Bat and Bird Survey for,
Mr. H. Scott-Moncrief.
Folly building at,
Basford Hall,
Basford Green,
Basford,
LEEK,
Staffordshire,
ST13 7ER.

Map Ref SJ 9904 5116
1st September 2015.

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Contents.

Summary.

- **There is evidence of bats using the building as a place of shelter.**
- **2 bat droppings and a small number of butterfly wings were found in the property.**
- **There was evidence of birds nesting in the building.**
- **There is a temporary roosting opportunity in gaps around the floor joists that could be used as a feeding perch or temporary shelter for individual bats.**
- **There was evidence of bats using the temporary roosting opportunities.**
- **A Brown long eared bat was seen to fly into and out of the building, not staying long enough to perch or roost.**
- **A European Protected Species license will not be required for this development should planning permission be granted.**
- **Wrens are nesting in the one gap in the stone walls.**
- **Swallows are nesting in the first floor room of the Folly building.**
- **There are nesting opportunities for birds in the shrubs and trees on the site.**
- **A method of working should be put in place with contractors to ensure that in the event of bats being found they will not be injured.**
- **New roosting opportunities for local crevice dwelling bats should be created by installing bat boxes in the adjacent trees.**
- **A new feeding perch for Brown long eared bats can be created by installing a bat box on the adjacent trees.**

Introduction.

An inspection and building survey for bats was requested by Rob Duncan, on behalf of his client Mr. H. Scott-Moncrief. The survey was to be undertaken in relation to the submission of a planning application to change the use of the existing Folly building to make it a holiday letting residential use. The property was visited on the 13th August 2015 and the surveyor spent 1 hour on site. The weather was dry but overcast.

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 - Good Practice Guidelines, 2012, 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 Survey Good Practice Guidelines, 2012, 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.

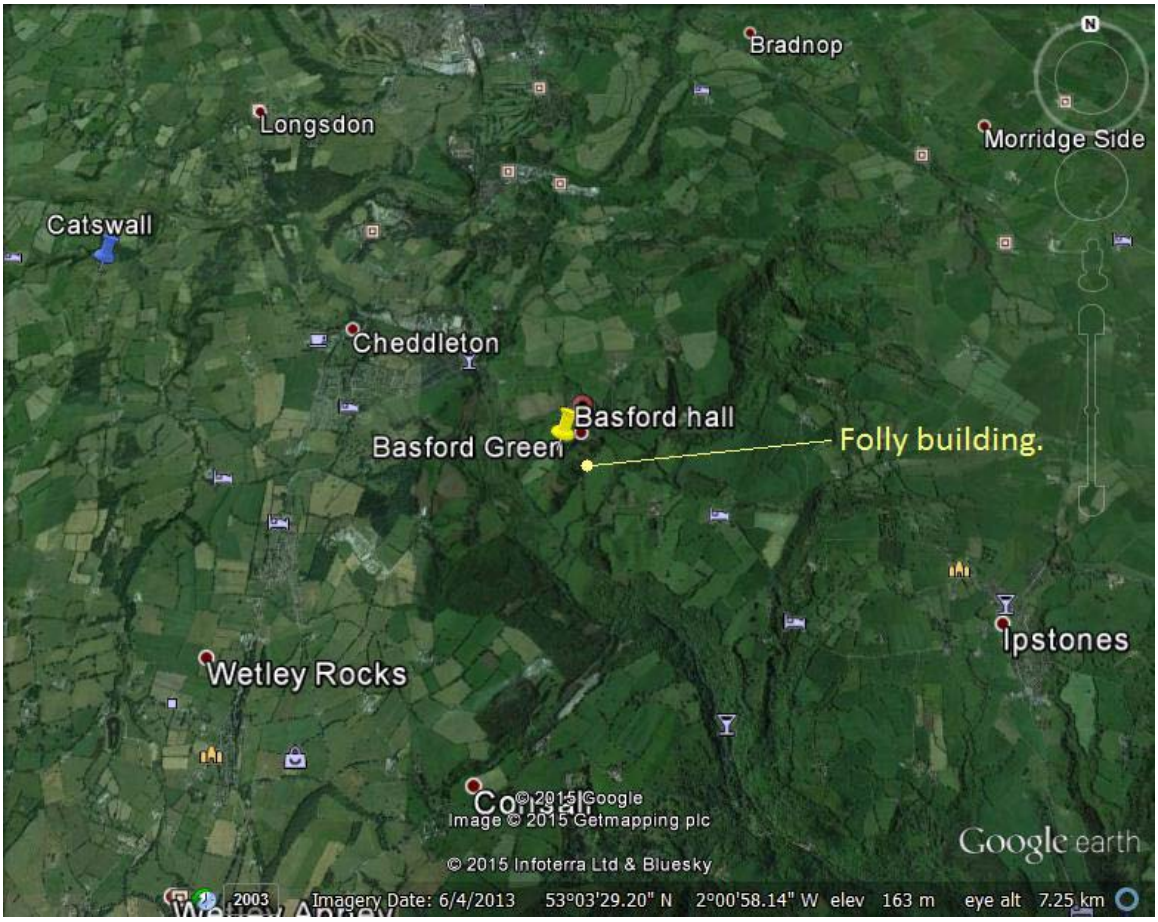
Any trees on site are surveyed following the methodology set out in the Bat Tree Habitat Key, Henry L Andrews et al 2013, which produces a key for identifying Potential Roost Features in trees and their likleyhood of being used by bats. Trees on any site being surveyed will have Potential Roost Features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

