



Bat Emergence and Re-entry Surveys

Walnut Tree Cottage, Itchenor Road, West Itchenor, Chichester, West Sussex PO20 7AB

Mark Wombwell

Status	Issue	Name	Date
Final v1	1	Natalie Evans BA (Hons), MA, MRSB, Senior Consultant	22/09/2021
Final v2 (new plans)		Natalie Evans BA (Hons), MA, MRSB, Senior Consultant	12/04/2022

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Executive summary

Arbtech were commissioned by Mark Wombwell to undertake bat emergence and re-entry surveys at Walnut Tree Cottage, Itchenor Road, West Itchenor, Chichester, West Sussex PO20 7AB. The surveys were completed on 22nd August, 7th September and 21st September 2021. The aim of the assessment was to confirm the presence/likely-absence of a bat roost in the building and characterise any roosts present. This includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape.

The proposals are for "Demolition of existing house and Erection of 1 no. 2-storey house with loft accommodation and 1 no. detached garage with sail loft." The application will be submitted to Chichester District Council.

Recommendations

Ref	Survey conclusions	Foreseen impacts	Recommendations / Mitigation
B1	<p>Droppings found in the loft void indicate a void dwelling bat roost, however the lack of sightings during the dusk and dawn surveys suggest that this is an occasional or transitional roost of a single bat. This is highly likely to be a single brown long eared bat that utilizes this loft along with several others in neighboring buildings.</p> <p>Day roost three common pipistrelles and one soprano pipistrelle have been identified under the hanging tiles and roof tiles of the building.</p> <p>The house itself appears to be an important feeding and commuting marker for</p>	<p>The brown long-eared (TBC through DNA analysis) and common and soprano pipistrelle roosts will be destroyed during the demolition, and the bats within may be injured or killed.</p> <p>Any increase in artificial lighting as a result of the demolition and extensions could impact foraging and commuting habitat for bats.</p>	<p>A European protected species mitigation licence (EPSML) will be required from Natural England prior to the commencement of works, once planning has been granted. The licence application can be submitted within 3 months of the start of work. If more than 3 months elapses since the last survey, a material changes check will be required prior to licence submission. Surveys need to have been carried out in the most recent survey season to inform the application, so at least one updated survey may be required.</p> <p>Bat droppings will need to be sent for DNA analysis to confirm the species roosting in the loft.</p> <p>Bat records will need to be obtained from Sussex Biodiversity Records Centre.</p> <p>As part of the licence, three suitable bat boxes will be installed on retained trees on site prior to the start of work. The removal of the roof tiles and hanging tiles will be carried out under ecological supervision, and any bats found will be moved by hand to the appropriate bat box. There will be no increase in lighting on site. There will be no timing restriction on the works. The new extensions will incorporate replacement roosting features for the bat roosts that are to be lost. This will be in the form of bat adapted roof tiles or integrated bat boxes, or a mixture of the two. The new roofs will use a type 1F bitumen felt only. There will be no use of breathable membranes. There are no bat safe breathable membranes currently on the market.</p> <p>Low impact lighting will be necessary around the entire property to preserve it as a feeding ground and commuting marker.</p>

	<p>common and soprano pipistrelles who were seen circling the building at length during the dusk surveys.</p>		<p>For any new lighting where applicable - Low impact lighting strategies will be adopted from the guidance outlined in the new Bats and Lighting Publication produced by the Institution of Lighting Professionals and the Bat Conservation Trust "Guidance Note 08/18 Bats and artificial lighting in the UK Bats and the Built Environment series publication:http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting. The lighting on the site will:</p> <ul style="list-style-type: none"> • Use narrow spectrum light sources to lower the range of species affected by lighting • Use light sources that emit minimal ultra-violet light • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low level lighting used in conjunction with hoods, cowls, louvres and shields. Lights will also be directional to ensure that light is directed to the intended areas only. <p>External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimnable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.</p>
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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Mark Wombwell to undertake bat emergence and re-entry surveys at Walnut Tree Cottage, Itchenor Road, West Itchenor, Chichester, West Sussex PO20 7AB. The surveys were completed on 22nd August, 7th September and 21st September 2021. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

These surveys were completed following recommendations made in the Preliminary Roost Assessment (Arbtech 2021).

