photo 7: Building 1b – internal roof.</p>	
<p>1c Moderate potential risk of bat roosts.</p>	 <p>Photo 8: Building 1c – south</p>  <p>Photo 9: Interior of roof -1c</p>	 <p>Photo 10: Interior ground floor – 1c</p>  <p>Photo 11: Internal crevices in wall - 1c</p>	<p>Two storey stone barn attached to far</p> <p>External condition as 1a. Ground floor west elevation.</p> <p>Upper floor is open to the roof. The rc timber sarking beneath tiles. The spac undisturbed. The roof is supported by beams. Crevices visible at wall tops of droppings beneath. Internal ridge and cobwebbed.</p>






<p>1d Low potential risk of bat roosts.</p>			<p>One storey outbuilding with flat roof. Stonework and internal access available through doors.</p> <p>Roof is boarded internally - space can be accessed from interior of building.</p>
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Building ref	Photographs		Description
<p>2</p>	 <p>Photo 13: Building 2 from south west</p>	 <p>Photo 14: Building 2 from south east</p>	<p>See below for details.</p>
<p>2a Low potential risk of bat roosts.</p>	 <p>Photo 15: Building 2a from north</p>	 <p>Photo 16: Inside 2a</p>	<p>One-storey stone building. Roof is covered with corrugated fibre cement sheet, which is in poor condition. Internal access is available for bats at the eaves and open doorways. Cracks in stonework.</p> <p>Internally the building is open to the rafters supported by traditional beams. Timber present but is generally in poor condition. Cobwebs are present on internal ridge and roof are also in poor condition. Some sections of lath are present beneath the roof sheets. The space is undisturbed.</p>

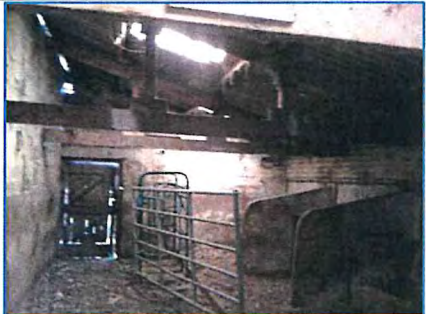


<p>2b Negligible potential risk of bat roosts.</p>	 <p>Photo 17: Inside 2b</p>		<p>One storey lean-to with corrugated fit which are tight fitting. Walls are rendered. Minor crevices were found which are potential roosting sites. The roof is unlined, and the interior is undisturbed.</p>
<p>2c Moderate potential risk of bat roosts.</p>	 <p>Photo 18: 2c External</p>	 <p>Photo 19: 2c Internal roof and barn owl box.</p>  <p>Photo 20: 2c Internal platform.</p>	<p>Brick and pantile barn. Part of the north wall has been replaced with fibre cement sheeting. Some roof tiles are missing and crevices in external masonry are potential roosting sites.</p> <p>A bitumen felt is fitted beneath the roof tiles to reach to the ridge. Beam crevices present as potential roosting sites.</p> <p>The floor is covered in deep straw.</p>

<p>2d Moderate potential risk of bat roosts.</p>	 <p>Photo 21: 2d External.</p>	 <p>Photo 22: 2d Internal.</p>	<p>Stone and pantile barn, 2-storey – open to 2c at ground level.</p> <p>Some gaps below lifted roof tiles and below/between copings. Crevices in the masonry. Internal access available via gaps around window and door frames</p> <p>Roof is underlined with bitumen felt or Roof is supported by traditional timber crevices present but cobwebby.</p>
<p>2e Moderate potential risk of bat roosts.</p>	 <p>Photo 23: 2e External.</p>	 <p>Photo 24: 2e Internal.</p>	<p>One-storey, internal and external as 2c beneath roof tiles.</p>
<p>2f Moderate potential risk of bat roosts.</p>	 <p>Photo 25: 2f External.</p>	 <p>Photo 26: 2f Internal.</p>	<p>One-storey, external as 2c and 2d.</p> <p>Roof is underlined with lath, which is in and gappy. Roof is supported by traditional timber Beam crevices present but cobwebby.</p>

<p>2g Negligible potential risk of bat roosts.</p>			<p>Small lean-to with mono-pitch roof covered in corrugated tin sheets. Roof is tightly sealed, providing no points of access for bats.</p> <p>Roof is boarded internally, and walls are plastered/rendered with no potential for bat roosting.</p>
<p>3 Low potential risk of bat roosts.</p>			<p>Large timber barn with corrugated tin roof. Interior walls are made of Yorkshire boards and some tin sheets, which are open and draughty. The floor is damp.</p>
<p>4 Negligible potential risk of bat roosts</p>			<p>Large open barn. Upper sections of walls are made of stone and lower sections are concrete. The roof is covered with corrugated cement sheets, supported by timber beams. There is a large open gap at the top of the roof.</p>

<p>5 Negligible potential risk of bat roosts</p>	 <p>Photo 32: Building 5.</p>		<p>Large open pole barn. The mono pitch corrugated tin sheets, supported by timber crevices suitable for bats were identified.</p>
<p>6 Negligible potential risk of bat roosts</p>	 <p>Photo 33: Building 6.</p>	 <p>Photo 34: Interior.</p>	<p>Nissen hut. Steel sheet roof and low brick walls. Open on south elevation. No suitable features for bats.</p>
<p>7a Moderate potential risk of bat roosts</p>	 <p>Photo 35: Building 7a.</p>	 <p>Photo 36 internal roof.</p>	<p>Pantile roof under a stone ridge. Part of the roof is accessible via the eaves and also large vents to the ridge masonry, around coping stones, door etc.</p> <p>Open to the roof internally. A bitumen membrane beneath the roof, this is in very poor condition and does not reach to the ridge. The ridge beam is exposed. Internal roof and beams are damp.</p>

<p>7b Moderate potential risk of bat roosts</p>			<p>Pantile roof under a stone ridge. Tile missing at the ridge. Crevices in masonry stones, door frames and hatches.</p> <p>Has a large open doorway to the south also available via open windows/door</p> <p>Has a bitumastic liner beneath the roof, open and exposed. Beam crevices visible and undisturbed.</p>
			
<p>7c Moderate potential risk of bat roosts</p>			<p>Pantile roof under a stone ridge. One condition as 7b.</p> <p>Has a bitumastic liner beneath the roof, cobwebby. Timber crevices present. It is dry and undisturbed.</p>