Bat records.

A search of public records has revealed the presence of;

Myotis daubentonii.
Myotis nattereri.
Nyctalus noctula.
Pipistrellus pipistrellus.
Pipistrellus pygmaeus.
Plecotus auritus.

Bat roosts recorded by the surveyor within 3km have been a non-maternity roost of Common pipistrelle bats. Bats recorded with bat detectors have been Common pipistrelle bats, Soprano pipistrelle bats, Noctule bats, and Brown long eared 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.

The buildings to be surveyed consisted of a Folly tower built of stone. The building has solid stone walls with timber floors and a timber flat roof, covered with a bitumous mineral felt and chippings.

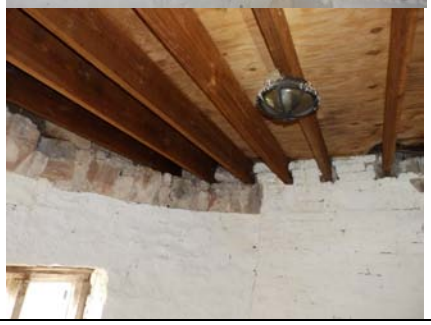
The building is open to access by bats and birds because of missing windows.

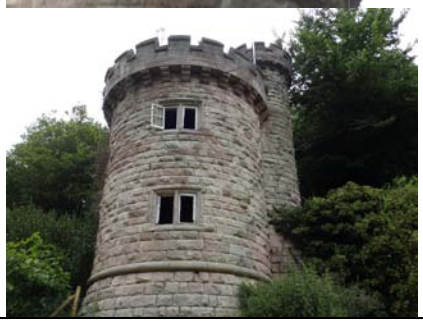
The property is situated in the Estate of Basford Hall with agricultural land around the property. The mature trees and hedgerows provide commuting routes and forage areas for bats. There are areas of woodland in the countryside around the site and this woodland would provide foraging habitat for bats.


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.

Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
In splits in timber floor joists.	None.	None. Machine cut timbers.	

Between end of the floor joist and stonework external wall.	Bat droppings and butterfly wing fragments.	Poor. There is a gap that bats could use and two droppings were found on the floor that could be from bats perching in this area or just flying around the building. The gap is very open and would only be used as temporary roosting by individual bats.	 
Feature.	**Evidence of bats.**	**Likelyhood of bats roosting.**	**Photograph.**
In external gaps in stonework.	None.	None. No gasp with access for bats.	

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

Bat droppings.

At first floor 2 medium sized bat droppings were found on the floor together with a number of butterfly wing fragments.


The bat droppings are most likely to be from a Brown long eared bat that has used the building as a feeding perch.

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.

