

**Bat and Bird Survey for,
Mr. M. Chappell.
Building at,
Yoxall Lodge,
Scotch Hill,
Newchurch,
Hoar Cross,
BURTON UPON TRENT,
Staffordshire,
DE13 8RL.**

**Map Ref SK 1566 2205
11th February 2019.**

S. Christopher Smith MRICS MSc CEnv.

**The Hayloft,
Farm Lane,
Grendon,
ATHERSTONE,
Warwickshire.
CV9 3DR**

**Natural England License Number 2016-23395-CLS-CLS
Natural England Bat Low Impact Class License
Registered Consultant RC133**

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Contents.

Summary	Page 2.
Introduction.	Page 3.
Legislation concerning bats.	Page 3.
Legislation concerning birds.	Page 4.
Methodology for bats.	Page 4.
Bat records.	Page 5.
Constraints.	Page 6.
Building survey.	Page 6.
Bat droppings.	Page 14.
Emergence surveys.	Page 15.
Birds.	Page 24.
Conclusion.	Page 24.
Mitigation for bats.	Page 24.
Method of working.	Page 28.
Bibliography.	Page 32.
Appendix 1.	Page 33.

Summary.

- **There is evidence of bats using the building as a place of shelter.**
- **There was no evidence of birds nesting in the buildings on site.**
- **The emergence surveys on the 29th August 2017 showed that there were two Brown long eared bats, one Soprano pipistrelle bats and one Common pipistrelle roosting in the building.**
- **A European Protected Species license will be required to undertake the demolition and re-development of Yoxall Lodge. The number of bats is small and of a common species. A Bat Mitigation Low Impact license could be used to facilitate the re-development of the property.**
- **New roosting opportunities for Brown long eared bats and crevice dwelling bats can be created in site should planning permission be granted.**
- **A method of working must be put in place with contractors to ensure that in the event of bats being found they will not be injured.**

Introduction.

An inspection and building survey for bats was requested by Mr. M. Chappell. The survey was to be undertaken in relation to the submission of a planning application to East Staffordshire Borough Council to replace the existing dwelling at Yoxall Lodge. The property was visited on the 29th May 2015 and the surveyor spent 1.75 hour on site. The weather was dry with patchy sunshine. This report was updated in 2017 with additional emergence surveys. The site has been visited throughout 2018 and this report has now been updated showing the replacement dwelling plans.



Legislation concerning bats.

The Wildlife and Countryside Act 1981 (WCA) protects bats and their roosts in England, Scotland and Wales. Some parts have been amended by the Countryside and Rights of Way Act 2000 (CROW) which applies only in England and Wales, and by the Nature Conservation (Scotland) Act 2004 which applies in Scotland.

The Conservation and Habitats Regulations 2010 (better known as the Habitats Regulations) implements the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora. All bats are listed as 'European protected species of animals'

Under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 it is illegal to:

- Deliberately capture, injure or kill any wild animal of a European Protected Species (EPS),
- Deliberately disturb wild animals of an EPS (affecting ability to survive, breed or rear young) – disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,
- Deliberately disturb wild animals of an EPS (impairing ability to migrate or hibernate) – disturbance of animals includes in particular any disturbance which is likely to impair their ability in the case of hibernating or migratory species to hibernate or migrate,
- Deliberately disturb wild animals of an EPS (affecting local distribution and abundance) – disturbance of animals includes in particular any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong,
- Deliberately disturb wild animals of an EPS (whilst occupying a structure or place used for shelter or protection) – intentionally or recklessly disturb any wild animal while it is occupying a structure or place which it uses for shelter or protection,
- Damage or destroy a breeding site or resting place of a wild animal an EPS.

Under the Wildlife and Countryside Act 1981 (as amended) it is legal to:

- Recklessly or intentionally kill, injures or take any wild animals included in Schedule 5.
- Recklessly or intentionally damage or destroy, or obstruct access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection,
- Recklessly or intentionally disturb any such animal while it is occupying a structure or place which it uses for shelter or protection.

Legislation concerning birds.

All common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended). Under this legislation it is an offence to:

- kill, injure or take any wild bird
- take, damage or destroy the nest of any wild bird while it is in use or being built
- take or destroy the egg of any wild bird

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

Methodology for bats.

The building surveys have been undertaken in accordance with Bat Surveys for Professional Ecologists- Good Practice Guidelines, 2016, the Bat Conservation Trust. Surveys of the buildings were undertaken during the daytime to look for evidence of bats using the buildings, or likely roosting sites. The evidence of bats using a building as a place of shelter can include bat

droppings, grease marks, urine stains or actual bats. This evidence is then considered when planning evening emergence counts and activity surveys, using bat detectors. These surveys provide evidence of where bats are roosting and activity across the site by foraging or commuting bats.

The Bat Surveys for Professional Ecologists- Good Practice Guidelines, 2016, specify that emergence surveys are undertaken dependent upon the roost potential of the buildings on the survey site, as set out below;

Roost potential.	Number of surveys.
High.	3
Low to moderate.	2
Low.	1

The surveys are started at sunset, with bats emerging from roosts at different times, dependent upon the species, and continued for two hours. Emergence surveys can only be undertaken from the beginning of April to the end of September when bats are active. The optimum period of undertaking surveys is the beginning of May to the end of August. Their emergence is dependent upon the weather, the bats only leaving their roost on warm nights when there will be sufficient insect prey around to make flight worthwhile. While bats will emerge in light rain and moderate winds, the surveys would not be undertaken when there is heavy rain and/or strong winds as this would not provide reliable data upon which to base the conclusions of the surveys. Mild weather in April and September will produce bat activity, particularly providing information on forage areas, commuting routes and pre-maternity group roosting.

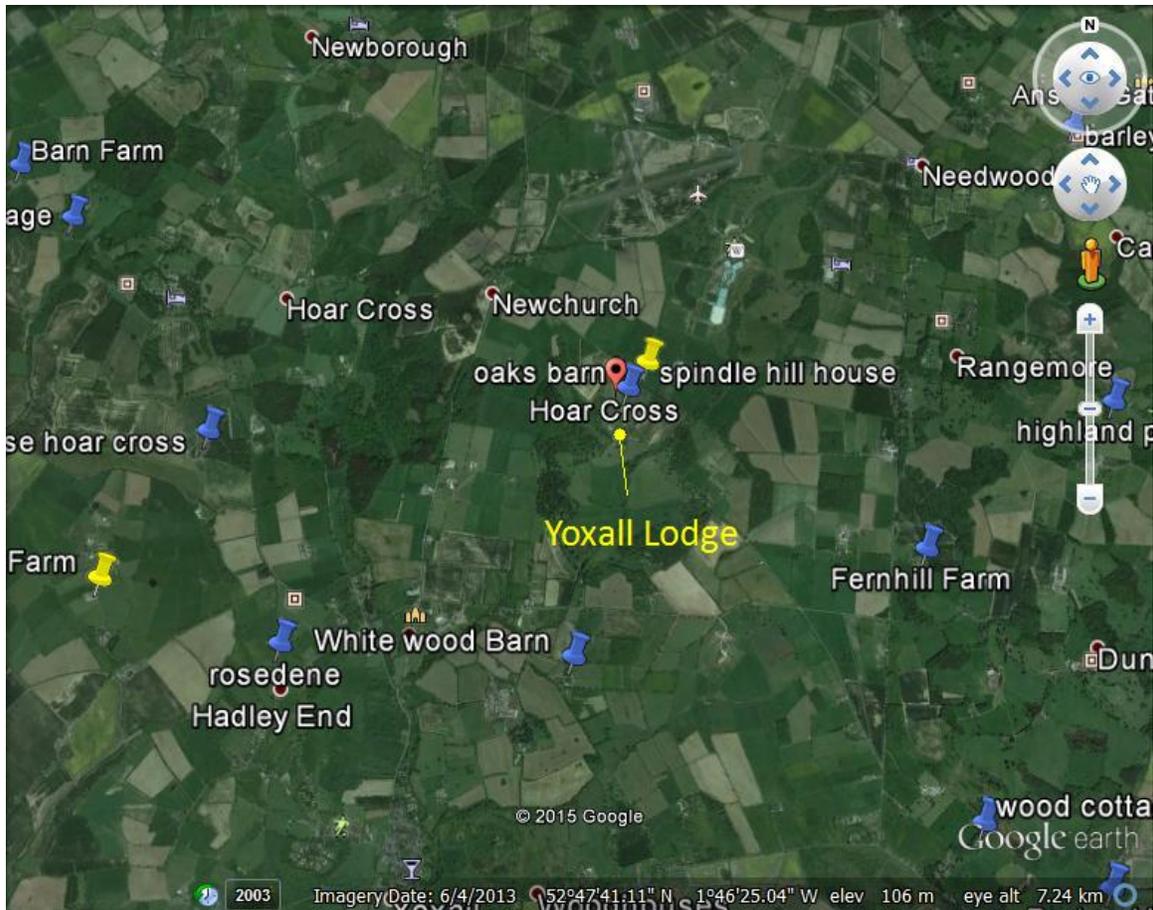
Any trees on site are surveyed following the methodology set out in the Bat Tree Habitat Key, Henry L Andrews et al 2013, which produces a key for identifying Potential Roost Features in trees and their likelihood of being used by bats. Trees on any site being surveyed will have Potential Roost Features identified from ground level surveys and highlighted in the report.

