Bat and Bird Survey for,
Mr. and Mrs. M. Cliff
Buildings at,
Oak Ridge,
Gratton Lane,
Endon,
STOKE ON TRENT,
ST9 9AQ.

Map Ref SJ 9346 5594
31st May 2017.

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Summary.

- **There is evidence of bats using the dwelling as a place of shelter.**
- **There was no evidence of birds nesting in the dwelling or the garages.**
- **Brown long eared bats are using the roof space of the dwelling as a place of shelter. One bat was seen in the roof space during the building survey. No bats have been seen emerging from the building. This is a Day roost of Brown long eared bats.**
- **There is a roosting opportunity between the bitumous underfelt and the plain tiles on the roof of the dwelling.**
- **Two Common pipistrelle bats were seen to emerge from behind the plain tiles on the property. This is a Day roost for Common pipistrelle bats.**
- **There is a roosting opportunity beneath the ridge tiles of the dwelling.**
- **The demolition of the building, if approved by the Local Authority must not occur if birds are nesting in the building until the young have fledged.**
- **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.**
- **A Bat Low Impact Class (BLIC) license will be required to demolish the property should planning permission be granted for re-development.**
- **New bat roosting opportunities can be created by installing two brick built bat boxes into the new development. A bat box is to be fitted to a tree on site before the demolition of the dwelling to provide temporary roosting for bats found in the building during the demolition.**

Introduction.

An inspection and building survey for bats was requested by Rob Duncan on behalf of Mr. and Mrs. M. Cliff. The survey was to be undertaken in relation to the submission of a planning application to replace the existing dwelling, garages and shed with a new dwelling. The property was visited on the 13th September 2016 and the surveyor spent 1 hour on site. The weather was dry with high cloud.

Temperature; 24°C Wind;0-1 Beaufort Scale Cloud Cover; 4/8th.



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 of 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 October 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 likleyhood 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;

Myotos daubentonii.
Myotis nattereri.
Nyctalus noctula.
Pipistrellus pipistrellus.
Pipistyrellus pygmeaus.
Plecotus auritus.

Bat roosts recorded by the surveyor within 3km have been a non-maternity roosts of Common pipistrelle 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 access constraints to the surveyor for the building survey for bats.

Building Survey.

The buildings to be surveyed consisted of a single storey dwelling with cavity brick walls and a pitched roof. The roof is supported on timber purlins and rafters with plain tiles and has a bitumous underfelt. There are soffits around the property with timber fascia and soffit boards.




There is a single storey pitched roof garage to the north of the dwelling and a single storey pitched roof double garage.





To the south of the dwelling is a single storey timber framed building with a corrugated iron roof that has been used as a store/shed.



The property is situated south of the small village of Gratton with agricultural land surrounding the village and the site. There are mature trees in the hedgerows and trees between the fields

which provide commuting routes for bats. There are areas of woodland in the countryside around the village 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.

Single car garage.

This is a single storey cavity brick building with a pitched roof.






The roof is supported on timber rafters with a bitumous underfelt. There are plain tiles on the roof. There are timber soffit boards at the eaves. There is no access to the structure for bats.

Bat roosting potential; None.

Double car garage.

This is a single storey building constructed on brickwork and pre-cast concrete panels.




There is a shallow pitched roof with profile steel roof sheets. There are no roosting opportunities for bats.

Bat roosting potential; None.

Shed.

This is a timber framed building with a single skin of timber cladding. There is a pitched roof supported on timber trusses with corrugated iron roof sheets supported on timber sheeting rails. There have been profile steel cladding sheets fitted to the timber cladding where water damage has caused the unlined timber cladding to become prone to weather penetration. There is access for bats around the doors, at the open eaves and at the pressed metal ridge flashing.

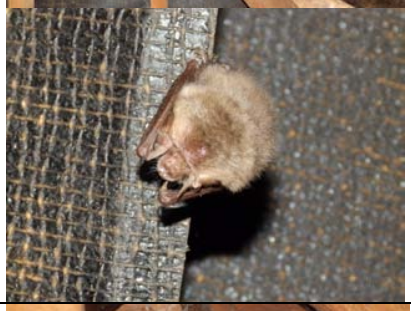





The only roosting opportunity for bats is between the timber sheeting rails and the corrugated iron roof sheets. The space between the sheets and the sheeting rail offers a temporary place of shelter to individual bats but the rapid heating and cooling of the roof sheets make the use of this area highly unlikely.

Bat roosting potential; None.

Dwelling.

Feature.	Evidence of bats.	Likelyhood of bats roosting.	Photograph.
Behind ridge board.	Bat droppings and single Brown long eared bat.	Definite. There were a large number of medium sized droppings on the floor of the roof space indicating use by a number of bats. Some of the ridge boards are cobweb covered indicating no use in that area by bats.	  
In splits in timber rafters.	None.	None. Machine cut timbers.	
Under ridge tiles.	None.	Possible. There is a gap under the end ridge tile on the southern elevation that could be used by bats to access the gap under	

		the ridge tiles and possibly the roof space.	  
Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
Under loose or missing roof tiles.	None.	Possible. There are a number of broken and missing roof tiles that give access under the roof tiles and possibly to the roof space.	 

			
Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
In eaves.	None.	None. Timber soffits and fascia boards with no access for bats.	

			 
Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
Under bonnet hip tiles.	None.	None. There is no access for bats.	 

			
Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
In verges.	None.	None. There is no access for bats.	  

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

Bat droppings.

There were a large number of medium sized segmented bat droppings in the roof space of the dwelling. The droppings were dark drown and glossy indicating that they were recent droppings, a number of months old. There were some very old gray brown droppings beneath the fresh droppings. The droppings were found beneath the ridge board, which together with the size and shape indicate that they are most likely from Brown long eared bats. A single Brown long eared bat was found in the roof space.