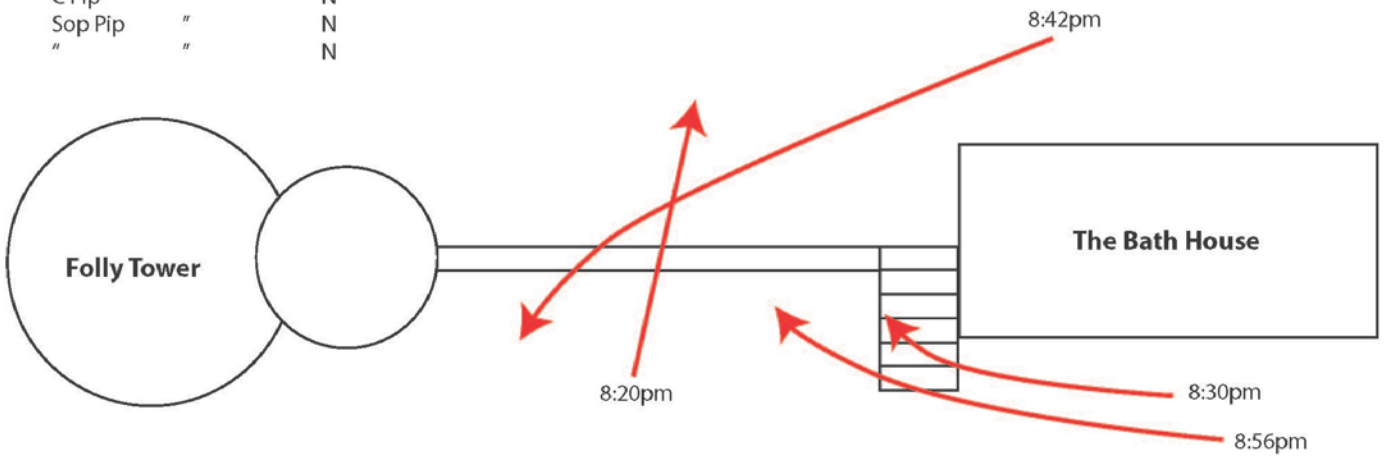
Matt Cottrill, Trainee Bat Worker.

20th August 2015.

Sunset.	20.23
Air Temperature.	20°C at the start of 19°C at the end of the survey.
Wind.	Beaufort scale 1-2.
Cloud cover.	6/8th increasing to 8/8th.

Surveyor: Matthew Cotterill Date: 20/08/2015 Location: The Bath House, ST13 7ER Weather: Cloudy, mild breeze Time: 8:00 - 10:30pm

Time	Species	Activity	Seen
8:20pm	C Pip	Passing	Y
8:30	"	"	Y
8:35	"	"	N
8:42	"	"	Y
8:45	"	"	N
8:50	"	"	N
8:56	"	"	Y
8:58	"	"	N
9:00	"	"	N
9:07	"	"	N
9:10	"	"	N
9:11 - 9:18	"	"	N
9:25	"	"	N
9:30 - 9:40	Sop Pip	"	N
9:42	C Pip	"	N
9:50	"	"	N
9:52	"	"	N
9:56	Sop Pip	"	N
10:00	C Pip	"	N
10:12	Sop Pip	"	N
10:15	"	"	N

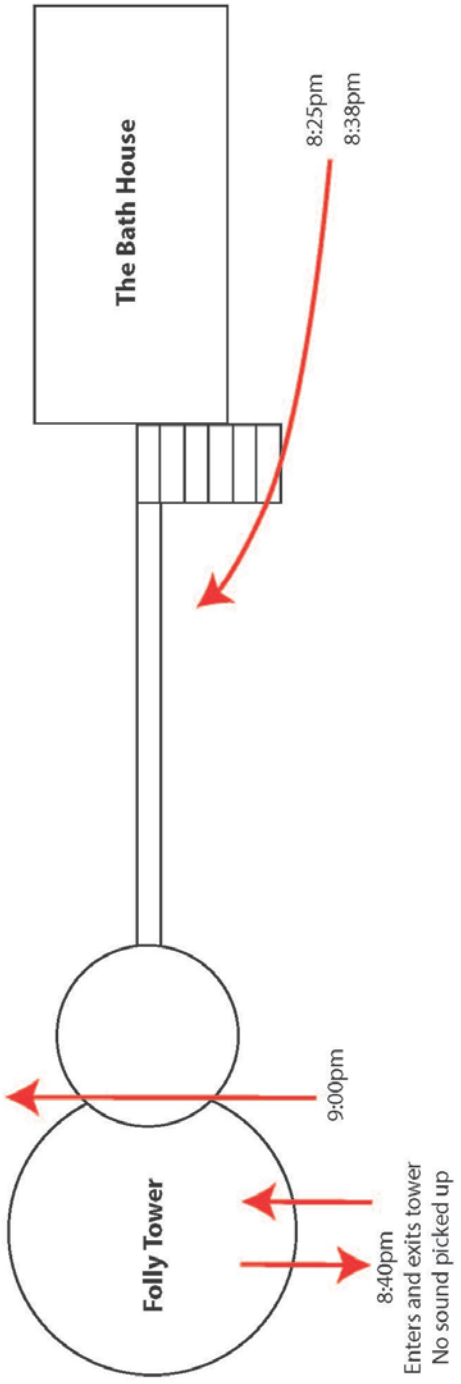


26th August 2015.