<p>7d Low potential risk of bat roosts</p>	 <p>Photo 43: Building 7d Interior.</p>		<p>Mono pitch lean to on north of 7b. Fib roof is supported by rough sawn timber only and the space is dry and bright.</p>
<p>8 Very low potential risk of bat roosts</p>	 <p>Photo 44: Building 8.</p>	 <p>Photo 45: Interior.</p>	<p>Large open barn. Upper sections are Y and lower sections of wall are stone. It is made from timber sleepers. The roof is made of corrugated fibre cement sheets, supported by concrete and steel beams.</p> <p>Some minor timber crevices visible. They are not disturbed.</p>

6.3 Emergence surveys

Emergence survey 1 (Buildings 1, 2 and 3)











Date: 05/06/2019**Start time:** 21:10**End time:** 23:00**Sunset:** 21:33**Conditions:** 14°C start, 7°C end. Dry. 90% cloud cover. No breeze.**Surveyors:** Emma Telfer (ET); Richard Askew (RA); Oli Howford (OH); Kiera Manners (KM)**Equipment used:** 2x Pettersson D240x time expansion ultrasound detector with Edirol R09 recorder; 2x BatBox Duet Heterodyne detectors set to 50KHz.**Results summary:**

Two common pipistrelle bats were recorded emerging from Building 1, one was seen emerging from the south facing eaves, another was recorded leaving from an open door on the east side the building having emerged internally. One common pipistrelle emerged from the northern doorway of Building 2.

Roosts identified:

Building Ref.	Species	Count	Roost type	Emergence location/access point
1	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	2	Day roost	Open doorway on east and south eaves.
2	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Day roost	Doorway on north

Observations:

Surveyor	Time	Species	Number	Activity	Annotation
OH	21:32 22:00	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	4	Foraging around farm buildings	
RA	21:43 21:49	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Emerged from side door	1 
ET	21:45	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Heard not seen	
RA	21:50	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Emerged from south facing eaves	2 
KM	21:50	Common pipistrelle, <i>Pipistrellus pipistrellus</i>		Emerged from north doorway.	3 
OH	21:55	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Commuting	
ET	22:12 22:40	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Foraging	
RA	22:15 22:30	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Foraging around garden at front of house	
OH	22:25	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Commuting	
OH	22:34 22:36	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Foraging	

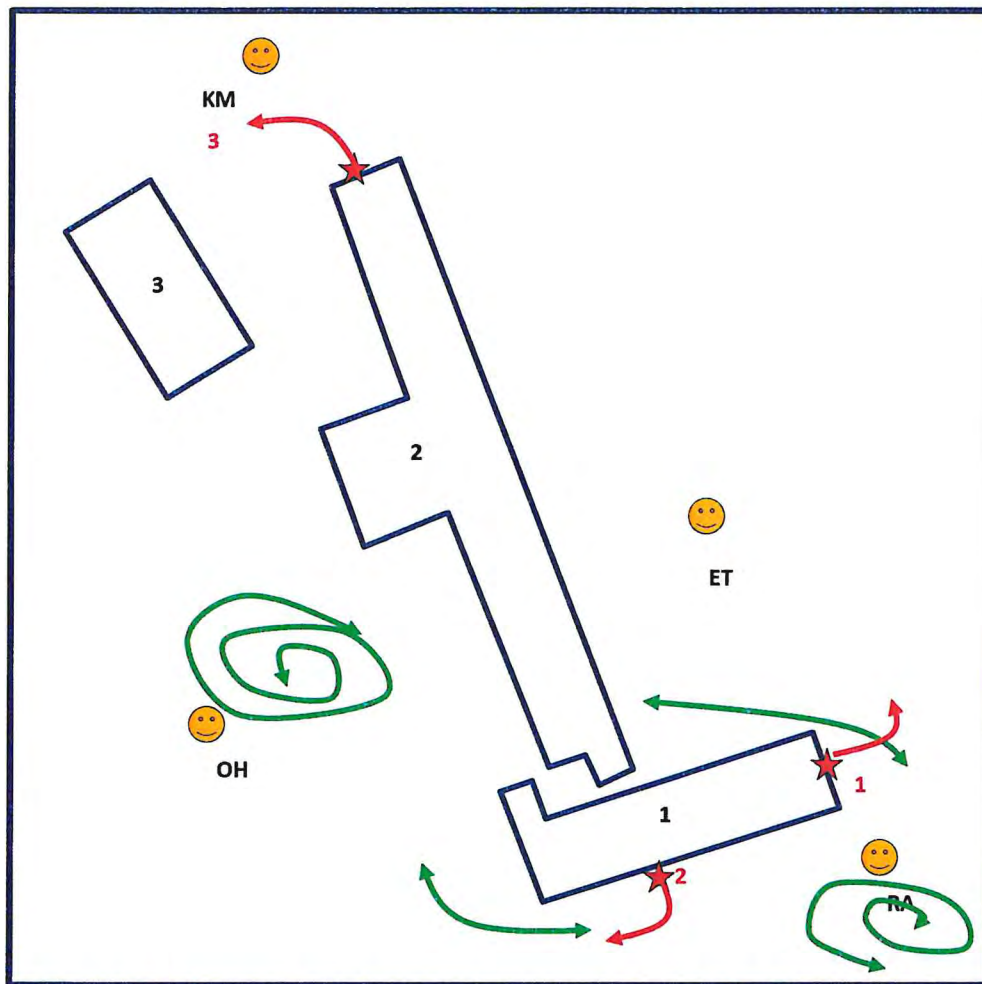
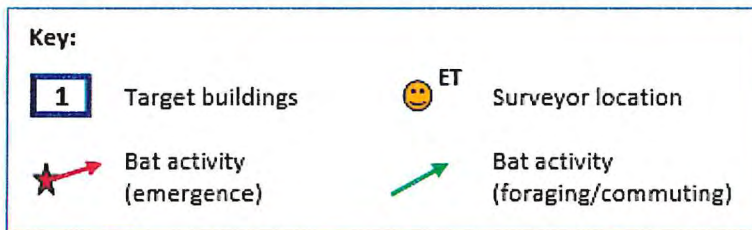


Figure 7 – Surveyor locations and bat activity recorded during survey 1 (10/06/2019).