The number of droppings is sufficient that this could be a maternity roost or satellite to a maternity roost.

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 and a dawn re-entry are to be undertaken. The number of surveys was determined with reference to the Bat Survey Guidelines for a property with high 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, a Batbox Baton XD Time Expansion bat detector with Olympus wav recorder , an Elekon Batscanner and Magenta 5 heterodyne bat detectors.

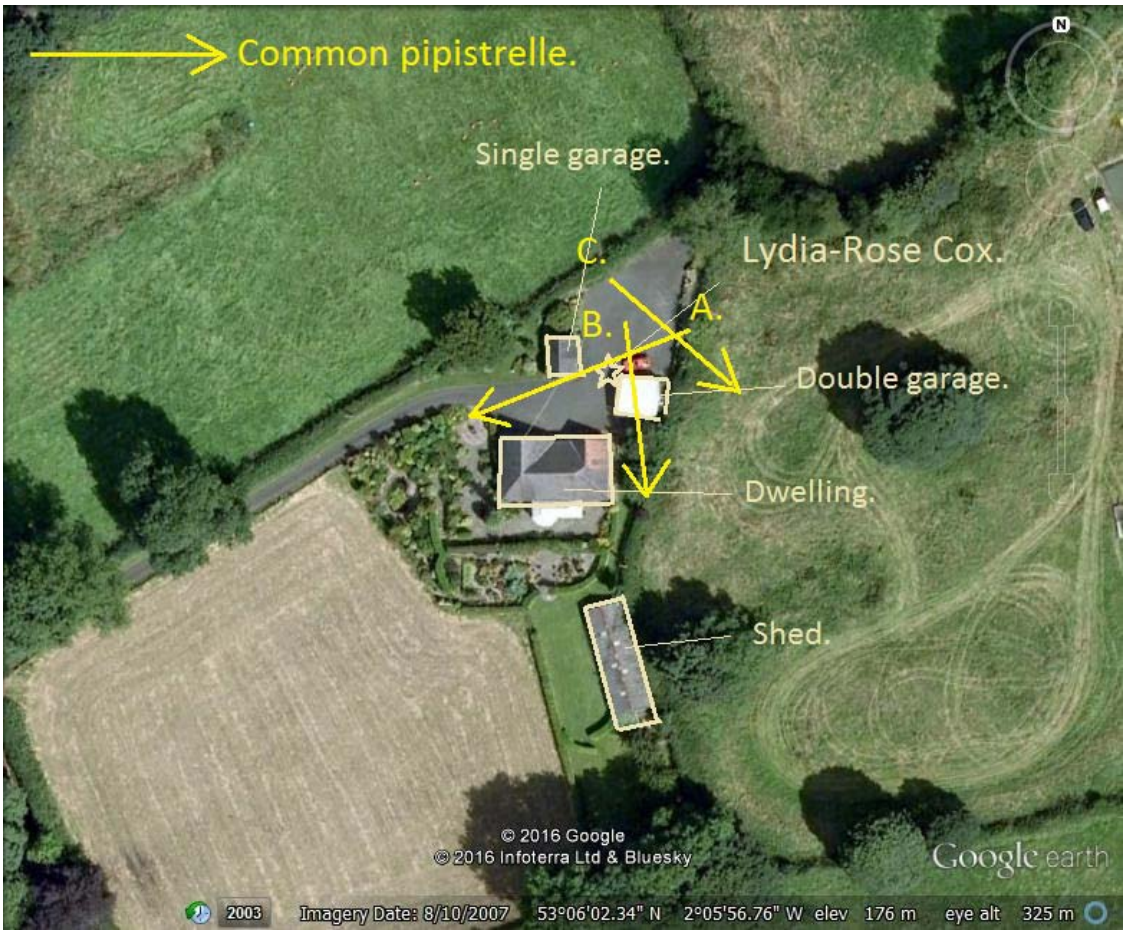
1st May 2017.

Sunset.	20.37
Air Temperature.	17.2°C at the start of 11.3°C at the end of the survey .
Wind.	Beaufort Scale 0-1.
Cloud cover.	3/8th.

Surveys started at 20.24
Surveys ended at 22.34

1st May 2016.
Surveyor. Lydia-Rose Cox, trainee bat worker.
Positioned to the north eastern of the building.

Time.	Direction.	Activity.	Species.	Notes.
21.11	A	Commuting	Common pipistrelle	
21.12	A	Commuting	Common pipistrelle	
21.14	C	Commuting	Common pipistrelle	
21.16	A	Commuting	Common pipistrelle	
21.17	C	Commuting	Common pipistrelle	
21.19	B	Commuting	Common pipistrelle	
21.20	C	Commuting	Common pipistrelle	
21.29	Not seen		Common pipistrelle	
21.30	A	Commuting	Common pipistrelle	
21.30	Not seen		Common pipistrelle	
21.31	Not seen	Foraging	Common pipistrelle	