Sunset.	20.10
Air Temperature.	16°C at the start of 14°C at the end of the survey.
Wind.	Beaufort scale 1.
Cloud cover.	3/8th increasing to 6/8th.

Surveyor: Matthew Cotterill Date: 26/08/2015 Location: The Bath House, ST13 7ER Weather: Cloudy, grey Time: 7:40 - 10:00pm

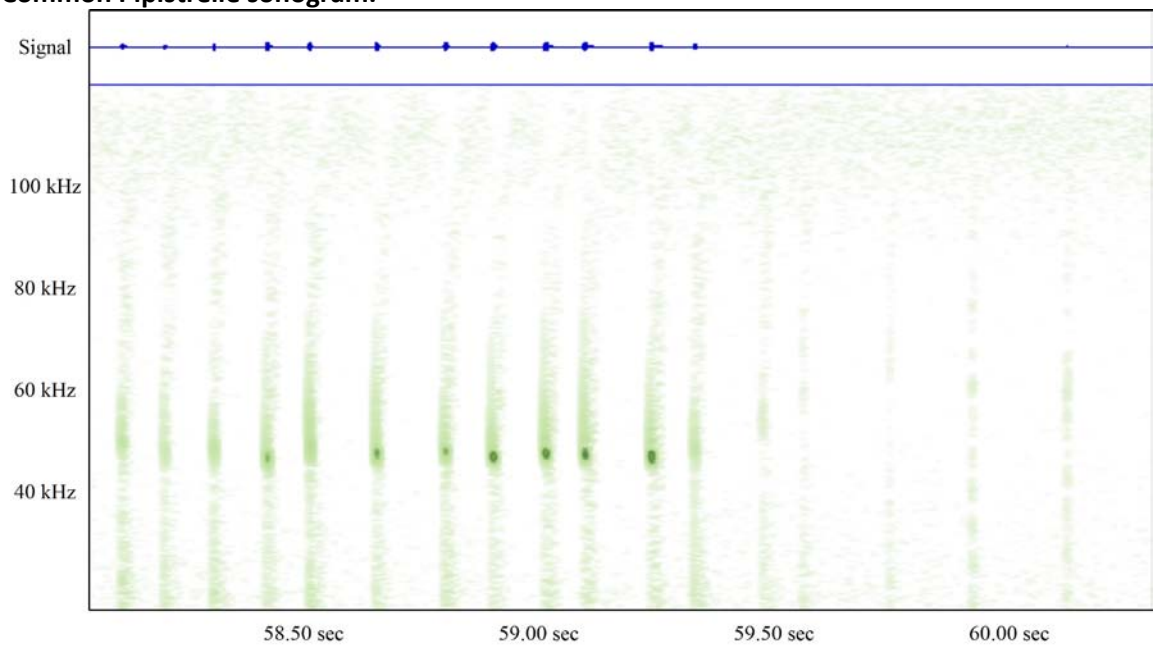
Time	Species	Activity	Seen
8:25pm	C Pip	Passing	Y
8:27	"	"	N
8:38	"	"	Y
8:40	Brown Long Eared???	"	Y
8:45	"	"	N
8:52	"	"	N
8:56	"	"	N
9:00	"	"	Y
9:10	"	"	N
9:20	"	"	N
9:24	"	"	N
9:29	"	"	N
9:35	"	"	N
9:42	"	"	N
9:47	"	"	N
9:52	"	"	N
9:55	"	"	N