Emergence locations:



Photo 46: Emergence location 2



Photo 47: Emergence location 3

Sound recordings:

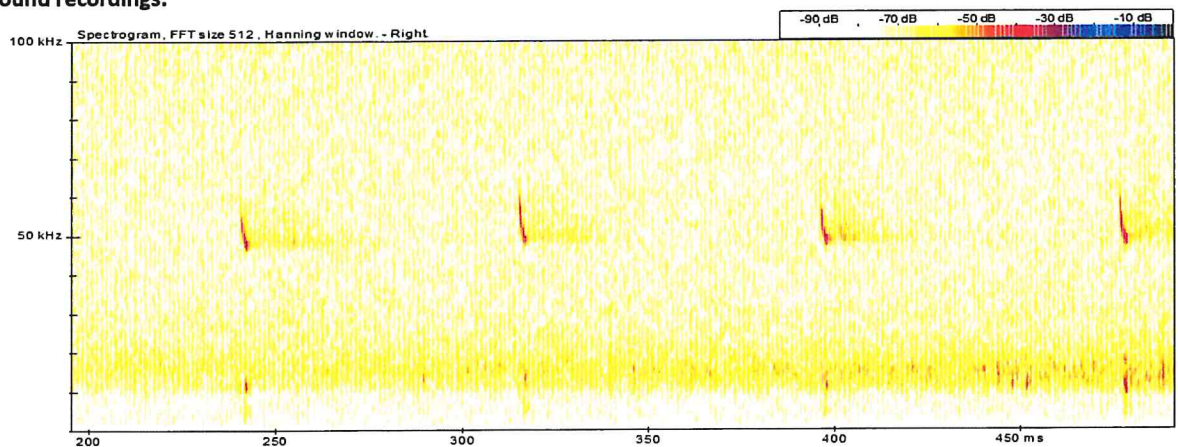


Figure 8: common pipistrelle emergence from location 2.

Emergence survey 2 (Building 7 and 8)

Date: 10/06/2019

Start time: 21:15

End time: 23:15

Sunset: 21:37

Table 2 - Environmental conditions:

	Temp (°C)	Wind (mph/BF)	Humidity (%rh)	rain	Cloud cover (%)
Start	12.5	0.9	80.8	Dry	70
Finish	11.4	1.3	86	Dry	70
Max	12.6	16.3	87.3		
Min	11.3	0	80.9		
Ave	11.4	0	85.5		

Surveyors: Matt Cooke (MC); Emma Telfer (ET); Sam Newton (SN); Oli Howford (OH)









Equipment used: 2x Pettersson D240x time expansion ultrasound detector with Edirol R09 recorder; 1x Pettersson D230 and 1x BatBox Duet Heterodyne detectors set to 50KHz.

Results summary: Five common pipistrelle bats were recorded emerging from the south end of building 7b from four different locations. Across the site common pipistrelle bats were recorded foraging in and around the buildings with several commuting across the site. Additionally, a barn owl flew from inside Barn 8 out of the south west side during the survey.

Roosts identified:

Building Ref.	Species	Count	Roost type	Emergence point	location/access
7b	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	5	Day roost	Open windows, gaps at eaves, under tiles	

Observations:

Surveyor	Time	Species	Number	Activity	Annotation
MC	21:35	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	2	Emerged from open window on building 7b	1 
ET/MC	21:50	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Emerged from gable at south end of building 7b	2 
MC	21:50	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	From masonry crevice in building 7b	3 
OH	21:55	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Commuting over barn	
ET	21:59	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Emerged from roof, then foraging in fold yard	4 
MC	22:02 22:05	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Foraging	
OH	22:07	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Commuting over barn	
SN	22:01 – 22:47	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	1	Foraging in and outside of building 8	

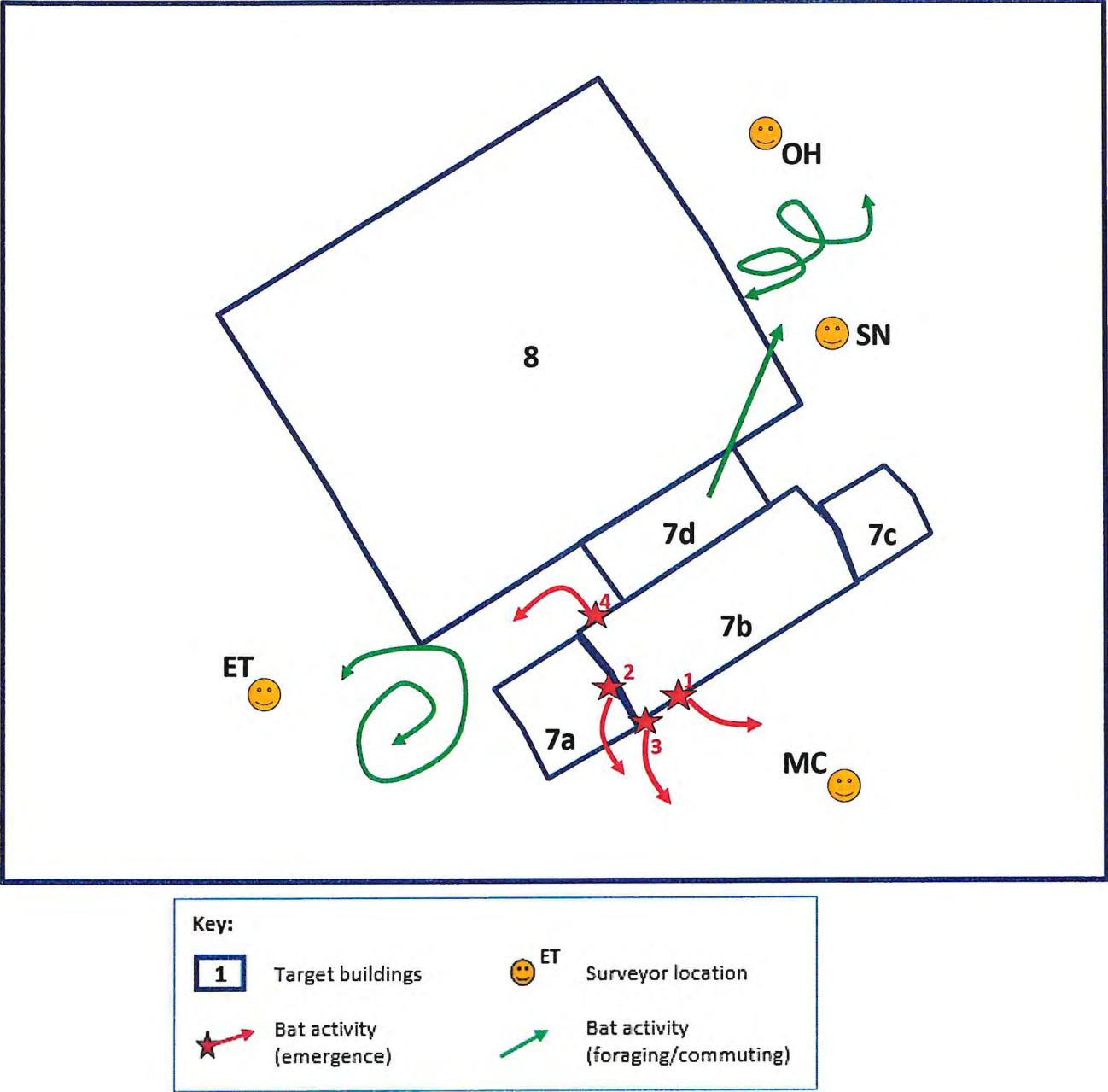


Figure 9 – Surveyor locations and bat activity recorded during emergence survey 2 (11/06/2019).