Bat records.

A search of public records has revealed the presence of;

Myotis daubentonii.
Myotis Whiskered/Brandtii.
Nyctalus noctula.
Pipistrellus pipistrellus.
Pipistrellus pygmaeus.
Plecotus auritus.

Bat roosts recorded by the surveyor within 3km have been a maternity group of Common pipistrelle bats, a maternity group of Brown long eared bats, three non-maternity groups of Common pipistrelle bats, five non-maternity groups of Brown long eared bats and two non-maternity roosts of Whiskered bats. Bats recorded with bat detectors foraging and commuting have been Brown long eared bats, Common pipistrelle bats, Whiskered bats and Noctule bats.



Constraints.

The building survey was undertaken in the summer when evidence of bats internally can still be seen but external evidence may be unavailable after heavy rain. The surveyor does not believe that the weather masked any evidence or access points for bats. There were no constraints to the surveyor for bats.

Building Survey.

Yoxall Lodge is a four bedroom two storey dwelling with painted solid brickwork. The roof has a timber structure and is covered with plain tiles. There is a bitumous underfelt on the roof.



The property is situated in a valley with agricultural land surrounding the site. There are mature trees in the hedgerows which provide forage and commuting routes for bats. There are extensive areas of woodland in the countryside around the site and this woodland would provide foraging habitat for bats.

The results of the building survey are presented as the likelihood of bats using an area/feature;

- None.** Bats are unlikely to use the feature/area in any way.
- Poor.** Bats may use the feature/area but it is not thought to be likely.
- Possible.** The feature/area provides an area that may be used by bats but no direct evidence of occupation was found.
- Definite.** Clear evidence of the use of a feature/area as a place of shelter, such as droppings.

Yoxall Lodge.

Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.
Behind ridge board.	Bat droppings.	Definite. There is access for bats to the ridge board and there are cobwebs on much of the ridge showing little use by bats.	

			
Feature.	Evidence of bats.	Likelihood of bats roosting.	Photograph.
In splits in timber rafters.	None.	None. Machine cut timbers.	
Under ridge tiles.	None.	Possible. There is one gap adjacent to the chimney that could be used by bats to access the space under the ridge tiles but this area is only one tile	

		<p>long. There are no other gaps on other sections of the ridge tiles.</p>	
<p>Feature.</p>	<p>Evidence of bats.</p>	<p>Likelyhood of bats roosting.</p>	<p>Photograph.</p>
<p>Under bonnet tiles.</p>	<p>None.</p>	<p>None. There are small gaps where mortar is coming loose but they are too small to provide roosting for crevice dwelling bats and the one larger gaps do not</p>	

		continue under the bonnet tiles.	
Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.
Under loose or missing roof tiles.	None.	Possible. There is one missing roof tile on the northern elevation.	

			
Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.
In eaves.	None.	Possible. The eaves on the majority of the property are brick with some areas corbelled. There is a ventilation gap at the eaves of the garden roof which gives access to the roof space but there is no evidence of bats using the space.	  
In verges.	None.	None. There is no access under the tiles.	

			
Feature.	Evidence of bats.	Likelihood of bats roosting.	Photograph.
Under lead flashings or hanging tiles on sides of dormer windows.	None.	Possible. There is no access for bat under the lead flashings but there are small gaps where hanging tiles have been cut that could give access and a place of shelter for individual bats.	

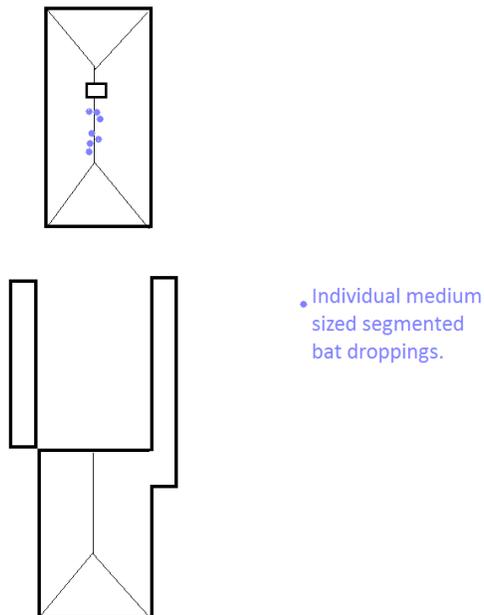
			
Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.
Under lead flashings around chimneys.	None.	Poor. There is no access for bats to the roof space or the rear of the roof tiles but there is one area where there is a temporary place of shelter for individual bats during periods of warm weather.	

			
Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.

Bar droppings.

7 medium sized segmented bat droppings were found in the roof space of Yoxall Lodge. The bat droppings varied in colour from grey brown to medium brown but none showed signs of being fresh and the grey/brown droppings were probably a number of years old.

Bat droppings Yoxall Lodge.



The size and location of the droppings beneath the ridge board make it most likely that these droppings are from a Brown long eared bat.

Emergence surveys.

In order to provide data upon bat movements on site, to determine whether bats are roosting in buildings and to allow the identification of bats emerging from buildings, two evening emergence surveys were undertaken. The number of surveys was determined with reference to the Bat Survey Guidelines for a property with low to moderate roost potential.

The aim of each survey was to look at different areas of the buildings to determine if bats were emerging from a roost and to assess bat activity across the site. The surveys were undertaken using heterodyne and frequency division bat detectors from which it is possible to identify bats by their different ultrasound call. Bat passes were recorded during ten minute periods from sunset. Where a bat was seen it was recorded on a plan of the site to provide information upon movements across the site. As bats close in on their prey their echolocation calls get closer together sounding like a buzz. These feeding buzzes are recording as they confirm the presence of prey and bats feeding in the area.

The surveys were undertaken using a Batbox Duet frequency division bat detector with an Edirol R09 recording device, a Batbox Baton frequency division bat detector with an Olympus WAV sound recorder and a Magenta 5 heterodyne bat detector.

8th July 2015.

Surveyor. S. Christopher Smith.

Walking around Yoxall Lodge.