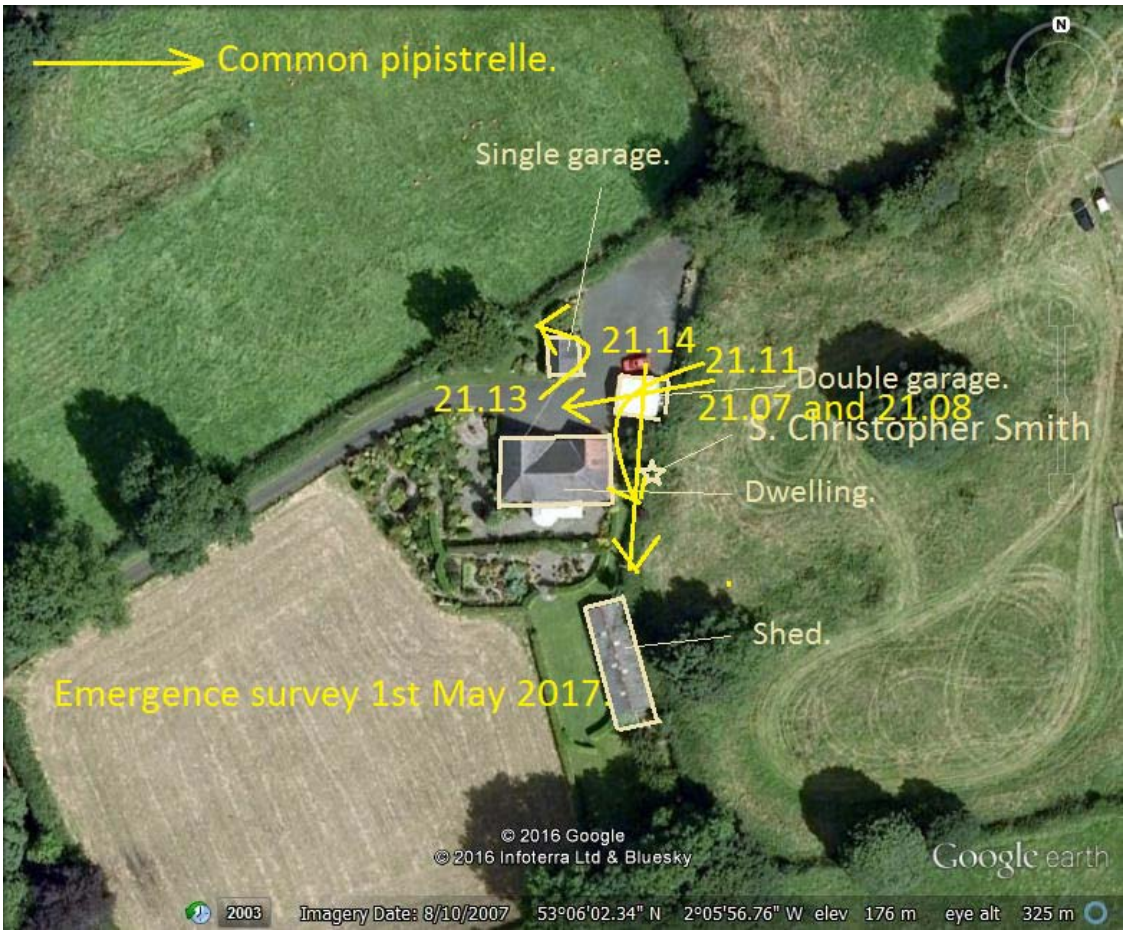
1st May 2016.
Surveyor. Martin Kessel, trainee bat worker.
Positioned at the south west corner of the building.

Time.	Direction.	Activity.	Species.	Notes.
21.09	A	Commuting	Common pipistrelle	
21.18	Not seen	Commuting	Common pipistrelle	
21.20	A and B	Foraging	Common pipistrelle	2x and circled in garden
21.21	Not seen	Faint	Common pipistrelle	



1st May 2016.
Surveyor. S. Christopher Smith, Licensed bat worker.
Positioned to the east of the building.

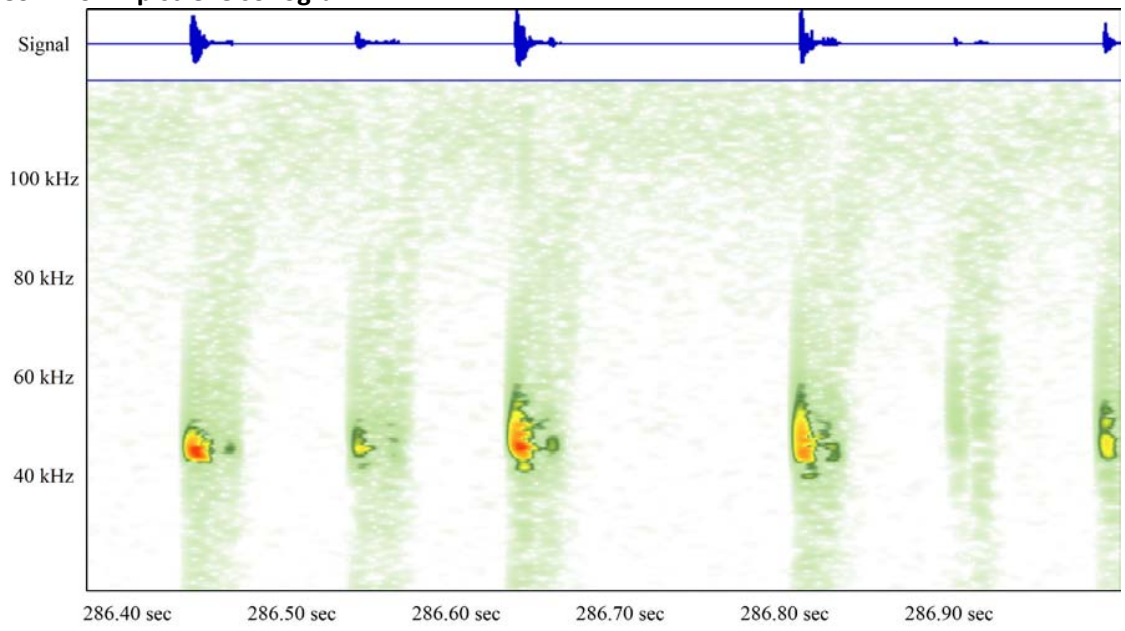
Time.	Direction.	Activity.	Species.	Notes.
21.07		Commuting	Common pipistrelle	
21.08		Commuting	Common pipistrelle	
21.11		Commuting	Common pipistrelle	
21.13		Commuting	Common pipistrelle	
21.14		Commuting	Common pipistrelle	
21.58	Not seen	Commuting	Common pipistrelle	
21.59	Not seen	Commuting	Common pipistrelle	