Emergence locations:



Photo 48 emergence locations 1,2 and 3 on building 7b

Sound recordings:

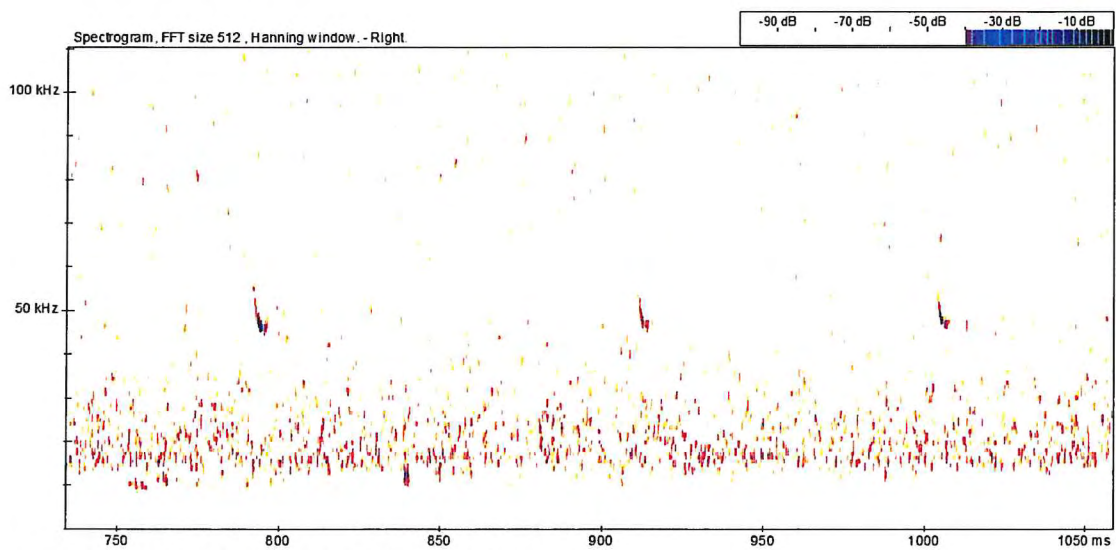


Figure 10 Common pipistrelle emerging from location 2

7 Discussion and analysis

Bats

Building 1, 2 and 7

The surveys have identified small and dispersed day roosts of common pipistrelle bats within these buildings. Bats are roosting within internal and external crevices which are abundant within the roof, timbers and masonry of these traditional buildings.

No evidence has been found during the surveys to indicate any usage of the site by higher numbers of bats. The low numbers of emergences and level of activity recorded during the dusk surveys do not suggest the presence of any maternity roosts. The emergence surveys were conducted in the optimal survey season, therefore any use of the site and buildings by higher numbers would have easily been picked up. Roost locations are dispersed widely across the site. Emergences from each location were solitary bats and one emergence of 2 bats from the same crevice; therefore, all roosts are likely to be single males or non-breeding females which typically roost individually during the summer months and away from the main breeding colony. Several roosts may also be transient.

There is a risk of use of potential crevice roost habitat, which is abundant across the site, by transient or hibernating bats. Pipistrelle species of bat often change roost location, particularly non-breeding roosts.

All other buildings

Other buildings on site have very low or negligible risk bat roosting potential habitat. An emergence survey of all areas of potential roost habitat was carried out in optimal conditions and at an optimal time of year and no evidence of roosting bats was found. We can therefore rule out any use of these areas by roosting bats, without any need for further surveys.

Breeding birds and barn owls.

Birds have used crevices within masonry for nesting and barn swallows have nested inside several buildings.

There is evidence of use of Building 2 by barn owl and a barn owl was observed within the open barn 8 during the emergence survey. The number of barn owl pellets found during the visual inspection (2 in total) indicates very occasional use only. No signs of nesting were found; however, this building provides suitable barn owl nesting habitat in the form of a barn owl box and a large timber platform.