Time	Pipistrelle ?	Pipistrelle 45kHz	Pipistrelle 55kHz	Brown Long Eared bat.	Noctule	Myotis bat
21.20-21.30						
21.30-21.40						
21.40-21.50						
21.50-22.00		1* ¹				
22.00-22.10		2* ²				
22.10-22.20	1* ³	5* ⁴				
22.20-22.30		7* ⁵				
22.30-22.40		2* ⁶	2* ⁷	5* ⁸		
22.40-22.50						
22.50-23.00		1* ⁹		2* ¹⁰		
23.00-23.10		1* ¹¹	1* ¹²	2* ¹³		1* ¹⁴
23.10-23.20		1* ¹⁵				

Sunset. 21.30

Air Temperature. 14.1°C at the start of 11.1°C at the end of the survey.

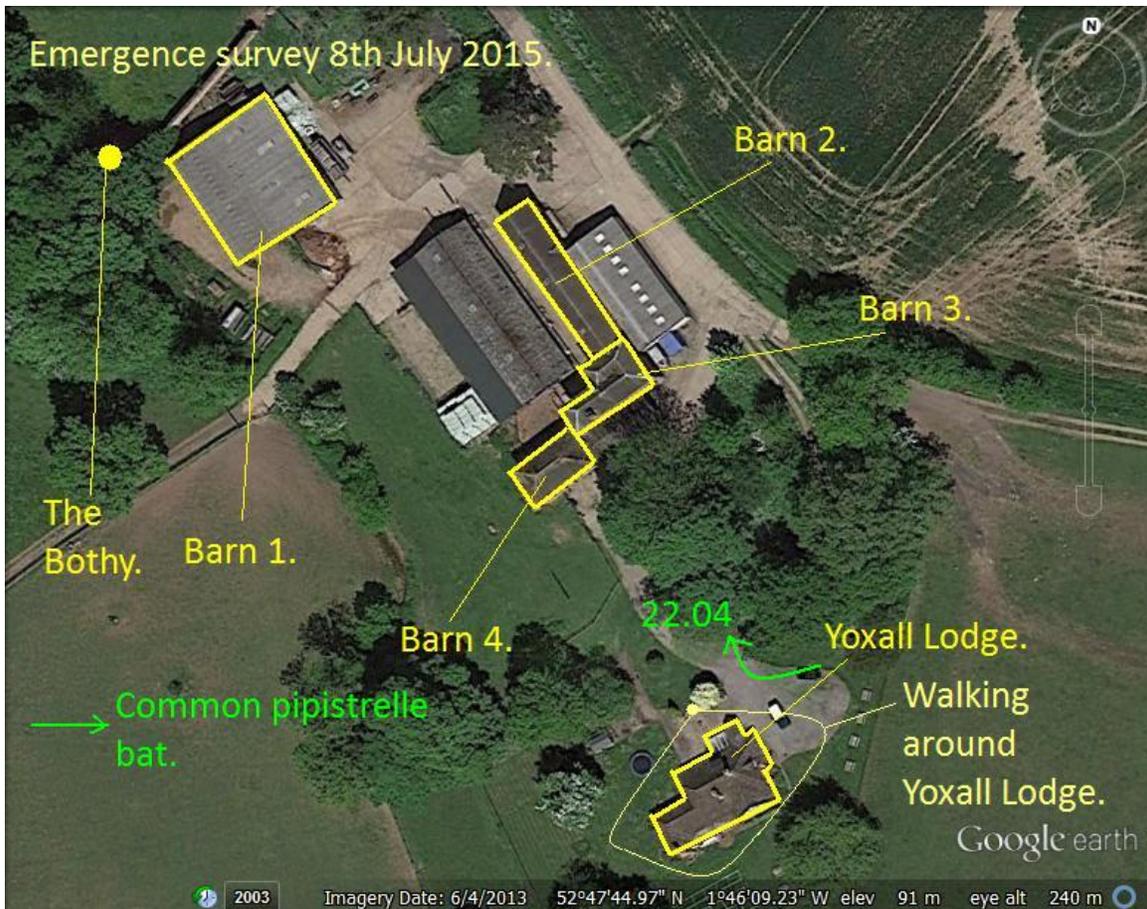
Wind. 0-1 Beaufort with occasional gusts 1-2 Beaufort.

Cloud cover. 0/8th.

Notes;

1. Bat heard but not seen at 21.57.

2. Bat heard and seen at 22.04. Other bat heard but not seen at 22.05.
3. Bat heard but not seen at 22.12.
4. Bats heard but not seen at 22.10, 22.10, 22.11, 22.15 and 22.17.
5. Bats heard but not seen at 22.21, 22.22, 22.22, 22, 25, 22.25, 22.29 and 22,29.
6. Bats heard but not seen at 22.30 and 22.33.
7. Bats heard but not seen at 22.33 and 22.33.
8. Bats heard around trees but not seen at 22.32, 22.32, 22.32, 22.34 and 22.37.
9. Bat heard but not seen at 22.59.
10. Bats heard but not seen at 22.56 and 22.56.
11. Bat heard but not seen at 23.08.
12. Bat heard but not seen at 23.00.
13. Bats heard but not seen at 23.03 and 23.05.
14. Bat heard but not seen at 23.06.
15. Bat heard but not seen at 23.11.



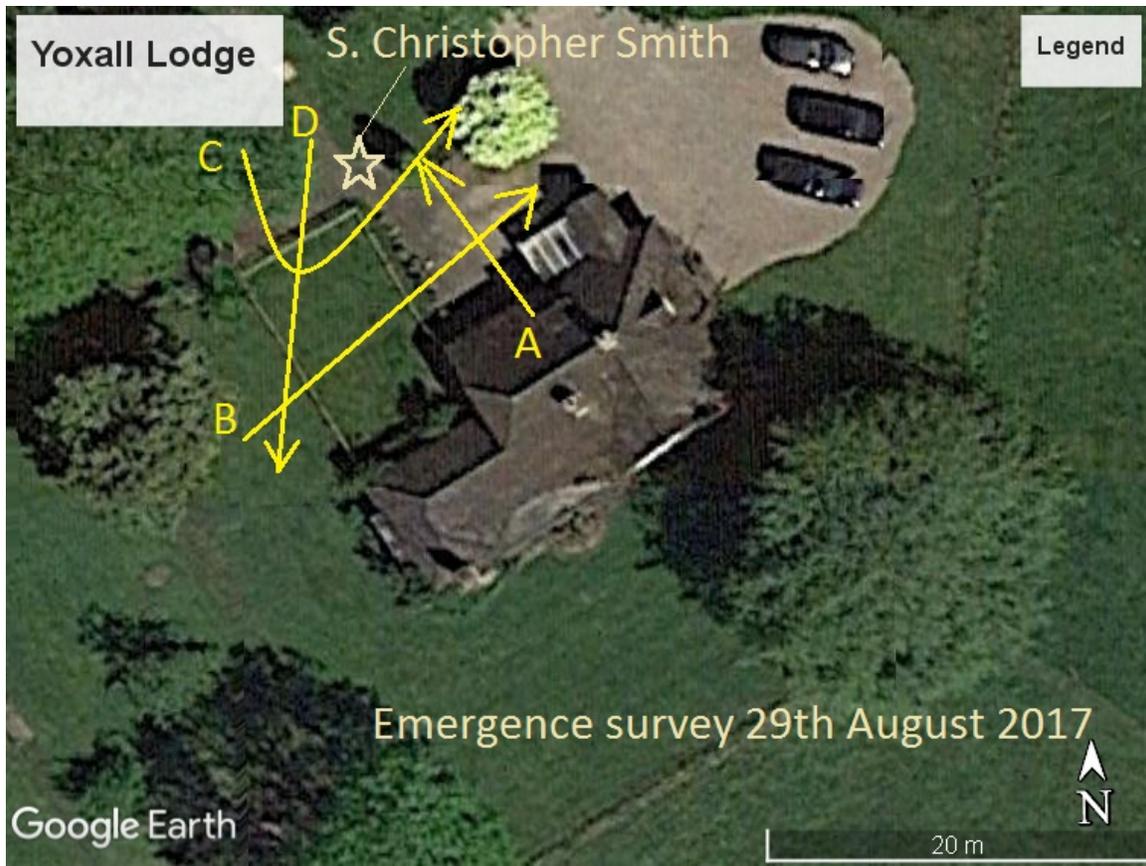
In 2017 an additional survey with three surveyors was undertaken at Yoxall Lodge. The surveys were undertaken using a Batbox Duet frequency division bat detector with an Edirol R09 recording device, a Batbox Baton frequency division bat detector with an Olympus WAV sound recorder, a Batbox Baton XD Time Expansion bat detector with Olympus wav recorder , an Elekon Batscanner and Magenta 5 heterodyne bat detectors.