1.2 Site Context

The site is located at National Grid Reference SU79870109 has an area of approximately 0.1ha.

1.3 Scope of the report

This report provides a description of the bat activity observed and recorded during each survey. The aim of the assessment was to characterise any roosts present including species, number of individuals, number and location of roost access points, and to gain an understanding of how bats use the site.

Robust data has been collected, following good practice guidelines, to inform an assessment of the potential impacts of the proposed development on bats, and inform mitigation and enhancements. This report provides information on constraints to the proposals as a result of roosting bats, and summarises any mitigation required to achieve planning permission, and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out, including a request for information from the local bat group or records centre - please refer to the Preliminary Roost Assessment (Arbtech 2021)
- Field survey(s) has been undertaken, including an external survey and internal inspection.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on the requirements of a European protected species mitigation licence (EPSML) application if appropriate.

A survey plan is presented in Appendix 1 showing the location of each surveyor and the bat activity observed and recorded during each survey, proposed plans in Appendix 2 and a summary of relevant legislation is presented in Appendix 3.

1.4 Project Description

The proposals are for 'Demolition of rear extension. Proposed single storey front, rear and side extensions, two storey front extension, loft conversion and detached garage with sail loft.' The application will be submitted to Chichester District Council.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 1km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records for bats held on Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release and was analysed and summarised in the preliminary roost assessment survey. Please refer to the Preliminary Roost Assessment (Arbtech 2021).

2.2 Site Survey methodology

The survey methods were informed by the recommendations presented in the Preliminary Roost Assessment (Arbtech 2021). This survey identified the following survey requirements in line with best practice:

Table 1: Recommended surveys

Ecological Factor	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations
Bats	B1 has high habitat value for crevice dwelling bats due to the available suitable roosting crevices under roof tiles and hanging tiles. There is evidence of bat use externally under hanging tiles. The evidence in the loft suggests a day roost of void dwelling species, most likely brown long-eared bat.	All hanging tiles and roof tiles are proposed to be replaced. The roost in the loft will be destroyed when the loft is converted. Any roosts present under roof tiles and hanging tiles will be destroyed when these are removed. Bats may be injured or killed.	In order to proceed with the development following best practice and in line with planning policy, a suite of dusk emergence and dawn re-entry surveys will need to be carried out between May and September. Three surveys are required; two at dusk and one at dawn with at least 2-3 weeks between them. Ideally, at least two of the surveys should be within the optimal survey season which is mid-May-August. Two surveyors are required to provide coverage of B1. Any development work that impacts bat roosts will need to be permitted by a Natural England licence. Bat records will need to be obtained from Sussex Biodiversity Records Centre. DNA analysis should be undertaken on the droppings collected from the loft.

The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections with suitable roosting features could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used heterodyne and frequency division bat detectors, and Wildlife Acoustics EM3+ and Echo Meter Touch detectors connected to iPads. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. The Echo Meter Touch includes an auto ID function for bat species; however, this is not 100% accurate and further post-survey sound analysis is often required to confirm species that could not be identified by the auto ID software during the survey. Surveyors also used head torches, survey record sheets and pens/pencils for recording all activity observed during the surveys. Each

surveyor was also provided with a handheld radio for communication between surveyors to assist with confirming ambiguous bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility. Dawn re-entry surveys commenced 2 hours before sunrise and continued until 15 minutes after sunrise.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these adverse weather conditions can impact upon bat emergence and foraging behaviour.