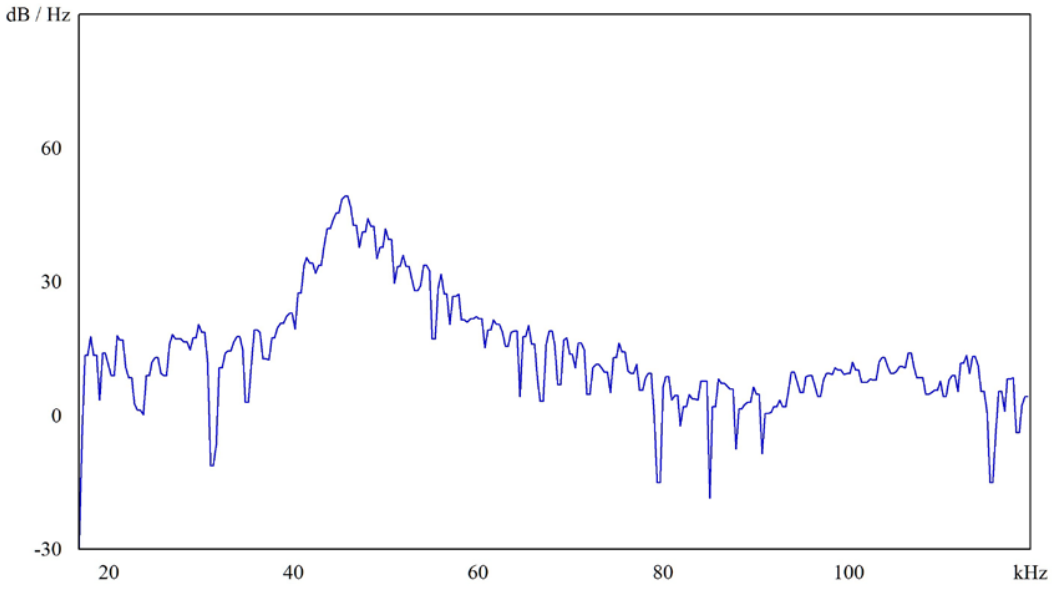
Analysis of the recordings from the bat detectors have confirmed the presence of Common Pipistrelle bats.

The bats were commuting across the site with no forage calls recorded. 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.



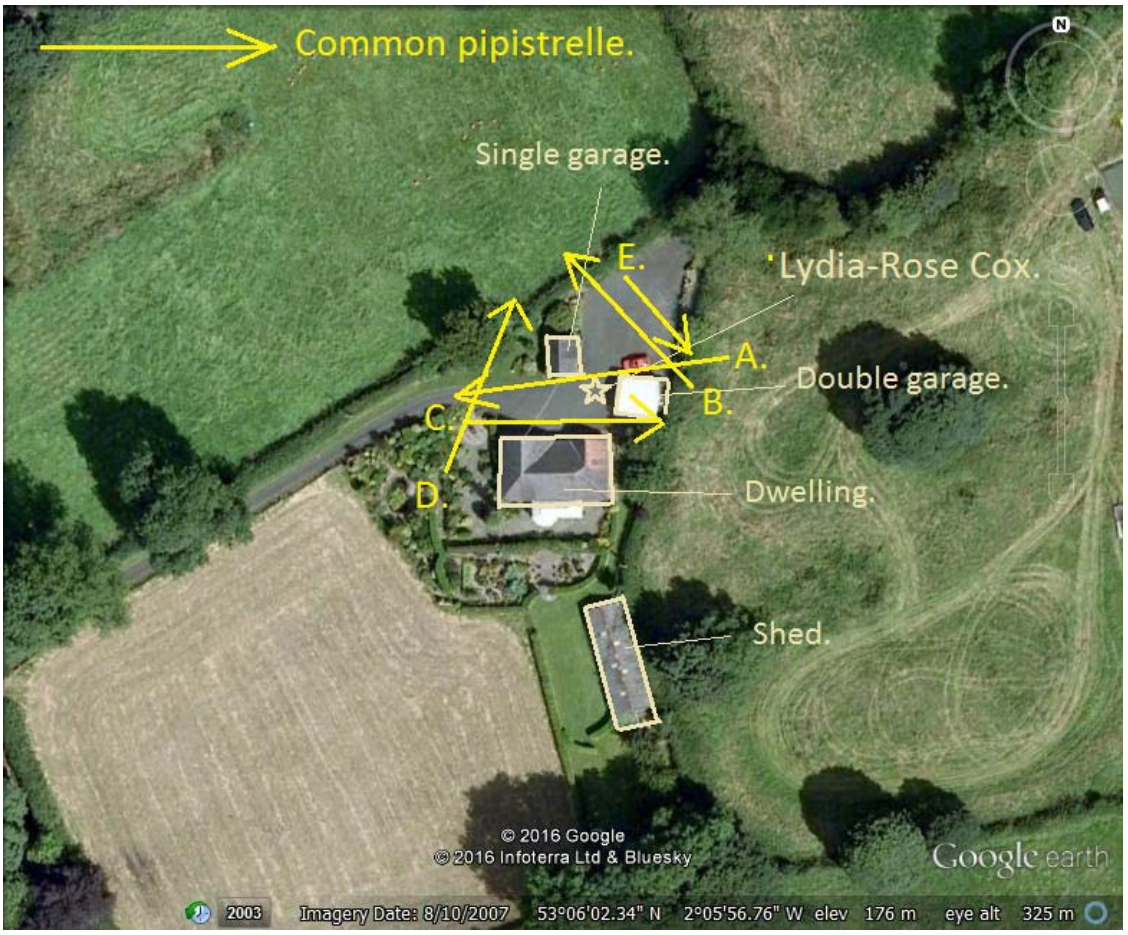
22nd May 2017.