29th August 2017.

Sunset. 20.02
Air Temperature. 18.4°C at the start of 15.1°C at the end of the survey .
Wind. Beaufort Scale 1.
Cloud cover. 8/8th.
Survey started at 19.50 and ended at 22.01

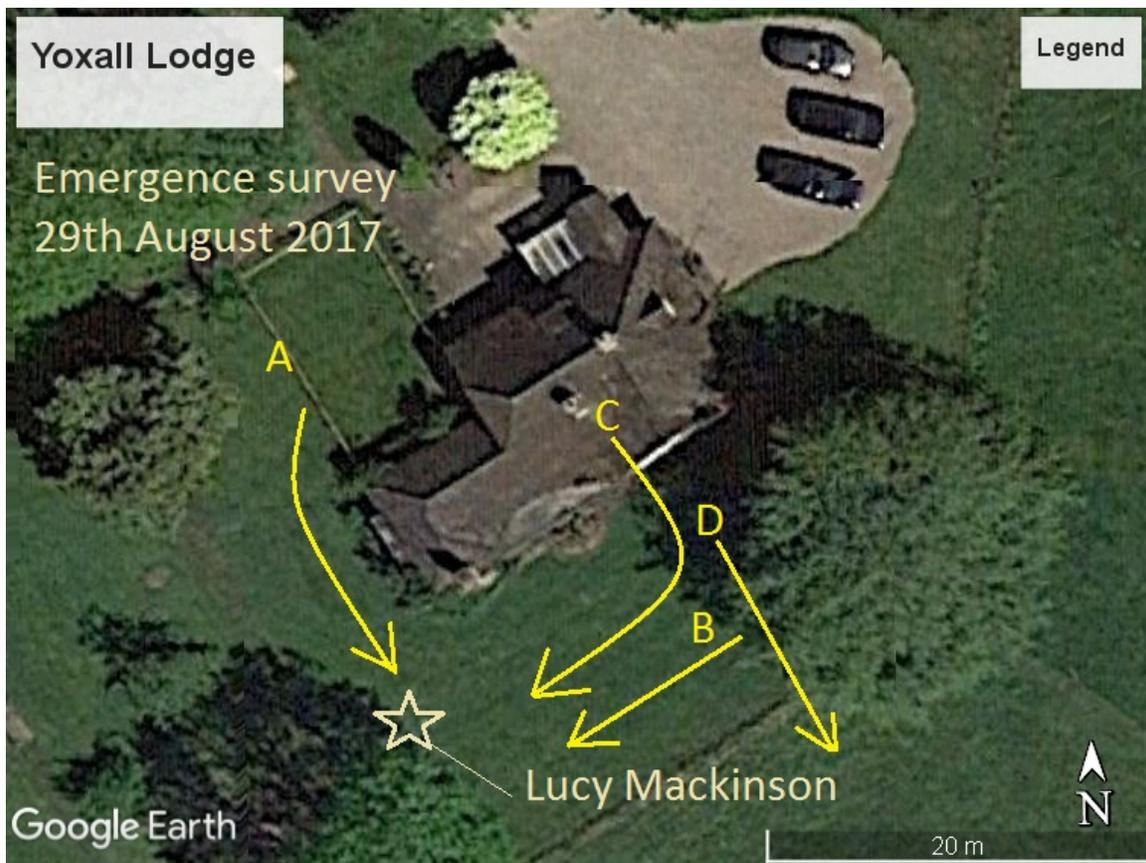
Surveyor. S. Christopher Smith.
Positioned at the north side of the site.

Time.	Direction.	Activity.	Species.	Notes.
20.16	Not Seen	Commuting	Common pipistrelle	
20.19	Not Seen	Commuting	Common pipistrelle	
20.21	Not Seen	Commuting	Common pipistrelle	
20.23	A	Commuting	Common pipistrelle	
20.24	Not Seen	Emerged	Common pipistrelle	
20.30	B	Commuting	Brown long eared	
20.30	Not Seen	Foraging	Common pipistrelle	
20.32	C	Commuting	Common pipistrelle	
20.34	D	Commuting	Common pipistrelle	
20.39	Not Seen	Commuting	Brown long eared	
20.47	Not Seen	Commuting	Common pipistrelle	
20.57	Not Seen	Commuting	Common pipistrelle	
21.08	Not Seen	Commuting	Brown long eared	
21.12	E	Commuting	Brown long eared	
21.15	Not Seen	Commuting	Common pipistrelle	
21.18	Not Seen	Commuting	Common pipistrelle	
21.21	Not Seen	Commuting	Common pipistrelle	
21.25	Not Seen	Commuting	Common pipistrelle	
21.26	Not Seen	Commuting	Common pipistrelle	2 passes
21.27	Not Seen	Commuting	Common pipistrelle	
21.28	Not Seen	Commuting	Common pipistrelle	2 passes
21.29	Not Seen	Commuting	Common pipistrelle	
21.31	Not Seen	Commuting	Common pipistrelle	2 passes
21.32	Not Seen	Commuting	Common pipistrelle	2 passes
21.33	Not Seen	Commuting	Common pipistrelle	



Surveyor. Lucy Mackinson, licensed bat worker.
Positioned at the south west side of the site.

Time.	Direction.	Activity.	Species.	Notes.
20.19	C	Emerged	Common pipistrelle	
20.24	A	Commuting	Pipistrelle	No echolocation but flight pattern of pipistrelle
20.26	A	Commuting	Whiskered?	Brief call
20.27	B	Commuting	Common pipistrelle	
20.30	Not Seen	Commuting	Brown long eared	
20.33	A	Commuting	Common pipistrelle	
20.33	A	Commuting	Common pipistrelle	
20.34	Not Seen	Commuting	Brown long eared	
20.44	D	Commuting	Whiskered?	Brief call
20.51	Not Seen	Commuting	Common pipistrelle	
20.55	Not Seen	Commuting	Brown long eared	
20.57	Not Seen	Commuting	Whiskered?	Brief call
21.07	Not Seen	Commuting	Brown long eared	2 passes
21.18	Not Seen	Commuting	Common pipistrelle	
21.22	Not Seen	Commuting	Common pipistrelle	
21.26	Not Seen	Commuting	Common pipistrelle	3 passes
21.31	Not Seen	Commuting	Brown long eared	



Surveyor. Lydia-Rose Cox, trainee bat worker.
Positioned at the south east side of the site.