2.3 Surveyors

The lead surveyor is Natalie Evans, (Natural England Bat Licence Number: 2018-37888-CLS-CLS) and was assisted by experienced surveyors with several years of bat survey experience. Two surveyors were used to provide sufficient cover of B1 during each survey. Two surveyors were also used to provide sufficient cover of B2. The designated position of each surveyor during each survey is detailed in the tables in Section 3.1 below and shown on the plan in Appendix 1.

2.4 Limitations

These surveys follow best practice guidance to confirm presence or likely absence of roosting bats and where present, characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the building and the site as a whole by bats, at all times cannot be established based on this information.


There were no specific limitations to the survey.



3.0 Results and Evaluation

3.1 Survey Results

The results of each survey are provided in the tables below.

Table 2: Survey results

Date		22/08/2021		
Start and End Times		19:50 – 21:45 Sunset: 20:10		
Weather Conditions		<table border="0"> <tr> <td>Start: Temp: 20.5 Relative Humidity: 56% Cloud Cover: 5% Wind: 1 Rain: 0%</td> <td>End: Temp: 17.7 Relative Humidity: 72% Cloud Cover: 80% Wind: 1 Rain: 0%</td> </tr> </table>	Start: Temp: 20.5 Relative Humidity: 56% Cloud Cover: 5% Wind: 1 Rain: 0%	End: Temp: 17.7 Relative Humidity: 72% Cloud Cover: 80% Wind: 1 Rain: 0%
Start: Temp: 20.5 Relative Humidity: 56% Cloud Cover: 5% Wind: 1 Rain: 0%	End: Temp: 17.7 Relative Humidity: 72% Cloud Cover: 80% Wind: 1 Rain: 0%			
Surveyor (position) As shown in Appendix 1		<p>Natalie Evans - Natural England Bat Licence Number: 2018-37888-CLS-CLS (Position 1 – observing the southern and western elevations and roof structures of B1).</p> <p>Jonathan Kewell – 7 years’ survey experience (Position 2 – observing the southern and eastern elevations and roof structures of B1).</p>		
Building Reference	Surveyor Position	Notes/observations: An IR Camera was used to observe the northern elevations and roof structures of B1.		
B1	1	<p>A common pipistrelle rounded the building at 20:31 and re-entered under a hanging tile (shown below). It later re-emerged from under that same tile at 20:35.</p>  <p>A soprano pipistrelle flew down the south side of the house towards surveyor 2 at 20:34. A common pipistrelle flew south and then east around the house towards surveyor 2 at 20:37. At 20:37 a common pipistrelle emerged from the roof tiles to the right of the gablet (shown below).</p>		

		 <p>From 20:37, passes by four common and one soprano pipistrelle were recorded frequently, circling the property in an anti-clockwise direction. These passes occurred approximately every one to two minutes until 20:51 when all activity ceased. At 21:04 a single common pipistrelle began circling the building in the same way, and passes were recorded every one to two minutes for the remainder of the survey.</p>
<p>B1</p>	<p>2</p>	<p>At 20:30 a common pipistrelle emerged from the hanging tiles at the north-east corner of the building (shown below) and began feeding in the eastern driveway and garden. A second common pipistrelle arrived at 20:33 and began feeding in the garden.</p>  <p>At 20:37 a common pipistrelle emerged from the same spot as the first. Four common pipistrelles were feeding in the garden with frequent passes around the property in an anti-clockwise direction until 20:41. At 20:43 a single common pipistrelle returned to feed in the eastern driveway and garden, and then began looping the property again, with passes every one to two minutes until the end of the survey.</p>