8 Impact assessment

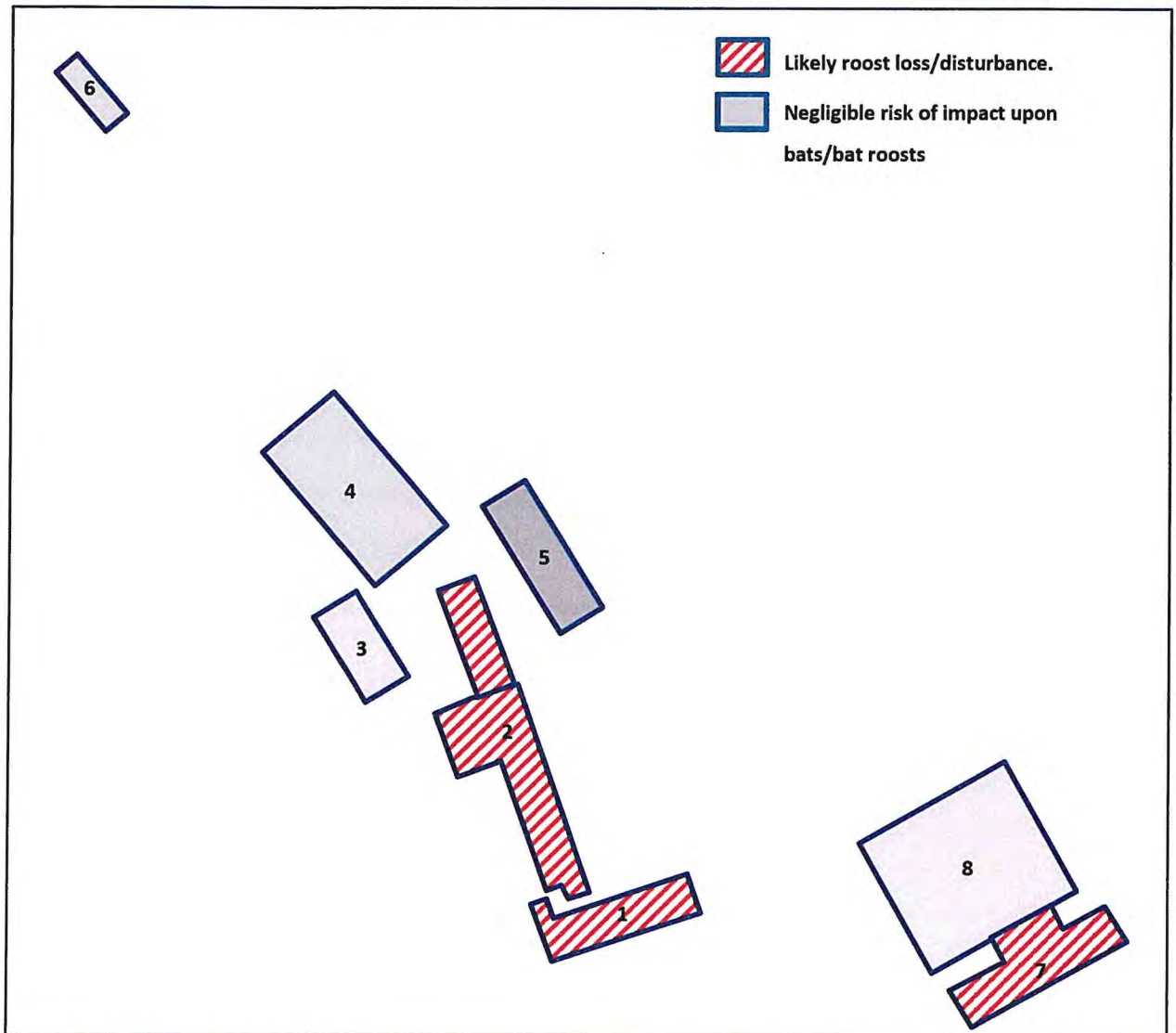


Figure 11: Summary of Impacts on bats

Building 1, 2 and 7 only.

Proposed work to these buildings will result in the loss of several small and dispersed day roosts used by solitary or low numbers of common pipistrelle bat. There is also a risk of harm or disturbance to individual bats that may use potential crevice habitat identified during the scoping survey, for transient roosting or hibernation.

Table 3 - Summary of impacts:

Impact on bats	Impact on roosting habitats	Impact on commuting and foraging habitats
Physical disturbance	Modification of access point to roost either physically or through, for example lighting or removal of vegetation.	Modification of commuting or foraging habitats either physically or through disturbance, e.g. light spill/noise.
Noise disturbance through, for example increased human presence or use of noise generating equipment.	Modification of roost either physically, for example by roof removal, or through, for example, changed temperature, humidity, ventilation or lighting regime.	Severance of commuting routes (fragmentation)
Injury/mortality (e.g. in roost during destruction or through collision with road/rail traffic)	Loss of roost.	Loss of foraging habitats.

Table 4: Impacts on bats that can arise from proposed activities (from BCT survey guidelines 2016)

All other buildings.

There is no evidence to suggest that works to these buildings will impact on bats.

Breeding birds and barn owls.

There will be a loss of barn owl roosting habitat. There will be a loss of bird nesting habitat, including potential barn owl nesting habitat and a reduction in available swallow nesting sites caused by the development. There is a risk of harm or disturbance to nesting birds if work is carried out where active nests are present.

9 Mitigation & Compensation

9.1 Mitigation summary

Bats

Building 1, 2 and 7 only.

In order to reduce the risk of detrimental impacts upon bats and to ensure compliance with current wildlife legislation (see Section 12) an outline method statement for future works is included below. A full method statement will be required for a European Protected Species Licence (EPSL) which will be applied for prior to works, but after planning permission has been granted. Further survey input will be required for the licence application.

Replacement crevice roosting habitat will be provided on site through the installation of three professional quality and long-lasting bat boxes on site (Schwegler 1FF or equivalent). Due to low numbers and non-breeding status, this mitigation is considered to be proportionate to the level of bat use and will ensure that ecological functionality is maintained post-development.

All other buildings.

As a comprehensive inspection of all other buildings on site revealed no evidence of roosting bats and only low or negligible potential bat roosting opportunities were found, no further survey work or mitigation for bats is considered necessary on these buildings.

Mitigation for barn owls and breeding birds.

A pre-works check shall be made of building 2 and 8 for any recent use by barn owl, to make sure that the level of usage has not changed.

To help safeguard the long-term use of the site and surrounding area by barn owls, at least 30 days prior to work, a pole mounted barn owl box will be provided within the location shown on Figure 12 and Figure 13. This will ensure that alternative habitat, including opportunities for nesting are made available. Once suitable alternative

provision is made available, the existing barn owl box in Building 2 will be checked for use and if empty, will be removed.

If work takes place during the bird breeding season, then a check should be made prior to work for any active bird nests within buildings to be worked on. If nests are found, then no work to these immediate areas will take place until any chicks have fledged. We recommend that an open sided structure, such as timber framed lean-to store be created within the development to provide replacement nesting habitat for swallows.

9.2 Method Statement

Bats

Building 1, 2 and 7 only

1. Works will require an EPSL. The schedule of works to buildings/areas covered by a licence will be specified within the EPSL application and is subject to the approval of Natural England.
2. A further emergence survey will take place, in order to inform the EPSL application.
3. Prior to any works commencing on site, workers and contractors will be informed of the protection afforded to bats and understand the method statement and procedure to be followed.
4. Prior to works, two professional quality bat boxes will be installed temporarily on site in a location agreed with the ecologist for the release of any bats uncovered during works.
5. Work to all roost locations, including roofing works and re-pointing will be carried out under the supervision of a suitably qualified ecologist (SQE), and when bats are active.
6. To mitigate for the loss of crevices and to enhance the site, on completion of building works, three long-lasting (+ 20yrs) professional quality (Schwegler Type 1FF or equivalent) bat boxes will be installed in locations as agreed by a suitably qualified bat ecologist.

7. Any lighting scheme will be designed to minimise any disturbance to bats currently using the site and surrounding area for foraging and commuting. No roost locations, foraging areas or commuting routes will be directly illuminated.

Barn owls and breeding birds.

1. A pre-works check of the site should be undertaken not more than 2 months before work commences to ensure that usage by barn owls has not changed.
2. At least thirty days before work commences on site an external barn owl box on a pole will be located on site (see Figure 12 and Figure 13Figure 12). Construction of the box will follow the guidelines provided by the barn owl trust. (see appendix 3).
3. Once suitable alternative provision is made available, the existing nest box within Building 2 will be removed, ensuring that no owls are present.
4. If work to any building takes place during the bird breeding season, then a check should be made prior to work for any active bird nests within buildings to be worked on. If nests are found, then no work to these immediate areas will take place until any chicks have fledged.