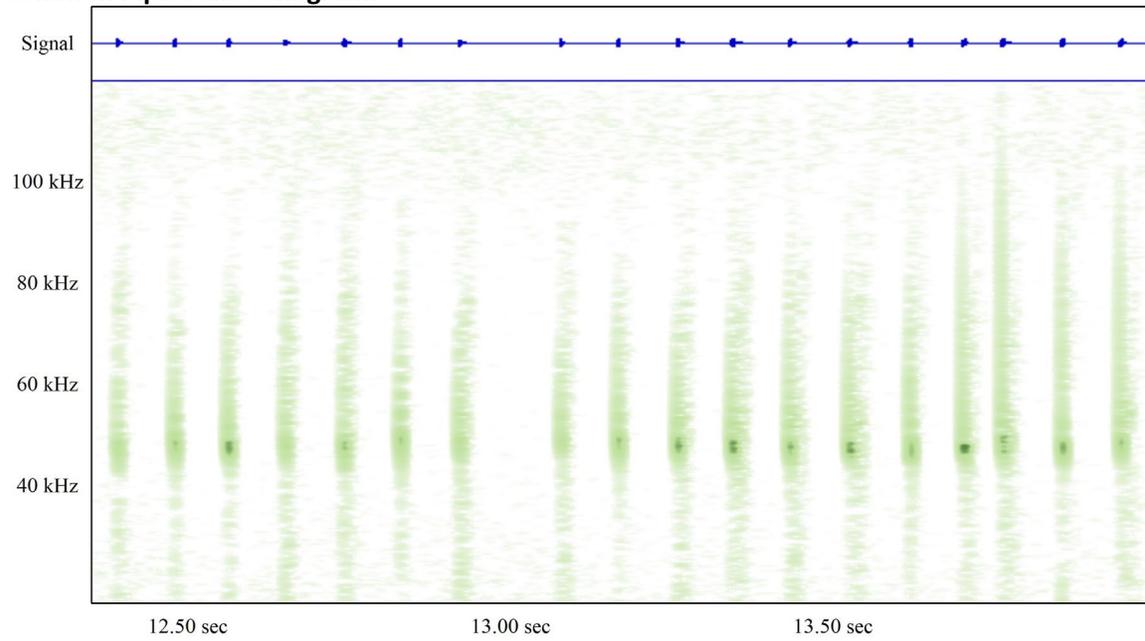
Time.	Direction.	Activity.	Species.	Notes.
20.27	A	Emerged	Brown long eared	
20.33	A	Emerged	Brown long eared	
20.46	Not Seen	Commuting	Brown long eared	
20.48	A	Commuting	Brown long eared	
20.51	A	Commuting	Brown long eared	
21.00	Not Seen	Commuting	Brown long eared	
21.29	Not Seen	Commuting	Common pipistrelle	
21.31	Not Seen	Commuting	Common pipistrelle	



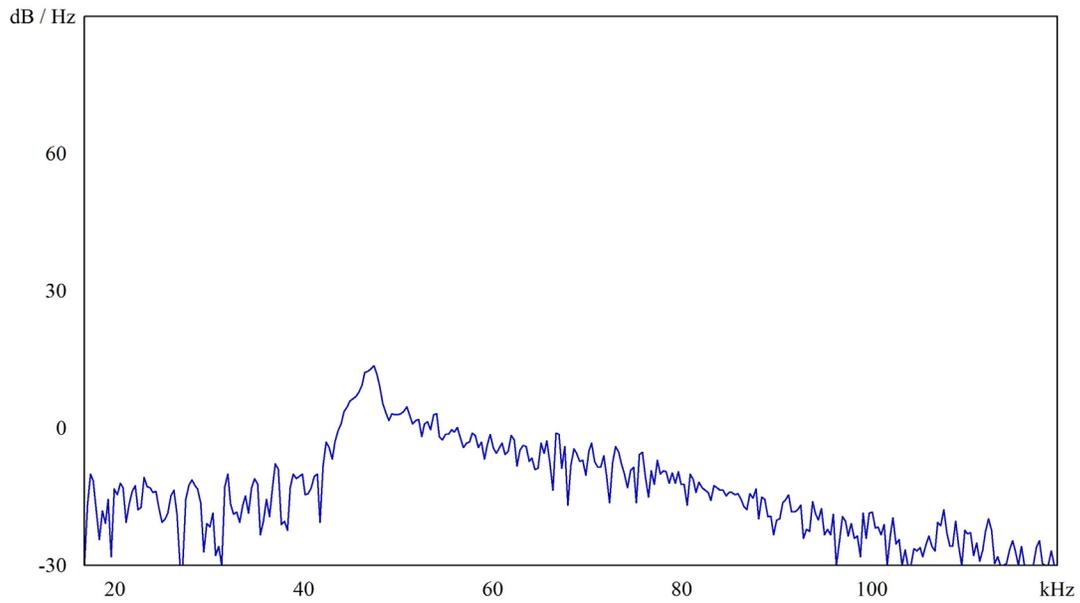
Analysis of the recordings from the bat detectors have confirmed the presence of Common Pipistrelle bats and Soprano pipistrelle bats.

The signal was not strong as the bats were only commuting across the site and not visible most of the time. The sonogram shows the typical 'hockey stick' shape for all pipistrelle echolocation calls, an initial frequency modulated downwards sweeping call followed by the constant frequency peak frequency area. The peak frequency can be seen to be around 45kHz on the peak frequency graph, confirming that the bat was a Common Pipistrelle.

Common Pipistrelle sonogram.

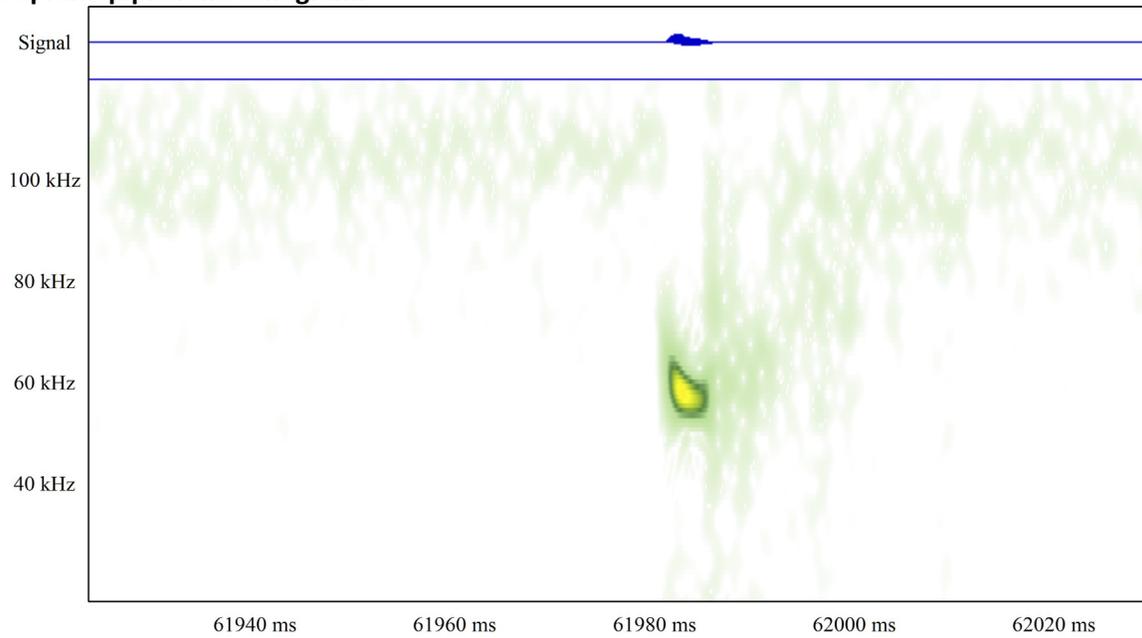


Common Pipistrelle peak frequency.