Sunset.	21.07
Air Temperature.	16.3°C at the start of 14.1°C at the end of the survey .
Wind.	Beaufort Scale 0-1.
Cloud cover.	1/8th.

Surveys started at 21.00
Surveys ended at 22.54

22nd May 2016.
Surveyor. Lydia-Rose Cox, trainee bat worker.
Positioned to the north eastern of the building.

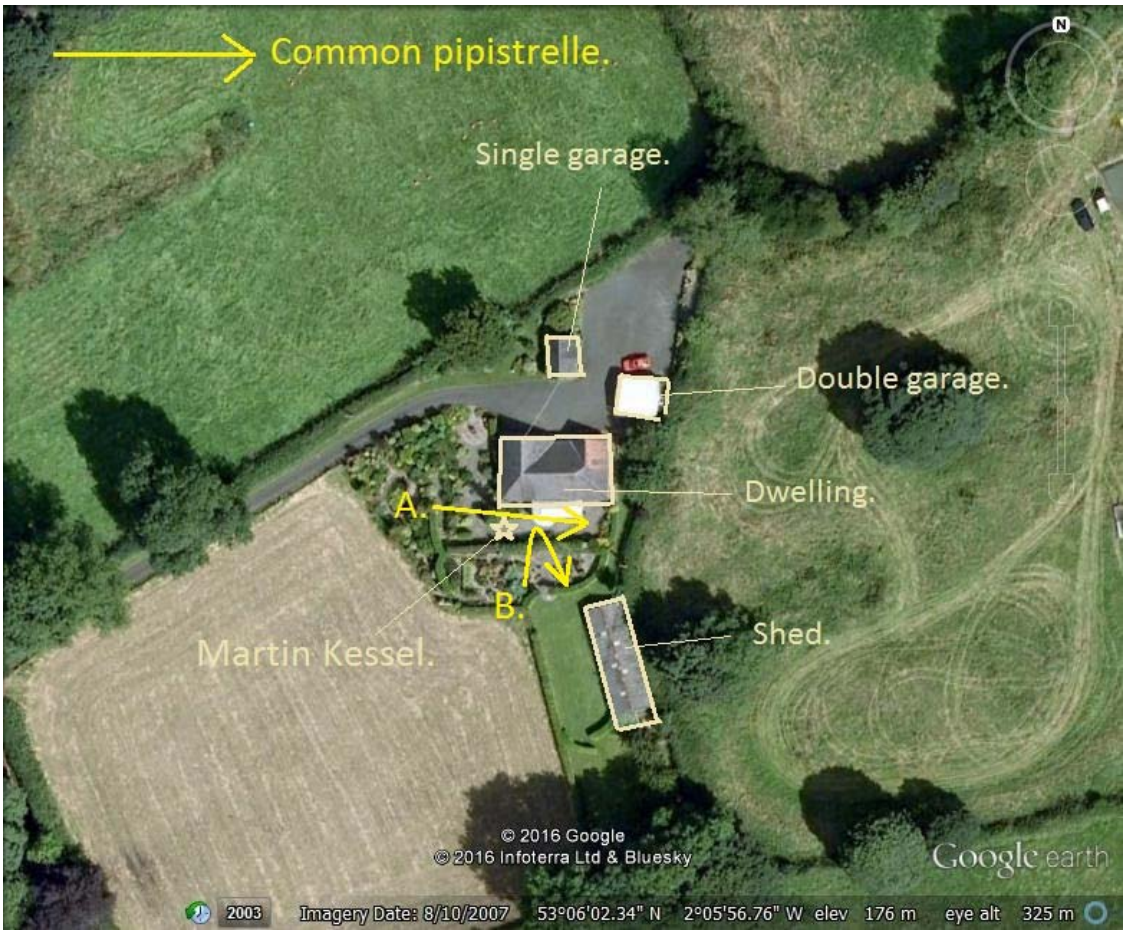
Time.	Direction.	Activity.	Species.	Notes.
21.40	A	Emerged	Common pipistrelle	Emerged above front door
21.45	E	Commuting	Common pipistrelle	
21.46	Not seen	Commuting	Common pipistrelle	
21.57	B	Commuting	Common pipistrelle	
22.00	C	Emerged	Common pipistrelle	Emerged from gable apex on eastern side.
22.00	B	Commuting	Common pipistrelle	
22.01	D	Commuting	Common pipistrelle	
22.05	C	Commuting	Common pipistrelle	
22.05	D	Commuting	Common pipistrelle	
22.08	E	Commuting	Common pipistrelle	
22.09	A	Commuting	Common pipistrelle	
22.11	A	Commuting	Common pipistrelle	
22.11	C	Commuting	Common pipistrelle	
22.13	C	Commuting	Common pipistrelle	
22.13	E	Not heard	Pipistrelle	Flight pattern
22.13	E	Not heard	Pipistrelle	Flight pattern
22.15	E	Commuting	Common pipistrelle	
22.16	C	Commuting	Common pipistrelle	
22.16	C	Commuting	Common pipistrelle	
22.17	B	Commuting	Common pipistrelle	
22.22	Not seen.	Commuting	Pipistrelle	Faint
22.23	E	Commuting	Soprano pipistrelle	
22.23	E	Foraging	Soprano pipistrelle	
22.30	Not seen	Commuting	Soprano pipistrelle	
22.31	Not seen	Foraging	Common pipistrelle	
22.32	Not seen	Foraging	Common pipistrelle	
22.32	A	Commuting	Common pipistrelle	
22.35	E	Foraging	Soprano pipistrelle	