Bat, breeding bird and barn owl survey: Centre Farm, Battersby –2019

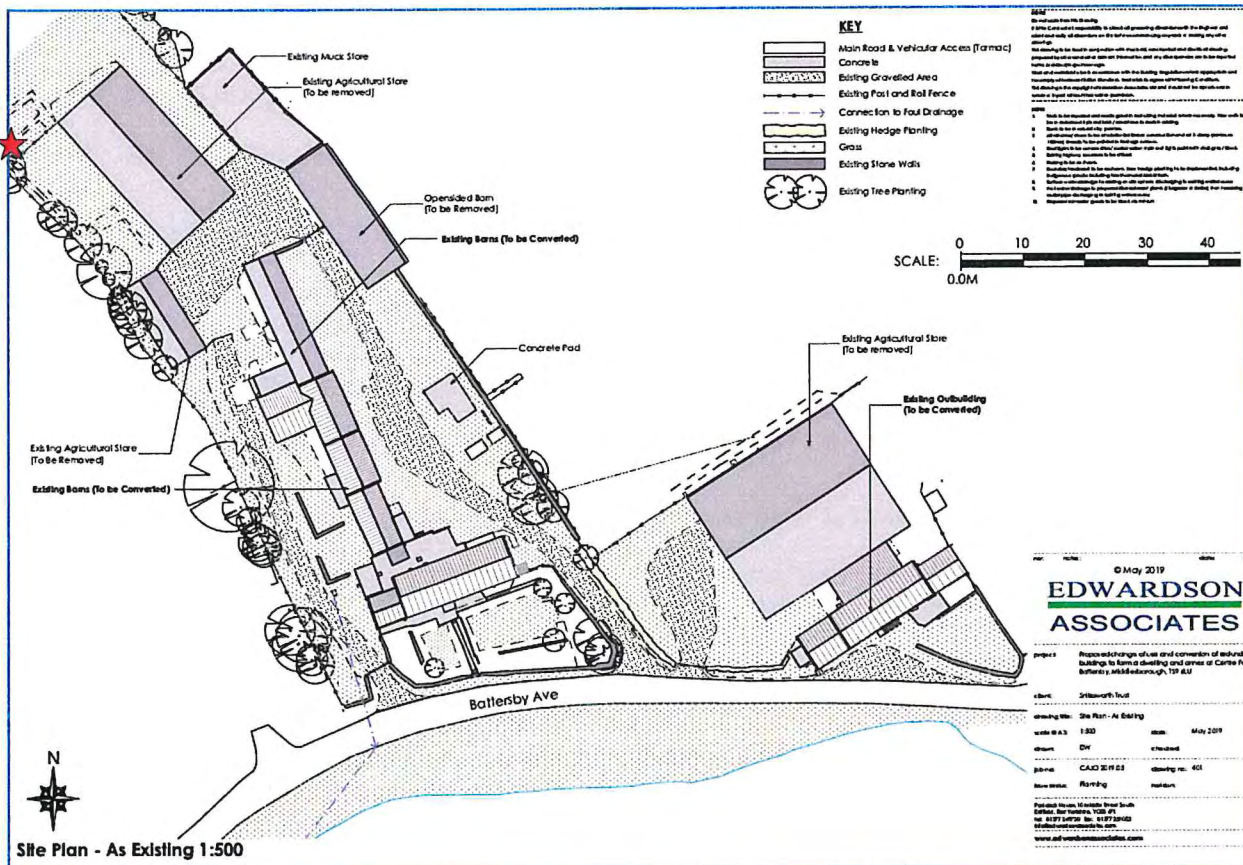


Figure 12: Site plan with location of barn owl pole box highlighted by red arrow



Figure 13 Aerial photograph of site with location of barn owl pole box highlighted by red arrow

10 Information concerning bat protection and the planning system

10.1 Relevant Legislation.

All bat species are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended), the Countryside and Rights of Way Act 2000 and the Habitat Regulations 2017.

Under the WCA it is an offence for any person to intentionally kill, injure or take any wild bat; to intentionally disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection; to intentionally damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; to be in possession or control of any live or dead wild bat, or any part of, or anything derived from a wild bat; or to sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild bat, or any part of, or anything derived from a wild bat.

Under the Habitat Regulations 2017, it is an offence to (a) deliberately capture, injure or kills any wild animal of a European protected species (EPS), (b) deliberately disturb wild animals of any such species, (c) deliberately take or destroy the eggs of such an animal, or (d) damages or destroys a breeding site or resting place of such an animal. Deliberate disturbance of animals of a European protected species (EPS) includes in particular any disturbance which is likely 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 to affect significantly the local distribution or abundance of the species to which they belong.

Prosecution could result in imprisonment, fines of £5,000 per animal affected and confiscation of vehicles and equipment used. In order to minimise the risk of breaking the law it is essential to work with care to avoid harming bats, to be aware of the procedures to be followed if bats are found during works, and to commission surveys and expert advice as required to minimise the risk of reckless harm to bats.

10.2 Licences.

Where it is proposed to carry out works which will damage / destroy a bat roost or disturb bats to a significant degree, an EPS licence must first be obtained from the Natural England (even if no bats are expected to be present when the work is carried out). The application for a license normally requires a full knowledge of the use of a site by bats, including species, numbers, and timings. Gathering this information usually involves surveying throughout the bat active season. The licence may require ongoing monitoring of the site following completion of the works.

Licences can only be issued if Natural England are satisfied that there is no satisfactory alternative to the development and that 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.

10.3 Planning and Wildlife.

The updated July 2018 National Planning Policy Framework (NPPF) has replaced PPS9 (Planning Policy Statement on Biodiversity and Geological Conservation) as the relevant national planning guidance in relation to ecological issues.

Paragraph 174 refers to the requirement of plans to “protect and enhance biodiversity and geodiversity” In order to do this, “plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

In paragraph 175 the NPPF indicates that “when determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.”