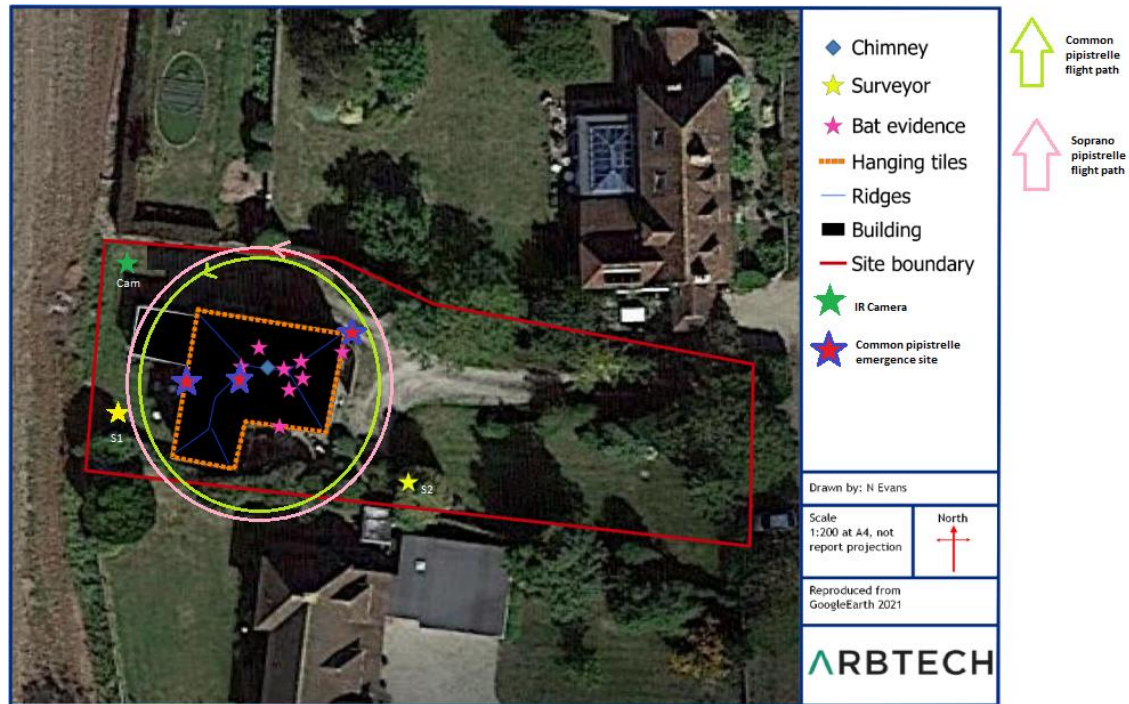



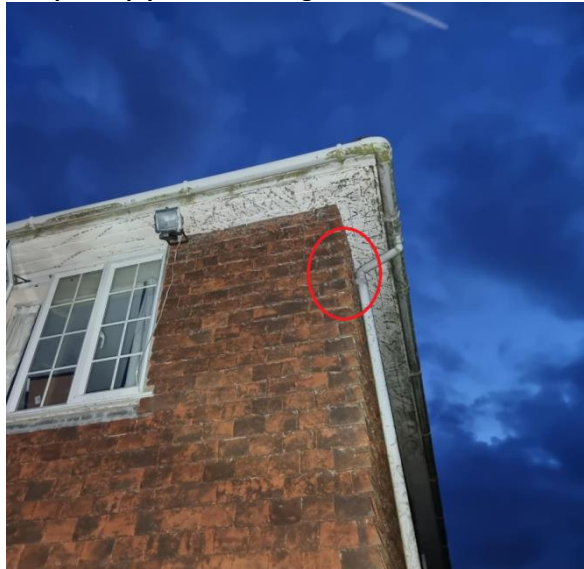
Table 3: Survey results

Date		07/09/2021		
Start and End Times		05:00 – 06:45 Sunrise: 06:27		
Weather Conditions		<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Start: Temp: 18.2°C Relative Humidity: 63% Cloud Cover: 0% Wind: 0mph Rain: None </td> <td style="width: 50%; vertical-align: top;"> End: Temp: 16.4°C Relative Humidity: 72% Cloud Cover: 0% Wind: 0mph Rain: None </td> </tr> </table>	Start: Temp: 18.2°C Relative Humidity: 63% Cloud Cover: 0% Wind: 0mph Rain: None	End: Temp: 16.4°C Relative Humidity: 72% Cloud Cover: 0% Wind: 0mph Rain: None
Start: Temp: 18.2°C Relative Humidity: 63% Cloud Cover: 0% Wind: 0mph Rain: None	End: Temp: 16.4°C Relative Humidity: 72% Cloud Cover: 0% Wind: 0mph Rain: None			
Surveyor (position) As shown in Appendix 1		Joanna Andrews (lead surveyor) – eight years’ survey experience (Position 1 – observing the south east and south west facing elevations and roof structures of B1). Toby Bowman – eight years’ survey experience (Position 2 – observing the north east and north west facing elevations and roof structures of B1).		
Building Reference	Surveyor Position	Notes/observations:		
B1	1	<p>Between 05:05 and 05:18 three passes by common pipistrelles were heard to the front of the house but the bats were not seen. From 05:34 until 06:03 constant activity by three common pipistrelles was observed, the bats were heard social calling and seen feeding in the trees to the north east of B1 and in the garden to the east of the building. At 06:03 one common pipistrelle re-entered under the hanging tiles on the most eastern south west facing elevation of B1: shown below, circled in red.</p>  <p>At 05:28 and 05:34 passes by Natterer’s bats were heard to the south of the site but the bats were not seen. Passes by a brown long-eared bat were seen at 05:41 and 05:47, the bat was seen circling the area to the east of B1 at the southern end of the building.</p>		
B1	2	At 05:24 a pass by a brown long-eared bat was seen, the bat flew north east along the western boundary of the site.		