Common pipistrelle.
Single garage.
E.
Lydia-Rose Cox.
A.
Double garage.
B.
C.
D.
Dwelling.
Shed.
© 2016 Google
© 2016 Infoterra Ltd & Bluesky
Google earth
2003
Imagery Date: 8/10/2007
53°06'02.34" N
2°05'56.76" W
elev
176 m
eye alt
325 m



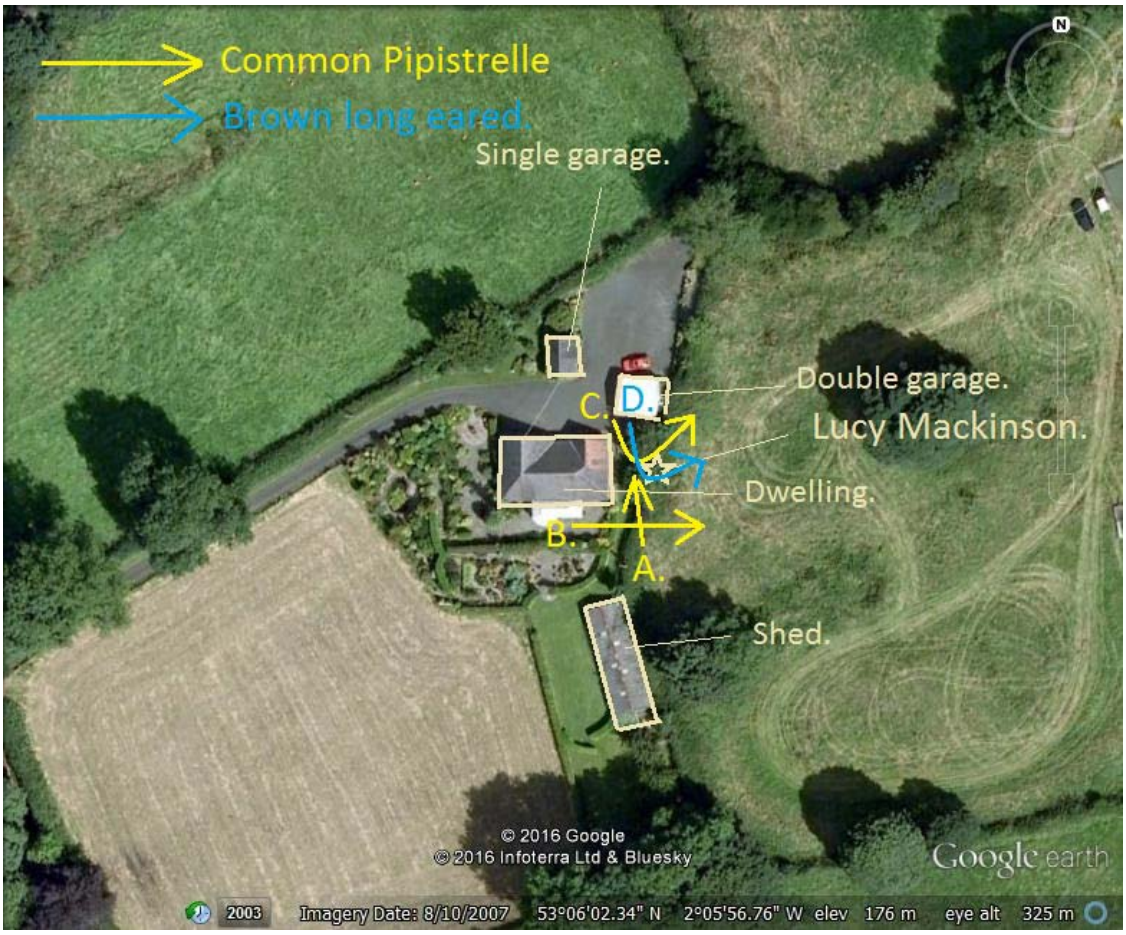
22nd May 2016.
Surveyor. Martin Kessel, trainee bat worker.
Positioned at the south west corner of the building.

Time.	Direction.	Activity.	Species.	Notes.
22.13	A	Not heard	Brown long eared?	By flight pattern and size.
22.15	Not seen.	Commuting	Common pipistrelle	
22.16	Not seen.	Commuting	Common pipistrelle	
22.21	Not seen.	Commuting	Noctule	
22.22	Not seen.	Commuting	Common pipistrelle	
22.23	Not seen.	Commuting	Common pipistrelle	
22.24	B	Foraging	Common pipistrelle	
22.30	Not seen.	Commuting	Common pipistrelle	
22.31	Not seen.	Commuting	Common pipistrelle	
22.32	Not seen.	Commuting	Common pipistrelle	
22.34	Not seen.	Foraging	Common pipistrelle	
22.41	Not seen.	Faint	Noctule	



22nd May 2016.
Surveyor. Lucy Mackinson, Licensed bat worker.
Positioned at the south west corner of the building.