The accompanying ODPM / Defra Circular 06/2005 remains pertinent; circular 06/2005 is prescriptive in how planning officers should deal with protected species, see paragraphs 98 and 99:

The presence of a protected species is a material consideration when considering a proposal that, if carried out, would be likely to result in harm to the species or its habitat (see ODPM/Defra Circular, para 98)

LPAs should consider attaching planning conditions/entering into planning obligations to enable protection of species. They should also advise developers

that they must comply with any statutory species protection issues affecting the site (ODPM/Defra Circular, para 98)

The presence and extent to which protected species will be affected must be established before planning permission is granted. If not, a decision will have been made without all the facts (ODPM/Defra Circular, para 99)

Any measures necessary to protect the species should be conditioned/planning obligations used, before the permission is granted. Conditions can also be placed on a permission in order to prevent development proceeding without a Habitats Regulations Licence (ODPM/Defra Circular, para 99).

The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances.

Further to NPPF and OPDM Circular 06/2005, Section 40 of the Natural Environment and Rural Communities Act (2006) states that 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Section 40(3) also states that 'conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.

10.4 Legislation in relation to barn owls

Barn owls are afforded full protection under the Wildlife and Countryside Act, 1981. Their inclusion in Schedule One protects against wilful disturbance whilst an owl is at or near the nest, and makes it an offence to carry out any of the following actions:

- Killing or injuring a barn owl
- Catching a barn owl
- Taking or destroying any egg of a barn owl
- Damaging or destroying the active nest site with eggs or young or before eggs are laid
- Disturbing the dependent young of a barn owl
- Possessing, offering for sale or selling a barn owl (but see exceptions)
- Release or allow the escape of a barn owl into the wild (but see exceptions)

These actions are punishable by a maximum fine, upon conviction, of £5,000.

Nesting has been recorded in every month of the year.

Protection is also given under the Countryside and Rights of Way Act, 2000 against reckless disturbance whilst nesting.

Because of recent declines in numbers, and concern over their current status, barn owls are also listed in the EC Birds Directive and Appendix II of the Bern Convention. They are an Amber Listed species in “Birds of Conservation Concern” (RSPB).

11 References

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- The Barn Owl Trust (<http://www.barnowltrust.org.uk/>)
- Barn Owl Trust (2012) *Barn Owl Conservation Handbook*, Pelagic Publishing, Exeter

Appendix 1: Glossary of bat roost terms

Bat Roost Definitions:

Day roost: a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost: a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.

Transitional / occasional roost: used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.

Mating sites: where mating takes place from later summer and can continue through winter.

Maternity roost: where female bats give birth and raise their young to independence.

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.

Satellite roost: an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Appendix 2: Standard good working practices in relation to bats

Bats are small, mobile animals. Individual bats can fit into gaps 14-20mm wide. They can roost in a number of places including crevices between stonework, under roof and ridge tiles, in cavity walls, behind barge boards, in soffits and fascias and around window frames. Builders should always be aware of the potential for bats to be present in almost any small gap accessible from the outside in a building. The following guidelines are provided in order to reduce the risk of harm to individual bats.

- Roofs to be replaced, or which are parts of a building to be demolished, should be dismantled carefully by hand. Ridge tiles, roof tiles and coping stones should always be lifted upwards and not slid off as this may squash/crush bats.
- Re-pointing of crevices should be done between April and October when bats are active. Crevices should be fully inspected for bats using a torch prior to re-pointing.
- Any existing mortar to be raked should be done so by hand (not with a mechanical device).
- Look out for bats during construction works. Bats are opportunistic and may use gaps overnight that have been created during works carried out in the daytime.
- If any bats are found works should stop and the Bat Conservation Trust (0845 1300 228) or a suitably qualified bat ecologist should be contacted.

If it is necessary to pick a bat up always use gloves. It should be carefully caught in a cardboard box and kept in a quiet, dark place. The Bat Conservation Trust or a suitably qualified bat ecologist should be contacted.

Appendix 3: Barn Owl Trust information on pole mounted nestboxes.



Barn Owl Trust

Pole-mounted nest box for Barn Owls

barnowltrust.org.uk/barn-owl-nestbox/barn-owl-pole-nest-box/

Firstly, have you considered putting a nest box inside a building?

There are lots of reasons why *nestboxes in buildings are better than boxes on poles*. They are far cheaper too!

[About nestboxes in buildings.](#)

[Where's the best place for your Barn Owl nestbox?](#)



Is the landscape suitable?

Barn Owl nest boxes in the UK should be placed in open countryside (avoid urban, suburban, heavily forested and high mountain areas). Sites within 1 km of a motorway or other fast unscreened main roads should be avoided due to the risk of road deaths. Nestboxes do not need to be placed on patches or strips of rough grassland as the birds are perfectly capable of 'commuting' across unsuitable habitats before starting to hunt and have very large home ranges. Check to see if your local landscape is suitable.



Pole boxes are usually erected where there are no suitable buildings or trees, like here on The Fens.

1/6

Barn Owl polebox instructions:

Obtaining and erecting a suitable pole

Most electricity or telegraph poles are suitable (provided there are no cables attached!). Minimum length 6 metres. Minimum diameter 150mm. Erection normally requires specialist machinery or a digger. Bury 1.5 metres in the ground leaving a height of 4.5 metres. Wherever possible the box should be secured to the pole before erection. The position in relation to habitat features is not critical but ensure that the main entrance hole is not screened by a building or tree(s).



Dimensions

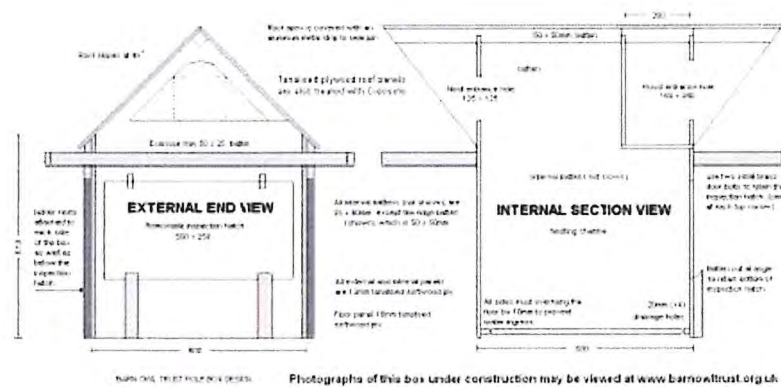
*The dimensions given in the plans below must be treated as the **minimum** size.*

An ideal nest box for Barn Owls would be much bigger than the one described on this page: a full 1 metre from the bottom of the entrance hole to the bottom of the box and with a floor area of at least 1 metre x 1 metre. However, boxes that big would be very difficult to erect(!) and more expensive to build. Barn Owl nestbox designs are a compromise between what is ideal for the birds and what is practical to erect.