Between 05:33 and 05:59 constant activity by up to three common pipistrelles at any one time was observed, the bats were seen flying between B1 and the neighbouring site to the north and feeding around the trees to the north east of B1. **At 05:59 one common pipistrelle re-entered under the hanging tiles on the north east facing elevation of B1: shown below, circled in red.**



Table 4: Survey results

Date		21/09/2021		
Start and End Times		18:40 – 20:35 Sunset: 19:03		
Weather Conditions		<table border="0"> <tr> <td>Start: Temp: 17°C Relative Humidity: 61% Cloud Cover: 10% Wind: 1mph Rain: None</td> <td>End: Temp: 12.7°C Relative Humidity: 91% Cloud Cover: 10% Wind: 1mph Rain: None</td> </tr> </table>	Start: Temp: 17°C Relative Humidity: 61% Cloud Cover: 10% Wind: 1mph Rain: None	End: Temp: 12.7°C Relative Humidity: 91% Cloud Cover: 10% Wind: 1mph Rain: None
Start: Temp: 17°C Relative Humidity: 61% Cloud Cover: 10% Wind: 1mph Rain: None	End: Temp: 12.7°C Relative Humidity: 91% Cloud Cover: 10% Wind: 1mph Rain: None			
Surveyor (position) As shown in Appendix 1		Natalie Evans - Natural England Bat Licence Number: 2018-37888-CLS-CLS (Position 1 – observing the southern and western elevations and roof structures of B1). Jonathan Kewell – 7 years’ survey experience (Position 2 – observing the southern and eastern elevations and roof structures of B1).		
Building Reference	Surveyor Position	Notes/observations: An IR Camera was used to observe the northern elevations and roof structures of B1.		
B1	1	At 19:26 a soprano pipistrelle flew from the north face of the building in a westerly direction to the fields. At 19:36 a common pipistrelle passed west along the alley to the south of the building and fed in the western garden. A second common pipistrelle joined it from the north-west at 19:37 and these two common pipistrelles began flying up and down in an L-shaped pattern against the northern and western faces of the building. These passes continued without interruption until the end of the survey.		
B1	2	<p>A soprano pipistrelle emerged from the corner tiles at the north-east corner of the building (shown below) at 19:18 and flew east down the drive.</p>  <p>At 19:21 a common pipistrelle emerged from the right-hand side of the first window within the south-east L (shown below), and flew east into the front garden where it began feeding around surveyor position 2.</p>		