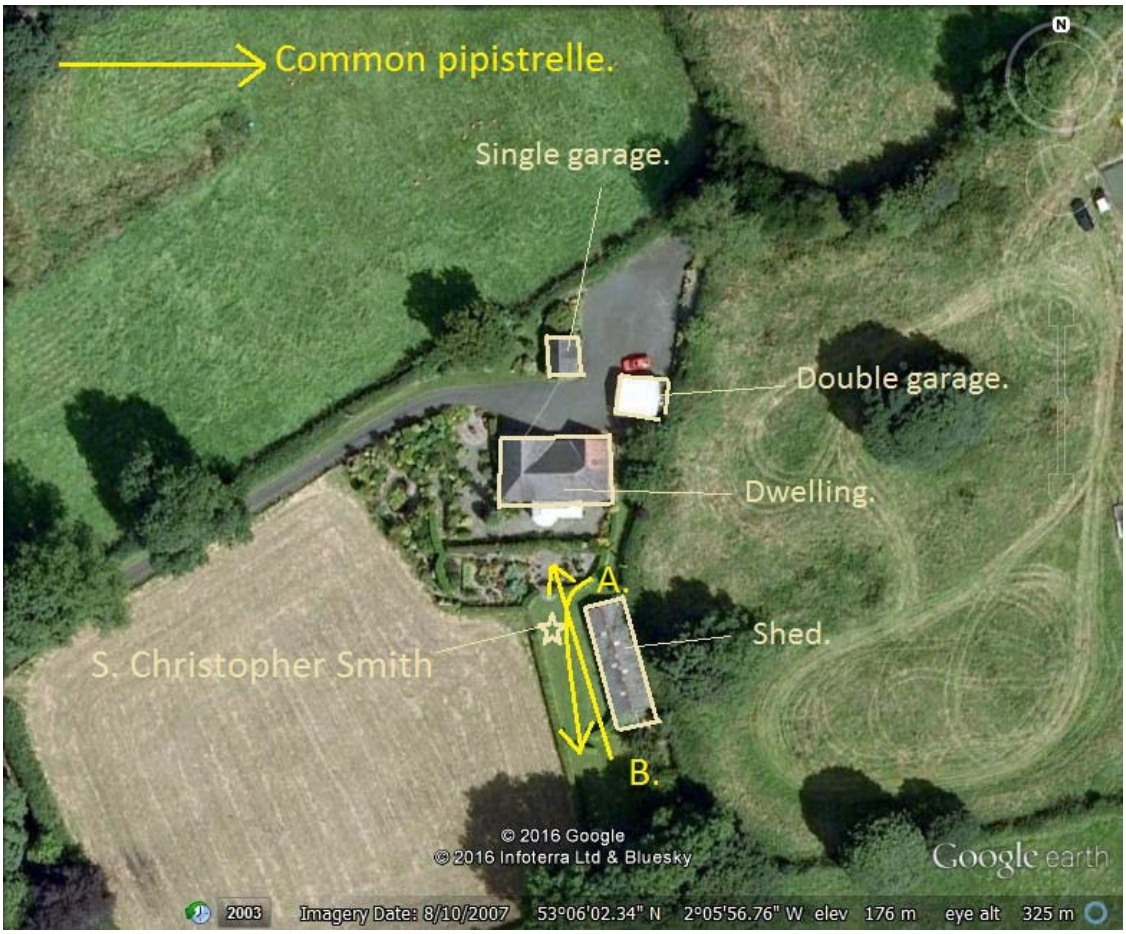
Time.	Direction.	Activity.	Species.	Notes.
21.44	A	Foraging	Common pipistrelle	
21.50	B	Foraging	Common pipistrelle	
21.57	C	Foraging	Common pipistrelle	
21.59	D	Foraging	Brown long eared	
22.10	D	Not heard	Brown long eared	
22.11	C	Foraging	Common pipistrelle	
22.34	C	Foraging	Common pipistrelle	



22nd May 2016.
Surveyor. S. Christopher Smith, Licensed bat worker.
Positioned to the east of the building.

Time.	Direction.	Activity.	Species.	Notes.
21.47	A	Commuting	Common pipistrelle	
21.53	Not seen	Faint	Common pipistrelle	
21.57	B	Commuting	Common pipistrelle	
22.02	A	Commuting	Common pipistrelle	
22.02	B	Commuting	Common pipistrelle	
22.03	B	Commuting	Common pipistrelle	
22.07	A	Foraging	Common pipistrelle	
22.09	A	Commuting	Common pipistrelle	
22.10	A	Commuting	Common pipistrelle	
22.10	Not seen	Commuting	Common pipistrelle	
22.10	B	Foraging	Common pipistrelle	
22.11	Not seen	Foraging	Common pipistrelle	
22.12	Not seen	Commuting	Common pipistrelle	
22.13	Not seen	Commuting	Common pipistrelle	
22.14	A	Foraging	Common pipistrelle	2 x seen together

22.19	Not seen	Commuting	Common pipistrelle	
22.20	Not seen	Commuting	Common pipistrelle	
22.27	Not seen	Faint	Pipistrelle	
22.29	Not seen	Foraging	Common pipistrelle	
22.29	Not seen	Commuting	Common pipistrelle	
22.31	Not seen	Faint	Common pipistrelle	
22.32	Not seen	Commuting	Common pipistrelle	



Birds.

There was no evidence of birds nesting in the dwelling and there are no opportunities for birds to nest in the dwelling, the single garage and the double garage.

There are nesting opportunities in the timber shed but there was no evidence of birds nesting in the workshops or the garage.

Conclusion.

There was evidence of bats using the dwelling as a place of shelter. There are a number of droppings and some are very very fresh indicating use by Brown long eared bats. A single Brown long eared bat was seen in the roof space.

There is access to the space between the underside of the ridge tiles and the roof tiles and the bitumous underfelt.

There are temporary roosting opportunities for bats in the shed to the south of the dwelling. The roosting opportunities are between sheeting rails and corrugated iron sheets and the likleyhood of bats using the space is very poor.

The emergence surveys have produced no evidence of Brown long eared bats emerging from the building. The use of the roof space by Brown long eared bats is therefore as a day roost by a small number of bats.

The emergence surveys have produced evidence of two Common pipistrelle bats emerging from under roof tiles above the main door and from the ties at the northern gable apex. The building is being used by Common pipistrelle bats as a day roost.



No bats were seen to emerge from the garages or the sheds. The demolition of the shed and garages must be undertaken following the method of working below so that harm to bats is avoided.

The demolition of the dwelling, shed and garages will not affect nesting birds.