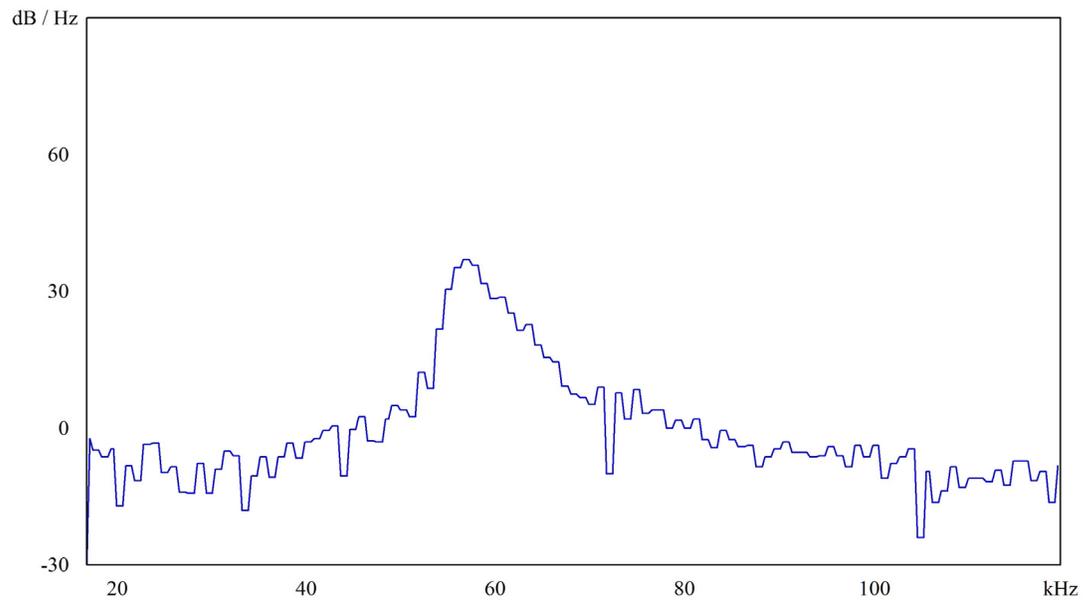


The Soprano pipistrelle peak frequency shows that the peak is around 55kHz.

Soprano pipistrelle sonogram.

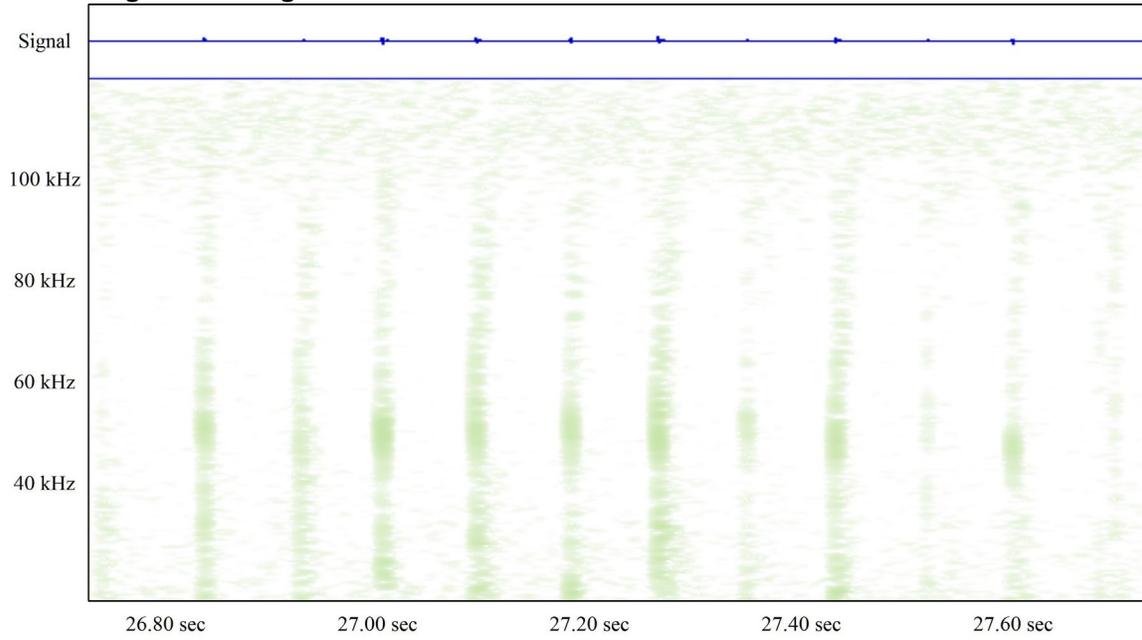


Soprano pipistrelle peak frequency

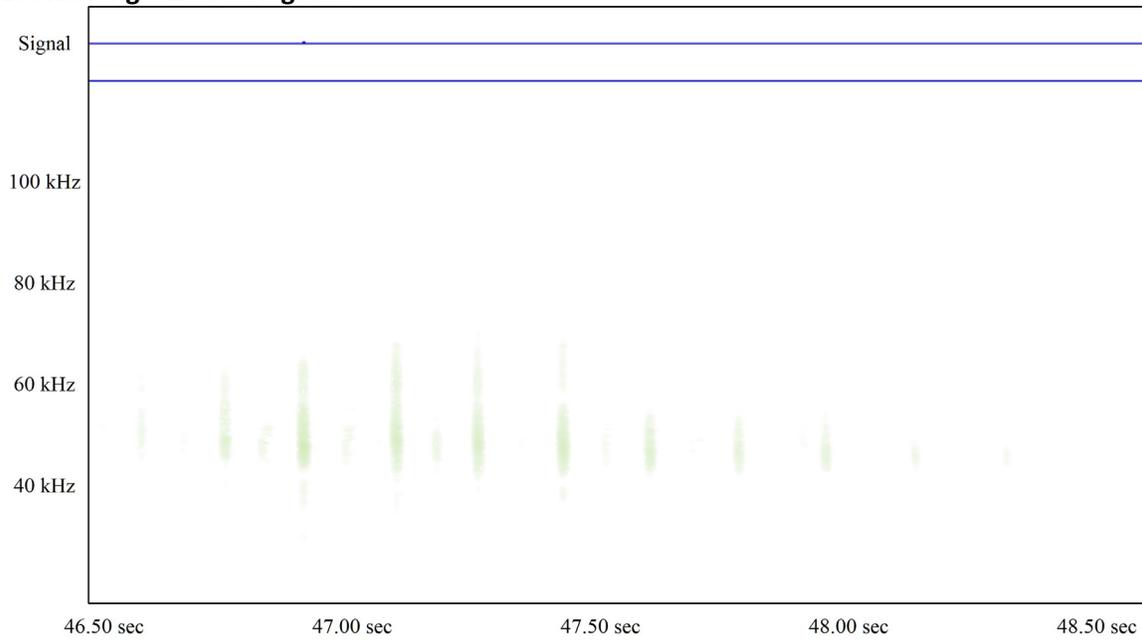


The Brown long eared bats heard have also been confirmed by sound analysis with the weak frequency modulated downwards sweeping call. The signal is weak because of the nature of the Brown long eared call.

Brown long eared sonogram.



Brown long eared sonogram.



Birds.

There was no evidence of birds nesting in the dwelling but there are opportunities for birds to nest in the shrubbery growing up the building.

Conclusion.

There is evidence of bats using the roof space of Yoxall Lodge as a temporary place of shelter with a small number of droppings being found.

There was evidence from emergence surveys of 2 Brown long eared bats, a Soprano pipistrelle bat and a Common pipistrelle bats using Yoxall Lodge as a place of shelter.

A European Protected Species license will be required to undertake the development if planning permission is granted.

New roosting for crevice dwelling bats can be created on the site by installing brick bat boxes into areas of new brickwork that form the new garage building.

New roosting for Brown long eared bats can be created in the roof space of the new garage building.

Birds could nest in the property although there has been no evidence of nesting. No demolition or re-development of the buildings is to take place between March and August in any year if birds are nesting and the young have not fledged.

Impacts on bats.

The demolition of the property will have a negative impact on bats due of the loss of the roosting in the dwelling. The method of working below must be followed to ensure that the potential for disturbing or harming bats, however small, is minimized and avoided.

There is no loss of habitat from the proposed extension and there will be no impact on habitat, forage or commuting routes from the proposed development.

Mitigation for bats.