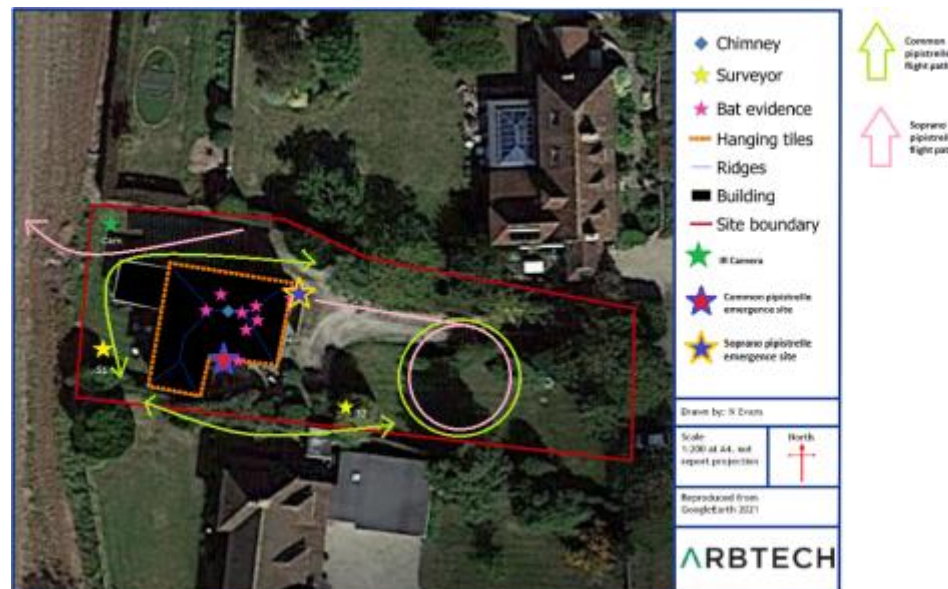
At 19:24 this common pipistrelle was joined by a soprano pipistrelle from the east and both feeding and social calling were observed.

At 19:26 the soprano pipistrelle passed west around the north of the building.

At 19:36 the common pipistrelle passed west around the south of the building.

A common pipistrelle arrived in the front garden from the east at 19:40 and began flying up and down the drive, social calling as it approached the north-east corner.

From 19:44 until the end of the survey, two common pipistrelles were seen at the north-east corner of the building briefly every 30 to 60 seconds as they came to the end of the L-shaped pattern observed by surveyor 1.



4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

When bat roosts are present, the bat surveys undertaken at a site facilitate the characterisation of the roost type. This allows for appropriate mitigation and compensation to be designed to inform a European Protected Species Mitigation Licence (EPSML) application to Natural England.

The definitions of bat roost types are provided below, taken from the *Bat Mitigation Guidelines* (English Nature, 2004) and the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

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

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

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

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

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

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

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

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Sites where hibernating bats have been confirmed by appropriate survey effort should be classed as 'hibernation confirmed'.

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.

Other: roost types are interchangeable and not always easy to classify according to the nuances of certain species.

The surveys undertaken to date in and around B1 provide sufficient information to inform a European Protected Species Mitigation Licence (EPSML). An EPSML **will be required** to enable the proposed works to be lawfully undertaken, whilst ensuring the favourable conservation status of the species concerned in their natural range; detailed mitigation will be described in the EPSML Method Statement. Appropriate justification for this assessment is provided in Section 3 of this report.

Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law. Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.

4.2 Evaluation

The following recommendations are provided taking the desk-based assessment and site survey results into account.