How to build a Barn Owl pole nest box

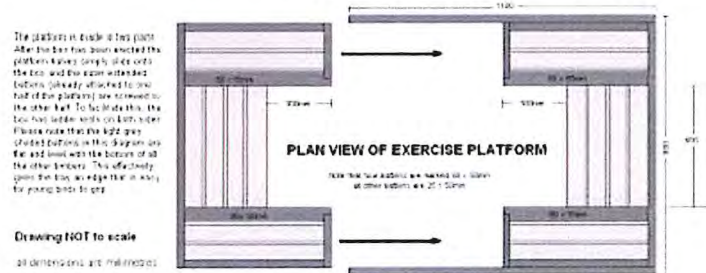
Have a look at our [photo guide – how to build a Barn Owl polebox](#).

- Our deep nest box design is very safe for owlets due to a 60cm drop from the entrance hole to the bottom and an exercise platform with a raised edge.
- If you wish to vary from this owl box diagram, please check our essential [criteria](#) for interior Barn Owl boxes.



8480040, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667,

Photographs of this box under construction may be viewed at www.barnowltrust.org.uk



Materials to use

The basic owl box should be built using rot-resistant or Tanalith E treated sheet material manufactured using a waterproof adhesive. The Barn Owl Trust uses 12 mm tanalised softwood ply, 25 x 50mm and 50 x 50mm tanalised batten with 40mm and 50mm rust-resistant screws. Please avoid using hardwood ply, unless it is stamped "FSC Approved".

Preservative

Where tanalised plywood is not available any type of preservative may be used provided that the box is dry before erection. It is essential that the edges and ends of all parts are treated *before* assembly.

Waterproofing

The top of the box should be covered with heavy duty roofing felt. A waterproof sealant (such as Ever-Build Weather-Mate) should be used in all the wood joints to prevent water seeping in. If you need proof that this is necessary, try leaving your pole box under a sprinkler for a few hours. 20mm diameter drainage holes can also be drilled in the floor of the box. The front, back and sides *must* overhang the floor of the box.

How to erect a Barn Owl pole nest box

The easiest way to put up a polebox is by machine. See our photoguide to [erecting a Barn Owl pole-mounted nest box by machine](#).

Alternatively, if you have no machine available, see our photoguide to [erecting a Barn Owl pole-mounted nest box by hand](#).



Human access and cleaning out

The front of the box should have an access panel to enable nest debris to be cleared out periodically. The internal depth of the box is important as it reduces the chances of a nestling Barn Owl falling from the box and dying as a result of neglect or predation. Therefore it is important that the box depth is maintained by clearing out the box once it has more than roughly 75mm of nest debris. If Jackdaws use the box it must be cleaned out every year (wear gloves and a dust mask). Boxes only used by breeding Barn Owls will need clearing out every 2 or 3 years at most. Under the Wildlife and Countryside Act 1981, it is an offence to disturb breeding Barn Owls so November to January is usually the best time.

Your safety

Before erecting a box, please ensure that you have properly assessed the risks involved, particularly with regard to working at height. Poleboxes are generally too heavy to lift single-handed and using a ladder is potentially dangerous. Please do not work alone and consider using multiple ladders or safer methods. Ideally, your polebox should be attached before the pole is erected. The Barn Owl Trust has used an [erection method requiring three people and three ladders](#) but this cannot be unreservedly recommended. The most important thing when erecting the box is your own safety (for which you are responsible).

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Criteria to use when judging the suitability of other Barn Owl polebox designs

Avoid poor nest box design - which can be fatal to owlets.

- Entrance hole size: Optimum 100 x 130mm; min. 100 x 100mm; max. 150 x 150mm.
- Floor area of nest chamber: Good size range 0.3 to 0.4 m². (e.g. 600 x 600mm). Absolute minimum 0.2m².
- Depth from bottom of entrance hole to nest floor must be not less than 540mm.
- There must be an external platform below the entrance hole that allows ample room for an entire brood of young birds to exercise and await food deliveries; minimising the danger of young birds falling before fledging.
External platform size should be at least 0.125 m².
- The platform must have a raised edge high enough for Barn Owls to grip easily.
- Interior must remain dry during prolonged heavy rain coming from any direction.
- The platform should be positioned, and have sufficient shelter and drainage, to prevent rainwater getting into the nest box entrance.
- There should be enough height difference between the nest and the external platform to prevent the accumulation of a continuous (internal/external) layer of pellet debris allowing rainwater to soak through to the inside thereby chilling the

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nest contents.

- All sides should overhang the floor which needs adequate drainage. The installation of a (drier) false floor can be an advantage.
- Roof should be covered in thick roofing felt guaranteed for not less than 10 years, applied by heat or adhesive (not nailed or pierced in any way). Very steeply sloping roofs may not need covering but any apex join must be permanently waterproofed.
- A flat or slightly sloping roof that provides additional exercise space for the young is advantageous.
- Human access for easy clearing-out of nest debris is essential.
- Timber liable to decay within 20 years must be treated with long-lasting preservative: either pressure treated (e.g. Tanalith E) or surface treated including all edges of all component parts. Plywood used must be manufactured using a waterproof adhesive.
- All screws/nails and any metal fittings used should be rust proof.
- Should be substantially constructed yet light enough to permit safe erection using normal lifting equipment. Normal polebox weight range is 18-30kg. Any polebox under 13kg is probably not substantial enough.
- Should not be constructed from tropical hardwood unless the timber is FSC certified as sustainably grown.
- Within the box, a separate entrance hole into a small compartment so as to provide a secluded roosting space for an adult owl can be advantageous. (However, it should be designed so as to minimise the chances of this inferior cavity being used for nesting by Barn Owls).
- Measures aimed at reducing the chances of entry by other species (such as Jackdaws) are to be encouraged provided that they do not significantly reduce the box's suitability for Barn Owls.
 - In mainland Europe, entry by Beech Martens may be prevented by positioning the pole away from buildings or trees and by wrapping a 1.5 metre section of the pole with thin aluminium or other very slippery material.
- Boxes should be supplied with information that specifies an erection height of not less than 4 metres above ground level and stresses the importance of using a substantial pole of not less than 150mm diameter (normally 6 metres long, 1.5 metres underground and 4.5 metres in height).
- Information provided with poleboxes should also cover the following subjects: foraging habitat requirements, box positioning to maximise the chances of occupation (entrance hole visibility), the need for clearing out debris so as to maintain internal depth, box erection and attachment methods, and human safety issues.
- As a general rule, Barn Owl nestboxes should not be erected within 1km of any motorway, dual-carriageway or similar major road.

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