It is possible that birds could nest between the corrugated iron sheets and the timber structural frame of the shed. In order that there is no disturbance to nesting birds this building is not to be demolished between March and the end of August in any year unless a survey for nesting birds has been undertaken and it can be clearly shown that birds are not nesting in the building.

A Bat Low Impact Class (BLIC) license will be required to undertake the development if planning permission is granted and roosting must be maintained on the site. If planning permission for demolition and re-development is granted then before the building is demolished a BLIC must be obtained. The license must be applied for at least three weeks before the demolition takes place and can be applied for up to 6 months before the demolition. The BLIC license will require that the mitigation set out below is created as a part of the development and the bat consultant must be present during the removal of the roof tiles.

Impacts on bats.

The demolition of the dwelling will have a major negative impact on bats due of the loss of the roosting in the roof space and under the roof tiles. 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 development and there will be no impact on habitat, forage or commuting routes from the proposed development.

Mitigation for bats.

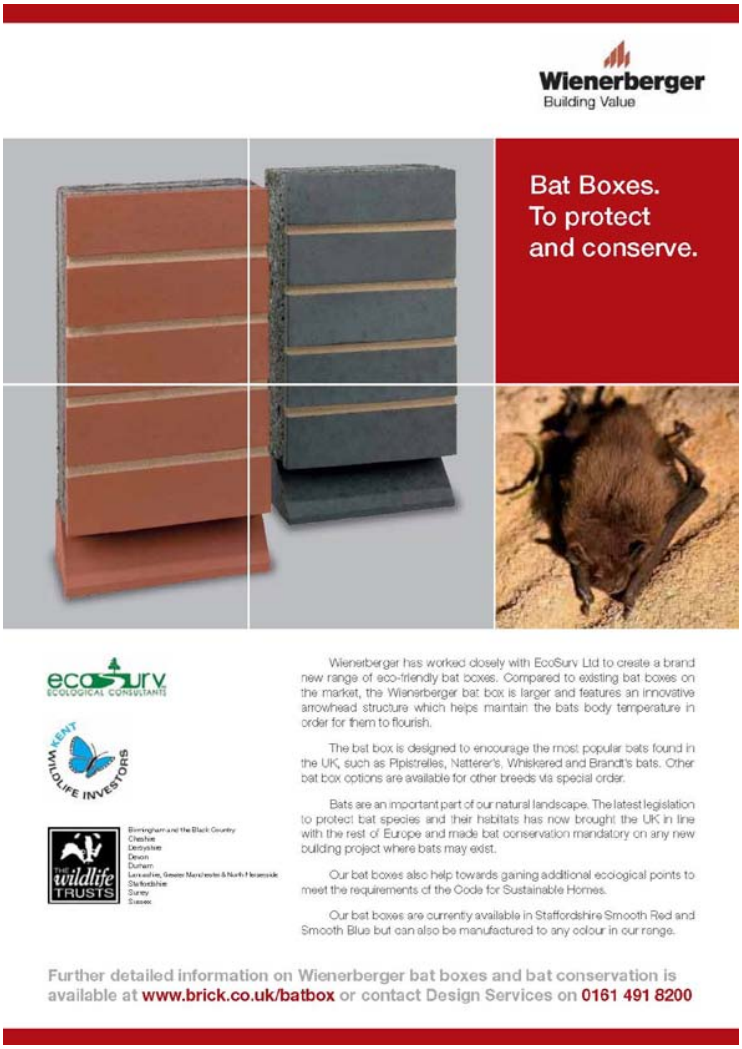
The building survey and the emergence surveys have shown that there are individual Brown long eared and Common pipistrelle bats using the building as a place of shelter. A BLIC license is required to undertake the development. The BLIC license will require that bat boxes are installed on site to provide day roosting for these species of bats.

A brick built bat box can be installed at the gable apex of the southern and northern elevations of the new 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.



A location away from doors and windows should be chosen so that droppings falling from the bat box will not cause a nuisance for the occupiers. A south facing elevation will also benefit from solar gain and will provide a warm roost for crevice dwelling bats.

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.

A bat box must be fixed to a tree on site prior to the demolition of the dwelling, should planning permission be granted. This will provide a place of shelter for any bats found in the building during demolition.

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 dwelling as a place of shelter and it is possible that individual bats may use the possible temporary roosting sites between the sheeting rails and the corrugated iron sheets of the shed 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.

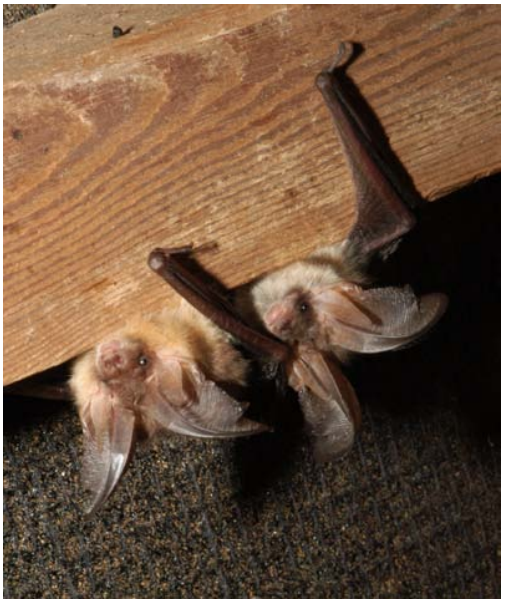




It is common to find bat droppings in places used by bats. These are small and often confused with mouse droppings. It is possible to distinguish between them as mouse droppings are hard whereas bat droppings, being only insect remains, crumble when rubbed between the fingers.




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^{o}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
- Alot 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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Appendix 1.

Roost Types as designated by Natural England and the Bat Surveys for Professional Ecologists, 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).