Table 5: Evaluation of building on site

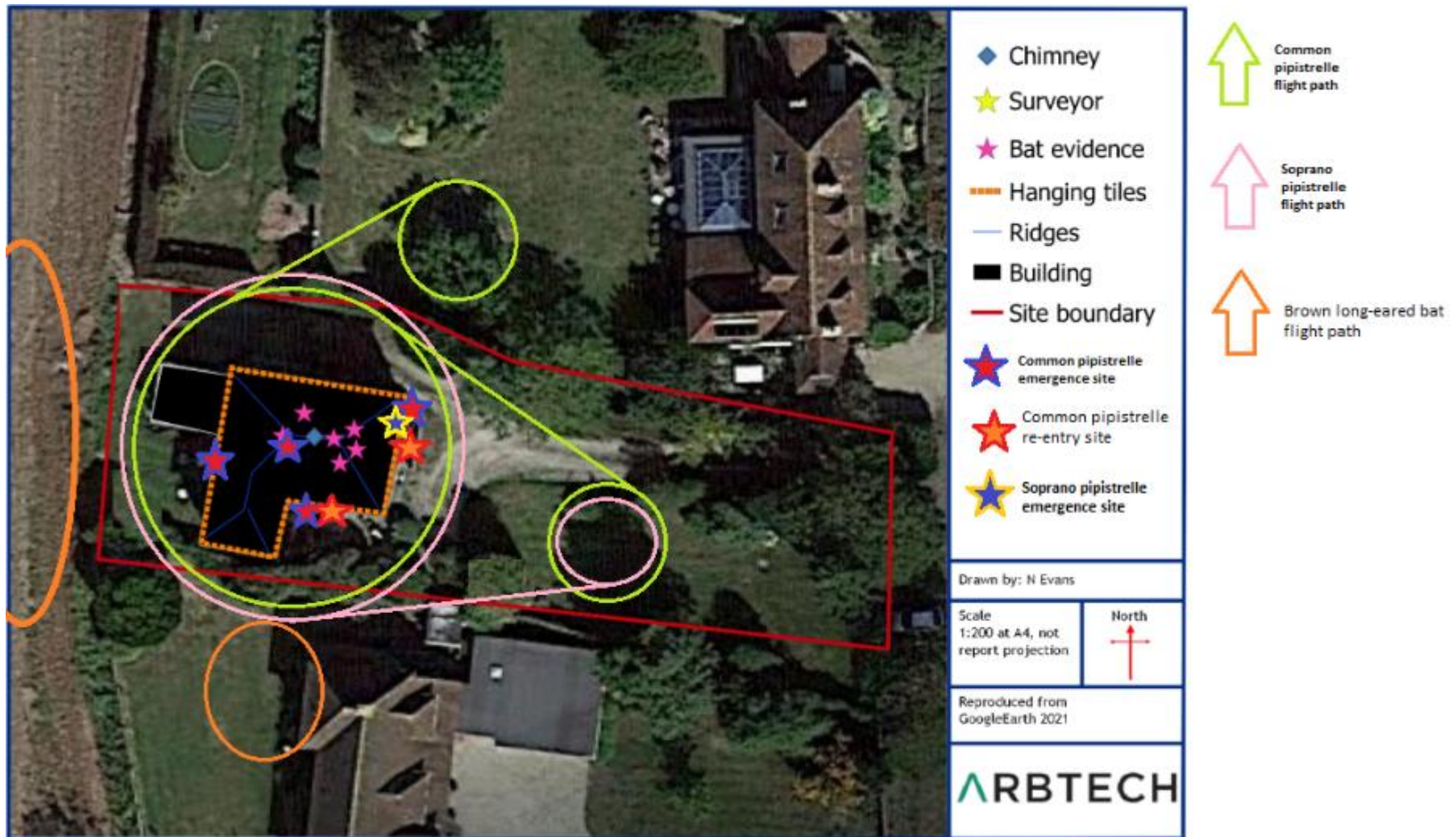
Ref	Survey conclusions	Foreseen impacts	Recommendations / Mitigation
B1	<p>Droppings found in the loft void indicate a void dwelling bat roost, however the lack of sightings during the dusk and dawn surveys suggest that this is an occasional or transitional roost of a single bat. This is highly likely to be a single brown long eared bat that utilizes this loft along with several others in neighboring buildings.</p> <p>Day roost three common pipistrelles and one soprano pipistrelle have been identified under the hanging tiles and roof tiles of the building.</p> <p>The house itself appears to be an important feeding and commuting marker for common and soprano pipistrelles who were seen circling the building at length during the dusk surveys.</p>	<p>The brown long-eared (TBC through DNA analysis) and common and soprano pipistrelle roosts will be destroyed during the demolition, and the bats within may be injured or killed.</p> <p>Any increase in artificial lighting as a result of the demolition and extensions could impact foraging and commuting habitat for bats.</p>	<p>A European protected species mitigation licence (EPSML) will be required from Natural England prior to the commencement of works, once planning has been granted. The licence application can be submitted within 3 months of the start of work. If more than 3 months elapses since the last survey, a material changes check will be required prior to licence submission. Surveys need to have been carried out in the most recent survey season to inform the application, so at least one updated survey may be required.</p> <p>Bat droppings will need to be sent for DNA analysis to confirm the species roosting in the loft.</p> <p>Bat records will need to be obtained from Sussex Biodiversity Records Centre.</p> <p>As part of the licence, three suitable bat boxes will be installed on retained trees on site prior to the start of work. The removal of the roof tiles and hanging tiles will be carried out under ecological supervision, and any bats found will be moved by hand to the appropriate bat box. There will be no increase in lighting on site. There will be no timing restriction on the works. The new extensions will incorporate replacement roosting features for the bat roosts that are to be lost. This will be in the form of bat adapted roof tiles or integrated bat boxes, or a mixture of the two. The new roofs will use a type 1F bitumen felt only. There will be no use of breathable membranes. There are no bat safe breathable membranes currently on the market.</p> <p>Low impact lighting will be necessary around the entire property to preserve it as a feeding ground and commuting marker.</p> <p>For any new lighting where applicable - Low impact lighting strategies will be adopted from the guidance outlined in the new Bats and Lighting Publication produced by the Institution of Lighting Professionals and the Bat Conservation Trust "Guidance Note 08/18 Bats and artificial lighting in the UK Bats and the Built Environment series</p>