Records and the emergence surveys show that there are populations of crevice dwelling bats locally. New roosting opportunities for these species of bats can be created when the site is re-developed if planning permission is granted, to meet the requirements of the National Planning Policy Framework (2012).

A brick built bat box can be installed at the eaves of the eastern and western elevations of the new garages to be built adjacent to the dwelling, should planning permission be granted. These are constructed from brick or concrete blocks and are built into the outer leaf of brickwork. They can have facing bricks or be rendered. They provide no access to the cavity wall.



They are made by a number of companies including Wienerberger, Ibstock Brick, Habibat and Schwegler.



**Bat Boxes.
To protect
and conserve.**



Birmingham and the Black Country
Cheshire
Derbyshire
Devon
Durham
Lancashire, Greater Manchester & North West
Staffordshire
Sussex

Wienerberger has worked closely with EcoSurv Ltd to create a brand new range of eco-friendly bat boxes. Compared to existing bat boxes on the market, the Wienerberger bat box is larger and features an innovative arrowhead structure which helps maintain the bats body temperature in order for them to flourish.

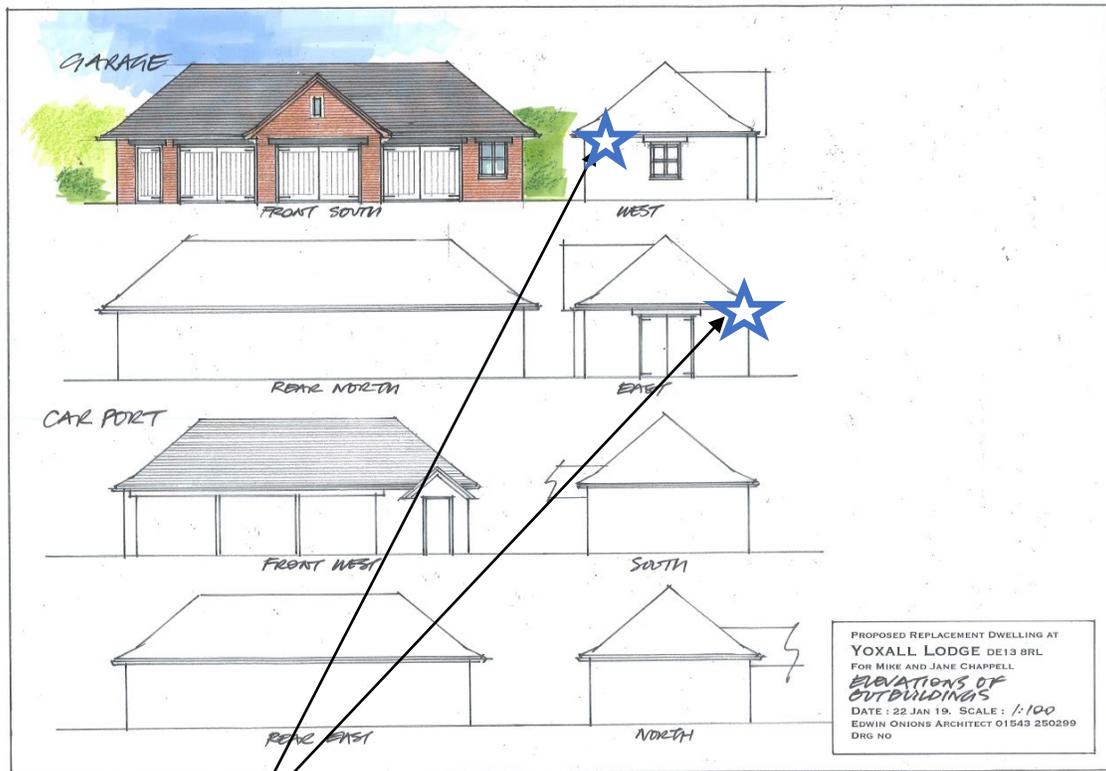
The bat box is designed to encourage the most popular bats found in the UK, such as Pipistrelles, Natterer's, Whiskered and Brandt's bats. Other bat box options are available for other breeds via special order.

Bats are an important part of our natural landscape. The latest legislation to protect bat species and their habitats has now brought the UK in line with the rest of Europe and made bat conservation mandatory on any new building project where bats may exist.

Our bat boxes also help towards gaining additional ecological points to meet the requirements of the Code for Sustainable Homes.

Our bat boxes are currently available in Staffordshire Smooth Red and Smooth Blue but can also be manufactured to any colour in our range.

Further detailed information on Wienerberger bat boxes and bat conservation is available at www.brick.co.uk/batbox or contact Design Services on 0161 491 8200



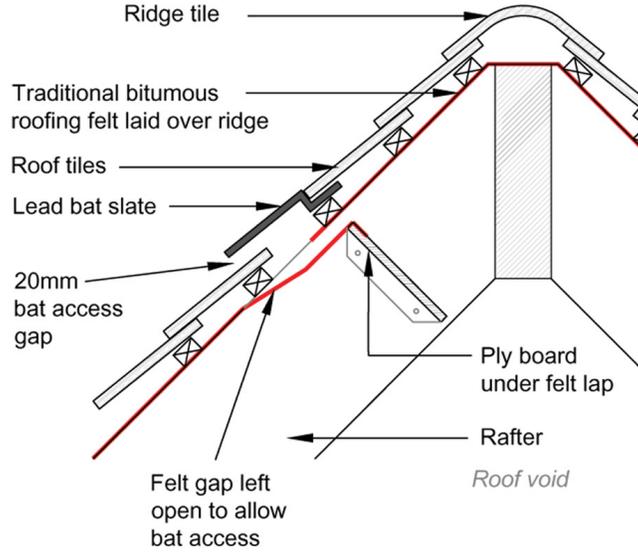
Brick built bat boxes.

The eastern and western elevations have been chosen because the position will benefit from solar gain and will provide a warm roost for crevice dwelling bats.

A new roost for Brown long eared bats can be created in the roof space of the garage. Access can be created by installing a lead bat slate on the eastern elevation close to the mature trees which will provide a commuting route and forage opportunities. The roofing membrane must be a traditional bitumous underfelt that is compatible with bat use.

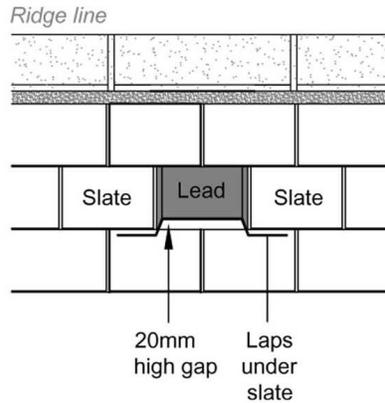
**BAT ACCESS 'SLATE'
DETAIL 1B - with access to
roof void**