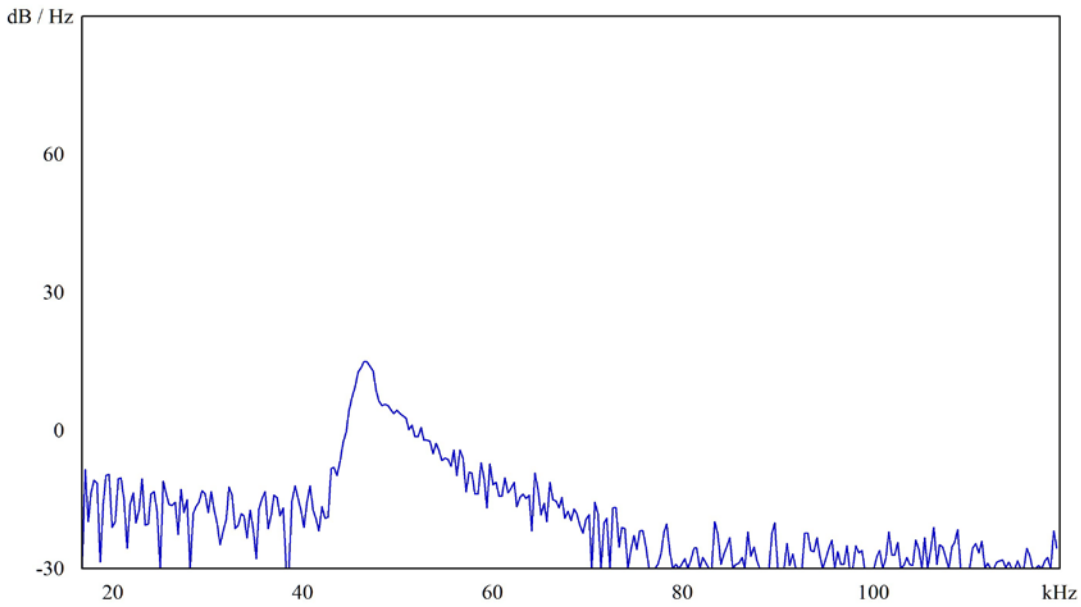
Analysis of the recordings from the bat detectors have confirmed the presence of Common Pipistrelle bats and Soprano pipistrelle bats.

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.

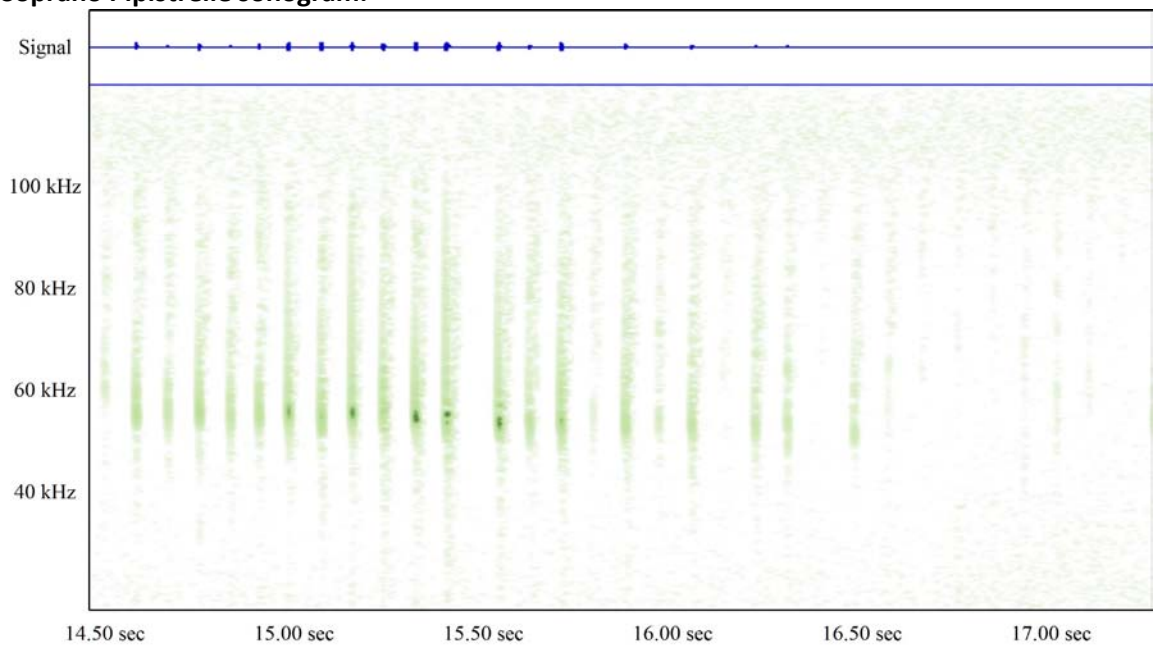


Common Pipistrelle peak frequency.