			<p>publication:http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting. The lighting on the site will:</p> <ul style="list-style-type: none"> • Use narrow spectrum light sources to lower the range of species affected by lighting • Use light sources that emit minimal ultra-violet light • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low level lighting used in conjunction with hoods, cowls, louvres and shields. Lights will also be directional to ensure that light is directed to the intended areas only. <p>External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimnable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.</p>
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5.0 Bibliography

- Arbtech Consulting Ltd (2021). Preliminary Roost Assessment (PRA) Walnut Tree Cottage
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2021)
- Magic database (2021) <http://www.magic.gov.uk/MagicMap.aspx>
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan



PROPOSED SITE & ROOF PLAN
Scale: 1:200

PLANNING

NO.	DATE	DESCRIPTION
PROJECT		
WALNUT TREE COTTAGE, THE STREET, ITCHENOR, CHICHESTER, PO20 7AB		
DRAWING		
PROPOSED SITE PLAN		
CLIENT		
MARK WOMBWELL		
SCALE	1:200 @ A1	SYSTEM
DATE	MAR 2022	CHECKED
ENGINEER NO.	2105 / PL3 10	



Appendix 3: Legislation and Planning Policy related to bats

LEGAL PROTECTION

All species of bat are fully protected under *The Conservation of Habitats and Species Regulations 2017* through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) To impair their ability:
 - (i) To survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the *Wildlife and Countryside Act 1981 (as amended 01.04.1996)* through their inclusion on **Schedule 5**. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2017

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

- ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
- scientific and educational purposes,
- ringing or marking
- conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.