SECTION: BAT ACCESS 'SLATE' 1B
Not to scale



Elevation: BAT ACCESS 'SLATE' DETAIL 1B
Not to scale

Bat slate built into slope



Photograph of bat slate



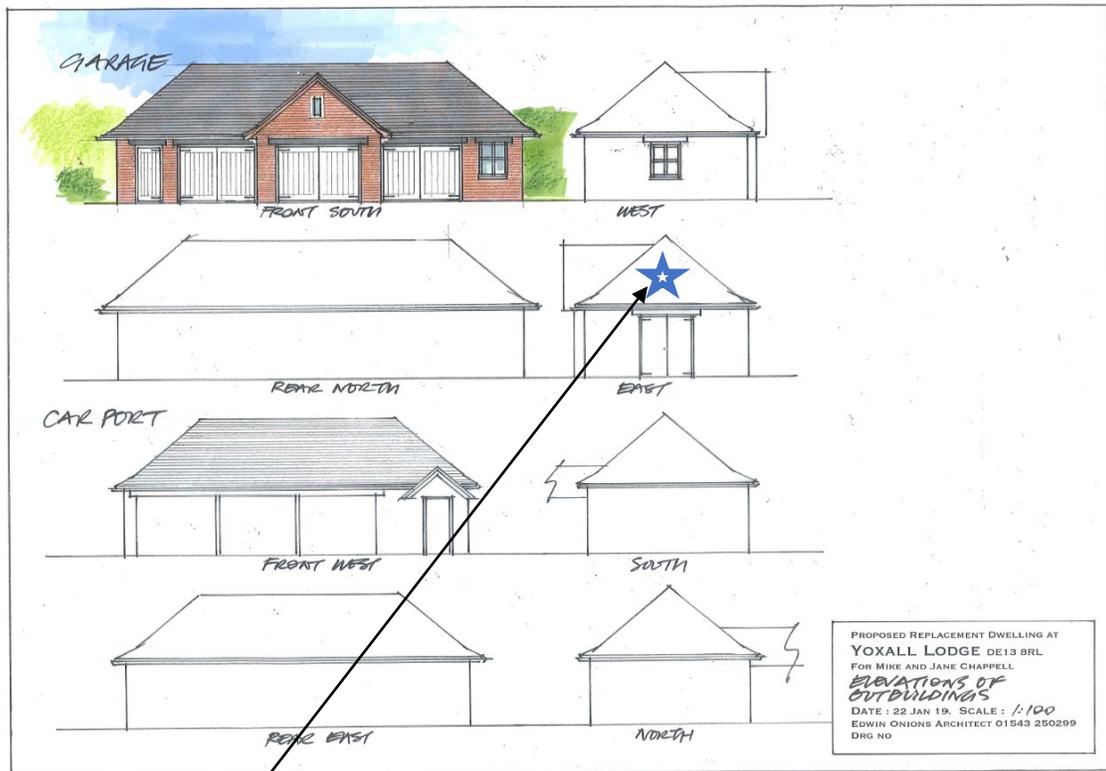
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Drawn by: Emma L Smith B.A. (Hons.)



Lead bat access slate.

There should be no direct illumination of the new bat roosting opportunities. Lighting around the site will be by low wattage down lights at low level to provide security and safety lighting for the dwelling and service area. This lighting will be set no higher than the head height of the ground floor windows and will minimise the possible disturbance to bats in this area. Any security lighting will use PIR's to ensure they turn off automatically once the movement has ceased.

The method of working has been set out so that it can printed and handed to contractors on site.

Method of working.

There is evidence of bats using the buildings as a place of shelter and it is possible that individual bats may use the possible temporary roosting sites under the ridge tiles, at the verge and under the roof tiles next to the missing tile at different times of year. Because of this possibility a method of working must be put in place when there are contractors on site. This would cover work to the roof or demolition where there was access for bats.

The common species of bats that are likely to roost in buildings of this nature and are evidenced from the regional records, are crevice dwelling bats, such as the Common Pipistrelle. These bats are small and can use accesses as little as 50mm x 20mm. when found in buildings they appear no bigger than a thumb and have dark brown fur.



It is common to find bat droppings in places used by bats. These are small and often confused with mouse droppings. It is possible to distinguish between them as mouse droppings are hard whereas bat droppings, being only insect remains, crumble when rubbed between the fingers.



The other species of bat that may possibly be found on site is the Brown Long Eared bat. These are a medium sized bat, larger than a Pipistrelle with very long ears that meet in the centre of the head. These bats may be found in crevices in the brickwork, behind ridge boards or in splits in the larger roof timbers.



- When tiles are removed they should be lifted away from the roof and not slid or twisted to avoid injuring any bats roosting beneath the tiles.
- Ridge tiles should be lifted without sliding so as to avoid injuring any bats roosting beneath them.
- If a bat is found under a roof tile or ridge tile, the tile should be carefully replaced and work in that area stopped until such time as a licensed bat worker can attend the site.
- The bat can then be removed to a place of safety until such time that it can be released at night.
- The demolition of any part of the building where bats could potentially roost should be by hand. This includes the removal of roof tiles, ridge tiles, soffits, gutter fascia boards and hanging tiles. If a bat is found the work should be stopped immediately and a bat worker called to come and deal with the bat. The bat should not be handled except by a licensed bat worker. Any bats found will be taken into care for release on site later dependent upon the time and weather.
- Bats discovered during the winter period will be taken into care, feed and kept healthy until they can be released on site in the Spring.
- Bats will not be released on site until evening temperatures are consistently above 6°C, at least three nights, the wind is light, and there is no rain.
- Bats taken into care over the winter will be released to the new roost opportunities in Spring if they are available using the same release criteria as above.

Legislation concerning bats.

The Wildlife and Countryside Act 1981 (WCA) protects bats and their roosts in England, Scotland and Wales. Some parts have been amended by the Countryside and Rights of Way Act 2000 (CRoW) which applies only in England and Wales, and by the Nature Conservation (Scotland) Act 2004 which applies in Scotland.

The Conservation of Habitats and Species Regulations 2010 (better known as the Habitats Regulations) implements the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora. All bats are listed as 'European protected species of animals'.

It is an offence for any person to:

- Deliberately capture, injure or kill a bat.
- Intentionally or recklessly disturb bats, where that disturbance may significantly affect the ability of those bats to survive, breed, rear or nurture their young, or is likely to significantly affect the local distribution or abundance of any bat species, whether in a roost or not.
- Damage or destroy a place of shelter (roost) of a bat, be that a resting or breeding place.
- Possess a bat, whole or in part, alive or dead.
- Intentionally or recklessly obstruct access to a roost.
- Sell or offer for sale or exchange whole or parts of bats, alive or dead.

The fine for committing an offence is £5,000 per bat.

If a bat is found on site, work should stop in the area where the bat was found and the contractor should call the Bat Consultant; S. Christopher Smith 07967636115.

Breathable Roofing Membranes-Info Sheet

What are they?

- ✦ Traditional roofing felt was bitumen based
- ✦ Modern membranes are made from very fine and long plastic fibres that are spun into thin sheets. They be single ply or have various layers to provide a more complex membrane.
- ✦ They are known as Breathable roofing membranes or Vapour permeable underlay's (BRMs/VPUs)

Who Makes them?

- ✦ When most people talk about BRMs, they will call it Tyvek as this is the most famous brand name
- ✦ There are over 70 products in the UK alone, made by 20+ companies – never assume the product is Tyvek unless there is proof.

Why are they used?

- ✦ Modern houses are designed to be more energy efficient, meaning they tend to be warmer.
- ✦ Along with human activities this means increased levels of water vapour in the air
- ✦ When this passes up into the cold roof space, it forms condensation, which can lead to problems
- ✦ In the past gaps would have been left near the ridge and eaves to allow ventilation, but increased insulation often means this isn't possible. A breathable membrane aids this as it allows water vapour to pass out of the loft into the external air

Potential Problems

- ✦ There have been reports of bats becoming entangled in fibres pulled from the membranes
- ✦ Possibility of Temperature and humidity change
- ✦ A lot of membranes are white or brightly coloured

Advice

- ✦ **At present we cannot recommend specific brands that are considered safe for use in bat roosts, as such it is recommended that bitumen felt be used where possible**
- ✦ It is not against the law not to install a BRM
- ✦ If the planner insists on a BRM, suggest a dark coloured and reinforced membrane



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S.Christopher Smith MRICS MSc CEnv.

Appendix 1.

Roost Types as designated by Natural England and the Bat Survey Good Practice Guidelines.

- A. 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.
- B. 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.
- C. Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
- D. 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.
- E. Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites
- F. Mating sites: sites where mating takes place from later summer and can continue through winter.
- G. Maternity roost: where female bats give birth and raise their young to independence.
- H. Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
- I. 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.
- J. Other – Explain what the roost type is if not one of the above (it is recognised that roost types are interchangeable and not always easy to classify according to the nuances of certain species).