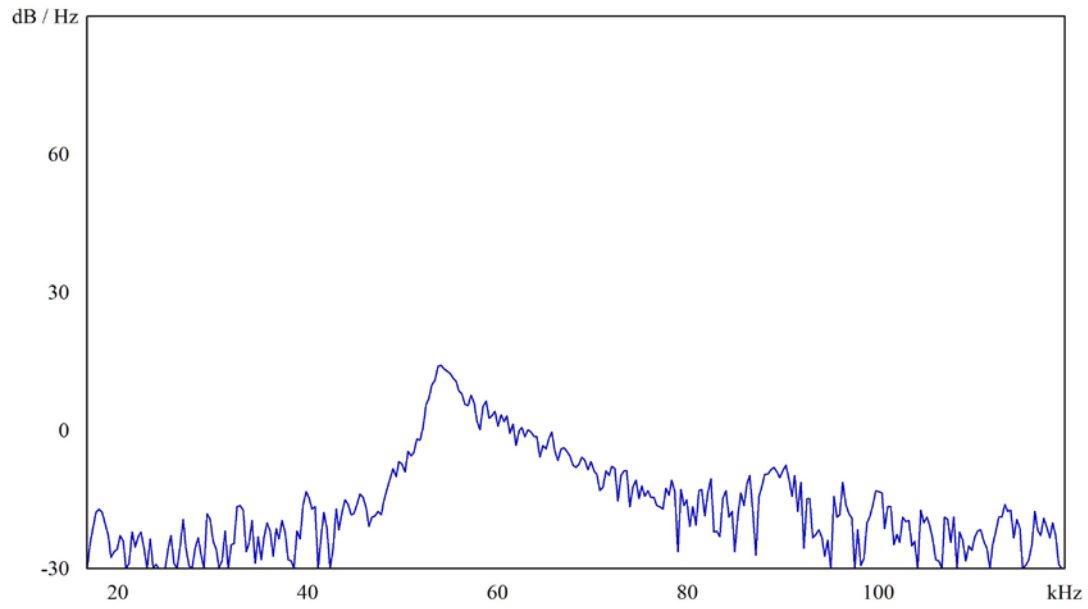


The Soprano Pipistrelle bats heard have also been confirmed by sound analysis with the peak frequency being around 55kHz.

Soprano Pipistrelle sonogram.



Soprano Pipistrelle peak frequency.



Birds.

There was evidence of birds nesting in the Folly.

A Wren's nest was found in the only hollow in the external stonework. The young had all fledged when the nest was found and checked.

At first floor in the Folly there is a Swallow's nest on top of the light fitting.

There are nesting opportunities in the shrubs and trees around the site. If any shrubs and small trees are to be felled they must be checked for nesting birds prior to the commencement of any work. If birds are nesting the tree or shrub must not be felled and cleared until the young have fledged.

Conclusion.

There was evidence of bats using the dwelling as a place of shelter. The number of droppings is small and the presence of butterfly wings make it most likely that this is a feeding perch. The feeding perch use can be replaced by erecting two bat boxes on adjacent trees if planning

permission is granted for the change of use to a holiday let. The gap around the joist ends is very open and only provides temporary roosting opportunities for individual bats.

The Bat Mitigation Guidelines states on page 39 that the mitigation and compensation for small numbers of bats of a common species should be;

'Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements'

If the roosting for the Brown long eared bats can be retained on the site while the development proceeds, if planning permission is granted then it may be there will be no loss of Brown Long Eared bat roosting, and the development of the site **"will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".**

A European Protected Species license will not be required to undertake the development if planning permission is granted and roosting can be maintained on the site.

The bat boxes will also provide roosting the Common pipistrelle and Soprano pipistrelle bats seen and heard around the site.

The change of use of the Folly will affect nesting birds. There must be no disturbance of birds that are nesting. Before any works starts the nesting areas should be checked. If birds are sitting on eggs or there are young birds in the nest then work must be delayed until the young have fledged.

Mitigation for bats.

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

Two Schwegler 2F bat boxes should be erected on adjacent trees at a height of 4-5m above ground level in a location where there are no branches beneath the bat box that could restrict the flight path into and out of the bat box.

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 during the demolition at different times of year. Because of this possibility a method of working should 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.

- 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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